Agenda
Civic Works Committee

The 4th Meeting of the Civic Works Committee

February 21, 2024

9:30 AM

Council Chambers - Please check the City website for additional meeting detail information. Meetings can be viewed via live-streaming on YouTube and the City Website.

The City of London is situated on the traditional lands of the Anishinaabek (AUh-nish-in-ah-bek), Haudenosaunee (Ho-den-no-show-nee), Lūnaapéewak (Len-ah-pay-wuk) and Attawandaron (Add-a-won-da-run).

We honour and respect the history, languages and culture of the diverse Indigenous people who call this territory home. The City of London is currently home to many First Nations, Métis and Inuit today.

As representatives of the people of the City of London, we are grateful to have the opportunity to work and live in this territory.

Members

Councillors A. Hopkins (Chair), J. Pribil, S. Trosow, S. Franke, D. Ferreira

The City of London is committed to making every effort to provide alternate formats and communication supports for meetings upon request. To make a request specific to this meeting, please contact CWC@london.ca or 519-661-2489 ext. 2425.

Pages

1. Disclosures of Pecuniary Interest

2. Consent

3. Scheduled Items

4. Items for Direction

5. Deferred Matters/Additional Business

6. Adjournment

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: **2023 Drinking Water Annual Report and Summary Report for the City of London Drinking Water System**
Date: **February 21, 2024**

Recommendation

That, on the recommendation of the Deputy City Manager, Environment and Infrastructure, the 2023 Drinking Water Annual Report and Summary Report for the City of London Drinking Water System **BE RECEIVED** for information.

Executive Summary

Ontario Regulation 170/03 (Drinking Water Systems) requires the owner of a municipal drinking water system ensure that an Annual Report and a Summary Report be prepared, covering the period of January 1 through to December 31 of the previous year. This report, along with its appendices, fulfills these requirements.

Linkage to the Corporate Strategic Plan

Municipal Council's Strategic Plan identifies "Well-Run City" as a strategic area of focus. This report supports the 2023-2027 Strategic Plan by demonstrating leadership and accountability in the management and provision of quality programs and services.

Analysis

1.0 Background Information

1.1 Previous Reports Related to this Matter

"2022 Drinking Water Annual Report and Summary Report for the City of London Drinking Water System", Civic Works Committee, February 22, 2023.

2.0 Discussion and Considerations

2.1 Regulatory Requirements

Ontario Regulation 170/03 (Drinking Water Systems) requires the owner of a municipal drinking water system ensure that an Annual Report and a Summary Report be prepared, covering the period of January 1 through to December 31 of the previous year.

The Annual Report is to contain:

- A brief description of the drinking water system, including a list of water treatment chemicals used by the system;
- A summary of the results of required tests;
- A summary of any adverse test results reported and corrective actions taken; and,
- A description of any major expenses incurred to install, repair or replace required equipment.

O. Reg. 170/03 further stipulates that:

a) The Owner shall ensure that a copy of the Annual Report is given without charge to every person who requests a copy;
b) Effective steps are taken to advise users of water from the system that copies of the Annual Report are available, without charge, and of how a copy may be obtained;
c) The Owner of a large municipal residential system serving more than 10,000 people is required to post a copy of the Annual Report to the municipality's website; and,
d) A Summary Report is to be prepared and presented to the members of the Municipal Council by no later than March 31 of the following year.

The Summary Report is to contain:

- A list of any regulatory requirements applicable to the system that were not met at any time during the period covered by the report, the duration of the failure, and the measures that were taken to correct the failure; and,
- A summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows and compared to the rated capacity of the system.

Due to the large number of pages, the 2023 Drinking Water Summary Report for the City of London Drinking Water System has been provided to members of Council in electronic format, with the 2023 Annual Report attached as an appendix. The Summary Report (without appendices) is attached as Appendix 'A' to this report.

The Elgin-Middlesex Pumping Station (EMPS) is jointly owned by the City of St. Thomas, the Town of Aylmer, and the City of London, and is operated by the Ontario Clean Water Agency (OCWA). The Annual Report for the EMPS (London portion) was not yet available at the time of writing this report. It will be provided to members of Council under separate memo prior to the reporting deadline of February 28, 2022.

Conclusion

Receipt of Appendix 'A' of this report by members of Council fulfils the reporting requirements of O. Reg. 170/03, Schedule 22. The 2023 Drinking Water Summary Report is available to members of the public by request and will be posted on the City's website.

Prepared by:	**John Simon, P.Eng.** **Division Manager, Water Operations**
Submitted by:	**Ashley Rammeloo, MMSc., P.Eng.,** **Director Water, Wastewater, and Stormwater**
Recommended by:	**Kelly Scherr, P. Eng., MBA, FEC** **Deputy City Manager, Environment and Infrastructure**

Appendix 'A' – City of London 2023 Drinking Water Summary Report
Appendix 'B' – 2023 Annual Report EMPS London

c.c. Scott Koshowski – Water Operations Engineer
Michael Schulthess – City Clerk
Aaron Rozentals – Division Manager – Water Engineering
Andrew Henry – Director – Regional Water Supply
Dan Huggins – Water Quality Manager
Dr. Alex Summers –Medical Officer of Health Middlesex-London Health Unit

Appendix A

CITY OF LONDON

2023 DRINKING WATER SUMMARY REPORT

System Name: City Of London Drinking Water System

System Rating:
Water Distribution Subsystem Class IV
Water Treatment Subsystem Class II
Average Day Demand: 127.790 MLD
Peak Day Demand: 177.070 MLD (June 2, 2023)
Population Served: 431,000 (approx.)
Source Water: Surface Water (Lake Huron, Lake Erie)
Drinking Water System Number: 260004917
Municipal Drinking Water Licence: 006-101

London
CANADA

CONTACT INFO:
Owner:
Corporation of the City of London
300 Dufferin Avenue, London, Ontario N6A 4L9
Contact: Mr. John Simon, P.Eng. Division Manager Water Operations
519-661-2489 ext. 4938

Table of Contents

Reporting Requirements

Ontario Regulation 170/03 requires that municipalities prepare a Summary Report for their drinking water system for the preceding calendar year and submit it to the members of the Municipal Council by March 31 of each year. This report, presented to Municipal Councils Civic Works Committee on February 21, 2024, fulfills that requirement.

O. Reg 170/03 also requires the preparation of an Annual Report on the operation of the drinking-water system to be made available to members of the public.

Before February 28, 2024, a copy of the 2023 Annual Report and Summary Report for the City of London's water works will be provided to the local office of the Ministry of the Environment, Conservation and Parks (MECP) as a courtesy for information purposes.

The Elgin-Middlesex Pumping Station (EMPS) is jointly owned by the St. Thomas Area Secondary Water Supply System, the Aylmer Area Secondary Water Supply System, and the City of London. EMPS is operated by the Ontario Clean Water Agency (OCWA). The Annual Report for the EMPS (London portion) has been provided by OCWA and is attached as Appendix C of this report.

Water Budget

The 2020-2023 operating and capital budgets represent financial sustainability for Londoners, whereby annual rate increases are approximately the average of the Consumer Price Index (CPI) and the Non-Residential Building Construction Price Index (NRBCPI). The 2020-2023 Water Operating and Capital Budgets support four core business objectives:

- Compliance
- Financial Management
- Customer Service
- Best Management Practices

The total Water budget for 2023 was $93.7 million, which includes long term infrastructure improvements. The Water Budget helps maintain London's advantage of a safe, clean, and secure water supply. The Water Service Area remains proactive in initiatives to ensure that this service continues to meet the demands and expectations of customers. Existing infrastructure requires ongoing renewal (replacement and rehabilitation) activities to manage the infrastructure gap, ensuring that future generations are not faced with a water system that is failing, unreliable, and expensive to maintain.

Operational Performance

The City of London Water Service Area continues to experience ongoing challenges, more recently with the current economic environment. The most significant impact during the past few years has been the availability and cost of essential stock, inventory, supplies, and material. Delivery time for many standard stock items has increased from weeks to now months, and in some cases nearly a year. In addition, the costs for these items have seen increases of 20% to 40%. The Water Service Area has taken steps to address these issues and continues to closely monitor availability of supplies. The Water Service Area is an essential service that must maintain service continuity. Despite these circumstances, the Water Service Area once again continued operationally with "business-as-usual", having only minor service level impacts seen on non-critical work processes for 2023.

Staffing/Business Continuity
Throughout 2023, continuity of service was never in jeopardy. Water Operations staff remained fully dedicated to the delivery of safe, reliable drinking water. During this time, staff continued with their work arrangements and environments, implemented new and updated existing procedures (ie. Corporate Health and Safety Standard Operating Guidelines) and worked diligently to ensure uninterrupted supply of this essential service.

Budget
Due to supply chain disruptions and price increases, there have been budget implications to operational material and supplies. The Water Service Area has continued to work within allocated budgets.

Sampling & Water Quality Monitoring

In 2023, the MECP required large municipal drinking water systems to test for 70 different organic, inorganic, and chemical parameters. The City of London's water sampling regime includes monthly testing for microbiological indicators and chlorine residuals from 57 standard locations across the City, as well nearly 3,000 random grab samples. Analysis is also performed for up to 117 parameters, including organics, inorganics, chemicals, pesticides, and metals at 13 standard locations around the City. This level of testing far exceeds the MECP's minimum sampling requirements.

London has 10 locations throughout the City where continuous in-line sampling of chlorine residual and pH is monitored. Staff also perform approximately 4,000 additional chlorine tests each year related to construction and maintenance activities. These efforts help ensure that the water within the distribution system is always of high quality, completely safe to consume, and consistent for manufacturing processes.

2023 Water Quality Sampling Summary

Parameter	Ontario Maximum Acceptable Concentration (MAC)	Units	Lab's Method Detection Limit (MDL)	Measured Concentrations 2023	MAC Exceedance (Y/N)
REGULATED INORGANICS					
Antimony	6	ug/L	0.6	**0.9 - 0.9**	No
Arsenic	10	ug/L	0.2	**0.2 - 0.3**	No
Barium	1000	ug/L	0.02	**13.9 - 23.6**	No
Boron	5000	ug/L	2	**13 - 17**	No
Cadmium	5	ug/L	0.003	**0.004 - 0.008**	No
Chromium	50	ug/L	0.08	**0.08 <MDL**	No
Fluoride	1.5	mg/L	0.06	**0.35 - 0.78**	No
Free Chlorine	--	mg/L	0.000	**0.25 - 1.7**	No
Lead	10	ug/L	0.01	**0.01 - 0.09**	No
Mercury	1	ug/L	0.01	**0.01 <MDL**	No
Selenium	50	ug/L	0.04	**0.16 - 0.21**	No
Sodium	20	mg/L	0.01	**11 - 16.2**	No
Uranium	20	ug/L	0.002	**0.034 - 0.046**	No
TRIHALOMETHANES & HALOACETIC ACIDS					
Total Haloacetic Acids	80	ug/L	5.3	**5.3 - 19.9**	No
Dibromoacetic Acid	--	ug/L	2	**2 <MDL**	No
Dichloroacetic Acid	--	ug/L	2.6	**3.5 - 13.6**	No
Monobromoacetic acid	--	ug/L	2.9	**2.9 <MDL**	No
Monochloroacetic Acid	--	ug/L	4.7	**4.7 <MDL**	No
Trichloroacetic Acid	--	ug/L	5.3	**5.3 - 10.5**	No
Trihalomethanes (total)	100	ug/L	0.37	**13 - 56**	No
Bromodichloromethane	--	ug/L	0.26	**4.1 - 12**	No
Bromoform	--	ug/L	0.34	**0.34 - 0.37**	No
Chloroform	--	ug/L	0.29	**7.3 - 39**	No
Dibromochloromethane	--	ug/L	0.37	**2 - 4.8**	No
Total Haloacetic Acids	80	ug/L	5.3	**5.3 - 19.9**	No
Dibromoacetic Acid	--	ug/L	2	**2 <MDL**	No
Dichloroacetic Acid	--	ug/L	2.6	**3.5 - 13.6**	No
Monobromoacetic acid	--	ug/L	2.9	**2.9 <MDL**	No
Monochloroacetic Acid	--	ug/L	4.7	**4.7 <MDL**	No
Trichloroacetic Acid	--	ug/L	5.3	**5.3 - 10.5**	No
Trihalomethanes (total)	100	ug/L	0.37	**13 - 56**	No
Bromodichloromethane	--	ug/L	0.26	**4.1 - 12**	No
Bromoform	--	ug/L	0.34	**0.34 - 0.37**	No
Chloroform	--	ug/L	0.29	**7.3 - 39**	No
Dibromochloromethane	--	ug/L	0.37	**2 - 4.8**	No

Parameter	Ontario Maximum Acceptable Concentration (MAC)	Units	Lab's Method Detection Limit (MDL)	Measured Concentrations 2023	MAC Exceedance (Y/N)
REGULATED ORGANICS					
Atrazine	--	ug/L	0.01	**0.01 - 0.04**	No
Atrazine + N-dealkylated metabolites	5	ug/L	0.01	**0.02 - 0.06**	No
De-ethylated Atrazine	--	ug/L	0.01	**0.01 <MDL**	No
Azinphos-methyl	20	ug/L	0.05	**0.05 <MDL**	No
Benzene	1	ug/L	0.32	**0.32 <MDL**	No
Benzo(a)pyrene	0.01	ug/L	0.004	**0.004 <MDL**	No
Bromoxynil	5	ug/L	0.33	**0.33 <MDL**	No
Carbaryl	90	ug/L	0.05	**0.05 <MDL**	No
Carbofuran	90	ug/L	0.01	**0.01 <MDL**	No
Carbon tetrachloride	2	ug/L	0.17	**0.17 <MDL**	No
Chlorpyrifos	90	ug/L	0.02	**0.02 <MDL**	No
Diazinon	20	ug/L	0.02	**0.02 <MDL**	No
Dicamba	120	ug/L	0.2	**0.2 <MDL**	No
1,2-Dichlorobenzene	200	ug/L	0.41	**0.41 <MDL**	No
1,4-Dichlorobenzene	5	ug/L	0.36	**0.36 <MDL**	No
1,2-Dichloroethane	5	ug/L	0.35	**0.35 <MDL**	No
Dichloromethane	50	ug/L	0.35	**0.35 <MDL**	No
2,4-dichlorophenol	900	ug/L	0.15	**0.15 <MDL**	No
2,4-dichlorophenoxyacetic acid (2,4-D)	100	ug/L	0.19	**0.19 <MDL**	No
Diclofop-methyl	9	ug/L	0.4	**0.4 <MDL**	No
Dimethoate	20	ug/L	0.06	**0.06 <MDL**	No
Diquat	70	ug/L	1	**1 <MDL**	No
Diuron	150	ug/L	0.03	**0.03 <MDL**	No
Glyphosate	280	ug/L	1	**1 <MDL**	No
Malathion	190	ug/L	0.02	**0.02 <MDL**	No
MCPA	0.1	mg/L	0.00012	**0.00012 <MDL**	No
Metolachlor	50	ug/L	0.01	**0.01-0.02**	No
Metribuzin	80	ug/L	0.02	**0.02 <MDL**	No
Monochlorobenzene	80	ug/L	0.3	**0.3 <MDL**	No
Paraquat	10	ug/L	1	**1 <MDL**	No
Pentachlorophenol	60	ug/L	0.15	**0.15 <MDL**	No
Phorate	2	ug/L	0.01	**0.01 <MDL**	No
Picloram	190	ug/L	1	**1 <MDL**	No
Polychlorinated Biphenyls (PCBs)	3	ug/L	0.04	**0.04 <MDL**	No
Prometryne	1	ug/L	0.03	**0.03 <MDL**	No
Simazine	10	ug/L	0.01	**0.01 <MDL**	No
Terbufos	1	ug/L	0.01	**0.01 <MDL**	No
2,3,4,6-tetrachlorophenol	100	ug/L	0.2	**0.2 <MDL**	No
Triallate	230	ug/L	0.01	**0.01 <MDL**	No
Trichloroethylene	5	ug/L	0.44	**0.44 <MDL**	No
2,4,6-trichlorophenol	5	ug/L	0.25	**0.25 <MDL**	No
Trifluralin	45	ug/L	0.02	**0.02 <MDL**	No
Vinyl Chloride	1	ug/L	0.17	**0.17 <MDL**	No
NITRATES					
Nitrate (as nitrogen)	10	mg/L	0.006	**0.021 - 1.2**	No
Nitrate + Nitrite (as nitrogen)	10	mg/L	0.006	**0.021 - 1.2**	No
Nitrite (as nitrogen)	1	mg/L	0.003	**0.003 <MDL**	No

Parameter	Ontario Maximum Acceptable Concentration (MAC)	Units	Lab's Method Detection Limit (MDL)	Measured Concentrations 2023	MAC Exceedance (Y/N)
NON-REGULATED INORGANICS/ORGANICS					
Alachlor	5	ug/L	0.02	**0.02 <MDL**	No
Alkalinity	--	mg/L as CaCO3	2	**78 - 98**	No
Aluminum	--	ug/L	1	**19 - 28**	No
Ammonia+Ammonium (N)	--	mg/L	0.04	**0.04 <MDL**	No
Calcium	--	mg/L	0.01	**27.9 -37**	No
Chloride	--	mg/L	0.04	**9.3 - 17**	No
Cobalt	--	ug/L	0.004	**0.007 - 0.015**	No
Colour	--	TCU	3	**3 <MDL**	No
Conductivity	--	uS/cm	2	**248 - 315**	No
Copper	--	ug/L	0.2	**0.9 - 1.6**	No
Cyanide	200	ug/L	2	**2 <MDL**	No
1,1-Dichloroethylene (vinylidene chloride)	14	ug/L	0.33	**0.33 <MDL**	No
Dissolved Organic Carbon	--	mg/L	1	**1 <MDL**	No
Ethylbenzene	140	ug/L	0.33	**0.33 <MDL**	No
Field pH	--	no unit	0	**7.4 - 8.06**	No
Field Temperature	--	celciu s	0	**10.6 - 14.8**	No
Hardness	--	mg/L as CaCO3	0.05	**102 - 129**	No
Iron	--	ug/L	7	**7 <MDL**	No
Langelier's Index @ 20 C	--	@ 20 C	0	**-0.27 - -0.07**	No
Langelier's Index @ 4 C	--	@ 4 C	0	**-0.59 - -0.39**	No
Magnesium	--	mg/L	0.001	**7.8 - 8.89**	No
Manganese	--	ug/L	0.01	**0.04 - 0.17**	No
Nickel	--	ug/L	0.1	**0.3 - 0.7**	No
Nitrogen-Kjeldahl (N)	--	mg/L	0.05	**0.1 - 0.12**	No
Organic Nitrogen	--	mg/L	0.05	**0.11 - 0.12**	No
pH	--	No unit	0	**7.98 - 7.99**	No
Phosphorus	--	mg/L	0.003	**0.003 <MDL**	No
Potassium	--	mg/L	0.009	**1.02 - 1.46**	No
Silicon; reactive silicate	--	mg/L	0.02	**0.66 - 1.63**	No
Silver	--	ug/L	0.05	**0.05 <MDL**	No
Solids (Total Dissolved)	--	mg/L	30	**154 - 183**	No
Sulphate	--	mg/L	0.04	**26 - 30**	No
Sulphide	--	ug/L	6	**6 <MDL**	No
Surr 1,2-Dichloroethane-d4	--	Surr Rec %	0	**101 - 104**	No
Surr 4-Bromofluorobenzene	--	Surr Rec %	0	**92 - 92**	No
Surr Decachlorobiphenyl	--	%	0	**99 - 105**	No
Tetrachloroethylene (perchloroethylene)	10	ug/L	0.35	**0.35 <MDL**	No
Toluene	60	ug/L	0.36	**0.36 <MDL**	No

Parameter	Ontario Maximum Acceptable Concentration (MAC)	Units	Lab's Method Detection Limit (MDL)	Measured Concentrations 2023	MAC Exceedance (Y/N)
Total Chlorine-Field	--	mg/L	0	**1.33 - 1.44**	No
2,4,5-TP (Silvex)	--	ug/L	0.18	**0.18 <MDL**	No
Turbidity	--	NTU	0.1	**0.25 - 1.1**	No
Turbidity-Field	--	NTU	0	**0.03 - 0.11**	No
Xylene (Total)	--	ug/L	0.43	**0.43 <MDL**	No
m/p-xylene	--	ug/L	0.43	**0.43 <MDL**	No
o-xylene	--	ug/L	0.17	**0.17 <MDL**	No
Zinc	--	ug/L	2	**2 <MDL**	No
MICROBIOLOGICAL					
Escherichia Coli	0	cfu/100mL	0	**0 <MDL**	No
Total Coliform	0	cfu/100mL	0	**0 - 4**	Yes
Heterotrophic Plate Count (HPC)	--	cfu/1 mL	0	**0 - 2000**	No
Total Coliform Background	--	cfu/100mL	0	**0 - 143**	No

In 2023, there were six (6) adverse microbiological results out of 2,955 samples taken. All involved the detection of Total Coliform bacteria (ranging from 1 to 4 cfu/100 mL). In each case, staff implemented the mandatory adverse response procedure, which included notifying the MECP and the Middlesex-London Health Unit, and immediately re-sampled at each location. The re-sample results revealed no adverse indicators.

In all instances, it is highly unlikely that there were ‘actual’ water quality issues at these sites. All adverse samples were identified as having free chlorine residuals which were well above the minimum acceptable level at the time of the sampling (ranging between 0.72 to 1.00 mg/L). E. coli and Coliform bacteria cannot survive in chlorinated water; therefore, it is suspected that post-sampling contamination occurred. The re-sampling results support this conclusion. The microbiological testing procedure is extremely sensitive: accidental sample contamination can occur through operator or laboratory error, despite the specific procedures and precautions being adhered to while processing samples.

System Statistics and Major Events

During the period from January 1, 2023, through to December 31, 2023, a total of 6,665,929,000 litres of water were purchased, at a cost of more than $27,900,000 from the Joint Water Boards and subsequently pumped into London via the Arva Pumping Station and the London components within the Elgin Middlesex Pumping Station. Overall, the City’s average day demand was 127,790,400 litres. Peak day consumption increased over that of 2022, likely due to the hot and dry month of May. The June 2, 2023 peak day demand was recorded at 177,070,000 litres.

A summary of system pumpage can be found in the full version of the Summary Report. The data includes monthly average and maximum daily flows. These values are also compared to the rated flow rate capacities identified in London’s Municipal Drinking Water License. There were no occurrences of flow rate exceedance during the specified time period.

Listed below are some 2023 statistics for the City of London Distribution System:

Approximate Replacement Value of Drinking Water System	**$6,100,000,000**
Number of Pumping Stations	**9**
Total Number of Water Services	**>124,000**
Length of Watermain	**1,645 km**
Number of Watermain Breaks	**62**
Number of Water Service Leaks	**313**

Municipalities Receiving London Water

In the Municipality of Middlesex Centre, the villages of Arva and Ballymote continue to receive their drinking water under contract from the City of London. During 2023, Delaware discontinued receiving their drinking water from the City of London, opting to be supplied directly from the Lake Huron Primary Water Supply System. The Municipality of Middlesex Centre has been provided a copy of the Annual Report as per O. Reg 170/03.

Several residences within Central Elgin also continued receiving drinking water from the transmission watermain that supplies London from EMPS. For this reason, Central Elgin has also been provided a copy of the report.

2023 Annual Report
(London)

Ontario

Drinking-Water Systems Regulation O. Reg. 170/03

Drinking Water System Number:	**260004917**
Municipal Drinking-Water Licence:	**006-001**
Drinking-Water System Name:	**City of London Drinking Water System**
Drinking-Water System Owner:	**The Corporation of the City of London**
Drinking-Water System Category:	**Large Municipal Residential System**
Period being reported:	**January 1, 2023 to December 31, 2023**

Does your Drinking-Water System serve more than 10,000 people? **Yes**

Is your annual report available to the public at no charge on a web site? **Yes**

Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection:

City of London – City Hall
Customer Service Division – 8th Floor
(Public Service Information Area)
300 Dufferin Avenue, London, ON

List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Drinking Water System Name	**Drinking Water System Number**
Middlesex Centre Distribution System	260004202
Includes: Arva Waterworks	260004202
Ballymote Waterworks	260004202
Delaware Distribution System	260063323

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water? **Yes**

Indicate how you notified system users that your annual report is available, and is free of charge.

Public access/notice via the web: **Yes**
Public access/notice via Government Office: **Yes**
Public access/notice via a newspaper: **No**
Public access/notice via Public Request: **Yes**
Public access/notice via a Public Library: **No**
Public access/notice via other method: **No**

Describe your Drinking-Water System:
There are two primary water supplies in the City of London. These are both surface water sources and are:
- Lake Huron Primary Water Supply System (LHPWSS)
- Elgin Area Primary Water Supply System (EAPWSS)

During 2023 the London-Elgin-Middlesex Booster Station was operated by a designated Operating Authority that being, Ontario Clean Water Agency. The annual report for the London-Elgin-Middlesex Booster Station was not available at the time this report was created and therefore, it will be provided under separate cover.

List all water treatment chemicals used over this reporting period:
- Liquid Chlorine
- Sodium Hypochlorite
- Fluorosilicic Acid (hydrofluorosilicic acid)

Were any significant expenses incurred to?
Large numbers of Water Service Leaks continue to dominate repair/remediation efforts. Approximately 310 water service leaks occurred in 2023, attributing to a 5:1 ratio of water service leaks to water main breaks.

Springbank Reservoir #3 underwent significant remediation and refurbishment to the internal roof slab T beams, as well as reconstruction of the exterior roof slab water proofing. This refurbishment is anticipated to provide an additional 50 years of life expectancy of this asset.

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre.

Bacteriological Adverse

				Parameters			
Adverse Incident Date	Corrective Action	Corrective Action Date	Adverse Water Quality Indicator # (AWQI #)	E. coli (cfu/100ml)	Total Coliform (cfu/100ml)	HPC / Background (cfu/1ml)	Free Cl2 (mg/L)
8-Aug-2023 [1]			162967	0	1	<10	0.80
	Resample	9-Aug-2023		0	0	0	0.68
	Resample	9-Aug-2023		0	0	0	0.76
8-Aug-2023 [2]			162968	0	1	<10	0.79
	Resample	9-Aug-2023		0	0	0	0.83
	Resample	9-Aug-2023		0	0	2	0.78
10-Aug-2023 [3]			163002	0	1	<10	0.72
	Resample	11-Aug-2023		0	0	0	0.79
	Resample	11-Aug-2023		0	0	0	0.85
	Resample	11-Aug-2023		0	0	0	0.84
7-Dec-2023 [4]			164179	0	4	0	1.00
	Resample	8-Dec-2023		0	0	<10	1.07
	Resample	8-Dec-2023		0	0	<10	1.01
	Resample	8-Dec-2023		0	0	<10	1.00
14-Dec-2023 [5]			164210	0	1	<10	0.80
	Resample	15-Dec-2023		0	0	0	0.78
	Resample	15-Dec-2023		0	0	0	0.84
	Resample	15-Dec-2023		0	0	0	0.91
21-Dec-2023 [6]			164253	0	1	<10	0.86
	Resample	22-Dec-2023		0	0	0	0.76
	Resample	22-Dec-2023		0	0	0	0.89
	Resample	22-Dec-2023		0	0	0	0.82

Notes:

[1]**Details:** A Total Coliform count of 1 per 100 mL was detected in a sample collected from 1600 Attawandaron Rd.

Corrective Action: The original site was immediately re-sampled. A sample was also taken upstream of the original site. No downstream site was available because the original sample was taken at the end of a dead-end watermain. There were no indicators of adverse water quality in any of the re-sample results.

[2]**Details:** A Total Coliform count of 1 per 100 mL was detected in a sample collected from 869 Commissioners Rd (#1 Reservoir).

Corrective Action: The original site was immediately re-sampled. A sample was also taken downstream of the original site. No upstream site was available because the original sample was taken from a reservoir. There were no indicators of adverse water quality in any of the re-sample results.

[3]**Details:** A Total Coliform count of 1 per 100 mL was detected in a sample collected from 2080 Wickerson Rd.

Corrective Action: The original site was immediately re-sampled. Samples were also taken at sites upstream and downstream from the original site. There were no indicators of adverse water quality in any of the re-sample results.

[4]**Details:** A Total Coliform count of 4 per 100 mL was detected in a sample collected from 13966 Medway Rd. (Arva Pumping Station).

Corrective Action: The original site was immediately re-sampled. Samples were also taken at sites upstream and downstream from the original site. There were no indicators of adverse water quality in any of the re-sample results.

[5]**Details:** A Total Coliform count of 1 per 100 mL was detected in a sample collected from 2080 Wickerson Rd (Wickerson P.S.).

Corrective Action: The original site was immediately re-sampled. Samples were also taken at sites upstream and downstream from the original site. There were no indicators of adverse water quality in any of the re-sample results.

[6]**Details:** A Total Coliform count of 1 per 100 mL was detected in a sample collected from 603 Wonderland Rd S (Westmount Pumping Station).

Corrective Action: The original site was immediately re-sampled. Samples were also taken at sites upstream and downstream from the original site. There were no indicators of adverse water quality in any of the re-sample results.

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

	# of E. coli Samples Taken	Range of E. coli (cfu/100mL)	# of Total Coliform Samples Taken	Range of Coliform (cfu/100mL)	# of HPC / Background Samples	Range of HPC (cfu/1mL)
Treated	N/A	N/A	N/A	N/A	N/A	N/A
Distribution	2955	0 - 0	2955	0 - 4	2955	0 - 2000

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

	# of Grab Samples	Continuous Monitoring	Range of Results
Turbidity	57	N/A	0.03 - 0.11 NTU
Alkalinity	5	N/A	78 - 87 mg/L as CaCO3
Lead	5	N/A	<0.01 - 0.09 µg/L
Chlorine*	3018	87600	0.25 - 1.70 mg/L
Fluoride**	102	17520	0.35 - 0.83 mg/L

*London has 10 locations with continuous online chlorine monitoring
**Continuous online fluoride monitoring occurs at Arva and SERPs

Note: For continuous monitors use 8760 as the number of samples

Summary of Inorganic and Organic parameters tested during this reporting period or the most recent sample results.

As outlined below, sampling was carried out for inorganic and organic parameters at the following sites: Arva Pumping Station and Southeast Reservoir and Pumping Station.

SITE: Arva Pumping Station - Treated Distribution

a) INORGANIC PARAMETERS (including lead, sodium, nitrate, nitrite, and fluoride)

Date of Municipal Drinking Water Licence	Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
September 21, 2017	Antimony	6/Jun/23	0.9	ug/L	No
September 21, 2017	Arsenic	6/Jun/23	0.2	ug/L	No
September 21, 2017	Barium	6/Jun/23	13.9	ug/L	No
September 21, 2017	Boron	6/Jun/23	13	ug/L	No
September 21, 2017	Cadmium	6/Jun/23	0.004	ug/L	No
September 21, 2017	Chromium	6/Jun/23	0.08	ug/L	No
September 21, 2017	Fluoride	4/Jan/23	0.40	mg/L	No
September 21, 2017	Fluoride	11/Jan/23	0.44	mg/L	No
September 21, 2017	Fluoride	18/Jan/23	0.49	mg/L	No
September 21, 2017	Fluoride	25/Jan/23	0.56	mg/L	No
September 21, 2017	Fluoride	1/Feb/23	0.54	mg/L	No
September 21, 2017	Fluoride	8/Feb/23	0.59	mg/L	No
September 21, 2017	Fluoride	15/Feb/23	0.50	mg/L	No
September 21, 2017	Fluoride	22/Feb/23	0.58	mg/L	No
September 21, 2017	Fluoride	1/Mar/23	0.46	mg/L	No
September 21, 2017	Fluoride	8/Mar/23	0.35	mg/L	No
September 21, 2017	Fluoride	15/Mar/23	0.51	mg/L	No
September 21, 2017	Fluoride	22/Mar/23	0.54	mg/L	No
September 21, 2017	Fluoride	29/Mar/23	0.45	mg/L	No
September 21, 2017	Fluoride	5/Apr/23	0.54	mg/L	No
September 21, 2017	Fluoride	12/Apr/23	0.50	mg/L	No
September 21, 2017	Fluoride	19/Apr/23	0.50	mg/L	No
September 21, 2017	Fluoride	24/Apr/23	0.61	mg/L	No
September 21, 2017	Fluoride	3/May/23	0.52	mg/L	No
September 21, 2017	Fluoride	10/May/23	0.52	mg/L	No
September 21, 2017	Fluoride	17/May/23	0.56	mg/L	No
September 21, 2017	Fluoride	24/May/23	0.54	mg/L	No
September 21, 2017	Fluoride	31/May/23	0.61	mg/L	No
September 21, 2017	Fluoride	8/Jun/23	0.66	mg/L	No
September 21, 2017	Fluoride	14/Jun/23	0.58	mg/L	No
September 21, 2017	Fluoride	22/Jun/23	0.56	mg/L	No
September 21, 2017	Fluoride	29/Jun/23	0.61	mg/L	No
September 21, 2017	Fluoride	5/Jul/23	0.64	mg/L	No
September 21, 2017	Fluoride	12/Jul/23	0.58	mg/L	No
September 21, 2017	Fluoride	19/Jul/23	0.62	mg/L	No
September 21, 2017	Fluoride	26/Jul/23	0.50	mg/L	No
September 21, 2017	Fluoride	2/Aug/23	0.57	mg/L	No
September 21, 2017	Fluoride	9/Aug/23	0.63	mg/L	No
September 21, 2017	Fluoride	16/Aug/23	0.60	mg/L	No
September 21, 2017	Fluoride	23/Aug/23	0.65	mg/L	No
September 21, 2017	Fluoride	30/Aug/23	0.78	mg/L	No
September 21, 2017	Fluoride	6/Sep/23	0.58	mg/L	No
September 21, 2017	Fluoride	13/Sep/23	0.58	mg/L	No
September 21, 2017	Fluoride	20/Sep/23	0.59	mg/L	No
September 21, 2017	Fluoride	27/Sep/23	0.52	mg/L	No

September 21, 2017	Fluoride	4/Oct/23	0.47	mg/L	No
September 21, 2017	Fluoride	11/Oct/23	0.66	mg/L	No
September 21, 2017	Fluoride	18/Oct/23	0.62	mg/L	No
September 21, 2017	Fluoride	25/Oct/23	0.55	mg/L	No
September 21, 2017	Fluoride	1/Nov/23	0.56	mg/L	No
September 21, 2017	Fluoride	8/Nov/23	0.55	mg/L	No
September 21, 2017	Fluoride	15/Nov/23	0.69	mg/L	No
September 21, 2017	Fluoride	22/Nov/23	0.70	mg/L	No
September 21, 2017	Fluoride	29/Nov/23	0.57	mg/L	No
September 21, 2017	Fluoride	6/Dec/23	0.59	mg/L	No
September 21, 2017	Fluoride	13/Dec/23	0.55	mg/L	No
September 21, 2017	Fluoride	20/Dec/23	0.52	mg/L	No
September 21, 2017	Fluoride	27/Dec/23	0.52	mg/L	No
September 21, 2017	Lead	14/Mar/23	0.01 <MDL	ug/L	No
September 21, 2017	Lead	6/Jun/23	0.01	ug/L	No
September 21, 2017	Lead	7/Sep/23	0.02	ug/L	No
September 21, 2017	Lead	5/Dec/23	0.01	ug/L	No
September 21, 2017	Mercury	6/Jun/23	0.01	ug/L	No
September 21, 2017	Nitrate (as nitrogen)	14/Mar/23	1.200	mg/L	No
September 21, 2017	Nitrate (as nitrogen)	6/Jun/23	0.354	mg/L	No
September 21, 2017	Nitrate (as nitrogen)	7/Sep/23	0.335	mg/L	No
September 21, 2017	Nitrate (as nitrogen)	5/Dec/23	0.285	mg/L	No
September 21, 2017	Nitrate + Nitrite (as nitrogen)	14/Mar/23	1.200	mg/L	No
September 21, 2017	Nitrate + Nitrite (as nitrogen)	6/Jun/23	0.354	mg/L	No
September 21, 2017	Nitrate + Nitrite (as nitrogen)	7/Sep/23	0.335	mg/L	No
September 21, 2017	Nitrate + Nitrite (as nitrogen)	5/Dec/23	0.285	mg/L	No
September 21, 2017	Nitrite (as nitrogen)	14/Mar/23	0.003 <MDL	mg/L	No
September 21, 2017	Nitrite (as nitrogen)	6/Jun/23	0.003 <MDL	mg/L	No
September 21, 2017	Nitrite (as nitrogen)	7/Sep/23	0.003 <MDL	mg/L	No
September 21, 2017	Nitrite (as nitrogen)	5/Dec/23	0.003 <MDL	mg/L	No
September 21, 2017	Selenium	6/Jun/23	0.16	ug/L	No
September 21, 2017	Sodium	6/Jun/23	11	mg/L	No
September 21, 2017	Uranium	6/Jun/23	0.034	ug/L	No

b) ORGANIC PARAMETERS (including THM)

Date of Municipal Drinking Water Licence	Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
September 21, 2017	Alachlor	6/Jun/23	0.02 <MDL	ug/L	No
September 21, 2017	Atrazine	6/Jun/23	0.01 <MDL	ug/L	No
September 21, 2017	Atrazine + N-dealkylated metabolites	6/Jun/23	0.02	ug/L	No
September 21, 2017	De-ethylated Atrazine	6/Jun/23	0.01 <MDL	ug/L	No
September 21, 2017	Azinphos-methyl	6/Jun/23	0.05 <MDL	ug/L	No
September 21, 2017	Benzene	6/Jun/23	0.32 <MDL	ug/L	No
September 21, 2017	Benzo(a)pyrene	6/Jun/23	0.004 <MDL	ug/L	No
September 21, 2017	Bromoxynil	6/Jun/23	0.33	ug/L	No
September 21, 2017	Carbaryl	6/Jun/23	0.05 <MDL	ug/L	No
September 21, 2017	Carbofuran	6/Jun/23	0.01 <MDL	ug/L	No
September 21, 2017	Carbon tetrachloride	6/Jun/23	0.17 <MDL	ug/L	No
September 21, 2017	Chlorpyrifos	6/Jun/23	0.02 <MDL	ug/L	No
September 21, 2017	Diazinon	6/Jun/23	0.02 <MDL	ug/L	No
September 21, 2017	Dicamba	6/Jun/23	0.2	ug/L	No
September 21, 2017	1,2-Dichlorobenzene	6/Jun/23	0.41 <MDL	ug/L	No
September 21, 2017	1,4-Dichlorobenzene	6/Jun/23	0.36 <MDL	ug/L	No
September 21, 2017	1,2-Dichloroethane	6/Jun/23	0.35 <MDL	ug/L	No
September 21, 2017	Dichloromethane	6/Jun/23	0.35 <MDL	ug/L	No

September 21, 2017	2,4-dichlorophenol	6/Jun/23	0.15	ug/L	No
September 21, 2017	2,4-dichlorophenoxyacetic acid (2,4-D)	6/Jun/23	0.19	ug/L	No
September 21, 2017	Diclofop-methyl	6/Jun/23	0.4	ug/L	No
September 21, 2017	Dimethoate	6/Jun/23	0.06 <MDL	ug/L	No
September 21, 2017	Diquat	6/Jun/23	1 <MDL	ug/L	No
September 21, 2017	Diuron	6/Jun/23	0.03 <MDL	ug/L	No
September 21, 2017	Glyphosate	6/Jun/23	1 <MDL	ug/L	No
September 21, 2017	Malathion	6/Jun/23	0.02 <MDL	ug/L	No
September 21, 2017	MCPA	6/Jun/23	0.00012 <MDL	mg/L	No
September 21, 2017	Metolachlor	6/Jun/23	0.01 <MDL	ug/L	No
September 21, 2017	Metribuzin	6/Jun/23	0.02 <MDL	ug/L	No
September 21, 2017	Paraquat	6/Jun/23	1 <MDL	ug/L	No
September 21, 2017	Pentachlorophenol	6/Jun/23	0.15	ug/L	No
September 21, 2017	Phorate	6/Jun/23	0.01 <MDL	ug/L	No
September 21, 2017	Picloram	6/Jun/23	1	ug/L	No
September 21, 2017	Polychlorinated Biphenyls (PCBs)	6/Jun/23	0.04	ug/L	No
September 21, 2017	Prometryne	6/Jun/23	0.03 <MDL	ug/L	No
September 21, 2017	Simazine	6/Jun/23	0.01 <MDL	ug/L	No
September 21, 2017	Terbufos	6/Jun/23	0.01 <MDL	ug/L	No
September 21, 2017	2,3,4,6-tetrachlorophenol	6/Jun/23	0.2	ug/L	No
September 21, 2017	Triallate	6/Jun/23	0.01 <MDL	ug/L	No
September 21, 2017	Trichloroethylene	6/Jun/23	0.44 <MDL	ug/L	No
September 21, 2017	2,4,6-trichlorophenol	6/Jun/23	0.25	ug/L	No
September 21, 2017	Trifluralin	6/Jun/23	0.02 <MDL	ug/L	No
September 21, 2017	Trihalomethanes (total)	14/Mar/23	25	ug/L	No
September 21, 2017	Bromodichloromethane	14/Mar/23	6.9	ug/L	No
September 21, 2017	Bromoform	14/Mar/23	0.34 <MDL	ug/L	No
September 21, 2017	Chloroform	14/Mar/23	16	ug/L	No
September 21, 2017	Dibromochloromethane	14/Mar/23	2	ug/L	No
September 21, 2017	Trihalomethanes (total)	6/Jun/23	21	ug/L	No
September 21, 2017	Bromodichloromethane	6/Jun/23	6.5	ug/L	No
September 21, 2017	Bromoform	6/Jun/23	0.34 <MDL	ug/L	No
September 21, 2017	Chloroform	6/Jun/23	12	ug/L	No
September 21, 2017	Dibromochloromethane	6/Jun/23	2.1	ug/L	No
September 21, 2017	Trihalomethanes (total)	7/Sep/23	30	ug/L	No
September 21, 2017	Bromodichloromethane	7/Sep/23	8.8	ug/L	No
September 21, 2017	Bromoform	7/Sep/23	0.34 <MDL	ug/L	No
September 21, 2017	Chloroform	7/Sep/23	17	ug/L	No
September 21, 2017	Dibromochloromethane	7/Sep/23	4.2	ug/L	No
September 21, 2017	Trihalomethanes (total)	5/Dec/23	19	ug/L	No
September 21, 2017	Bromodichloromethane	5/Dec/23	6.5	ug/L	No
September 21, 2017	Bromoform	5/Dec/23	0.34 <MDL	ug/L	No
September 21, 2017	Chloroform	5/Dec/23	8.8	ug/L	No
September 21, 2017	Dibromochloromethane	5/Dec/23	3.3	ug/L	No
September 21, 2017	Vinyl Chloride	6/Jun/23	0.17 <MDL	ug/L	No

c) NON-REGULATED INORGANIC/ORGANIC PARAMETERS

Date of Municipal Drinking Water Licence	Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
September 21, 2017	Alkalinity	6/Jun/23	78	mg/L as CaCO3	No
September 21, 2017	Aluminum	6/Jun/23	28	ug/L	No
September 21, 2017	Ammonia+Ammonium (N)	6/Jun/23	0.04	mg/L	No
September 21, 2017	Calcium	6/Jun/23	27.9	mg/L	No
September 21, 2017	Chloride	6/Jun/23	9.3	mg/L	No
September 21, 2017	Cobalt	6/Jun/23	0.007	ug/L	No

September 21, 2017	Colour	6/Jun/23	3 <MDL	TCU	No
September 21, 2017	Conductivity	6/Jun/23	248	uS/cm	No
September 21, 2017	Copper	6/Jun/23	1.6	ug/L	No
September 21, 2017	Cyanide; total	6/Jun/23	2	ug/L	No
September 21, 2017	1,1-Dichloroethylene (vinylidene chloride)	6/Jun/23	0.33 <MDL	ug/L	No
September 21, 2017	Dissolved Organic Carbon	6/Jun/23	1	mg/L	No
September 21, 2017	Ethylbenzene	6/Jun/23	0.33 <MDL	ug/L	No
September 21, 2017	Field pH	6/Jun/23	8.02	no unit	No
September 21, 2017	Field pH	6/Jun/23	8.02	no unit	No
September 21, 2017	Field Temperature	6/Jun/23	10.6	celcius	No
September 21, 2017	Field Temperature	6/Jun/23	10.6	celcius	No
September 21, 2017	Hardness	6/Jun/23	102	mg/L as CaCO3	No
September 21, 2017	Iron	6/Jun/23	7	ug/L	No
September 21, 2017	Langelier`s Index	6/Jun/23	-0.59	@ 4 C	No
September 21, 2017	Langelier`s Index	6/Jun/23	-0.27	@ 20 C	No
September 21, 2017	Magnesium	6/Jun/23	7.8	mg/L	No
September 21, 2017	Manganese	6/Jun/23	0.04	ug/L	No
September 21, 2017	Monochlorobenzene	6/Jun/23	0.3 <MDL	ug/L	No
September 21, 2017	Nickel	6/Jun/23	0.3	ug/L	No
September 21, 2017	Nitrogen-Kjeldahl (N)	6/Jun/23	0.11	mg/L	No
September 21, 2017	Organic Nitrogen	6/Jun/23	0.11	mg/L	No
September 21, 2017	pH	6/Jun/23	7.99	No unit	No
September 21, 2017	Phosphorus	6/Jun/23	0.003	mg/L	No
September 21, 2017	Potassium	6/Jun/23	1.02	mg/L	No
September 21, 2017	Silicon; reactive silicate	6/Jun/23	1.63	mg/L	No
September 21, 2017	Silver	6/Jun/23	0.05	ug/L	No
September 21, 2017	Solids (Total Dissolved)	6/Jun/23	154	mg/L	No
September 21, 2017	Sulphate	6/Jun/23	26	mg/L	No
September 21, 2017	Sulphide	6/Jun/23	6	ug/L	No
September 21, 2017	Surr 1,2-Dichloroethane-d4	6/Jun/23	101	Surr Rec %	No
September 21, 2017	Surr 4-Bromofluorobenzene	6/Jun/23	92	Surr Rec %	No
September 21, 2017	Surr Decachlorobiphenyl	6/Jun/23	99	%	No
September 21, 2017	Tetrachloroethylene (perchloroethylene)	6/Jun/23	0.35 <MDL	ug/L	No
September 21, 2017	Toluene	6/Jun/23	0.36 <MDL	ug/L	No
September 21, 2017	Total Chlorine-Field	6/Jun/23	1.44	mg/L	No
September 21, 2017	Total Chlorine-Field	6/Jun/23	1.44	mg/L	No
September 21, 2017	2-(2,4,5-Trichlorophenoxy)propanoic acid (2,4,5-TP)	6/Jun/23	0.18	ug/L	No
September 21, 2017	Turbidity	6/Jun/23	1.1	NTU	No
September 21, 2017	Xylene (Total)	6/Jun/23	0.43 <MDL	ug/L	No
September 21, 2017	m/p-Xylene	6/Jun/23	0.43 <MDL	ug/L	No
September 21, 2017	o-xylene	6/Jun/23	0.17 <MDL	ug/L	No
September 21, 2017	Zinc	6/Jun/23	2	ug/L	No

SITE: Arva Pumping Station - Treated Distribution

d) ORGANIC PARAMETERS (HAA)

Date of Municipal Drinking Water Licence	Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
September 21, 2017	Total Haloacetic Acids	14/Mar/23	15.4	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	14/Mar/23	2 <MDL	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	14/Mar/23	7.2	ug/L	No
September 21, 2017	(Monobromoacetic acid)	14/Mar/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	14/Mar/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	14/Mar/23	8.1	ug/L	No
September 21, 2017	Total Haloacetic Acids	6/Jun/23	5.3 <MDL	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	6/Jun/23	2 <MDL	ug/L	No

September 21, 2017	(Dichloroacetic Acid)	6/Jun/23	4	ug/L	No
September 21, 2017	(Monobromoacetic acid)	6/Jun/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	6/Jun/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	6/Jun/23	5.3 <MDL	ug/L	No
September 21, 2017	Total Haloacetic Acids	7/Sep/23	6.1	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	7/Sep/23	2 <MDL	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	7/Sep/23	6.1	ug/L	No
September 21, 2017	(Monobromoacetic acid)	7/Sep/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	7/Sep/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	7/Sep/23	5.3 <MDL	ug/L	No
September 21, 2017	Total Haloacetic Acids	5/Dec/23	5.3 <MDL	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	5/Dec/23	2 <MDL	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	5/Dec/23	4.9	ug/L	No
September 21, 2017	(Monobromoacetic acid)	5/Dec/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	5/Dec/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	5/Dec/23	5.3 <MDL	ug/L	No

Ontario

Drinking-Water Systems Regulation O. Reg. 170/03

SITE: Southeast Reservoir and Pumping Station - Treated Distribution
a) INORGANIC PARAMETERS (including lead, sodium, nitrate, nitrite, and fluoride)

Date of Municipal Drinking Water Licence	Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
September 21, 2017	Antimony	6/Jun/23	0.9	ug/L	No
September 21, 2017	Arsenic	6/Jun/23	0.3	ug/L	No
September 21, 2017	Barium	6/Jun/23	23.6	ug/L	No
September 21, 2017	Boron	6/Jun/23	17	ug/L	No
September 21, 2017	Cadmium	6/Jun/23	0.008	ug/L	No
September 21, 2017	Chromium	6/Jun/23	0.08 <MDL	ug/L	No
September 21, 2017	Fluoride	4/Jan/23	0.45	mg/L	No
September 21, 2017	Fluoride	11/Jan/23	0.48	mg/L	No
September 21, 2017	Fluoride	18/Jan/23	0.56	mg/L	No
September 21, 2017	Fluoride	25/Jan/23	0.47	mg/L	No
September 21, 2017	Fluoride	1/Feb/23	0.54	mg/L	No
September 21, 2017	Fluoride	8/Feb/23	0.53	mg/L	No
September 21, 2017	Fluoride	15/Feb/23	0.44	mg/L	No
September 21, 2017	Fluoride	22/Feb/23	0.47	mg/L	No
September 21, 2017	Fluoride	1/Mar/23	0.45	mg/L	No
September 21, 2017	Fluoride	23/Mar/23	0.48	mg/L	No
September 21, 2017	Fluoride	29/Mar/23	0.44	mg/L	No
September 21, 2017	Fluoride	5/Apr/23	0.58	mg/L	No
September 21, 2017	Fluoride	12/Apr/23	0.52	mg/L	No
September 21, 2017	Fluoride	19/Apr/23	0.57	mg/L	No
September 21, 2017	Fluoride	24/Apr/23	0.59	mg/L	No
September 21, 2017	Fluoride	3/May/23	0.39	mg/L	No
September 21, 2017	Fluoride	10/May/23	0.55	mg/L	No
September 21, 2017	Fluoride	17/May/23	0.53	mg/L	No
September 21, 2017	Fluoride	24/May/23	0.51	mg/L	No
September 21, 2017	Fluoride	31/May/23	0.54	mg/L	No
September 21, 2017	Fluoride	8/Jun/23	0.55	mg/L	No
September 21, 2017	Fluoride	14/Jun/23	0.51	mg/L	No
September 21, 2017	Fluoride	22/Jun/23	0.55	mg/L	No
September 21, 2017	Fluoride	29/Jun/23	0.55	mg/L	No
September 21, 2017	Fluoride	5/Jul/23	0.59	mg/L	No
September 21, 2017	Fluoride	12/Jul/23	0.55	mg/L	No
September 21, 2017	Fluoride	19/Jul/23	0.52	mg/L	No
September 21, 2017	Fluoride	26/Jul/23	0.53	mg/L	No
September 21, 2017	Fluoride	2/Aug/23	0.49	mg/L	No
September 21, 2017	Fluoride	9/Aug/23	0.57	mg/L	No
September 21, 2017	Fluoride	16/Aug/23	0.54	mg/L	No
September 21, 2017	Fluoride	23/Aug/23	0.55	mg/L	No
September 21, 2017	Fluoride	30/Aug/23	0.60	mg/L	No
September 21, 2017	Fluoride	6/Sep/23	0.58	mg/L	No
September 21, 2017	Fluoride	13/Sep/23	0.58	mg/L	No
September 21, 2017	Fluoride	20/Sep/23	0.58	mg/L	No
September 21, 2017	Fluoride	27/Sep/23	0.55	mg/L	No
September 21, 2017	Fluoride	4/Oct/23	0.55	mg/L	No
September 21, 2017	Fluoride	11/Oct/23	0.55	mg/L	No
September 21, 2017	Fluoride	18/Oct/23	0.57	mg/L	No
September 21, 2017	Fluoride	25/Oct/23	0.53	mg/L	No
September 21, 2017	Fluoride	1/Nov/23	0.56	mg/L	No
September 21, 2017	Fluoride	8/Nov/23	0.65	mg/L	No
September 21, 2017	Fluoride	15/Nov/23	0.56	mg/L	No
September 21, 2017	Fluoride	22/Nov/23	0.55	mg/L	No
September 21, 2017	Fluoride	29/Nov/23	0.54	mg/L	No

September 21, 2017	Fluoride	6/Dec/23	0.59	mg/L	No
September 21, 2017	Fluoride	13/Dec/23	0.53	mg/L	No
September 21, 2017	Fluoride	20/Dec/23	0.52	mg/L	No
September 21, 2017	Fluoride	27/Dec/23	0.51	mg/L	No
September 21, 2017	Lead	27/Mar/23	0.02	ug/L	No
September 21, 2017	Lead	6/Jun/23	0.01 <MDL	ug/L	No
September 21, 2017	Lead	7/Sep/23	0.01 <MDL	ug/L	No
September 21, 2017	Lead	5/Dec/23	0.01 <MDL	ug/L	No
September 21, 2017	Mercury	6/Jun/23	0.01 <MDL	ug/L	No
September 21, 2017	Nitrate (as nitrogen)	27/Mar/23	0.16	mg/L	No
September 21, 2017	Nitrate (as nitrogen)	6/Jun/23	0.12	mg/L	No
September 21, 2017	Nitrate (as nitrogen)	7/Sep/23	0.09	mg/L	No
September 21, 2017	Nitrate (as nitrogen)	5/Dec/23	0.02	mg/L	No
September 21, 2017	Nitrate + Nitrite (as nitrogen)	27/Mar/23	0.16	mg/L	No
September 21, 2017	Nitrate + Nitrite (as nitrogen)	6/Jun/23	0.12	mg/L	No
September 21, 2017	Nitrate + Nitrite (as nitrogen)	7/Sep/23	0.09	mg/L	No
September 21, 2017	Nitrate + Nitrite (as nitrogen)	5/Dec/23	0.02	mg/L	No
September 21, 2017	Nitrite (as nitrogen)	27/Mar/23	0.003 <MDL	mg/L	No
September 21, 2017	Nitrite (as nitrogen)	6/Jun/23	0.003 <MDL	mg/L	No
September 21, 2017	Nitrite (as nitrogen)	7/Sep/23	0.003 <MDL	mg/L	No
September 21, 2017	Nitrite (as nitrogen)	5/Dec/23	0.003 <MDL	mg/L	No
September 21, 2017	Selenium	6/Jun/23	0.21	ug/L	No
September 21, 2017	Sodium	6/Jun/23	16.2	mg/L	No
September 21, 2017	Uranium	6/Jun/23	0.046	ug/L	No

b) ORGANIC PARAMETERS (including THM)

Date of Municipal Drinking Water Licence	Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
September 21, 2017	Alachlor	6/Jun/23	0.02 <MDL	ug/L	No
September 21, 2017	Atrazine	6/Jun/23	0.04	ug/L	No
September 21, 2017	Atrazine + N-dealkylated metabolites	6/Jun/23	0.06	ug/L	No
September 21, 2017	De-ethylated Atrazine	6/Jun/23	0.01 <MDL	ug/L	No
September 21, 2017	Azinphos-methyl	6/Jun/23	0.05 <MDL	ug/L	No
September 21, 2017	Benzene	6/Jun/23	0.32 <MDL	ug/L	No
September 21, 2017	Benzo(a)pyrene	6/Jun/23	0.004 <MDL	ug/L	No
September 21, 2017	Bromoxynil	6/Jun/23	0.33 <MDL	ug/L	No
September 21, 2017	Carbaryl	6/Jun/23	0.05 <MDL	ug/L	No
September 21, 2017	Carbofuran	6/Jun/23	0.01 <MDL	ug/L	No
September 21, 2017	Carbon tetrachloride	6/Jun/23	0.17 <MDL	ug/L	No
September 21, 2017	Chlorpyrifos	6/Jun/23	0.02 <MDL	ug/L	No
September 21, 2017	Diazinon	6/Jun/23	0.02 <MDL	ug/L	No
September 21, 2017	Dicamba	6/Jun/23	0.2 <MDL	ug/L	No
September 21, 2017	1,2-Dichlorobenzene	6/Jun/23	0.41 <MDL	ug/L	No
September 21, 2017	1,4-Dichlorobenzene	6/Jun/23	0.36 <MDL	ug/L	No
September 21, 2017	1,2-Dichloroethane	6/Jun/23	0.35 <MDL	ug/L	No
September 21, 2017	Dichloromethane	6/Jun/23	0.35 <MDL	ug/L	No
September 21, 2017	2,4-dichlorophenol	6/Jun/23	0.15 <MDL	ug/L	No
September 21, 2017	2,4-dichlorophenoxyacetic acid (2,4-D)	6/Jun/23	0.19 <MDL	ug/L	No
September 21, 2017	Diclofop-methyl	6/Jun/23	0.4 <MDL	ug/L	No
September 21, 2017	Dimethoate	6/Jun/23	0.06 <MDL	ug/L	No
September 21, 2017	Diquat	6/Jun/23	1 <MDL	ug/L	No
September 21, 2017	Diuron	6/Jun/23	0.03 <MDL	ug/L	No
September 21, 2017	Glyphosate	6/Jun/23	1 <MDL	ug/L	No
September 21, 2017	Malathion	6/Jun/23	0.02 <MDL	ug/L	No
September 21, 2017	MCPA	6/Jun/23	0.00012 <MDL	mg/L	No
September 21, 2017	Metolachlor	6/Jun/23	0.02	ug/L	No

September 21, 2017	Metribuzin	6/Jun/23	0.02 <MDL	ug/L	No
September 21, 2017	Paraquat	6/Jun/23	1 <MDL	ug/L	No
September 21, 2017	Pentachlorophenol	6/Jun/23	0.15 <MDL	ug/L	No
September 21, 2017	Phorate	6/Jun/23	0.01 <MDL	ug/L	No
September 21, 2017	Picloram	6/Jun/23	1 <MDL	ug/L	No
September 21, 2017	Polychlorinated Biphenyls (PCBs)	6/Jun/23	0.04 <MDL	ug/L	No
September 21, 2017	Prometryne	6/Jun/23	0.03 <MDL	ug/L	No
September 21, 2017	Simazine	6/Jun/23	0.01 <MDL	ug/L	No
September 21, 2017	Terbufos	6/Jun/23	0.01 <MDL	ug/L	No
September 21, 2017	2,3,4,6-tetrachlorophenol	6/Jun/23	0.2 <MDL	ug/L	No
September 21, 2017	Triallate	6/Jun/23	0.01 <MDL	ug/L	No
September 21, 2017	Trichloroethylene	6/Jun/23	0.44 <MDL	ug/L	No
September 21, 2017	2,4,6-trichlorophenol	6/Jun/23	0.25 <MDL	ug/L	No
September 21, 2017	Trifluralin	6/Jun/23	0.02 <MDL	ug/L	No
September 21, 2017	Trihalomethanes (total)	27/Mar/23	17	ug/L	No
September 21, 2017	Bromodichloromethane	27/Mar/23	5.8	ug/L	No
September 21, 2017	Bromoform	27/Mar/23	0.34 <MDL	ug/L	No
September 21, 2017	Chloroform	27/Mar/23	8.5	ug/L	No
September 21, 2017	Dibromochloromethane	27/Mar/23	3	ug/L	No
September 21, 2017	Trihalomethanes (total)	6/Jun/23	29	ug/L	No
September 21, 2017	Bromodichloromethane	6/Jun/23	8.2	ug/L	No
September 21, 2017	Bromoform	6/Jun/23	0.34 <MDL	ug/L	No
September 21, 2017	Chloroform	6/Jun/23	18	ug/L	No
September 21, 2017	Dibromochloromethane	6/Jun/23	3.3	ug/L	No
September 21, 2017	Trihalomethanes (total)	7/Sep/23	41	ug/L	No
September 21, 2017	Bromodichloromethane	7/Sep/23	11	ug/L	No
September 21, 2017	Bromoform	7/Sep/23	0.37	ug/L	No
September 21, 2017	Chloroform	7/Sep/23	25	ug/L	No
September 21, 2017	Dibromochloromethane	7/Sep/23	4.4	ug/L	No
September 21, 2017	Trihalomethanes (total)	5/Dec/23	25	ug/L	No
September 21, 2017	Bromodichloromethane	5/Dec/23	7.6	ug/L	No
September 21, 2017	Bromoform	5/Dec/23	0.34 <MDL	ug/L	No
September 21, 2017	Chloroform	5/Dec/23	15	ug/L	No
September 21, 2017	Dibromochloromethane	5/Dec/23	2.8	ug/L	No
September 21, 2017	Vinyl Chloride	6/Jun/23	0.17 <MDL	ug/L	No

c) NON-REGULATED INORGANIC/ORGANIC PARAMETERS

Date of Municipal Drinking Water Licence	Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
September 21, 2017	Alkalinity	6/Jun/23	98	mg/L as CaCO3	No
September 21, 2017	Aluminum	6/Jun/23	19	ug/L	No
September 21, 2017	Ammonia+Ammonium (N)	6/Jun/23	0.04 <MDL	mg/L	No
September 21, 2017	Calcium	6/Jun/23	37	mg/L	No
September 21, 2017	Chloride	6/Jun/23	17	mg/L	No
September 21, 2017	Cobalt	6/Jun/23	0.015	ug/L	No
September 21, 2017	Colour	6/Jun/23	3 <MDL	TCU	No
September 21, 2017	Conductivity	6/Jun/23	315	uS/cm	No
September 21, 2017	Copper	6/Jun/23	0.9	ug/L	No
September 21, 2017	Cyanide; total	6/Jun/23	2 <MDL	ug/L	No
September 21, 2017	1,1-Dichloroethylene (vinylidene chloride)	6/Jun/23	0.33 <MDL	ug/L	No
September 21, 2017	Dissolved Organic Carbon	6/Jun/23	1 <MDL	mg/L	No
September 21, 2017	Ethylbenzene	6/Jun/23	0.33 <MDL	ug/L	No
September 21, 2017	Field pH	6/Jun/23	7.40	no unit	No
September 21, 2017	Field pH	6/Jun/23	7.40	no unit	No
September 21, 2017	Field Temperature	6/Jun/23	14.80	celcius	No
September 21, 2017	Field Temperature	6/Jun/23	14.80	celcius	No

September 21, 2017	Hardness	6/Jun/23	129	mg/L as CaCO3	No
September 21, 2017	Iron	6/Jun/23	7 <MDL	ug/L	No
September 21, 2017	Langelier`s Index	6/Jun/23	-0.39	@ 4 C	No
September 21, 2017	Langelier`s Index	6/Jun/23	-0.07	@ 20 C	No
September 21, 2017	Magnesium	6/Jun/23	8.89	mg/L	No
September 21, 2017	Manganese	6/Jun/23	0.17	ug/L	No
September 21, 2017	Monochlorobenzene	6/Jun/23	0.3 <MDL	ug/L	No
September 21, 2017	Nickel	6/Jun/23	0.7	ug/L	No
September 21, 2017	Nitrogen-Kjeldahl (N)	6/Jun/23	0.12	mg/L	No
September 21, 2017	Organic Nitrogen	6/Jun/23	0.12	mg/L	No
September 21, 2017	pH	6/Jun/23	7.98	No unit	No
September 21, 2017	Phosphorus	6/Jun/23	0.003 <MDL	mg/L	No
September 21, 2017	Potassium	6/Jun/23	1.46	mg/L	No
September 21, 2017	Silicon; reactive silicate	6/Jun/23	0.66	mg/L	No
September 21, 2017	Silver	6/Jun/23	0.05 <MDL	ug/L	No
September 21, 2017	Solids (Total Dissolved)	6/Jun/23	183	mg/L	No
September 21, 2017	Sulphate	6/Jun/23	30	mg/L	No
September 21, 2017	Sulphide	6/Jun/23	6 <MDL	ug/L	No
September 21, 2017	Surr 1,2-Dichloroethane-d4	6/Jun/23	104	Surr Rec %	No
September 21, 2017	Surr 4-Bromofluorobenzene	6/Jun/23	92	Surr Rec %	No
September 21, 2017	Surr Decachlorobiphenyl	6/Jun/23	105	%	No
September 21, 2017	Tetrachloroethylene (perchloroethylene)	6/Jun/23	0.35 <MDL	ug/L	No
September 21, 2017	Toluene	6/Jun/23	0.36 <MDL	ug/L	No
September 21, 2017	Total Chlorine-Field	6/Jun/23	1.33	mg/L	No
September 21, 2017	Total Chlorine-Field	6/Jun/23	1.33	mg/L	No
September 21, 2017	2-(2,4,5-Trichlorophenoxy)propanoic acid (2,4,5-TP)	6/Jun/23	0.18 <MDL	ug/L	No
September 21, 2017	Turbidity	6/Jun/23	0.25	NTU	No
September 21, 2017	Xylene (Total)	6/Jun/23	0.43 <MDL	ug/L	No
September 21, 2017	m/p-Xylene	6/Jun/23	0.43 <MDL	ug/L	No
September 21, 2017	o-xylene	6/Jun/23	0.17 <MDL	ug/L	No
September 21, 2017	Zinc	6/Jun/23	2 <MDL	ug/L	No

SITE: Southeast Reservoir and Pumping Station - Treated Distribution

d) ORGANIC PARAMETERS (HAA)

Date of Municipal Drinking Water Licence	Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
September 21, 2017	Total Haloacetic Acids	27/Mar/23	6.4	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	27/Mar/23	2 <MDL	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	27/Mar/23	6.4	ug/L	No
September 21, 2017	(Monobromoacetic acid)	27/Mar/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	27/Mar/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	27/Mar/23	5.3 <MDL	ug/L	No
September 21, 2017	Total Haloacetic Acids	6/Jun/23	18.4	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	6/Jun/23	2 <MDL	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	6/Jun/23	11.2	ug/L	No
September 21, 2017	(Monobromoacetic acid)	6/Jun/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	6/Jun/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	6/Jun/23	7.2	ug/L	No
September 21, 2017	Total Haloacetic Acids	7/Sep/23	19.9	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	7/Sep/23	2 <MDL	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	7/Sep/23	13.6	ug/L	No
September 21, 2017	(Monobromoacetic acid)	7/Sep/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	7/Sep/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	7/Sep/23	6.3	ug/L	No
September 21, 2017	Total Haloacetic Acids	5/Dec/23	17.2	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	5/Dec/23	2 <MDL	ug/L	No

September 21, 2017	(Dichloroacetic Acid)	5/Dec/23	9.5	ug/L	No
September 21, 2017	(Monobromoacetic acid)	5/Dec/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	5/Dec/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	5/Dec/23	7.7	ug/L	No

Summary of Inorganic/Organic parameters tested during this reporting period.

As outlined below, sampling was carried out for THM's & HAA's at 214 Rathowan St., 4562 Colonel Talbot Rd., 603 Wonderland Rd. S., 525 Crestwood Dr., 950 East Springbank Gate, and 365DD London Pipeline.

SITE: Fire Hydrant at 214 Rathowan St. - Treated Distribution

a) ORGANIC PARAMETERS (HAA & THM)

Date of Municipal Drinking Water Licence	Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
September 21, 2017	Total Haloacetic Acids	14/Mar/23	13.4	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	14/Mar/23	2 <MDL	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	14/Mar/23	6.5	ug/L	No
September 21, 2017	(Monobromoacetic acid)	14/Mar/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	14/Mar/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	14/Mar/23	6.8	ug/L	No
September 21, 2017	Total Haloacetic Acids	6/Jun/23	12.9	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	6/Jun/23	2 <MDL	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	6/Jun/23	7.4	ug/L	No
September 21, 2017	(Monobromoacetic acid)	6/Jun/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	6/Jun/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	6/Jun/23	5.5	ug/L	No
September 21, 2017	Total Haloacetic Acids	7/Sep/23	5.3 <MDL	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	7/Sep/23	2 <MDL	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	7/Sep/23	5.3	ug/L	No
September 21, 2017	(Monobromoacetic acid)	7/Sep/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	7/Sep/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	7/Sep/23	5.3 <MDL	ug/L	No
September 21, 2017	Total Haloacetic Acids	5/Dec/23	5.3 <MDL	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	5/Dec/23	2 <MDL	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	5/Dec/23	5.1	ug/L	No
September 21, 2017	(Monobromoacetic acid)	5/Dec/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	5/Dec/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	5/Dec/23	5.3 <MDL	ug/L	No
September 21, 2017	Trihalomethanes (total)	14/Mar/23	24	ug/L	No
September 21, 2017	Bromodichloromethane	14/Mar/23	7	ug/L	No
September 21, 2017	Bromoform	14/Mar/23	0.34 <MDL	ug/L	No
September 21, 2017	Chloroform	14/Mar/23	14	ug/L	No
September 21, 2017	Dibromochloromethane	14/Mar/23	2.5	ug/L	No
September 21, 2017	Trihalomethanes (total)	6/Jun/23	25	ug/L	No
September 21, 2017	Bromodichloromethane	6/Jun/23	7	ug/L	No
September 21, 2017	Bromoform	6/Jun/23	0.34 <MDL	ug/L	No
September 21, 2017	Chloroform	6/Jun/23	15	ug/L	No
September 21, 2017	Dibromochloromethane	6/Jun/23	2.3	ug/L	No
September 21, 2017	Trihalomethanes (total)	7/Sep/23	34	ug/L	No
September 21, 2017	Bromodichloromethane	7/Sep/23	9.1	ug/L	No
September 21, 2017	Bromoform	7/Sep/23	0.34 <MDL	ug/L	No
September 21, 2017	Chloroform	7/Sep/23	21	ug/L	No
September 21, 2017	Dibromochloromethane	7/Sep/23	4	ug/L	No
September 21, 2017	Trihalomethanes (total)	5/Dec/23	23	ug/L	No
September 21, 2017	Bromodichloromethane	5/Dec/23	7.4	ug/L	No
September 21, 2017	Bromoform	5/Dec/23	0.34 <MDL	ug/L	No
September 21, 2017	Chloroform	5/Dec/23	12	ug/L	No
September 21, 2017	Dibromochloromethane	5/Dec/23	3.5	ug/L	No

SITE: 4562 Colonel Talbot Rd. (Hydrant) - Treated Distribution

a) ORGANIC PARAMETERS (HAA & THM)

Date of Municipal Drinking Water Licence	Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
September 21, 2017	Total Haloacetic Acids	14/Mar/23	19.9	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	14/Mar/23	2 <MDL	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	14/Mar/23	9.3	ug/L	No
September 21, 2017	(Monobromoacetic acid)	14/Mar/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	14/Mar/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	14/Mar/23	10.5	ug/L	No
September 21, 2017	Total Haloacetic Acids	6/Jun/23	18.5	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	6/Jun/23	2 <MDL	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	6/Jun/23	11.4	ug/L	No
September 21, 2017	(Monobromoacetic acid)	6/Jun/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	6/Jun/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	6/Jun/23	7	ug/L	No
September 21, 2017	Total Haloacetic Acids	7/Sep/23	18.8	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	7/Sep/23	2 <MDL	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	7/Sep/23	12.2	ug/L	No
September 21, 2017	(Monobromoacetic acid)	7/Sep/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	7/Sep/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	7/Sep/23	6.6	ug/L	No
September 21, 2017	Total Haloacetic Acids	5/Dec/23	17.8	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	5/Dec/23	2 <MDL	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	5/Dec/23	10.3	ug/L	No
September 21, 2017	(Monobromoacetic acid)	5/Dec/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	5/Dec/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	5/Dec/23	7.5	ug/L	No
September 21, 2017	Trihalomethanes (total)	14/Mar/23	29	ug/L	No
September 21, 2017	Bromodichloromethane	14/Mar/23	8	ug/L	No
September 21, 2017	Bromoform	14/Mar/23	0.34 <MDL	ug/L	No
September 21, 2017	Chloroform	14/Mar/23	19	ug/L	No
September 21, 2017	Dibromochloromethane	14/Mar/23	2.7	ug/L	No
September 21, 2017	Trihalomethanes (total)	6/Jun/23	33	ug/L	No
September 21, 2017	Bromodichloromethane	6/Jun/23	8.5	ug/L	No
September 21, 2017	Bromoform	6/Jun/23	0.34 <MDL	ug/L	No
September 21, 2017	Chloroform	6/Jun/23	22	ug/L	No
September 21, 2017	Dibromochloromethane	6/Jun/23	3	ug/L	No
September 21, 2017	Trihalomethanes (total)	7/Sep/23	56	ug/L	No
September 21, 2017	Bromodichloromethane	7/Sep/23	12	ug/L	No
September 21, 2017	Bromoform	7/Sep/23	0.34 <MDL	ug/L	No
September 21, 2017	Chloroform	7/Sep/23	39	ug/L	No
September 21, 2017	Dibromochloromethane	7/Sep/23	4.8	ug/L	No
September 21, 2017	Trihalomethanes (total)	5/Dec/23	32	ug/L	No
September 21, 2017	Bromodichloromethane	5/Dec/23	9	ug/L	No
September 21, 2017	Bromoform	5/Dec/23	0.34 <MDL	ug/L	No
September 21, 2017	Chloroform	5/Dec/23	20	ug/L	No
September 21, 2017	Dibromochloromethane	5/Dec/23	3.1	ug/L	No

SITE: 603 Wonderland Rd. S. - Treated Distribution

a) ORGANIC PARAMETERS (HAA)

Date of Municipal Drinking Water Licence	Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
September 21, 2017	Total Haloacetic Acids	14/Mar/23	14.7	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	14/Mar/23	7.2	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	14/Mar/23	2 <MDL	ug/L	No
September 21, 2017	(Monobromoacetic acid)	14/Mar/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	14/Mar/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	14/Mar/23	7.5	ug/L	No
September 21, 2017	Total Haloacetic Acids	6/Jun/23	17.7	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	6/Jun/23	10.1	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	6/Jun/23	2 <MDL	ug/L	No
September 21, 2017	(Monobromoacetic acid)	6/Jun/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	6/Jun/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	6/Jun/23	7.6	ug/L	No
September 21, 2017	Total Haloacetic Acids	7/Sep/23	7.2	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	7/Sep/23	7.2	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	7/Sep/23	2 <MDL	ug/L	No
September 21, 2017	(Monobromoacetic acid)	7/Sep/23	4.7 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	7/Sep/23	2.9 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	7/Sep/23	5.3 <MDL	ug/L	No
September 21, 2017	Total Haloacetic Acids	5/Dec/23	5.3 <MDL	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	5/Dec/23	5.3	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	5/Dec/23	2 <MDL	ug/L	No
September 21, 2017	(Monobromoacetic acid)	5/Dec/23	4.7 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	5/Dec/23	2.9 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	5/Dec/23	5.3 <MDL	ug/L	No

SITE: 525 Crestwood Dr. - Treated Distribution

a) ORGANIC PARAMETERS (HAA)

Date of Municipal Drinking Water Licence	Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
September 21, 2017	Total Haloacetic Acids	14/Mar/23	14.7	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	14/Mar/23	2 <MDL	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	14/Mar/23	7.9	ug/L	No
September 21, 2017	(Monobromoacetic acid)	14/Mar/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	14/Mar/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	14/Mar/23	6.8	ug/L	No
September 21, 2017	Total Haloacetic Acids	6/Jun/23	14	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	6/Jun/23	2 <MDL	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	6/Jun/23	8.5	ug/L	No
September 21, 2017	(Monobromoacetic acid)	6/Jun/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	6/Jun/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	6/Jun/23	5.5	ug/L	No
September 21, 2017	Total Haloacetic Acids	7/Sep/23	15.8	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	7/Sep/23	2 <MDL	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	7/Sep/23	10.5	ug/L	No
September 21, 2017	(Monobromoacetic acid)	7/Sep/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	7/Sep/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	7/Sep/23	5.3 <MDL	ug/L	No
September 21, 2017	Total Haloacetic Acids	5/Dec/23	13	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	5/Dec/23	2 <MDL	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	5/Dec/23	7.1	ug/L	No
September 21, 2017	(Monobromoacetic acid)	5/Dec/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	5/Dec/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	5/Dec/23	5.9	ug/L	No

SITE: 950 East Springbank Gate - Treated Distribution

a) ORGANIC PARAMETERS (HAA)

Date of Municipal Drinking Water Licence	Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
September 21, 2017	Total Haloacetic Acids	14/Mar/23	17.3	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	14/Mar/23	2 <MDL	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	14/Mar/23	9	ug/L	No
September 21, 2017	(Monobromoacetic acid)	14/Mar/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	14/Mar/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	14/Mar/23	8.4	ug/L	No
September 21, 2017	Total Haloacetic Acids	6/Jun/23	12.9	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	6/Jun/23	2 <MDL	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	6/Jun/23	7.2	ug/L	No
September 21, 2017	(Monobromoacetic acid)	6/Jun/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	6/Jun/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	6/Jun/23	5.7	ug/L	No
September 21, 2017	Total Haloacetic Acids	7/Sep/23	7.7	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	7/Sep/23	2 <MDL	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	7/Sep/23	7.7	ug/L	No
September 21, 2017	(Monobromoacetic acid)	7/Sep/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	7/Sep/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	7/Sep/23	5.3 <MDL	ug/L	No
September 21, 2017	Total Haloacetic Acids	5/Dec/23	5.7	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	5/Dec/23	2 <MDL	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	5/Dec/23	5.7	ug/L	No
September 21, 2017	(Monobromoacetic acid)	5/Dec/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	5/Dec/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	5/Dec/23	5.3 <MDL	ug/L	No

SITE: 365DD - London Pipeline - Treated Distribution

a) ORGANIC PARAMETERS (HAA & THM)

Date of Municipal Drinking Water Licence	Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
September 21, 2017	Lead	4/Jan/23	0.01 <MDL	ug/L	No
September 21, 2017	Total Haloacetic Acids	4/Jan/23	5.3 <MDL	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	4/Jan/23	2 <MDL	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	4/Jan/23	3.9	ug/L	No
September 21, 2017	(Monobromoacetic acid)	4/Jan/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	4/Jan/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	4/Jan/23	5.3 <MDL	ug/L	No
September 21, 2017	Total Haloacetic Acids	4/Apr/23	5.3 <MDL	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	4/Apr/23	2 <MDL	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	4/Apr/23	3.5	ug/L	No
September 21, 2017	(Monobromoacetic acid)	4/Apr/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	4/Apr/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	4/Apr/23	5.3 <MDL	ug/L	No
September 21, 2017	Total Haloacetic Acids	4/Jul/23	6	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	4/Jul/23	2 <MDL	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	4/Jul/23	6	ug/L	No
September 21, 2017	(Monobromoacetic acid)	4/Jul/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	4/Jul/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	4/Jul/23	5.3 <MDL	ug/L	No
September 21, 2017	Total Haloacetic Acids	3/Oct/23	5.8	ug/L	No
September 21, 2017	(Dibromoacetic Acid)	3/Oct/23	2 <MDL	ug/L	No
September 21, 2017	(Dichloroacetic Acid)	3/Oct/23	5.8	ug/L	No
September 21, 2017	(Monobromoacetic acid)	3/Oct/23	2.9 <MDL	ug/L	No
September 21, 2017	(Monochloroacetic Acid)	3/Oct/23	4.7 <MDL	ug/L	No
September 21, 2017	(Trichloroacetic Acid)	3/Oct/23	5.3 <MDL	ug/L	No
September 21, 2017	Trihalomethanes (total)	4/Jan/23	13	ug/L	No
September 21, 2017	Bromodichloromethane	4/Jan/23	4.1	ug/L	No
September 21, 2017	Bromoform	4/Jan/23	0.34 <MDL	ug/L	No
September 21, 2017	Chloroform	4/Jan/23	7.3	ug/L	No
September 21, 2017	Dibromochloromethane	4/Jan/23	2	ug/L	No
September 21, 2017	Trihalomethanes (total)	4/Apr/23	15	ug/L	No
September 21, 2017	Bromodichloromethane	4/Apr/23	5	ug/L	No
September 21, 2017	Bromoform	4/Apr/23	0.34 <MDL	ug/L	No
September 21, 2017	Chloroform	4/Apr/23	7.4	ug/L	No
September 21, 2017	Dibromochloromethane	4/Apr/23	2.8	ug/L	No
September 21, 2017	Trihalomethanes (total)	4/Jul/23	26	ug/L	No
September 21, 2017	Bromodichloromethane	4/Jul/23	7.9	ug/L	No
September 21, 2017	Bromoform	4/Jul/23	0.34 <MDL	ug/L	No
September 21, 2017	Chloroform	4/Jul/23	15	ug/L	No
September 21, 2017	Dibromochloromethane	4/Jul/23	3.5	ug/L	No
September 21, 2017	Trihalomethanes (total)	3/Oct/23	31	ug/L	No
September 21, 2017	Bromodichloromethane	3/Oct/23	9.1	ug/L	No
September 21, 2017	Bromoform	3/Oct/23	0.34 <MDL	ug/L	No
September 21, 2017	Chloroform	3/Oct/23	18	ug/L	No
September 21, 2017	Dibromochloromethane	3/Oct/23	3.6	ug/L	No

b) NON-REGULATED INORGANIC/ORGANIC PARAMETERS

Date of Municipal Drinking Water Licence	Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
September 21, 2017	Turbidity-Field	4/Jan/23	0.07	NTU	No
September 21, 2017	Turbidity-Field	3/Jan/23	0.08	NTU	No
September 21, 2017	Turbidity-Field	10/Jan/23	0.06	NTU	No

September 21, 2017	Turbidity-Field	17/Jan/23	0.05	NTU	No
September 21, 2017	Turbidity-Field	24/Jan/23	0.07	NTU	No
September 21, 2017	Turbidity-Field	31/Jan/23	0.07	NTU	No
September 21, 2017	Turbidity-Field	7/Feb/23	0.05	NTU	No
September 21, 2017	Turbidity-Field	14/Feb/23	0.08	NTU	No
September 21, 2017	Turbidity-Field	21/Feb/23	0.06	NTU	No
September 21, 2017	Turbidity-Field	28/Feb/23	0.11	NTU	No
September 21, 2017	Turbidity-Field	7/Mar/23	0.08	NTU	No
September 21, 2017	Turbidity-Field	14/Mar/23	0.09	NTU	No
September 21, 2017	Turbidity-Field	21/Mar/23	0.1	NTU	No
September 21, 2017	Turbidity-Field	28/Mar/23	0.06	NTU	No
September 21, 2017	Turbidity-Field	4/Apr/23	0.08	NTU	No
September 21, 2017	Turbidity-Field	11/Apr/23	0.06	NTU	No
September 21, 2017	Turbidity-Field	18/Apr/23	0.09	NTU	No
September 21, 2017	Turbidity-Field	25/Apr/23	0.08	NTU	No
September 21, 2017	Turbidity-Field	2/May/23	0.07	NTU	No
September 21, 2017	Turbidity-Field	8/May/23	0.06	NTU	No
September 21, 2017	Turbidity-Field	8/May/23	0.07	NTU	No
September 21, 2017	Turbidity-Field	9/May/23	0.04	NTU	No
September 21, 2017	Turbidity-Field	16/May/23	0.05	NTU	No
September 21, 2017	Turbidity-Field	23/May/23	0.09	NTU	No
September 21, 2017	Turbidity-Field	30/May/23	0.1	NTU	No
September 21, 2017	Turbidity-Field	6/Jun/23	0.06	NTU	No
September 21, 2017	Turbidity-Field	13/Jun/23	0.07	NTU	No
September 21, 2017	Turbidity-Field	19/Jun/23	0.09	NTU	No
September 21, 2017	Turbidity-Field	27/Jun/23	0.05	NTU	No
September 21, 2017	Turbidity-Field	4/Jul/23	0.06	NTU	No
September 21, 2017	Turbidity-Field	4/Jul/23	0.06	NTU	No
September 21, 2017	Turbidity-Field	11/Jul/23	0.04	NTU	No
September 21, 2017	Turbidity-Field	18/Jul/23	0.04	NTU	No
September 21, 2017	Turbidity-Field	25/Jul/23	0.06	NTU	No
September 21, 2017	Turbidity-Field	1/Aug/23	0.05	NTU	No
September 21, 2017	Turbidity-Field	8/Aug/23	0.08	NTU	No
September 21, 2017	Turbidity-Field	15/Aug/23	0.06	NTU	No
September 21, 2017	Turbidity-Field	22/Aug/23	0.04	NTU	No
September 21, 2017	Turbidity-Field	29/Aug/23	0.08	NTU	No
September 21, 2017	Turbidity-Field	5/Sep/23	0.06	NTU	No
September 21, 2017	Turbidity-Field	12/Sep/23	0.08	NTU	No
September 21, 2017	Turbidity-Field	19/Sep/23	0.07	NTU	No
September 21, 2017	Turbidity-Field	26/Sep/23	0.09	NTU	No
September 21, 2017	Turbidity-Field	3/Oct/23	0.03	NTU	No
September 21, 2017	Turbidity-Field	3/Oct/23	0.03	NTU	No
September 21, 2017	Turbidity-Field	10/Oct/23	0.09	NTU	No
September 21, 2017	Turbidity-Field	17/Oct/23	0.05	NTU	No
September 21, 2017	Turbidity-Field	24/Oct/23	0.07	NTU	No
September 21, 2017	Turbidity-Field	31/Oct/23	0.06	NTU	No
September 21, 2017	Turbidity-Field	6/Nov/23	0.06	NTU	No
September 21, 2017	Turbidity-Field	14/Nov/23	0.05	NTU	No
September 21, 2017	Turbidity-Field	21/Nov/23	0.06	NTU	No
September 21, 2017	Turbidity-Field	28/Nov/23	0.09	NTU	No
September 21, 2017	Turbidity-Field	5/Dec/23	0.06	NTU	No
September 21, 2017	Turbidity-Field	12/Dec/23	0.08	NTU	No
September 21, 2017	Turbidity-Field	19/Dec/23	0.05	NTU	No
September 21, 2017	Turbidity-Field	27/Dec/23	0.06	NTU	No

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

None.

2023 Summary of Water Pumpage

DAY	DATE	ARVA PUMPAGE (m^3)	SERPS PUMPAGE (m^3)	TOTAL LONDON CONSUMPTION (m^3)
Sunday	1/Jan/23	83,316	20,960	103,938
Monday	2/Jan/23	89,644	22,763	111,363
Tuesday	3/Jan/23	88,656	22,794	113,254
Wednesday	4/Jan/23	94,048	22,714	115,973
Thursday	5/Jan/23	89,808	22,794	115,871
Friday	6/Jan/23	95,884	24,225	118,305
Saturday	7/Jan/23	93,698	25,239	115,104
Sunday	8/Jan/23	96,518	26,365	121,305
Monday	9/Jan/23	93,800	25,448	122,292
Tuesday	10/Jan/23	94,992	21,176	121,467
Wednesday	11/Jan/23	97,628	24,073	120,010
Thursday	12/Jan/23	98,108	23,114	118,967
Friday	13/Jan/23	94,352	22,809	120,656
Saturday	14/Jan/23	98,400	22,728	118,648
Sunday	15/Jan/23	106,608	22,740	119,314
Monday	16/Jan/23	89,286	***28,119***	120,336
Tuesday	17/Jan/23	90,422	22,876	119,837
Wednesday	18/Jan/23	***124,974***	25,933	117,085
Thursday	19/Jan/23	122,568	23,542	116,685
Friday	20/Jan/23	94,032	22,764	118,218
Saturday	21/Jan/23	92,816	22,781	116,386
Sunday	22/Jan/23	96,912	22,806	117,125
Monday	23/Jan/23	93,648	22,768	120,700
Tuesday	24/Jan/23	99,840	22,728	119,186
Wednesday	25/Jan/23	94,912	22,779	118,142
Thursday	26/Jan/23	94,928	22,764	118,256
Friday	27/Jan/23	94,736	22,764	117,725
Saturday	28/Jan/23	90,656	22,769	116,582
Sunday	29/Jan/23	97,328	22,769	117,955
Monday	30/Jan/23	113,216	22,765	118,844
Tuesday	31/Jan/23	99,944	19,536	***126,921***
January 2023 Monthly Max		124,974	28,119	126,921
January 2023 Monthly Average		97,412	23,315	118,417
January 2023 Total		2,922,362	699,445	3,552,511

DAY	DATE	ARVA PUMPAGE (m^3)	SERPS PUMPAGE (m^3)	TOTAL LONDON CONSUMPTION (m^3)
Wednesday	1/Feb/23	95,294	22,737	***126,036***
Thursday	2/Feb/23	106,762	23,072	123,070
Friday	3/Feb/23	98,446	22,270	121,956
Saturday	4/Feb/23	98,830	19,201	118,482
Sunday	5/Feb/23	106,490	10,621	120,606
Monday	6/Feb/23	102,508	23,249	120,796
Tuesday	7/Feb/23	101,982	23,084	120,669
Wednesday	8/Feb/23	100,952	24,114	122,924
Thursday	9/Feb/23	92,352	24,681	120,528
Friday	10/Feb/23	97,352	24,083	120,984
Saturday	11/Feb/23	91,868	24,646	117,754
Sunday	12/Feb/23	98,160	24,852	119,630
Monday	13/Feb/23	110,980	11,948	119,884
Tuesday	14/Feb/23	109,648	11,866	120,048
Wednesday	15/Feb/23	105,584	11,932	122,251
Thursday	16/Feb/23	88,240	22,910	120,169
Friday	17/Feb/23	78,928	22,922	119,099
Saturday	18/Feb/23	79,104	25,002	114,027
Sunday	19/Feb/23	92,192	19,287	116,180
Monday	20/Feb/23	63,872	26,165	114,840
Tuesday	21/Feb/23	95,888	26,005	115,354
Wednesday	22/Feb/23	91,168	***26,561***	116,151
Thursday	23/Feb/23	87,712	15,828	114,701
Friday	24/Feb/23	109,056	10,868	115,753
Saturday	25/Feb/23	111,760	5,877	111,549
Sunday	26/Feb/23	105,696	4,978	116,762
Monday	27/Feb/23	***115,856***	4,972	116,995
Tuesday	28/Feb/23	112,080	4,951	120,300
February 2023 Monthly Max		115,856	26,561	126,036
February 2023 Monthly Max		98,170	18,524	118,839
February 2023 Total		2,748,760	518,682	3,327,499

DAY	DATE	ARVA PUMPAGE (m^3)	SERPS PUMPAGE (m^3)	TOTAL LONDON CONSUMPTION (m^3)
Wednesday	1/Mar/23	***112,048***	8,858	120,004
Thursday	2/Mar/23	108,192	16,514	119,858
Friday	3/Mar/23	85,856	26,014	119,649
Saturday	4/Mar/23	96,434	25,136	120,104
Sunday	5/Mar/23	90,770	26,406	121,122
Monday	6/Mar/23	110,576	11,967	121,077
Tuesday	7/Mar/23	102,636	***29,523***	123,140
Wednesday	8/Mar/23	97,344	25,529	122,760
Thursday	9/Mar/23	97,152	25,518	120,641
Friday	10/Mar/23	90,112	25,202	118,696
Saturday	11/Mar/23	90,128	25,517	116,998
Sunday	12/Mar/23	88,064	24,909	110,944
Monday	13/Mar/23	104,272	16,685	117,575
Tuesday	14/Mar/23	89,406	26,343	121,499
Wednesday	15/Mar/23	99,074	26,042	121,396
Thursday	16/Mar/23	94,414	25,295	121,062
Friday	17/Mar/23	90,302	25,853	119,424
Saturday	18/Mar/23	90,160	25,616	117,693
Sunday	19/Mar/23	98,924	25,539	120,630
Monday	20/Mar/23	97,036	25,954	122,314
Tuesday	21/Mar/23	98,554	25,950	123,151
Wednesday	22/Mar/23	100,434	12,764	122,555
Thursday	23/Mar/23	100,486	24,639	120,277
Friday	24/Mar/23	95,860	24,001	121,101
Saturday	25/Mar/23	84,664	23,672	116,679
Sunday	26/Mar/23	103,380	22,839	118,102
Monday	27/Mar/23	96,738	22,796	120,210
Tuesday	28/Mar/23	106,656	21,461	121,916
Wednesday	29/Mar/23	96,864	21,488	122,185
Thursday	30/Mar/23	101,264	20,366	***123,659***
Friday	31/Mar/23	97,808	21,480	119,063
March 2023 Monthly Max		112,048	29,523	123,659
March 2023 Monthly Average		97,278	22,899	120,177
March 2023 Total		3,015,608	709,876	3,725,484

DAY	DATE	ARVA PUMPAGE (m^3)	SERPS PUMPAGE (m^3)	TOTAL LONDON CONSUMPTION (m^3)
Saturday	1/Apr/23	97,424	20,979	118,403
Sunday	2/Apr/23	101,072	19,292	120,477
Monday	3/Apr/23	106,112	19,225	119,474
Tuesday	4/Apr/23	92,848	23,090	122,477
Wednesday	5/Apr/23	97,744	22,992	121,300
Thursday	6/Apr/23	96,448	22,943	120,518
Friday	7/Apr/23	97,008	22,956	116,131
Saturday	8/Apr/23	90,464	21,977	110,412
Sunday	9/Apr/23	85,408	22,955	113,211
Monday	10/Apr/23	97,136	22,893	121,269
Tuesday	11/Apr/23	102,624	22,914	126,102
Wednesday	12/Apr/23	99,004	27,680	129,277
Thursday	13/Apr/23	85,930	***35,709***	***131,347***
Friday	14/Apr/23	114,918	20,295	126,347
Saturday	15/Apr/23	***114,986***	20,300	122,075
Sunday	16/Apr/23	102,804	20,300	126,908
Monday	17/Apr/23	103,416	20,333	122,428
Tuesday	18/Apr/23	111,824	20,252	120,910
Wednesday	19/Apr/23	111,520	20,265	123,911
Thursday	20/Apr/23	98,736	20,288	125,311
Friday	21/Apr/23	94,016	21,995	123,668
Saturday	22/Apr/23	99,680	22,785	114,388
Sunday	23/Apr/23	91,856	22,801	118,420
Monday	24/Apr/23	103,584	22,888	122,532
Tuesday	25/Apr/23	91,130	25,981	124,668
Wednesday	26/Apr/23	100,384	24,332	125,064
Thursday	27/Apr/23	105,474	25,163	125,379
Friday	28/Apr/23	99,116	24,338	122,638
Saturday	29/Apr/23	94,074	22,880	117,945
Sunday	30/Apr/23	93,072	22,218	118,804
April 2023 Monthly Max		114,986	35,709	131,347
April 2023 Monthly Average		99,327	22,767	121,727
April 2023 Total		2,979,812	683,019	3,651,796

DAY	DATE	ARVA PUMPAGE (m^3)	SERPS PUMPAGE (m^3)	TOTAL LONDON CONSUMPTION (m^3)
Monday	1/May/23	101,450	23,257	121,896
Tuesday	2/May/23	96,880	23,329	122,205
Wednesday	3/May/23	101,792	23,476	121,051
Thursday	4/May/23	101,424	23,305	123,666
Friday	5/May/23	101,680	23,459	123,833
Saturday	6/May/23	90,208	24,738	120,415
Sunday	7/May/23	93,040	23,627	119,994
Monday	8/May/23	101,456	24,644	127,667
Tuesday	9/May/23	91,776	28,600	132,494
Wednesday	10/May/23	115,926	27,657	137,586
Thursday	11/May/23	115,682	23,334	137,230
Friday	12/May/23	120,422	23,366	138,121
Saturday	13/May/23	115,256	21,624	133,669
Sunday	14/May/23	111,694	21,629	129,099
Monday	15/May/23	115,694	23,343	136,342
Tuesday	16/May/23	111,590	23,346	139,282
Wednesday	17/May/23	118,798	23,344	134,893
Thursday	18/May/23	114,448	23,332	136,532
Friday	19/May/23	105,828	23,313	136,584
Saturday	20/May/23	105,266	22,271	117,767
Sunday	21/May/23	83,090	23,369	126,121
Monday	22/May/23	105,904	25,114	137,444
Tuesday	23/May/23	127,458	23,363	142,261
Wednesday	24/May/23	124,154	23,347	142,204
Thursday	25/May/23	125,604	23,327	142,582
Friday	26/May/23	123,372	23,345	150,317
Saturday	27/May/23	131,216	23,394	151,542
Sunday	28/May/23	127,782	23,390	161,876
Monday	29/May/23	136,184	24,215	***170,624***
Tuesday	30/May/23	144,818	27,429	169,682
Wednesday	31/May/23	***148,480***	***29,426***	168,853
May 2023 Monthly Max		148,480	29,426	170,624
May 2023 Monthly Average		113,173	24,023	137,220
May 2023 Total		3,508,372	744,713	4,253,832

DAY	DATE	ARVA PUMPAGE (m^3)	SERPS PUMPAGE (m^3)	TOTAL LONDON CONSUMPTION (m^3)
Thursday	1/Jun/23	144,078	27,898	172,908
Friday	2/Jun/23	142,638	***29,927***	***177,070***
Saturday	3/Jun/23	***156,736***	28,159	162,009
Sunday	4/Jun/23	123,872	23,371	165,910
Monday	5/Jun/23	144,096	23,337	163,774
Tuesday	6/Jun/23	148,032	21,326	160,117
Wednesday	7/Jun/23	138,160	21,025	161,733
Thursday	8/Jun/23	128,224	22,828	150,230
Friday	9/Jun/23	124,000	23,777	158,143
Saturday	10/Jun/23	123,920	19,100	151,776
Sunday	11/Jun/23	132,672	22,710	131,207
Monday	12/Jun/23	100,432	23,608	128,850
Tuesday	13/Jun/23	105,658	23,638	132,134
Wednesday	14/Jun/23	109,646	25,572	134,863
Thursday	15/Jun/23	109,338	23,645	135,333
Friday	16/Jun/23	119,450	21,441	134,396
Saturday	17/Jun/23	109,888	25,350	132,513
Sunday	18/Jun/23	110,306	21,994	139,411
Monday	19/Jun/23	118,830	21,988	153,496
Tuesday	20/Jun/23	140,028	22,306	156,607
Wednesday	21/Jun/23	140,474	22,451	162,925
Thursday	22/Jun/23	144,052	22,811	149,400
Friday	23/Jun/23	122,678	18,949	135,595
Saturday	24/Jun/23	93,712	24,996	129,799
Sunday	25/Jun/23	106,142	26,744	135,615
Monday	26/Jun/23	109,286	22,357	133,127
Tuesday	27/Jun/23	110,854	23,704	133,252
Wednesday	28/Jun/23	115,280	23,705	138,453
Thursday	29/Jun/23	104,608	20,322	144,366
Friday	30/Jun/23	131,664	22,979	144,081
June 2023 Monthly Max		156,736	29,927	177,070
June 2023 Monthly Average		123,625	23,401	146,970
June 2023 Total		3,708,754	702,018	4,409,092

DAY	DATE	ARVA PUMPAGE (m^3)	SERPS PUMPAGE (m^3)	TOTAL LONDON CONSUMPTION (m^3)
Saturday	1/Jul/23	111,440	23,973	126,362
Sunday	2/Jul/23	99,312	23,330	115,072
Monday	3/Jul/23	91,888	23,324	124,023
Tuesday	4/Jul/23	114,000	23,319	137,142
Wednesday	5/Jul/23	115,648	24,952	***145,604***
Thursday	6/Jul/23	119,744	25,470	137,194
Friday	7/Jul/23	96,416	***25,751***	135,545
Saturday	8/Jul/23	105,584	25,092	113,002
Sunday	9/Jul/23	92,048	23,982	130,567
Monday	10/Jul/23	110,400	23,969	137,158
Tuesday	11/Jul/23	119,642	23,962	136,485
Wednesday	12/Jul/23	105,718	24,630	134,853
Thursday	13/Jul/23	104,770	24,645	131,854
Friday	14/Jul/23	110,058	24,636	133,127
Saturday	15/Jul/23	99,926	24,002	122,002
Sunday	16/Jul/23	101,262	23,988	125,426
Monday	17/Jul/23	99,994	23,977	139,245
Tuesday	18/Jul/23	123,326	22,387	140,055
Wednesday	19/Jul/23	123,346	24,627	142,197
Thursday	20/Jul/23	116,218	19,764	137,375
Friday	21/Jul/23	115,180	23,938	135,697
Saturday	22/Jul/23	106,718	23,982	129,591
Sunday	23/Jul/23	111,162	23,978	131,099
Monday	24/Jul/23	111,904	23,965	139,559
Tuesday	25/Jul/23	118,960	23,963	144,384
Wednesday	26/Jul/23	***123,360***	23,919	138,767
Thursday	27/Jul/23	106,544	21,280	134,763
Friday	28/Jul/23	111,552	22,645	137,511
Saturday	29/Jul/23	106,272	23,991	125,543
Sunday	30/Jul/23	98,320	24,008	125,594
Monday	31/Jul/23	107,328	23,960	133,664
July 2023 Monthly Max		123,360	25,751	145,604
July 2023 Monthly Average		108,969	23,852	132,918
July 2023 Total		3,378,040	739,409	4,120,460

DAY	DATE	ARVA PUMPAGE (m^3)	SERPS PUMPAGE (m^3)	TOTAL LONDON CONSUMPTION (m^3)
Tuesday	1/Aug/23	115,118	23,956	139,309
Wednesday	2/Aug/23	118,942	23,969	142,276
Thursday	3/Aug/23	118,732	23,922	***147,445***
Friday	4/Aug/23	127,386	23,969	144,649
Saturday	5/Aug/23	118,526	23,997	131,002
Sunday	6/Aug/23	92,984	23,958	121,554
Monday	7/Aug/23	94,918	24,008	120,864
Tuesday	8/Aug/23	106,544	23,970	134,963
Wednesday	9/Aug/23	115,520	19,662	141,892
Thursday	10/Aug/23	***128,688***	18,983	140,725
Friday	11/Aug/23	119,472	22,809	136,549
Saturday	12/Aug/23	104,432	23,996	127,831
Sunday	13/Aug/23	103,024	23,989	128,777
Monday	14/Aug/23	110,176	24,465	136,812
Tuesday	15/Aug/23	105,504	23,962	128,173
Wednesday	16/Aug/23	105,408	***26,208***	134,139
Thursday	17/Aug/23	110,016	25,039	132,356
Friday	18/Aug/23	101,392	23,889	127,917
Saturday	19/Aug/23	100,672	23,996	123,902
Sunday	20/Aug/23	101,568	23,327	128,690
Monday	21/Aug/23	110,352	23,963	139,173
Tuesday	22/Aug/23	114,932	23,931	138,113
Wednesday	23/Aug/23	110,062	23,881	129,774
Thursday	24/Aug/23	106,064	23,963	134,714
Friday	25/Aug/23	110,246	23,920	133,071
Saturday	26/Aug/23	105,920	23,989	126,839
Sunday	27/Aug/23	105,574	23,989	126,424
Monday	28/Aug/23	111,086	23,952	137,132
Tuesday	29/Aug/23	117,240	23,952	138,458
Wednesday	30/Aug/23	111,148	23,940	129,033
Thursday	31/Aug/23	102,936	23,933	135,136
August 2023 Monthly Max		128,688	26,208	147,445
August 2023 Monthly Average		109,825	23,725	133,474
August 2023 Total		3,404,582	735,487	4,137,693

DAY	DATE	ARVA PUMPAGE (m^3)	SERPS PUMPAGE (m^3)	TOTAL LONDON CONSUMPTION (m^3)
Friday	1/Sep/23	106,394	23,966	136,842
Saturday	2/Sep/23	106,244	24,000	125,503
Sunday	3/Sep/23	103,426	23,995	128,292
Monday	4/Sep/23	110,742	23,992	141,991
Tuesday	5/Sep/23	***128,016***	25,141	***148,390***
Wednesday	6/Sep/23	126,976	20,978	143,027
Thursday	7/Sep/23	111,584	20,339	137,998
Friday	8/Sep/23	122,976	24,471	132,286
Saturday	9/Sep/23	102,368	24,515	128,060
Sunday	10/Sep/23	97,904	24,965	131,474
Monday	11/Sep/23	109,776	24,453	138,400
Tuesday	12/Sep/23	110,384	24,455	132,757
Wednesday	13/Sep/23	110,448	24,137	134,063
Thursday	14/Sep/23	110,304	24,432	133,753
Friday	15/Sep/23	110,208	23,923	132,851
Saturday	16/Sep/23	103,248	23,922	126,474
Sunday	17/Sep/23	103,328	23,906	126,947
Monday	18/Sep/23	101,728	23,870	133,234
Tuesday	19/Sep/23	110,728	23,844	136,583
Wednesday	20/Sep/23	122,332	23,859	136,892
Thursday	21/Sep/23	119,516	15,703	139,859
Friday	22/Sep/23	121,764	18,871	137,737
Saturday	23/Sep/23	119,568	18,378	129,641
Sunday	24/Sep/23	123,222	17,193	130,612
Monday	25/Sep/23	97,072	22,062	136,372
Tuesday	26/Sep/23	111,440	25,828	133,705
Wednesday	27/Sep/23	107,840	***26,695***	135,477
Thursday	28/Sep/23	107,824	24,484	132,772
Friday	29/Sep/23	107,152	23,971	133,628
Saturday	30/Sep/23	107,744	24,006	126,609
September 2023 Monthly Max		128,016	26,695	148,390
September 2023 Monthly Average		111,075	23,145	134,074
September 2023 Total		3,332,256	694,354	4,022,227

DAY	DATE	ARVA PUMPAGE (m^3)	SERPS PUMPAGE (m^3)	TOTAL LONDON CONSUMPTION (m^3)
Sunday	1/Oct/23	97,024	23,975	129,966
Monday	2/Oct/23	112,160	23,957	***138,878***
Tuesday	3/Oct/23	***119,344***	23,952	138,563
Wednesday	4/Oct/23	115,008	22,244	137,948
Thursday	5/Oct/23	115,056	***26,551***	136,439
Friday	6/Oct/23	105,744	23,986	129,379
Saturday	7/Oct/23	100,736	23,997	115,840
Sunday	8/Oct/23	79,200	23,996	111,211
Monday	9/Oct/23	91,296	23,761	115,561
Tuesday	10/Oct/23	105,792	23,658	127,365
Wednesday	11/Oct/23	104,240	23,974	127,335
Thursday	12/Oct/23	103,504	23,973	130,225
Friday	13/Oct/23	103,424	23,972	126,869
Saturday	14/Oct/23	95,200	24,024	118,760
Sunday	15/Oct/23	90,944	24,011	121,534
Monday	16/Oct/23	104,304	23,983	127,130
Tuesday	17/Oct/23	104,174	23,151	129,179
Wednesday	18/Oct/23	106,498	24,535	129,353
Thursday	19/Oct/23	103,290	24,004	128,738
Friday	20/Oct/23	100,462	23,970	126,512
Saturday	21/Oct/23	96,116	24,010	120,126
Sunday	22/Oct/23	96,244	24,001	121,108
Monday	23/Oct/23	101,600	23,950	125,377
Tuesday	24/Oct/23	106,304	23,952	127,199
Wednesday	25/Oct/23	106,048	22,619	127,387
Thursday	26/Oct/23	105,520	22,621	127,906
Friday	27/Oct/23	100,576	22,971	126,281
Saturday	28/Oct/23	103,248	21,351	116,501
Sunday	29/Oct/23	99,296	21,353	114,463
Monday	30/Oct/23	99,264	20,923	119,832
Tuesday	31/Oct/23	70,410	26,297	124,872
October 2023 Monthly Max		119,344	26,551	138,878
October 2023 Monthly Average		101,356	23,668	125,737
October 2023 Total		3,142,026	733,722	3,897,836

DAY	DATE	ARVA PUMPAGE (m^3)	SERPS PUMPAGE (m^3)	TOTAL LONDON CONSUMPTION (m^3)
Wednesday	1/Nov/23	108,360	24,138	122,881
Thursday	2/Nov/23	101,852	23,961	123,224
Friday	3/Nov/23	97,004	23,964	122,176
Saturday	4/Nov/23	96,786	23,553	114,267
Sunday	5/Nov/23	96,998	***24,583***	125,237
Monday	6/Nov/23	95,768	22,617	120,111
Tuesday	7/Nov/23	102,320	23,975	125,319
Wednesday	8/Nov/23	106,294	23,356	126,114
Thursday	9/Nov/23	102,302	23,939	126,241
Friday	10/Nov/23	102,862	23,988	125,979
Saturday	11/Nov/23	98,052	23,165	118,244
Sunday	12/Nov/23	102,646	22,783	121,499
Monday	13/Nov/23	102,904	22,714	126,561
Tuesday	14/Nov/23	102,980	22,699	127,260
Wednesday	15/Nov/23	107,648	22,713	126,305
Thursday	16/Nov/23	103,040	21,772	126,408
Friday	17/Nov/23	99,568	22,649	125,028
Saturday	18/Nov/23	94,944	22,684	118,331
Sunday	19/Nov/23	94,528	22,662	120,166
Monday	20/Nov/23	102,432	22,334	127,613
Tuesday	21/Nov/23	95,216	21,725	125,386
Wednesday	22/Nov/23	108,160	20,180	126,630
Thursday	23/Nov/23	110,624	20,194	126,103
Friday	24/Nov/23	106,704	20,204	128,289
Saturday	25/Nov/23	99,248	21,018	120,093
Sunday	26/Nov/23	104,496	20,983	120,100
Monday	27/Nov/23	99,088	20,965	126,242
Tuesday	28/Nov/23	109,922	20,945	134,990
Wednesday	29/Nov/23	***117,832***	22,679	***136,114***
Thursday	30/Nov/23	115,540	23,628	128,063
November 2023 Monthly Max		117,832	24,583	136,114
November 2023 Monthly Average		102,871	22,559	124,699
November 2023 Total		3,086,118	676,770	3,740,976

DAY	DATE	ARVA PUMPAGE (m^3)	SERPS PUMPAGE (m^3)	TOTAL LONDON CONSUMPTION (m^3)
Friday	1/Dec/23	94,354	23,503	128,891
Saturday	2/Dec/23	97,026	22,003	119,142
Sunday	3/Dec/23	99,326	23,280	118,452
Monday	4/Dec/23	100,264	23,214	125,734
Tuesday	5/Dec/23	103,498	23,191	125,304
Wednesday	6/Dec/23	105,458	23,225	126,942
Thursday	7/Dec/23	106,434	23,208	124,398
Friday	8/Dec/23	97,072	23,992	124,567
Saturday	9/Dec/23	94,158	23,251	115,726
Sunday	10/Dec/23	91,816	23,043	119,328
Monday	11/Dec/23	101,700	23,964	127,460
Tuesday	12/Dec/23	111,076	23,939	129,911
Wednesday	13/Dec/23	105,286	23,823	***133,462***
Thursday	14/Dec/23	110,471	24,615	130,211
Friday	15/Dec/23	102,514	***24,632***	126,093
Saturday	16/Dec/23	97,088	21,642	118,379
Sunday	17/Dec/23	96,472	17,990	116,562
Monday	18/Dec/23	100,687	17,972	117,437
Tuesday	19/Dec/23	101,955	17,284	130,220
Wednesday	20/Dec/23	***114,737***	17,069	122,682
Thursday	21/Dec/23	110,284	15,970	123,343
Friday	22/Dec/23	105,478	15,982	122,927
Saturday	23/Dec/23	93,105	16,004	111,659
Sunday	24/Dec/23	85,261	16,031	106,837
Monday	25/Dec/23	85,901	12,999	97,002
Tuesday	26/Dec/23	85,320	12,004	102,150
Wednesday	27/Dec/23	98,140	11,984	113,089
Thursday	28/Dec/23	110,273	11,502	112,540
Friday	29/Dec/23	99,492	10,325	115,231
Saturday	30/Dec/23	99,593	10,019	109,439
Sunday	31/Dec/23	98,916	9,917	105,036
December 2023 Monthly Max		114,737	24,632	133,462
December 2023 Monthly Average		100,102	18,954	119,360
December 2023 Total		3,103,155	587,577	3,700,153

Drinking-Water System Number:	260004917
Drinking-Water System Name:	**Elgin Middlesex Pumping Station – City of London Distribution System**
Drinking-Water System Owner:	City of London
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2023 through December 31, 2023

Complete if your Category is Large Municipal Residential or Small Municipal Residential

Does your Drinking-Water System serve more than 10,000 people? Yes [X] No [ ]

Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No [ ]

Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.

City of London
300 Dufferin Ave
London, ON
N6B 1Z2
www.london.ca

Elgin Area Primary Water Supply System
Treatment Plant
43665 Dexter Line, Union, ON

Complete for all other Categories.

Number of Designated Facilities served:

N/A

Did you provide a copy of your annual report to all Designated Facilities you serve?
Yes [ ] No [ ]

Number of Interested Authorities you report to: N/A

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?
Yes [ ] No [ ]

List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Systems that receive their drinking water directly from the London EMPS:

Drinking Water System Name	Drinking Water System Number
City of London Distribution System	260004917

Systems that receive their drinking water indirectly from the London EMPS:

Drinking Water System Name	Drinking Water System Number
Municipality of Central Elgin	260004761

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?

Yes [X] No [ ]

Indicate how you notified system users that your annual report is available, and is free of charge.

[X] Public access/notice via the web
[X] Public access/notice via Government Office
[ ] Public access/notice via a newspaper
[X] Public access/notice via Public Request
[ ] Public access/notice via a Public Library
[ ] Public access/notice via other method ____

Describe your Drinking-Water System

The Elgin Middlesex Pumping Station (EMPS) receives water from the Elgin Area Primary Water Supply System (EAPWSS), which is located to the east of Port Stanley. Water from the EAPWSS is pumped into the EAPWSS site reservoirs located at the EMPS. The total capacity of the 2 reservoirs is 54,600$m^{3.}$ Through various secondary water supply systems, the EMPS serves the Cities of London, St. Thomas, Town of Aylmer, Municipalities of Central Elgin, Malahide and Southwold.

The EMPS is a shared facility. Booster pumps are dedicated to directing water to the City of London, St. Thomas Secondary and/or Aylmer Area Secondary Water Supply Systems. The EMPS houses a surge facility to service the London transmission main.

Three pipelines exit the EMPS: one pipeline runs North along Highbury Avenue into the Southeast Reservoir Pumping Station (SERPS) to service the London distribution system, the second exits to the south of the EMPS property and extends West to service the St. Thomas Area Secondary Water Supply System; the third exits to the South, to Highway 3 and then runs in an Easterly direction to service the municipalities on the Aylmer Area Secondary Water Supply System.

List all water treatment chemicals used over this reporting period

No re-treatment of water directed into the London system took place at the EMPS in 2023.

Were any significant expenses incurred to?

[ ] Install required equipment
[X] Repair required equipment
[X] Replace required equipment

Please provide a brief description and a breakdown of monetary expenses incurred

- Elgin Middlesex Pumping Station Process Flow Diagram Consolidation
- London Air Compressor Engineering Design
- Air Compressor Repairs and Major Preventative Maintenance
- Pump Dismantle - Physical Component Inspection and Measurements

Notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
N/A	N/A	N/A	N/A	N/A	N/A

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

	Number of Samples	Range of E.coli Results (CFU/100 mL) (min #)-(max #)	Range of Total Coliform Results (CFU/100 mL) (min #)-(max #)	Number of Heterotrophic Plate Count (HPC) Samples	Range of HPC Results (CFU/1 mL) (min #)-(max #)
Distribution	58	(0) – (0)	(0) – (0)	58	(<10)-(100)

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

Parameter	Number of Grab Samples (Continuous Monitoring)	Min	Max	Avg
Free Chlorine Residual (mg/L)	8760	0.45	1.08	0.88

Summary of Organic parameters sampled during this reporting period or the most recent sample results

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
THM (NOTE: result value is based on one sample)	January 4, 2023 April 4, 2023 July 4, 2023 October 3, 2023	13 15 26 31	µg/L µg/L µg/L µg/L	NO
THM Running Annual Average (RAA)	2023	21	µg/L	NO

HAA **(**NOTE**:** result value is based on one sample**)**	January 4, 2023 April 4, 2023 July 4, 2023 October 3, 2023	ND ND 6.0 5.8	µg/L µg/L µg/L µg/L	NO
HAA **Running Annual Average (RAA)**	2023	5.9	µg/L	NO

ND = Non-detect

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: **2023 Ministry of the Environment, Conservation and Parks Inspection of the City of London Drinking Water System**
Date: **February 21, 2024**

Recommendation

That, on the recommendation of the Deputy City Manager, Environment and Infrastructure, the following report on the Ministry of the Environment, Conservation and Parks Inspection of the City of London Drinking Water System **BE RECEIVED** for information.

Executive Summary

The Ontario Ministry of the Environment, Conservation and Parks (MECP) performs annual inspections to ensure that municipalities are operating water systems in compliance with all applicable legal requirements.

The MECP completed the 2023 inspection of London's drinking water system in December, 2023, and outlined its findings in the *City of London Distribution System Inspection Report*. The outcome of the inspection is provided for Council in this report.

Linkage to the Corporate Strategic Plan

Municipal Council's Strategic Plan identifies "Well-Run City" as a strategic area of focus. This report supports the 2023-2027 Strategic Plan by demonstrating leadership and accountability in the management and provision of quality programs and services.

Analysis

1.0 Background Information

1.1 Previous Reports Related to this Matter

- Civic Works Committee – January 31, 2023 – 2022 Ministry of the Environment, Conservation and Parks Inspection of the City of London Water Distribution System

1.2 Overview

Municipal drinking water systems in Ontario are held to very high standards by the provincial government. The MECP performs rigorous annual inspections to ensure that municipalities are operating their water systems in accordance with all applicable regulations and legislated requirements.

MECP inspections include staff interviews, facility inspections, and reviews of operating procedures, water analysis reports, operational records, staff certification, and training records. If an Inspector finds that a system operator did not properly comply with an applicable requirement, it is recorded as an incident of non-compliance.

MECP Inspections are used to generate Drinking Water System Inspection Rating Records. Each incident of non-compliance results in a subtraction from a possible score of 100%. The annual rating records for all municipal drinking water systems in Ontario are made available to the public on the Government of Ontario website.

2.0 Discussion and Considerations

2.1 Inspection Findings

On December 19, 2023, the MECP issued the City of London Distribution System Inspection Report for the 2023 inspection. No incidents of non-compliance were identified and the City of London received a Final Inspection Rating of 100.00%.

The following summarizes London's Final Inspection Ratings for the last 5 years:

- 2019 – 100.00%
- 2020 – 100.00%
- 2021 – 100.00%
- 2022 – 100.00%
- 2023 – 100.00%

The full 2023 City of London Distribution System Inspection Report is available to members of the public on the City of London website.

Conclusion

The Ministry of the Environment, Conservation and Parks completed the 2023 inspection of London's drinking water system, and outlined its findings in the City of London Distribution System Inspection Report. No issues of regulatory non-compliance were identified and the City of London received a Final Inspection Rating of 100.00%.

Prepared by:	**John Simon, P.Eng.** **Division Manager, Water Operations**
Submitted by:	**Ashley M. Rammeloo, MMSc., P.Eng.** **Director, Water, Wastewater, and Stormwater**
Recommended by:	**Kelly Scherr, P.Eng., MBA, FEC** **Deputy City Manager, Environment and Infrastructure**

CC: Aaron Rozentals - Division Manager, Water Engineering
Dan Huggins, Water Quality Manager

Report to Civic Works Committee

To: **Chair and Members**
Civic Works Committee
From: **Kelly Scherr, P. Eng., MBA, FEC**
Deputy City Manager, Environment & Infrastructure
Subject: **Hamilton Road and Gore Road Intersection Improvements Environmental Assessment Project File Report**
Date: **February 21, 2024**

Recommendation

That, on the recommendation of the Deputy City Manager, Environment & Infrastructure, the following actions **BE TAKEN** with respect to the Hamilton Road and Gore Road Intersection Improvements Environmental Assessment:

a) The Hamilton Road and Gore Road Intersection Improvements Environmental Assessment Study Project File Report **BE ACCEPTED**;

b) A Notice of Study Completion for the Project **BE FILED** with the Municipal Clerk; and,

c) The Project File Report **BE PLACED** on the public record for a 30-day review period.

Executive Summary

Purpose

This report provides an overview of the Municipal Class Environmental Assessment (EA) process for the Hamilton Road and Gore Road intersection improvements and seeks approval to finalize the study and post it for the necessary 30-day public review period. The study identifies geometric, safety, operational and capacity improvements to the Hamilton Road and Gore Road intersection.

Context

The City of London continues to develop and grow and to accommodate this growth, infrastructure improvements are required that accommodate the planned growth.

The initial technical review of the Hamilton Road and Gore Road intersection completed in 2011, identified the need to reconfigure the intersection based on the history of collisions and geometric, operational and delay deficiencies.

The Hamilton Road and Gore Road intersection is a three-leg stop-controlled skewed intersection located on the east side of the city. Hamilton Road and Gore Road are classified as Civic Boulevards in the London Plan. Gore Road carries approximately 14,000 vehicles per day and Hamilton Road carries approximately 15,000 and 6,000 vehicles per day west and east of the intersection respectively. There are also a small number of pedestrians and cyclists that currently use this intersection. Citizen concerns are frequently received related to the skew of the intersection and its influence on sight lines and stop compliance. The intersection is subject to a higher frequency of related collision types.

The need for the intersection improvements was confirmed in the Transportation Master Plan and in the 2019 Development Charges Background Study.

An environmental assessment (EA) study for the intersection work was initiated in accordance with the Ontario's Environmental Assessment Act. The improvements identified in this EA study will create an opportunity to enhance and improve the features of this intersection and to accommodate existing and future traffic demands including active transportation improvements. The improvements will also enhance the overall transportation network and provide better connectivity to adjacent communities by following the City's Complete Streets Design Manual approach. The implementation of complete streets improvements is important to create equitable access across the area.

The EA study area limits extend approximately 200 m in each direction from the intersection as shown on Figure 1. The subject intersection is abutted by residential and commercial properties and the entrance to the Pottersburg Pollution Control Plant. A major Hydro One Networks Inc. transmission corridor traverses the site parallel to Gore Road.

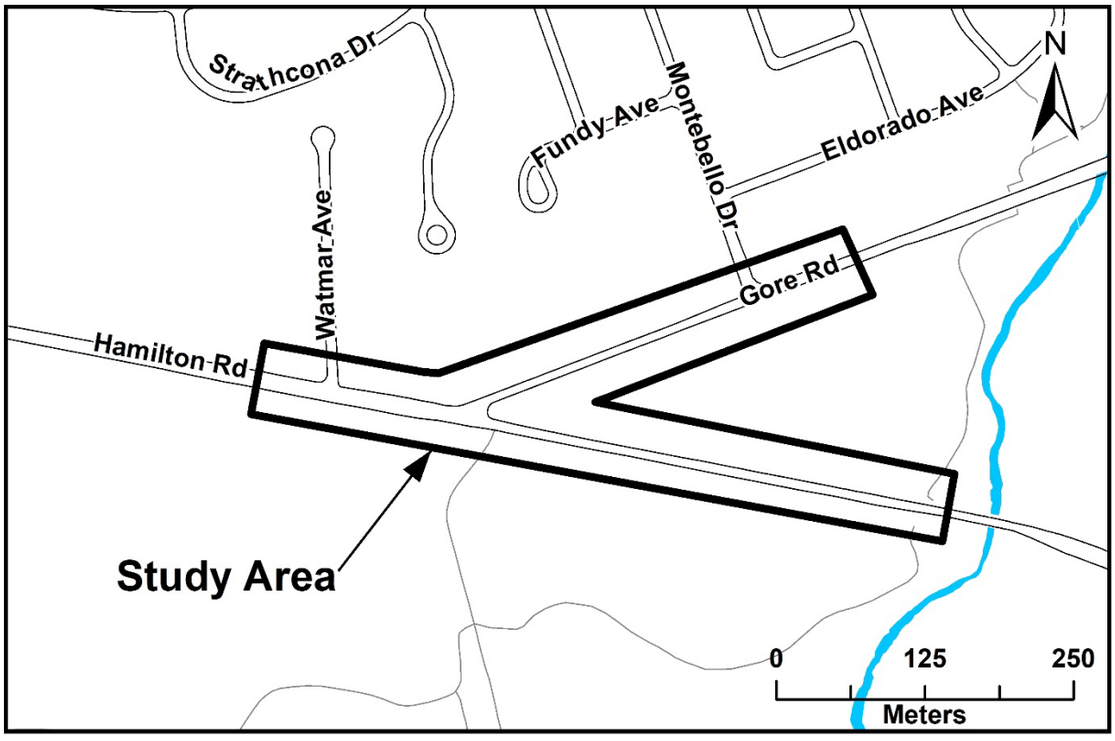

Figure 1: EA Study Area Map

Linkage to the Corporate Strategic Plan

Municipal Council's new Strategic Plan identifies "Mobility and Transportation" as a strategic area of focus. This report supports the Strategic Plan by identifying the building of infrastructure that provides safe, integrated, connected, reliable and efficient transportation choices.

Analysis

1.0 Background Information

1.1 Previous Reports Related to this Matter

- Built and Natural Environment Committee – October 31, 2011- Hamilton Road and Gore Road Intersection

- Civic Works Committee - June 19, 2012- London 2030 Transportation Master Plan
- Civic Works Committee - September 7, 2016 - London ON Bikes Cycling Master Plan
- Strategic Priorities and Policy Committee – May 6, 2019 – Approval of 2019 Development Charges By-Law and DC Background Study
- Civic Works Committee – September 22, 2020 – Hamilton Road & Gore Road Intersection Improvements Environmental Assessment Study Appointment of Consulting Engineer
- Strategic Priorities and Policy Committee – October 20, 2020 – 2021 Development Charges Update Covering Report and Proposed By-Law.

2.0 Discussion and Considerations

2.1 Study Description

The Hamilton Road and Gore Road intersection EA was carried out in accordance with Schedule 'B' of the Municipal Class Environmental Assessment (EA) requirements. The Class EA process is approved under the Ontario Environmental Assessment Act and outlines the process whereby municipalities can comply with the requirements of the Act.

The Class EA study has satisfied the requirements of the Ontario Environmental Assessment Act by providing a comprehensive, environmentally sound planning process with public participation. The Project File Report (PFR) documents the process followed to determine the recommended alternative and the environmentally significant aspects of the planning, design, and construction of the proposed improvements. It describes the problem being addressed, the existing social, natural, and cultural environmental considerations, planning and design alternatives that were considered, and a description of the recommended alternative. The PFR also identifies environmental effects and proposed mitigation measures, commitments to further work, and consultation associated with the implementation of the project. A copy of the draft PFR is available on the project web page: https://getinvolved.london.ca/gorehamilton.

2.2 Problem and Opportunity Statement

Phase I of the Municipal Class EA (MCEA) process involved the identification of the problem and opportunity statement. Based on the review of existing conditions, servicing studies, planning documents, development proposals, preliminary traffic studies and collision data, the following summarizes the problems and opportunities within the study area:

> *Hamilton Road and Gore Road are Civic Boulevards in the eastern side of the City of London. Gore Road intersects Hamilton Road at a three-legged stop-controlled intersection at a challenging skew angle. The intersection has seen an increase in traffic volumes, leading to a greater number of incidents and necessitating a review of the current intersection. Through the EA process, a review of design alternatives will be conducted to determine a preferred alternative for an improved intersection arrangement and controls, while maintaining the objectives of: improving safety to drivers, cyclists and pedestrians, protection of the environment, minimal disruption to residents and surrounding areas, engaging a broad range of stakeholders, optimizing costs, and documenting the study process in compliance with the Municipal Class Environmental Assessment Schedule "B" process.*

2.3 Alternative Solutions

Phase II of the MCEA process includes an inventory of the existing socio-economic, cultural and natural environments to identify alternative solutions to address the problem/opportunity statement. Alternative solutions are identified and evaluated based on their ability to reduce impacts to the socio-economic and natural environment, archaeology, cultural heritage, climate change to provide a cost-effective transportation engineering design. Input from the public, Indigenous Communities, and review agencies was carefully considered during the evaluation process. Alternative solutions considered for the study area included:

Alternative 1 - Roundabout concept:

> A three-leg design with single lane entries on the north and east legs and a dual lane entry on the west leg.

Alternative 2 - Signalized Intersection Concept #1

> The intersection would shift to the east and Hamilton Road would be realigned so that it would “tee” into Gore Road.

Alternative 3 - Signalized Intersection Concept #2

> Minor Realignment of Gore Road, so that it lines up with the existing entrance to the wastewater treatment plant.

Do Nothing

> No improvements – do not continue any further with project.

Hydro One Networks Inc. have an interest and approval authority over any proposed improvements as the occupier of a major transmission corridor owned by Infrastructure Ontario and passing through the intersection. The project team completed the initial evaluation based on an initial constraint imposed by Hydro One to minimize impact to the utility corridor and transmission structures. As a result, Alternative 2 – Signalized Intersection was initially recommended as the preferred alternative during the first public information center (PIC).

Following a lengthy review process by Hydro One, which included multiple detailed design revisions of alternatives, Hydro One provided support of the roundabout alternative, allowing a second review to be completed. The second evaluation also included a more in depth look at each of the screening criteria. The second evaluation resulted in Alternative 1 – Roundabout as the new preferred alternative.

A detailed description of both evaluation processes and the sketches of all alternatives are available in the Draft Project File Report posted on the project web page.

2.4 Recommended Alternative

Alternative 1, a three-leg roundabout design with an accessible side street to nearby residential properties was selected as the recommended alternative for the improvement of the intersection.

The recommended alternative provides transportation facilities for all road users (pedestrians, cyclists, and drivers) as per the City’s Complete Streets requirements and considers traffic capacity and operations, safety, the social and natural environment, climate, existing utilities, and costs. The recommended alternative was selected, developed, and refined through consultation with Indigenous Communities, agencies, advisory committees, interested parties, and the public. The recommended alternative was determined to be Alternative 1 – Roundabout which is shown in Figure 2 below.

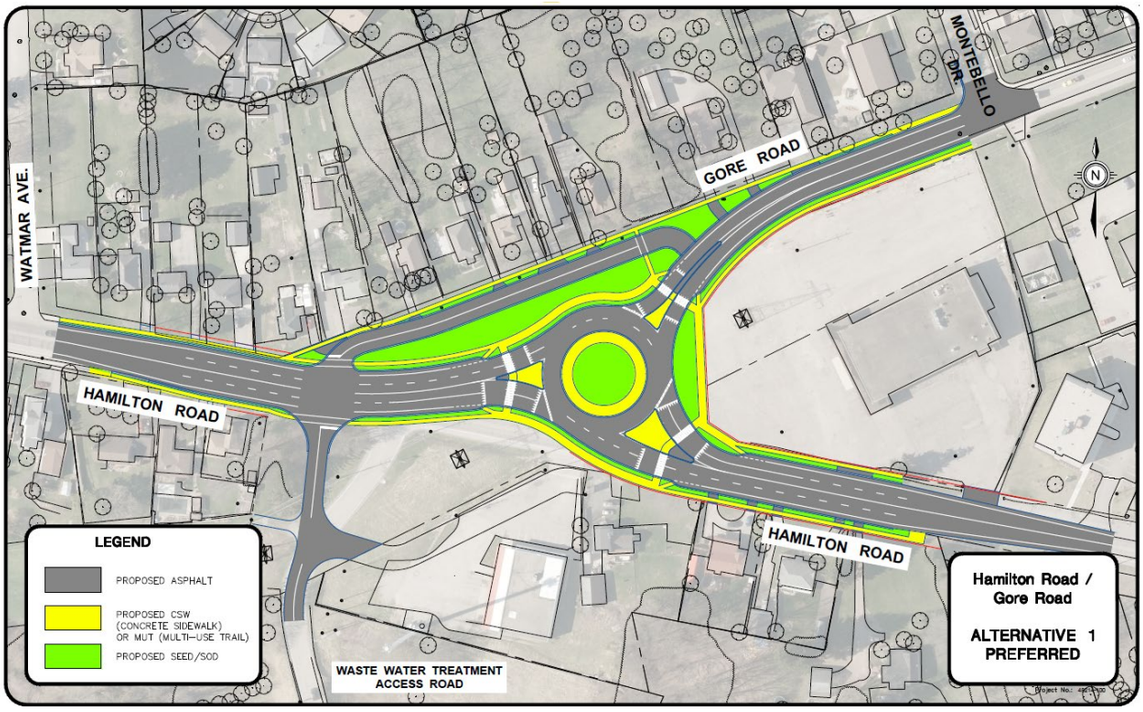

Figure 2: Alternative 1 - Roundabout

The recommended alternative includes the following design considerations:

- Provides the highest consideration for the safety of all road users by discouraging speeding and reducing angle conflicts through the intersection which reduces the likelihood of severe collisions.
- Provides the shortest crossing distances for pedestrians and cyclists compared to the other alternatives.
- Accommodates active transportation connections between nearby pedestrian crossings and recreational multiuse pathways. Wide multi-use paths outside of the roundabout will provide cyclists an option if they decide not to ride through the roundabout.
- Provides good level of service for current and future vehicular traffic flow and with the introduction of new pedestrian and cycling facilities, improved safety and connectivity is provided for these modes of travel.
- Reduces the number of driveways located within the intersection.
- New streetlighting.
- Considers climate change by applying the Climate Emergency Screening Tool criteria, including improving active transportation facilities and resiliency of the stormwater management system.
- Reduces vehicle stopping and idling time which results in less vehicle emissions.

The roundabout design is predicted to function well and accommodate growth for the foreseeable future. The recommended alternative also provides flexibility to accommodate potential future Hamilton Road corridor improvements with minimal impacts.

3.0 Financial Impact/Considerations

3.1 Preliminary Cost Estimates

A preliminary cost estimate for the improvements identified through the study has been prepared, including engineering, utility relocations, roadway construction, sanitary servicing, stormwater management, street lighting, landscaping, and construction staging. The total preliminary cost estimate developed during the environmental assessment is $8,702,000 including contingency, engineering fees, and land acquisition. This cost estimate is based on the current (2024) costs of similar projects and reflects recent inflationary increases in construction material prices, and labour market conditions. The project cost estimate is close to the current budget after allocation of underground servicing costs to appropriate accounts. The transportation project is included in the Development Charges Background Study which identifies that the majority of the project cost is attributable to city growth and will be funded through development charges. The breakdown of the cost estimate is shown below.

Table 1: Environmental Assessment Cost Estimate for Hamilton Road and Gore Road Intersection Improvements (2024 dollars)

Item	Total
Site Preparation & Removals	$449,000
Roadworks	$1,469,000
Storm Sewers	$500,000
Sanitary Sewers	$456,000
Watermain	$485,000
Utility Relocation	$270,000
Street Lighting	$400,000
Miscellaneous/Provisional Items	$759,000
Engineering and Construction Administration (20%)	$957,000
Contingency (20%)	$957,000
SUBTOTAL	**$6,702,000**
Property Acquisition	$2,000,000
TOTAL	**$8,702,000**

4.0 Key Issues and Considerations

4.1 Property Impacts

The avoidance of property requirements was an important consideration in the identification and evaluation of the alternatives by the project team.

To accommodate the alternatives presented, property acquisition will be required to varying degrees. The preferred alternative will require acquisition of residential property, as well as property from Infrastructure Ontario for the Hydro One corridor. The property needs associated with residential properties will be identified more thoroughly during the detailed design phase and will be coordinated with the City's Realty Services team. Preliminary discussions have been held with Infrastructure Ontario, and they are aware of the proposed improvements and impacts to their property. The property needs are shown in Appendix H Figures of the Draft PFR that can be found on the project web page: https://getinvolved.london.ca/gorehamilton.

4.2 Public, Agency and Indigenous Communities Consultation

Consultation was a key component of this Class EA study to provide an opportunity for interested groups, the public and Indigenous Communities to gain an understanding of the study process and provide feedback. The key interested groups included residents, public, advisory committee, agencies, and those who may be affected by the project. Eight Indigenous Communities were sent notifications about this project including Aamjiwnaang First Nation, Bkejwanong Territory (Walpole Island), Caldwell First Nation, Kettle and Stony Point First Nation, Chippewas of the Thames First Nation, Munsee-Delaware Nation, Delaware Nation at Moraviantown and Oneida Nation of the Thames.

A Notice of Study Commencement was issued in September 2020. The study team received correspondence from the public and agencies indicating their interest in the study and requesting to be kept informed.

The first public information centre (PIC) was held on June 25, 2021, and was hosted online to conform with COVID-19 restrictions in effect at the time. The public was able to access the getinvolved.london.ca webpage where a recorded video presentation was available in addition to general information regarding the project. A hyperlink to getinvolved.london.ca was also provided on the City of London's Environmental Assessment webpage. The presentation featured members of the project team explaining the purpose, problem statement, planning and design process, evaluation criteria, identified alternatives, evaluation results, and the preferred solution for the intersection and next steps. Visitors to the webpage were prompted to provide comments through the website, via email or through a downloadable form which could be scanned, faxed or mailed to the City of London.

The second PIC was hosted in-person at the Bob Hayward Branch of the YMCA on Hamilton Road on October 2, 2023. In addition, a pre-recorded video of the PIC material was uploaded to the City of London's website. The presentation featured a recap of PIC#1 as well as updating the public on the progress of the project since PIC#1. Visitors to the PIC were prompted to provide comments through the website, via email or through a physical form.

Drawings detailing the various alternatives were included in the presentation and the project team presented the alternative design concepts with an explanation of the advantages and disadvantages of each design. A prompt requesting comments was included in the getinvolved.london.ca webpage to solicit information and to determine preferences. Written responses and emails received from residents are included in the PFR report. Significant support, including support from adjacent property owners, for the roundabout option was received during the consultation phase.

Project information was also presented to the Integrated Transportation Community Advisory Committee (ITCAC) for feedback on June 21, 2023. There were mixed comments regarding the roundabout option with some concerns expressed regarding the pedestrian crossings. The project team will review and confirm the type of pedestrian crossings consistent with City and Provincial standards during the detailed design phase.

During the upcoming 30-day public review, the Project File Report (PFR) will be made available on the City of London website, at the City Hall, and at the closest public library to the study area. As per the Ministry of the Environment, Conservation and Parks' (MECP) request, the draft PFR has been submitted for their technical review and is also available on the City's web page: getinvolved.london.ca/gorehamilton.

There will be an opportunity to request a higher level of study (i.e., requiring an individual EA or imposing conditions on the project) through a Section 16 order request to the Minister of Environment, Conservation and Parks on the grounds that the order may prevent, mitigate or remedy potentially adverse impacts on constitutionally

protected Aboriginal and treaty rights. Requests that are not made on these grounds will not be considered by the Minister.

4.3 Implementation

It is estimated that the construction of the project could begin in 2026 subject to all approvals and property acquisition and could be undertaken in one construction season. Coordination with adjacent projects, property owners, and regulatory agencies is planned early in the design process. A traffic management and communications plan will be developed during detailed design to inform road users, outline detours during potential closures, and instruct local traffic movement. Access to properties will be maintained during construction.

Conclusion

Improvements to the Hamilton Road and Gore Road intersection are necessary to improve safety and accommodate an increasingly busy thoroughfare in the east side of the city. A Schedule B Municipal Class EA was undertaken to confirm the preferred long-term solution for the intersection. The Project File Report (PFR) has been completed and will be reviewed by the MECP prior to posting for the final public review.

Alternative solutions were developed to address the problems and opportunities at this unique intersection. The recommended alternative for the Hamilton Road and Gore Road intersection is to create a new roundabout with accommodation for pedestrians and cyclists, increased capacity for drivers, safe access points to future developments, full illumination and landscaping opportunities. Roundabouts have proven to be effective at improving safety at intersections, particularly skewed intersections such as this one.

Consultation was a key component of this study. The Class EA was prepared with input from Indigenous Communities, advisory committees, agencies, utilities, emergency service providers and property owners in proximity to the study.

Pending Council approval, a Notice of Study Completion will be filed, and the PFR will be placed on public record for a 30-day review period. Interested parties and the public are encouraged to provide input and comments regarding the study during this time. Accommodation will be made for those requiring a hard copy review. Requests for a higher level of study or conditions may be submitted to the MECP based on potential impacts to constitutionally protected Aboriginal and treaty rights.

Prepared by:	**Garfield Dales, P. Eng., Division Manager, Transportation Planning and Design**
Submitted by:	**Doug MacRae, P. Eng., MPA, Director, Transportation and Mobility**
Recommended by:	**Kelly Scherr, P. Eng., MBA, FEC, Deputy City Manager, Environment and Infrastructure**

c: Vince Pugliese, MTE Consultants Inc.
Paul Yanchuk, City of London
John Bos, City of London

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: **Orr Municipal Drain - Request for Drain Major Improvement and Appointment of Consulting Engineer**
Date: **February 21, 2024**

Recommendation

That on the recommendation of Deputy City Manager, Environment and Infrastructure, the following actions **BE TAKEN** with respect to the Orr Municipal Drain:

(a) The request for a Major Improvement to the Orr Municipal Drain located in the area of Colonel Talbot Road and Southminster Bourne to benefit the drainage of 6526 Southminster Bourne, Township of Westminster, **BE ACCEPTED** by the Council of the Corporation of the City of London under Section 78 of the Drainage Act, and

(b) Spriet Associates London Limited **BE APPOINTED** the Consulting Engineer under Section 8 of the Drainage Act.

Linkage to the Corporate Strategic Plan

This recommendation supports the following 2023-2027 Strategic Plan areas of focus:

- Waterways, wetlands, watersheds, and natural areas are protected and enhanced.
    - Protect the natural environment and avoid natural hazards when building new infrastructure or development.
    - Improve the natural environment and build resiliency when replacing aging infrastructure.

Executive Summary

City staff received a request for a major improvement under Section 78 of the Drainage Act to provide a crossing of the existing Orr Municipal Drain. Staff recommend that Council accept the request and appoint an engineering consultant to assess the requested improvements and implement drainage works in accordance with the Drainage Act.

Analysis

1.0 Background Information

1.1 Previous Reports Related to this Matter

- None.

2.0 Discussion and Considerations

2.1 Purpose

On November 27th, 2023, Staff received a request for drainage from the registered owner of 6526 Southminster Bourne, within the former Geographical Township of Westminster. The request is provided in Appendix ‘A’. The property is currently serviced by the Orr Municipal Drain. A location map is provided in Appendix ‘B’. The signee of the request and owner of 6526 Southminster Bourne would like the current crossing on

the property be replaced as it has reached the end of its structural life cycle and is not suitable for modern farming equipment. Staff recommend that council accept the request.

3.0 Financial Impact/Considerations

3.1 Procurement Process

Spriet Associates London Limited is recommended to be appointed as the consulting engineer to conduct a preliminary site visit and, if suitable, prepare a report and implement drainage works, in accordance with Section 78 of the Ontario Drainage Act. This consultant assignment will be awarded to Spriet Associates London Ltd. administratively, in accordance with 15.2 c) of the City's Procurement of Goods and Services Policy, selection of Professional Consulting Services that are less than $100,000.

In accordance with the Drainage Act, costs associated with this project will be assessed to property owners using the maintenance schedule that will be provided as part of the updated Drainage Report.

Conclusion

City Staff recommend accepting the request to evaluate the drainage concerns at 6526 Southminster Bourne and for the named engineering consultant, Spriet Associates London Ltd., to pursue next steps and implementation, all in accordance with Ontario Drainage Act RSO 1990.

Prepared by:	**Shawna Chambers, DPA, P.Eng.** **Division Manager, Stormwater Engineering**
Submitted by:	**Ashley M. Rammeloo, MMSc., P.Eng.** **Director, Water, Wastewater, and Stormwater**
Recommended by:	**Kelly Scherr, P.Eng., MBA, FEC** **Deputy City Manager, Environment, and Infrastructure**

Appendix 'A' – Landowner Request

Appendix 'B' - Drainage Area Map

cc: Paul Titus, Program Manager, Stormwater Engineering
Jessica Trela, Drainage Superintendent, Stormwater Engineering
M. DeVos – Spriet Associates London Ltd.
A. Kruspel – Spriet Associates London Ltd.

Ontario

Ministry of Agriculture, Food and Rural Affairs

Notice of Request for Drain Major Improvement *Drainage Act*, R.S.O. 1990, c. D.17, subs. 78 (1.1)

To: The Council of the Corporation of the City of London

Re: Orr Drain
(Name of Drain)

In accordance with section 78 (1.1) of the *Drainage Act*, take notice that I, as owner of land affected, request that the above mentioned drain be improved.

The Major Improvement Project work being requested is (check all appropriate boxes):

- ☐ Changing the course of the drainage works;
- ☐ Making a new outlet for the whole or any part of the drainage works;
- ☐ Constructing a tile drain under the bed of the whole or any part of the drainage works;
- ☑ Constructing, reconstructing or extending bridges or culverts;
- ☐ Extending the drainage works to an outlet;
- ☐ Improving or altering the drainage works if the drainage works is located on more than one property;
- ☐ Covering all or part of the drainage works;
- ☐ Consolidating two or more drainage works; and/or
- ☐ Any other activity to improve the drainage works, other than an activity prescribed by the Minister as a minor improvement.

Provide a more specific description of the proposed drain major improvement you are requesting:

Requesting a culvert crossing across Orr drain, capable of accomodating large farm equipment. Needed to safely access full property.

Property Owners

- Your municipal property tax bill will provide the property description and parcel roll number.
- In rural areas, the property description should be in the form of (part) lot and concession and civic address.
- In urban areas, the property description should be in the form of street address and lot and plan number, if available.

Property Description
WESTMINSTER CON ETR N PT LOT 49 RP 33R12565 PART 1

Ward or Geographic Township	Parcel Roll Number
Westminister	080060002000000

If property is owned in partnership, all partners must be listed. If property is owned by a corporation, list the corporation's name and the name and corporate position of the authorized officer. Only the owner of the property may request a drain improvement.

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Ownership

Select Ownership Type — If you need to provide additional information, please attach along with this form.

Sole Ownership

Owner Name (Last, First Name) (Type/Print)	Signature	Date (yyyy/mm/dd)
Oegema Grains Ltd.		2023/11/27

Partnership (Each partner in the ownership of the property must sign the form)

Owner Name (Last, First Name) (Type/Print)	Signature	Date (yyyy/mm/dd)

Corporation (The individual with authority to bind the corporation must sign the form)

Name of Signing Officer (Last, First Name) (Type/Print)	Position Title
Philip Oegema	President

Name of Corporation

Oegema Grains Ltd.

I have the authority to bind the Corporation.

Signature	Date (yyyy/mm/dd)
	2023/11/27

Enter the mailing address and primary contact information of property owner below:

Last Name	First Name	Middle Initial
Oegema	Philip	

Mailing Address

Unit Number	Street/Road Number	Street/Road Name	PO Box
	11277	Wonderland Rd S	

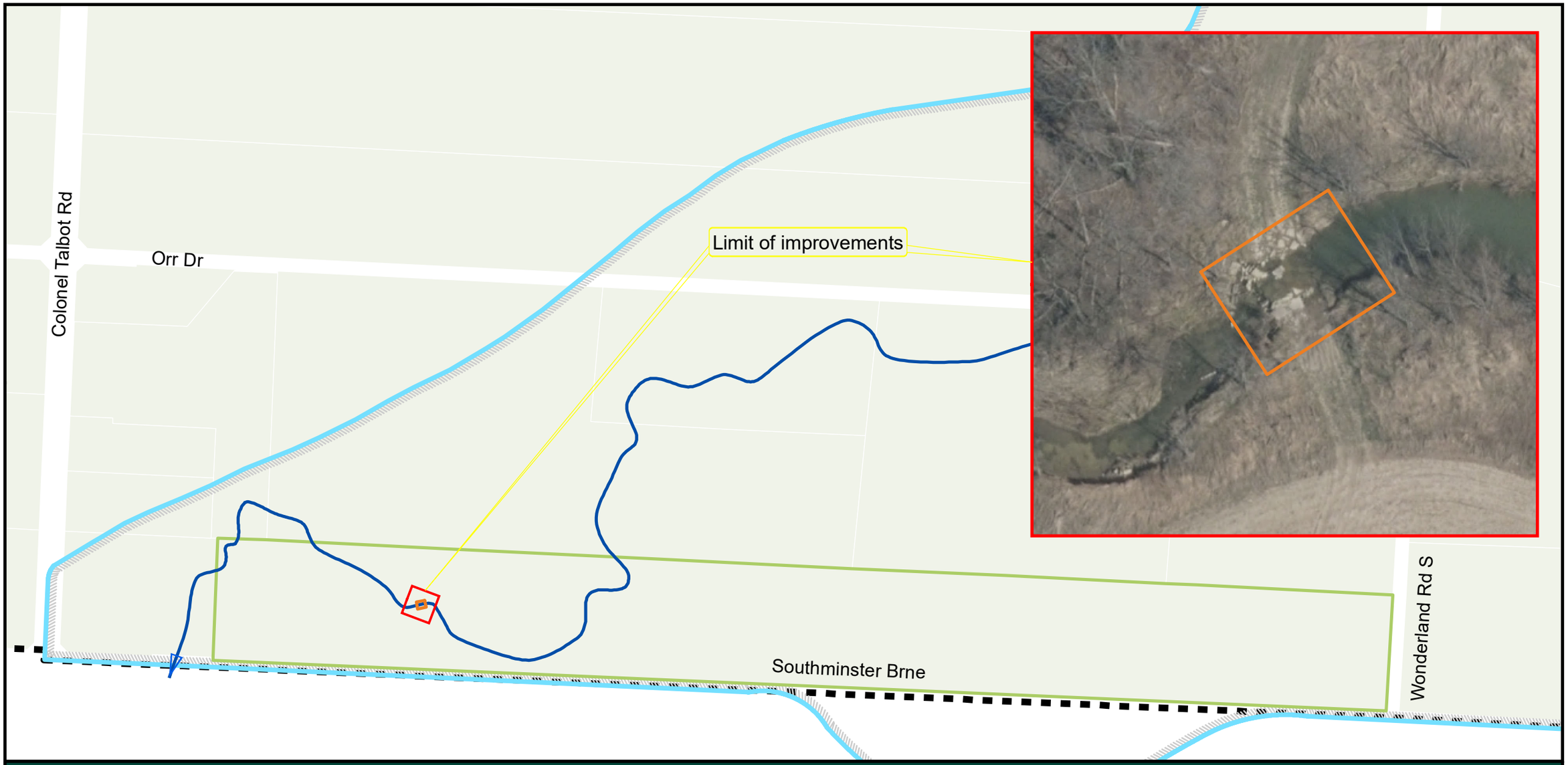
City/Town	Province	Postal Code
St. Thomas	Ont	N5P 3T1

Telephone Number	Cell Phone Number (Optional)	Email Address (Optional)
	[redacted]	phil@oegemagrains.com

To be completed by recipient municipality:

Notice filed this 17 day of January 20 24

Name of Clerk (Last, First Name)	Signature of Clerk
per Chambers, Shawna	per



APPENDIX 'B' - LOCATION MAP - ORR DRAIN - LIMITS OF WORK

0 6,000 12,000 24,000
Meters

Legend:

- Orr Drain 1999
- Work zone
- 6526 Southminster Brne
- City of London Limits
- Parcels
- Drain Catchment Area

Map Produced by JCh
Stormwater Engineering
Printed: January 2024
300 Dufferin Avenue,
PO Box 5035
London, Ontario
N6A 4L9
www.London.ca

Report to Civic Works Committee

To: **Chair and Members**
Civic Works Committee
From: **Kelly Scherr, P.Eng., MBA, FEC**
Deputy City Manager, Environment & Infrastructure
Subject: **Single Source: Adelaide Wastewater Treatment Plant Section 1 Restoration Design and Contract Administration**
Date: **February 21, 2024**

Recommendation

That, on the recommendation of the Deputy City Manager, Environment & Infrastructure, the following actions **BE TAKEN** with respect to the Adelaide Wastewater Treatment Plant Section 1 Restoration project:

a) The contract for engineering design services **BE AWARDED** to CIMA Canada Inc., in the amount of $468,886.00 including contingency but excluding HST, as a single source award in accordance with Article 14.4.e of the Procurement of Goods and Services Policy;

b) the financing for this project **BE APPROVED** as set out in the Sources of Financing Report attached hereto as Appendix ‘A’; and

c) the Mayor and City Clerk **BE AUTHORIZED** to execute any contract or other documents, if required, to give effect to these recommendations.

d) the Civic Administration **BE AUTHORIZED** to undertake all the administrative acts that are necessary in connection with this project.

Executive Summary

Section 1 at Adelaide Wastewater Treatment Plant has been out of service for decades, with all treatment occurring in Section 2. However, flows have increased to the point that the treatment capacity of Section 1 must be restored. Some design work was completed for the restoration by another consultant, but additional engineering effort is required to bring that work to a tender-ready stage.

CIMA was previously awarded the design and contract administration for flood protection at Adelaide through a competitive procurement. The timing of both projects necessitates that the work be undertaken concurrently. As a cost-saving and time-saving measure, staff plan to tender all works under a single construction contract, which would be better handled by a single design engineer and contract administrator.

The purpose of this report is to seek approval to a single source assignment to CIMA Canada Inc. for engineering services related to the restoration of Section 1 at Adelaide Wastewater Treatment Plant.

Linkage to the Corporate Strategic Plan

This report supports the 2023-2027 Corporate Strategic Plan in the following areas:

- Build infrastructure to support future development and protect the environment;
- Improve London’s resiliency to respond to potential future challenges; and

Analysis

1.0 Background Information

1.1 Previous Reports Related to this Matter

Greenway and Adelaide Wastewater Treatment Plants Climate Change Resiliency Consulting Fees Value Increase. Civic Works Committee. August 15, 2023.

Greenway and Adelaide Wastewater Treatment Plants Climate Change Resiliency Detailed Design Consultant Award. Civic Works Committee. October 4, 2022.

Adelaide WWTP Climate Change Resilience Class EA – Notice of Completion. Civic Works Committee. April 20, 2022.

Disaster Mitigation and Adaptation Fund – Contribution Agreement. Civic Works Committee. March 29, 2022.

Greenway and Adelaide Wastewater Treatment Plants Climate Change Resiliency Class Environmental Assessment Consultant Award. Civic Works Committee. March 2, 2021.

Adelaide Wastewater Treatment Plant Upgrades Consultant Award. Civic Works Committee. May 26, 2020.

2.0 Discussion and Considerations

2.1 Project History – Adelaide WWTP Section 1 Restoration

The Adelaide Wastewater Treatment Plant (WWTP) currently provides sanitary servicing for north and northeast London. It has a rated capacity of 36,400 m^3/d, making it London's third-largest treatment plant. The majority of this capacity is through Section 2 at the plant, and while Section 1 still forms part of the rated treatment capacity, it is older and requires upgrades to restore it to full treatment duty. Flows in the Adelaide sewershed have increased over the past five years as a result of increased wastewater from new development and unwanted water getting into the sewer system. These flow increases mean that the treatment capacity of Section 1 will need to be fully restored in order to treat future flows. It is important that a plant has sufficient capacity both to comply with the plant's Provincial operating approval and to reduce the volume and frequency of wastewater by-passes to the Thames River.

In 2020, a Consultant was hired, through a competitive Request for Proposals process, to provide the preliminary and detailed design services to restore Section 1 and allow it to return to service. The upgrades will include the removal of outdated and inoperable equipment, installation of a modern grit removal system, channel and piping modifications, new sludge pumps, new aeration equipment, and new settling tank equipment. That Consultant has provided their final drawing set to the City.

2.2 Project History – Adelaide WWTP Flood Protection

With climate change, the City of London and other communities are experiencing more frequent and intense wet weather events, which increases the potential for flooding. Flooding is a concern at the City's wastewater treatment plants for two main reasons: damage of treatment plant components due to inundation by rising river levels; and, environmental impacts associated with the bypass of untreated or partially treated wastewater for several days following an intense wet weather event. The City of London secured the opportunity for federal funding in the amount of 40% of eligible costs through the Disaster Mitigation and Adaptation Fund to improve the resilience of the Adelaide WWTP through flood protection.

A Request for Proposals was issued for the design and contract administration of flood protection at Adelaide WWTP which followed Municipal Class Environmental

Assessment recommendations accepted in 2022. The contract was awarded to CIMA Canada Inc.

During the preliminary design and value engineering discussions, several items outside the original scope were identified as beneficial to include within this design. These items generally advance capital renewal and upgrades that would have been completed in the near future and the City will benefit from capital cost savings realized by completing these items alongside work already in design. In addition, an opportunity to construct another previously planned project at Adelaide WWTP was pursued in order to save on contract administration costs and reduce overall risk to the City. Further discussion on each additional scope item is detailed in the following sections. All items have the support of City staff for the incorporation into the overall design.

2.3 Concurrent Timelines and Opportunities for Savings

The Section 1 Restoration and Flood Protection projects at Adelaide were originally intended to be separate contracts. However, delays in delivering the design of the Section 1 project and restriction on the timing of the federal funding program for the Flood Protection project have resulted in significant overlap of the two construction periods. City staff previously recommended that the Section 1 restoration project be incorporated into the overall flood protection construction contract and that Contract Administration services should be provided by one Consultant (CIMA Canada Inc.). The reduction in duplicated services is expected to provide an overall benefit to the City in both cost and coordination capacity. Contract administration services have already been awarded to CIMA.

However, upon further review, the drawing package provided previously was found to be lacking details and design features considered important to the overall tender package. As a result, staff requested and received a proposal from CIMA to revise the design and produce a final sealed tender package to be incorporated into the flood protection project. The total value of that proposal is $468,886.00, including contingency but excluding HST.

2.4 Procurement of Services

Staff are recommending the award of these design and tendering services to CIMA Canada Inc. as a single source award in accordance with Article 14.4.e of the Procurement of Goods and Services Policy: “The required services are to be supplied by a particular supplier having special knowledge, skills, expertise or experience.” CIMA’s status as the design engineer and contract administrator for the Adelaide Flood Protection project, coupled with the financial advantages available to the City through consolidating the two construction and contract administration contracts, uniquely positions CIMA to provide these services to the City.

In order to maintain timelines required under the Disaster Mitigation and Adaptation Fund, staff also invoked Article 4.3.d of the Policy and instructed CIMA to proceed with the first stages of the design revision on February 6, 2024. That Article references the Deputy City Manager’s authorization to award services without competitive procurement in the presence of a triggering event.

In this case, the triggering event was the determination that additional design services were required in order to successfully tender the works for the restoration of Section 1. If those works are not incorporated into the Flood Protection project, then the Section 1 Restoration project would need to be delayed by two (2) years to allow Flood Protection to be completed. The Flood Protection project cannot be delayed without jeopardizing over $8 million in federal funding. A failure to tender the Section 1 Restoration project in 2024 poses an operational risk to the City that Adelaide WWTP may not be capable of meeting future treatment capacity needs and a financial risk in that opportunities for efficiency through project consolidation would be lost and material cost escalations are expected to occur over 2-3 years.

3.0 Financial Impact/Considerations

The detailed source of financing is in included in Appendix A of this report. The additional engineering services scope can be funded from existing capital sources as shown.

Conclusion

The upgrades described in this report will provide the City with a more robust and resilient treatment facility that will service future growth in north-west London. By completing both the Flood Protection and Section 1 restoration projects concurrently, the overall cost and risk to the City is expected to be reduced. It is recommended that a consulting assignment to create a tender-ready design for the restoration of Section 1 at Adelaide WWTP be awarded to CIMA Canada Inc. in the total amount of $468,886.00 plus HST be approved for this project.

Prepared by:	**Kirby Oudekerk, MPA, P.Eng.** **Division Manager, Wastewater Treatment Operations**
Submitted by:	**Ashley Rammeloo, MMSc., P. Eng.** **Director, Water, Wastewater and Stormwater**
Recommended by:	**Kelly Scherr, P. Eng., MBA, FEC** **Deputy City Manager, Environment & Infrastructure**

Appendix ‘A’ Source of Financing

cc: Steve Mollon, Senior Manager, Procurement and Supply
Jason Davies, Manager III, Financial Planning and Policy
Zeina Nsair, Financial Business Administrator, Finance and Corporate Services

Appendix "A"

#24027
February 21, 2024
(Award Contract)

Chair and Members
Civic Works Committee

RE: Single Source: Adelaide Wastewater Treatment Plant Section 1 Restoration Design and Contract Administration
(Subledger FS20AD02)
Capital Project ES5234 - Adelaide WWTP Flood Protection
CIMA Canada Inc. - $468,886.00 (excluding HST)

Finance Supports Report on the Sources of Financing:

Finance Supports confirms that the cost of this project can be accommodated within the financing available for it in the Capital Budget and that, subject to the approval of the recommendation of the Deputy City Manager, Environment and Infrastructure, the detailed source of financing for this purchase is:

Estimated Expenditures	Approved Budget	Committed To Date	This Submission	Balance for Future Work
Engineering	1,362,525	885,387	477,138	0
Construction	9,059,969	12,980	0	9,046,989
Total Expenditures	$10,422,494	$898,367	$477,138	$9,046,989
Sources of Financing				
Debenture Quota (Note 1)	1,000,000	0	0	1,000,000
Drawdown from Sewage Works Renewal Reserve Fund	9,422,494	898,367	477,138	8,046,989
Total Financing	$10,422,494	$898,367	$477,138	$9,046,989

Financial Note:

Contract Price	$468,886
Add: HST @13%	60,955
Total Contract Price Including Taxes	529,841
Less: HST Rebate	-52,703
Net Contract Price	$477,138

Note 1: Note to City Clerk: Administration hereby certifies that the estimated amounts payable in respect of this project does not exceed the annual financial debt and obligation limit for the Municipality from the Ministry of Municipal Affairs in accordance with the provisions of Ontario Regulation 403/02 made under the Municipal Act, and accordingly the City Clerk is hereby requested to prepare and introduce the necessary by-laws.

An authorizing by-law should be drafted to secure debenture financing for project ES5234 -Adelaide WWTP Flood Protection for the net amount to be debentured of $1,000,000.

Jason Davies
Manager of Financial Planning & Policy

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Report to Civic Works Committee

To: **Chair and Members**
Civic Works Committee
From: **Kelly Scherr, P. Eng., MBA, FEC**
Deputy City Manager, Environment & Infrastructure
Subject: **RFP18-34 Contract Amendment: Detailed Design for Highbury Avenue South Reconstruction**
Date: **February 21, 2024**

Recommendation

That, on the recommendation of the Deputy City Manager, Environment & Infrastructure, the following actions **BE TAKEN** with respect to the contract amendment for the detailed design and tendering of the Highbury Avenue South Reconstruction:

a) The contract with Parsons Inc. **BE INCREASED** by $746,161.41 to a total agreement value of $1,567,367.91 (excluding HST) to complete additional detailed design activities for Highbury Avenue South Reconstruction including rehabilitation of the Bradley Avenue and Commissioners Road bridges, in accordance with Section 20.3 (e) of the City's Procurement of Goods and Services Policy;

b) the financing for this assignment **BE APPROVED** as set out in the Sources of Financing Report attached hereto as Appendix A;

c) the Civic Administration **BE AUTHORIZED** to undertake all the administrative acts that are necessary in connection with this assignment;

d) the approvals given herein **BE CONDITIONAL** upon the Corporation entering into a formal contract with the consultant for the work; and,

e) the Mayor and City Clerk **BE AUTHORIZED** to execute any contract or other documents including agreements, if required, to give effect to these recommendations.

Executive Summary

This report seeks the approval of Council to increase the existing Highbury Avenue South Reconstruction engineering consultant contract with Parsons Inc. by $746,161.41 to $1,567,367.91 to complete additional detailed design activities associated with the rehabilitation of the Bradley Avenue and Commissioners Road bridges over Highbury Avenue. The current contract includes the detailed design for the reconstruction of Highbury Avenue South not including these bridges. The Commissioners Road and Bradley Avenue bridges have recently been recommended for rehabilitation to improve their condition and to extend the service life of the structures. Additional design effort and revisions to the Highbury Avenue South design package are necessary to accommodate as well as coordination with the on-going provincial Highway 401/Highbury Avenue interchange construction project. The inclusion of this additional work within the current project provides good value and will result in construction cost efficiencies and minimized traffic impacts and disruption.

The tender preparation for the reconstruction of Highbury Avenue South, including the rehabilitation of the Commissioners Road and Bradley Avenue bridges is anticipated to be completed later this year to allow for construction to start in 2025 subject to updated costing and sufficient budget.

Linkage to the Corporate Strategic Plan

Municipal Council's new Strategic Plan identifies "Mobility and Transportation" as a strategic area of focus. This report supports the Strategic Plan by identifying the building of infrastructure that provides safe, integrated, connected, reliable and efficient

transportation choices.

Analysis

1.0 Background Information

1.1 Previous Reports Related to this Matter

- Civic Works Committee - October 30, 2018 – Rehabilitation of Wenige Expressway Bridge and Highbury Avenue South, Preliminary, Detailed Design and Tendering Appointment of Consulting Engineer
- Civic Works Committee - March 10, 2020 – Contract Award Tender No. 20-15 Wenige Expressway Bridge Rehabilitation
- Civic Works Committee - December 14, 2021 – Highbury Avenue South Rehabilitation Project

2.0 Discussion and Considerations

2.1 Background

The Highbury Avenue South Reconstruction project includes road reconstruction from south of the Wenige Expressway Bridge (Thames River) to the north limit of the Highway 401 Interchange as shown in Figure 1 below.

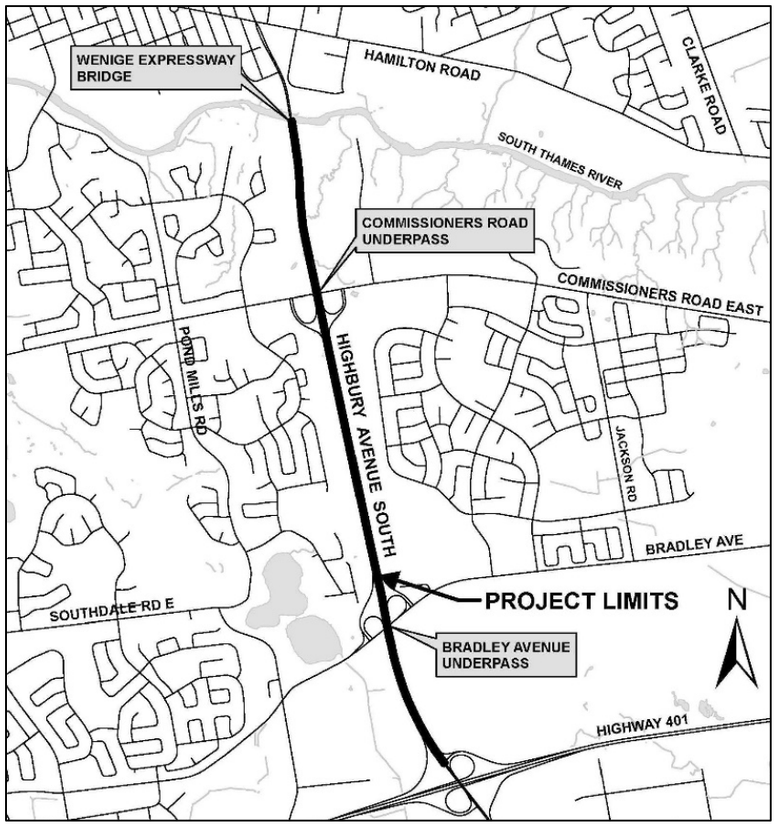

Figure 1:Highbury Avenue South Reconstruction Project Limits

The existing concrete roadway south of the Wenige Expressway Bridge to Highway 401 was built in the mid 1960's. The road has been subject to heavy traffic loading and the current average daily traffic count is 48,000 vehicles. The concrete roadway is in poor condition. Parsons Inc. was appointed to complete the detailed design and tendering for the rehabilitation of Highbury Avenue South. Based on recent bridge inspection information, it has been recommended that the Commissioners Road and Bradley Avenue bridges be rehabilitated to extend the useful life of the structures and improve their condition. Incorporation of this work into the current contract creates efficiencies.

The Commissioners Road Underpass at Highbury Avenue was constructed in 1965 and

while some repairs have been carried out during its life, a major rehabilitation has not yet occurred. In 2023, a detailed bridge condition survey and preliminary structural design report was completed and recommended that major rehabilitation be completed to extend the structure's service life by another 30 years. The proposed rehabilitation of the Commissioners Road bridge includes:

- Concrete patch repairs to the deck;
- Replacement of the waterproofing and asphalt system;
- Replacement of the expansion joints;
- Replacement of the barrier wall system;
- Widening of sidewalks;
- Patch repairs to the deck soffit and girders, sidewalk, median, piers, pier caps, diaphragms, abutments, and wingwalls, where required; and,
- Repair of deteriorated concrete slope paving.

The Bradley Avenue Underpass at Highbury Avenue was constructed in 1965 and is in fair to poor condition. The structure requires regular maintenance which includes scaling of loose concrete to keep it from falling to the Highbury driving lanes below. In 2023, a detailed bridge condition survey and preliminary structural design report was completed which recommended that minor rehabilitation be completed to extend the structure's service life by another 15 years, which is when the bridge is scheduled for replacement. The proposed rehabilitation of Bradley Avenue bridge includes:

- Replacement of asphalt;
- Placement of concrete barrier in front of the existing barrier system; and,
- Patch repairs to the deck soffit, girders, and fascia.

Completing the two bridge rehabilitations during the roadway reconstruction of Highbury Avenue South will provide overall cost and construction efficiencies thereby providing good value for the city and will reduce future traffic impacts and disruption.

2.2 Procurement Process

In 2018, Request for Proposal RFP18-34 was conducted and Parsons Inc. was awarded the project for the initial design of the reconstruction of the Wenige Expressway Bridge and Highbury Avenue from Hamilton Road to Highway 401 in the amount of $537,028.50, in accordance with Section 15.2(e) of the Procurement of Goods and Services Policy. The timing of this procurement was dictated by the need to address the deteriorating condition of the Wenige Expressway Bridge which was reconstructed in 2020 and 2021 as the first phase of the project.

In 2021, Parsons Inc. was retained to complete the detailed design and tendering of the second phase of the project on Highbury Avenue South from the Wenige Expressway Bridge to Highway 401 in the amount of $284,178.00, in accordance with Section 15.2 (g) of the Procurement of Goods and Services Policy.

Parsons Inc. has prepared a proposal for the detailed design required to incorporate the two bridge rehabilitations into the Highbury Avenue South Reconstruction project. Extending the current design assignment with Parsons Inc. provides cost efficiencies and good value to the city as there is significant background knowledge within the firm related to the project. The negotiated consultant fees for this scope change includes engineering services required to complete the detailed design, contract drawings, and incorporation of the additional bridge work into the Highbury Avenue South tender package. Additional effort and revisions for the detailed design of the Highbury Avenue rehabilitation are also included in the fees, which include:

- Coordinating traffic staging with the Ministry of Transportation for the Highway 401/Highbury Avenue interchange construction project which is underway;
- Engineering investigation and review to comply with updated excess soil regulations; and,

- Reconstruction of the Commissioners Road / Highbury Avenue signalized intersection at the west side ramps to comply with AODA standards.

The additional fees have been reviewed and negotiated to ensure that they are reasonable for the scope of work required and competitive with rates for other similar projects. The approval of this additional work valued at $746,161.41 will bring the new total value of the overall consulting assignment to $1,567,367.91.

City administration is recommending awarding the additional work to Parsons Inc. as an amendment to the original award, as per Section 20.3 e) ii) of the Procurement of Goods & Services Policy.

> ii. the total amended value of the contract will exceed the Council approved source of financing by an amount greater than $50,000 or 3% of original contract value, whichever is greater, and there are funds available.

3.0 Financial Impact/Considerations

Funds are available from existing capital budgets. There are no ongoing operating costs associated with the award of this assignment. The Source of Financing Report is appended to this report as Appendix A.

Conclusion

It is recommended that the Commissioners Road and Bradley Avenue underpass bridges be rehabilitated to improve their condition and extend the service life of the structures. Completing these bridge rehabilitations as part of the upcoming roadway reconstruction of Highbury Avenue South will provide cost and construction efficiencies representing good value for the city while reducing future traffic impacts and disruption. Through the ongoing project, Parsons Inc. has demonstrated a good understanding of the requirements for this project and has effectively completed the detailed design for the Highbury Avenue South Reconstruction project. The original contract value with Parsons Inc. was $537,028.50 and included the design of the Wenige Expressway Bridge and Highbury Avenue from Hamilton Road to Highway 401. In 2021, Parsons Inc.'s contract was extended by $284,178.00 to complete the detailed design assignment and tendering of the project's second phase involving the reconstruction of Highbury Avenue South.

It is recommended that Parsons Inc.'s contract be increased by $746,161.41 which will result in a total contract value of $1,567,367.91 (excluding HST) to complete additional detailed design activities including the rehabilitation of the Bradley Avenue and Commissioners Road bridges over Highbury Avenue. Cost and construction efficiencies is achieved through one consolidated construction contract as there is significant background knowledge within the firm and many of the same staff working on the project. The request for tender is anticipated to be completed later this year with construction planned to start in the spring of 2025 subject to budget availability.

Prepared by:	**Garfield Dales, P. Eng., Division Manager Transportation Planning & Design**
Submitted by:	**Doug MacRae, P. Eng., MPA, Director Transportation & Mobility**
Recommended by:	**Kelly Scherr, P. Eng., MBA, FEC, Deputy City Manager, Environment & Infrastructure**
Appendix A:	Source of Financing Report
c:	Steve Mollon, Senior Manager, Procurement & Supply Steven Funk, Technologist II Andrew Denomme, P.Eng., Transportation Design Engineer Paul Yanchuk, P.Eng., Transportation Design Engineer Osama Gamal, P.Eng., Parsons Inc.

#24022
February 21, 2024
(Contract Increase)

Chair and Members
Civic Works Committee

RE: RFP18-34 Contract Amendment: Detailed Design for Highbury Avenue South Reconstruction
(Subledger RD210015)
Capital Project TS144620 - Road Network Improvements(Main)
Capital Project TS176323 - Bridges Major Upgrades
Capital Project TS406723 - Traffic Signals - MTCE
Parsons Inc. - $746,161.41 (excluding HST)

Finance Supports Report on the Sources of Financing:

Finance Supports confirms that the cost of this project can be accommodated within the financing available for it in the Capital Budget and that, subject to the approval of the recommendation of the Deputy City Manager, Environment and Infrastructure, the detailed source of financing is:

Estimated Expenditures	Approved Budget	Committed To Date	This Submission	Balance for Future Work
TS144620 - Road Network Improvements(Main)				
Engineering	1,081,019	994,430	86,588	0
Construction	8,543,134	7,874,216	0	668,918
Construction (Utilities)	38,855	36,793	0	2,062
City Related Expenses	5,294	5,294	0	(0)
TS144620 - Total	9,668,302	8,910,733	86,588	670,981
TS176323 - Bridges Major Upgrades				
Engineering	1,112,097	457,672	654,425	0
Construction	4,276,564	4,070	0	4,272,493
City Related Expenses	20,000	2,624	0	17,376
TS176322 - Total	5,408,661	464,366	654,425	4,289,870
TS406723 - Traffic Signals - MTCE				
Engineering	500,000	29,455	18,281	452,264
Construction	3,766,089	1,721,116	0	2,044,973
Traffic Signals	63,572	63,572	0	0
TS406723 - Total	4,329,661	1,814,144	18,281	2,497,237
Total Expenditures	$9,738,322	$2,278,510	$672,706	$6,787,106
Sources of Financing				
TS144620 - Road Network Improvements(Main)				
Canada Community-Building Fund	9,613,695	8,856,126	86,588	670,981
Other Contributions	54,607	54,607	0	0
TS144620 - Total	9,668,302	8,910,733	86,588	670,981
TS176323 - Bridges Major Upgrades				
Drawdown from Transportation Renewal Reserve Fund	2,486,898	0	0	2,486,898
Canada Community-Building Fund	2,921,763	464,366	654,425	1,802,972
TS176322 - Total	5,408,661	464,366	654,425	4,289,870

Sources of Financing Countinued	Approved Budget	Committed To Date	This Submission	Balance for Future Work

#24022
February 21, 2024
(Contract Increase)

Chair and Members
Civic Works Committee

RE: RFP18-34 Contract Amendment: Detailed Design for Highbury Avenue South Reconstruction
(Subledger RD210015)
Capital Project TS144620 - Road Network Improvements(Main)
Capital Project TS176323 - Bridges Major Upgrades
Capital Project TS406723 - Traffic Signals - MTCE
Parsons Inc. - $746,161.41 (excluding HST)

TS406723 - Traffic Signals - MTCE				
Capital Levy	3,632,783	1,814,144	0	1,818,639
Drawdown from Transportation Renewal Reserve Fund	696,878	0	18,281	678,597
TS406723 - Total	4,329,661	1,814,144	18,281	2,497,236
Total Financing	$9,738,322	$2,278,510	$672,706	$6,787,106

Financial Note:	**TS144620**	**TS176323**	**TS406723**	**Total**
Contract Increase	85,090	$643,106	$17,965	$746,161
Add: HST @13%	11,062	83,604	2,335	97,001
Total Contract Price Including Taxes	96,152	726,710	20,300	843,162
Less: HST Rebate	-9,564	-72,285	-2,019	-83,868
Net Contract Price	$86,588	$654,425	$18,281	$759,294

Jason Davies
Manager of Financial Planning & Policy

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Report to Civic Works Committee

To: **Chair and Members**
Civic Works Committee
From: **Kelly Scherr, P.Eng., MBA, FEC**
Deputy City Manager, Environment & Infrastructure
Subject: **Ontario Transfer Payment Agreement for Municipal Energy Plan Funding for Detailed Cost-Benefit Analysis of Climate Emergency Action Plan Actions**
Date: **February 21, 2024**

Recommendation

That on the recommendation of the Deputy City Manager, Environment & Infrastructure, the attached proposed by-law (Appendix "A") **BE INTRODUCED** at the Municipal Council meeting on March 5, 2024 to:

a) **APPROVE** the Ontario Transfer Payment Agreement between His Majesty the King in right of Ontario as represented by the Minister of Energy ("Province") and The Corporation of the City of London for the provision of funding for updating the energy mapping and financial models (i.e. cost-benefit analysis) in support of the Climate Emergency Action Plan attached as Schedule "1";

b) **AUTHORIZE** the Mayor and Clerk to execute the Agreement; and

c) **AUTHORIZE** the Deputy City Manager, Environment & Infrastructure, as the Duly Authorized Officer to approve reimbursement claims to be submitted to the Ontario Ministry of Energy to receive approved funding as identified in Schedule "E" of the attached Transfer Payment Agreement.

Executive Summary

The Ontario Ministry of Energy offers funding through their Municipal Energy Plan program (MEP Program) to help Ontario municipalities further understand their energy use to improve energy efficiency, reduce energy consumption and greenhouse gas emissions, foster green energy solutions, and support economic development.

The Climate Emergency Action Plan (CEAP) specifically refers to the need for detailed energy and greenhouse gas (GHG) emissions analysis and cost-benefit assessment to help guide the implementation of this plan. An enterprise-wide team of City staff are working with Sustainability Solution Group (SSG) to implement a tailored CityInSight emissions reduction and financial model for climate actions in London to identify the financial impacts of potential community low-carbon pathways. The total cost of this project is $90,000 and is being covered by existing City funds.

City staff have applied to and received an offer of $25,000 funding from the MEP Program to assist with this work through a Transfer Payment Agreement.

Linkage to the Corporate Strategic Plan

Municipal Council recognizes the importance of climate change mitigation, climate change adaptation, sustainable energy use, related environmental issues and the need for a more sustainable and resilient city in its 2023-2027 Strategic Plan for the City of London. Specifically, London's efforts in both climate change mitigation and adaptation address these areas of the Strategic Plan, at one level or another:

- Reconciliation, Equity, Accessibility and Inclusion
- Housing and Homelessness
- Economic Growth, Culture, and Prosperity
- Mobility and Transportation

- Wellbeing and Safety
- Climate Action and Sustainable Growth
- Well-Run City

The CEAP was unanimously approved by Council in April 2022 following the declaration of a climate emergency in 2019. The CEAP's Area of Focus 10 – Measuring, Monitoring and Providing Feedback includes the following action:

> *1.b. Develop an updated detailed assessment of the economic cost and benefits of climate change mitigation actions (e.g., marginal abatement costs) needed to reach net-zero emissions by 2050.*

Analysis

1.0 Background Information

1.1 Previous Reports Pertinent to this Matter

Relevant reports that can be found at www.london.ca under Council meetings include:

- 2023 Climate Emergency Action Plan Update Report (January 16, 2024 meeting of the Strategic Priorities and Policy Committee)
- May 30, 2023, 2022 Climate Emergency Action Plan Progress Report, Report to the Strategic Priorities and Policy Committee (SPPC)
- April 5, 2022, Overview of Engagement and Feedback on Draft Climate Emergency Action Plan, Report to the SPPC
- February 8, 2022, Draft Climate Emergency Action Plan Report to the SPPC

1.2 Purpose

The purpose of this report is to approve a Transfer Payment Agreement between the City and the Province to receive MEP Program funding for updating the energy mapping and financial models (i.e., cost-benefit analysis) in support of the CEAP.

2.0 Discussions and Considerations

The Ontario Ministry of Energy offers funding through their Municipal Energy Plan program (MEP Program) to help Ontario municipalities further understand their energy use to improve energy efficiency, reduce energy consumption and GHG emissions, foster green energy solutions, and support economic development.

The City of London was one of a number of Ontario municipalities that pioneered the use of energy mapping, detailed energy and greenhouse gas (GHG) emissions analysis, and cost-benefit assessment through participation in the Integrated Energy Mapping for Ontario Communities project from 2008 to 2010. However, this information is now outdated.

The CEAP specifically refers to the need for detailed energy and GHG emissions analysis and cost-benefit assessment to help guide the implementation of this plan. An enterprise-wide team of staff are working with Sustainability Solution Group (SSG) to implement a tailored CityInSight emissions reduction and financial model for climate actions in London to identify the financial impacts of potential community low-carbon pathways.

2.1 Risk Management

In Schedule 'A' of the Transfer Payment Agreements, Article 9.1 – Indemnity requires the City to indemnify and hold harmless the Minister (including agents, appointees and employees) from and against any loss or proceeding, unless solely caused by their gross negligence or wilful misconduct. Although this clause exposes the City to risk, the benefits of the agreement outweigh the risks. The City mitigates these risks through project management and control measures, liability transfers and applicable insurance.

3.0 Financial Impact/Considerations

The total cost of SSG's CityInSight project is $90,000 and is being covered by existing City budget for CEAP implementation. Enbridge Gas provided $10,000 towards this project in 2023 through their Municipal Energy Solutions Incentive program.

City staff have applied to and received an offer of $25,000 funding from the MEP Program to assist with this work through a Transfer Payment Agreement.

Conclusion

Participating in eligible funding programs such as the MEP Program will be key to being able to implement London's Climate Emergency Action Plan in a matter that leverages City expenditures to access additional funds to carry out activities.

Prepared by:	**Jamie Skimming, P.Eng.** **Manager, Energy & Climate Change**
Prepared and Submitted by:	**Jay Stanford, MA, MPA, Director** **Climate Change, Environment & Waste Management**
Recommended by:	**Kelly Scherr, P.Eng., MBA, FEC, Deputy City Manager, Environment & Infrastructure**

Appendix A: A By-law to approve the Transfer Payment Agreement with the Province for the purpose of updating the energy mapping and financial models (i.e. cost-benefit analysis) in support of the Climate Emergency Action Plan

APPENDIX A

Bill No.

By-law No.

A By-law to approve the Transfer Payment Agreement with the Province for the purpose of updating the energy mapping and financial models (i.e., cost-benefit analysis) in support of the Climate Emergency Action Plan; and to authorize the Mayor and City Clerk to act on behalf the City of London and execute the Agreement.

WHEREAS section 2 of the Municipal Act, 2001, S.O. 2001, c.25, as amended, provides that municipalities are created by the Province of Ontario to be responsible and accountable governments with respect to matters within their jurisdiction and each municipality is given powers and duties under this Act and many other Acts for the purpose of providing good government with respect to those matters;

AND WHEREAS section 9 of the Municipal Act, 2001 provides that a municipality has the capacity, rights, powers and privileges of a natural person for the purpose of exercising its authority under this or any other Act;

AND WHEREAS section 10 of the Municipal Act, 2001 provides that a municipality may provide any service or thing that the municipality considers necessary or desirable for the public; and may pass by-laws respecting economic, social and environmental well-being of the municipality, and may pass by-laws respecting services and 'things the municipality is authorized to provide';

AND WHEREAS subsection 5(3) of the Municipal Act, 2001 provides that a municipal power shall be exercised by by-law:

NOW THEREFORE the Municipal Council of The Corporation of the City of London enacts as follows:

1. The Transfer Payment Agreement, attached as Schedule A, to be entered into between The Corporation of the City of London and His Majesty the King in right of Ontario as represented by the Minister of Energy, for the purpose of updating the energy mapping and financial models (i.e., cost-benefit analysis) in support of the Climate Emergency Action Plan is approved.

2. The Mayor and the City Clerk are authorized to execute the agreement approved under section 1 above.

3. The Deputy City Manager, Environment & Infrastructure, is the Duly Authorized Officer to approve reimbursement claims to be submitted to the Ontario Ministry of Energy to receive approved funding as identified in Schedule “E” of the attached Transfer Payment Agreement.

4. This by-law shall come into force and effect on the day it is passed.

PASSED in Open Council March 5, 2024

Josh Morgan
Mayor

Michael Schulthess
City Clerk

First reading – March 5, 2024
Second reading – March 5, 2024
Third reading – March 5, 2024

Schedule A

ONTARIO TRANSFER PAYMENT AGREEMENT

THE AGREEMENT is effective as of the 26th day of March, 2024

B E T W E E N :

His Majesty the King in right of Ontario
as represented by the Minister of Energy

(the **"Province")**

- and -

The Corporation of the City of London

(the **"Recipient")**

CONSIDERATION

In consideration of the mutual covenants and agreements contained in this Agreement and for other good and valuable consideration, the receipt and sufficiency of which are expressly acknowledged, the Province and the Recipient agree as follows:

1.0 ENTIRE AGREEMENT

1.1 The agreement, together with:

Schedule "A" - General Terms and Conditions
Schedule "B" - Project Specific Information and Additional Provisions
Schedule "C" - Project
Schedule "D" - Budget
Schedule "E" - Payment Plan
Schedule "F" - Reports, and

any amending agreement entered into as provided for in section 4.1, constitutes the entire agreement between the Parties with respect to the subject matter contained in the Agreement and supersedes all prior oral or written representations and agreements.

2.0 CONFLICT OR INCONSISTENCY

2.1 **Conflict or Inconsistency.** In the event of a conflict or inconsistency between the Additional Provisions and the provisions in Schedule "A", the following rules will apply:

(a) the Parties will interpret any Additional Provisions in so far as possible, in a way that preserves the intention of the Parties as expressed in Schedule "A"; and

(b) where it is not possible to interpret the Additional Provisions in a way that is consistent with the provisions in Schedule "A", the Additional Provisions will prevail over the provisions in Schedule "A" to the extent of the inconsistency.

3.0 COUNTERPARTS

3.1 The Agreement may be executed in any number of counterparts, each of which will be deemed an original, but all of which together will constitute one and the same instrument.

3.2 The Agreement may be validly executed and delivered by means of transmission of signed facsimile or by email transmission of an electronic signature.

4.0 AMENDING THE AGREEMENT

4.1 The Agreement may only be amended by a written agreement duly executed by the Parties.

5.0 ACKNOWLEDGEMENT

5.1 The Recipient acknowledges that:

(a) by receiving Funds, it may become subject to legislation applicable to organizations that receive funding from the Government of Ontario, including the Broader Public Sector Accountability Act, 2010 (Ontario), the Public Sector Salary Disclosure Act, 1996 (Ontario), and the Auditor General Act (Ontario);

(b) His Majesty the King in right of Ontario has issued expenses, perquisites, and procurement directives and guidelines pursuant to the Broader Public Sector Accountability Act, 2010 (Ontario);

(c) the Funds are:

(i) to assist the Recipient to carry out the Project and not to provide goods or services to the Province;

(ii) funding for the purposes of the *Public Sector Salary Disclosure Act, 1996* (Ontario);

(d) the Province is not responsible for carrying out the Project; and

(e) the Province is bound by the *Freedom of Information and Protection of Privacy Act* (Ontario) and that any information provided to the Province in connection with the Project or otherwise in connection with the Agreement may be subject to disclosure in accordance with that Act.

- SIGNATURE PAGE FOLLOWS –

The Parties have executed the Agreement on the dates set out below.

HIS MAJESTY THE KING IN RIGHT OF ONTARIO as represented by the Minister of Energy

Name: Krista, Adams
Title: Director, Conservation Programs and Partnerships Branch

Date

The Corporation of the City of London

Name: Josh Morgan
Title: Mayor

Date

Name: Michael Schulthess
Title: City Clerk

Date

We have authority to bind the Recipient.

SCHEDULE "A"
GENERAL TERMS AND CONDITIONS

A1.0 INTERPRETATION AND DEFINITIONS

A1.1 **Interpretation.** For the purposes of interpretation:

(a) words in the singular include the plural and vice-versa;
(b) words in one gender include all genders;
(c) the headings do not form part of the Agreement; they are for reference only and will not affect the interpretation of the Agreement;
(d) any reference to dollars or currency will be in Canadian dollars and currency; and
(e) "include", "includes" and "including" denote that the subsequent list is not exhaustive.

A1.2 **Definitions.** In the Agreement, the following terms will have the following meanings:

"Additional Provisions" means the terms and conditions set out in Schedule "B".

"Agreement" means this agreement entered into between the Province and the Recipient, all of the schedules listed in section 1.1, and any amending agreement entered into pursuant to section 4.1.

"Budget" means the budget attached to the Agreement as Schedule "D".

"Business Day" means any working day, Monday to Friday inclusive, excluding statutory and other holidays, namely: New Year's Day; Family Day; Good Friday; Easter Monday; Victoria Day; Canada Day; Civic Holiday; Labour Day; Thanksgiving Day; Remembrance Day; Christmas Day; Boxing Day and any other day on which the Province has elected to be closed for business.

"Effective Date" means the date set out at the top of the Agreement.

"Event of Default" has the meaning ascribed to it in section A13.1.

"Expiry Date" means the expiry date set out in Schedule "B".

"Funding Year" means:

(a) in the case of the first Funding Year, the period commencing on the Effective Date and ending on the following March 31; and

(b) in the case of Funding Years subsequent to the first Funding Year, the

period commencing on April 1 following the end of the previous Funding Year and ending on the following March 31.

"Funds" means the money the Province provides to the Recipient pursuant to the Agreement.

"Indemnified Parties" means His Majesty the King in right of Ontario, His ministers, agents, appointees, and employees.

"Maximum Funds" means the maximum Funds set out in Schedule "B".

"Notice" means any communication given or required to be given pursuant to the Agreement.

"Notice Period" means the period of time within which the Recipient is required to remedy an Event of Default pursuant to section A13.3 (b), and includes any such period or periods of time by which the Province extends that time in accordance with section A13.4.

"Parties" means the Province and the Recipient.

"Party" means either the Province or the Recipient.

"Project" means the undertaking described in Schedule "C".

"Reports" means the reports described in Schedule "F".

A2.0 REPRESENTATIONS, WARRANTIES, AND COVENANTS

A2.1 **General.** The Recipient represents, warrants, and covenants that:

(a) it is, and will continue to be, a validly existing legal entity with full power to fulfill its obligations under the Agreement;

(b) it has, and will continue to have, the experience and expertise necessary to carry out the Project;

(c) it is in compliance with, and will continue to comply with, all federal and provincial laws and regulations, all municipal by-laws, and any other orders, rules, and by-laws related to any aspect of the Project, the Funds, or both; and

(d) unless otherwise provided for in the Agreement, any information the Recipient provided to the Province in support of its request for funds (including information relating to any eligibility requirements) was true and complete at the time the Recipient provided it and will continue to be true

and complete.

A2.2 **Execution of Agreement.** The Recipient represents and warrants that it has:

(a) the full power and authority to enter into the Agreement; and

(b) taken all necessary actions to authorize the execution of the Agreement.

A2.3 **Governance.** The Recipient represents, warrants, and covenants that it has, will maintain in writing, and will follow:

(a) a code of conduct and ethical responsibilities for all persons at all levels of the Recipient's organization;

(b) procedures to enable the Recipient's ongoing effective functioning;

(c) decision-making mechanisms for the Recipient;

(d) procedures to enable the Recipient to manage Funds prudently and effectively;

(e) procedures to enable the Recipient to complete the Project successfully;

(f) procedures to enable the Recipient to identify risks to the completion of the Project and strategies to address the identified risks, all in a timely manner;

(g) procedures to enable the preparation and submission of all Reports required pursuant to Article A7.0; and

(h) procedures to enable the Recipient to address such other matters as the Recipient considers necessary to enable the Recipient to carry out its obligations under the Agreement.

A2.4 **Supporting Proof.** Upon the request of the Province, the Recipient will provide the Province with proof of the matters referred to in Article A2.0.

A3.0 TERM OF THE AGREEMENT

A3.1 **Term.** The term of the Agreement will commence on the Effective Date and will expire on the Expiry Date unless terminated earlier pursuant to Article A11.0, Article A12.0, or Article A13.0.

A4.0 FUNDS AND CARRYING OUT THE PROJECT

A4.1 **Funds Provided.** The Province will:

(a) provide the Recipient up to the Maximum Funds for the purpose of carrying out the Project;

(b) provide the Funds to the Recipient in accordance with the payment plan attached to the Agreement as Schedule "E"; and

(c) deposit the Funds into an account designated by the Recipient provided that the account:

(i) resides at a Canadian financial institution; and

(ii) is in the name of the Recipient.

A4.2 **Limitation on Payment of Funds**. Despite section A4.1:

(a) the Province is not obligated to provide any Funds to the Recipient until the Recipient provides the certificates of insurance or other proof as the Province may request pursuant to section A10.2;

(b) the Province is not obligated to provide instalments of Funds until it is satisfied with the progress of the Project;

(c) the Province may adjust the amount of Funds it provides to the Recipient in any Funding Year based upon the Province's assessment of the information the Recipient provides to the Province pursuant to section A7.1; or

(d) if, pursuant to the *Financial Administration Act* (Ontario), the Province does not receive the necessary appropriation from the Ontario Legislature for payment under the Agreement, the Province is not obligated to make any such payment, and, as a consequence, the Province may:

(i) reduce the amount of Funds and, in consultation with the Recipient, change the Project; or

(ii) terminate the Agreement pursuant to section A12.1.

A4.3 **Use of Funds and Carry Out the Project.** The Recipient will do all of the following:

(a) carry out the Project in accordance with the Agreement;

(b) use the Funds only for the purpose of carrying out the Project;

(c) spend the Funds only in accordance with the Budget;

(d) not use the Funds to cover any cost that has or will be funded or reimbursed by one or more of any third party, ministry, agency, or organization of the Government of Ontario.

A4.4 **Interest Bearing Account.** If the Province provides Funds before the Recipient's immediate need for the Funds, the Recipient will place the Funds in an interest bearing account in the name of the Recipient at a Canadian financial institution.

A4.5 **Interest.** If the Recipient earns any interest on the Funds, the Province may:

(a) deduct an amount equal to the interest from any further instalments of Funds; or

(b) demand from the Recipient the payment of an amount equal to the interest.

A4.6 **Rebates, Credits, and Refunds.** The Ministry will calculate Funds based on the actual costs to the Recipient to carry out the Project, less any costs (including taxes) for which the Recipient has received, will receive, or is eligible to receive, a rebate, credit, or refund.

A5.0 RECIPIENT'S ACQUISITION OF GOODS OR SERVICES, AND DISPOSAL OF ASSETS

A5.1 **Acquisition.** If the Recipient acquires goods, services, or both with the Funds, it will:

(a) do so through a process that promotes the best value for money; and

(b) comply with the Broader Public Sector Accountability Act, 2010 (Ontario), including any procurement directive issued thereunder, to the extent applicable.

A5.2 **Disposal.** The Recipient will not, without the Province's prior written consent, sell, lease, or otherwise dispose of any asset purchased or created with the Funds or for which Funds were provided, the cost of which exceeded the amount as provided for in Schedule "B" at the time of purchase.

A6.0 CONFLICT OF INTEREST

A6.1 **No Conflict of Interest.** The Recipient will carry out the Project and use the Funds without an actual, potential, or perceived conflict of interest.

A6.2 **Conflict of Interest Includes.** For the purposes of Article A6.0, a conflict of interest includes any circumstances where:

(a) the Recipient; or

(b) any person who has the capacity to influence the Recipient's decisions,

has outside commitments, relationships, or financial interests that could, or could be seen to, interfere with the Recipient's objective, unbiased, and impartial judgment relating to the Project, the use of the Funds, or both.

A6.3 **Disclosure to Province.** The Recipient will:

(a) disclose to the Province, without delay, any situation that a reasonable person would interpret as an actual, potential, or perceived conflict of interest; and

(b) comply with any terms and conditions that the Province may prescribe as a result of the disclosure.

A7.0 REPORTS, ACCOUNTING, AND REVIEW

A7.1 **Preparation and Submission.** The Recipient will:

(a) submit to the Province at the address referred to in section A17.1, all Reports in accordance with the timelines and content requirements as provided for in Schedule "F", or in a form as specified by the Province from time to time;

(b) submit to the Province at the address referred to in section A17.1, any other reports as may be requested by the Province in accordance with the timelines and content requirements specified by the Province;

(c) ensure that all Reports and other reports are completed to the satisfaction of the Province; and

(d) ensure that all Reports and other reports are signed on behalf of the Recipient by an authorized signing officer.

A7.2 **Record Maintenance.** The Recipient will keep and maintain:

(a) all financial records (including invoices) relating to the Funds or otherwise to the Project in a manner consistent with generally accepted accounting principles; and

(b) all non-financial documents and records relating to the Funds or otherwise to the Project.

A7.3 **Inspection.** The Province, any authorized representative, or any independent auditor identified by the Province may, at the Province's expense, upon twenty-four hours' Notice to the Recipient and during normal business hours, enter upon the Recipient's premises to review the progress of the Project and the Recipient's allocation and expenditure of the Funds and, for these purposes, the Province, any authorized representative, or any independent auditor identified by the Province may take one or more of the following actions:

(a) inspect and copy the records and documents referred to in section A7.2;

(b) remove any copies made pursuant to section A7.3(a) from the Recipient's premises; and

(c) conduct an audit or investigation of the Recipient in respect of the expenditure of the Funds, the Project, or both.

A7.4 **Disclosure.** To assist in respect of the rights provided for in section A7.3, the Recipient will disclose any information requested by the Province, any authorized representatives, or any independent auditor identified by the Province, and will do so in the form requested by the Province, any authorized representative, or any independent auditor identified by the Province, as the case may be.

A7.5 **No Control of Records.** No provision of the Agreement will be construed so as to give the Province any control whatsoever over the Recipient's records.

A7.6 **Auditor General.** The Province's rights under Article A7.0 are in addition to any rights provided to the Auditor General pursuant to section 9.1 of the *Auditor General Act* (Ontario).

A8.0 COMMUNICATIONS REQUIREMENTS

A8.1 **Acknowledge Support.** Unless otherwise directed by the Province, the Recipient will:

(a) acknowledge the support of the Province for the Project; and

(b) ensure that the acknowledgement referred to in section A8.1(a) is in a form and manner as directed by the Province.

A8.2 **Publication.** The Recipient will indicate, in any of its Project-related publications, whether written, oral, or visual, that the views expressed in the publication are the views of the Recipient and do not necessarily reflect those of the Province.

A9.0 INDEMNITY

A9.1 **Indemnification.** The Recipient will indemnify and hold harmless the Indemnified Parties from and against any and all liability, loss, costs, damages, and expenses (including legal, expert and consultant fees), causes of action, actions, claims, demands, lawsuits, or other proceedings, by whomever made, sustained, incurred, brought, or prosecuted, in any way arising out of or in connection with the Project or otherwise in connection with the Agreement, unless solely caused by the negligence or wilful misconduct of the Indemnified Parties.

A10.0 INSURANCE

A10.1 **Recipient's Insurance.** The Recipient represents, warrants, and covenants that it has, and will maintain, at its own cost and expense, with insurers having a secure A.M. Best rating of B+ or greater, or the equivalent, all the necessary and appropriate insurance that a prudent person carrying out a project similar to the Project would maintain, including commercial general liability insurance on an occurrence basis for third party bodily injury, personal injury, and property damage, to an inclusive limit of not less than the amount provided for in Schedule "B" per occurrence. The insurance policy will include the following:

(a) the Indemnified Parties as additional insureds with respect to liability arising in the course of performance of the Recipient's obligations under, or otherwise in connection with, the Agreement;

(b) a cross-liability clause;

(c) contractual liability coverage; and

(d) a 30-day written notice of cancellation.

A10.2 **Proof of Insurance.** The Recipient will:

(a) provide to the Province, either:

(i) certificates of insurance that confirm the insurance coverage as provided for in section A10.1; or

(ii) other proof that confirms the insurance coverage as provided for in section A10.1; and

(b) upon the request of the Province, provide to the Province a copy of any insurance policy.

A11.0 TERMINATION ON NOTICE

A11.1 **Termination on Notice.** The Province may terminate the Agreement at any time without liability, penalty, or costs upon giving at least 30 days' Notice to the Recipient.

A11.2 **Consequences of Termination on Notice by the Province.** If the Province terminates the Agreement pursuant to section A11.1, the Province may take one or more of the following actions:

(a) cancel further instalments of Funds;

(b) demand from the Recipient the payment of any Funds remaining in the possession or under the control of the Recipient; and

(c) determine the reasonable costs for the Recipient to wind down the Project, and do either or both of the following:

(i) permit the Recipient to offset such costs against the amount the Recipient owes pursuant to section A11.2(b); and

(ii) subject to section A4.1(a), provide Funds to the Recipient to cover such costs.

A12.0 TERMINATION WHERE NO APPROPRIATION

A12.1 **Termination Where No Appropriation.** If, as provided for in section A4.2(d), the Province does not receive the necessary appropriation from the Ontario Legislature for any payment the Province is to make pursuant to the Agreement, the Province may terminate the Agreement immediately without liability, penalty, or costs by giving Notice to the Recipient.

A12.2 **Consequences of Termination Where No Appropriation.** If the Province terminates the Agreement pursuant to section A12.1, the Province may take one or more of the following actions:

(a) cancel further instalments of Funds;

(b) demand from the Recipient the payment of any Funds remaining in the possession or under the control of the Recipient; and

(c) determine the reasonable costs for the Recipient to wind down the Project and permit the Recipient to offset such costs against the amount owing pursuant to section A12.2(b).

A12.3 **No Additional Funds.** If, pursuant to section A12.2(c), the Province determines

that the costs to wind down the Project exceed the Funds remaining in the possession or under the control of the Recipient, the Province will not provide additional Funds to the Recipient.

A13.0 EVENT OF DEFAULT, CORRECTIVE ACTION, AND TERMINATION FOR DEFAULT

A13.1 **Events of Default.** Each of the following events will constitute an Event of Default:

(a) in the opinion of the Province, the Recipient breaches any representation, warranty, covenant, or other material term of the Agreement, including failing to do any of the following in accordance with the terms and conditions of the Agreement:

(i) carry out the Project;

(ii) use or spend Funds; or

(iii) provide, in accordance with section A7.1, Reports or such other reports as may have been requested pursuant to section A7.1(b);

(b) the Recipient's operations, its financial condition, or its organizational structure, changes such that it no longer meets one or more of the eligibility requirements of the program under which the Province provides the Funds;

(c) the Recipient makes an assignment, proposal, compromise, or arrangement for the benefit of creditors, or a creditor makes an application for an order adjudging the Recipient bankrupt, or applies for the appointment of a receiver; or

(d) the Recipient ceases to operate.

A13.2 **Consequences of Events of Default and Corrective Action.** If an Event of Default occurs, the Province may, at any time, take one or more of the following actions:

(a) initiate any action the Province considers necessary in order to facilitate the successful continuation or completion of the Project;

(b) provide the Recipient with an opportunity to remedy the Event of Default;

(c) suspend the payment of Funds for such period as the Province determines appropriate;

(d) reduce the amount of the Funds;

(e) cancel further instalments of Funds;

(f) demand from the Recipient the payment of any Funds remaining in the possession or under the control of the Recipient;

(g) demand from the Recipient the payment of an amount equal to any Funds the Recipient used, but did not use in accordance with the Agreement;

(h) demand from the Recipient the payment of an amount equal to any Funds the Province provided to the Recipient; and

(i) terminate the Agreement at any time, including immediately, without liability, penalty or costs to the Province upon giving Notice to the Recipient.

A13.3 **Opportunity to Remedy.** If, in accordance with section A13.2(b), the Province provides the Recipient with an opportunity to remedy the Event of Default, the Province will give Notice to the Recipient of:

(a) the particulars of the Event of Default; and

(b) the Notice Period.

A13.4 **Recipient not Remedying.** If the Province provided the Recipient with an opportunity to remedy the Event of Default pursuant to section A13.2(b), and:

(a) the Recipient does not remedy the Event of Default within the Notice Period;

(b) it becomes apparent to the Province that the Recipient cannot completely remedy the Event of Default within the Notice Period; or

(c) the Recipient is not proceeding to remedy the Event of Default in a way that is satisfactory to the Province,

the Province may extend the Notice Period, or initiate any one or more of the actions provided for in sections A13.2(a), (c), (d), (e), (f), (g), (h), and (i).

A13.5 **When Termination Effective.** Termination under Article A13.0 will take effect as provided for in the Notice.

A14.0 FUNDS AT THE END OF A FUNDING YEAR

A14.1 **Funds at the End of a Funding Year.** Without limiting any rights of the Province under Article A13.0, if the Recipient has not spent all of the Funds allocated for the Funding Year as provided for in the Budget, the Province may

take one or both of the following actions:

(a) demand from the Recipient payment of the unspent Funds; and

(b) adjust the amount of any further instalments of Funds accordingly.

A15.0 FUNDS UPON EXPIRY

A15.1 **Funds Upon Expiry.** The Recipient will, upon expiry of the Agreement, pay to the Province any Funds remaining in its possession or under its control.

A16.0 DEBT DUE AND PAYMENT

A16.1 **Payment of Overpayment.** If at any time the Province provides Funds in excess of the amount to which the Recipient is entitled under the Agreement, the Province may:

(a) deduct an amount equal to the excess Funds from any further instalments of Funds; or

(b) demand that the Recipient pay an amount equal to the excess Funds to the Province.

A16.2 **Debt Due.** If, pursuant to the Agreement:

(a) the Province demands from the Recipient the payment of any Funds or an amount equal to any Funds; or

(b) the Recipient owes any Funds or an amount equal to any Funds to the Province, whether or not the Province has demanded their payment,

such Funds or other amount will be deemed to be a debt due and owing to the Province by the Recipient, and the Recipient will pay the amount to the Province immediately, unless the Province directs otherwise.

A16.3 **Interest Rate.** The Province may charge the Recipient interest on any money owing by the Recipient at the then current interest rate charged by the Province of Ontario on accounts receivable.

A16.4 **Payment of Money to Province.** The Recipient will pay any money owing to the Province by cheque payable to the "Ontario Minister of Finance" and delivered to the Province as provided for in Schedule "B".

A16.5 **Fails to Pay.** Without limiting the application of section 43 of the *Financial Administration Act* (Ontario), if the Recipient fails to pay any amount owing under the Agreement, His Majesty the King in right of Ontario may deduct any unpaid

amount from any money payable to the Recipient by His Majesty the King in right of Ontario.

A17.0 NOTICE

A17.1 **Notice in Writing and Addressed.** Notice will be in writing and will be delivered by email, postage-prepaid mail, personal delivery, or fax, and will be addressed to the Province and the Recipient respectively as provided for in Schedule "B", or as either Party later designates to the other by Notice.

A17.2 **Notice Given.** Notice will be deemed to have been given:

(a) in the case of postage-prepaid mail, five Business Days after the Notice is mailed; or

(b) in the case of email, personal delivery, or fax, one Business Day after the Notice is delivered.

A17.3 **Postal Disruption.** Despite section A17.2(a), in the event of a postal disruption:

(a) Notice by postage-prepaid mail will not be deemed to be given; and

(b) the Party giving Notice will give Notice by email, personal delivery, or fax.

A18.0 CONSENT BY PROVINCE AND COMPLIANCE BY RECIPIENT

A18.1 **Consent.** When the Province provides its consent pursuant to the Agreement, it may impose any terms and conditions on such consent and the Recipient will comply with such terms and conditions.

A19.0 SEVERABILITY OF PROVISIONS

A19.1 **Invalidity or Unenforceability of Any Provision.** The invalidity or unenforceability of any provision of the Agreement will not affect the validity or enforceability of any other provision of the Agreement. Any invalid or unenforceable provision will be deemed to be severed.

A20.0 WAIVER

A20.1 **Waiver Request.** Either Party may, in accordance with the Notice provision set out in Article A17.0, ask the other Party to waive an obligation under the Agreement.

A20.2 **Waiver Applies.** Any waiver a Party grants in response to a request made pursuant to section A20.1 will:

(a) be valid only if the Party granting the waiver provides it in writing; and

(b) apply only to the specific obligation referred to in the waiver.

A21.0 INDEPENDENT PARTIES

A21.1 **Parties Independent.** The Recipient is not an agent, joint venturer, partner, or employee of the Province, and the Recipient will not represent itself in any way that might be taken by a reasonable person to suggest that it is, or take any actions that could establish or imply such a relationship.

A22.0 ASSIGNMENT OF AGREEMENT OR FUNDS

A22.1 **No Assignment.** The Recipient will not, without the prior written consent of the Province, assign any of its rights or obligations under the Agreement.

A22.2 **Agreement Binding.** All rights and obligations contained in the Agreement will extend to and be binding on the Parties' respective heirs, executors, administrators, successors, and permitted assigns.

A23.0 GOVERNING LAW

A23.1 **Governing Law.** The Agreement and the rights, obligations, and relations of the Parties will be governed by and construed in accordance with the laws of the Province of Ontario and the applicable federal laws of Canada. Any actions or proceedings arising in connection with the Agreement will be conducted in the courts of Ontario, which will have exclusive jurisdiction over such proceedings.

A24.0 FURTHER ASSURANCES

A24.1 **Agreement into Effect.** The Recipient will provide such further assurances as the Province may request from time to time with respect to any matter to which the Agreement pertains, and will otherwise do or cause to be done all acts or things necessary to implement and carry into effect the terms and conditions of the Agreement to their full extent.

A25.0 JOINT AND SEVERAL LIABILITY

A25.1 **Joint and Several Liability.** Where the Recipient is comprised of more than one entity, all such entities will be jointly and severally liable to the Province for the fulfillment of the obligations of the Recipient under the Agreement.

A26.0 RIGHTS AND REMEDIES CUMULATIVE

A26.1 **Rights and Remedies Cumulative.** The rights and remedies of the Province under the Agreement are cumulative and are in addition to, and not in substitution

for, any of its rights and remedies provided by law or in equity.

A27.0 FAILURE TO COMPLY WITH OTHER AGREEMENTS

A27.1 **Other Agreements.** If the Recipient:

(a) has failed to comply with any term, condition, or obligation under any other agreement with His Majesty the King in right of Ontario or one of His agencies (a "**Failure**");

(b) has been provided with notice of such Failure in accordance with the requirements of such other agreement;

(c) has, if applicable, failed to rectify such Failure in accordance with the requirements of such other agreement; and

(d) such Failure is continuing,

the Province may suspend the payment of Funds for such period as the Province determines appropriate.

A28.0 SURVIVAL

A28.1 **Survival.** The following Articles and sections, and all applicable cross-referenced sections and schedules, will continue in full force and effect for a period of seven years from the date of expiry or termination of the Agreement: Article 1.0, Article 3.0, Article A1.0 and any other applicable definitions, section A2.1(a), sections A4.2(d), A4.5, section A5.2, section A7.1 (to the extent that the Recipient has not provided the Reports or other reports as may have been requested to the satisfaction of the Province), sections A7.2, A7.3, A7.4, A7.5, A7.6, Article A8.0, Article A9.0, section A11.2, sections A12.2, A12.3, sections A13.1, A13.2(d), (e), (f), (g) and (h), Article A15.0, Article A16.0, Article A17.0, Article A19.0, section A22.2, Article A23.0, Article A25.0, Article A26.0, Article A27.0 and Article A28.0.

- END OF GENERAL TERMS AND CONDITIONS

SCHEDULE "B"
PROJECT SPECIFIC INFORMATION AND ADDITIONAL PROVISIONS

Maximum Funds	$25,000
Expiry Date	September 1, 2025
Amount for the purposes of section A5.2 (Disposal) of Schedule "A"	$0
Insurance	$ 2,000,000
Contact information for the purposes of Notice to the Province (primary)	**Name: Ministry of Energy** **Attention: Jamelia Alleyne, Senior Advisor** **Address: 77 Grenville Street, 5th Floor, Toronto, ON M7A 2C1** **Phone: 437- 553-4115** **Email: Jamelia.s.alleyne@ontario.ca**
Contact information for the purposes of Notice to the Province (secondary)	**Name: Ministry of Energy** **Attention: Adam Khan, Manager, Conservation Programs and Partnerships** **Address: 77 Grenville Street, 5th Floor, Toronto, ON M7A 2C1** **Phone: 437- 232-1370** **Email: Adam.Khan@ontario.ca**
Contact information for the purposes of Notice to the Recipient	**Name: The Corporation of the City of London** **Attention: Jamie Skimming, Manager, Energy and Climate Change** **Address: 300 Dufferin Avenue, London ON, N6A 4L9** **Phone: (905) 661-2489 x5204** **Email: jskimmin@london.ca**

Contact information for the senior financial person in the Recipient organization (e.g., CFO, CAO) – to respond as required to requests from the Province related to the Agreement	**Name: The Corporation of the City of London** **Attention: Anna Lisa Barbon, Deputy City Manager, Finance Supports** **Address: 300 Dufferin Avenue, London ON, N6A 4L9** **Phone: (519) 661-2489 x4705** **Email: abarbon@london.ca**

Additional Provisions:

1.0 Article A4.0 of Schedule "A" is amended by adding the following section A4.6.1:

A4.6.1 **Reallocation.** Despite section A4.3, where the Funds for a task (as such tasks are listed in Schedule "D") that the Recipient is entitled to receive from the Province under Schedule "D" are less than the maximum amount of Funds allocated for that task, the Recipient may reallocate such difference to another task that is outlined in Schedule "D" to the extent that the Funds the Recipient is entitled to receive from the Province for that other task are more than the maximum Funds allocated for that other task under Schedule "D".

A4.6.2 **Prior Approval.** The Recipient shall not proceed with a reallocation described in section A4.6.1 without the prior written approval of the Province to do so, unless the reallocation is between tasks within the same Milestone as outlined in Schedule "D" in which case the Recipient will be required to report the reallocation in the relevant Milestone Status Package (MSP) submitted to the Province as outlined in Schedule "F".

2.0 The Agreement is amended by the insertion of new Article A29.0 as follows:

A29.0 OPEN DATA

A29.1 **Open Data.** The Recipient agrees that the Province may publicly release the following information, whether in hard copy or in electronic form, on the internet or otherwise: Recipient name, Recipient contact information, Recipient address or general location, amount of Maximum Funds and/or Funds, Project description, Project objective/goals, Project locations, Project results reported by the Recipient and the Budget.

SCHEDULE "C"
PROJECT

Project Background

The Municipal Energy Plan program ("MEP Program") is designed to help Ontario municipalities understand their energy use through a community energy planning process.

Municipalities, through the MEP Program, create a Community Energy Plan (the "Plan") to improve energy efficiency, reduce energy consumption and greenhouse gas emissions, foster green energy solutions and support economic development.

Scope of Project

The Recipient previously completed their Climate Emergency Action Plan ("CEAP"), which was approved by London City Council in April, 2022. The Project will augment the CEAP by updating the energy mapping and financial models (i.e. cost-benefit analysis).

The details of each stage to be completed by the Recipient are as outlined below.

The Province shall provide the Funds to the Recipient, in accordance with the Agreement, in order to support a portion of the costs associated with the Project.

If applicable, the Recipient shall prepare a request for proposals (RFP) to engage a qualified consultant to undertake some or all stages of the Project and evaluate the proposals received from proponents.

The Recipient shall complete the following Project milestones:

Milestone 1: Low Carbon Scenario and Financial Modelling

The Recipient will complete the following actions:

- Review of CEAP actions;
- Presentation to the Recipient's staff (targets and actions);
- Low carbon scenario modelling;
- Presentation to the Recipient's staff (emission reduction scenarios);
- Financial modelling.

Upon completion of Milestone 1, the Recipient shall provide to the Province:

- A summary of the notes from the first two presentations to the Recipient's staff;

and
- A summary of the results of the financial modelling and low carbon scenario.

Milestone 2: Final Document

The Recipient will complete the following actions:
- Completion of the draft document;
- Third presentation to the Recipient's staff to consult on the draft document;
- Completion of the final document.

Upon completion of Milestone 2, the Recipient shall submit to the Province:
- The final document or Plan, which shall include at a minimum:
    - An acknowledgment of project funding support provided by the Government of Ontario;
    - Identification of internal or external resources that will assist in plan implementation;
    - A summary of stakeholder engagement undertaken and how stakeholders will continue to be engaged in the future; and
    - An outline of how the Plan will be communicated to the stakeholders.

The final document must be approved by the Recipient's Municipal Council and provided to the Province. The Province will provide comments and suggestions to be revised by the Recipient, as necessary.

Timelines

The Recipient has 12 months to complete the Project. The expected start date of the Project is March 26, 2024, and expected completion date is March 26, 2025. The Recipient will advise the Province if the Project will begin later than the expected start date.

The table below outlines the timelines associated with the specific tasks for each milestone of this Project, as outlined in Schedule "D":

PROJECT MILESTONE	EXPECTED COMPLETION DATE
Milestone 1: Low Carbon Scenario and Financial Modelling	**November 1, 2024**
Milestone 2: Final Document	**March 1, 2025**

SCHEDULE "D"

Province's Detailed Contribution Breakdown

Stage	Milestone	Task Name (List each Item/task on a separate line)	Task Lead (e.g. Recipient, Consultant)	Detailed Description of Tasks and associated costs (e.g. staffing costs including staff title and role on the project; venue, hospitality, non-local travel for stakeholder engagement sessions)	Province's Maximum Allocation per Milestone, $
1	1	Review of CEAP actions	Consultant (SSG)	SSG will work with Recipient staff to review, categorize, and evaluate the actions approved from the CEAP. The 200 actions will be grouped and evaluated based on their estimated impacts.	$12,000
		Staff presentation - targets & actions	Consultant (SSG)	SSG will present analysis of the BAU, targets and catalogue of actions to staff and stakeholders. Based on the discussion, SSG will recommend final emissions reduction targets and a slate of low-carbon actions to model.	
		Low carbon scenario	Consultant (SSG)	The prioritized actions will be prepared in CityInSight and modelled for their energy and emissions effects between the baseline year and 2050. The scenario will include year-over-year energy and emissions projections under low-carbon action implementation. All modelled data results will have graphic representations, making the data easy to digest.	
		Staff presentation - Emission reduction scenarios	Consultant (SSG)	This workshop will review the estimated impacts of climate actions for the Recipient and community. Participants will have an opportunity to dive into the emissions impacts of the actions and scenarios, and provide input on how the actions and policies can be implemented.	
		Financial modelling	Consultant (SSG)	Financial impacts will be evaluated including total capital required by sector and year, operating costs by sector and action, costs and benefits of each action, including abatement cost, net present value, and other financial indicators, modelled in CityInSight. The financial modelling will provide financial estimates surrounding complex topics such as mode shifting, where the financial responsibility lies for implementation, where the brunt of the costs and savings are found, and the differences between actions that provide savings versus avoided costs.	
2	2	Draft Document	Consultant (SSG)	The draft document, which may be called the "How to Move Forward with CEAP" document, will be created in consultation with Recipient staff. It will be a coherent, compelling, accessible, and easily digestible document, which will include a narrative, goals, synopsis of the actions, and a presentation of the financial modelling co-benefits analysis. The draft document will answer the call to action provided in the CEAP, specifically sections 1.a., focused on providing Londoners with the latest information on local emissions and climate change impacts, and 1.b., focused on the economic costs and benefits of climate mitigation actions.	$13,000

Stage	Milestone	Task Name (List each Item/task on a separate line)	Task Lead (e.g. Recipient, Consultant)	Detailed Description of Tasks and associated costs (e.g. staffing costs including staff title and role on the project; venue, hospitality, non-local travel for stakeholder engagement sessions)	Province's Maximum Allocation per Milestone, $
		Staff presentation - Draft document	Consultant (SSG)	Recipient staff and the consulting team will present the draft document to staff for finalization approval and adoption pending final modifications.	
		Final document	Consultant (SSG)	The Recipient will prepare the final document which will be professionally designed and copy-edited. It will include visualizations and photos that help communicate the plan to a diverse audience, ranging from technical stakeholders to the public. The final package will include a series of information pieces for a variety of internal and external stakeholders, such as the City's Planning & Economic Development area for land use planning, transportation for the Mobility Master Plan, The London Environmental Network and Climate Action London for general public engagement, etc. The final document will be submitted to the Recipient for final approval.	
				Grand Total	**$25,000**

Ineligible Costs:

- Furniture;
- Computer hardware;
- Computer software (unless it can be demonstrated that the software is essential to the project, such as software to analyze baseline energy data);
- Telecommunications hardware;
- Training such as conferences and courses;
- Non-local travel costs and accommodations;
- Daily travel costs, with the exception of local travel costs directly related to attending stakeholder engagement sessions related to the Project;
- Meals and Hospitality expenses specifically for staff including external consultants or contractors hired exclusively for the project;
- Alcohol
- First-class travel
- Purchasing or leasing capital equipment;

- Purchasing or leasing real estate;
- Lobbying projects;
- Insurance for general liability as required by the Province, or any other type of insurance; and
- Salaries of staff who are not specifically hired by the Recipient for undertaking the Project. However, compensation for work related to the Project that falls outside of the scope of such staff members' paid time responsibilities may be an eligible expense.

General:
The Funds that the Recipient is entitled to receive from the Province for each milestone outlined in this Schedule "D" are (i) based on eligible costs actually incurred by the Recipient, and (ii) shall be equal to no more than 50% of the total eligible costs actually incurred by the Recipient for each milestone, up to the Province's maximum funding allocation amount provided for that milestone under the terms of this Agreement. As such, the amount paid out to the Recipient by the Province may be less than the maximum amount outlined herein.

For an eligible expense incurred by the Recipient, the Recipient may claim the part of the HST that is not eligible for a rebate by the Canada Revenue Agency ("Eligible HST"). For greater clarity, Eligible HST shall only be recoverable by the Recipient from the Funds outlined in Schedule "D" and any such claims are subject to the Province's approval.

All travel, meals and hospitality expenses are subject to the Recipient's guidelines on travel, meal and hospitality expenses provided that such guidelines are no less stringent than the Province's Travel, Meal and Hospitality Expenses Directive. Written approval of the Province is required before any such arrangements are made. Without limiting the generality of the foregoing, alcohol and first-class travel cannot be claimed and will not be reimbursed as part of a travel or meal expense.

SCHEDULE "E"
PAYMENT PLAN

Subject to the terms and conditions of this Agreement, the Funds shall be distributed to the Recipient in accordance with the following Payment Plan and in accordance with all other terms of the Agreement.

PAYMENT MILESTONE	DUE DATE FOR PAYMENT	MAXIMUM PAYMENT AMOUNT
MEP MSP 1 for Milestone 1: Low Carbon Scenario and Financial Modelling	Within 30 days of the Province's approval of the MEP MSP 1 reports as further outlined in Schedule "F".	**$12,000**
MEP MSP 2 for Milestone 2: Final Document	Within 30 days of the Province's approval of the MEP MSP 2 reports as further outlined in Schedule "F".	**$13,000**
	TOTAL:	**$25,000.00**

SCHEDULE "F"
REPORTS

1. The Recipient is to submit to the Province the MEP Milestone Status Package (MSP) that consists of:
    1.1. A Milestone Report (see the "MEP Program MILESTONE REPORT template" below), and
    1.2. A Budget report (see the "Budget Reporting template" below).

2. Each MSP includes a short progress report outlining Milestone's progress and original invoices/receipts (or electronic copies) for expenses incurred and paid up until that specific milestone reporting due date as outlined in Schedule "C" above.

3. Where there has been a reallocation of Funds between tasks within the same Milestone, the corresponding MSP report shall include a description and details of such reallocation.

4. The due dates for each MEP MSP submission to the Province are as outlined in the table below.

NAME OF REPORT	DUE DATE
MEP MSP 1 for Milestone 1: Low Carbon Scenario and Financial Modelling	December 1, 2024
MEP MSP 2 for Milestone 2: Final Document	April 1, 2025

MEP Program

MILESTONE REPORT template

Municipality	
Contact Name	
Email	
Phone	
Date	

Milestone Number	**Milestone payment amount* ($)**
Milestone due date (in TPA)	
Expected submission date for next Milestone (in TPA)	

ALL SECTIONS MUST BE COMPLETED IN ORDER FOR PAYMENT TO BE PROCESSED

1. Milestone Description

2A. Project Progress and Results to Date
Provide a brief summary of project activities and outcomes from this Milestone period.

2B. Project Activities, Deliverables and Outcomes		
Based on the information provided in section 1B, please outline the individual activities, deliverables and outcomes for this Milestone and provide a status update. Add rows as necessary.		
Activity / Deliverable	**Completed? (Y/N)**	**Outcomes**
e.g.Create surveys	*Y*	*Survey created with input from third parties* *Survey included as a separate attachment (name of file)*

2C. Project Cost Summary
Please use the *Budget and Expenses Reporting Template* attached to report on all milestone activities, provide an updated budget (if applicable) and report on actual expenses incurred. Note: where applicable, invoices and staff time logs showing tasks completed, hours worked on the project and hourly rate are required.

2D. Lessons Learned
In a bulleted list, summarize the key lessons learned to date. This section is very important as the learnings can be passed on to others engaging in similar work potentially saving others time and effort.

3. Stakeholder Engagement
Report on the status of your stakeholder engagement efforts (including participant names, organizations, and sectors) This is an important component of all three stages of the MEP development process.

4A. Communications from this reporting period	
List any project-related communications from the current reporting period. Please note any press releases, media events, media mentions, etc. and include them as attachments to this report.	
Name of event/ article/ media piece	**Details**
e.g. Article in the local newspaper	*Project profiled in local newspaper on June 2, 2021* *PDF scan of article attached (name of file)*

4B. Upcoming Events	
List any upcoming communication opportunities.	
Name of event/ article/ media piece	**Details**
e.g. Public information session on project	*Stakeholder workshop will be held on January 10, 2024 to discuss the MEP.*

5. Summary
Provide a list of all the attachments included with this report.
e.g., Budget and Expenses Reporting Template (name of file.xls) 1. 2. 3.

2C. Budget and Expense Reporting Template

UPDATED BUDGET					ACTUAL EXPENSE	
Stage	**Milestone**	**Task Name (as per Schedule D)**	**Detailed Descriptions (as per Schedule D)**	**Province's Maximum Allocation (as per Schedule D) $[6]**	**Total Actual Cost, $**	**Province's Allocation of Actual Cost, $**
1	1					
	SUBTOTALS FOR MILESTONE 1					
2	2					
	SUBTOTAL FOR MILESTONE 2					
GRAND TOTALS						

[6]All milestone and stage subtotals should match the Province's maximum allocation per item/task as per Schedule D, unless otherwise approved by the Province.

Report to Civic Works Committee

To: **Chair and Members**
Civic Works Committee
From: **Kelly Scherr, P.Eng., MBA, FEC**
Deputy City Manager, Environment & Infrastructure
Subject: **Contract Amendment RFP 19-02 – Recycling Collection and Garbage and Yard Waste Collection in a Portion of London with Miller Waste Systems Inc.**
Date: **February 21, 2024**

Recommendation

That, on the recommendation of the Deputy City Manager, Environment & Infrastructure, the following actions **BE TAKEN**:

a) Approval **BE GIVEN** to exercise the contract amendment provisions of section 20.3e of the Procurement of Goods and Services Policy for RFP 19-02 Recycling Collection Garbage & Yard Waste Collection for a cost exceeding the threshold limits outlined in section 8.5 (a)(ii) and Schedule A for collection of Green Bin materials;

b) The price submitted by Miller Waste Systems Inc., to collect Green Bin materials in addition to recycling, garbage and yard waste for an annual cost of approximately $395,000, **BE ACCEPTED**, noting that the net annual contract price increase is approximately $231,000 when cost reduction associated with reduced frequency of garbage collection is included;

c) Civic Administration **BE AUTHORIZED** to undertake all administrative acts that are necessary in connection with the contract referenced in a) above, and

d) The Mayor and City Clerk **BE AUTHORIZED** to execute any contract or other documents, if required to give effect to these recommendations.

Executive Summary

This report recommends amending the existing amended contract the City of London (City) has with Miller Waste Systems Inc. (Miller Waste) for RFP 19-02 to provide Green Bin material collection services in the south-west portion of the city, including Lambeth, Riverbend, and Settlement Trail (Contract Collection Area). There are cost and collection program operational efficiencies due to economies of scale and existing service provision that are to the benefit of the City in proceeding with this contract amendment.

The annual cost of the contract amendment of approximately $395,000 requires Council approval in accordance with the Procurement of Goods and Services Policy. As part of RFP 19-02, Miller Waste submitted a price to collect garbage on a biweekly basis which is a lower price than the price to collect garbage 42 times per year. Therefore, the net annual contract cost increase is approximately $231,000.

Linkage to the Corporate Strategic Plan

City Council continues to recognize the importance of waste management and the need for a more sustainable and resilient city in the development of its 2023-2027 Strategic Plan for the City of London. Specifically, London’s efforts in waste management address the two following areas of focus: Climate Action and Sustainable Growth and Well-Run City. The CEAP was approved by Council in April 2022 following the declaration of a climate emergency in 2019. The CEAP’s Area of Focus 5, Transforming Consumption and Waste as Part of the Circular Economy.

Analysis

1.0 Background Information

1.1 Previous Reports Related to this Matter

Some relevant reports that can be found at www.london.ca under Council and Committees meetings include:

- Contract Amendment: RFP 19-02 Recycling Collection, Garbage and Yard Waste Collection (January 9, 2024, meeting of the Civic Works Committee (CWC), Item #2.5)
- Award of Contract (Request for Proposals 19-02) – Recycling Collection (City-Wide) and Garbage and Yard Waste Collection in a Portion of London (August 12, 2019, meeting of CWC, Item #2.4)

1.2 Background

Miller Waste was the successful proponent of RFP 19-02 and provides Blue Box recycling collection services city wide and garbage and yard waste collection services in the Contract Collection Area.

The contract for RFP 19-02 with Miller Waste was recently approved by Committee and Council to be amended to align with the agreement the City has with Circular Materials Ontario (CMO) to continue to provide collection of eligible Blue Box materials until the end of the Blue Box Program transition period in 2025.

The City started a source separated Green Bin collection and composting program (Green Bin program) in January 2024. This program requires a portion of the waste stream (compostable materials designated to be included in the City's Green Bin program) that was previously collected as garbage to be collected and managed separately. Implementation of the Green Bin program requires amendment of the existing contract the City has with Miller Waste to provide the additional services to collect Green Bin materials separately in the Contract Collection Area.

2.0 Discussion and Considerations

2.1 Gross and Net Contract Amendment Price

Miller Waste at the request of City staff has provided a price per stop (location collected) to complete this additional collection work, in the Contract Collection Area. The estimated annual cost based on the current number of stops to collect per year is approximately $395,000. As part of RFP 19-02, Miller Waste submitted a price to collect garbage on a biweekly basis which is a lower price than the price to collect garbage 42 times per year. The net annual contract cost increase is approximately $231,000 (Table 1).

Table 1: Estimated Net Annual Contract Increase

Estimated annual cost to collect Green Bin Materials	$395,000
Estimated annual cost reduction to collect garbage less frequently	($164,000)
Estimated net annual contract increase	$231,000

The net increase of $231,000 represents a greater than 3% increase in the original contract cost. The Procurement of Goods and Services Policy indicates that a Deputy City Manager can amend a contract by an amount "not exceeding 3% of original contract value". Because this amendment exceeds the threshold, a staff report to Council is required.

2.2 Rationale for Amendment

RFP 19-02 was released and awarded in 2019. At that time a price to provide the services to collect Green Bin materials in the Collection Contract Area could not be requested as the details such as, type of Green Bin, materials to be included, processing location and frequency of collection of the Green Bin program had not been finalized. These details were finalized at different times in 2023 with the last approval provided in August 2023.

There are significant advantages for the City to have Miller Waste continue to complete the additional work required to collect Green Bin materials in the Contract Collection Area. Miller Waste:

- Already collects Garbage and Yard Waste in this area, resulting in efficiencies and cost reduction through economies of scale;
- Is experienced in Green Bin collection. They collect Green Bin materials in a number of Ontario municipalities and have the necessary operational and customer service experience;
- Avoids duplication of management and administration systems;
- Has the ability to respond to resident concerns about Green Bin and/or biweekly garbage pickup which is often the case during program startup and program changes;
- Has some existing equipment that was leveraged and re-deployed, reducing the need for some additional equipment and staff resources to provide the services required to collect Green Bin materials; and
- Has existing resources that can be used to address external pressures to provide the service such as Green Bin program participation rates, seasonal and holiday volume fluctuations, and inclement weather.

Noting the cost and efficiency advantages listed above, City staff recommend finalizing the price provided by Miller Waste to collect Green Bin materials in the Collection Contract Area.

2.3 Procurement Process

RFP 19-02 for Recycling Collection, Garbage & Yard Waste Collection was issued May 6, 2019. Three (3) proposals were received, and Miller Waste was the successful proponent. The original contract was amended in January 2024 to align with the agreement with Circular Materials Ontario (CMO).

This amendment report requests a net increase of $231,000 to the amended contract, which represents a greater than 3% increase in the original contract cost. Section 20.3 e. ii. of the Procurement of Goods and Services Policy requires City Council to authorize contract amendments, as per 8.5 a, when the total amended value of the contract will exceed the Council approved source of financing by an amount greater than $50,000 or 3% of original contract value, whichever is greater, and there are funds available.

3.0 Financial Impact/Considerations

The additional costs associated with the recommended amendment of the contract to collect Green Bin materials can be accommodated in the base budget of the proposed 2024-2027 Multi-Year Budget.

Conclusion

This report recommends Council approve an amendment of the existing amended contract the City has with Miller Waste to collect Green Bin materials in the Collection Contract Area noting that, overall, there are financial and operational advantages to the City in proceeding with the contract amendment to have Miller Waste collect Green Bin

materials; and the costs associated with the amendment can be accommodated in the base budget of the 2024-2027 Multi-Year Budget.

Prepared by:	**Mike Losee, B.Sc.** **Division Manager, Waste Management**
Prepared and Submitted by:	**Jay Stanford, M.A., M.P.A.** **Director, Climate Change, Environment & Waste Management**
Recommended by:	**Kelly Scherr, P. Eng., MBA, FEC** **Deputy City Manager, Environment & Infrastructure**

C: Ian Collins, Director, Financial Services
Steve Mollon, Senior Manager, Procurement and Supply

Report to Civic Works Committee

To: **Chair and Members**
Civic Works Committee
From: **Kelly Scherr, P.Eng., MBA, FEC**
Deputy City Manager, Environment & Infrastructure
Subject: **Exercise First Contract Renewal Option RFP 19-02 – Recycling, Garbage and Yard Waste Collection in a Portion of London with Miller Waste Systems Inc.**
Date: **February 21, 2024**

Recommendation

That, on the recommendation of the Deputy City Manager, Environment & Infrastructure, the following actions **BE TAKEN**:

a) Approval **BE GIVEN** to exercise the contract renewal provisions of section 20.2 of the Procurement of Goods and Services Policy for the first-year renewal option of RFP 19-02 Recycling Collection, Garbage and Yard Waste Collection, as amended to include Green Bin, for a cost exceeding the threshold limits outlined in section 8.5 (a)(vi) and Schedule A of the policy noted above;

b) Civic Administration **BE AUTHORIZED** to undertake all administrative acts that are necessary in connection with the contract referenced above; and

c) The Mayor and City Clerk **BE AUTHORIZED** to execute any contract or other documents, if required to give effect to these recommendations.

Executive Summary

This report recommends execution of the first option year at the sole discretion of the City for the amended contract the City has with Miller Waste Systems Inc. (Miller Waste) for RFP 19-02. Miller Waste began the following services August 31, 2020:

- Blue Box curbside collection (city-wide)
- Multi-residential collection (city-wide)
- Garbage collection in Lambeth, Riverbend, Settlement Trail, south of the 401
- Yard Waste collection in the same areas
- Collection from EnviroDepots for Blue Box materials in carts
- Green Bin collection in the same areas (started January 15, 2024)

The criteria for renewal of option years as outlined in the Procurement of Goods and Services Policy have been met and the justification and rationale for the original award of contract remain consistent as at the time of award.

Miller Waste has provided similar services to the City since 2009 and has been an excellent service provider.

The annual cost of the existing amended contract is approximately $10,996,000 and requires Council approval in accordance with the Procurement of Goods and Services Policy. The majority of the costs of this contract, approximately $9,960,000 on an annual basis, are associated with collecting Blue Box materials and are recovered through the City's contract with Circular Materials Ontario (CMO).

Linkage to the Corporate Strategic Plan

City Council continues to recognize the importance of waste management and the need for a more sustainable and resilient city in the development of its 2023-2027 Strategic Plan for the City of London. Specifically, London's efforts in waste management address the two following areas of focus: Climate Action and Sustainable Growth and Well-Run City.

The Climate emergency Action Plan (CEAP) was approved by Council in April 2022 following the declaration of a climate emergency in 2019. The CEAP's Area of Focus 5, Transforming Consumption and Waste as Part of the Circular Economy.

Analysis

1.0 Background Information

1.1 Previous Reports Related to this Matter

Some relevant reports that can be found at www.london.ca under Council and Committees meetings include:

- Contract Amendment: RFP 19-02 Recycling Collection, Garbage and Yard Waste Collection (January 9, 2024, meeting of the Civic Works Committee (CWC), Item #2.5)
- Award of Contract (Request for Proposals 19-02) – Recycling Collection (City-Wide) and Garbage and Yard Waste Collection in a Portion of London (August 12, 2019, meeting of CWC, Item #2.4)

1.2 Background

Miller Waste was the successful proponent of RFP 19-02 and provides a range of collection services both city-wide and in the Contract Collection Area.

The contract with Miller Waste was recently approved by Council to be amended to align with the agreement the City has with CMO to continue to provide collection of eligible Blue Box materials until the end of the Blue Box Program transition period in 2025. The total contract with Miller Waste, as amended, has an annual value of approximately $10,996,000. The majority of the of the amended annual contract value (approximately $9,960,000) for Miller Waste to provide collection of eligible Blue Box materials is recovered through the City's agreement with CMO.

Miller Waste began services August 31, 2020 as follows:

- Blue Box curbside collection (city-wide)
- Multi-residential collection (city-wide)
- Garbage collection in Lambeth, Riverbend, Settlement Trail, south of the 401
- Yard Waste collection in the same areas
- Collection from EnviroDepots for Blue box materials in carts
- Green Bin collection in the same areas (started January 15, 2024)

The initial term of the contract ends on August 30, 2024. The contract contains renewal options of four (4) additional (1) year periods at the sole discretion of the City. The annual contract value requires Committee and Council to approve renewal options in accordance with the Procurement of Goods and Services Policy.

2.0 Discussion and Considerations

The initial term of the amended contract ends on August 30, 2024. Four (4), one (1) year renewal options at the sole discretion of the City are available, with each renewal requiring Council approval:

- September 1, 2024 to August 30, 2025
- September 1, 2025 to August 30, 2026
- September 1, 2026 to August 30, 2027
- September 1, 2027 to August 30, 2028

The annual value of the amended contract for RFP 19-02 is approximately $10,996,000.

City staff are recommending approval of the first renewal option in accordance with the following rationale:

Supplier Performance:
- Miller Waste has continued to meet or exceed the requirements of the different components of the contract;
- Miller Waste was approved by CMO to carry on as the Blue Box collection service provider for the City and was awarded a contract by CMO to operate both the receiving facility and processing facility as part of Blue Box transition and the subsequent individual producer responsibility system serving a portion of southwestern Ontario beginning January 1, 2026;
- Resident concerns that have been raised have been addressed in a timely manner and to the satisfaction of City staff;
- Miller Waste has accepted responsibility when concerns have been examined and has addressed items when further action is required;
- Miller Waste has proven to be a consistent and valued service provider to the City; and
- Miller Waste has provided recycling, garbage, and yard waste collections services to the City since 2009.

Contract Renewal Costs:
- The amended contract for RFP 19-02 contains annual inflationary price adjustments which will be carried through approved contract renewals;
- Recent amendments to the contract for changes of the scope of work to collect Blue Box materials during the Blue Box Program transition period and associated costs will be recovered through the City's agreement with CMO; and
- The remaining costs associated with the contract, as amended, can be accommodated in the base budget of the 2024-2027 Multi-Year Budget, noting that January 1, 2026 requires a major adjustment to the contract as most recycling services will not be administered by the City.

Review of initial award of RFP 19-02:
- The justification and rationale for the initial award of RFP 19-02 to Miller Waste is still relevant as noted in the staff report to the August 12, 2019 meeting of the Civic Works Committee

2.1 Procurement Process

RFP 19-02 for Recycling Collection, Garbage & Yard Waste Collection was issued May 6, 2019. Three (3) proposals were received, and Miller Waste was the successful proponent. The initial contract period as stated in the RFP was four (4) years with options to renew at the City's discretion for four (4) additional one (1) year periods. The initial contract period with Miller Waste began on August 31, 2020 with an expiry date of August 31, 2024.

With the initial contract period expiring in 2024, City staff are recommending exercising the first option year and renewing the Miller Waste contract as per Section 20.2 of the Procurement of Goods and Services Policy, where the Deputy City Manager, or delegate, may authorize Procurement and Supply to exercise such option, and the approval for contract renewals shall be governed by Section 8.5 a. vi. and Schedule "A" of the Policy:

8.5 The following body and persons shall have the respective approval authority as set out below (see summary in Schedule “A”). All dollar values are based on annual amounts and must be within pre-approved budgeted limits.
a. Committee and City Council must approve the following awards:
vi. Contract renewals greater than $6,000,000 (section 20.2);

Procurement and Supply has reviewed the rationale to exercise the first option year of the Miller Waste contract and supports the decision as it provides best value to the City of London.

3.0 Financial Impact/Considerations

The annual costs associated with this one year renewal can be accommodated in the base budget of the proposed 2024-2027 Multi-Year Budget. As previously noted, the majority of the of the annual costs is recovered through the City’s agreement with CMO for Blue Box services.

Conclusion

This report recommends Council approve the first renewal option of the existing amended contract the City has with Miller Waste for RFP 19-02 for the following summary reasons:

- Miller Waste has been an overall excellent service provider to the City during the initial term of the current amended contract and in previous work for the City;
- The criteria for execution of renewal options outlined in the Procurement of Goods and Services Policy have been met; and
- The costs for the entire amended contract can be accommodated in the base budget of the 2024-2027 Multi-Year Budget, noting that most of the costs associated collection of Blue Box materials are recovered through the agreement the City has with CMO.

Prepared by:	**Mike Losee, B.Sc.** **Division Manager, Waste Management**
Prepared and Submitted by:	**Jay Stanford, M.A., M.P.A.** **Director, Climate Change, Environment & Waste Management**
Recommended by:	**Kelly Scherr, P. Eng., MBA, FEC** **Deputy City Manager, Environment & Infrastructure**

C: Ian Collins, Director, Financial Services
Steve Mollon, Senior Manager, Procurement and Supply

Environmental Stewardship and Action Community Advisory Committee

Report

3rd Meeting of the Environmental Stewardship and Action Community Advisory Committee
February 7, 2024

Attendance

B. Samuels (Chair), B. Amendola, R. Duvernoy, A. Ford, M. Griffith, A. Hames, M.A. Hodge, C. Hunsberger, N. Serour and L. Vuong and H. Lysynski (Clerk)

ABSENT: I. ElGhamrawy and A. Pert

ALSO PRESENT: J. Stanford and M. Szarka

The meeting was called to order at 4:32 PM; it being noted that B. Amendola, R. Duvernoy, A. Ford, M. Griffith, A. Hames, C. Hunsberger, N. Serour and L. Vuong were in remote attendance.

1. Call to Order

1.1 Disclosures of Pecuniary Interest

That it BE NOTED that no pecuniary interests were disclosed.

1.2 Election of Vice Chair

That the election of Vice Chair BE POSTPONED until the Environmental Stewardship and Action Community Advisory Committee vacancies have been filled.

2. Scheduled Items

None.

3. Consent

3.1 2nd Report of the Environmental Stewardship and Action Community Advisory Committee

That it BE NOTED that the 2nd Report of the Environmental Stewardship and Action Community Advisory Committee, from its meeting held on January 3, 2024, was received.

3.2 Municipal Council Resolution – 1st and 2nd Reports of the Environmental Stewardship and Action Community Advisory Committee

That it BE NOTED that the Municipal Council resolution adopted at its meeting held on January 23, 2024, with respect to the 1st and 2nd Reports of the Environmental Stewardship and Action Community Advisory Committee, was received.

3.3 2023 Climate Emergency Action Plan Update Report

That it BE NOTED that the Environmental Stewardship and Action Community Advisory Committee held a discussion and received the staff report dated January 16, 2024 entitled "2023 Climate Emergency Action Plan Update Report".

4. Sub-Committees and Working Groups

4.1 Draft Work Plan 2024

That the draft 2024 Environmental Stewardship and Action Plan Community Advisory Committee Work Plan BE ADOPTED.

5. Items for Discussion

5.1 (ADDED) Planting Under or Around Powerlines and Electrical Equipment

That the "Planning Under or Around Powerlines and Electrical Equipment" BE INCLUDED as a resource document to assist with tree planting as proposed in the draft 2024 Work Plan.

6. Adjournment

The meeting adjourned at 5:15 PM.

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: **Gold Seal & Fournie Municipal Drain Improvements**
Date: **February 21, 2024**

Recommendation

That on the recommendation of Deputy City Manager, Environment and Infrastructure, the following actions **BE TAKEN** with respect to the Gold Seal & Fournie Municipal Drain Improvements:

(a) The drainage report, attached as Appendix 'A', prepared by Spriet Associates London Ltd, Consulting Engineers for the construction of the Gold Seal and Fournie Municipal Drains (2023) **BE ADOPTED,** it being noted the notice of the public meeting was provided in accordance with the provisions of Section 78 of the Drainage Act; and,

(b) the proposed by-law, attached as Appendix 'B' **BE INTRODUCED** at this meeting, and **BE GIVEN** two readings at the March 5, 2024 Council meeting to authorize the reconstruction of the Gold Seal & Fournie Municipal Drain 2023 project, it being noted that the third reading and enactments of the by-law would occur after the holding of the Court of Revision in connection with the project.

Linkage to the Corporate Strategic Plan

This recommendation supports the following 2023-2027 Strategic Plan areas of focus:

- Waterways, wetlands, watersheds, and natural areas are protected and enhanced.
    - Protect the natural environment and avoid natural hazards when building new infrastructure or development.
    - Improve the natural environment and build resiliency when replacing aging infrastructure.

Executive Summary

The Drainage report for both the Gold Seal and Fournie Drains was completed under Section 78 of the Drainage Act and initiated by the Road Authority (Ministry of Transportation). Council motioned for Spriet Associates London Ltd. to review the request and begin the process of creating new Drainage Reports. The Gold Seal and Fournie Drain Reports detail the recommendations, design criteria, cost estimates, and assessment schedule for the cost of construction and future maintenance to the Gold Seal and Fournie Municipal Drains. Accepting the By-law to adopt the drainage report will allow the design to be tendered for construction.

Analysis

1.0 Background Information

1.1 Previous Reports Related to this Matter

- Council – February 1, 1999 – A by-law to provide for a Drainage Works in the City of London (Construction of the Gold Seal Municipal Drain).

- Council – February 6, 1969 – A by-law to provide for a drainage works in the Township of Westminster, in the County of Middlesex, and for borrowing on the credit of the Municipality, the sum of 8,800.00, for completing the drainage works.

2.0 Discussion and Considerations

2.1 Purpose

To undertake the improvements to the Gold Seal and Fournie Municipal Drains, the provincial Drainage Act requires a Council resolution to adopt the drainage report and enact the related by-laws. An assessment was undertaken to review the drainage conditions and assess how to best align the drains around the new interchange design.

2.2 Context

The proposed work to reconstruct the Gold Seal and Fournie Municipal Drains was initiated by the road authority, Ontario Ministry of Transportation (MTO). Both drains provide for drainage related to the MTO's Highway 401 and Colonel Talbot Road interchange improvements. A map of the site area is attached as Appendix 'C'.

2.3 Additional Background

The Drainage Report for the Gold Seal and Fournie Municipal Drains was prepared pursuant to Section 78 of the Drainage Act. The requests for drainage improvements were studied by Spriet Associates Ltd. and are documented in the Engineer's Report (Appendix 'A'). The report includes technical specification for construction, cost estimates, and an assessment schedule indicating how future maintenance costs are to be divided amongst the benefitting landowners.

The Drainage Act requires a public meeting prior to the adoption of the Engineer's Report. This Civic Works Committee meeting will serve that purpose. All property owners within the watershed have been notified of this meeting and may be present to pose questions. There is a further opportunity to appeal the assessment schedule prior to construction through the Court of Revision to be scheduled after this meeting. Representatives from Spriet Associates Ltd will also attend the meeting to answer any questions regarding the Drainage Report.

3.0 Financial Impact/Considerations

3.1 Procurement Process

The Ministry of Transportation is responsible for the capital costs to reconstruct the Gold Seal and Fournie drains as the reconstruction work is being completed to accommodate the reconstruction of the 401 interchange. The new drainage reports include updates to the assessment schedules to property owners for future maintenance costs.

Conclusion

The drains, when reconstructed, will be of great benefit to the lands and roads through which they run and will provide improved outlets to the lands within the watersheds. Once Council approves the reconstruction of the Gold Seal and Fournie Municipal Drains 2023 project as set out in the Drainage Reports governed by the Drainage Act, a tender for these works will be issued and construction undertaken.

Prepared by:	**Shawna Chambers, DPA, P.Eng.** **Division Manager, Stormwater Engineering**
Submitted by:	**Ashley M. Rammeloo, MMSc., P.Eng.** **Director, Water, Wastewater, and Stormwater**
Recommended by:	**Kelly Scherr, P.Eng., MBA, FEC** **Deputy City Manager, Environment, and Infrastructure**

Appendix ‘A’ – By-law

Appendix ‘B’ – Engineer’s Reports

Appendix ‘C’ – Site Map

cc: Paul Titus, Program Manager, Stormwater Engineering
Jessica Trela, Drainage Superintendent, Stormwater Engineering
M. DeVos – Spriet Associates London Ltd.
A. Kruspel – Spriet Associates London Ltd.

APPENDIX 'A'

GOLD SEAL DRAIN 2023

City of London

SPRIET
ASSOCIATES
ENGINEERS & ARCHITECTS
155 York Street
London, Ontario N6A 1A8
Tel. (519) 672-4100
Fax (519) 433-9351
E-mail MAIL@SPRIET.ON.CA

Our Job No. 220279

November 30, 2023

London, Ontario
November 30, 2023

GOLD SEAL DRAIN 2023

City of London

To the Mayor and Council of
The City of London

Mayor and Council:

We are pleased to present our report on the reconstruction of a portion of the Gold Municipal Drain serving parts of Lots 56 and 57, E.N.B.T.R. (geographic Westminster) in the City of London. The tributary watershed area contains approximately 47 hectares.

AUTHORIZATION

This report was prepared pursuant to Section 78 of the Drainage Act. Instructions were received from your Municipality with respect to a motion of Council. The work was initiated by a request signed by one of the affected landowners.

HISTORY

The Gold Seal Drain was last reconstructed pursuant to a report submitted by M.P. DeVos, P. Eng. dated October 14, 1998, and consisted of a Main Drain and Branches A, B, and C. The Main Drain extends northerly through Lots 52 to 55, up to Glanworth Drive in the middle of Concession E.N.B.T.R. From there it crosses the road and continues north-easterly across Lot 56 to its head at the line between Lots 56 and 57.

EXISTING DRAINAGE CONDITIONS & REQUESTS

At a site meeting held and a field investigation and survey were completed. Upon reviewing our findings we note the following:

- that Glanworth Drive is being re-routed northerly starting at a location just east of the existing Main Drain crossing, heading north-westerly and westerly so it meets Highway 4 approximately 440 meters north of the existing intersection

- that a tee intersection with the new road alignment will be created in the vicinity of the existing drain

- the MTO requested the portion of the Main Drain affected by their construction be reconstructed using sewer pipe and that a new report be prepared to reflect these changes

DESIGN CRITERIA AND CONSIDERATIONS

The MTO has engaged Dillon Consulting to prepare a “Design-Build Ready Report” for the project. As part of that process a Municipal Drainage Management Design Report was prepared.

The report recommends that the existing Main Drain tile be replaced with a 450mm sewer pipe across the new Glanworth Drive and Tempo Road intersection with new catchbasins at the ends and that the existing catchbasin on the north side of Tempo Road (previously Glanworth) be replaced with a new catchbasin slightly north of the existing catchbasin.

RECOMMENDATIONS

We are therefore recommending the following:

- that the existing Main Drain tile be replaced with 450mm sewer pipe across the new roadway
- that catchbasins be installed in several locations to accommodate surface access and alignment drainages

SUMMARY OF PROPOSED WORK

The proposed work consists of approximately 33 lineal meters of 450mm sewer pipe including catchbasins.

SCHEDULES

Three schedules are attached hereto and form part of this report, being Schedule 'A' - Allowances, Schedule 'B' - Cost Estimate, and Schedule 'C' - Assessment for Maintenance.

Schedule 'A' - Allowances. In accordance with Section 30 of the Drainage Act, allowances are provided for damages to lands and crops along the route of the drain as defined below.

Schedule 'B' - Cost Estimate. This schedule provides for a detailed cost estimate of the report which is in the amount of $23,300.00. This estimate includes engineering, administration, and allowances associated with this project. The construction has not been included in the estimate as the work will be completed by the MTO as part of their interchange expansion project.

Schedule 'C' – Assessment for Construction and Schedule ‘D’ - Assessment for Maintenance. In accordance with Section 65(3) of the Drainage Act, these schedules outline changes to the existing Schedules of Assessment in the 1998 report and the distribution of future repair and/or maintenance costs for portions of, or the entire drainage works. Any changed property/assessment is shown in bold.

Spriet Associates Drawing No.'s 1, Job No. 220279 and Drawing No. 7, Storm Water Management, Appendix F by Dillon Consulting dated December 2021 form part of this report. They show and describe in detail the location and extent of the work to be done and the lands which are affected.

ALLOWANCES

DAMAGES: Section 30 of the Drainage Act provides for the compensation to landowners along the drain for damages to lands and crops caused by the construction of the drain. The amount granted is based on $4,787.00/ha. for open ditch work with excavated material levelled adjacent to drain. This base rate is multiplied by the hectares derived from the working widths shown on the plans and the applicable lengths.

ASSESSMENT

Due to the nature of the work, location, materials, and installation methods, the entire cost of this report shall be a Special Assessment against the Ministry of Transportation Ontario in accordance with Section 26 of the Drainage Act.

MAINTENANCE

Upon completion of construction, all owners are hereby made aware of Sections 80 and 82 of the Drainage Act which forbid the obstruction of or damage or injury to a municipal drain.

After completion, the portion of the Drain within the Tempo Road and Glanworth Drive road allowance shall be maintained by the City of London at the expense of the adjacent Road Authority until such time as the assessment is changed under the Drainage Act.

In accordance with Section 65(3) of the Drainage Act, the Assessments on the existing Gold Seal Drain for Future Maintenance to properties affected by this report have been altered to reflect the changes occurring. Therefore, the remaining existing Main Drain – Closed Portion upstream and downstream shall be maintained by the City of London at the expense of all upstream lands and roads assessed in the attached revised 1998 Schedule ‘C’ – Assessment for Construction. The Main Drain – Open Portion shall be maintained by the City of London at the expense of the lands and roads assessed in the revised attached Schedule 'D' - Assessment for Maintenance and in the same relative proportions until such time as the assessment is changed under the Drainage Act.

Respectfully submitted,

SPRIET ASSOCIATES LONDON LIMITED

M.P. DeVos, P. Eng.

MPD:bv

SCHEDULE ' A ' - ALLOWANCES

GOLD SEAL DRAIN 2023

City of London

e with Section 30 of the Drainage Act, we determine the allowances payable to
to owners entitled thereto as follows:

CON.	LOT	ROLL NUMBER (Owner)	Section 30 Damages	TOTALS
ENBTR	W½E½ 56	80-060-021-01(806584 Ontario Ltd.)	$ 200.00	$ 200.00
ENBTR	Pt.E½ 56	80-060-033 PART 1 (1068788 Ontario Ltd.)	200.00	200.00
ENBTR	Pt.E½ 56	80-060-033 PART 2 (1068788 Ontario Ltd.)	150.00	150.00
		Total Allowances	$ 550.00	$ 550.00

TOTAL ALLOWANCES ON THE MAIN DRAIN-CLOSED PORTION **$ 550.00**

SCHEDULE 'B' - COST ESTIMATE

GOLD SEAL DRAIN 2023

City of London

We have made an estimate of the cost of the proposed work which is outlined in detail as follows:

CONSTRUCTION		
Locate and expose existing tile	$	1,010.00
Contingencies	$	350.00
Allowances under Section 30 of the Drainage Act	$	550.00
ADMINISTRATION		
Net Harmonized Sales Tax	$	660.00
Survey, Plan and Final Report	$	15,500.00
Expenses	$	230.00
Review of Construction Drawings	$	2,000.00
Supervision and Updating Final Construction Details	$	3,000.00
TOTAL ESTIMATED COST	**$**	**23,300.00**

GOLD SEAL DRAIN 1998 October 14, 1998
City of London **Revised by Section 65 (3)**
November 30, 2023

CON.	LOT	HECTARES AFFECTED	ED	ROLL No. (OWNER)	SPECIAL BENEFIT	BENEFIT	OUTLET	TOTAL
MAIN DRAIN-CLOSED PORTION								
ENBTR	Pt.S½	53	2.4	80-060-024(J. & M. Ferguson)	$	$ 2,910.00	43.00	2,953.00
ENBTR	E¼	53	5.2	80-060-025(1068788 Ontario Ltd.)		750.00	76.00	826.00
ENBTR	NWPt.	53	6.0	80-060-016(1000182402 Ontario Inc.)		11,990.00	487.00	12,477.00
ENBTR	SWPt.	54	8.9	80-060-01601(806433 Ontario Ltd.)		6,720.00	1,612.00	8,332.00
ENBTR	NWPt.	54	1.2	80-060-019(1068788 Ontario Ltd.)			146.00	146.00
ENBTR	Pt.N½	54	10.1	80-060-021-01(806584 Ontario Ltd.)		6,270.00	2,245.00	8,515.00
ENBTR	E¼	54	12.1	80-060-021-01(806584 Ontario Ltd.)			987.00	987.00
ENBTR	WPt.	55	4.7	80-060-019(1068788 Ontario Ltd.)			1,318.00	1,318.00
ENBTR	W½E½	55	20.2	80-060-021-01(806584 Ontario Ltd.)		11,580.00	5,923.00	17,503.00
ENBTR	E¼	55	14.1	80-060-022(J. & M. Ferguson)			2,350.00	2,350.00
* ENBTR	Pt.W½	56	0.55	80-060-035(Cameron Grane & Riggers Inc.)			501.00	501.00
ENBTR	**Pt.W½**	**56**	**0.8**	**80-060-03505 PART 1 (756950 Ontario Ltc**			**364.00**	**364.00**
ENBTR	**Pt.W½**	**56**	**1.6**	**80-060-03505 PART 2 (756950 Ontario Ltd.)**			**727.00**	**727.00**
ENBTR	**Pt.E½**	**56**	**32.2**	**80-060-033 PART 1 (1068788 Ontario Ltd.**		**14,240.00**	**13,579.00**	**27,819.00**
ENBTR	**Pt.E½**	**56**	**0.8**	**80-060-033 PART 2 (1068788 Ontario Ltd.)**			**337.00**	**337.00**
ENBTR	SEPt.	57	15.6	80-060-030(G. Axford)		650.00	9,639.00	10,289.00
ENBTR	NEPt.	57	6.3	80-060-031(M. Lorenzutti & F. Damico)			4,762.00	4,762.00
				TOTAL ASSESSMENT ON LANDS	$	$ 55,110.00	$ 45,096.00	$ 100,206.00
Glanworth Drive		**4.5**		**City of London**	**$**	**$ 2,270.00**	**7,383.00**	**9,653.00**
Tempo Road		**0.7**		**City of London**		**1,510.00**	**1,148.00**	**2,658.00**
				TOTAL ASSESSMENT ON ROADS	$	$ 3,780.00	$ 8,531.00	$ 12,311.00

SPECIAL ASSESSMENT against the City of London for the increased cost of boring a 406mm (16") smooth wall pipe under Glanworth Drive on the Main Drain $ 6,480.00

SPECIAL ASSESSMENT against Union Gas for the administration and construction costs of locating their gas line on Glanworth Drive and any modifications to the drainage works if required $ 300.00

TOTAL ASSESSMENT ON THE MAIN DRAIN-CLOSED PORTION $ 119,297.00

GOLD SEAL DRAIN 1998
City of London

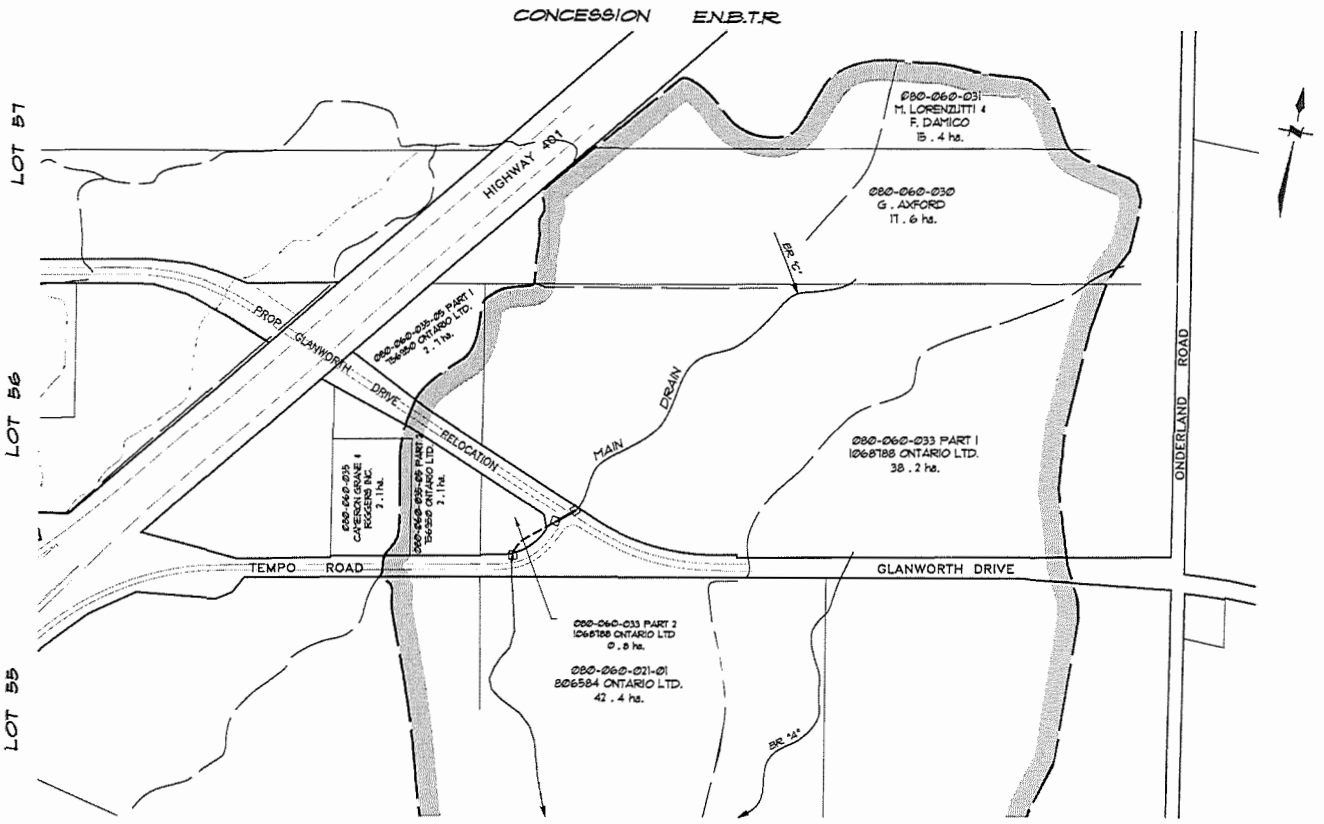
October 14, 1998
Job No. 97226 **Revised by Section 65**
November 30, 2023

	CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	PERCENTAGE OF MAINTENANCE COST
	MAIN DRAIN-OPEN PORTION				
	City of London		(Former Township of Westminster)		
*	ENBTR	WPt. 49	0.3	80-060-003(1188165 Ontario Ltd.)	0.02 %
*	ENBTR	Pt.W½ 50	1.4	80-060-004(CRM Properties Inc..)	0.09
*	ENBTR	Pt.W½ 50	1.7	80-060-00402(Laidlaw Carriers Bulk GP Inc.)	0.11
*	ENBTR	Pt.W½ 50	5.9	80-060-00410(Laidlaw Carriers Bulk GP Inc.)	1.48
*	ENBTR	Pt.W½ 50	1.8	80-060-00401(Badger Daylighting Inc.)	1.31
	ENBTR	Pt.W½ 50	5.4	80-060-00403(C. & K. Wodrich)	0.33
	ENBTR	SPt. 51	16.8	80-060-008(R. & I. Orr)	3.47
*	ENBTR	SPt. 51	0.1	80-060-008(R. & I. Orr)	0.01
	ENBTR	NWPt. 51	17.4	80-060-010(J. & R. Baker)	5.47
	ENBTR	Pt.51&Pt. 52	25.4	80-060-011(J. Burtwistle)	9.70
	ENBTR	NW¼ 52	6.1	80-060-013(1068788 Ontario Ltd.)	0.74
	ENBTR	NE¼ 52	16.2	80-060-024(J. & M. Ferguson)	5.14
	ENBTR	SW¼ 53	1.2	80-060-015(S. Peake)	0.15
	ENBTR	Pt.S½ 53	8.1	80-060-024(J. & M. Ferguson)	1.69
	ENBTR	E¼ 53	13.7	80-060-025(1068788 Ontario Ltd.)	5.04
	ENBTR	NWPt. 53	6.0	80-060-016(1000182402 Ontario Inc.)	2.05
	ENBTR	SWPt. 54	8.9	80-060-01601(806433 Ontario Ltd.)	3.04
	ENBTR	NWPt. 54	1.2	80-060-019(1068788 Ontario Ltd.)	0.20
	ENBTR	Pt.N½ 54	10.1	80-060-021-01(806584 Ontario Ltd.)	3.45
	ENBTR	E¼ 54	12.1	80-060-021-01(806584 Ontario Ltd.)	4.13
	ENBTR	WPt. 55	4.7	80-060-019(1068788 Ontario Ltd.)	1.25
	ENBTR	W½E½ 55	20.2	80-060-021-01(806584 Ontario Ltd.)	6.90
	ENBTR	E¼ 55	14.1	80-060-022(J. & M. Ferguson)	4.82
*	ENBTR	Pt.W½ 56	0.55	80-060-035(Cameron Grane & Riggers Inc.)	0.29
	ENBTR	**Pt.W½ 56**	**0.8**	**80-060-03505 PART 1 (756950 Ontario Ltd.)**	**0.27**
	ENBTR	**Pt.W½ 56**	**1.6**	**80-060-03505 PART 2 (756950 Ontario Ltd.)**	**0.56**
	ENBTR	**Pt.E½ 56**	**32.2**	**80-060-033 PART 1 (1068788 Ontario Ltd.)**	**10.75**
	ENBTR	**Pt.E½ 56**	**0.8**	**80-060-033 PART 2 (1068788 Ontario Ltd.)**	**0.28**
	ENBTR	SEPt. 57	15.6	80-060-030(G. Axford)	4.35
	ENBTR	NEPt. 57	6.3	80-060-031(M. Lorenzutti & F. Damico)	2.15
	WNBTR	Pt.NE¼ 49	13.6	80-060-176(Oegema Grains Ltd.)	2.77
*	WNBTR	Pt.NE¼ 49	1.0	80-060-17610(Oegema Grains Ltd.)	0.01
	WNBTR	S½ 50	17.4	80-060-175(Thomas Brothers Produce Inc.)	3.34
	WNBTR	N½ 50	17.0	80-060-174(Thomas Brothers Produce Inc.)	1.95
	WNBTR	SEPt. 51	20.2	80-060-173(Thomas Brothers Produce Inc.)	0.89
				TOTAL ASSESSMENT ON LANDS	88.20 %
	Colonel Talbot Rd.		2.8	City of London	1.90 %
	Orr Drive		2.5	City of London	1.03
	Tempo Road		**0.7**	**City of London**	**1.40**
	Glanworth Drive		**4.5**	**City of London**	**5.80**
				TOTAL ASSESSMENT ON ROADS	10.13 %
				TOTAL ASSESSMENT IN THE CITY OF LONDON	**98.33 %**

GOLD SEAL DRAIN 1998
City of London

CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	PERCENTAGE OF MAINTENANCE COST
MAIN DRAIN-OPEN PORTION (Continued) **Township of Southwold**				
County Road No. 18		0.8	County of Elgin	1.67 %
		TOTAL ASSESSMENT ON ROADS		1.67 %
		TOTAL ASSESSMENT IN TOWNSHIP OF SOUTHWOLD		**1.67 %**
		TOTAL ASSESSMENT FOR MAINTENANCE ON THE MAIN DRAIN-OPEN PORTION		**100.00 %**

NOTE:
All of the above lands, with the exception of those noted with an asterisk, are classified as agricultural.



PLAN SCALE 1:5,000

GENERAL NOTES

1/ THE NEW 450mm STORM SEWER PIPE TO BE INSTALLEDTO REPLACE THE EXISTING MAIN DRAIN TILE UNDER THE NEW GLANWORTH DRIVE & TEMPO ROAD INTERSECTION AND THE NEW CATCHBASIN CONNECTION ON THE NORTH SIDE OF TEMPO ROAD (INCLUDING NEW CATCHBASINS) ARE TO BE ARE TO BE INCORPORATED AS PART OF THE MAIN DRAIN AND THE GOLD SEAL DRAIN 2022 FOR FUTURE MAINTENANCE PURPOSES .

2/ FOR FURTHER CONSTRUCTION DETAILS (INCLUDING PROFILES & ELEVATIONS) REFER TO THE "GLANWORTH DRIVE UNDERPASS REPLACEMENT" DRAWING NO. 7, STORM WATER MANAGEMENT, APPENDIX F, BY DILLON CONSULTING

3/ WHERE THE STORM SEWER OR APPURTENANCE IS LOCATED ON THE ROAD ALLOWANCE, THE WORKING WIDTH SHALL BE CONFINED TO THE ROAD ALLOWANCE. OTHERWISE THE WORKING WIDTH SHALL BE 20m

PLAN LEGEND

- LIMIT OF WATERSHED AREA
- PROPOSED DRAINAGE WORKS
- EXTERIOR OR INTERIOR WATERSHED
- EXIST. MUNICIPAL DRAIN
- EXIST. MUNICIPAL DRAIN TO BE INCLUDED

10 - 025 ASSESSMENT ROLL NUMBER
J. SMITH OWNERS NAME
48.3 ha. HECTARES OWNED

GOLD SEAL DRAIN 2023

City of London

Drainage Technologist
JESSICA TRELA
519-661-2489 EXT. 5953

No.	REVISIONS	DATE

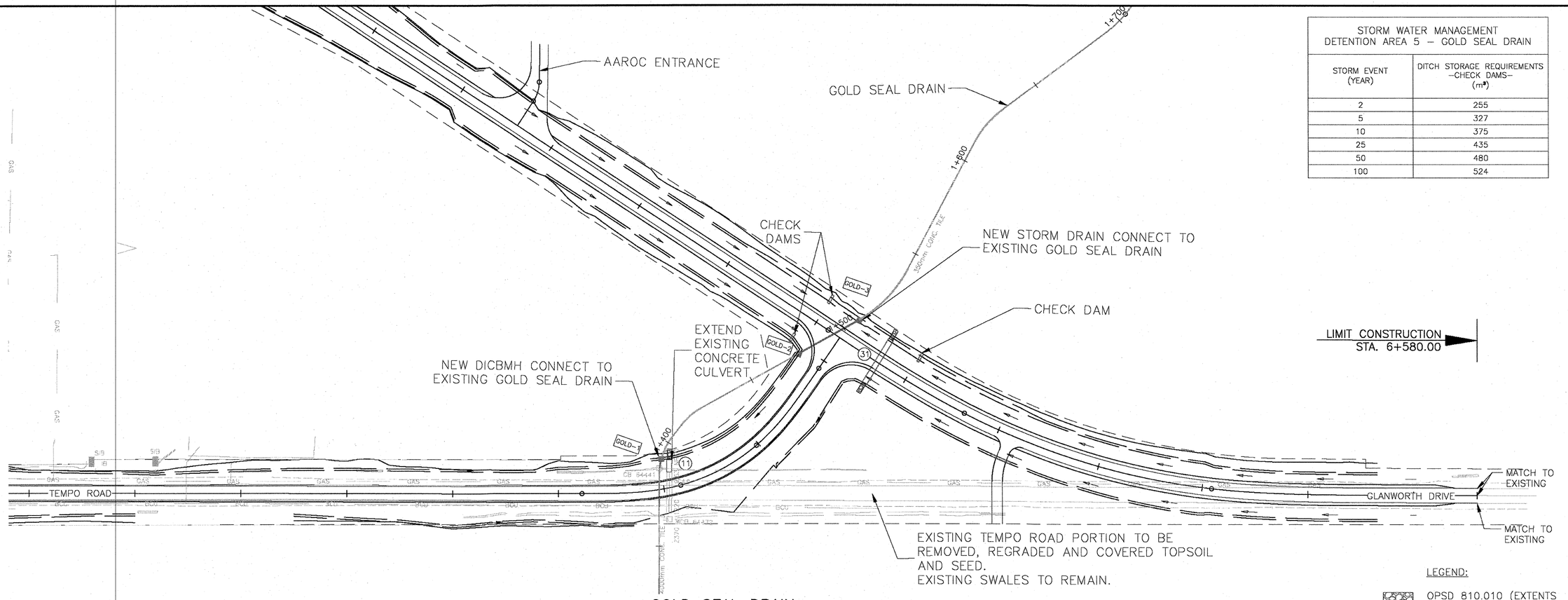
LICENSED PROFESSIONAL ENGINEER — Nov. 30/23 — M. P. DeROS — PROVINCE OF ONTARIO

Drawn By: ak	Field Book	JOB No.	Drawing No.
Date: NOV. 30, 2023	N/A	220279	1

PLAN

SPRIET ASSOCIATES
LONDON LIMITED
CONSULTING ENGINEERS
155 YORK STREET — LONDON (519) 672-4100 — N6A 1A8

STORM WATER MANAGEMENT DETENTION AREA 5 – GOLD SEAL DRAIN	
STORM EVENT (YEAR)	DITCH STORAGE REQUIREMENTS –CHECK DAMS– (m^3)
2	255
5	327
10	375
25	435
50	480
100	524

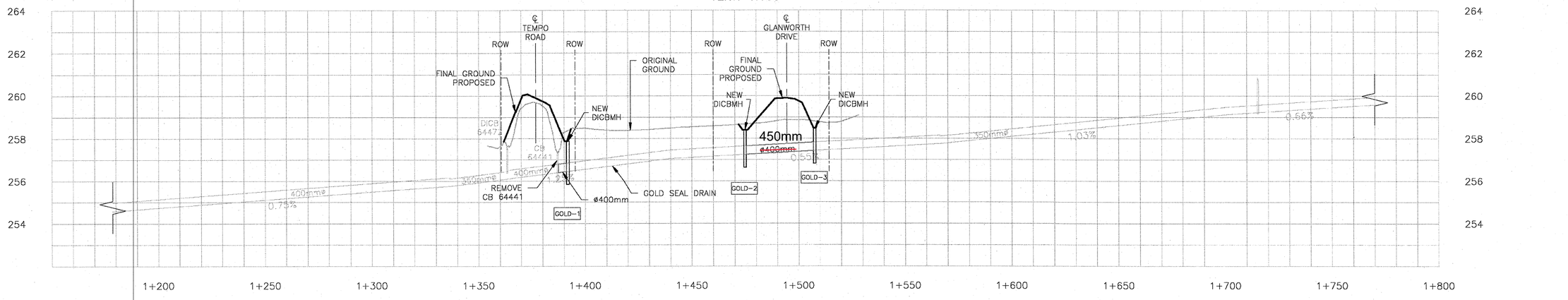


LEGEND:

OPSD 810.010 (EXTENTS TO BE DETERMINED DURING DETAILED DESIGN).

GOLD SEAL DRAIN

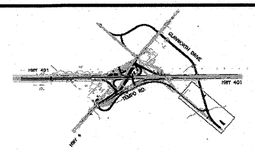
HORIZ: 1:1000
VERT: 1:100



DATE PLOTTED: 1/28/2022 5:57:29 PM
FILE LOCATION: G:\240\12711\0\assignment\1 (3011-E-0046)\GWP 3030-11-00\03-Drainage\01-Contract\3030-11-00 Municipal Drain Design.dwg

MEGA EA ASSIGNMENT 1A, GWP 3030–11–00
HIGHWAY 401/HIGHWAY 4 (COLONEL TALBOT ROAD) INTERCHANGE IMPROVEMENT AND COLONEL TALBOT ROAD UNDERPASS AND GLANWORTH DRIVE UNDERPASS REPLACEMENT

Ontario



THE DETAILS SHOWN ON THIS DRAWING ARE PRELIMINARY AND ARE PROVIDED FOR INFORMATION ONLY

20m 0 40m
Horizontal

CREATED BY: JCR
CHECKED BY: BGH
PROJECT No. 12–7110
DATE: DEC 2021

DILLON CONSULTING

STORM WATER MANAGEMENT
ULTIMATE IMPROVEMENTS
PLAN & PROFILE
APPENDIX F

PAGE 7

FOURNIE DRAIN 2023

City of London

SPRIET
ASSOCIATES
ENGINEERS & ARCHITECTS
155 York Street
London, Ontario N6A 1A8
Tel. (519) 672-4100
Fax (519) 433-9351
E-mail MAIL@SPRIET.ON.CA

Our Job No. 220278

December 20, 2023

London, Ontario
December 20, 2023

FOURNIE DRAIN 2023

City of London

To the Mayor and Council of
The City of London

Mayor and Council:

We are pleased to present our report on the reconstruction of parts of the Fournie Municipal Drain serving parts of Lots 51 to 57, Concessions WNBTR and ETR (geographic Westminster) in the City of London and parts of Lots 52 to 55, Concession WNBTR (geographic Delaware) in the Municipality of Middlesex Centre. The total watershed area affected by the proposed work contains approximately 150 hectares.

AUTHORIZATION

This report was prepared pursuant to Section 78 of the Drainage Act. Instructions were received from your Municipality with respect to a motion of Council. The work was initiated by a request signed by the Road Authority.

HISTORY

The portion of Fournie Drain downstream of Tempo Road was last reconstructed pursuant to a report submitted by A.J. DeVos, P. Eng. dated February 6, 1969. It consisted of an open ditch extending downstream from Tempo Road, across Lots 54 and 53, Concession E.N.B.T.R., Highway 4, and Lots 53 through 51, Concession W.N.B.T.R.

The drain was later extended upstream pursuant to a report submitted by J.P. McIntyre, P.Eng., dated August 26, 1981. It consisted of an open ditch extending upstream from the head of the existing drain across Tempo Road, then along the north side of said road for approximately 350 meters. It then turned and crossed Highway 401 to its north side and then north-easterly and northerly crossing Glanworth Drive a short distance west of the overpass. The portion across Glanworth Drive was a closed drain consisting of 300mm pipe.

The drain was later partially relocated in Lots 53 and 54, and a new Super Truck Branch constructed pursuant to a report submitted by D.W. Pletch, P.Eng., dated June 6, 1990. The relocation included a new culvert and the Branch consisted of 450mm sewer pipe and a maintenance hole.

EXISTING DRAINAGE CONDITIONS & REQUESTS

At a site meeting held with respect to the project and through later discussions, the owners reported the following:

- that the Ontario Ministry of Transportation (MTO) is completing improvements to the interchange where Highway 4 crosses Highway 401
- that the improvements require alterations of the intersection of Highway 4 and Tempo Road
- that the improvements also include the relocation of the Glanworth Drive overpass
- it was requested that a new report be prepared to reflect the required changes to the Fournie Drain as a result of the above road works
- that the MTO has engaged Dillon Consulting to prepare a "Design-Build Ready Report" for the project. As part of that process a Municipal Drainage Management Design Report was prepared. The report provides the design of the alterations to the drain along with stormwater management to address water quantity and quality

A field investigation and survey were completed to confirm the new design in relation to the existing drain grades and features.

A draft report including drawings, cost estimates, and assessment information was prepared and reviewed with affected landowners to review the findings and preliminary proposals. Further input and requests were provided by the affected owners at that time and at later dates. This included expanding the work to include the relocation of the drain from Sta. 0+500 to Sta. 0+710.

DESIGN CRITERIA AND CONSIDERATIONS

As part of the MTO design process for the interchange improvements, the Stormwater Management Report recommends that ponds be constructed/improved to reduce release flows to the Fournie Drain. Two ponds are proposed, northeast of the Highway 4 bridge, which outlet directly into the Fournie Drain. One pond is proposed northwest of the bridge, with low-flow release directly to the Fournie Drain. A further detention area is proposed in the south road ditch, southwest of the interchange, which ultimately outlets to a private drain in Lot 53. Additionally, overbank storage has been provided directly along the portion of Fournie Drain between the two new culverts under Tempo Road.

For the culverts being replaced/added under this project, the MTO designed these for a minimum of 1 in 50-year storm, including freeboard provision and analyzed up to above the 1 in 100-year storm.

The capacity of a typical open channel agricultural drain would be designed in accordance with the rational method to a design frequency of a 1 in 2-year storm. The MTO design criteria for any of the changed area is higher than this.

RECOMMENDATIONS

Through the MTO design this report recommends the following:

MAIN DRAIN:

- that the existing ditch be partially cleaned out and relocated from the existing culvert under Highway 4 upstream for approximately 240 meters to the new Tempo Road intersection
- that the existing entrance culvert at Sta. 0+120 be replaced to accommodate the relocation of the ditch
- that a new culvert under the relocated Tempo Road at Sta. 0+260 be constructed matching to the existing drain alignment on the upstream side
- no excavation in the ditch bottom is required between Tempo Road culverts (Sta. 0+270 to Sta. 0+450) but overbank storage will be provided by widening the upper part of the drain
- that a new culvert at the relocated Tempo Road crossing (Sta. 0+470) be constructed in the existing drain location
- that the existing ditch be relocated westerly adjacent to the Tempo Road road allowance between Sta. 0+500 and Sta. 0+710 across the adjacent farm property
- that the existing road culvert at Sta. 0+740 be replaced to accommodate the road alignment change in this location
- that a minor change to the ditch alignment be completed between Sta. 0+760 and Sta. 1+120 to accommodate eastbound on-ramp improvements
- that the existing culvert under Highway 401 be extended on the south side to accommodate the above
- that the existing ditch be relocated on the north side of the 401 to the proposed Stormwater Management Facility (SWMF2) to accommodate westbound off-ramp improvements (Sta. 1+195 to Sta. 1+350)
- that the existing 300mm sub-surface piped road crossing under the old Glanworth Drive ramp be removed and replaced with an open ditch directed into SWMF2
- that a rodent gate and quarry stone rip-rap be installed around the end of the pipe termination (approximately 3 meters downstream of the existing catchbasin)
- that the two existing catchbasins (and pipe between) on the upstream side of the old Glanworth Drive crossing be included as part of this report for future maintenance purposes

RECOMMENDATIONS (cont'd)

- that the outlet of Pond 2 (on the Fournie Drain) consists of a 450mm low-release flow pipe and overflow weir set at an elevation below the upstream inlet Fournie Drain open ditch

- that the M.T.O. complete the work as part of their intersection improvement project with the exception of the portion from Sta. 0+500 to Sta. 0+710 which shall be completed by the City one construction season after the M.T.O. work

SUPER TRUCK BRANCH:

- that the existing Super Truck Branch (450mm dia.) and existing road storm pipe across Colonel Talbot Road be replaced with new 9,800mm dia. pipe

- that the existing SWMF pipe outlet be cut off and protected with a rodent gate and quarry stone rip-rap

- that the existing SWMF pipe, upstream of the existing maintenance hole, be replaced and extended to the new property line with a 600mm dia. sewer pipe, connecting to the new outlet for the relocated private SWMF

ENVIRONMENTAL CONSIDERATIONS AND MITIGATION MEASURES

This report is being completed to facilitate the MTO project described previously. The MTO will be completing the final drain contract administration and environmental approvals. Their project initially went through the Class EA process however it should be noted that this drain is shown on mapping to be a Class C drain and may be subject to timing windows for in-drain work.

SUMMARY OF PROPOSED WORK

The proposed work consists of approximately 1,400 lineal meters of open ditch cleanout and reconstruction including quarry stone rip-rap bank protection and road culverts, and the replacement/incorporation of 15 lineal meters of 300mm pipe and two catchbasins.

SCHEDULES

Three schedules are attached hereto and form part of this report, being Schedule 'A' - Allowances, Schedule 'B' - Cost Estimate, and Schedule 'C' - Assessment for Future Maintenance.

Schedule 'A' - Allowances. In accordance with Sections 29 and 30 of the Drainage Act, allowances are provided for right-of-way and damages to lands and crops along the route of the drain as defined below.

Schedule 'B' - Cost Estimate. This schedule provides for a detailed cost estimate of the proposed work which is in the amount of $345,000.00. This estimate includes engineering and administrative costs associated with this project.

SCHEDULES (cont'd)

Schedule 'C' - Assessment for Future Maintenance. In accordance with Section 65(3) of the Drainage Act, this schedule outlines changes to the existing Schedule of Assessment in the 1969 report and the distribution of future repair and/or maintenance costs for portions of, or the entire drainage works. Any changed property/assessment is shown in bold.

Spriet Associates Drawings No. 1 to 4, Job No. 220278 and Drawings No.'s 1 to 4, Stormwater Management Appendix F by Dillon Consulting dated November 2023 form part of this report. They show and describe in detail the location and extent of the work to be done and the lands which are affected.

ALLOWANCES

RIGHT-OF-WAY: Section 29 of the Drainage Act provides for an allowance to the owners whose land must be used for the construction, repair, or future maintenance of a drainage works.

The allowance provides for the loss of land due to the construction provided for in the report. The amounts granted are based on the value of the land, and the rate used was $50,000.00/ha. When any buffer strip is incorporated and/or created, the allowance granted is for any land beyond a 1.8-meter width deemed to have always been part of the drain. For existing open ditches, the right-of-way to provide for the right to enter and restrictions imposed on those lands is deemed to have already been granted.

DAMAGES: Section 30 of the Drainage Act provides for the compensation to landowners along the drain for damages to lands and crops caused by the construction of the drain. The amount granted is based on $5,300.00/ha. This base rate is multiplied by the hectares derived from the working widths shown on the plans and the applicable lengths.

ASSESSMENT

Due to the nature of the work, location, materials, installation methods, and agreement, a Special Assessment has been made against the MTO in accordance with Section 26 of the Drainage Act, for the entire cost of this report.

MAINTENANCE

Upon completion of construction, all owners are hereby made aware of Sections 80 and 82 of the Drainage Act which forbid the obstruction of or damage or injury to a municipal drain.

In accordance with Section 65(3) of the Drainage Act the Assessment for Future Maintenance on the original 1969 report to properties affected by this report have been altered to reflect the changes occurring.

Therefore, the portion of the Main Drain from Orr Drive upstream to Sta. 0+710 (Dillon Page 1) with the exception of culverts shall continue to be maintained by the City of London at the expense of all upstream lands and roads assessed in the revised attached 1969 Schedule of Assessment, until such time as the assessment is changed under the Drainage Act.

MAINTENANCE (cont'd)

Repairs or improvements to the road culverts on the Main Drain at Sta. 0+260 and Sta. 0+470 under Tempo Road and Sta. 0+000 Under Highway 4 shall be the responsibility of the applicable Road Authority, entirely at their cost. The culvert at Sta. 0+120 shall be maintained by the City of London, with cost being assessed as 35% to Highway 4, 30% to Roll # 080-060-016 and the remaining 35% against the upstream outletting assessments.

The portion of the drain, previously referred to as the Fournie Drain Extension 1981, be included as part of this report. After completion, this part of the drain (Sta. 0+710 to Sta. 1+412) shall be maintained by the City of London, at the expense of the MTO.

After completion, the Super Truck Branch shall be maintained by the City of London at the expense of the MTO.

Respectfully submitted,

SPRIET ASSOCIATES LONDON LIMITED

M.P. DeVos, P. Eng.

MPD:ms

SCHEDULE 'A' - ALLOWANCES

FOURNIE DRAIN 2023

City of London

In accordance with Sections 29 and 30 of the Drainage Act, we determine the allowances payable to owners entitled thereto as follows:

CON.	LOT	ROLL NUMBER (Owner)	Section 29 Right-of-Way	Section 30 Damages	TOTALS
MAIN DRAIN					
Geographic Westminster					
ENBTR	SW¼ 53	060-015(S. Peake)	$ 930.00	$ 100.00	$ 1,030.00
ENBTR	Pt.54& 55	060-019(1068788 Ontario Ltd.)	370.00	3,660.00	4,030.00
ENBTR	PtS½ 54	060-016-01(806433 Ontario Ltd.)	40.00	210.00	250.00
		Total Allowances	$ 1,340.00	$ 3,970.00	$ 5,310.00
		TOTAL ALLOWANCES ON THE FOURNIE DRAIN 2023			**$ 5,310.00**

SCHEDULE 'B' - COST ESTIMATE

FOURNIE DRAIN 2023

City of London

We have made an estimate of the cost of the proposed work which is outlined in detail as follows:

ALLOWANCES

Allowances under Sections 29 & 30 of the Drainage Act	$	5,310.00

CONSTRUCTION

Mobilization of equipment	$	2,000.00
Remobilization of equipment to open channel once seeding has established and backfill	$	2,000.00
Clearing and grubbing including disposal	$	3,000.00
Install and maintain sediment and erosion control measures	$	800.00
Construct temporary crossing using 900mm pipe or larger including removal during backfill	$	2,500.00
18.0 meters of 450mm aluminized C.S.P. 2.0mm thickness		
Supply	$	1,800.00
Construct access laneway/ramp including supply and compaction of Granular 'A'	$	2,200.00
Strip, stockpile topsoil from new ditch area and area to be regraded and haul and deposit at existing ditch (8200 m²)	$	10,250.00
212 meters of open ditch construction and cut adjacent area on west side of existing ditch (Approx. 7100 m³ excavation)	$	52,500.00
Scarify ditch banks and apply Flexterra HP-FGM bonded fibre on ditch banks (approx. 2850 m²)	$	14,250.00
Hand seeding of buffer strip (approx. 450 m²)	$	900.00
Backfill existing ditch (Approximately 210m length - 3800 m³)	$	39,550.00
Redistribution of topsoil on area outside of ditch and final grading upon completion (Approx. 6900 m²)	$	10,350.00
Supply and place N.A.G. C350 Turf Reinforcement Mat on seeded bank with quarry stone rip-rap bank protection		
(Approx. 160 m² NAG C-350 TRM required)	$	6,400.00
(Approx. 77 m³ quarry stone required)	$	21,180.00
Backfill washouts, supply and place quarry stone rip-rap protection (with filter blanket) on ditch slopes as rock chutes		
(Approx. 14.0 m³ quarry stone required)	$	3,850.00

SCHEDULE 'B' - COST ESTIMATE (cont'd)

FOURNIE DRAIN 2023
City of London

CONSTRUCTION (cont'd)

Haul excess excavated material to adjacent area as specified on drawings and level including grading (3400 m^3)	$	34,000.00
Contract security financing	$	2,960.00
Contingencies	$	9,000.00
Contingency for OLS to re-establish property bars	$	3,000.00

ADMINISTRATION

Net Harmonized Sales Tax	$	6,600.00
Survey, Plan and Final Report	$	61,000.00
Expenses	$	1,000.00
Review of Construction Drawings	$	13,600.00
Supervision and Updating Final Construction Details	$	35,000.00
TOTAL ESTIMATED COST	**$**	**345,000.00**

SCHEDULE ' C ' - ASSESSMENT FOR FUTURE MAINTENANCE

FOURNIE DRAIN 2023

City of London

Original Schedule Feburary 6 1969
Job No. 220278 Revised by Sect. 65 December 20, 2023

** = Non-agricultural*

	CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	BENEFIT	OUTLET	TOTAL
MAIN DRAIN - OPEN PORTION							
	Geographic Westminster						
	WNBTR	**Pt. 57**	**1.2**	**060-156(London Valley IV Inc.)**	**$**	**$ 8.00**	**$ 8.00**
	WNBTR	**Pt. 57**	**0.59**	**060-158(D. & M. Coleman)**		**4.00**	**4.00**
	WNBTR	**N½ 56**	**2.8**	**060-159(806433 Ontario Ltd.)**		**19.00**	**19.00**
	WNBTR	**Pt.S½ 56**	**2.5**	**060-161(Dauntless ULC)**		**16.00**	**16.00**
*	WNBTR	Pt.S½ 56	0.22	060-160(R. & D. Backes)		1.00	1.00
	WNBTR	**55**	**23.4**	**060-162(C. & J. & J. M. Ferguson)**		**113.00**	**113.00**
	WNBTR	Pt 54	30.3	060-167-01(646808 Ontario Limited)			
	WNBTR			combined with 050-181 & 050-167-01 in Midd. Cent.		146.00	146.00
*	**WNBTR**	**Pt 54**	**0.11**	**060-017(The Hastings Mill Inc.)**		**2.00**	**2.00**
*	**WNBTR**	**Pt 54**	**0.10**	**060-168(Rose Chapel Inc)**		**2.00**	**2.00**
*	**WNBTR**	**Pt53& 54**	**7.5**	**060-164(Stone Ridge Travel Centre Inc.)**		**41.00**	**41.00**
	WNBTR	WPt. 53	0.80	050-181 (646808 Ontario Ltd.) Midd. Cent.		4.00	4.00
	WNBTR	53	27.3	060-166(J. & C. Burtwistle)	567.00	145.00	712.00
	WNBTR	Pt. 53	19.3	North Part of 050-167-02(JNC AG Capital Inc.) Midd. Cent.		99.00	99.00
	WNBTR	Pt. 52	3.2	South Part 050-167-02 & Part 050-167 Midd. Cent.		16.00	16.00
	WNBTR	Pt. 52	2.0	050-179 (JNC AG Capital Inc.) Midd. Cent.		10.00	10.00
	WNBTR	N½ 52	20.6	060-170(J. & E. Burtwistle)	683.00	104.00	787.00
	WNBTR	PtN½ 52	1.0	060-169(1886966 Ont. Ltd)		9.00	9.00
	WNBTR	S½ 52	25.5	060-171(C. &. D. Carrothers)	870.00	123.00	993.00
	WNBTR	N½ 51	31.0	060-172(S. Peake)	990.00	124.00	1,114.00
	WNBTR	S½ 51	25.8	060-173(Thomas Brothers Produce Inc.)	855.00	78.00	933.00
	ENBTR	NPt. 57	1.0	060-040(London Valley 11 Inc.)		7.00	7.00
*	**ENBTR**	**Pt.S½ 57**	**0.0**	**060-038(M. Catulli)**			
	ENBTR	**Pt.S½ 57**	**11.1**	**060-039-01(2533430 Ontario Inc.)**		**74.00**	**74.00**
	ENBTR	**Pt.S½ 57**	**3.0**	**060-039-02(Shogun Maitake Property)**		**20.00**	**20.00**
	ENBTR	**Pt.S½ 57**	**1.0**	**060-030(G. Axford)**		**7.00**	**7.00**
*	**ENBTR**	**NWPt. 56**	**8.0**	**060-037(2726064 Ontario Inc.)**		**52.00**	**52.00**
*	ENBTR	Pt. 56	11.9	060-036(Associated Materials Canada Ltd.)		78.00	78.00
*	**ENBTR**	**Pt. 56**	**4.37**	**060-034(All Makes Logistics Intermodal Freight Services Inc.)**		**34.00**	**34.00**
*	**ENBTR**	**Pt. 56**	**1.88**	**060-035-05 PART 1(756950 Ontario Ltd.)**		**12.00**	**12.00**
*	**ENBTR**	**Pt. 56**	**0.53**	**060-035-05 PART 2(756950 Ontario Ltd.)**		**3.00**	**3.00**
*	**ENBTR**	**Pt. 56**	**1.71**	**060-035(Cameron Grane & Riggers)**		**31.00**	**31.00**
*	**ENBTR**	**Pt.54& 55**	**3.3**	**060-018(IBEW Local 120 Bld. Corp.)**		**13.00**	**13.00**
	ENBTR	**Pt.54& 55**	**36.6**	**060-019(1068788 Ontario Ltd.)**	205.00	**83.00**	**288.00**
	ENBTR	**PtS½ 54**	**17.6**	**060-016-01(806433 Ontario Ltd.)**	**30.00**	**95.00**	**125.00**
	ENBTR	**Pt.N½ 53**	**24.2**	**060-016 (1000182402 Ontario Inc.)**	**122.00**	**125.00**	**247.00**
*	ENBTR	NWPt 53	2.0	060-014(Henry Wall Holdings Inc.)		10.00	10.00

SCHEDULE ' C ' - ASSESSMENT FOR FUTURE MAINTENANCE (Cont'd)

FOURNIE DRAIN 2023
City of London

** = Non-agricultural*

	CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	BENEFIT	OUTLET	TOTAL
MAIN DRAIN - OPEN PORTION (cont'd)							
	Geographic Westminster						
	ENBTR	SW¼ 53	17.7	060-015(S. Peake)		88.00	88.00
	ENBTR	Pt.52& 53	2.0	060-024(J. & M. Ferguson)		10.00	10.00
*	ENBTR	Pt 52	0.2	060-012(T. & H. Bramley)		3.00	3.00
	ENBTR	NW¼ 52	14.0	060-013(1068788 Ont. Ltd.)		69.00	69.00
	ENBTR	S½ 52	10.5	060-011(J. Burtwistle)		49.00	49.00
	ENBTR	NPt. 51	6.1	060-010(J. & R. Baker)		28.00	28.00
	ENBTR	**SPt. 51**	**0.7**	**060-008(L. & I. Orr)**		**3.00**	**3.00**
				TOTAL ASSESSMENT ON LANDS	$ 4,322.00	$ 1,958.00	$ 6,280.00
	Orr Drive		**0.6**	**City of London**	**$**	**$ 3.00**	**$ 3.00**
	Littlewood Dr.		**0.3**	**City of London**		**5.00**	**5.00**
	Old Litlewood Dr.		**0.9**	**City of London**		**17.00**	**17.00**
	Col. Talbot Road		**2.3**	**City of London**		**61.00**	**371.00**
	Col. Talbot Road		**4.6**	**Ontario Ministry of Tansportation**	**310.00**	**122.00**	**122.00**
	Glanworth Drive		**4.1**	**City of London**		**82.00**	**82.00**
	Burtwistle Lane		**0.8**	**City of London**		**12.00**	**12.00**
	Tempo Road		**5.7**	**City of London**	**133.00**	**112.00**	**245.00**
	Highway 401		**50.0**	**Ontario Ministry of Tansportation**	**792.00**	**983.00**	**1,775.00**
				TOTAL ASSESSMENT ON ROADS	$ 1,235.00	$ 1,397.00	$ 2,632.00
				TOTAL ASSESSMENT ON THE FORUNIE DRAIN 1969			**$ 8,912.00**

Properties in bold have been revised under Section 65 of the Drainage Act

SPECIFICATIONS FOR CONSTRUCTION
OF
MUNICIPAL DRAINAGE WORKS

GENERAL INDEX

SECTION A - GENERAL WORK

INDEX

SECTION A

GENERAL WORK

A.1 COMMENCEMENT AND COMPLETION OF WORK

The work must commence immediately after the Contractor is notified of the acceptance of his tender or at a later date, if set out as a condition of the tender. If weather creates poor ground or working conditions the Contractor may be required, at the discretion of the Engineer, to postpone or halt work until conditions become acceptable.

As noted on the drawing, the contractor must first arrange for a preconstruction meeting to be held on the site with the Contractor and affected owners attending to review in detail the construction scheduling, access and other pertinent details. The Contractor's costs for attending this meeting shall be included in his lump sum tender price. If the Contractor leaves the job site for a period of time after initiation of work, he shall give the Engineer and the Superintendent a minimum of twenty-four (24) hours' notice prior to returning to the project.

The work must be proceeded with in such a manner as to ensure its completion at the earliest possible date and within the time limit set out in the tender or in the contract documents.

A.2 WORKING AREA AND ACCESS

The working area available to the Contractor to construct the drain and related works including an access route to the drain shall be as specified on the drawings.

Should the specified widths become inadequate due to unusual conditions, the Contractor shall notify the Engineer immediately in order that negotiations with the affected owners can take place.

Where a Contractor exceeds the specified widths due to the nature of his operations and without authorization, he shall be held responsible for the costs of all additional damages and the amount shall be deducted from his contract price and paid to the affected owners by the Municipality.

A.3 ROAD CROSSINGS

.1 General

.1 Scope: These specifications apply to all road crossings - Municipal, County, Regional, or Highway Roads. Where the word "Authority" is used, it shall be deemed to apply to the appropriate owning authority. These specifications in no way limit the Authority's Specifications and Regulations governing the construction of drains on their Road Allowance. The Authority will supply no labour, equipment or materials for the construction of the road crossing unless otherwise noted on the drawings.

.2 Road Occupancy Permit: Where applicable the Contractor must submit an Application for a Road Occupancy Permit to the Authority and allow a minimum of 5 working days (exclusive of holidays) for its review and issuance.

.3 Road Closure Request and Construction Notification: The Contractor shall submit written notification of construction and request for road closure (if applicable) to the Road Authority/Public Works Manager and the Drainage Engineer or Superintendent for review and approval a minimum of five (5) working days (exclusive of holidays) prior to proceeding with any work on road allowance. It shall be the Road Authority's responsibility to notify all the applicable emergency services, schools, etc. of the road closure or construction taking place.

.4 Traffic Control: Where the Contractor is permitted to close the road to through traffic, the Contractor shall provide for and adequately sign the detour route to the satisfaction of the Road Authority. Otherwise, the Contractor shall keep the road open to traffic at all times. The Contractor shall provide, for the supply, erection and maintenance, suitable warning signs and/or flagmen in accordance with the Manual of Uniform Traffic Control Devices and to the satisfaction of the Road Authority to notify the motorists of work on the road ahead.

A.3 **ROAD CROSSINGS** (cont'd)

.5 Site Meeting/Inspection: A site meeting shall be held with the affected parties to review in detail the crossing and/or its related works. The Authority's Inspector and/or the Drainage Engineer will inspect the work while in progress to ensure that the work is done in strict accordance with the specifications.

.6 Weather: No construction shall take place during inclement weather or periods of poor visibility.

.7 Equipment: No construction material and/or equipment is to be left within 3 meters of the edge of pavement overnight or during periods of inclement weather.

.2 **Jacking and Boring**

.1 Material: The bore pipe shall consist of new, smooth wall steel pipe, meeting the requirements of H20 loading for road crossings and E80 loading for railway crossings. The minimum size, wall thickness and length shall be as shown on the drawings. Where welding is required, the entire circumference of any joint shall be welded using currently accepted welding practices.

.2 Site Preparation and Excavation: Where necessary, fences shall be carefully taken down as specified in the General Conditions. Prior to any excavation taking place, all areas which will be disturbed shall be stripped of topsoil. The topsoil is to be stockpiled in locations away from the bore operation, off the line of future tile placement and out of existing water runs or ditches. The bore pit shall be located at the upstream end of the bore unless otherwise specified or approved. Bore pits shall be kept back at least 1 meter from the edge of pavement and where bore pits are made in any portion of the shoulder, the excavated material shall be disposed of off the road allowance and the pit backfilled with thoroughly compacted Granular "A" for its entire depth.

.3 Installation: The pipe shall be installed in specified line and grade by a combination of jacking and boring. Upon completion of the operations, both ends of the bore pipe shall be left uncovered until the elevation has been confirmed by the Engineer or Superintendent. The ends of the bore pipe shall be securely blocked off and the location marked by means of a stake extending from the pipe invert to 300mm above the surrounding ground surface.

.4 Unstable Soil or Rock: The Contractor shall contact the Engineer immediately should unstable soil be encountered or if boulders of sufficient size and number to warrant concern are encountered. Any bore pipe partially installed shall be left in place until alternative methods or techniques are determined by the Engineer after consultation with the Contractor, the Superintendent and the owning authority.

.5 Tile Connections: Prior to commencement of backfilling, all tile encountered in excavations shall be reconnected using material of a size comparable to the existing material. Where the excavation is below the tile grade, a compacted granular base is to be placed prior to laying the tile. Payment for each connection will be made at the rate outlined in the Form of Tender and Agreement.

.6 Backfill: Unless otherwise specified, the area below the proposed grade shall be backfilled with a crushed stone bedding. Bore pits and excavations outside of the shoulder area may be backfilled with native material compacted to a density of 95% Standard Proctor. All disturbed areas shall be neatly shaped, have the topsoil replaced and hand seeded. Surplus material from the boring operation shall be removed from the site at the Contractor's expense.

.7 Restoration: The entire affected area shall be shaped and graded to original lines and grades, the topsoil replaced, and the area seeded down at the rate of 85 kg/per ha. unless otherwise specified or in accordance with the M.T.O. Encroachment Permit. Fences shall be restored to their original condition in accordance with the General Conditions.

.8 Acceptance: All work undertaken by the Contractor shall be to the satisfaction of the Engineer.

A.3 **ROAD CROSSINGS** (cont'd)

.3 **Open Cut**

.1 Material: The culvert or sub-drain crossing pipe material shall be specified on the drawings.

.2 Site Preparation and Excavation: Where necessary, fences shall be carefully taken down as specified in the general conditions. Prior to any excavation taking place, the areas which will be disturbed shall be stripped of topsoil. The topsoil is to be stockpiled in locations away from the construction area.

.3 Installation: The pipe shall be installed using bedding and cover material in accordance with Standard Detailed Drawing No. 2 or detail provided on drawings.

.4 Unstable Soil or Rock: The Contractor shall contact the Engineer immediately should unstable soil be encountered or if boulders of sufficient size and number to warrant concern are encountered.

.5 Tile Connections: Prior to commencement of backfilling, all tiles encountered in excavations shall be reconnected using material of a size comparable to the existing material. Where the excavation is below the tile grade, a compacted granular base is to be placed prior to laying the tile. Payment for connections not shown on the drawings shall be an extra to the contract.

.6 Backfill: Backfill from the top of the cover material up to the underside of road base shall meet the requirements for M.T.O. Granular "B". The backfill shall be placed in lifts not exceeding 300mm in thickness and each lift shall be thoroughly compacted to produce a density of 98% Standard Proctor. Granular "B" road base for County Roads and Highways shall be placed to a 450mm thickness and Granular "A" shall be placed to a thickness of 200mm, both meeting M.T.O. requirements. Granular road base materials shall be thoroughly compacted to produce a density of 100% Standard Proctor.

Where the road surface is paved, the Contractor shall be responsible for placing an HL-4 Hot Mix Asphalt patch of the same thickness as the existing pavement. The asphalt patch shall be flush with the existing roadway on each side and not overlap. If specified, the asphalt patch shall not be placed immediately over the road base and the Granular "A" shall be brought up flush with the existing asphalt and a liberal amount of calcium chloride shall be spread on the gravel surface. The asphalt patch must be completed within the time period set out on the drawing.

The excavated material from the trench beyond a point 2.5 meters from the travelled portion or beyond the outside edge of the gravel shoulder, may be used as backfill in the trench in the case of covered drains. This material should be compacted in layers not exceeding 600mm.

A.4 **SURPLUS EXCAVATED MATERIAL AND GRAVEL**

Excess excavated material from open cut installation through roads, railways, laneways and lawn/grass areas, shall be removed and disposed of off-site by the Contractor as part of their lump sum installation price. If as a result of any work, gravel or crushed stone is required and not all the gravel or crushed stone is used in the construction of the works, the Contractor shall haul away such surplus gravel or stone unless otherwise approved.

A.5 **FENCES**

No earth shall be placed against fences and all fences removed by the Contractor are to be replaced by him in as good condition as found. In general, the Contractor will not be allowed to cut existing fences but shall disconnect existing fences at the nearest anchor post or other such fixed joint and shall carefully roll it back out of the way. Where the distance to the closest anchor post or fixed joint exceeds 50 meters, the Contractor will be allowed to cut and splice in accordance with accepted methods and to the satisfaction of the owner and the Engineer or Superintendent. Where existing fences are deteriorated to the extent that existing materials are not salvageable for replacement, the Contractor shall notify the Engineer or the Superintendent prior to dismantling. Fences damaged beyond salvaging by the Contractor's negligence shall be replaced with new materials, similar to those existing, at the Contractor's expense. The replacement of the fences shall be done to the satisfaction of the owner and the Engineer or Superintendent. The site examination should indicate to the Contractor such work, if any, and an allowance should be made in the tendered price.

The Contractor shall not leave any fence open when he is not at work in the immediate vicinity.

A.6 LIVESTOCK

The Contractor shall provide each property owner with 48 hours' notice prior to removing any fences along fields which could possibly contain livestock. Thereafter, the property owner shall be responsible to keep all livestock clear of the construction areas until further notified. Where necessary, the Contractor will be directed to erect temporary fences. The Contractor shall be held responsible for loss or injury to livestock or damage caused by livestock, where the injury or damage is caused by his failure to notify the property owner or through negligence or carelessness on the part of the Contractor.

The Contractor constructing a tile drain shall not be held responsible for damages or injury to livestock occasioned by leaving trenches open for inspection by the Engineer if he notifies the owner at least 48 hours prior to commencement of the work on that portion. The Contractor will be held liable for such damages or injury if the backfilling of such trenches is delayed more than 1 day after acceptance by the Engineer.

A.7 STANDING CROPS

The Contractor shall not be held responsible for damages to standing crops within the working area available and the access route provided if he notifies the owner thereof at least 48 hours prior to commencement of the work on that portion.

A.8 RAILWAYS, HIGHWAYS, UTILITIES

A minimum of forty-eight (48) hours' notice to Railways, Highways and Utilities, exclusive of Saturdays, Sundays and Holidays, shall be required by the Contractor prior to any work being performed and in the case of a pipe being installed by open cutting or boring under a Highway or Railway, a minimum of 72 hours' notice is required.

A.9 UTILITIES

The attention of the Contractor is drawn to the presence of utilities along the course of the drain. The Contractor will be responsible for determining the location of all utilities and will be held liable for any damage to all utilities caused by his operations. The Contractor shall co-operate with all authorities to ensure that all utilities are protected from damage during the performance of the work. The cost of any necessary relocation work shall be borne by the utility. No allowance or claims of any nature will be allowed on account for delays or inconveniences due to utilities relocation, or for inconveniences and delays caused by working around or with existing utilities not relocated.

A.10 IRON BARS

The Contractor shall be held liable for the cost of an Ontario Land Surveyor to replace any iron bars destroyed during the course of construction.

A.11 STAKES

At the time of the survey, stakes are set along the course of the drain at intervals of 50 meters. The Contractor shall ensure that the stakes are not disturbed unless approval is obtained from the Engineer. Any stakes removed by the Contractor without the authority of the Engineer, shall be replaced at the expense of the Contractor. At the request of the Contractor, any stakes which are removed or disturbed by others or by livestock, shall be replaced at the expense of the drain.

A.12 **RIP-RAP**

Rip-rap shall be specified on the drawings and shall conform to the following:

.1 **Quarry Stone**: shall range in size from 150mm to 300mm evenly distributed and shall be placed to a 300mm thickness on a filter blanket at a 1.5 to 1 slope unless otherwise noted. Filter blanket to be Mirafi 160N or approved equal.

.2 **Broken Concrete**: may be used in areas outside of regular flows if first broken in maximum 450mm sized pieces and mixed to blend with quarry stone as above. No exposed reinforcing steel shall be permitted.

.3 **Shot Rock**: shall range in size from 150mm to 600mm placed to a depth of 450mm thickness on a filter blanket at a 1.5:1 slope unless otherwise noted. Filter blanket to be Mirafi 160N or approved equal.

A.13 **GABION BASKETS**

Supply and install gabion basket rip-rap protection as shown on the drawings.
Gabion baskets shall be as manufactured by Maccaferri Gabions of Canada Ltd. or approved equal and shall be assembled and installed in strict accordance with the manufacturer's recommendations.
The gabion fill material shall consist solely of fractured field stone or gabion stone graded in size from 100mm to 200mm (4" to 8") and shall be free of undersized fragments and unsuitable material.

A.14 **RESTORATION OF LAWNS**

.1 **General**: Areas noted on the drawings to be restored with seeding or sodding shall conform to this specification, and the Contractor shall allow for all costs in his lump sum bid for the following works.

.2 **Topsoil**: Prior to excavation, the working area shall be stripped of existing topsoil. The topsoil stockpile shall be located so as to prevent contamination with material excavated from the trench. Upon completion of backfilling operations, topsoil shall be spread over the working area to a depth equal to that which previously existed but not less than the following:

- Seeding and sodding - minimum depth of 100mm
- Gardens - minimum depth of 300mm

In all cases where a shortfall of topsoil occurs, whether due to lack of sufficient original depth or rejection of stockpiled material due to Contractor's operations, imported topsoil from acceptable sources shall be imported at the Contractor's expense to provide the specified depths. Topsoil shall be uniformly spread, graded, and cultivated prior to seeding or sodding. All clods or lumps shall be pulverized, and any roots or foreign matter shall be raked up and removed as directed.

.3 **Sodding**

.1 **Materials**: Nursery sod to be supplied by the Contractor shall meet the current requirements of the Ontario Sod Growers Association for No. 1 Bluegrass Fescue Sod.
.2 **Fertilizer**: Prior to sod placement, approved fertilizer shall be spread at the rate of 5kg/100m² of surface area and shall be incorporated into such surfaces by raking, discing or harrowing. All surfaces on which sod is to be placed shall be loose at the time of placing sod to a depth of 25mm.
.3 **Placing Sod**: Sod shall be laid lengthwise across the face of slopes with ends close together. Sod shall be counter sunk along the joints between the existing grade and the new sodding to allow for the free flow of water across the joint. Joints in adjacent rows shall be staggered and all joints shall be pounded and rolled to a uniform surface.

On slopes steeper than 3 to1, and in unstable areas, the Engineer may direct the Contractor to stake sod and/or provide an approved mesh to prevent slippages. In all cases where such additional work is required, it will be deemed an extra to the contract and shall be paid for in accordance with the General Conditions. No sod shall be laid when frozen nor upon frozen ground nor under any other condition not favourable to the growth of the sod. Upon completion of sod laying the Contractor shall thoroughly soak the area with water to a depth of 50mm. Thereafter it will be the responsibility of the property owner to maintain the area in a manner so as to promote growth.

A.14 **RESTORATION OF LAWNS (cont'd)**

.4 **Seeding**: Seed to be supplied by the Contractor shall be "high quality grass seed" harvested during the previous year, and shall be supplied to the project in the supplier's original bags on which a tag setting out the following information is affixed:

- Year or Harvest - recommended rate of application
- Type of Mixture - fertilizer requirements

Placement of seed shall be by means of an approved mechanical spreader. All areas on which seed is to be placed shall be loose at the time of placing seed, to a depth of 25mm. Seed and fertilizer shall be spread in accordance with the supplier's recommendations unless otherwise directed by the Engineer. Thereafter it will be the responsibility of the property owner to maintain the area in a manner so as to promote growth.

.5 **Settlement**: The Contractor shall be responsible during the one-year guarantee period for the necessary repair of restored areas due to trench settlement. Areas where settlement does not exceed 50mm may be repaired by top dressing with fine topsoil. In areas where settlement exceeds 50mm, the Contractor will be required to backfill the area with topsoil and restore with seeding and/or sodding as originally specified.

A.15 **RESTORATION OF ROADS AND LANEWAYS**

.1 **Gravel**: Restoration shall be in accordance with the applicable standard detailed drawing or as shown on the drawings.

.2 **Asphalt and Tar and Chip**: Prior to restoration all joints shall be neatly sawcut. Restoration shall be as a in gravel above with the addition of the following:

.1 Roads shall have the finished grade of Granular 'A', allow two courses of hot-mix asphalt (M.T.O. 310), 80mm HL6 and 40mm HL3 or to such greater thickness as may be required to match the existing.

.2 Laneways shall have the finished grade of Granular 'A' allow one 50mm minimum course of hot-mix asphalt (HL3) or greater as may be required to match existing.

SECTION B - OPEN DRAIN

INDEX

SECTION B

OPEN DRAIN

B.1 PROFILE

The profile drawing shows the depth of cuts from the ground beside the stake to the final invert of the ditch in meters and decimals of a meter and also the approximate depth of cuts from the existing bottom of the ditch to the elevation of the ditch bottom. These cuts are established for the convenience of the Contractor; however, benchmarks will govern the final elevation of the drain. Benchmarks have been established along the course of the drain and their locations and elevations are noted on the profile drawing. A uniform grade shall be maintained between stakes in accordance with the profile drawing.

B.2 ALIGNMENT

The drain shall be constructed in a straight line and shall follow the course of the present drain or water run unless otherwise noted on the drawings. Where it is necessary to straighten any bends or irregularities in alignment not noted on the drawings, the Contractor shall contact the Engineer or Superintendent before commencing the work.

B.3 CLEARING AND GRUBBING

Prior to commencement of work, all trees, scrub, fallen timber and debris shall be removed from the side slopes of the ditch and for such a distance on the working side so as to eliminate any interference with the construction of the drain or the spreading of the spoil. The side slopes shall be neatly cut and cleared flush with slope whether or not they are affected directly by the excavation. With the exception of large stumps causing damage to the drain, the side slope shall not be grubbed. All other cleared areas shall be grubbed and the stumps put into piles for disposal by the owner.

All trees or limbs 150mm (6") or larger, that it is necessary to remove, shall be considered as logs and shall be cut and trimmed, and left in the working width separate from the brush, for use or disposal by the owner. Trees or limbs less than 150mm in diameter shall be cut in lengths not greater than 5 meters and placed in separate piles with stumps spaced not less than 75 meters apart in the working width, for the use or disposal of the owner. In all cases, these piles shall be placed clear of excavated materials, and not be piled against standing trees. No windrowing will be permitted. The clearing and grubbing and construction of the drain are to be carried out in two separate operations and not simultaneously at the same location.

B.4 EXCAVATION

The bottom width and the side slopes of the ditch shall be those shown on the profile drawing.

Unless otherwise specified on the drawings, only the existing ditch bottom is to be cleaned out and the side slopes are not to be disturbed. Where existing side slopes become unstable because of construction, the Contractor shall immediately contact the Engineer or Superintendent. Alternative methods of construction and/or methods of protection will then be determined, prior to continuing the work.

Where an existing drain is being relocated or where a new drain is being constructed, the Contractor shall, unless otherwise specified, strip the topsoil for the full width of the drain, including the location of the spoil pile. Upon completion of levelling, the topsoil shall be spread to an even depth across the full width of the spoil.

B.5 EXCAVATED MATERIAL

Excavated material shall be deposited on either or both sides of the drain as indicated on the drawings or as directed by the Engineer or Superintendent. A buffer strip of not less than 3 meters in width through farmed lands and 2 meters in width through bush areas shall be left along the top edges of the drain. The buffer strip shall be seeded and/or incorporated as specified on the drawings. The material shall be deposited beyond the specified buffer strip.

B.5 **EXCAVATED MATERIAL** (cont'd)

No excavated material shall be placed in tributary drains, depressions, or low areas which direct water into the ditch so that water will be trapped behind the spoil bank. The excavated material shall be placed and levelled to a minimum width to depth ratio of 50 to 1 unless instructed otherwise. The edge of the spoil bank away from the ditch shall be feathered down to the existing ground; the edge of the spoil bank nearest the ditch shall have a maximum slope of 2 to 1. The material shall be levelled such that it may be cultivated with ordinary farm equipment without causing undue hardship on machinery and personnel. No excavated material shall cover any logs, scrub, debris, etc. of any kind.

Where it is necessary to straighten any unnecessary bends or irregularities in the alignment of the ditch, the excavated material from the new cut shall be used for backfilling the original ditch. Regardless of the distance between the new ditch and the old ditch no extra compensation will be allowed for this work and must be included in the Contractor's lump sum price for the open work.

Any stones 150mm or larger left exposed on top of the levelled excavated material shall be removed and disposed of as an extra to the contract unless otherwise noted on plans.

B.6 **EXCAVATION THROUGH BRIDGES AND CULVERTS**

The Contractor shall excavate the drain to the full specified depth and width under all bridges. Where the bridge or culvert pipe is located within a road allowance, the excavated material shall be levelled within the road allowance. Care shall be taken not to adversely affect existing drainage patterns. Temporary bridges may be carefully removed and left on the bank of the drain but shall be replaced by the Contractor when the excavation is completed unless otherwise specified. Permanent bridges must be left intact. All necessary care and precautions shall be taken to protect the structure. The Contractor shall notify the Engineer or Superintendent if excavation may cause the structure to undermine or collapse.

B.7 **PIPE CULVERTS**

Where specified on the drawings, the existing culvert shall be carefully removed, salvaged and either left at the site for the owner or reinstalled at a new grade or location. The value of any damage caused to the culvert due to the Contractor's negligence in salvage operation will be determined and deducted from the contract price.

All pipe culverts shall be installed in accordance with the standard detail drawings as noted on the drawings. If couplers are required, 5 corrugation couplers shall be used for up to and including 1200mm dia. pipe and 10 corrugation couplers for greater than 1200mm dia.

B.8 **MOVING DRAINS OFF ROADS**

Where an open drain is being removed from a road allowance, it must be reconstructed wholly on the adjacent lands with a minimum distance of 2.0 meters between the property line and the top of the bank, unless otherwise noted on the drawings. The excavated material shall be used to fill the existing open ditch and any excess excavated material shall be placed and levelled on the adjacent lands beyond the buffer strip, unless otherwise noted. Any work done on the road allowance, with respect to excavation, disposal of materials, installation of culverts, cleaning under bridges, etc., shall be to the satisfaction of the Road Authority and the Engineer.

B.9 **TRIBUTARY OUTLETS**

The Contractor shall guard against damaging the outlets of tributary drains. Prior to commencement of excavation on each property the Contractor shall contact the owner and request that all known outlet pipes be marked by the owner. All outlets so marked or visible or as noted on the profile, and subsequently damaged by the Contractor's operations will be repaired by the Contractor at his cost. All outlet pipes repaired by the Contractor under direction of the Drainage Superintendent or Engineer which were not part of the Contract shall be considered an extra to the contract price.

B.10 SEDIMENT BASINS AND TRAPS

Sediment basins shall be excavated as specified on drawings prior to commencement of upstream work as shown on the Drawings. The basin shall be in a parabolic shape with a depth of 450mm below the proposed ditch bottom and extend along the drain for a minimum length of 15 meters.

Silt fences shall be placed across ditch bottom immediately downstream of the proposed work as specified on the drawings prior to construction and maintained during construction. The silt fence shall be removed and disposed of after construction.

B.11 SEEDING

.1 **Delivery**: The materials shall be delivered to the site in the original unopened containers which shall bear the vendor's guarantee of analysis and seed will have a tag showing the year of harvest.

.2 **Hydro Seeding**: Areas specified on drawings shall be hydro seeded and mulched upon completion of construction in accordance with O.P.S.S. 572 and with the following application rates:

Primary Seed (85 kg/ha.):	50% Creeping Red Fescue 40% Perennial Ryegrass 5% White Clover
Nurse Crop	Italian (Annual) Ryegrass at 25% of Total Weight
Fertilizer (300 kg/ha.)	8-32-16
Hydraulic Mulch (2000 kg/ha.)	Type "B"
Water (52,700 litres/ha.)	

Seeding shall not be completed after September 30.

.3 **Hand Seeding**: Hand seeding shall be completed daily with the seed mixture and fertilizer and application rate shown under "Hydro Seeding" above. Placement of the seed shall be by means of an approved mechanical spreader. Seeding shall not be completed after September 30.

SECTION C - TILE DRAIN

INDEX

SECTION C

TILE DRAIN

C.1 PIPE MATERIALS

.1 **Concrete Tile**: All tile installed under these specifications shall be sound and of first quality and shall meet all A.S.T.M. Specifications current at the time of tendering. Concrete tile shall conform to Designation C412 "Extra Quality" except that the minimum compression strengths shall be increased by 25%. Heavy Duty tile shall conform to Designation C412 "Heavy Duty Extra Quality".

.2 **Corrugated Steel Pipe**: Unless otherwise specified, all metal pipe shall be corrugated, riveted steel pipe or helical corrugated steel pipe with a minimum wall thickness of 1.6mm (16 gauge) and shall be fully galvanized.

.3 **Plastic Tubing**: The plans will specify the type of tubing or pipe, such as non-perforated or perforated (with or without filter material).

i) Corrugated Plastic Drainage Tubing shall conform to the current O.F.D.A. Standards
ii) Heavy Duty Corrugated Plastic Pipe shall be "Boss 1000" manufactured by the Big 'O' Drain Tile Co. Ltd. or approved equal

.4 **Concrete Sewer Pipe**: The Designations for concrete sewer pipe shall be C14 for concrete sewer pipe 450mm (18") diameter or less; and C76 for concrete sewer pipe greater than 450mm (18") diameter. Where closed joints are specified, joints shall conform to the A.S.T.M. Specification C443.

Where concrete sewer pipe “seconds” are permitted the pipe should exhibit no damages or cracks on the barrel section and shall be capable of satisfying the crushing strength requirements for No.1, Pipe Specifications (C14 or C76). The pipe may contain cracks or chips in the bell or spigot which could be serious enough to prevent the use of rubber gaskets, but which are not so severe that the joint could not be mortared conventionally.

.5 **Plastic Sewer Pipe**: The plans will specify the type of sewer pipe, such as non-perforated or perforated (with or without filter material). All plastic sewer pipe and fittings shall be “Boss Poly-Tite”, ULTRA-RIB”, “Challenger 3000" or approved equal with a minimum stiffness of 320 kpa at 5% deflection.

.6 **Plastic Fittings**: All plastic fittings shall be "Boss 2000" or "Challenger 2000" with split coupler joints or approved equal.

C.2 TESTING

The manufacturer shall provide specimens for testing if required. The random selection and testing procedures would follow the appropriate A.S.T.M. requirements for the material being supplied. The only variation is the number of tiles tested: 200mm to 525mm dia. - 5 tile tested, 600mm to 900mm dia. - 3 tile tested. The drain will be responsible for all testing costs for successful test results. Where specimens fail to meet the minimum test requirements, the manufacturer will be responsible for the costs of the unsuccessful tests. Alternately, the Engineer may accept materials on the basis of visual inspections and the receipt in writing from the Manufacturer of the results of daily production testing carried out by the Manufacturer for the types and sizes of the material being supplied.

C.3 LINE

Prior to stringing the tile, the Contractor shall contact the Superintendent or the Engineer in order to establish the course of the drain.

Where an existing drain is to be removed and replaced in the same trench by the new drain or where the new drain is to be installed parallel to an existing drain, the Contractor shall excavate test holes to locate the existing drain (including repairing drainage tile) at intervals along the course of the drain as directed by the Engineer and/or the Superintendent. The costs for this work shall be included in the tender price.

Where an existing drain is to be removed and replaced in the same trench by the new drain, all existing tiles shall be destroyed, and all broken tile shall be disposed of offsite.

C.3 **LINE** (cont'd)

The drain shall run in as straight a line as possible throughout its length, except that at intersections of other water courses or at sharp corners, it shall run on a curve of at least a 15-meter radius. The new tile drain shall be constructed at an offset from and generally parallel with any ditch or defined watercourse in order that fresh backfill in the trench will not be eroded by the flow of surface water. The Contractor shall exercise care not to disturb any existing tile drain or drains which parallel the course of the new drain, particularly where the new and the existing tile act together to provide the necessary capacity.

C.4 **CLEARING AND GRUBBING**

Prior to commencement of drain construction, all trees, scrub, fallen timber and debris shall be cleared and grubbed from the working area. Unless otherwise specified, the minimum width to be cleared and grubbed shall be 20 meters in all hardwood areas and 30 meters in all softwood areas (willow, poplar, etc.), the width being centred on the line of the drain.

All trees or limbs 150mm (6") or larger, that it is necessary to remove, shall be considered as logs and shall be cut and trimmed, and left in the working width separate from the brush, for use or disposal by the owner. Trees or limbs less than 150mm in diameter shall be cut in lengths not greater than 5 meters and placed in separate piles with stumps spaced not less than 75 meters apart in the working width, for the use or disposal of the owner. In all cases, these piles shall be placed clear of excavated materials, and not be piled against standing trees. No windrowing will be permitted. The clearing and grubbing and construction of the drain are to be carried out in two separate operations and not simultaneously at the same location.

C.5 **PROFILE**

The profile drawing shows the depth of cuts from the ground beside the stake to the final invert of the drain in meters and decimals of a meter. These cuts are established for the convenience of the Contractor; however, benchmarks will govern the final elevation of the drain. Benchmarks have been established along the course of the drain and their locations and elevations are noted on the profile drawing.

C.6 **GRADE**

The Contractor shall provide and maintain in good working condition, an approved system of establishing a grade sight line to ensure the completed works conform to the profile drawing. In order to confirm the condition of his system and to eliminate the possibility of minor errors on the drawings, he shall ensure his grade sight line has been confirmed to be correct between a minimum of two control points (bench marks) and shall spot check the actual cuts and compare with the plan cuts prior to commencement of tile installation. He shall continue this procedure from control point to control point as construction of the drain progresses. When installing a drain towards a fixed point such as a bore pipe, the Contractor shall uncover the pipe and confirm the elevation, using the sight line, a sufficient distance away from the pipe in order to allow for any necessary minor grade adjustments to be made in order to conform to the as built elevation of the bore pipe. All tile improperly installed due to the Contractor not following these procedures shall be removed and replaced entirely at the Contractor's cost.

When following the procedures and a significant variation is found, the Contractor shall immediately cease operations and advise the Engineer.

C.7 **EXCAVATION**

.1 **Trench:** Unless otherwise specified, all trenching shall be done with a recognized farm tiling machine approved by the Engineer or Superintendent. The machine shall shape the bottom of the trench to conform to the outside diameter of the pipe for a minimum width of one-half of the outside diameter. The minimum trench width shall be equal to the outside diameter of the tile to be installed plus 100mm (4") on each side unless otherwise approved. The maximum trench width shall be equal to the outside diameter of the tile to be installed plus 250mm (10") on each side unless otherwise approved.

C.7 **EXCAVATION** (cont'd)

.2 **Scalping**: Where the depths of cuts in isolated areas along the course of the drain as shown on the profile exceed the capacity of the Contractor's tiling machine, he shall lower the surface grade in order that the tiling machine may trench to the correct depth. Topsoil is to be stripped over a sufficient width that no subsoil will be deposited on top of topsoil. Subsoil will then be removed to the required depth and piled separately. Upon completion of backfilling, the topsoil will then be replaced to an even depth over the disturbed area. The cost for this work shall be included in his tender price.

.3 **Excavator**:Where the Contractor's tiling machine consistently does not have the capacity to dig to the depths required or to excavate the minimum trench width required, he shall indicate in the appropriate place provided on the tender form his proposed methods of excavation.

Where the use of an excavator is either specified on the drawings or approved as evidenced by the acceptance of his tender on which he has indicated the proposed use of a backhoe he shall conform to the following requirements:

a) the topsoil shall be stripped and replaced in accordance with Section .2 "Scalping".
b) all tile shall be installed on a bed of 19mm crushed stone with a minimum depth of 150mm which has been shaped to conform to the lower segment of the tile.
c) the Contractor shall allow for the cost of the preceding requirements (including the supply of the crushed stone) in his lump sum tender price unless it is otherwise provided for in the contract documents.

.4 **Backfilling Ditch**: Where the contract includes for a closed drain to replace an open drain and the ditch is to be backfilled, the Contractor shall install the tile and backfill the trench prior to backfilling the ditch unless otherwise noted. The distance the trench shall be located away from the ditch shall be as noted on the drawings, (beyond area required for stockpiling topsoil and backfilling). After tile installation is complete topsoil (if present) shall be stripped and stockpiled within the above limits prior to backfilling of ditch. Only tracked equipment shall be permitted to cross backfilled tile trench and must be at 90 degrees to line of tile.

C.8 **INSTALLATION**

The tile is to be laid with close fitting joints and in regular grade and alignment in accordance with the plan and profile drawings. The tiles are to be bevelled, if necessary, to ensure close joints (in particular around curves). Where, in heavy clay soils, the width of a joint exceeds 10mm the joint shall be wrapped with filter cloth as below. Where the width of a joint exceeds 12mm the tile shall first be removed and the joint bevelled to reduce the gap. The maximum deflection of one tile joint shall be 15 degrees. Where a drain connects to standard or ditch inlet catchbasins or junction box structures, the Contractor shall include in his tender price for the supply and installation of compacted Granular 'A' bedding under areas backfilled from the underside of the pipe to undisturbed soil. The connections will then be grouted.

Where a tile drain passes through a bore pit, the Tile Contractor shall include in his tender price for the supply and placement of compacted Granular "A" bedding from the underside of the pipe down to undisturbed soil within the limits of the bore pit.

As above and where soil conditions warrant, the Engineer may require (or as specified on the drawings) that each tile joint be wrapped with synthetic filter cloth. The width of the filter cloth shall be 300mm wide for tile sizes of 150mm to 300mm and 400mm wide for sizes of 350mm to 750mm. The filter cloth shall cover the full perimeter of the tile and overlap a minimum of 100mm or as specified on the drawings. The type of cloth shall be Mirafi 140NL for loam soils and 150N for sandy soil. Any such work not shown on the drawings shall be considered as an addition to the contract price unless specified on the drawings.

C.9 **ROAD AND LANEWAY SUB-SURFACE CROSSINGS**

All road and laneway crossings may be made with an open cut in accordance with standard detailed drawings in the specifications or on the drawings. The exact location of the crossing shall be verified and approved by the Road Authority and the Engineer and/or Superintendent.

C.10 **BACKFILLING**

As the laying of the tile progresses, blinding up to the springline including compaction by tamping (by hand) is to be made on both sides of the tile. No tile shall be backfilled until inspected by the Engineer or Drainage Superintendent unless otherwise approved by the Engineer.

The remainder of the trench shall be backfilled with special care being taken in backfilling up to a height approximately 150mm above the top of the tile to ensure that no tile breakage occurs. During the backfilling operation no equipment shall be operated in a way that would transfer loads onto the tile trench. Surplus material is to be mounded over the tile trench so that when settlement takes place the natural surface of the ground will be restored. Upon completion, a minimum cover of 600mm is required over all tile. Where stones larger than 150mm are present in the backfill material, they shall be separated from the material and disposed of by the Contractor.

Where a drain crosses a lawn area, the backfilling shall be carried out as above except that, unless otherwise specified, the backfill material shall be mechanically compacted to eliminate settlement.

C.11 **UNSTABLE SOIL**

The Contractor shall immediately contact the Engineer or Superintendent if quicksand is encountered, such that installation with a tiling machine is not possible. The Engineer shall, after consultation with the Superintendent and Contractor, determine the action necessary and a price for additions or deletions shall be agreed upon prior to further drain installation. Where directed by the Engineer, test holes are to be dug to determine the extent of the affected area. Cost of test holes shall be considered an addition to the contract price.

C.12 **ROCKS**

The Contractor shall immediately contact the Engineer or Superintendent if boulders of sufficient size and number are encountered such that the Contractor cannot continue trenching with a tiling machine. The Engineer or Superintendent may direct the Contractor to use some other method of excavating to install the drain. The basis of payment for this work shall be determined by the Engineer and Drainage Superintendent.

If only scattered large stones or boulders are removed on any project, the Contractor shall haul same to a nearby bush or fence line, or such other convenient location as approved by the Landowners(s).

C.13 **BROKEN, DAMAGED TILE OR EXCESS TILE**

The Contractor shall remove and dispose of off-site all broken (existing or new), damaged or excess tile or tiles. If the tile is supplied by the Municipality, the Contractor shall stockpile all excess tile in readily accessible locations for pickup by the Municipality upon the completion of the job.

C.14 **TRIBUTARY DRAINS**

Any tributary tile encountered in the course of the drain shall be carefully taken up by the Contractor and placed clear of the excavated earth. If the tributary tile drains encountered are clean or reasonably clean, they shall be connected into the new drain. Where existing drains are full of sediment, or contain pollutants, the decision to connect those drains to the new drain shall be left to the Engineer or Superintendent. Each tributary tile connection made by the Contractor shall be located and marked with a stake and no backfilling shall take place until the connection has been approved by the Engineer or Superintendent.

For tributary drains 150mm dia. or smaller connected to new tiles 250mm dia. or larger, and for 200mm dia. connected to 350mm dia. or larger, the Contractor shall neatly cut a hole in the middle of a tile length. The connections shall be made using a prefabricated adaptor. All other connections shall be made with prefabricated wyes or tees conforming to Boss 2000 split coupler or approved equal.

Where an open drain is being replaced by a new tile drain, existing tile outlets entering the ditch from the side opposite the new drain shall be extended to the new drain. All existing metal outlet pipes shall be carefully removed, salvaged, and left for the owner. Where the grade of the connection passes through the newly placed backfill in the ditch, the backfill material below the connection shall be thoroughly compacted and metal pipe of a size compatible with the tile outlet shall be installed so that a minimum length of 2 meters at each end is extending into undisturbed soil.

C.14 **TRIBUTARY DRAINS** (cont'd)

Where locations of tiles are shown on the drawings the Contractor shall include in his tender price, all costs for connecting those tiles to the new drain regardless of length.

Where tiles not shown on the drawings are encountered in the course of the drain, and are to be connected to the new drain, the Contractor shall be paid for each connection at the rate outlined in the Form of Tender and Agreement.

C.15 **OUTLET PIPES**

Corrugated steel pipe shall be used to protect the tile at its outlet. It shall have a hinged metal grate with a maximum spacing between bars of 40mm. The corrugated steel pipe shall be bevelled at the end to generally conform to the slope of the ditch bank and shall be of sufficient size that the tile can be inserted into it to provide a solid connection. The connection will then be grouted immediately.

The installation of the outlet pipe and the required rip-rap protection shall conform to the standard detailed drawing as noted on the drawing.

C.16 **CATCHBASINS AND JUNCTION BOXES**

.1 **Catchbasins**: Unless otherwise noted or approved, catchbasins shall be in accordance with O.P.S.D. 705.010, 705.030. All catchbasins shall include two - 150mm riser sections for future adjustments. All ditch inlet catchbasins shall include one 150mm riser section for future adjustments. The catchbasin top shall be a "Bird Cage" type substantial steel grate, removable for cleaning and shall be inset into a recess provided around the top of the structure. The grate shall be fastened to the catchbasin with bolts into the concrete. Spacing of bars on grates for use on 600mmx600mm structures shall be 65mm centre to centre. Spacing of bars on grates for use on structures larger than 600mmx600mm shall be 90mm with a steel angle frame.

The exact location and elevation of catchbasins shall be approved by the Road Authority or the Engineer/Superintendent. Catchbasins offset from the drain shall have "Boss 2000" 200mm diameter leads or approved equal unless otherwise noted and the leads shall have a minimum of 600mm of cover. The leads shall be securely grouted at the structures and the drain.

.2 **Junction Boxes**: Junction boxes shall be the precast type unless otherwise approved. Dimensions for precast junction boxes shall conform to those for catchbasins. The inside dimensions of the box shall be a minimum of 100mm larger than the outside diameter of the largest pipe being connected. The minimum cover over the junction box shall be 600mm. Benching to spring line shall be supplied with all junction boxes.

.3 **Connections**: Catchbasins and junction boxes shall not be ordered until elevations of existing pipes being connected have been verified in the field as indicated on the drawings. All connections shall be securely grouted at both the inside and outside walls of the structure.

.4 **Installation**: Where the native material is clay, all catchbasins shall be backfilled with an approved granular material placed and compacted to a minimum width of 300mm on all sides with the following exception. Where the native material is sandy or granular in nature it may be used as backfill. Filter cloth shall be placed between the riser sections of all catchbasins.

Where the Contractor has over excavated or where ground conditions warrant, the structure shall be installed on a compacted granular base.

The Contractor shall include in his tender price for the construction of a berm behind all ditch inlet structures. The berm shall be constructed of compacted clay keyed 300mm into undisturbed soil. Topsoil shall be distributed to a 65mm thickness and seeded unless otherwise specified. The Contractor shall also include for regrading, shaping and seeding of road ditches for a maximum of 15 meters each way from all catchbasins.

C.17 **BLIND INLETS**

Where specified, blind inlets shall be installed along the course of the drain in accordance with details on the drawings.

C.18 **GRASSED WATERWAY**

Topsoil to be stripped from construction area and stockpiled prior to construction of waterway. Waterway to be graded into a parabolic shape to the width shown on the drawings. Topsoil to be relevelled over the waterway and other areas disturbed by construction.

Waterway to be prepared for seeding by harrowing and then seeded by drilling followed by rolling. Seeding rate to be 85 Kg/Ha with the following mixture:

30% Canon Canada Bluegrass
25% Koket Chewings Fescue
30% Rebel Tall Fescue
15% Diplomat Perennial Rye
Plus #125 Birdsfoot Trefoil (25% of Total Weight)

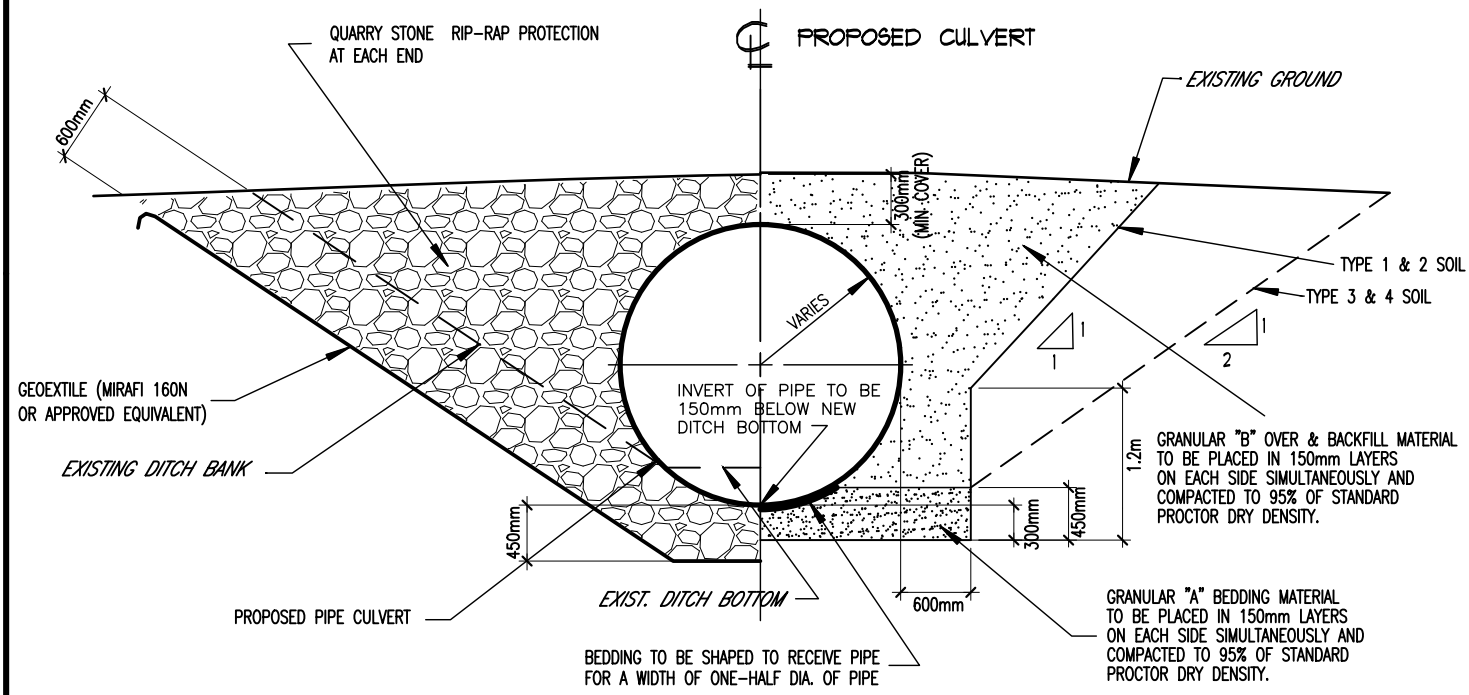
C.19 **BACKFILLING EXISTING DITCHES**

The Contractor shall backfill the ditch sufficiently for traversing by farm machinery. If sufficient material is not available from the old spoil banks to fill in the existing ditch, the topsoil shall be stripped and the subsoil shall be bulldozed into the ditch and the topsoil shall then be spread over the backfilled ditch unless otherwise specified on the contract drawings. The Contractor shall ensure sufficient compaction of the backfill and if required, repair excess settlement up to the end of the warranty period. The final grade of the backfilled ditch shall provide an outlet for surface water.

C.20 **RECOMMENDED PRACTICE FOR CONSTRUCTION OF SUBSURFACE DRAINAGE SYSTEM**

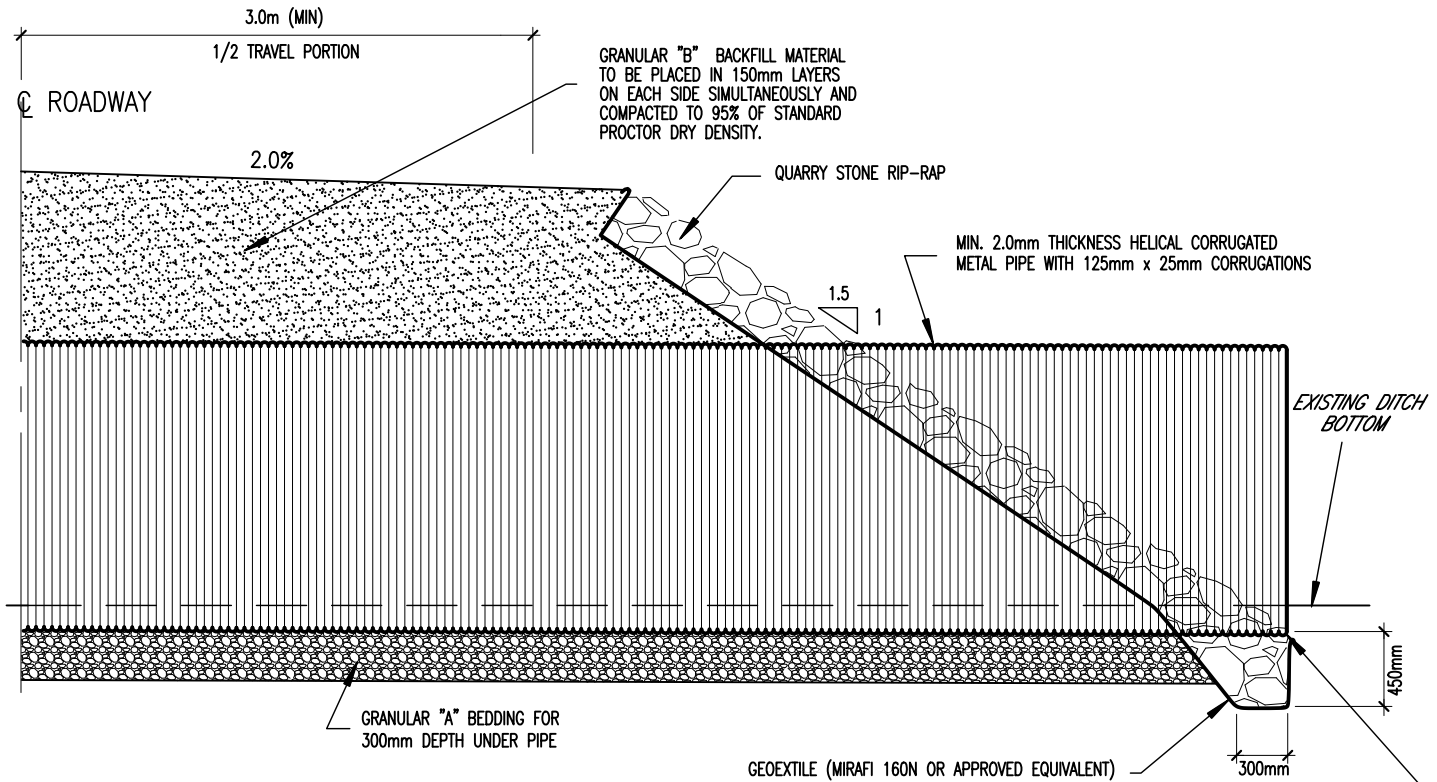
Drainage guide for Ontario, Ministry of Agriculture, Food and Rural Affairs Publication Number 29 and its amendments, dealing with the construction of Subsurface Drainage systems, shall be the guide to all methods and materials to be used in the construction of tile drains except where superseded by other specifications of this contract.

The requirements of licensing of operators, etc. which apply to the installation of closed drains under the Tile Drainage Act shall also be applicable to this contract in full unless approval otherwise is given in advance by the Engineer.



HALF ELEVATION

HALF SECTION



HALF SECTION THROUGH PIPE

NOTES

1) WHERE THE CULVERT IS TO BE INSTALLED IN POOR SOIL CONDITIONS, THE BEDDING MATERIAL SHALL BE 19mm CRUSHED STONE COMPLETELY WRAPPED IN GEOTEXTILE SUCH AS MIRAFI 160N OR APPROVED EQUIVALENT.

TYPICAL FARM CULVERT INSTALLATION DETAIL

Scale: N.T.S.	Approved by:	Date: January 1983
Drawn by: jk	M.P.D.	Revised: November 2000

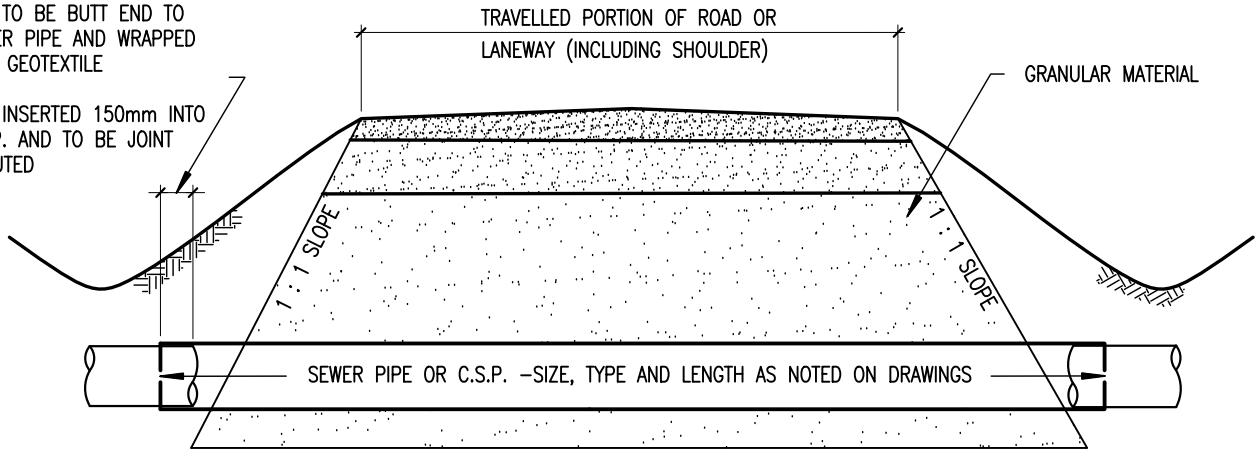
ELEVATION & SECTION

STANDARD DETAILED DRAWING No. 01

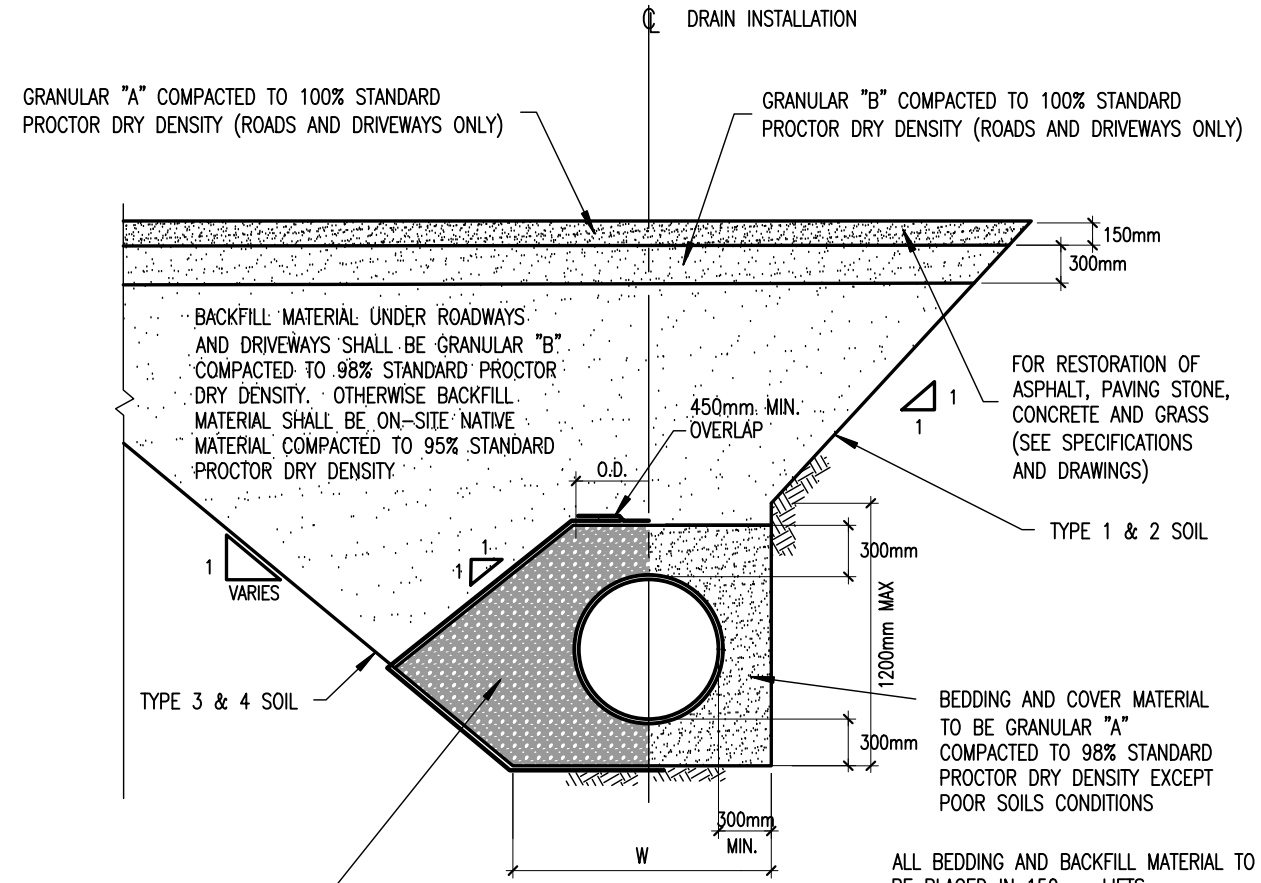
SPRIET ASSOCIATES LONDON LIMITED
CONSULTING ENGINEERS ARCHITECTS

1. TILE TO BE BUTT END TO SEWER PIPE AND WRAPPED WITH GEOTEXTILE

2. TILE INSERTED 150mm INTO C.S.P. AND TO BE JOINT GROUTED

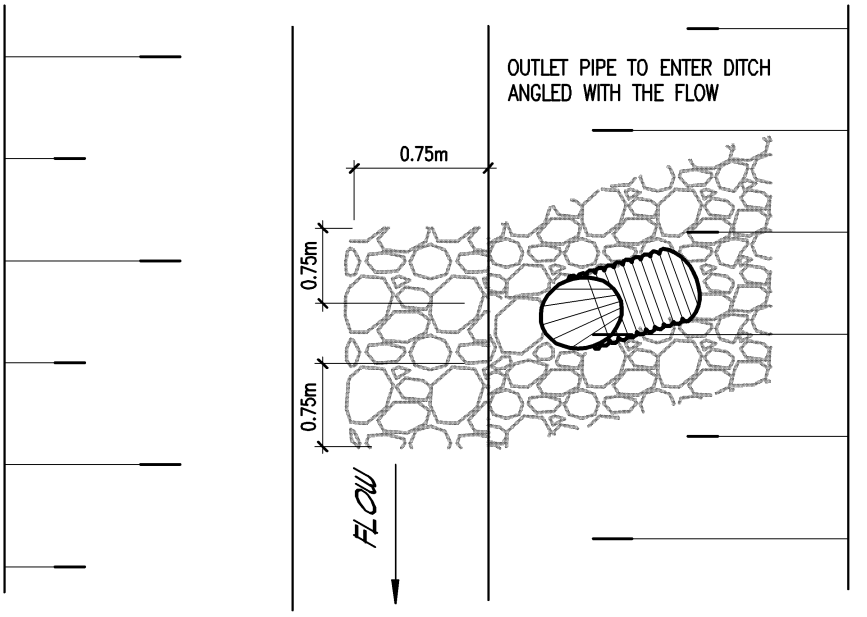


SECTION THROUGH PIPE



CROSS SECTION

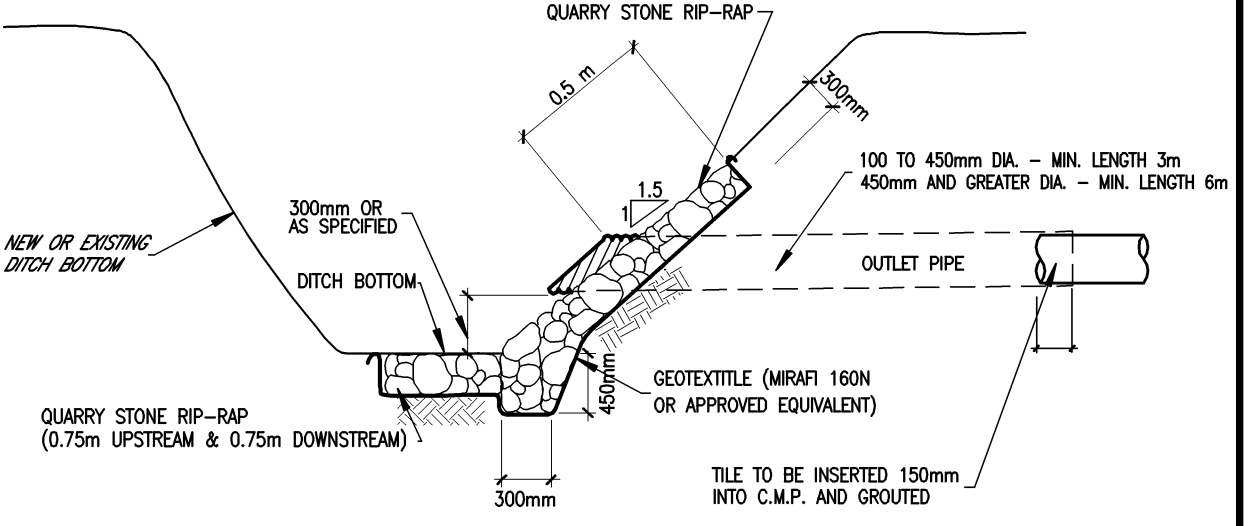
TYPICAL INSTALLATION DETAIL FOR SEWER PIPE UNDER DRIVEWAYS AND TRAVELLED PORTIONS OF ROADS		
Scale: N.T.S.	Approved by:	Date: January 1983
Drawn by: jk	M.P.D.	Revised: JULY 2018
ELEVATION & SECTION		STANDARD DETAILED DRAWING No. 02
SPRIET ASSOCIATES LONDON LIMITED CONSULTING ENGINEERS ARCHITECTS		



PLAN

NOTES

1. WHERE THE DISTURBED AREA EXCEEDS THE MIN. WIDTHS, RIP-RAP TO EXTEND TO A MIN. OF 600mm BEYOND THE DISTURBED AREA

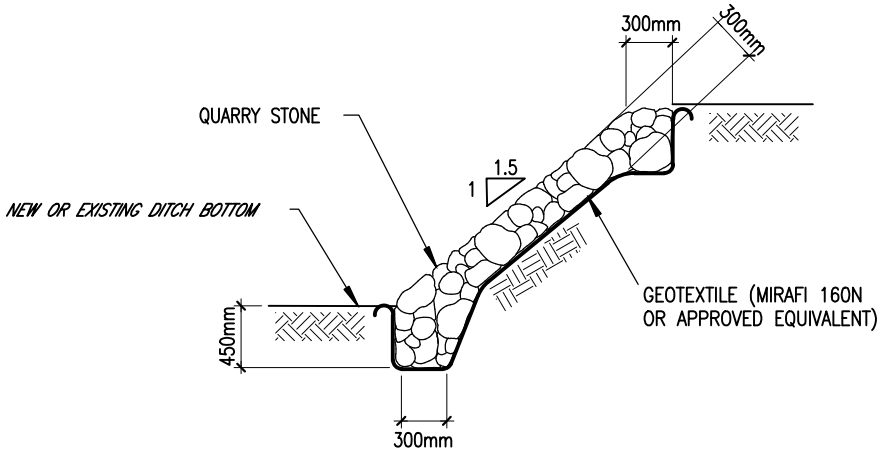


TYPICAL OUTLET RIP-RAP

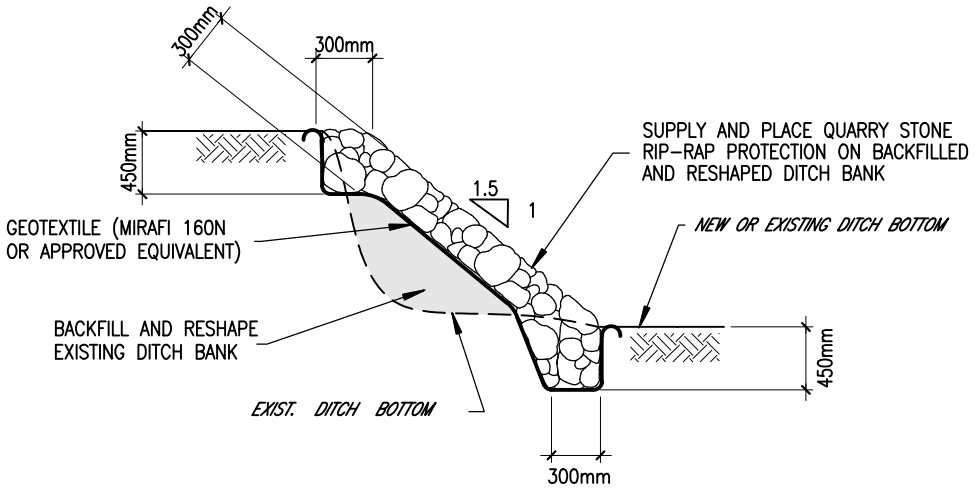
NOTES

1. RIP-RAP TO EXTEND UP THE SLOPE 0.5 METER ABOVE TOP OF OUTLET
2. WHERE SURFACE RUN ENTERS DITCH AT OUTLET PIPE, A ROCK CHUTE SHALL BE INSTALLED (SEE S.D.D. No. 05) AND PIPE SHALL BE INSTALLED ADJACENT TO ROCK CHUTE.
3. HINGED RODENT GATE TO BE AFFIXED TO END OF OUTLET PIPE.

TYPICAL OUTLET RIP-RAP THROUGH SIDE SLOPE OF DITCH		
Scale: N.T.S.	Approved by:	Date: November 2000
Drawn by: jk	M.P.D.	Revised: January 2009
PLAN & SECTION		STANDARD DETAILED DRAWING No. 03
SPRIET ASSOCIATES LONDON LIMITED CONSULTING ENGINEERS ARCHITECTS		

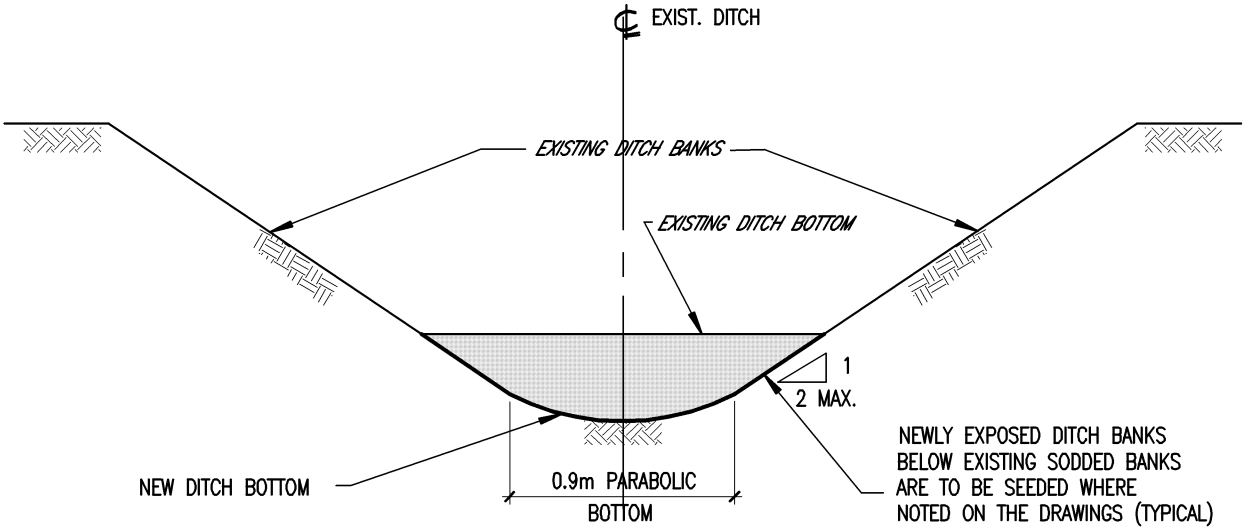


TYPICAL DITCH BANK RIP–RAP

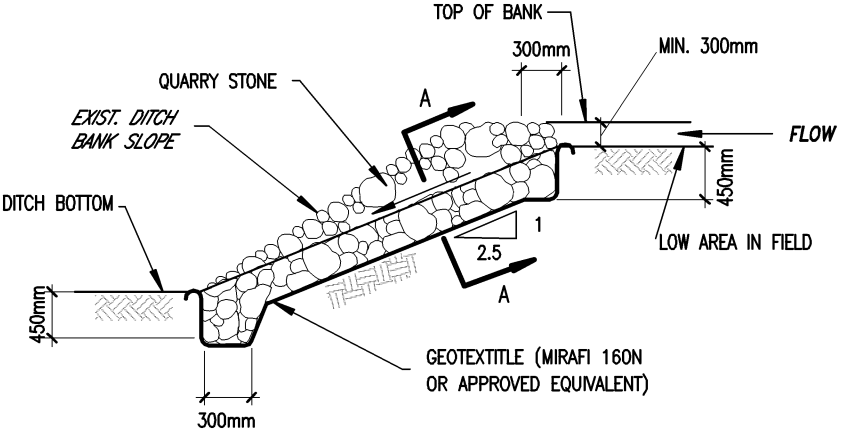


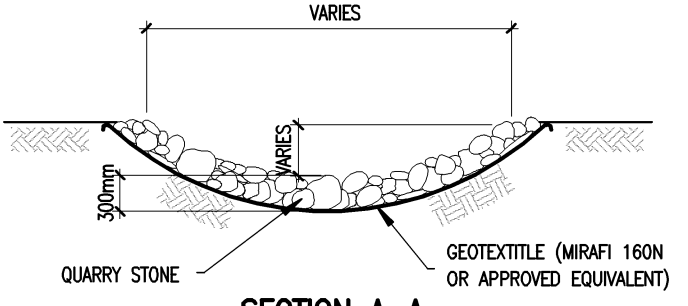
TYPICAL DITCH BANK RIP–RAP WITH BACKFILLING OF WASHOUT

TYPICAL DITCH BANK RIP–RAP DETAILS		
Scale: N.T.S.	Approved by:	Date: July 2000
Drawn by: jk	M.P.D.	Revised: November 2000
SECTIONS		STANDARD DETAILED DRAWING No. 04
SPRIET ASSOCIATES LONDON LIMITED CONSULTING ENGINEERS ARCHITECTS		



TYPICAL DITCH BOTTOM CLEANOUT





SECTION A–A

TYPICAL ROCK CHUTE

TYPICAL DITCH BOTTOM CLEANOUT TYPICAL ROCK CHUTE CONSTRUCTION		
Scale: N.T.S.	Approved by:	Date: November 2000
Drawn by: jk	M.P.D.	Revised:
SECTIONS		STANDARD DETAILED DRAWING No. 05
SPRIET ASSOCIATES LONDON LIMITED CONSULTING ENGINEERS ARCHITECTS		

NOTE: Additional Drawings noted below are available upon request.

Fournie Drain 2023 - Plan & General Notes
Fournie Drain 2023 - Detail Plan & Profile
Fournie Drain 2023 - Cross Sections

Bill No.
2024

By-law No.

A by-law to provide for Drainage Works in the City of London (Construction of the Gold Seal & Fournie Municipal Drains)

WHEREAS the Municipal Council of The Corporation of the City of London appointed Spriet Associates Ltd, pursuant to section 78 of the *Drainage Act*, R.S.O. 1990, c. D.17, to prepare a report on the construction of the Gold Seal and Fournie Municipal Drains ;

AND WHEREAS the Municipal Council of the Corporation of The City of London at it's meeting February 21, 2024 adopted the Consulting Engineers' report dated November 30th, 2023.

NOW THEREFORE the Municipal Council of The Corporation of the City of London enacts as follows:

1. The reports dated November 30th, 2023, are hereby adopted and the undertaking and completion of the drainage works outlined in the report are hereby authorized.

2. The allowances in connection with this drainage works set out in Schedule "A" of this by-law are hereby approved.

3. The assessments for future maintenance for this drainage works set out in Schedule "D" of this by-law are hereby approved and shall be levied upong the lands, including roads, listed in Schedule "D" of this by law.

4. This by-law comes into force and effect on the day it is passed.

PASSED in Open Council on [insert date]

Josh Morgan
Mayor

Michael Schulthess
City Clerk

First Reading – insert date
Second Reading – insert date
Third Reading – insert date

SCHEDULE ' A ' - ALLOWANCES

GOLD SEAL DRAIN 2023

City of London

e with Section 30 of the Drainage Act, we determine the allowances payable to
to owners entitled thereto as follows:

CON.	LOT	ROLL NUMBER (Owner)	Section 30 Damages	TOTALS
ENBTR	W½E½ 56	80-060-021-01(806584 Ontario Ltd.)	$ 200.00	$ 200.00
ENBTR	Pt.E½ 56	80-060-033 PART 1 (1068788 Ontario Ltd.)	200.00	200.00
ENBTR	Pt.E½ 56	80-060-033 PART 2 (1068788 Ontario Ltd.)	150.00	150.00
		Total Allowances	$ 550.00	$ 550.00

TOTAL ALLOWANCES ON THE MAIN DRAIN-CLOSED PORTION **$ 550.00**

SCHEDULE 'B' - COST ESTIMATE

GOLD SEAL DRAIN 2023

City of London

We have made an estimate of the cost of the proposed work which is outlined in detail as follows:

CONSTRUCTION		
Locate and expose existing tile	$	1,010.00
Contingencies	$	350.00
Allowances under Section 30 of the Drainage Act	$	550.00
ADMINISTRATION		
Net Harmonized Sales Tax	$	660.00
Survey, Plan and Final Report	$	15,500.00
Expenses	$	230.00
Review of Construction Drawings	$	2,000.00
Supervision and Updating Final Construction Details	$	3,000.00
TOTAL ESTIMATED COST	**$**	**23,300.00**

GOLD SEAL DRAIN 1998 October 14, 1998
City of London **Revised by Section 65 (3)**
November 30, 2023

CON.	LOT	HECTARES AFFECTED	ED	ROLL No. (OWNER)	SPECIAL BENEFIT	BENEFIT	OUTLET	TOTAL
MAIN DRAIN-CLOSED PORTION								
ENBTR	Pt.S½	53	2.4	80-060-024(J. & M. Ferguson)	$	$ 2,910.00	43.00	2,953.00
ENBTR	E¼	53	5.2	80-060-025(1068788 Ontario Ltd.)		750.00	76.00	826.00
ENBTR	NWPt.	53	6.0	80-060-016(1000182402 Ontario Inc.)		11,990.00	487.00	12,477.00
ENBTR	SWPt.	54	8.9	80-060-01601(806433 Ontario Ltd.)		6,720.00	1,612.00	8,332.00
ENBTR	NWPt.	54	1.2	80-060-019(1068788 Ontario Ltd.)			146.00	146.00
ENBTR	Pt.N½	54	10.1	80-060-021-01(806584 Ontario Ltd.)		6,270.00	2,245.00	8,515.00
ENBTR	E¼	54	12.1	80-060-021-01(806584 Ontario Ltd.)			987.00	987.00
ENBTR	WPt.	55	4.7	80-060-019(1068788 Ontario Ltd.)			1,318.00	1,318.00
ENBTR	W½E½	55	20.2	80-060-021-01(806584 Ontario Ltd.)		11,580.00	5,923.00	17,503.00
ENBTR	E¼	55	14.1	80-060-022(J. & M. Ferguson)			2,350.00	2,350.00
* ENBTR	Pt.W½	56	0.55	80-060-035(Cameron Grane & Riggers Inc.)			501.00	501.00
ENBTR	**Pt.W½**	**56**	**0.8**	**80-060-03505 PART 1 (756950 Ontario Ltc**			**364.00**	**364.00**
ENBTR	**Pt.W½**	**56**	**1.6**	**80-060-03505 PART 2 (756950 Ontario Ltd.)**			**727.00**	**727.00**
ENBTR	**Pt.E½**	**56**	**32.2**	**80-060-033 PART 1 (1068788 Ontario Ltd.**		**14,240.00**	**13,579.00**	**27,819.00**
ENBTR	**Pt.E½**	**56**	**0.8**	**80-060-033 PART 2 (1068788 Ontario Ltd.)**			**337.00**	**337.00**
ENBTR	SEPt.	57	15.6	80-060-030(G. Axford)		650.00	9,639.00	10,289.00
ENBTR	NEPt.	57	6.3	80-060-031(M. Lorenzutti & F. Damico)			4,762.00	4,762.00
				TOTAL ASSESSMENT ON LANDS	$	$ 55,110.00	$ 45,096.00	$ 100,206.00
Glanworth Drive		**4.5**		**City of London**	**$**	**$ 2,270.00**	**7,383.00**	**9,653.00**
Tempo Road		**0.7**		**City of London**		**1,510.00**	**1,148.00**	**2,658.00**
				TOTAL ASSESSMENT ON ROADS	$	$ 3,780.00	$ 8,531.00	$ 12,311.00

SPECIAL ASSESSMENT against the City of London for the increased cost of boring a 406mm (16") smooth wall pipe under Glanworth Drive on the Main Drain $ 6,480.00

SPECIAL ASSESSMENT against Union Gas for the administration and construction costs of locating their gas line on Glanworth Drive and any modifications to the drainage works if required $ 300.00

TOTAL ASSESSMENT ON THE MAIN DRAIN-CLOSED PORTION $ 119,297.00

GOLD SEAL DRAIN 1998
City of London

October 14, 1998
Job No. 97226 **Revised by Section 65**
November 30, 2023

	CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	PERCENTAGE OF MAINTENANCE COST
	MAIN DRAIN-OPEN PORTION				
	City of London		(Former Township of Westminster)		
*	ENBTR	WPt. 49	0.3	80-060-003(1188165 Ontario Ltd.)	0.02 %
*	ENBTR	Pt.W½ 50	1.4	80-060-004(CRM Properties Inc..)	0.09
*	ENBTR	Pt.W½ 50	1.7	80-060-00402(Laidlaw Carriers Bulk GP Inc.)	0.11
*	ENBTR	Pt.W½ 50	5.9	80-060-00410(Laidlaw Carriers Bulk GP Inc.)	1.48
*	ENBTR	Pt.W½ 50	1.8	80-060-00401(Badger Daylighting Inc.)	1.31
	ENBTR	Pt.W½ 50	5.4	80-060-00403(C. & K. Wodrich)	0.33
	ENBTR	SPt. 51	16.8	80-060-008(R. & I. Orr)	3.47
*	ENBTR	SPt. 51	0.1	80-060-008(R. & I. Orr)	0.01
	ENBTR	NWPt. 51	17.4	80-060-010(J. & R. Baker)	5.47
	ENBTR	Pt.51&Pt. 52	25.4	80-060-011(J. Burtwistle)	9.70
	ENBTR	NW¼ 52	6.1	80-060-013(1068788 Ontario Ltd.)	0.74
	ENBTR	NE¼ 52	16.2	80-060-024(J. & M. Ferguson)	5.14
	ENBTR	SW¼ 53	1.2	80-060-015(S. Peake)	0.15
	ENBTR	Pt.S½ 53	8.1	80-060-024(J. & M. Ferguson)	1.69
	ENBTR	E¼ 53	13.7	80-060-025(1068788 Ontario Ltd.)	5.04
	ENBTR	NWPt. 53	6.0	80-060-016(1000182402 Ontario Inc.)	2.05
	ENBTR	SWPt. 54	8.9	80-060-01601(806433 Ontario Ltd.)	3.04
	ENBTR	NWPt. 54	1.2	80-060-019(1068788 Ontario Ltd.)	0.20
	ENBTR	Pt.N½ 54	10.1	80-060-021-01(806584 Ontario Ltd.)	3.45
	ENBTR	E¼ 54	12.1	80-060-021-01(806584 Ontario Ltd.)	4.13
	ENBTR	WPt. 55	4.7	80-060-019(1068788 Ontario Ltd.)	1.25
	ENBTR	W½E½ 55	20.2	80-060-021-01(806584 Ontario Ltd.)	6.90
	ENBTR	E¼ 55	14.1	80-060-022(J. & M. Ferguson)	4.82
*	ENBTR	Pt.W½ 56	0.55	80-060-035(Cameron Grane & Riggers Inc.)	0.29
	ENBTR	**Pt.W½ 56**	**0.8**	**80-060-03505 PART 1 (756950 Ontario Ltd.)**	**0.27**
	ENBTR	**Pt.W½ 56**	**1.6**	**80-060-03505 PART 2 (756950 Ontario Ltd.)**	**0.56**
	ENBTR	**Pt.E½ 56**	**32.2**	**80-060-033 PART 1 (1068788 Ontario Ltd.)**	**10.75**
	ENBTR	**Pt.E½ 56**	**0.8**	**80-060-033 PART 2 (1068788 Ontario Ltd.)**	**0.28**
	ENBTR	SEPt. 57	15.6	80-060-030(G. Axford)	4.35
	ENBTR	NEPt. 57	6.3	80-060-031(M. Lorenzutti & F. Damico)	2.15
	WNBTR	Pt.NE¼ 49	13.6	80-060-176(Oegema Grains Ltd.)	2.77
*	WNBTR	Pt.NE¼ 49	1.0	80-060-17610(Oegema Grains Ltd.)	0.01
	WNBTR	S½ 50	17.4	80-060-175(Thomas Brothers Produce Inc.)	3.34
	WNBTR	N½ 50	17.0	80-060-174(Thomas Brothers Produce Inc.)	1.95
	WNBTR	SEPt. 51	20.2	80-060-173(Thomas Brothers Produce Inc.)	0.89
				TOTAL ASSESSMENT ON LANDS	88.20 %
	Colonel Talbot Rd.		2.8	City of London	1.90 %
	Orr Drive		2.5	City of London	1.03
	Tempo Road		**0.7**	**City of London**	**1.40**
	Glanworth Drive		**4.5**	**City of London**	**5.80**
				TOTAL ASSESSMENT ON ROADS	10.13 %
				TOTAL ASSESSMENT IN THE CITY OF LONDON	**98.33 %**

GOLD SEAL DRAIN 1998
City of London

CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	PERCENTAGE OF MAINTENANCE COST
MAIN DRAIN-OPEN PORTION (Continued) **Township of Southwold**				
County Road No. 18		0.8	County of Elgin	1.67 %
		TOTAL ASSESSMENT ON ROADS		1.67 %
		TOTAL ASSESSMENT IN TOWNSHIP OF SOUTHWOLD		**1.67 %**
		TOTAL ASSESSMENT FOR MAINTENANCE ON THE MAIN DRAIN-OPEN PORTION		**100.00 %**

NOTE:
All of the above lands, with the exception of those noted with an asterisk, are classified as agricultural.

SCHEDULE 'A' - ALLOWANCES

FOURNIE DRAIN 2023

City of London

In accordance with Sections 29 and 30 of the Drainage Act, we determine the allowances payable to owners entitled thereto as follows:

CON.	LOT	ROLL NUMBER (Owner)	Section 29 Right-of-Way	Section 30 Damages	TOTALS
MAIN DRAIN					
Geographic Westminster					
ENBTR	SW¼ 53	060-015(S. Peake)	$ 930.00	$ 100.00	$ 1,030.00
ENBTR	Pt.54& 55	060-019(1068788 Ontario Ltd.)	370.00	3,660.00	4,030.00
ENBTR	PtS½ 54	060-016-01(806433 Ontario Ltd.)	40.00	210.00	250.00
		Total Allowances	$ 1,340.00	$ 3,970.00	$ 5,310.00

TOTAL ALLOWANCES ON THE FOURNIE DRAIN 2023 $ 5,310.00

SCHEDULE 'B' - COST ESTIMATE

FOURNIE DRAIN 2023

City of London

We have made an estimate of the cost of the proposed work which is outlined in detail as follows:

ALLOWANCES

Allowances under Sections 29 & 30 of the Drainage Act	$	5,310.00

CONSTRUCTION

Mobilization of equipment	$	2,000.00
Remobilization of equipment to open channel once seeding has established and backfill	$	2,000.00
Clearing and grubbing including disposal	$	3,000.00
Install and maintain sediment and erosion control measures	$	800.00
Construct temporary crossing using 900mm pipe or larger including removal during backfill	$	2,500.00
18.0 meters of 450mm aluminized C.S.P. 2.0mm thickness		
Supply	$	1,800.00
Construct access laneway/ramp including supply and compaction of Granular 'A'	$	2,200.00
Strip, stockpile topsoil from new ditch area and area to be regraded and haul and deposit at existing ditch (8200 m²)	$	10,250.00
212 meters of open ditch construction and cut adjacent area on west side of existing ditch (Approx. 7100 m³ excavation)	$	52,500.00
Scarify ditch banks and apply Flexterra HP-FGM bonded fibre on ditch banks (approx. 2850 m²)	$	14,250.00
Hand seeding of buffer strip (approx. 450 m²)	$	900.00
Backfill existing ditch (Approximately 210m length - 3800 m³)	$	39,550.00
Redistribution of topsoil on area outside of ditch and final grading upon completion (Approx. 6900 m²)	$	10,350.00
Supply and place N.A.G. C350 Turf Reinforcement Mat on seeded bank with quarry stone rip-rap bank protection		
(Approx. 160 m² NAG C-350 TRM required)	$	6,400.00
(Approx. 77 m³ quarry stone required)	$	21,180.00
Backfill washouts, supply and place quarry stone rip-rap protection (with filter blanket) on ditch slopes as rock chutes		
(Approx. 14.0 m³ quarry stone required)	$	3,850.00

SCHEDULE 'B' - COST ESTIMATE (cont'd)

FOURNIE DRAIN 2023
City of London

CONSTRUCTION (cont'd)

Haul excess excavated material to adjacent area as specified on drawings and level including grading (3400 m^3)	$	34,000.00
Contract security financing	$	2,960.00
Contingencies	$	9,000.00
Contingency for OLS to re-establish property bars	$	3,000.00

ADMINISTRATION

Net Harmonized Sales Tax	$	6,600.00
Survey, Plan and Final Report	$	61,000.00
Expenses	$	1,000.00
Review of Construction Drawings	$	13,600.00
Supervision and Updating Final Construction Details	$	35,000.00
TOTAL ESTIMATED COST	**$**	**345,000.00**

SCHEDULE ' C ' - ASSESSMENT FOR FUTURE MAINTENANCE

FOURNIE DRAIN 2023

City of London

Original Schedule Feburary 6 1969

Job No. 220278 Revised by Sect. 65 December 20, 2023

** = Non-agricultural*

	CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	BENEFIT	OUTLET	TOTAL
MAIN DRAIN - OPEN PORTION							
	Geographic Westminster						
	WNBTR	**Pt. 57**	**1.2**	**060-156(London Valley IV Inc.)**	**$**	**$ 8.00**	**$ 8.00**
	WNBTR	**Pt. 57**	**0.59**	**060-158(D. & M. Coleman)**		**4.00**	**4.00**
	WNBTR	**N½ 56**	**2.8**	**060-159(806433 Ontario Ltd.)**		**19.00**	**19.00**
	WNBTR	**Pt.S½ 56**	**2.5**	**060-161(Dauntless ULC)**		**16.00**	**16.00**
*	WNBTR	Pt.S½ 56	0.22	060-160(R. & D. Backes)		1.00	1.00
	WNBTR	**55**	**23.4**	**060-162(C. & J. & J. M. Ferguson)**		**113.00**	**113.00**
	WNBTR	Pt 54	30.3	060-167-01(646808 Ontario Limited)			
	WNBTR			combined with 050-181 & 050-167-01 in Midd. Cent.		146.00	146.00
*	**WNBTR**	**Pt 54**	**0.11**	**060-017(The Hastings Mill Inc.)**		**2.00**	**2.00**
*	**WNBTR**	**Pt 54**	**0.10**	**060-168(Rose Chapel Inc)**		**2.00**	**2.00**
*	**WNBTR**	**Pt53& 54**	**7.5**	**060-164(Stone Ridge Travel Centre Inc.)**		**41.00**	**41.00**
	WNBTR	WPt. 53	0.80	050-181 (646808 Ontario Ltd.) Midd. Cent.		4.00	4.00
	WNBTR	53	27.3	060-166(J. & C. Burtwistle)	567.00	145.00	712.00
	WNBTR	Pt. 53	19.3	North Part of 050-167-02(JNC AG Capital Inc.) Midd. Cent.		99.00	99.00
	WNBTR	Pt. 52	3.2	South Part 050-167-02 & Part 050-167 Midd. Cent.		16.00	16.00
	WNBTR	Pt. 52	2.0	050-179 (JNC AG Capital Inc.) Midd. Cent.		10.00	10.00
	WNBTR	N½ 52	20.6	060-170(J. & E. Burtwistle)	683.00	104.00	787.00
	WNBTR	PtN½ 52	1.0	060-169(1886966 Ont. Ltd)		9.00	9.00
	WNBTR	S½ 52	25.5	060-171(C. &. D. Carrothers)	870.00	123.00	993.00
	WNBTR	N½ 51	31.0	060-172(S. Peake)	990.00	124.00	1,114.00
	WNBTR	S½ 51	25.8	060-173(Thomas Brothers Produce Inc.)	855.00	78.00	933.00
	ENBTR	NPt. 57	1.0	060-040(London Valley 11 Inc.)		7.00	7.00
*	**ENBTR**	**Pt.S½ 57**	**0.0**	**060-038(M. Catulli)**			
	ENBTR	**Pt.S½ 57**	**11.1**	**060-039-01(2533430 Ontario Inc.)**		**74.00**	**74.00**
	ENBTR	**Pt.S½ 57**	**3.0**	**060-039-02(Shogun Maitake Property)**		**20.00**	**20.00**
	ENBTR	**Pt.S½ 57**	**1.0**	**060-030(G. Axford)**		**7.00**	**7.00**
*	**ENBTR**	**NWPt. 56**	**8.0**	**060-037(2726064 Ontario Inc.)**		**52.00**	**52.00**
*	ENBTR	Pt. 56	11.9	060-036(Associated Materials Canada Ltd.)		78.00	78.00
*	**ENBTR**	**Pt. 56**	**4.37**	**060-034(All Makes Logistics Intermodal Freight Services Inc.)**		**34.00**	**34.00**
*	**ENBTR**	**Pt. 56**	**1.88**	**060-035-05 PART 1(756950 Ontario Ltd.)**		**12.00**	**12.00**
*	**ENBTR**	**Pt. 56**	**0.53**	**060-035-05 PART 2(756950 Ontario Ltd.)**		**3.00**	**3.00**
*	**ENBTR**	**Pt. 56**	**1.71**	**060-035(Cameron Grane & Riggers)**		**31.00**	**31.00**
*	**ENBTR**	**Pt.54& 55**	**3.3**	**060-018(IBEW Local 120 Bld. Corp.)**		**13.00**	**13.00**
	ENBTR	**Pt.54& 55**	**36.6**	**060-019(1068788 Ontario Ltd.)**	205.00	**83.00**	**288.00**
	ENBTR	**PtS½ 54**	**17.6**	**060-016-01(806433 Ontario Ltd.)**	**30.00**	**95.00**	**125.00**
	ENBTR	**Pt.N½ 53**	**24.2**	**060-016 (1000182402 Ontario Inc.)**	**122.00**	**125.00**	**247.00**
*	ENBTR	NWPt 53	2.0	060-014(Henry Wall Holdings Inc.)		10.00	10.00

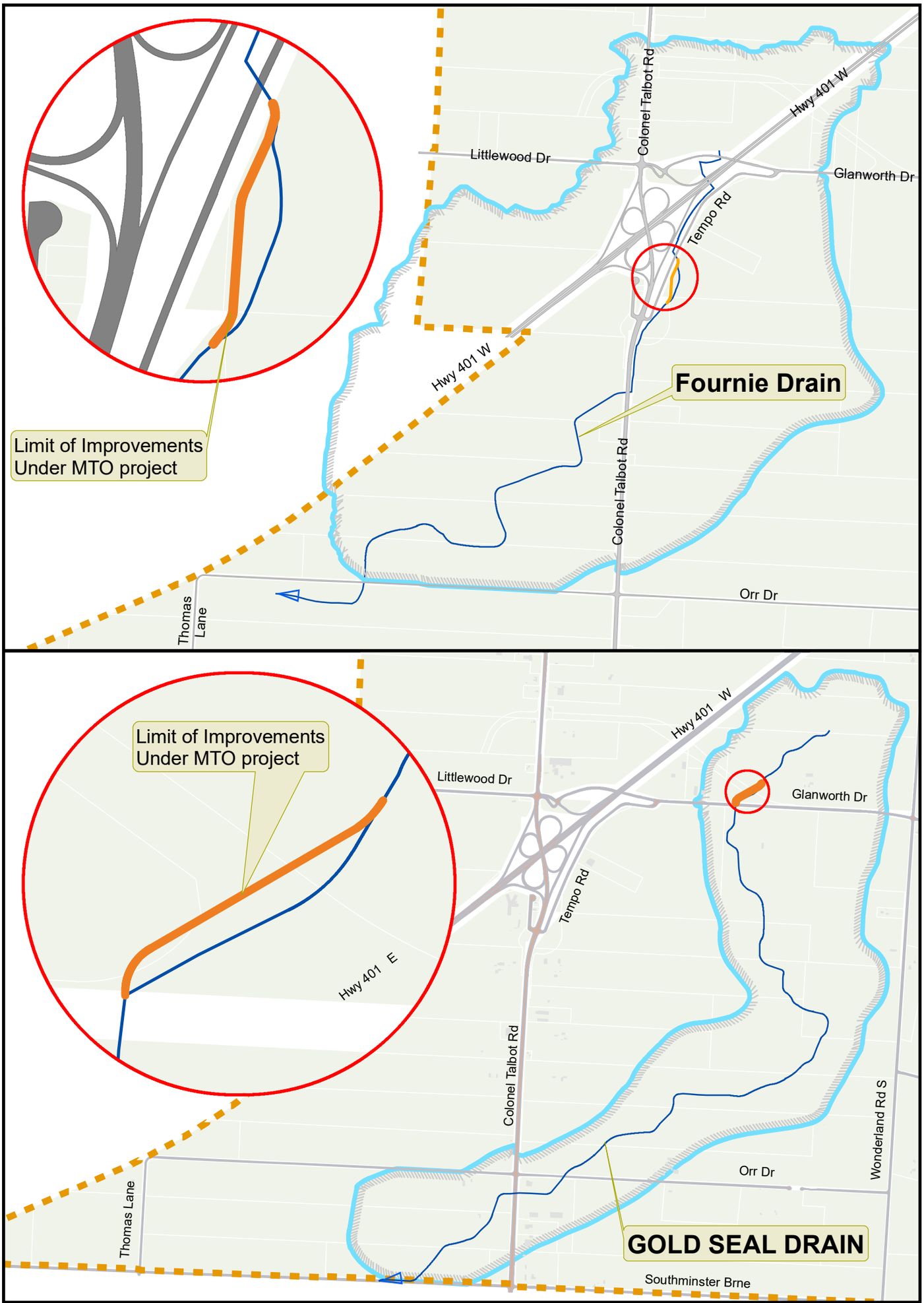
SCHEDULE ' C ' - ASSESSMENT FOR FUTURE MAINTENANCE (Cont'd)

FOURNIE DRAIN 2023
City of London

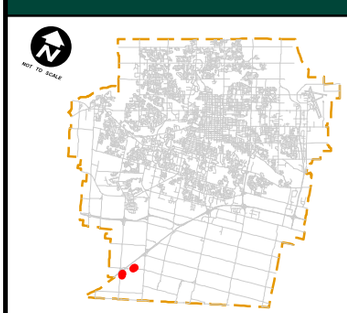
** = Non-agricultural*

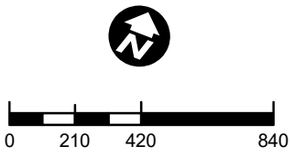
	CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	BENEFIT	OUTLET	TOTAL
MAIN DRAIN - OPEN PORTION (cont'd)							
	Geographic Westminster						
	ENBTR	SW¼ 53	17.7	060-015(S. Peake)		88.00	88.00
	ENBTR	Pt.52& 53	2.0	060-024(J. & M. Ferguson)		10.00	10.00
*	ENBTR	Pt 52	0.2	060-012(T. & H. Bramley)		3.00	3.00
	ENBTR	NW¼ 52	14.0	060-013(1068788 Ont. Ltd.)		69.00	69.00
	ENBTR	S½ 52	10.5	060-011(J. Burtwistle)		49.00	49.00
	ENBTR	NPt. 51	6.1	060-010(J. & R. Baker)		28.00	28.00
	ENBTR	**SPt. 51**	**0.7**	**060-008(L. & I. Orr)**		**3.00**	**3.00**
				TOTAL ASSESSMENT ON LANDS	$ 4,322.00	$ 1,958.00	$ 6,280.00
	Orr Drive		**0.6**	**City of London**	**$**	**$ 3.00**	**$ 3.00**
	Littlewood Dr.		**0.3**	**City of London**		**5.00**	**5.00**
	Old Litlewood Dr.		**0.9**	**City of London**		**17.00**	**17.00**
	Col. Talbot Road		**2.3**	**City of London**		**61.00**	**371.00**
	Col. Talbot Road		**4.6**	**Ontario Ministry of Tansportation**	**310.00**	**122.00**	**122.00**
	Glanworth Drive		**4.1**	**City of London**		**82.00**	**82.00**
	Burtwistle Lane		**0.8**	**City of London**		**12.00**	**12.00**
	Tempo Road		**5.7**	**City of London**	**133.00**	**112.00**	**245.00**
	Highway 401		**50.0**	**Ontario Ministry of Tansportation**	**792.00**	**983.00**	**1,775.00**
				TOTAL ASSESSMENT ON ROADS	$ 1,235.00	$ 1,397.00	$ 2,632.00
				TOTAL ASSESSMENT ON THE FORUNIE DRAIN 1969			**$ 8,912.00**

Properties in bold have been revised under Section 65 of the Drainage Act



APPENDIX 'C' - LIMITS OF WORK - FOURNIE DRAIN AND GOLD SEAL DRAIN





Legend

- City of London Limits
- Parcels
- Water body
- Drain Catchment Area

Map Produced by JCh
Stormwater Engineering
Printed: January 2024

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