

Agenda Including Addeds

Civic Works Committee

10th Meeting of the Civic Works Committee

June 18, 2019, 4:00 PM

Council Chambers

Members

Councillors P. Squire (Chair), M. van Holst, S. Lewis, S. Lehman, E. Pelozza, Mayor E. Holder

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The Committee will recess at approximately 6:30 PM for dinner, as required.

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Cycling Advisory Committee

Report

The 6th Meeting of the Cycling Advisory Committee
May 15, 2019
Committee Room #4

Attendance PRESENT: D. Mitchell, D. Doroshenko, D. Foster, R.
Henderson, J. Jordan and D. Szoller; P. Shack (Secretary)

ABSENT: W. Pol, R. Sirois and M. Zunti

ALSO PRESENT: A. Giesen, Sgt. S. Harding, P. Kavcic, A.
Miller and L. Davies Snyder

The meeting was called to order at 4:00 PM.

1. Call to Order

1.1 Disclosures of Pecuniary Interest

That it BE NOTED that no pecuniary interests were disclosed.

2. Scheduled Items

2.1 2019 London Celebrates Cycling Event

That it BE NOTED that the attached presentation from A. Miller,
Transportation Demand Management Coordinator, with respect to 2019
London Celebrates Cycling Event, was received.

3. Consent

3.1 5th Report of the Cycling Advisory Committee

That the 5th Report of the Cycling Advisory Committee, from its meeting
held on April 17, 2019, was received.

3.2 Draft Lambeth Area Community Improvement Plan (CIP)

That it BE NOTED that the Cycling Advisory Committee took no action,
with respect to the Draft Lambeth Area Community Improvement Plan
(CIP).

3.3 Notice of Revised Planning Application - Official Plan and Zoning By-law Amendments - 462 and 472 Springbank Drive

That it BE NOTED that the Notice of Revised Planning Application dated
April 10, 2019, from M. Corby, Senior Planner, with respect to the Official
Plan and Zoning By-law Amendments for 462 and 472 Springbank Drive,
was received.

3.4 Notice of Planning Application - Official Plan and Zoning By-law Amendments - 676-700 Beaverbrook Avenue and 356 Oxford Street East

That it BE NOTED that the Notice of Planning Application, dated April 10,
2019, from M. Corby, Senior Planner, with respect to the Official Plan and
Zoning By-law Amendments for 676-700 Beaverbrook Avenue and 356
Oxford Street East, was received.

3.5 Notice of Planning Application - Official Plan and Zoning By-law Amendments - 3334 and 3354 Wonderland Road South

That it BE NOTED that the Notice of Planning Application, dated April 17, 2019, from B. Debbert, Senior Planner, with respect to the Official Plan and Zoning By-law Amendments for 3334 and 3354 Wonderland Road South, was received.

3.6 Notice of Revised Planning Application - Zoning By-law Amendment - 945 Bluegrass Drive

That it BE NOTED that the Notice of Revised Planning Application, dated April 24, 2019, from C. Lowery, Planner II, with respect to the Zoning By-law Amendment for 945 Bluegrass Drive, was received.

3.7 Notice of Public Meeting - Zoning By-law Amendment - 1081 Riverside Drive

That it BE NOTED that the Public Meeting Notice, dated April 25, 2019, from N. Pasato, Senior Planner, with respect to the Zoning By-law Amendment for 1081 Riverside Drive, was received.

3.8 Notice of Public Meeting - Zoning By-law Amendment - 3557 Colonel Talbot Road

That it BE NOTED that the Notice of Public Meeting, dated April 24, 2019, from M. Corby, Senior Planner, with respect to the Zoning By-law Amendment for 3557 Colonel Talbot Road, was received.

4. Sub-Committees and Working Groups

4.1 Colborne Street Cycle Track Analysis

That it BE NOTED that the Cycling Advisory Committee heard a verbal update from D. Mitchell, with respect to the Colborne Street Cycle Track Analysis.

5. Items for Discussion

5.1 2018 Work Plan

That the attached 2018 Cycling Advisory Committee Work Plan BE FORWARDED to the Municipal Council for information.

5.2 2019 Work Plan

That it BE NOTED that the Cycling Advisory Committee held a general discussion with respect to the 2019 Work Plan.

6. Deferred Matters/Additional Business

None.

7. Adjournment

The meeting adjourned at 7:15 PM.



London Celebrates Cycling 2019 Edition



Allison Miller
TDM Coordinator
Environmental Programs



What is *London Celebrates Cycling*?

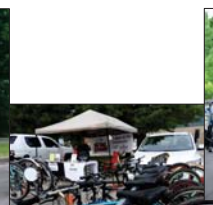
- A celebration of all things cycling in London
- Third annual event
- Events geared to all ages, abilities and interests
- Family-friendly



Inaugural 2017 Edition



2018 Edition



This Year

- Expanded May 27th – June 16th
- Builds on TREA's 28th annual Bicycle Festival and other cycling events, such as Bike to Work Day.
- Activities for all ages, interests and abilities.
- Most are free!



2019 Organizing Committee

- Big Bike Giveaway
- Boler Mountain
- CAN-Bike London
- City of London
- Fanshawe College
- London Cycle Link
- MEC
- Middlesex-London Health Unit
- Outspokin Cycles
- Squeaky Wheel Bike Co-Op
- Thames Region Ecological Association
- Urban League/Byron Community Organization



Partners



We Want You!

- Spread the word
- Participate
- Volunteer
- Celebrate Cycling!



More information

[London.ca/CelebrateCycling](https://london.ca/CelebrateCycling)

Or contact Allison at AMiller@London.ca



Cycling Advisory Committee Work Plan – 2018

Final Edit - 2019-05-07 Dave Mitchell

	Activity	Background	Responsibility	Proposed Timeline	Proposed Budget	Cycling Master Plan Alignment	Link to Strategic Plan	Status
CAC 18.2	Provide recommendations for better integration of the recreational and commuter cycling networks	To be provided through Cycling Master Plan, EA input.	CAC Environmental Programs Jay Stanford and Allison Miller Parks and Rec Andrew Macpherson Transportation Doug MacRae	Ongoing		- Action #7 Identifying & Enhancing Local Cycling Hubs - Action #8 Enhancing Bicycle Parking - Action #9 Establishing Performance Measures - Action #10 Designing & Implementing Crossings & Transitions	Our Strategy 60 Direction #6 Place a new emphasis on Creating attractive mobility choices	Completed. Consulting firm hired is MMM.
CAC 18.4	Provide recommendations for better integration of the recreational and commuter cycling networks	King St cycle track	CAC Transportation Peter Kavcic	Q2-2019				Update: Construction began April 8th, 2019. TBC in ~12 weeks.
CAC 18.5	Provide input to CoL Cycling web presence	CoL cycling portal on website london.ca/cycling	CAC Environmental Programs: Jay Stanford Allison Miller and Andrew Gleison	Mar-May 2018		Action #6 Creating a Cycling Specific Web Presence		Complete. Edits & additions are ongoing. CAC welcome to use and/or promote content.
CAC 18.6	Promote safe cycling infrastructure through education and improved facilities and infrastructure	- Need to support / initiate City, business and other community partner initiatives relating to mapping, bicycle parking, cycling lanes, etc. - Promotional outreach for cycling - Promotion of the Cycling Master Plan	CAC Transportation Doug MacRae Peter Kavcic	Ongoing		- Action #2 Establishing a Winter Cycling Network - Action #8 Enhancing Bicycle Parking - Action #9 Establishing Performance Measures	Our Strategy 60 Direction #7 Build strong, healthy and attractive neighbourhoods for everyone 6. Identify, create and promote cycling destinations in London and connect these destinations to neighbourhoods through a safe cycling network.	Update: The City is actively looking to increase education around cycling.
CAC 18.7	Improved facilities and infrastructure	Colborne St cycle track	CAC Transportation Doug Macrae Peter Kavcic	Q2 -2018				Update: Completed from Horton to Dufferin. Official launch June 28, 2018 - Q2
CAC 18.8	Improved facilities and infrastructure	Kiwanis Park Bridge	CAC Transportation Doug Macrae Peter Kavcic Parks & Rec Andrew Macpherson					No official launch. Complete.
CAC 18.9	Improved facilities and infrastructure	TVP North Branch	CAC Transportation Doug Macrae Peter Kavcic Parks & Rec Andrew Macpherson	Start late May or June				Update: In Tender phase for Spring 2019. Construction late 2019 to 2020. Can be removed from workplan.
CAC 18.12	Addressing Bicycle Theft	Promotion of best practices in bicycle security	CAC Bike Security WG Environmental Programs: Jay Stanford and Allison Miller	Ongoing		Action #8 Enhancing Bicycle Parking		Inventory of downtown short-term bike parking conducted. Working group has stalled since the vacancy of B. McCall.
CAC 18.13	Provide input and recommendations to Environmental Assessments relating to road and cycling infrastructure to assist in managing and upgrading transportation infrastructure.	EA's provide a primary opportunity to ensure cycling priorities are taken into consideration for new roadworks and infrastructure projects.	CAC	Ongoing			Our Strategy 60 Direction #7 Build strong, healthy and attractive neighbourhoods for everyone 6. Identify, create and promote cycling destinations in London and connect these destinations to neighbourhoods through a safe cycling network.	Building a master list similar to the one used by TAC to keep track of EA and CAC representatives at them.
CAC 18.14	Educational Initiatives	Attend Share the Road conference	Rebecca Henderson	April 20-19	\$200	Action #9 Establishing Performance Measures		Report received
CAC 18.15	Recognition Program	Dovetail into Mayor's annual recognition awards	Cycling Award sub-committee					On hold until post election. Update: 2019 AC Reception invitations are out. Scheduled for Top of the Hall Café on Thursday, May 9, 2019, from 7:00 to 9:00 p.m. The Mayor's remarks are scheduled for 7:30 p.m. RSVP by April 26th
CAC 18.16	Assist in the annual London Celebrates Cycling event	Work with city staff and stakeholders to provide a signature event that promotes all components of cycling culture	London Celebrates Cycling Subcommittee Allison Miller Dan Doroschenko	Mar-Jun 2018		- Action #5 Identifying & Implementing CAN-Bike Program - Action #12 Establishing High-Profile Events - Action #9 Establishing Performance Measures		Complete. Descriptive analysis and follow-up to be completed.

Cycling Advisory Committee Work Plan – 2018

Final Edit - 2019-05-07 Dave Mitchell

	Activity	Background	Responsibility	Proposed Timeline	Proposed Budget	Cycling Master Plan Alignment	Link to Strategic Plan	Status
CAC 18.18	Continue to identify / assess specific routes (to be mapped and signed) for key destinations and loops.	• Continue to support cycling infrastructure at the municipal, provincial and federal levels. • Monitor implementation of initiatives identified in the cycling master plan including potential stand- alone initiatives.	CAC	Ongoing			Strengthening Our Community – 5.1; Building a Sustainable City – 1.a, 2.a, 5.b	
CAC 18.19	Provide recommendations on operational requirements / improvements which will facilitate cycling	Operational priorities (i.e. – street cleaning, snow plowing) need to be established and/or coordinated to ensure key cycling routes are maintained appropriately and that operational activities are not 'out of sync' (i.e. – cleaning streets before sidewalks, then putting all the sand from the sidewalks onto the street & cycling lanes that had just been cleaned....)	CAC	Ongoing			Strengthening Our Community – 5.1; Building a Sustainable City – 1.a, 2.a, 5.b	

TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON JUNE 18, 2019
FROM:	KELLY SCHERR, P. ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER
SUBJECT:	COLONEL TALBOT PUMPING STATION CONSTRUCTION TENDER AWARD: TENDER T19-65

RECOMMENDATION

That on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, and subject to receipt of requisite regulatory approvals, the following actions **BE TAKEN** with respect to the award of contract for the Colonel Talbot Pumping Station construction project:

- (a) the bid submitted by Hayman Construction Inc. at its tendered price of \$5,089,201.00, excluding HST, **BE ACCEPTED**; it being noted that the bid submitted by Hayman Construction Inc. was the lowest of five bids received and meets the City's specifications and requirements in all areas;
- (b) the value of the total detailed design and contract administration fees for Stantec Consulting Ltd., **BE INCREASED** by \$174,535.00, excluding HST to \$1,534,085.60 including contingency, to cover additional efforts required as a result of additional work scope;
- (c) the financing for this project **BE APPROVED** as set out in the Sources of Financing Report attached, hereto, as Appendix 'A';
- (d) the Civic Administration **BE AUTHORIZED** to undertake all the administrative acts that are necessary in connection with this project;
- (e) the approval, given herein, **BE CONDITIONAL** upon the Corporation entering into a formal contract relating to this project (Tender 19-65); and
- (f) the Mayor and City Clerk **BE AUTHORIZED** to execute any contract or other documents, if required, to give effect to these recommendations.

PREVIOUS REPORTS PERTINENT TO THIS MATTER
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Civic Works Committee, April 16, 2019, Item 2.10 – Contract Award: Tender T19-21 Colonel Talbot Sanitary Sewer and Forcemain Installation.

Civic Works Committee, July 17, 2018, Item 2.7 – Dingman Creek and Colonel Talbot Pumping Stations Budget Adjustments.

Civic Works Committee, February 21, 2018, Item 2.5 – Colonel Talbot Pumping Station Fee Increase.

Civic Works Committee, December 1, 2015, Item 2.8 – Appointment of Consultant for Environmental Assessment, Design and Contract Administration for the Colonel Talbot Pumping Station & Sanitary Servicing Works.

Southwest Area Sanitary Servicing Master Plan:
<http://www.london.ca/residents/Environment/EAs/Pages/SW-Area-Sanitary-Servicing-Master-Plan.aspx>

2019-2023 STRATEGIC PLAN

This project supports the 2019-2023 Strategic Plan through the following: Building a Sustainable City, Build infrastructure to support future development and protect the environment.

BACKGROUND

Purpose

To seek Council approval to award a contract to Hayman Construction Inc. (Hayman) for the construction of the Colonel Talbot pumping station and to seek Council approval to increase the value of the contract with Stantec Consulting Ltd. (Stantec) for Engineering Services related to design and contract administration.

Context

The Colonel Talbot pumping station is a critical component in the wastewater servicing strategy for southwest London. This construction contract represents the final of four phases of construction required to bring this facility on line.

DISCUSSION

The Colonel Talbot pumping station was identified in the Southwest Area Sanitary Servicing (SASS) Master Plan as a key component of the wastewater infrastructure serving the Southwinds, North Talbot, Bostwick and Crestwood neighbourhoods as defined by the Southwest Area Plan (SWAP).

The completion of the Colonel Talbot pumping station will allow three separate pumping stations to be removed from operation, and will greatly improve the operation of a fourth. Ultimately, this station is expected to act as a swing station, allowing flows from the southwest to be treated at either Oxford Wastewater Treatment Plant or Greenway Wastewater Treatment Plant (via Wonderland PS), depending on operating conditions at each facility. This strategy is reflective of a long-term strategy of the Wastewater Treatment Operations Division to incorporate flexible servicing operations within the system in order to maximize the effectiveness and efficiency of wastewater collection and treatment in the City of London.

Construction of the first two phases of this four-phased project are complete. The third phase, which will construct the forcemain and bring sewers to the pumping station site, was awarded in April and is currently underway. The work contemplated under this contract is the final phase and involves constructing the pumping station itself. Work under this contract is expected to be complete by the second quarter of 2020.

An application has been made to the Ontario Ministry of the Environment, Conservation and Parks for the Environmental Compliance Approval for this station. Commencement of construction will be subject to receipt of this approval.

Increased Project Budget

The duration of this project has presented unexpected challenges related to the overall project budget. Tendered amounts for previously tendered project phases have come in above expectations, which has consumed the project budget previously requested. In particular, phase three contract requirements resulted in significantly increased complexity, involving additional features from multiple City departments and extensive temporary works in order to maintain traffic flow in the area.

City staff and the consultant are working to incorporate modifications into that contract that will result in overall savings and retention of contingency, but those funds must

remain committed to Contract Three and are therefore not available. As a result, approximately \$2 million of additional funding is required in order to award the construction contract for Colonel Talbot Pumping Station, Contract Four of the project.

Overall divisional operating costs are expected to increase by an estimated \$350,000 annually as a result of the operation of this station.

Increased Engineering Effort

Over the course of three years of design and construction administration, the level of effort and complexity of the job has increased beyond what was contemplated when the original engineering services contract was signed.

The following list identifies the most significant changes resulting in increased costs:

- Redesign of the forcemain route that resulted in significant construction cost savings;
- Significant challenges related to two previous construction phases that consumed project contingency, and
- Extended duration of the project.

Wastewater Operations staff have been working with Stantec to minimize the impacts of these changes and are of the opinion that the request before Council for \$174,535.00 in additional fees resulting from the foregoing changes is fair and justified.

Tender Summary

Tenders in response to Request for Tender T19-65 were opened on May 7, 2019. Five (5) tenderers submitted tender prices as listed below, excluding HST.

CONTRACTOR		TENDER PRICE SUBMITTED
1.	Hayman Construction Inc.	\$5,089,201.00
2.	Finnbilt General Contracting Limited	\$5,238,520.00
3.	K&L Construction	\$5,345,003.00
4.	H2Ontario Inc.	\$5,404,965.00
5.	Robert B. Somerville Co. Limited	\$6,487,360.00

The lowest price tender from Hayman Construction Inc. was found to be compliant with the City’s procurement process. Hayman has successfully completed other projects of a similar nature with the City, and more specifically with the Wastewater Treatment Operations Division.

The tender estimate just prior to tender opening was \$4,900,000.00, excluding HST. All tenders include a contingency allowance of \$500,000.00.

CONCLUSIONS

Hayman submitted the lowest tender price in response to Tender T19-65 and has demonstrated their ability to complete the required construction works through previously completed projects for the City of London. Award of T19-65 for the construction of the Colonel Talbot Pumping Station to Hayman Construction Inc. is recommended, pending regulatory approval.

Stantec Consulting Ltd. has performed additional work to ensure the success of this large infrastructure project to date. It is therefore recommended that the contract for Engineering Services be increased by \$174,535.00, which represents an appropriate increase based on efforts to date and expected efforts to the completion of the project.

Acknowledgements

This report was prepared with the assistance of Kirby Oudekerk, P.Eng., of the Wastewater Treatment Operations Division.

SUBMITTED BY:	CONCURRED BY:
GEORDIE GAULD DIVISION MANAGER WASTEWATER TREATMENT OPERATIONS	SCOTT MATHERS, P. ENG. DIRECTOR, WATER AND WASTEWATER
RECOMMENDED BY:	
KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER	

Attach: Appendix ‘A’ – Sources of Financing

- c.c. John Freeman
 Chris Ginty
 Geordie Gauld
 Alan Dunbar
 Hayman Construction Inc.

APPENDIX 'A'

#19086

Chair and Members
Civic Works Committee

June 18, 2019
(Award Contract)

RE: Colonel Talbot Pumping Station - T19-65
(Subledger WW150009)
Capital Project ES2204 - Colonel Talbot Pumping Station
Hayman Construction Inc. - \$5,089,201.00 (excluding H.S.T.)
Stantec Consulting Ltd. - \$1,534,085.60 (excluding H.S.T.)

FINANCE & CORPORATE SERVICES REPORT ON THE SOURCES OF FINANCING:

Finance & Corporate Services confirms that the cost of this project cannot be accommodated within the financing available for it in the Capital Works Budget and that, subject to the adoption of the recommendations of the Managing Director, Environmental & Engineering Services & City Engineer, the detailed source of financing for this project is:

SUMMARY OF ESTIMATED EXPENDITURES	Approved Budget	Additional Financing	Revised Budget	Committed to Date	This Submission
Engineering	\$1,242,053	\$199,702	\$1,441,755	\$1,264,148	\$177,607
Land Acquisition	637		637	637	
Construction	8,954,621	1,869,254	10,823,875	5,645,104	5,178,771
Construction (Southwinds P.S.)	195,000		195,000	195,000	
Construction (PDC Portion)	2,400		2,400	2,400	
City Related Expenses	2,689		2,689	2,689	
NET ESTIMATED EXPENDITURES	\$10,397,400	\$2,068,956	\$12,466,356	\$7,109,978	\$5,356,378 1)

SUMMARY OF FINANCING:

Debenture By-law No. W.5593-37 (Serviced through City Services - Sewer Reserve Fund (Development Charges) 2,3&4)	\$10,200,000	\$2,068,956	\$12,268,956	\$6,912,578	\$5,356,378
Other Contributions	195,000		195,000	195,000	
Cash Recovery from Property Owners (PDC)	2,400		2,400	2,400	
TOTAL FINANCING	\$10,397,400	\$2,068,956	\$12,466,356	\$7,109,978	\$5,356,378

1) Financial Note:	Construction	Engineering	Total
Contract Price	\$5,089,201	\$1,534,086	\$6,623,287
Less: Amount previously approved by Council March 6, 2018	0	1,359,551	1,359,551
Contract Price	\$5,089,201	\$174,535	\$5,263,736
Add: HST @13%	661,596	22,690	684,286
Total Contract Price Including Taxes	5,750,797	197,225	5,948,022
Less: HST Rebate	572,026	19,618	591,644
Net Contract Price	\$5,178,771	\$177,607	\$5,356,378

- 2) Development charges have been utilized in accordance with the underlying legislation and the Development Charges Background Studies completed in 2014.
- 3) The additional financing requirement of \$2,068,956 is available as additional debenture quota (serviced through City Services Sewer Reserve Fund).

NOTE TO CITY CLERK:

- 4) The City Clerk be authorized to increase Debenture By-law No. W.-5593-37 as amended by By-law No. W.-5593(a)-467 by \$2,068,956 from \$10,200,000 to \$12,268,956.
- 5) Overall divisional operating costs are expected to increase by an estimated \$350,000 annually as a result of the operation of this station.

JG

Kyle Murray
Director of Financial Planning & Business Support

TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON JUNE 18, 2019
FROM:	KELLY SCHERR, P. ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER
SUBJECT:	CONTRACT AWARD: TENDERS T19-48 AND T19-49 DINGMAN CREEK PUMPING STATION FORCEMAIN INSTALLATION

RECOMMENDATION

That on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, and subject to receipt of requisite regulatory approvals, the following actions **BE TAKEN** with respect to the award of contract for the Dingman Creek Pumping Station Forcemain construction project:

- (a) the bid submitted by 291 Construction Ltd. at its tendered price of \$3,572,506.65, excluding HST in response to Tender 19-48, **BE ACCEPTED**; it being noted that the bid submitted by 291 Construction Ltd. was the lowest of six bids received and meets the City's specifications and requirements in all areas;
- (b) the bid submitted by Bre-Ex Construction Inc. at its tendered price of \$4,912,985.47, excluding HST in response to Tender 19-49, **BE ACCEPTED**; it being noted that the bid submitted by Bre-Ex Construction Inc. was the lowest of three bids received and meets the City's specifications and requirements in all areas;
- (c) the financing for these projects **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 project;
- (d) the approval, given herein, **BE CONDITIONAL** upon the Corporation entering into formal contracts relating to this project (Tenders 19-48 and 19-49); and
- (e) the Mayor and City Clerk **BE AUTHORIZED** to execute any contract or other documents, if required, to give effect to these recommendations.

PREVIOUS REPORTS PERTINENT TO THIS MATTER
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Civic Works Committee, July 17, 2018, Item 2.7 – Dingman Creek and Colonel Talbot Pumping Stations Budget Adjustments.

Civic Works Committee, May 15, 2018, Item 2.5 – Appointment of Consulting Engineer – Design and Construction Administration Services – Dingman Creek Pumping Station Upgrades.

Civic Works Committee, April 17, 2018, Item 2.6 – South London Wastewater Servicing Study Municipal Class Environmental Assessment: Notice of Completion.

Civic Works Committee, August 29, 2017 – Appointment of Consulting Engineer, Dingman Creek PS Municipal Class EA.

2019-2023 STRATEGIC PLAN

This project supports the 2019-2023 Strategic Plan through the following: Building a Sustainable City, Build infrastructure to support future development and protect the environment.

BACKGROUND

Purpose

The purpose of this report is to seek Council approval for award of two construction contracts required to construct the Dingman Creek Pumping Station forcemain construction project.

Context

The Wonderland Pumping Station is the sole provider of wastewater servicing to south London. The new residential and industrial development facilitated by the City’s Growth Management Implementation Strategy (GMIS) will exceed the Wonderland Pumping Station’s remaining capacity in the short term. The construction of a new pumping station and forcemain at, or near, the location of the existing Dingman Creek Pumping Station was previously selected through an Environmental Assessment process as the preferred means of servicing growth in south London.

DISCUSSION

Wonderland Pumping Station is a key component of the City’s wastewater collection system and is currently the only means to convey wastewater collected from the southwest quadrant of the City, including areas such as White Oaks, Pond Mills, portions of Lambeth, and the industrial areas south of Highway 401. Currently the Wonderland Pumping Station operates near its rated capacity on a regular basis.

The South London Wastewater Servicing Study was undertaken to examine opportunities to construct additional servicing capacity. The preferred alternative identified in the study included the construction of new pumping station that would include preliminary treatment, septage receiving facilities and additional peak shaving capacity.

The first phase of the implementation of this solution consists of the construction of a new forcemain. Because of the length of the forcemain and in order to reduce overall construction time, the forcemain construction project was split into two separate contracts. The first tender was T19-48 and closed on May 3, 2019. The second tender, T19-49, was issued immediately after T19-48 and closed on May 14, 2019. The location of the project has been included as Appendix ‘B’: Location Map.

Tender Summaries

Tenders in response to Request for Tender T19-48 were opened on May 3, 2019. Six contractors submitted tender prices as listed below, excluding HST.

Table 1: T19-48 Tender Summary

CONTRACTOR		TENDER PRICE SUBMITTED
1.	291 Construction Ltd.	\$3,572,506.65
2.	Bre-Ex Construction Inc.	\$4,149,472.52
3.	Sierra Infrastructure Inc.	\$4,196,965.00
4.	CH Excavating (2013)	\$4,280,388.40
5.	Elgin Construction	\$4,682,842.63
6.	Blue-Con Construction	\$5,427,858.50

The tender estimate just prior to tender opening was \$4,200,000.00, excluding HST. All tenders include a contingency allowance of \$350,000.00.

Tenders in response to Request for Tender T19-49 were opened on May 15, 2019. Three contractors submitted tender prices as listed below, excluding HST.

Table 2: T19-49 Tender Summary

CONTRACTOR		TENDER PRICE SUBMITTED
1.	Bre-Ex Construction Inc.	\$4,912,985.47
2.	CH Excavating (2013)	\$4,958,467.02
3.	Sierra Infrastructure Inc.	\$5,100,000.00

The tender estimate just prior to tender opening was \$4,500,000.00, excluding HST. All tenders include a contingency allowance of \$400,000.00.

291 Construction Ltd. submitted the lowest tender price in response to Tender T19-48, and Bre-Ex Construction Inc. submitted the lowest tender price in response to Tender T19-49. Both contractors have previously demonstrated their ability to complete the required construction works through recently completed projects for the City of London.

CONCLUSIONS

291 Construction Ltd and Bre-Ex Construction Inc. submitted the lowest tender price for the construction of the two phases of the Dingman Creek pumping station forcemain installation. Both contractors have previously demonstrated their ability to complete similar large scale construction works and it is recommended that the respective projects be awarded to these contractors.

Acknowledgements

This report was prepared with the assistance of Kirby Oudekerk, P.Eng., of the Wastewater Treatment Operations Division.

SUBMITTED BY:	CONCURRED BY:
GEORDIE GAULD DIVISION MANAGER WASTEWATER TREATMENT OPERATIONS	SCOTT MATHERS, P. ENG. DIRECTOR, WATER AND WASTEWATER
RECOMMENDED BY:	
KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER	

Attach: Appendix ‘A’ – Sources of Financing
 Appendix ‘B’ – Location Map

c.c. John Freeman
 Chris Ginty
 Geordie Gauld
 Alan Dunbar
 Jason Davies
 291 Construction Ltd.
 Bre-Ex Construction Inc.

Chair and Members
Civic Works Committee

June 18, 2019
(Award Contract)

RE: Dingman Creek Pumping Station Forcemain Installation - Tenders: T19-48 and T19-49
(Subledger FS170008)
Capital Project ES5263 - Southwest Capacity Improvement
291 Construction Ltd. - \$3,572,506.65 (excluding H.S.T.) T19-48
Bre-Ex Construction Inc. - \$4,912,985.47 (excluding H.S.T.) T19-49

FINANCE & CORPORATE SERVICES REPORT ON THE SOURCES OF FINANCING:

Finance & Corporate Services confirms that the cost of this project can be accommodated within the financing available for it in the Capital Works Budget and that, subject to the adoption of the recommendations of the Managing Director, Environmental & Engineering Services & City Engineer, the detailed source of financing for this project is:

<u>SUMMARY OF ESTIMATED EXPENDITURES</u>	<u>Approved Budget</u>	<u>Revised Budget</u>	<u>Committed to Date</u>	<u>This Submission</u>	<u>Balance for Future Work</u>
Engineering	\$2,500,000	\$2,499,528	\$1,037,528		\$1,462,000
Construction	17,500,000	17,500,000		8,634,837	8,865,163
City Related Expenses		472	472		0
NET ESTIMATED EXPENDITURES	<u>\$20,000,000</u>	<u>\$20,000,000</u>	<u>\$1,038,000</u>	<u>\$8,634,837</u> 1)	<u>\$10,327,163</u>

SUMMARY OF FINANCING:

Drawdown from City Services - Sewers Reserve Fund (Development Charges)	2)	\$4,993,613	\$4,993,613	\$1,038,000	\$3,955,613	\$0
Debenture Quota (Serviced through City Services - Sewers Reserve Fund (Development Charges))	2&3)	15,006,387	15,006,387		4,679,224	10,327,163
TOTAL FINANCING		<u>\$20,000,000</u>	<u>\$20,000,000</u>	<u>\$1,038,000</u>	<u>\$8,634,837</u>	<u>\$10,327,163</u>

1) Financial Note:

Contract Price	<u>T19-48 291 Construction</u>	<u>T19-49 Bre-Ex Construction</u>	<u>Total</u>
Add: HST @13%	\$3,572,507	\$4,912,985	\$8,485,492
Total Contract Price Including Taxes	464,426	638,688	1,103,114
Less: HST Rebate	4,036,933	5,551,673	9,588,606
Net Contract Price	401,550	552,219	953,769
	<u>\$3,635,383</u>	<u>\$4,999,454</u>	<u>\$8,634,837</u>

2) Development charges have been utilized in accordance with the underlying legislation and the Development Charges Background Studies completed in 2014.

Note to City Clerk:

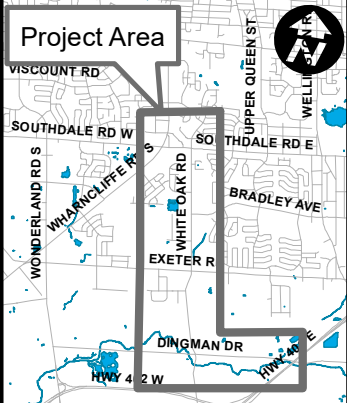
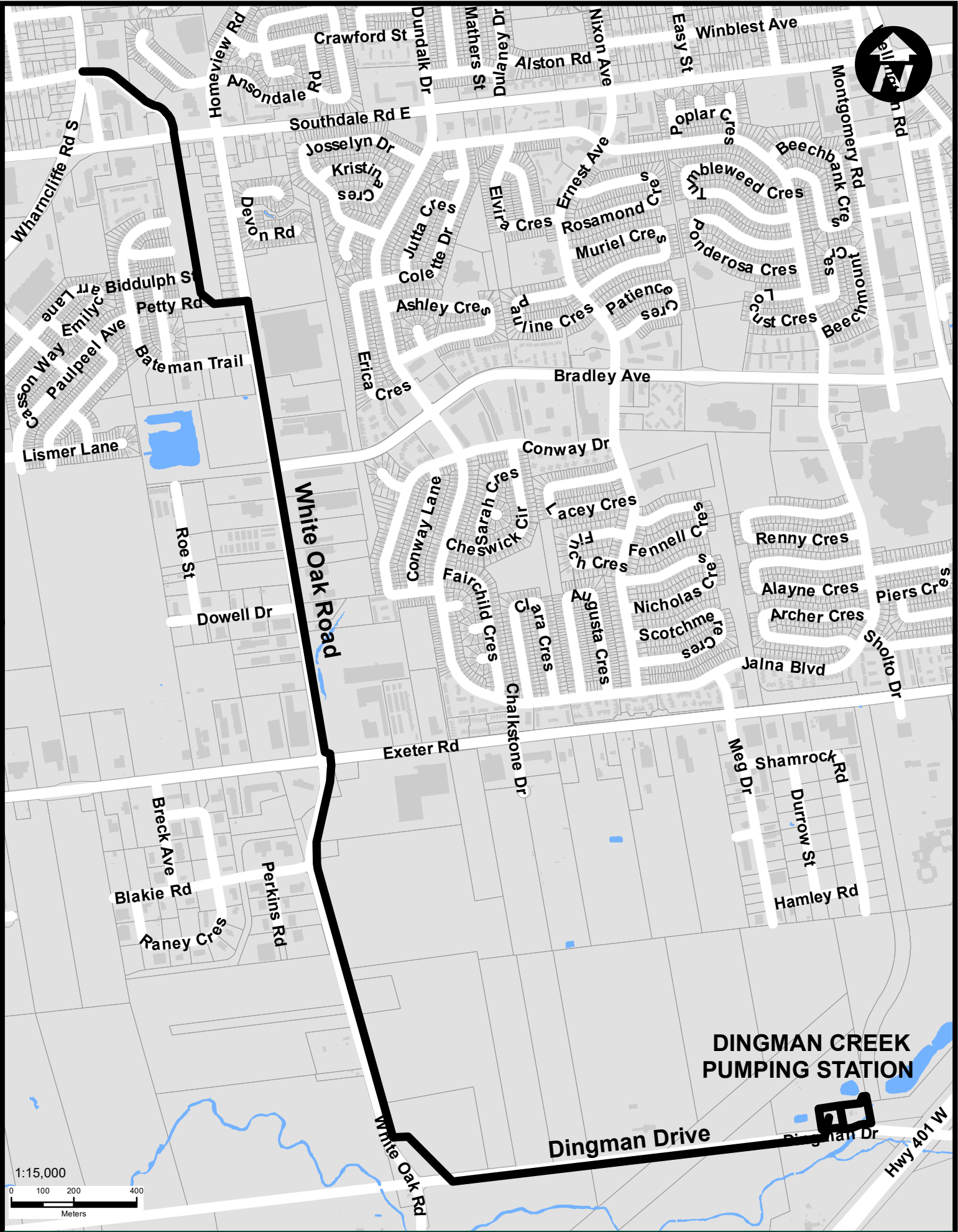
3) Administration hereby certifies that the estimated amounts payable in respect of this project does not exceed the annual financial debt and obligation limit for the Municipality of Municipal Affairs in accordance with the provisions of Ontario Regulation 403/02 made under the Municipal Act, and accordingly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

An authorizing by-law should be drafted to secure debenture financing for project ES5263-Southwest Capacity Improvement for the net amount to be debentured of \$15,006,387.00.

JG

Jason Davies
Manager of Financial Planning & Policy

APPENDIX 'B'



Dingman Creek Pumping Station Forcemain Installation

Dingman Drive from White Oak Road to Dingman Pumping Station.
White Oak Road from Dingman Drive to 185m North of Bateman Trail.
3087 White Oak Road from White Oak Road to Southdale Road East.
Private land from Southdale Road East to Wharncliffe Road South.

Map Produced by
the Wastewater &
Drainage Engineering
Division

June 6 2019 CM



London
CANADA

300 Dufferin Avenue,
PO Box 5035
London, Ontario
N6A 4L9
www.London.ca

 Project Area

TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON JUNE 18, 2019
FROM:	KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER
SUBJECT:	SINGLE SOURCE PROCUREMENT- GREENWAY REHEATER

RECOMMENDATION

That on the recommendation of the Managing Director of Environmental and Engineering Services and City Engineer, the following actions **BE TAKEN** with respect to the procurement of a replacement re-heater at the Greenway Wastewater Treatment Plant:

- a) approval hereby **BE GIVEN** to enter into negotiations for the single source purchase of new re-heater heat exchanger from Arvos Schmidtsche-Schack LLC;
- b) the approval given herein **BE CONDITIONAL** upon the Corporation negotiating satisfactory prices, terms and conditions with Arvos Schmidtsche-Schack LLC, to the satisfaction of the Managing Director, Environmental and Engineering Services and City Engineer, it being noted that there may not be sufficient time to adhere to the normal Committee and Council contract approval process due to escalating steel commodity prices resulting in limited price guarantees; and,
- c) the approval hereby **BE CONDITIONAL** upon the Corporation entering into a formal contract or issuing a purchase order relating to the subject matter of this approval.

PREVIOUS REPORTS PERTINENT TO THIS MATTER
--

Civic Works Committee, May 14, 2019, Item 6 – Greenway Wastewater Treatment Plant Organic Rankine Cycle Equipment Installation Budget Allocation

Civic Works Committee, May 26, 2014, Item 6 – Single Source Purchase of Pre-Heater Heat Exchanger and Re-Heater Heat Exchanger at Greenway Wastewater Treatment Centre.

2019-23 STRATEGIC PLAN

This project supports the Strategic Plan with respect to Building a Sustainable City- Robust Infrastructure.

BACKGROUND

Purpose

This report seeks approval to procure equipment through negotiations and in accordance with Section 14.4 (e) of the Procurement of Goods and Services Policy as a single source since the required goods are to be supplied by a particular supplier having special knowledge and experience.

Context

The re-heater is a critical component of the incineration process at Greenway Wastewater Treatment Plant. The re-heater is the final step in the incineration process and is used to heat the exhaust air to prevent condensation prior to discharge through the stack (chimney).The re-heater was previously replaced in 2016, but difficult operating conditions have resulted in a shortened service life. With an estimated value of over US\$250,000, Council approval is required prior to issuing a purchase order for this work. Capital budget planning has ensured that money is available for this life-cycle replacement purchase.

DISCUSSION

Project History

The Greenway incinerator was commissioned in 1988 and handles all the sludge generated at London’s wastewater treatment plants. The re-heater is the final heat exchanger in the process and is used to heat the exhaust air to prevent condensation prior to discharge through the stack. Historically the re-heater has been one of the most common points of failure due to the demanding service conditions in which it operates. A failure of the re-heater can ultimately lead to ash plumes exiting the plant stack and can contribute to long-term degradation of the stack itself.

The existing re-heater was purchased in 2014 through a single source contract with Alstom Power Inc. (now doing business as Arvos Schmidtsche-Schack LLC (Arvos)). The re-heater was installed in 2016, and included design features and adaptations that were developed through an iterative design and quotation process with Alstom engineering and sales staff.

Despite the specialized features, the re-heater has recently shown signs of failure. Repairs have been undertaken to enable continued operation of the incineration process, but they are not expected to represent a permanent solution, and replacement in the near future is unavoidable. Wastewater Operations staff have also pursued an assessment with Arvos staff in order to confirm the mechanism of failure to determine if any modifications to the design could provide an extended life.

Recommended Strategy

Purchasing a new re-heater allows the majority of new works to be constructed while maintaining the incinerator in operation, resulting in a significant reduction of incinerator downtime. Solids disposal operations at Greenway without the incinerator in operation costs up to \$100,000 per week while the current estimated price from Arvos is US\$250,000, exclusive of duties, taxes and shipping, so this purchase could ultimately result in a net savings for the City.

After the new re-heater is operational in its new position, the existing re-heater can be removed and more thoroughly inspected to confirm the suspected mode of failure. With this confirmed, the existing unit will be rebuilt and retained as a spare, allowing the two re-heater units to be exchanged and rebuilt as part of a preventive maintenance program during planned incinerator shutdowns every two to three years.

Financial Impact

The price of US\$250,000 (excluding duties, taxes and shipping) is subject to change with fluctuations in material costs, and installation would be by others at a later date. This price and the request for approval of a single source are based on the provision of

an exact replacement of the existing re-heater by the original equipment manufacturer, so modifications based on the findings of field investigations may also result in a change of price.

As a result, staff are seeking Council approval to negotiate a supply and delivery contract with Arvos, up to an upset limit of the equivalent of \$450,000.00. Funding for a replacement heat exchanger is available in the approved Capital Works Budget Account ES3080 for Greenway Incinerator Refurbishment.

CONCLUSIONS

The pre-heater is an essential component of the incineration process at Greenway Wastewater Treatment Plant, which processes the sludge removed from every wastewater treatment plant in the City. Purchasing a replacement re-heater from the same manufacturer improves preventive maintenance programs for solids treatment operations and may result in a net savings to the City through reduced costs due to incinerator downtime.

Arvos Schmidstche-Schack LLC is known to staff as a provider of high quality heat exchangers, and the ability to construct a replacement re-heater from the same plans mitigates construction risk and reduces the time required for design. Staff are requesting approval to proceed with the negotiation and execution of a single source purchase order for supply and delivery of a new re-heater to Greenway Wastewater Treatment Plant from Arvos Schmidstche-Schack LLC for up to \$450,000.00.

Acknowledgements

This report was prepared with the assistance of Kirby Oudekerk, P.Eng., Wastewater Treatment Operations Division.

PREPARED BY:	REVIEWED BY:
GEORDIE GAULD DIVISION MANAGER WASTEWATER TREATMENT OPERATIONS	SCOTT MATHERS, MPA, P.ENG. DIRECTOR WATER, WASTEWATER AND TREATMENT
RECOMMENDED BY:	
KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER	

Attachment: Appendix “A” Sources of Financing

cc: Chris Ginty, Procurement Officer
Jason Davies, Manager III, Financial Planning & Policy
John Millson, Senior Financial Business Administrator

June 18, 2019

(Approve Entering into Negotiations)

Chair and Members
Civic Works Committee

RE: Single Source Procurement - Greenway Reheater
(Subledger FS19GW02)
Capital Project ES3080 - Greenway Incinerator Refurbishment
Arvos Schmidtsche-Schack LLC - \$450,000.00 (excluding H.S.T.)

FINANCE & CORPORATE SERVICES REPORT ON THE SOURCES OF FINANCING:

Finance & Corporate Services confirms that the cost of this project can be accommodated within the financing available for it in the Capital Works Budget and that, subject to the adoption of the recommendations of the Managing Director, Environmental & Engineering Services & City Engineer, the detailed source of financing for this project is:

SUMMARY OF ESTIMATED EXPENDITURES	Approved Budget	Revised Budget	Committed to Date	This Submission	Balance for Future Work
Engineering	\$1,262,164	\$1,262,164	\$613,323		\$648,841
Construction	5,752,130	5,294,210	4,272,038		1,022,172
City Related Expenses	598,657	598,657	598,657		0
Additional Vehicle & Equipment	105,179	563,099	105,179	457,920	0
NET ESTIMATED EXPENDITURES	<u>\$7,718,130</u>	<u>\$7,718,130</u>	<u>\$5,589,197</u>	<u>\$457,920</u>	<u>1) \$1,671,013</u>

SUMMARY OF FINANCING:

Capital Sewer Rates	\$543,000	\$543,000	\$543,000		\$0
Debenture By-law No. W.-5590-307	1,812,530	1,812,530		141,517	1,671,013
Drawdown from Sewage Works Reserve Fund	5,362,600	5,362,600	5,046,197	316,403	0
TOTAL FINANCING	<u>\$7,718,130</u>	<u>\$7,718,130</u>	<u>\$5,589,197</u>	<u>\$457,920</u>	<u>\$1,671,013</u>

- 1) Financial Note:
- Contract Price

Add: HST @13%

Total Contract Price Including Taxes

Less: HST Rebate

Net Contract Price

\$450,000
58,500
508,500
50,580
<u>\$457,920</u>

JG

Jason Davies
Manager of Financial Planning & Policy

TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON JUNE 18, 2019
FROM:	KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER
SUBJECT:	CONSTRUCTION OF THE CRINKLAW-SCOTT AND BRANCH 'D' OF THE HAMPTON-SCOTT MUNICIPAL DRAINS (ES482517)

RECOMMENDATION

That, on the recommendation of the Managing Director, Environmental and Engineering Services & City Engineer the following actions **BE TAKEN** with respect to the construction of the Crinklaw-Scott and Branch 'D' of the Hampton-Scott Municipal Drains:

- (a) the drainage reports, attached as Appendix 'A', prepared by Spriet Associates London Ltd, Consulting Engineers for the construction of the Crinklaw-Scott and Branch 'D' of the Hampton-Scott Municipal Drains **BE ADOPTED**; and it being noted the notice of the meeting was provided to the benefitting property owners in accordance with the provisions of Section 41 of the *Drainage Act*; and,
- (b) the proposed by-laws attached as Appendix 'B' **BE INTRODUCED** at the Council meeting on June 25, 2019 and **BE GIVEN** two readings to authorize the construction of the Crinklaw-Scott and Branch 'D' of the Hampton-Scott Municipal Drains projects, it being noted that the third reading and enactment of the by-law would occur after the holding of the Court of Revision in connection with the project.

PREVIOUS REPORTS PERTINENT TO THIS MATTER
--

None

2019-23 STRATEGIC PLAN

This report aligns with the Strategic Plan's "Building a Sustainable City" strategic area of focus by supporting the following expected results:

- Improve London's resiliency to respond to potential future challenges;
- Build infrastructure to support future development and protect the environment; and
- Maintain or increase current levels of service; manage the infrastructure gap for all assets.

BACKGROUND

Purpose

The purpose of this report is to undertake the steps out lined in the *Drainage Act* to authorize the construction of Crinklaw-Scott Municipal Drain and Branch 'D' and Branch 'D' of the Hampton-Scott Municipal Drains.

Context

The Province's *Drainage Act* governs the creation and management of Municipal Drains. A Municipal Drain is a channel, ditch, or closed pipe constructed to provide drainage and prevent flooding within predominantly rural agricultural areas. These drains are constructed, operated, and maintained by municipalities in accordance with

the terms and conditions defined by the *Drainage Act*. Each benefitting property owner has the ability to petition for improvements to be made to a Municipal Drain and contributes its share towards the project.

In order to undertake the construction of the drains, the *Drainage Act* requires a Council resolution to adopt the drainage reports and enact the related by-laws. An assessment was undertaken to review drainage conditions in the area due to concerns with surface flooding. Based on this assessment, remedial works to the drains were designed within the area requiring drainage contained in the watersheds. The proposed work was initiated by a petition from the affected property owners. The submitted petitions represents a sufficient number of property owners within the watersheds to trigger the construction of drainage works as outlined in the *Drainage Act*. The engineer’s report also provides an allocation of the construction costs for the drain to the various benefitting land owners.

DISCUSSION

The benefitting area to be serviced by these two new Municipal Drains is generally located south of the Highway 401 and north of Dingman Drive between Highbury Avenue and the east limits of the City, in an area that is primarily agricultural lands. There have been historical instances of surface flooding on properties within the watersheds of both drains. Please refer to Appendix ‘C’-1 – Location Map Crinklaw-Scott Drain and Appendix ‘C’-2 Location Map Hampton-Scott Drain.

The Drainage reports for the Crinklaw-Scott and Branch ‘D’ of the Hampton-Scott Municipal Drains were prepared pursuant to Section 4 of the *Drainage Act*. The request for drainage improvements were studied by Spriet Associates London Limited and are documented in the Engineer’s Report. The report includes technical specifications for construction, cost estimates and an assessment of costs to benefitting property owners, in accordance with the provisions of the *Drainage Act*. This report provides an estimated construction costs of \$44,100.00 and \$81,700.00. The report also provides an assessment schedule indicating how the construction costs are to be divided up amongst the benefitting land owners. Generally speaking, the estimated breakdowns are shown in the tables below.

Table 1A: Schedule of Assessment, Crinklaw-Scott Drain				
	Total Assessment	Provincial Grants	Allowance	Approximate Net
City of London Property Owners	\$25,681.00	\$8,560.00	\$4,680.00	\$12,441.00
Municipality of Thames Centre Property Owners	\$17,874.00	\$5,893.00	\$80.00	\$11,901.00
Municipality of Thames Centre Dingman Drive	\$545.00	-	-	\$545.00
Total	\$44,100.00	\$14,453.00	\$4,760.00	\$24,887.00

Table 1B: Schedule of Assessment, Hampton-Scott Drain-Branch ‘D’				
	Total Assessment	Provincial Grants	Allowance	Approximate Net
City of London Property Owners	\$54,516.00	\$16,677.00	\$12,610.00	\$25,229.00
City of London Roads	\$4,091.00	-	-	\$4,091.00
Hydro One & MTO	\$22,519.00	-	-	\$22,519.00

City of London	\$574.00	-	-	\$574.00
Total	\$81,700.00	\$16,677.00	\$12,610.00	\$52,413.00

A copy of the applicable Engineer's Reports and drawings have been provided to the landowners and is included as Appendix 'A'1-Crinklaw-Scott Engineer's Report and Appendix 'A'2-Hampton-Scott Engineer's Report.

Drainage Act Requirements

The *Drainage Act* requires a meeting to consider the Drainage Report prior to the adoption of the Engineer's Report and this committee meeting will serve that purpose. All assessed property owners have been notified of this meeting and have been given the opportunity to express their concerns or pose questions. There is a further opportunity to appeal their assessment prior to construction through the Court of Revision, scheduled for July 2019. Representatives from Spriet Associates London Limited will also attend the meeting to answer any questions regarding the Drainage Report.

The adoption of the municipal drain report and the passing of the associated by-law is an important step towards ensuring access to provincial grants from the Ministry of Agriculture and Food and Rural Affairs, which presently contributes one-third of the total gross costs assessed to agricultural land.

CONCLUSIONS

The drains, when constructed, will be of great benefit to the lands and roads through which they run and will provide an improved outlet to the lands and roads within the watershed. Once City Council approves the construction of the Crinklaw-Scott and Branch 'D' of the Hampton-Scott Municipal Drains projects as set out in the Drainage Report governed by the *Drainage Act*, a tender for these works will be issued and construction undertaken.

Acknowledgements

This report was prepared within the Stormwater Engineering Division by Don Simpson, City of London Drainage Superintendent.

PREPARED BY:	REVIEWED AND CONCURRED BY:
SHAWNA CHAMBERS, P.ENG., DPA DIVISION MANAGER STORMWATER ENGINEERING	SCOTT MATHERS, MPA, P.ENG. DIRECTOR WATER, WASTEWATER AND TREATMENT
RECOMMENDED BY:	
KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR ENVIRONMENTAL AND ENGINEERING SERVICES & CITY ENGINEER	

- Attach:

Appendix 'A'-1 -- Engineer's Report Crinklaw-Scott Drain
Appendix 'A'-2 -- Engineer's Report Hampton-Scott Drain
Appendix 'B'-1 -- By-law Crinklaw-Scott Drain
Appendix 'B'-2 -- By-law Hampton-Scott Drain

Appendix 'C'-1 – Location Map Crinklaw-Scott Drain
Appendix 'C'-2 – Location Map Hampton-Scott Drain

C.c. Patrick Santagapita, Local Improvement and Assessment Analyst
Mike DeVos, Spriet Associates London Limited

Appendix 'A': Crinklaw-Scott Drain Engineer's Report

CRINKLAW - SCOTT DRAIN 2018

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. 216039

December 20, 2018

Appendix ‘A’: Crinklaw-Scott Drain Engineer’s Report

London, Ontario
December 20, 2018

CRINKLAW - SCOTT DRAIN 2018

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 construction of the Crinklaw - Scott Municipal Drain serving parts of Lots 2 and 3, Concession 3 (former Westminster) in the City of London and Lots 2 and 3, Concession 3 (former Westminster) in the Municipality of Thames Centre.

AUTHORIZATION

This report was prepared pursuant to Section 4 of the Drainage Act. Instructions were received from your Municipality with respect to a motion of Council. The work was initiated by a petition signed by the owners whose lands contain over 60 percent of the area requiring drainage.

DRAINAGE AREA

The total watershed area as described above contains approximately 46.4 hectares. The area requiring drainage for the Crinklaw – Scott Drain is described as the southwest part of Lot 2, southeast part of Lot 3, Concession 3 in the Municipality of Thames Centre and the southwest part of Lot 2, southeast part of Lot 3, Concession 3 in the City of London.

EXISTING DRAINAGE CONDITIONS

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

- that the Crinklaw properties, Roll No. 080-030-002 and Roll No. 055-148 are systematically tiled with an outlet into the Dingman Creek Drain
- that this includes a 300mm private plastic main tile from the outlet southeast to a catchbasin on the line between Lots 2 and 3, where the surface water enters from the southeast
- that 1524151 Ontario Ltd (Roll No. 080-030-001) is partially systematically tiled
- that surface water is creating washouts in the portion from the City limits to the outlet

Appendix 'A': Crinklaw-Scott Drain Engineer's Report

2

EXISTING DRAINAGE CONDITIONS (cont'd)

- the owners requested that a new municipal drain be constructed, either by twinning or replacing the existing private main tile and that the existing catchbasin be replaced with a larger one with a berm

A field investigation and survey were completed. Upon reviewing our findings, we note the following:

- that the affected watershed area does not presently have a sufficient or legal drainage outlet
- that the existing private plastic main tile is undersized by today's standards but in good working condition
- that there is erosion through the surface runs in the affected watershed area

Preliminary design, cost estimates and assessments for twin tile and single tile proposals were prepared and an informal public meeting was held to review the findings and preliminary proposals. Further input and requests were provided by the affected owners at that time and it was decided that a single larger tile drain be constructed.

DESIGN CRITERIA AND CONSIDERATIONS

The Drainage Coefficient method contained in the "DRAINAGE GUIDE FOR ONTARIO", Publication 29 by the Ontario Ministry of Agriculture, Food, and Rural Affairs is typically used to design municipal drains. The Drainage Coefficient defines a depth of water that can be removed in a 24 hour period and is expressed in millimetres per 24 hours. The coefficient used to design this drain with respect to capacity was 38.1mm per 24 hrs.

We would like to point out that there have been no indications of any adverse soil conditions. It should be noted that no formal soil investigation has been made, with this information being provided by the owners.

All of the proposed work has been generally designed and shall be constructed in accordance with the DESIGN AND CONSTRUCTION GUIDELINES FOR WORK UNDER THE DRAINAGE ACT.

RECOMMENDATIONS

We are therefore recommending the following:

- that a new 350mm to 400mm concrete tile, including related appurtenances, be constructed from the outlet southeasterly across Lots 3 and 2 to the City limits in order to provide a proper surface and sub-surface drainage outlet for the watershed area
- that catchbasins with berms be installed at various locations on the proposed drains to allow direct surface water entry into the tiles and thereby reduce surface flow and erosion

Appendix 'A': Crinklaw-Scott Drain Engineer's Report

3

RECOMMENDATIONS (cont'd)

Our design includes the wrapping of tile joints with geotextile to prevent the incursion of fine soil particles into the drain. If areas of poor soil are encountered at the time of construction, it may become necessary to install the tile on crushed stone bedding wrapped with geotextile or substitute plastic filter tile through such areas. The additional costs of such work would be an extra to the project. These areas are typically identified at the time of construction but may only become apparent after construction is completed. In this case, the extra costs for removal and reinstallation on stone bedding would be an extra to the project and if already billed become a supplementary billing.

In accordance with the principals of Section 14(2) of the Drainage Act, the existing surface waterway along the route of the tile drain shall be part of the drainage works for future maintenance. The width available for the waterway shall be equal to the maintenance working width as noted on the drawing.

ENVIRONMENTAL CONSIDERATIONS AND MITIGATION MEASURES

Based on the information available, there are no significant wetlands or sensitive areas within the affected watershed area or along the route of the drains. A species-at-risk screening was completed and Bird's-foot Violet has been previously observed in the vicinity of the project.

A mitigation plan was submitted to the Ministry of Natural Resources and Forestry for review. The Ministry has completed an internal assessment and concluded there is a low likelihood for Species at Risk to be affected by this project. The Ministry of Natural Resources and Forestry would like an environmental survey to be completed by qualified personnel prior to commencing work to confirm absence of species at risk.

The proposed construction of the Crinklaw – Scott Drain 2018 includes quarry stone outlet protection, surface inlets, and berms which greatly help reduce the overland surface flows and any subsequent erosion. A temporary flow check of silt fencing is to be installed in the ditch downstream of the tile outlet for the duration of the construction.

SUMMARY OF PROPOSED WORK

The proposed work consists of approximately 348 lineal meters of 350mm to 400mm concrete field tile including related appurtenances.

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 Construction.

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.

Appendix 'A': Crinklaw-Scott Drain Engineer's Report

4

SCHEDULES (cont'd)

Schedule 'B' - Cost Estimate. This schedule provides for a detailed cost estimate of the proposed work which is in the amount of \$44,100.00. This estimate includes engineering and administrative costs associated with this project. The estimated cost in the City of London is \$39,600.00 and the estimated cost in the Municipality of Thames Centre is 3,700.00.

Schedule 'C' - Assessment for Construction. This schedule outlines the distribution of the total estimated cost of construction over the roads and lands which are involved.

Drawing No. 1, Job No. 216039 and specifications 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.

For tile drains where the owners will be able to continue to use the land, the allowance provides for the right to enter upon such lands, and at various times for the purpose of inspecting such drain, removing obstructions, and making repairs. Also, the allowance provides for the restrictions imposed on those lands to protect the right-of-way from obstruction or derogation. The amounts granted for right-of-way on tile drains is based on a percentage of the value of the land designated for future maintenance. Therefore, the amounts granted are based on \$6,670.00/ha. through cropped lands. This value is multiplied by the hectares derived from the width granted for future maintenance and the applicable lengths.

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 \$3,510.00/ha for closed drains installed with a wheel machine. This base rate is multiplied by the hectares derived from the working widths shown on the plans and the applicable lengths.

ASSESSMENT DEFINITIONS

In accordance with the Drainage Act, lands that make use of a drainage works are liable for assessment for part of the cost of constructing and maintaining the system. These assessments are known as benefit, outlet liability and special benefit as set out under Sections 22 and 23 of the Act.

SECTION 22

Benefit as defined in the Drainage Act means the advantages to any lands, roads, buildings or other structures from the construction, improvement, repair or maintenance of a drainage works such as will result in a higher market value or increased crop production or improved appearance or better control of surface water, or any other advantages relating to the betterment of lands, roads, buildings or other structures.

Appendix 'A': Crinklaw-Scott Drain Engineer's Report

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ASSESSMENT DEFINITIONS (cont'd)

SECTION 23

Outlet liability is assessed to lands or roads that may make use of a drainage works as an outlet either directly or indirectly through the medium of any other drainage works or of a swale, ravine, creek or watercourse.

In addition, a Public Utility or Road Authority shall be assessed for and pay all the increased cost to a drainage works due to the construction and operation of the Public Utility or Road Authority. This may be shown as either benefit or special assessment.

ASSESSMENT

A modified "Todgham Method" was used to calculate the assessments shown on Schedule 'C'- Assessment for Construction. This entailed breaking down the costs of the drain into sections along its route. Special Assessments and Special Benefits were then extracted from each section.

The remainder is then separated into Benefit and Outlet costs. The Benefit cost is distributed to those properties receiving benefit as defined under "Assessment Definitions", with such properties usually being located along or close to the route of the drain. The Outlet Costs are distributed to all properties within the watershed area of that section on an adjusted basis. The areas are adjusted for location along that section, and relative run-off rates. Due to their different relative run-off rates, forested lands have been assessed for outlet at lower rates than cleared lands. Also, roads and residential properties have been assessed for outlet at higher rates than cleared farm lands.

The actual cost of the work involving this report, with the exception of Special Assessments, is to be assessed on a pro-rata basis against the lands and roads liable for assessment for benefit and outlet as shown in detail on Schedule 'C' - Assessment for Construction.

The cost to restore water supply for any well determined to be impacted by any construction covered under this report shall become part of this report and be pro-rated with the costs provided for in this report.

SPECIAL ASSESSMENT

If any additional work is required to the drainage works due to the existence of buried utilities such as gas pipe lines, communications cables, etc. or if any of the utilities require relocation or repair, then, the extra costs incurred shall be borne by the utility involved in accordance with the provisions of Section 26 of the Drainage Act.

GRANTS

In accordance with the provisions of Section 85 of the Drainage Act, a grant **may** be available for assessments against privately owned parcels of land which are used for agricultural purposes and eligible for the Farm Property Class Tax rate. Section 88 of the Drainage Act directs the Municipality to make application for this grant upon certification of completion of this drain. The Municipality will then deduct the grant from the assessments prior to collecting the final assessments.

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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 entire Crinklaw - Scott Drain 2018 shall be maintained by the City of London at the expense of all upstream lands and roads assessed in Schedule 'C' - Assessment for Construction 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

Appendix 'A': Crinklaw-Scott Drain
Engineer's Report

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SCHEDULE 'A' - ALLOWANCES
CRINKLAW-SCOTT DRAIN 2018
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:

CONCESSION	LOT	ROLL NUMBER (Owner)	Section 29 Right-of-Way	Section 30 Damages	TOTALS
City of London					
<i>Geographic Westminster</i>					
3	N½ 2	080-030-001(1524151 Ontario Limited)	\$ 1,150.00	\$ 1,210.00	\$ 2,360.00
3	NPt. 3	080-030-002(S. & D. Crinklaw)	1,130.00	1,190.00	2,320.00
			=====	=====	=====
Total Allowances			\$ 2,280.00	\$ 2,400.00	\$ 4,680.00
			=====	=====	=====
Total Allowances in the City of London					\$ 4,680.00
Municipality of Thames Centre					
<i>Geographic Westminster</i>					
3	SW¼ 2	55-150(1060047 Ontario Inc.)	\$ 40.00	\$ 40.00	\$ 80.00
			=====	=====	=====
Total Allowances			\$ 40.00	\$ 40.00	\$ 80.00
			=====	=====	=====
Total Allowances in the Municipality of Thames Centre					\$ 80.00
TOTAL ALLOWANCES ON THE CRINKLAW-SCOTT DRAIN 2018					\$ 4,760.00

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SCHEDULE 'B' - COST ESTIMATE

CRINKLAW-SCOTT DRAIN 2018

City of London

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

CONSTRUCTION

6 meters of 450mm dia., H.D.P.E. plastic sewer pipe including rodent gate, quarry stone rip-rap protection around pipe and end of ditch (Approximately 3m³ quarry stone req'd)	\$	520.00
Supply	\$	870.00
Installation		
Installation of the following concrete field tile including supply & installation of geotextile around tile joints (Approx. 450m req'd)	\$	3,700.00
178 meters of 350mm dia. concrete tile	\$	3,110.00
164 meters of 400mm dia. concrete tile	\$	6,570.00
Supply of the above listed tile		
Strip, stockpile and releve topsoil from tile trench and adjacent working area (4m wide) specified on drawings (approx. 348m)	\$	1,740.00
Supply and install one 900mm x 1200mm and two 600mm x 600mm ditch inlet catchbasins, including grates, leads,berms with overflow chutes, removal & disposal of existing catchbasin	\$	8,050.00
Clearing & Grubbing	\$	250.00
Exposing and locating existing tile drains.	\$	210.00
Tile connections as noted on plan	\$	250.00
Tile connections and contingencies	\$	1,200.00
Allowances under Sections 29 & 30 of the Drainage Act	\$	4,760.00

ADMINISTRATION

Endangered Species Review & Survey	\$	750.00
Conservation Authority Review Fee	\$	300.00
Net Harmonized Sales Tax	\$	620.00
Survey, Plan and Final Report	\$	7,600.00
Expenses	\$	300.00
Supervision and Final Inspection	\$	3,300.00
TOTAL ESTIMATED COST	\$	<u>44,100.00</u>

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SCHEDULE 'C' - ASSESSMENT FOR CONSTRUCTION

CRINKLAW-SCOTT DRAIN 2018

City of London

Job No. 216039

July 24, 2018

* = Non-agricultural

CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	BENEFIT	OUTLET	TOTAL
City of London						
Geographic Westminster						
3	N½ 2	4.5	080-030-001(1524151 Ontario Limited)	\$ 11,490.00	\$ 1,860.00	\$ 13,350.00
3	NPt. 3	1.1	080-030-002(S. & D. Crinklaw)	12,150.00	181.00	12,331.00
TOTAL ASSESSMENT ON LANDS				\$ 23,640.00	\$ 2,041.00	\$ 25,681.00
Total Assessment in the City of London						\$ 25,681.00
Municipality of Thames Centre						
Geographic Westminster						
3	SEPt. 3	12.2	55-148(S. & D. Crinklaw)	\$	\$ 2,388.00	\$ 2,388.00
* 3	SEPt. 3	0.36	55-148-10(C. Millman & C. Paterson)		195.00	195.00
3	SW¼ 2	20.1	55-150(1060047 Ontario Inc.)	910.00	10,398.00	11,308.00
3	SE¼ 2	7.7	55-151(C. Mann, K. Holmes & C. Moore)		3,983.00	3,983.00
TOTAL ASSESSMENT ON LANDS				\$ 910.00	\$ 16,964.00	\$ 17,874.00
Dingman Drive				\$	\$ 545.00	\$ 545.00
TOTAL ASSESSMENT ON ROADS				\$	\$ 545.00	\$ 545.00
Total Assessment in the Municipality of Thames Centre						\$ 18,419.00
TOTAL ASSESSMENT ON THE CRINKLAW-SCOTT DRAIN 2018						\$ 44,100.00

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SCHEDULE OF NET ASSESSMENT

CRINKLAW-SCOTT DRAIN 2018

City of London

(FOR INFORMATION PURPOSES ONLY)

Job No. 216039

July 24, 2018

* = Non-agricultural

ROLL NUMBER (OWNER)	TOTAL ASSESSMENT	GRANT	ALLOWANCES	APPROX. NET
City of London				
080-030-001(1524151 Ontario Limited)	\$ 13,350.00	\$ 4,450.00	\$ 2,360.00	\$ 6,540.00
080-030-002(S. & D. Crinklaw)	12,331.00	4,110.00	2,320.00	5,901.00
Total - City of London	\$ 25,681.00	\$ 8,560.00	\$ 4,680.00	\$ 12,441.00
Municipality of Thames Centre				
55-148(S. & D. Crinklaw)	\$ 2,388.00	\$ 796.00	\$	\$ 1,592.00
* 55-148-10(C. Millman & C. Paterson)	195.00			195.00
55-150(1060047 Ontario Inc.)	11,308.00	3,769.00	80.00	7,459.00
55-151(C. Mann, K. Holmes & C. Moore)	3,983.00	1,328.00		2,655.00
* Dingman Drive	545.00			545.00
Total - Municipality of Thames Centre	\$ 18,419.00	\$ 5,893.00	\$ 80.00	\$ 12,446.00
TOTALS	\$ 44,100.00	\$ 14,453.00	\$ 4,760.00	\$ 24,887.00

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**SPECIFICATIONS FOR CONSTRUCTION
OF
MUNICIPAL DRAINAGE WORKS**

GENERAL INDEX

SECTION A	General Conditions	Pages 1 to 9
SECTION B	Open Drain	Pages 10 to 12
SECTION C	Tile Drain	Pages 13 to 18
STANDARD DETAILED DRAWINGS		SDD-01 to SDD-05



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SECTION A - GENERAL CONDITIONS

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A.3 DRAWINGS AND SPECIFICATIONS.....	1
A.4 PAYMENT....N/A (Superceded).....	1
A.5 SUPERINTENDENT...N/A (Superceded).....	1
A.6 COMMENCEMENT AND COMPLETION OF WORK.....	2
A.7 WORKING AREA AND ACCESS....N/A (Superceded).....	2
A.8 SUPERVISION.....	2
A.9 INSPECTION...N/A (Superceded).....	2
A.10 ALTERATIONS AND ADDITIONS..N/A (Superceded).....	2
A.11 MAINTENANCE ..N/A (Superceded).....	3
A.12 INSURANCE....N/A (Superceded).....	3
A.13 LIMITATIONS OF OPERATIONS.....	3
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A.15 SUB-CONTRACTORS.....	3
A.16 PERMITS, NOTICES, LAWS AND RULES...N/A (Superceded).....	3
A.17 ROAD CROSSINGS.....	4
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A.23 LOCATION OF UTILITIES...N/A (Superceded).....	7
A.24 TERMINATION OF CONTRACT BY THE MUNICIPALITY...N/A (Superceded).....	7
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SECTION A

GENERAL CONDITIONS

A.1 SCOPE (N/A Superseded)

The work to be done under this specification consists of supplying all labour, materials and equipment to construct the work as outlined on the drawing(s). In some Municipalities, the Contractor shall supply all materials while in other Municipalities, he shall supply only certain materials. The form of Tender and Agreement lists which materials are to be supplied by the Contractor.

A.2 TENDERS (N/A Superseded)

Tenders are to be submitted on a lump sum basis for the complete works or a portion thereof, as set out in the Form of Tender and Agreement.

A.3 DRAWINGS AND SPECIFICATIONS

The tenderer must satisfy himself that he understands the meaning and intent of the drawings and specifications before submission of his tender. The standard specifications have been separated into sections for reference purpose only. They shall be considered complementary and, where a project is controlled under one of the sections, the remaining sections will still apply for miscellaneous works. In case of any inconsistency or conflict in the Tender Documents, the following order of precedence shall apply:

- Contract Drawings
- Form of Tender
- General Conditions
- Standard Specifications (Open Drain, Tile Drain, Specifications for Municipal Drain Crossing County Roads)
- Standard Drawings

A.4 PAYMENT (N/A Superseded)

Progress payments equal to 87±% of the value of the work done and materials incorporated in the work will be made to the Contractor on the written request of the Contractor to the Engineer. An additional 10±% will be paid 45 days after the final acceptance by the Engineer. Before this payment is released, the Contractor shall provide the Municipality with a Statutory Declaration that all material and/or labour incorporated in the work has been fully paid for, along with a Certificate of Clearance from the Workplace Safety and Insurance Board stating that all compensation has been paid. The Municipality will reserve 3%± of the Contract Price for one year as warranty. After the completion of the work, any part of this reserve may be used to correct defects which may develop within that time from faulty workmanship or material or loose backfill, provided that notice shall first be given to the Contractor and that he may promptly make good such defects, if he desires.

A.5 SUPERINTENDENT (N/A Superseded)

The word "Superintendent", as used hereinafter in these specifications, shall refer to a Drainage Superintendent, appointed by the Municipality. The Superintendent will act as the Engineer's representative. The Superintendent shall have the power to direct the execution of the work and to make any necessary minor adjustments. Adjustments in tile sizes or gradients shall not be made without the approval of the Engineer. Any instructions given by the Superintendent, which changes considerably the proposed work or with which the Contractor does not agree, shall be referred to the Engineer for his decision.

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A.6 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.

The Contractor shall give the Engineer and Superintendent a minimum of forty-eight (48) hours notice before commencement of work on any municipal drain. As noted on the plan, he can then arrange for a meeting to be held on the site with the Contractor and affected owners attending to review in detail the construction scheduling and other 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.7 WORKING AREA AND ACCESS (N/A Superceded)

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.8 SUPERVISION

The Contractor shall give the work his constant supervision and shall keep a competent foreman in charge at the site.

A.9 INSPECTION (N/A Superceded)

Final inspection by the Engineer will be made within twenty days after he has received notice in writing from the Contractor that the work is complete.

Periodic inspections by the Engineer or Superintendent will be made during the performance of the work. These interim inspections are required to check such items as location of drainage course and structures, tile grades prior to backfilling, backfilling and miscellaneous work items.

A.10 ALTERATIONS AND ADDITIONS (N/A Superceded)

The Engineer shall have the power to make alterations in the work shown or described in the drawings or specifications and the Contractor shall proceed to make such changes without causing delay. In every such case, the price agreed to be paid for the work under the contract shall be increased or decreased as the case may require according to a fair and reasonable valuation of the work added or deleted. The valuation shall be determined as a result of negotiations between the Superintendent, the Contractor, and the Engineer, but in all cases, the Engineer shall maintain the final responsibility for the decision. Such alterations and variations shall in no way render void the contract. No claim for variations or alterations in the increased or decreased price shall be valid unless done in pursuance of an order from the Engineer and/or Superintendent and notice of such claims made in writing before commencement of such work. In no case shall the Contractor commence work which he considers to be extra work before receiving the Engineer's and/or Superintendent's approval in writing.

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A.11 MAINTENANCE (N/A Superceded)

The Contractor shall repair and make good any damages or faults in the drain that may appear within one year after its completion (as dated on the final completion certificate) as the result of imperfect or defective work done or materials furnished by the Contractor. Nothing herein contained shall be construed as in any way restricting or limiting the liability of the Contractor under the laws of the Country, Province or Locality in which the work is being done.

A.12 INSURANCE (N/A Superceded)

- 1) Bodily Injury Liability: The Contractor shall effect and maintain, a Comprehensive General Liability Policy or its equivalent, covering claims for bodily injury, including death arising from and during operations under his Contract whether performed by himself, by a sub-contractor or by anyone directly or indirectly employed by either of them in the sum of \$ 2,000,000.00.
- 2) Property Damage: The Contractor shall effect and maintain Property Damage Liability Insurance to cover his and the sub-contractor's operations in the sum of \$ 1,000,000.00.
- 3) Fire Insurance: The Contractor shall procure fire and extended coverage insurance on the work to 100% of the Contract Amount.
- 4) The following are to be named as co-insured:
 - Successful Contractor
 - Sub-Contractor
 - Municipality
 - Spriet Associates London Limited
- 5) Within 7 days of award of Contract and prior to commencing work, the successful Contractor shall file with the Municipality, a copy of each insurance policy and certificate required. All such insurance shall be maintained until final completion of the work including the making good of faulty work or materials; except that coverage of completed operations liability shall in any event be maintained for twelve (12) months from the date of final completion as certified by the Engineer.

A.13 LIMITATIONS OF OPERATIONS

Except for such work as may be required by the Engineer to maintain the works in a safe and satisfactory condition, the Contractor shall not carry on his operations under the contract on Sundays without permission in writing of the Municipality.

A.14 LOSSES

The Contractor shall take all risks from floods or casualties of any kind.

A.15 SUB-CONTRACTORS

The Contractor shall not sublet the whole or any part of the contract without the approval of the Engineer or Superintendent.

A.16 PERMITS, NOTICES, LAWS AND RULES (N/A Superceded)

The Contractor shall ensure that all necessary permits or licences required for the execution of the work have been obtained (but this shall not include M.T.O. encroachment permits, County Road Permit, permanent easements or rights of servitude). The Contractor shall give all necessary notices and pay all fees required by law and comply with all laws, ordinances, rules and regulations (including the Occupational Health and Safety Act) relating to the work and to the preservation of the public's health and safety and if the specifications and drawings are at variance therewith, any resulting additional expenses incurred by the Contractor shall constitute an addition to the contract price.

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A.17 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.
- .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.

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.2 Jacking and Boring (cont'd)

- .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.

.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 under side 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.

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.3 Open Cut (cont'd)

The excavated material from the trench beyond a point 1.25 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.18 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.19 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.20 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.21 SURPLUS GRAVEL

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.22 RAILWAYS, HIGHWAYS, UTILITIES (N/A Superceded)

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.

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A.23 UTILITIES

(N/A Superceded)

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.24 TERMINATION OF CONTRACT BY THE MUNICIPALITY

(N/A Superceded)

If the Contractor should be adjudged bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, or if he should refuse or fail to supply enough properly skilled workmen or proper materials after having received seven (7) days notice in writing from the Engineer to supply additional workmen or materials, or if he should fail to make prompt payment to sub-contractors or for material or labour or persistently disregarding laws, ordinances, or the instruction of the Engineer, or otherwise being guilty of a substantial violation of the provisions of the contract, then the Municipality, upon the certification of the Engineer that sufficient cause exists to justify such action, may without prejudice to any other right or remedy, by giving the contractor written notice, terminate the employment of the contractor and take possession of the premises and of all materials, tools and appliances, thereon, and complete the work by whatever method the Engineer may deem expedient, but without undue delay or expense. In such case, the Contractor shall not be entitled to receive any further payment until the work is completed. If the unpaid balance of the contract price exceeds the expense of completing the work, including compensation to the Engineer for his additional services, such excess shall be paid to the Contractor. If such expense does not exceed such unpaid balance, the Contractor shall pay the difference to the Municipality. The expense incurred by the Municipality, as herein provided, shall be certified by the Engineer. Where a Contractor fails to commence work within seven (7) days of his commencement date as indicated by him on his Tender Form, and such extension of time as allowed due to poor weather or ground conditions, then the Municipality shall have the option, after providing the Contractor with seven (7) days notice of their intention to terminate the contract, award the contract to another Contractor at their discretion by retendering the project, inviting bids or by appointment. The additional costs of the above or retendering, and all other administration costs shall be deducted from the Contractor's bid deposit and the balance, if any, returned to him.

A.25 ERRORS AND UNUSUAL CONDITIONS

(N/A Superceded)

The Contractor shall notify the Engineer immediately of any error or unusual condition which may be found. Any attempt by the Contractor to make changes because of the error or unusual condition on his own shall be done at his own risk. Any additional cost incurred by the Contractor to remedy a wrong decision on his part shall be borne by the Contractor.

The Engineer shall make the alteration necessary to correct errors or to adjust for unusual conditions during which time it will be the Contractor's responsibility to keep his men and equipment gainfully employed elsewhere on the project. The contract amount shall be adjusted in accordance with a fair evaluation of the work added or deleted.

A.26 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.27 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.

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A.28 **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 : 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.29 **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.30 **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 contractors operations, imported topsoil from acceptable sources shall be imported at the contractors 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.

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A.30 RESTORATION OF LAWNS (cont'd)

On slopes steeper than 3:1, 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.

- .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 suppliers 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 suppliers 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.31 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.

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SECTION B - OPEN DRAIN

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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, bench marks will govern the final elevation of the drain. Bench marks 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 sideslope 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.

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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.

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 spoilbank. The excavated material shall be placed and levelled to a minimum width to depth ratio of 50:1 unless instructed otherwise. The edge of the spoilbank away from the ditch shall be feathered down to the existing ground; the edge of the spoilbank 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.

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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**

The Contractor shall excavate sediment basins prior to commencement of upstream work as shown on the plan and profile. The dimension of the basin will be in a parabolic shape with a depth of 450mm below the proposed ditch bottom and the basin will extend along the drain for a minimum length of 15 meters.

A sediment trap 300mm deep and 5 meters long with silt fence placed across ditch bottom on the downstream end of the trap shall be constructed prior to and maintained during construction, to prevent silt from flushing downstream. 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.

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SECTION C - TILE DRAIN

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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, rivetted 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 tile 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.

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C.3 LINE (cont'd)

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 off site.

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, bench marks will govern the final elevation of the drain. Bench marks 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.

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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.
- .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.

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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 fenceline, 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.

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C.14 TRIBUTARY DRAINS (cont'd)

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 pre-fabricated adaptor. All other connections shall be made with pre-fabricated 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.

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.

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C.16 CATCHBASINS AND JUNCTION BOXES (cont'd)

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 releveled 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.

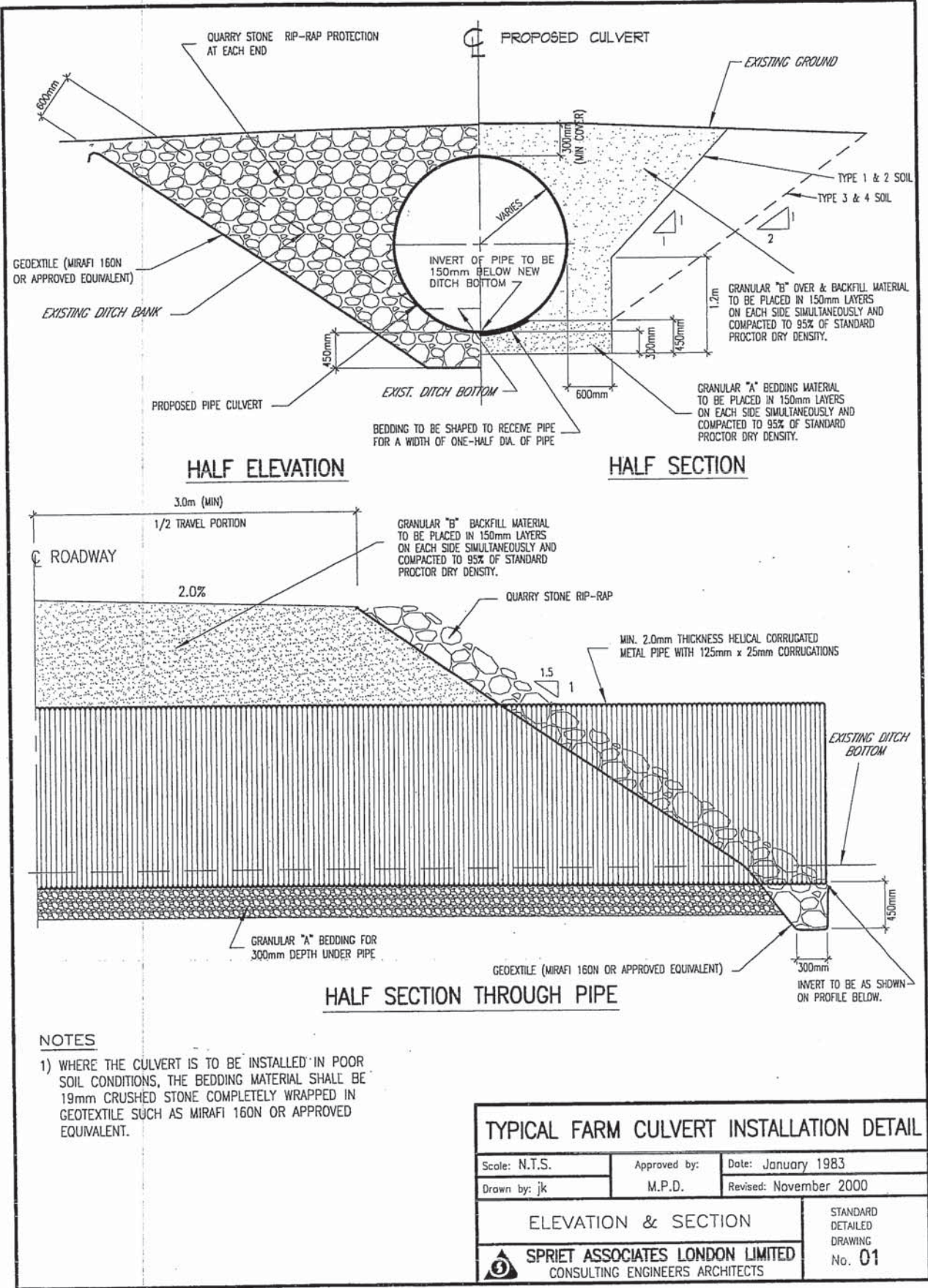
C.20 RECOMMENDED PRACTICE FOR CONSTRUCTION OF SUBSURFACE DRAINAGE SYSTEM

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.

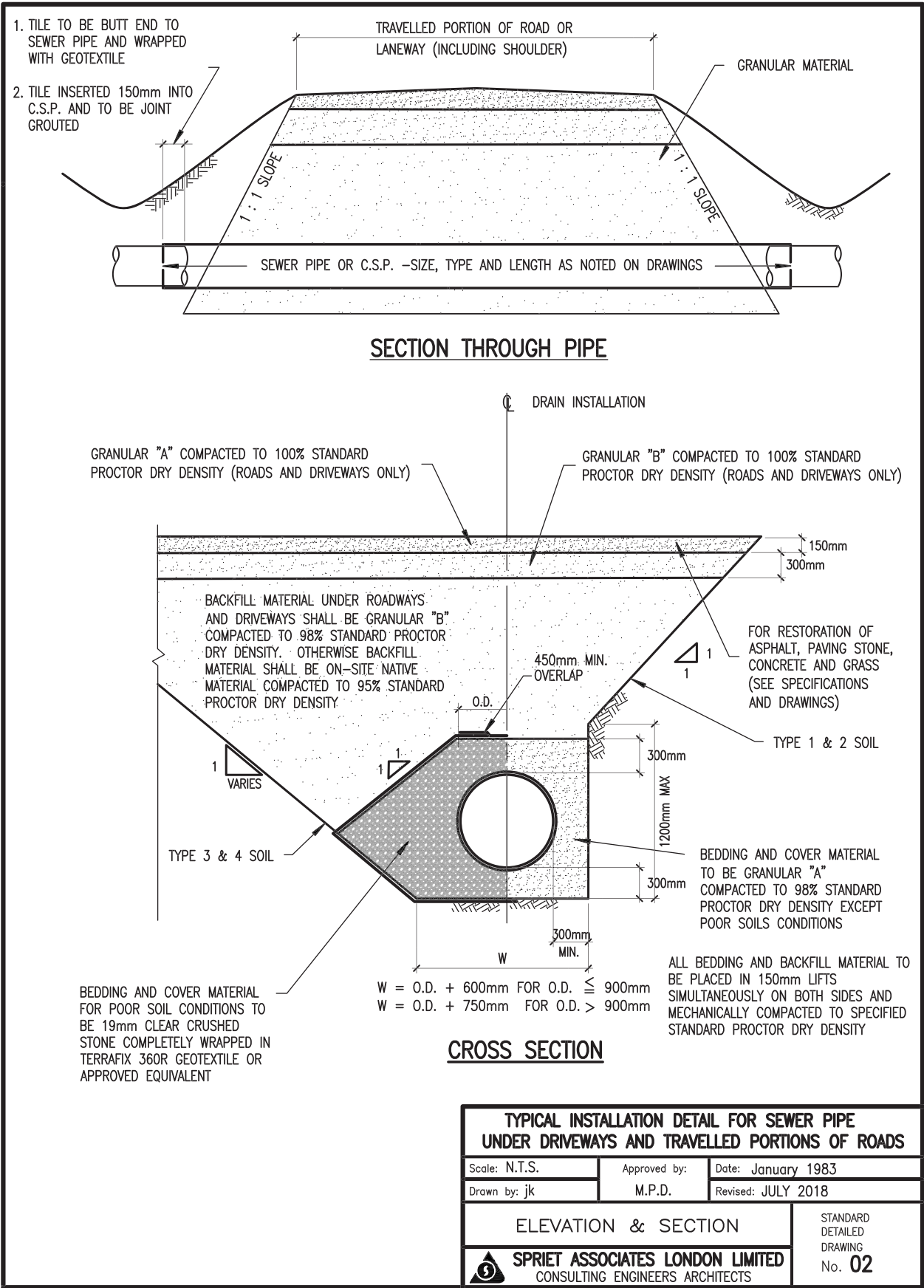
The requirements of licensing of operators, etc. which apply to the installation of closed drains under the Tile Drainage Act shall also be applicable to this contract in full unless approval otherwise is given in advance by the Engineer.

SPRIET ASSOCIATES

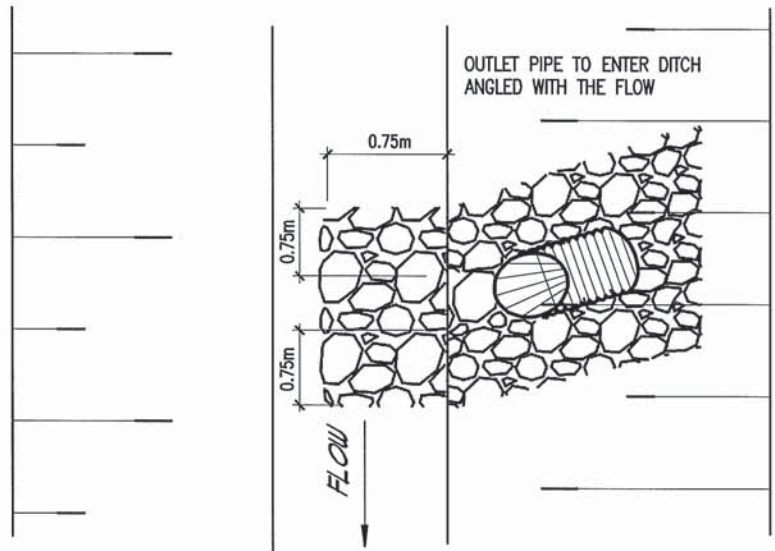
Appendix 'A': Crinklaw-Scott Drain
Engineer's Report



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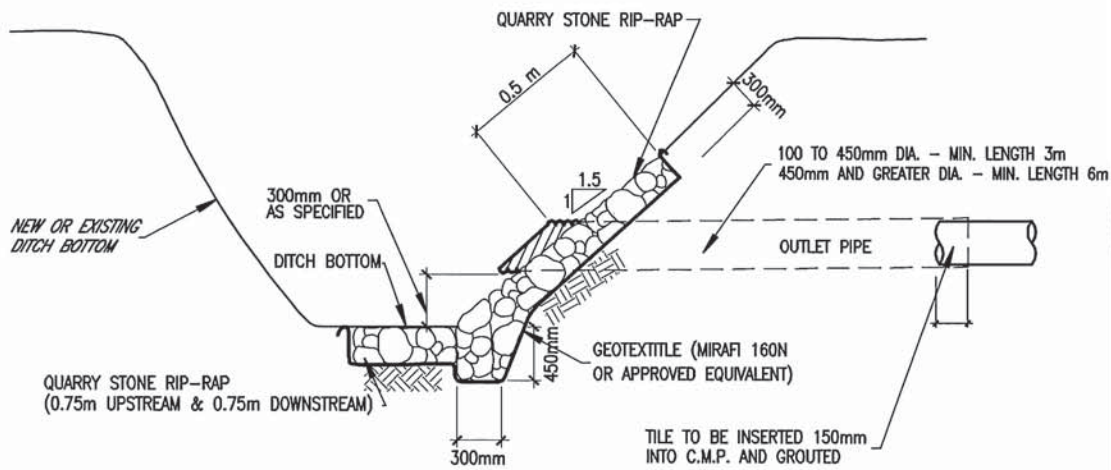


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PLAN

- NOTES**
- 1. WHERE THE DISTURBED AREA EXCEEDS THE MIN. WIDTHS, RIP-RAP TO EXTEND TO A MIN. OF 600mm BEYOND THE DISTURBED AREA

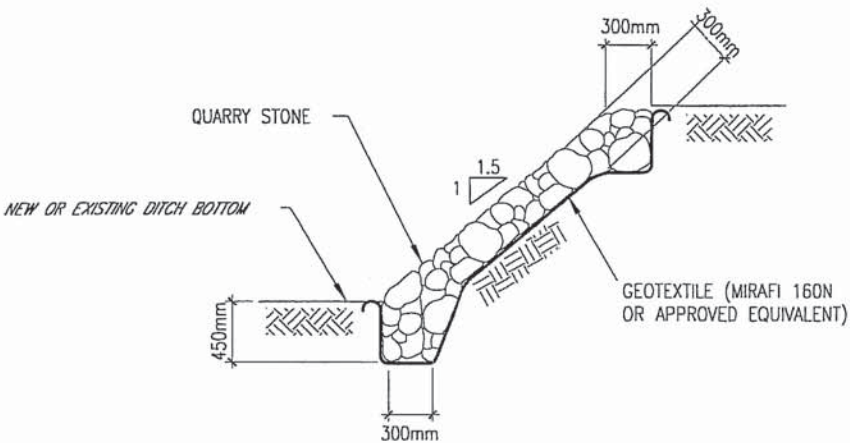


TYPICAL OUTLET RIP-RAP

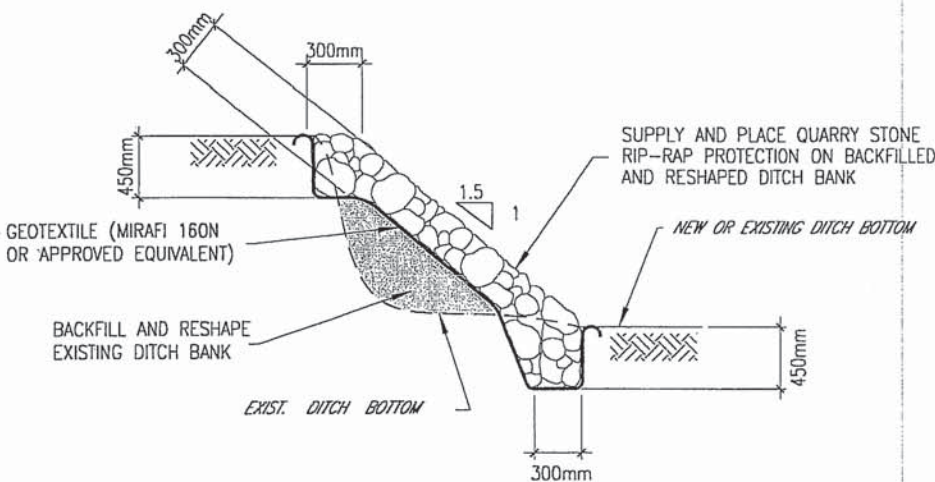
- NOTES**
- 1. RIP-RAP TO EXTEND UP THE SLOPE 0.5 METER ABOVE TOP OF OUTLET
 - 2. WHERE SURFACE RUN ENTERS DITCH AT OUTLET PIPE, A ROCK CHUTE SHALL BE INSTALLED (SEE S.D.D. No. 05) AND PIPE SHALL BE INSTALLED ADJACENT TO ROCK CHUTE.
 - 3. HINGED RODENT GATE TO BE AFFIXED TO END OF OUTLET PIPE.

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
SPRIET ASSOCIATES LONDON LIMITED CONSULTING ENGINEERS ARCHITECTS		No. 03

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Engineer's Report



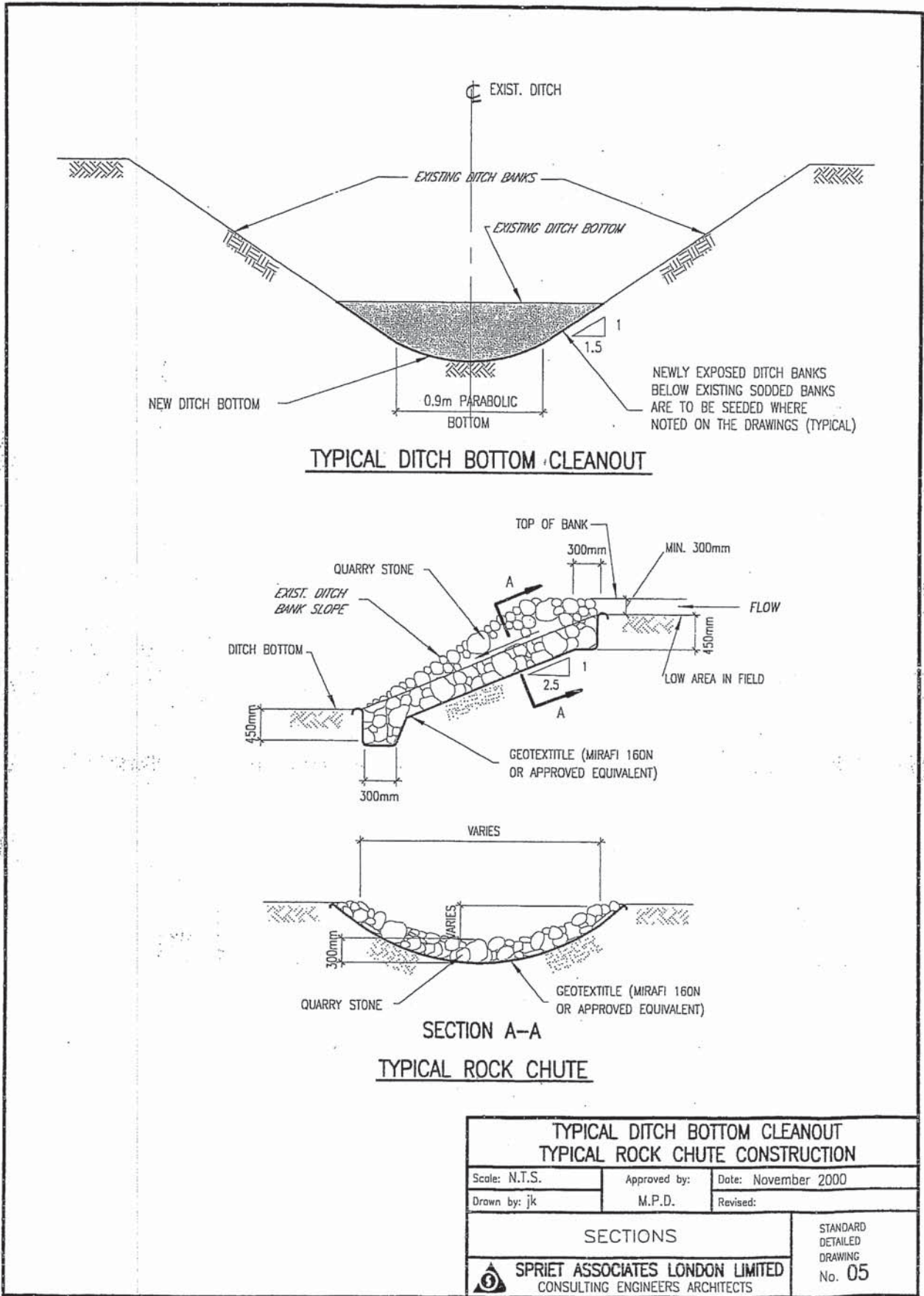
TYPICAL DITCH BANK RIP-RAP



TYPICAL DITCH BANK RIP-RAP
WITH BACKFILLING OF WASHOUT

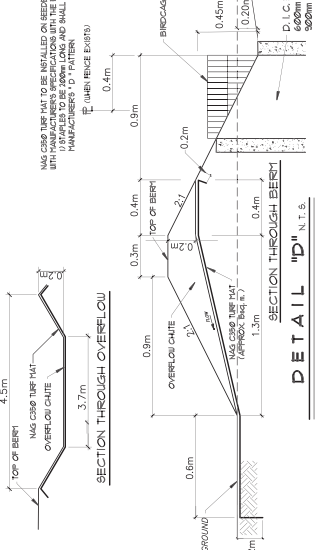
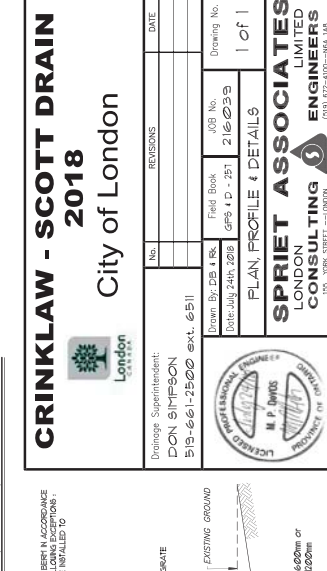
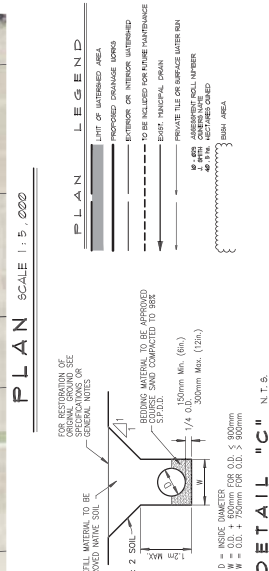
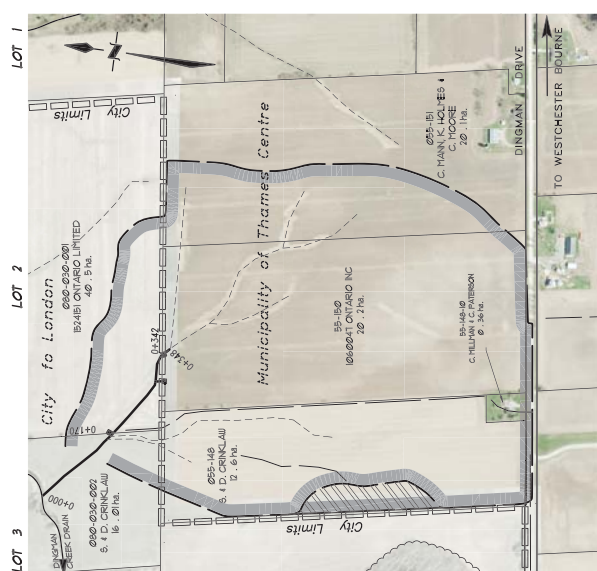
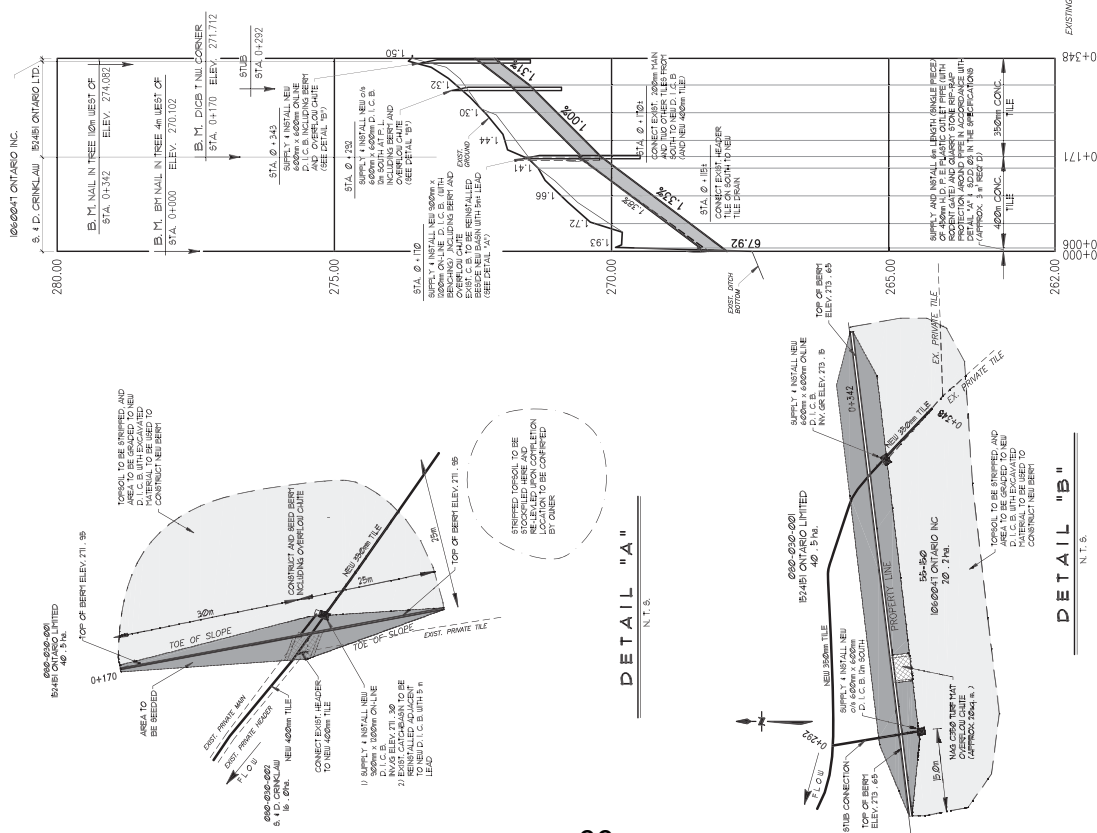
TYPICAL DITCH BANK RIP-RAP DETAILS			
Scale: N.T.S.	Approved by:	Date: July 2000	
Drawn by: jk	M.P.D.	Revised: November 2000	
SECTIONS			STANDARD DETAILED DRAWING
SPRIET ASSOCIATES LONDON LIMITED CONSULTING ENGINEERS ARCHITECTS			No. 04

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Appendix 'A2': Hampton-Scott Engineer's Report

HAMPTON - SCOTT DRAIN - BRANCH 'D' 2019

City of London



**SPRIET
ASSOCIATES
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Our Job No. 214181

March 20, 2019

**Appendix 'A2': Hampton-Scott
Engineer's Report**

London, Ontario
March 20, 2019

HAMPTON - SCOTT DRAIN - BRANCH 'D' 2019

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 construction of Branch 'D' of the Hampton-Scott Municipal Drain serving parts of Lots 11 to 16, Concession 2 (geographic Westminster) in the City of London.

AUTHORIZATION

This report was prepared pursuant to Section 4 of the Drainage Act. Instructions were received from your City with respect to a motion of Council. The work was initiated by a petition signed by the owners whose lands contain over 60 percent of the area requiring drainage.

DRAINAGE AREA

The total watershed area as described above contains approximately 156.3. hectares. The area requiring drainage is described as parts of the south half of Lots 11 and 12, Concession 2 (geographic Westminster), City of London.

HISTORY

The Hampton-Scott Drain was last reconstructed in its entirety pursuant to a report submitted by S.G. Chipman, P. Eng. dated June 20, 1950 and consisted of the extension, cleanout, and improvement of the existing Scott and Hampton Drains. The Hampton Drain consisted of 3,850 meters of open ditch extending from Wilton Grove Road in Lot 11, Concession 2, north and westerly crossing Bradley Avenue and Jackson Road, then north in Lot 13 for about halfway to Commissioners Road.

The Scott Drain extended from its junction with the Hampton Drain in the northwest part of Lot 10, Concession 2, northeasterly crossing Bradley Avenue into Lots 8 and 9, Concession 1.

After the construction of Highway 401 the Hampton Drain was reconstructed from the south side of the culvert under Highway 401 south for 1,821 meters to an outlet into the Dingman Creek in the northwest quarter of Lot 7, Concession 3, pursuant to a report known as the Hampton Outlet Drain,



Appendix 'A2': Hampton-Scott Engineer's Report

HISTORY (cont'd)

submitted by Donald J. Houghton, O.L.S., dated November 30, 1966. The report also included a small open Branch extending from the Main Drain 80 meters north to the south side of the highway, approximately 180 meters west of the Main Drain.

A further report on the Hampton-Scott Drain by A.J. DeVos, P.Eng., dated February 11, 1970, reconstructed the portions of the drains upstream of Highway 401. The report included several new Branch drains in Concession 3 and the Scott Drain was renamed Branch 'A'.

The tributary W. Jackson Drain was constructed pursuant to a report by J.P. McIntyre, P.Eng., dated January 4, 1971. This is a tile drain consisting of two 150mm branch drains and a 150mm to 250mm Main Drain, serving the south part of Lot 13, Concession 2, north of the 401 and runs through the south part of Lot 12 to an outlet on the north side of the 401. It shows that this 250mm tile was connected into an older, private tile but no records of this tile were able to be found. The Ministry of Transportation Ontario (MTO) also had no records of this connection.

EXISTING DRAINAGE CONDITIONS

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

- that there is a private ditch running westerly from the Hampton Outlet Drain approximately 380 meters south of Highway 401, to Cheese Factory Road between Max Brose Drive and Global Drive
- that this ditch is almost non-existent through some areas and there is considerable flooding on adjacent lands
- that the flooding has become worse since the Highway 401 reconstruction

A field investigation and survey were completed. Upon reviewing our findings, we note the following:

- that Highway 401 has been reconstructed with six lanes, paved median, internal storm drainage systems, and ditching improvements
- that the portion of the 401 which is tributary to the proposed drain extends from the W. Jackson Drain outlet west to Highbury Avenue, including the southeast corner of the interchange
- that the area south of the 401 and west of Cheese Factory Road is an industrial subdivision with internal storm drainage and storm water management. This system outlets to the south across Wilton Grove Road into a natural watercourse
- that low flow run-off from the 401 flows into a 450mm City of London bypass storm sewer via a catchbasin located 200± meters west of Cheese Factory Road. This storm sewer runs east along the south side of the 401 limits to Cheese Factory Road and then south on the road to the head of the existing private ditch (proposed drain)



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Appendix 'A2': Hampton-Scott Engineer's Report

EXISTING DRAINAGE CONDITIONS

- the easterly portions of the properties within the watershed area on the north and south sides of Max Brose Drive are presently undeveloped and contain a considerable amount of bush area
- that when the capacity of the existing 450mm storm sewer bypass is exceeded, the overflow runs southeasterly into the bush areas on the undeveloped lots. At times it is likely that the overflow runs over Cheese Factory Road and onto the adjoining easterly farm lands
- that there are catchbasins on the west side of Cheese Factory Road on both sides of Max Brose Road to provide outlet for the undeveloped areas, but there was a considerable depth of ponded water in the bush on the north side of the road
- that the W. Jackson Drain plan shows an existing tile connecting from its outlet to a point on the existing private ditch in Lot 11, Concession 2
- that the open ditch has silted in and does not provide a proper outlet for the tributary storm sewer and sub-surface drainage tiles
- that the lower portion has silted in considerably and the water floods and ponds on both sides
- that there are a considerable amount of trees and brush growing on the banks and bottom along most of the upper portion of the ditch reducing its capacity during times of high flow
- that the farm culvert in the east part of Lot 12, Concession 2 (Roll No. 080-030-025) is in poor condition, too high, and undersized for today's standards and farming practices
- that the channel through cultivated lands has a good grassed buffer
- that the middle portion of the ditch has a steep gradient which makes it susceptible to erosion

RECOMMENDATIONS

We are therefore recommending the following:

- that the existing ditch bottom in the upper portion from Cheese Factory Road to the line between Lots 11 and 12 be cleaned out to provide a proper sub-surface drainage outlet
- that the lower 375 meters of the existing ditch be deepened and reconstructed with 3:1 slopes to provide a proper sub-surface and surface drainage outlet
- that excavated material be levelled adjacent to the drain
- that the ditch bottom and ditch slopes be cleared only (stumps are to be left) of trees, brush and scrub



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Appendix 'A2': Hampton-Scott Engineer's Report

RECOMMENDATIONS

- that four quarry stone drop structures be constructed in the steep portion of the ditch to reduce velocity of the flow
- that the working space and access route be cleared and grubbed of trees, brush and scrub where required for machines to access and complete the work on the ditch and the areas where excavated material is to be levelled
- that the stumps, logs and brush be piled beyond this width
- that a new farm crossing consisting of 1200mm diameter pipe be constructed on the Country Paws (Roll No. 080-030-025) property including the removal and disposal of the existing culvert

Preliminary design, cost estimates and assessments were prepared and an informal public meeting was held to review the findings and preliminary proposals. Further input and requests were provided by the affected owners at that time and at later dates.

DESIGN CRITERIA AND CONSIDERATIONS

We would like to point out that there have been indications of sandy soil conditions. It should be noted that no formal soil investigation has been made, with this information being provided by Ontario Soils Survey report No. 56 – Middlesex County, and field observation.

All of the proposed work has been generally designed and shall be constructed in accordance with the DESIGN AND CONSTRUCTION GUIDELINES FOR WORK UNDER THE DRAINAGE ACT.

ENVIRONMENTAL CONSIDERATIONS AND MITIGATION MEASURES

Based on the information available, there are no provincially significant wetlands or sensitive areas along the route of the drain. Pre-screening for endangered species indicated past occurrences (very old) of Birds-foot Violet, Drooping Trillium, and Spoon-leaved Moss. The MNR indicated there was the potential occurrence in the general area of Barn Swallows, therefore a site survey was completed to assess the proposed work area. No evidence of any of these species were found and the habitat found was not likely to host or support these species. The proposed construction of the Hampton-Scott Drain – Branch 'D' 2019 includes quarry stone outlet protection and drop structures which greatly help reduce flow velocity in the ditch and subsequent erosion.

We are also recommending that the following erosion and sediment control measures be included as part of our reconstruction proposal to help mitigate any potential adverse impacts of the proposed drainage works on water quality and fishery habitat:

- timing of construction is to be only at times of low or no flow
- temporary flow checks of silt fencing are to be installed for the duration of the construction at the bottom end of the ditch cleanout and at the junction with the Main Drain



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Appendix 'A2': Hampton-Scott Engineer's Report

ENVIRONMENTAL CONSIDERATIONS AND MITIGATION MEASURES

- a cleanout of the ditch bottom only has been specified in the upper portion so that the existing bank vegetation is not disturbed. However, in the lower portion where the existing banks are unstable, or may become unstable, they are to be resloped and seeded as noted on the plans
- 1.5 meter wide grassed buffer strips between the top of the bank and any adjacent cultivated lands on both sides of the ditch are to be incorporated in accordance with the attached plans
- all work is to be completed from the north and east sides of the ditch where possible. Any natural vegetation, brush, trees, etc. that exist on the unaffected sides of the ditch, especially the south side, should be retained to provide shade and cover

It is to be noted that both the existing and newly vegetated banks as well as the existing natural buffer strips along each side of the ditch are permanent parts of the Hampton-Scott Drain – Branch 'D' 2019 Municipal Drain and shall not be disturbed or destroyed.

SUMMARY OF PROPOSED WORK

The proposed work consists of approximately 814 lineal meters of open ditch cleanout and reconstruction including quarry stone rip-rap drop structures, bank seeding, construction of a farm culvert, and sediment basins.

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 Construction.

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 \$ 81,700.00. This estimate includes engineering and administrative costs associated with this project.

Schedule 'C' - Assessment for Construction. This schedule outlines the distribution of the total estimated cost of construction over the roads and lands which are involved.

Drawing No. 1, Job No. 214181 and specifications 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.

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ALLOWANCES (cont'd)

For open ditches, 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 \$45,000.00/ha. for cropped lands and \$35,000.00/ha. for lower grassed areas. When any buffer strip is incorporated and/or created, the allowance granted is for the width for the portion deemed part of the drain.

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 amounts granted are based on the following:

- a) for open ditch work with excavated material levelled adjacent to the drain - \$4,787.00/ha.
- b) for open ditch work with minimal disturbance - \$1,333.00/ha.

These base rates are multiplied by the hectares derived from the working widths shown on the plans and the applicable lengths.

ASSESSMENT DEFINITIONS

In accordance with the Drainage Act, lands that make use of a drainage works are liable for assessment for part of the cost of constructing and maintaining the system. These assessments are known as benefit, outlet liability and special benefit as set out under Sections 22 and 23 of the Act.

SECTION 22

Benefit as defined in the Drainage Act means the advantages to any lands, roads, buildings or other structures from the construction, improvement, repair or maintenance of a drainage works such as will result in a higher market value or increased crop production or improved appearance or better control of surface water, or any other advantages relating to the betterment of lands, roads, buildings or other structures.

Special Benefit is assessed to lands for which some additional work or feature has been included in the construction repair or improvement of a drainage works. The costs of such work are separated and assessed independently from the regular work.

SECTION 23

Outlet liability is assessed to lands or roads that may make use of a drainage works as an outlet either directly or indirectly through the medium of any other drainage works or of a swale, ravine, creek or watercourse.

In addition, a Public Utility or Road Authority shall be assessed for and pay all the increased cost to a drainage works due to the construction and operation of the Public Utility or Road Authority. This may be shown as either benefit or special assessment.

A modified "Todgham Method" was used to calculate the assessments shown on Schedule 'C'- Assessment for Construction. This entailed breaking down the costs of the drain into sections along its route. Special Assessments and Special Benefit Assessments were then extracted from each section.



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ASSESSMENT

The remainder is then separated into Benefit and Outlet Assessments. The Benefit is distributed to those properties receiving benefit as defined under "Assessment Definitions", with such properties usually being located along or close to the route of the drain. The Outlet is distributed to all properties within the watershed area of that section on an adjusted basis. The areas are adjusted for location along that section, and relative run-off rates. Due to their different relative run-off rates, forested lands have been assessed for outlet at lower rates than cleared lands. Also, roads and residential properties have been assessed for outlet at higher rates than cleared farm lands.

The actual cost of the work involving this report is to be assessed on a pro-rata basis against the lands and roads liable for assessment for benefit and outlet as shown in detail on Schedule 'C' - Assessment for Construction.

GRANTS

In accordance with the provisions of Section 85 of the Drainage Act, a grant **may** be available for assessments against privately owned parcels of land which are used for agricultural purposes and eligible for the Farm Property Class Tax rate. Section 88 of the Drainage Act directs the Municipality to make application for this grant upon certification of completion of this drain. The Municipality will then deduct the grant from the assessments prior to collecting the final assessments.

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 Hampton-Scott Drain – Branch 'D' 2019 (excluding culverts) shall be maintained by the City of London at the expense of all upstream lands and roads assessed in Schedule 'C' - Assessment for Construction and in the same relative proportions until such time as the assessment is changed under the Drainage Act.

Future maintenance costs for the new farm culvert on the property described by Roll No. 080-030-025 shall be levied two-thirds to the affected owner and the remainder shall be pro-rated over the upstream outlet assessments.

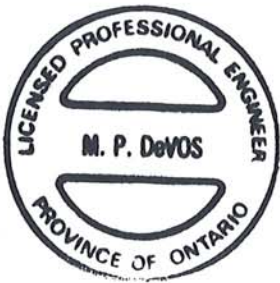
Respectfully submitted,

SPRIET ASSOCIATES LONDON LIMITED



M.P.DeVos, P. Eng.

MPD:bv



SPRIET ASSOCIATES
engineers & architects

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SCHEDULE 'A' - ALLOWANCES

HAMPTON - SCOTT DRAIN
BRANCH "D" 2019
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:

CONCESSION	LOT	ROLL NUMBER (Owner)	Section 29 Right-of-Way	Section 30 Damages	TOTALS
BRANCH "D"					
<i>Geographic Westminster</i>					
2	SPt.11& 12	080-030-025 (Country Paws Boarding Inc.)	\$ 5,390.00	\$ 2,180.00	\$ 7,570.00
2	SWPt. 12	080-030-024 (E. & K. Auzins)	2,670.00	2,370.00	5,040.00
Total Allowances			\$ 8,060.00	\$ 4,550.00	\$ 12,610.00
TOTAL ALLOWANCES ON THE HAMPTON-SCOTT DRAIN - BRANCH "D" 2019			\$ 12,610.00		

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SCHEDULE 'B' - COST ESTIMATE

HAMPTON - SCOTT DRAIN
BRANCH "D" 2019
City of London

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

BRANCH "D"

75 meters of open ditch spot cleanout	\$	300.00
439 meters of open ditch cleanout (Approx. 472 m³)	\$	2,400.00
300 meters of open ditch reconstruction (Approx. 1,000 m³)	\$	3,400.00
Seeding of ditch banks (approx. 1,850 m²)	\$	1,700.00
Levelling of excavated material	\$	2,700.00
Clearing & grubbing	\$	10,000.00
Construct four shot rock and quarry stone drop structures where specified		
Sta. 0+261 - 9m³ shot rock and 4m³ quarry stone		
Sta. 0+274 - 9m³ shot rock and 4m³ quarry stone		
Sta. 0+287 - 9m³ shot rock and 4m³ quarry stone		
Sta. 0+300 - 9m³ shot rock and 4m³ quarry stone	\$	10,400.00
Removal & disposal of existing pipe culvert		300.00
Construct the following helical corrugated aluminized steel pipe as new farm culvert		
Sta. 0+415 080-030-025 (Country Paws Boarding Inc.)		
Supply & delivery of 13 m - 1200mm dia, 2.0mm thick, 125mm x 25mm	\$	3,800.00
Installation of pipe including supply and installation of bedding and backfill including supply and install quarry stone rip-rap (Approx. 11m³ Required) disposal of any unacceptable material	\$	6,800.00
Supply & install N.A.G. C-350 Turf Mat at Sta. 0+000 on east bank of Hampton-Scott Main Drain (Approx. 6 m² req'd)	\$	180.00
Contract Security	\$	700.00
Contingencies	\$	3,470.00
Allowances under Sections 29 & 30 of the Drainage Act	\$	12,610.00

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SCHEDULE 'B' - COST ESTIMATE (cont'd

HAMPTON - SCOTT DRAIN - BRANCH 'D' 2019
City of London

ADMINISTRATION

Conservation Authority Review Fee	\$	500.00
Net Harmonized Sales Tax	\$	1,214.00
Survey, Plan and Final Report	\$	16,214.00
Expenses	\$	212.00
Supervision and Final Inspection	\$	<u>4,800.00</u>
TOTAL ESTIMATED COST	\$	<u><u>81,700.00</u></u>

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SCHEDULE 'C' - ASSESSMENT FOR CONSTRUCTION

HAMPTON - SCOTT DRAIN
BRANCH "D" 2019
City of London

Job No. 214181

March 20, 2019

* = Non-agricultural

CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	BENEFIT	OUTLET	TOTAL
BRANCH "D"						
<i>Geographic Westminster</i>						
* 2	S Pt. 11 & 12	9.7	080-030-025 (Country Paws Boarding Inc.)	\$ 23,810.00	\$ 376.00	\$ 24,186.00
2	SW Pt. 12	15.2	080-030-024 (E. & K. Auzins)	9,250.00	2,542.00	11,792.00
* 2	S Pt. 13	4.35	080-030-022-51 (London City)		442.00	442.00
* 2	S Pt. 13	1.3	080-030-022-01 (London City)		132.00	132.00
* 2	S Pt. 13 & 14	2.4	080-030-022 (Brose Canada Inc.)		244.00	244.00
* 2	S Pt. 13	4.9	080-030-067 (Brose Ontario Inc.)		589.00	589.00
2	N Pt. 12	7.4	080-030-064 (S. McNeil & R. Sumner)		1,005.00	1,005.00
2	NE Pt. 13	9.5	080-030-066 (J. & J. Jackson)		1,930.00	1,930.00
* 2	NW Pt. 13	3.2	080-030-068 (K. Wattel)		650.00	650.00
2	N Pts. 13 & 14	38.2	080-030-069 (E. Perl & S. Webb)		6,560.00	6,560.00
2	NE Pt. 15	12.5	080-030-071 (D., J. & A. Beattie & S. Huctwith)		2,488.00	2,488.00
2	NW Pt. 15	9.0	080-030-070 (D., J. & A. Beattie & S. Huctwith)		1,828.00	1,828.00
2	NE Pt. 16	2.4	080-030-072 (W. & B. Panas)		244.00	244.00
* 2	Right-of-Way	15.1	030-280-154 (Hydro One Networks Inc.)		2,590.00	2,590.00
TOTAL ASSESSMENT ON LANDS				\$ 33,060.00	\$ 21,620.00	\$ 54,680.00
Highway No. 401				16.8	Ministry of Transportation	\$ 6,710.00 \$ 16,219.00 \$ 22,929.00
Unopened Road				3.1	Ministry of Transportation	529.00 529.00
Cheese Factory Rd.				1.2	City of London	2,330.00 732.00 3,062.00
Max Brose Drive					City of London	500.00 500.00
TOTAL ASSESSMENT ON ROADS				\$ 9,540.00	\$ 17,480.00	\$ 27,020.00
TOTAL ASSESSMENT ON THE HAMPTON-SCOTT DRAIN BRANCH "D" 2019					\$ 81,700.00	

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SCHEDULE OF NET ASSESSMENT

HAMPTON - SCOTT DRAIN BRANCH "D" 2019 City of London

(FOR INFORMATION PURPOSES ONLY)

Job No. 214181

March 20, 2019

* = Non-agricultural

ROLL NUMBER (OWNER)	TOTAL ASSESSMENT	GRANT	ALLOWANCES	APPROX. NET
<i>Geographic Westminster</i>				
* 080-030-025 (Country Paws Boarding Inc.)	\$ 24,186.00	\$	\$ 7,570.00	\$ 16,616.00
080-030-024 (E. & K. Auzins)	11,792.00	3,931.00	5,040.00	2,821.00
* 080-030-022-51 (London City)	442.00			442.00
* 080-030-022-01 (London City)	132.00			132.00
* 080-030-022 (Brose Canada Inc.)	244.00			244.00
* 080-030-067 (Brose Ontario Inc.)	589.00			589.00
080-030-064 (S. McNeil & R. Sumner)	1,005.00	335.00		670.00
080-030-066 (J. & J. Jackson)	1,930.00	643.00		1,287.00
* 080-030-068 (K. Wattel)	650.00			650.00
080-030-069(E. Perl & S. Webb)	6,560.00	2,187.00		4,373.00
080-030-071(D.,J. & A.Beattie & S. Huctwith)	2,488.00	829.00		1,659.00
080-030-070(D.,J. & A.Beattie & S. Huctwith)	1,828.00	609.00		1,219.00
080-030-072(W. & B. Panas)	244.00	81.00		163.00
* 030-280-154 (Hydro One Networks Inc.)	2,590.00			2,590.00
* Highway No. 401	\$ 22,929.00	\$	\$	\$ 22,929.00
* Unopened Road	529.00			529.00
* Cheese Factory Rd.	3,062.00			3,062.00
* Max Brose Drive	500.00			500.00
TOTALS	\$ 81,700.00	\$ 8,615.00	\$ 12,610.00	\$ 60,475.00

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**SPECIFICATIONS FOR CONSTRUCTION
OF
MUNICIPAL DRAINAGE WORKS**

GENERAL INDEX

SECTION A	General Conditions	Pages 1 to 9
SECTION B	Open Drain	Pages 10 to 12
SECTION C	Tile Drain	Pages 13 to 18
STANDARD DETAILED DRAWINGS		SDD-01 to SDD-05



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SECTION A - GENERAL CONDITIONS I N D E X

SECTION NUMBER	PAGE NO.
A.1 SCOPE.....N/A (Superceded).....	1
A.2 TENDERS...N/A (Superceded).....	1
A.3 DRAWINGS AND SPECIFICATIONS.....	1
A.4 PAYMENT....N/A (Superceded).....	1
A.5 SUPERINTENDENT...N/A (Superceded).....	1
A.6 COMMENCEMENT AND COMPLETION OF WORK.....	2
A.7 WORKING AREA AND ACCESS....N/A (Superceded).....	2
A.8 SUPERVISION.....	2
A.9 INSPECTION...N/A (Superceded).....	2
A.10 ALTERATIONS AND ADDITIONS..N/A (Superceded).....	2
A.11 MAINTENANCE ..N/A (Superceded).....	3
A.12 INSURANCE....N/A (Superceded).....	3
A.13 LIMITATIONS OF OPERATIONS.....	3
A.14 LOSSES.....	3
A.15 SUB-CONTRACTORS.....	3
A.16 PERMITS, NOTICES, LAWS AND RULES...N/A (Superceded).....	3
A.17 ROAD CROSSINGS.....	4
A.18 FENCES.....	6
A.19 LIVESTOCK.....	6
A.20 STANDING CROPS	6
A.21 SURPLUS GRAVEL	6
A.22 RAILWAYS, HIGHWAYS, UTILITIES....N/A (Superceded).....	6
A.23 LOCATION OF UTILITIES...N/A (Superceded).....	7
A.24 TERMINATION OF CONTRACT BY THE MUNICIPALITY...N/A (Superceded).....	7
A.25 ERRORS AND UNUSUAL CONDITIONS...N/A (Superceded).....	7
A.26 IRON BARS	7
A.27 STAKES.....	7
A.28 RIP-RAP.....	8
A.29 GABION BASKETS.....	8
A.30 RESTORATION OF LAWNS.....	8
A.31 RESTORATION OF ROADS AND LANEWAYS.....	9

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SECTION A

GENERAL CONDITIONS

A.1 SCOPE (N/A Superseded)

The work to be done under this specification consists of supplying all labour, materials and equipment to construct the work as outlined on the drawing(s). In some Municipalities, the Contractor shall supply all materials while in other Municipalities, he shall supply only certain materials. The form of Tender and Agreement lists which materials are to be supplied by the Contractor.

A.2 TENDERS (N/A Superseded)

Tenders are to be submitted on a lump sum basis for the complete works or a portion thereof, as set out in the Form of Tender and Agreement.

A.3 DRAWINGS AND SPECIFICATIONS

The tenderer must satisfy himself that he understands the meaning and intent of the drawings and specifications before submission of his tender. The standard specifications have been separated into sections for reference purpose only. They shall be considered complementary and, where a project is controlled under one of the sections, the remaining sections will still apply for miscellaneous works. In case of any inconsistency or conflict in the Tender Documents, the following order of precedence shall apply:

- Contract Drawings
- Form of Tender
- General Conditions
- Standard Specifications (Open Drain, Tile Drain, Specifications for Municipal Drain Crossing County Roads)
- Standard Drawings

A.4 PAYMENT (N/A Superseded)

Progress payments equal to 87±% of the value of the work done and materials incorporated in the work will be made to the Contractor on the written request of the Contractor to the Engineer. An additional 10±% will be paid 45 days after the final acceptance by the Engineer. Before this payment is released, the Contractor shall provide the Municipality with a Statutory Declaration that all material and/or labour incorporated in the work has been fully paid for, along with a Certificate of Clearance from the Workplace Safety and Insurance Board stating that all compensation has been paid. The Municipality will reserve 3%± of the Contract Price for one year as warranty. After the completion of the work, any part of this reserve may be used to correct defects which may develop within that time from faulty workmanship or material or loose backfill, provided that notice shall first be given to the Contractor and that he may promptly make good such defects, if he desires.

A.5 SUPERINTENDENT (N/A Superseded)

The word "Superintendent", as used hereinafter in these specifications, shall refer to a Drainage Superintendent, appointed by the Municipality. The Superintendent will act as the Engineer's representative. The Superintendent shall have the power to direct the execution of the work and to make any necessary minor adjustments. Adjustments in tile sizes or gradients shall not be made without the approval of the Engineer. Any instructions given by the Superintendent, which changes considerably the proposed work or with which the Contractor does not agree, shall be referred to the Engineer for his decision.

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A.6 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.

The Contractor shall give the Engineer and Superintendent a minimum of forty-eight (48) hours notice before commencement of work on any municipal drain. As noted on the plan, he can then arrange for a meeting to be held on the site with the Contractor and affected owners attending to review in detail the construction scheduling and other 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.7 WORKING AREA AND ACCESS (N/A Superseded)

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.8 SUPERVISION

The Contractor shall give the work his constant supervision and shall keep a competent foreman in charge at the site.

A.9 INSPECTION (N/A Superseded)

Final inspection by the Engineer will be made within twenty days after he has received notice in writing from the Contractor that the work is complete.

Periodic inspections by the Engineer or Superintendent will be made during the performance of the work. These interim inspections are required to check such items as location of drainage course and structures, tile grades prior to backfilling, backfilling and miscellaneous work items.

A.10 ALTERATIONS AND ADDITIONS (N/A Superseded)

The Engineer shall have the power to make alterations in the work shown or described in the drawings or specifications and the Contractor shall proceed to make such changes without causing delay. In every such case, the price agreed to be paid for the work under the contract shall be increased or decreased as the case may require according to a fair and reasonable valuation of the work added or deleted. The valuation shall be determined as a result of negotiations between the Superintendent, the Contractor, and the Engineer, but in all cases, the Engineer shall maintain the final responsibility for the decision. Such alterations and variations shall in no way render void the contract. No claim for variations or alterations in the increased or decreased price shall be valid unless done in pursuance of an order from the Engineer and/or Superintendent and notice of such claims made in writing before commencement of such work. In no case shall the Contractor commence work which he considers to be extra work before receiving the Engineer's and/or Superintendent's approval in writing.

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A.11 **MAINTENANCE** (N/A Superceded)

The Contractor shall repair and make good any damages or faults in the drain that may appear within one year after its completion (as dated on the final completion certificate) as the result of imperfect or defective work done or materials furnished by the Contractor. Nothing herein contained shall be construed as in any way restricting or limiting the liability of the Contractor under the laws of the Country, Province or Locality in which the work is being done.

A.12 **INSURANCE** (N/A Superceded)

- 1) Bodily Injury Liability: The Contractor shall effect and maintain, a Comprehensive General Liability Policy or its equivalent, covering claims for bodily injury, including death arising from and during operations under his Contract whether performed by himself, by a sub-contractor or by anyone directly or indirectly employed by either of them in the sum of \$ 2,000,000.00.
- 2) Property Damage: The Contractor shall effect and maintain Property Damage Liability Insurance to cover his and the sub-contractor’s operations in the sum of \$ 1,000,000.00.
- 3) Fire Insurance: The Contractor shall procure fire and extended coverage insurance on the work to 100% of the Contract Amount.
- 4) The following are to be named as co-insured:

Successful Contractor
Sub-Contractor
Municipality
Spriet Associates London Limited
- 5) Within 7 days of award of Contract and prior to commencing work, the successful Contractor shall file with the Municipality, a copy of each insurance policy and certificate required. All such insurance shall be maintained until final completion of the work including the making good of faulty work or materials; except that coverage of completed operations liability shall in any event be maintained for twelve (12) months from the date of final completion as certified by the Engineer.

A.13 **LIMITATIONS OF OPERATIONS**

Except for such work as may be required by the Engineer to maintain the works in a safe and satisfactory condition, the Contractor shall not carry on his operations under the contract on Sundays without permission in writing of the Municipality.

A.14 **LOSSES**

The Contractor shall take all risks from floods or casualties of any kind.

A.15 **SUB-CONTRACTORS**

The Contractor shall not sublet the whole or any part of the contract without the approval of the Engineer or Superintendent.

A.16 **PERMITS, NOTICES, LAWS AND RULES** (N/A Superceded)

The Contractor shall ensure that all necessary permits or licences required for the execution of the work have been obtained (but this shall not include M.T.O. encroachment permits, County Road Permit, permanent easements or rights of servitude). The Contractor shall give all necessary notices and pay all fees required by law and comply with all laws, ordinances, rules and regulations (including the Occupational Health and Safety Act) relating to the work and to the preservation of the public’s health and safety and if the specifications and drawings are at variance therewith, any resulting additional expenses incurred by the Contractor shall constitute an addition to the contract price.

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A.17 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.
- .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.

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.2 Jacking and Boring (cont'd)

- .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.

.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 under side 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.

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.3 Open Cut (cont'd)

The excavated material from the trench beyond a point 1.25 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.18 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.19 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.20 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.21 SURPLUS GRAVEL

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.22 RAILWAYS, HIGHWAYS, UTILITIES (N/A Superceded)

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.

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A.23 UTILITIES (N/A Superceded)

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.24 TERMINATION OF CONTRACT BY THE MUNICIPALITY (N/A Superceded)

If the Contractor should be adjudged bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, or if he should refuse or fail to supply enough properly skilled workmen or proper materials after having received seven (7) days notice in writing from the Engineer to supply additional workmen or materials, or if he should fail to make prompt payment to sub-contractors or for material or labour or persistently disregarding laws, ordinances, or the instruction of the Engineer, or otherwise being guilty of a substantial violation of the provisions of the contract, then the Municipality, upon the certification of the Engineer that sufficient cause exists to justify such action, may without prejudice to any other right or remedy, by giving the contractor written notice, terminate the employment of the contractor and take possession of the premises and of all materials, tools and appliances, thereon, and complete the work by whatever method the Engineer may deem expedient, but without undue delay or expense. In such case, the Contractor shall not be entitled to receive any further payment until the work is completed. If the unpaid balance of the contract price exceeds the expense of completing the work, including compensation to the Engineer for his additional services, such excess shall be paid to the Contractor. If such expense does not exceed such unpaid balance, the Contractor shall pay the difference to the Municipality. The expense incurred by the Municipality, as herein provided, shall be certified by the Engineer. Where a Contractor fails to commence work within seven (7) days of his commencement date as indicated by him on his Tender Form, and such extension of time as allowed due to poor weather or ground conditions, then the Municipality shall have the option, after providing the Contractor with seven (7) days notice of their intention to terminate the contract, award the contract to another Contractor at their discretion by retendering the project, inviting bids or by appointment. The additional costs of the above or retendering, and all other administration costs shall be deducted from the Contractor's bid deposit and the balance, if any, returned to him.

A.25 ERRORS AND UNUSUAL CONDITIONS (N/A Superceded)

The Contractor shall notify the Engineer immediately of any error or unusual condition which may be found. Any attempt by the Contractor to make changes because of the error or unusual condition on his own shall be done at his own risk. Any additional cost incurred by the Contractor to remedy a wrong decision on his part shall be borne by the Contractor.

The Engineer shall make the alteration necessary to correct errors or to adjust for unusual conditions during which time it will be the Contractor's responsibility to keep his men and equipment gainfully employed elsewhere on the project. The contract amount shall be adjusted in accordance with a fair evaluation of the work added or deleted.

A.26 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.27 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.

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A.28 **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 : 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.29 **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.30 **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 contractors operations, imported topsoil from acceptable sources shall be imported at the contractors 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.

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A.30 RESTORATION OF LAWNS (cont'd)

On slopes steeper than 3:1, 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.

- .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 suppliers 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 suppliers 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.31 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.

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SECTION B - OPEN DRAIN

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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, bench marks will govern the final elevation of the drain. Bench marks 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 sideslope 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.

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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.

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 spoilbank. The excavated material shall be placed and levelled to a minimum width to depth ratio of 50:1 unless instructed otherwise. The edge of the spoilbank away from the ditch shall be feathered down to the existing ground; the edge of the spoilbank 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.

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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

The Contractor shall excavate sediment basins prior to commencement of upstream work as shown on the plan and profile. The dimension of the basin will be in a parabolic shape with a depth of 450mm below the proposed ditch bottom and the basin will extend along the drain for a minimum length of 15 meters.
A sediment trap 300mm deep and 5 meters long with silt fence placed across ditch bottom on the downstream end of the trap shall be constructed prior to and maintained during construction, to prevent silt from flushing downstream. 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.

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SECTION C - TILE DRAIN

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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, rivetted 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 tile 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.

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C.3 LINE (cont'd)

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 off site.

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, bench marks will govern the final elevation of the drain. Bench marks 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.

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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.
- .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.

SPRIET ASSOCIATES

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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 fenceline, 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.

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C.14 TRIBUTARY DRAINS (cont'd)

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 pre-fabricated adaptor. All other connections shall be made with pre-fabricated 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.

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.

SPRIET ASSOCIATES

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C.16 CATCHBASINS AND JUNCTION BOXES (cont'd)

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 releveled 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.

SPRIET ASSOCIATES

HALF ELEVATION

- QUARRY STONE RIP-RAP PROTECTION AT EACH END
- GEOTEXTILE (MIRAFI 160N OR APPROVED EQUIVALENT)
- EXISTING DITCH BANK
- PROPOSED PIPE CULVERT
- EXIST. DITCH BOTTOM
- BEDDING TO BE SHAPED TO RECEIVE PIPE FOR A WIDTH OF ONE-HALF DIA. OF PIPE
- INVERT OF PIPE TO BE 150mm BELOW NEW DITCH BOTTOM
- VARIABLES
- 300mm (MIN COVER)
- VARIES
- 600mm
- 450mm

HALF SECTION

- EXISTING GROUND
- TYPE 1 & 2 SOIL
- TYPE 3 & 4 SOIL
- GRANULAR "B" OVER & BACKFILL MATERIAL TO BE PLACED IN 150mm LAYERS ON EACH SIDE SIMULTANEOUSLY AND COMPACTED TO 95% OF STANDARD PROCTOR DRY DENSITY.
- GRANULAR "A" BEDDING MATERIAL TO BE PLACED IN 150mm LAYERS ON EACH SIDE SIMULTANEOUSLY AND COMPACTED TO 95% OF STANDARD PROCTOR DRY DENSITY.
- 1.2m
- 300mm
- 450mm
- 600mm

HALF SECTION THROUGH PIPE

- ROADWAY
- 3.0m (MIN)
- 1/2 TRAVEL PORTION
- 2.0%
- QUARRY STONE RIP-RAP
- MIN. 2.0mm THICKNESS HELICAL CORRUGATED METAL PIPE WITH 125mm x 25mm CORRUGATIONS
- 1.5
- 1
- EXISTING DITCH BOTTOM
- 450mm
- 300mm
- INVERT TO BE AS SHOWN ON PROFILE BELOW.
- GRANULAR "A" BEDDING FOR 300mm DEPTH UNDER PIPE
- GEOTEXTILE (MIRAFI 160N OR APPROVED EQUIVALENT)

NOTES

- 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 DETAILS			
Scale: N.T.S.	Approved by:	Date: January 1983	
Drawn by: jk	M.P.D.	Revised: November 2000	
ELEVATION & SECTION			STANDARD DETAILED DRAWING
SPRIET ASSOCIATES LONDON LIMITED CONSULTING ENGINEERS ARCHITECTS			No. 01

Appendix 'A2': Hampton-Scott
Engineer's Report

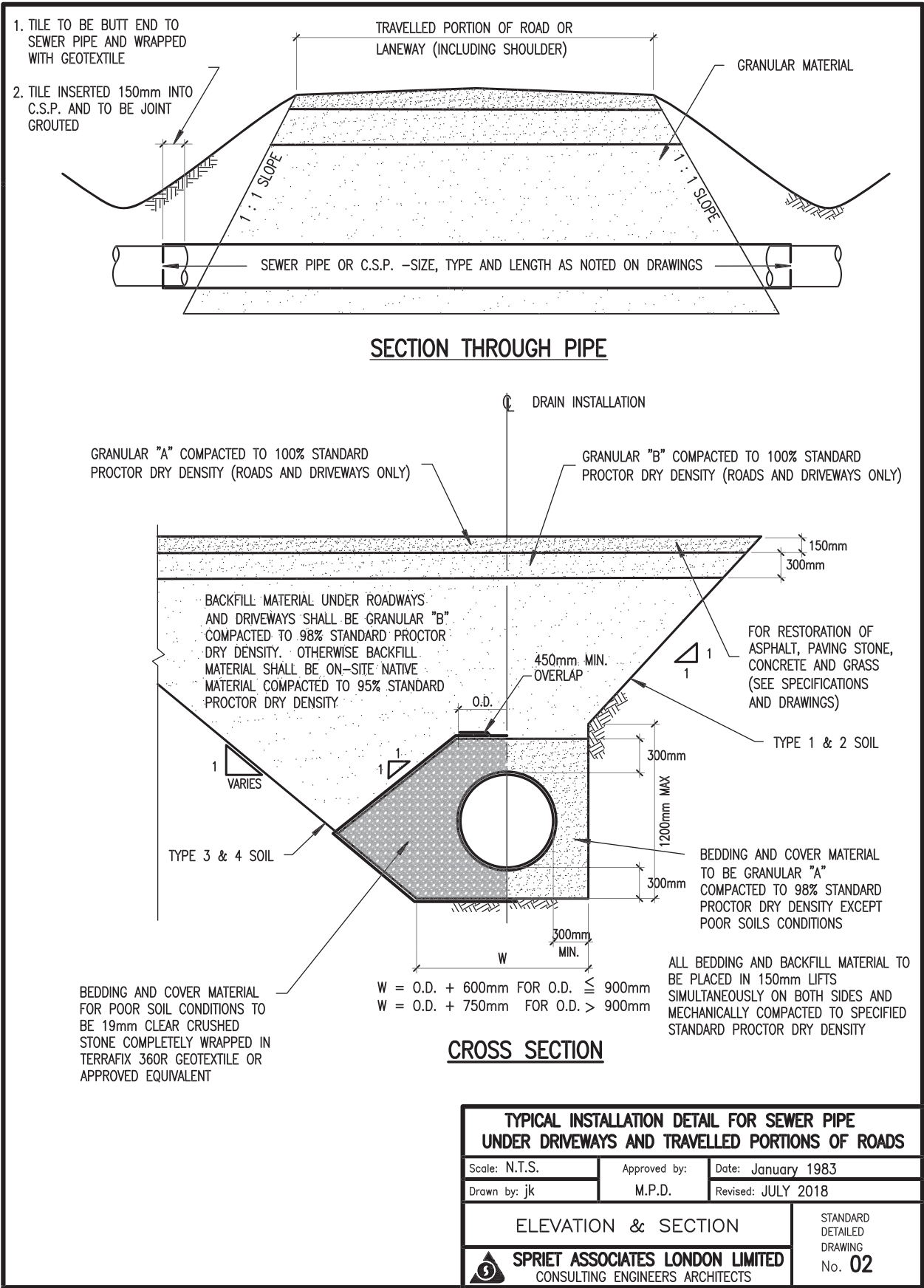


Diagram illustrating the plan view of a ditch outlet. The outlet pipe is shown entering the ditch, angled with the flow. The rip-rap area is defined by dimensions: 0.75m width and 0.75m depth. The flow direction is indicated by an arrow labeled 'FLOW'.

PLAN

NOTES

1. WHERE THE DISTURBED AREA EXCEEDS THE MIN. WIDTHS, RIP-RAP TO EXTEND TO A MIN. OF 600mm BEYOND THE DISTURBED AREA

Diagram illustrating the typical outlet rip-rap through the side slope of a ditch. The diagram shows the ditch bottom, the rip-rap area (quarry stone rip-rap), and the outlet pipe. Key dimensions and materials include:

- QUARRY STONE RIP-RAP (0.75m UPSTREAM & 0.75m DOWNSTREAM)
- 300mm OR AS SPECIFIED
- DITCH BOTTOM
- 0.5 m
- 1.5
- 300mm
- 100 TO 450mm DIA. - MIN. LENGTH 3m
- 450mm AND GREATER DIA. - MIN. LENGTH 6m
- OUTLET PIPE
- GEOTEXTILE (MIRAFI 160N OR APPROVED EQUIVALENT)
- 450mm
- 300mm
- TILE TO BE INSERTED 150mm INTO C.M.P. AND GROUTED

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

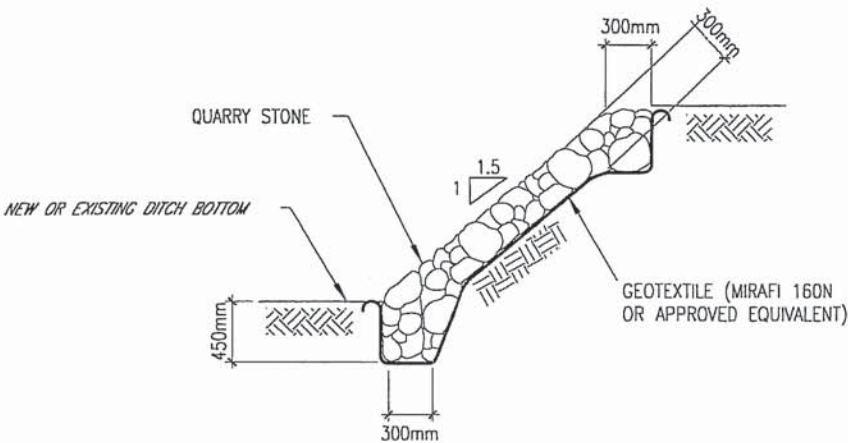
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Drawn by: jk	M.P.D.	Revised: January 2009

PLAN & SECTION

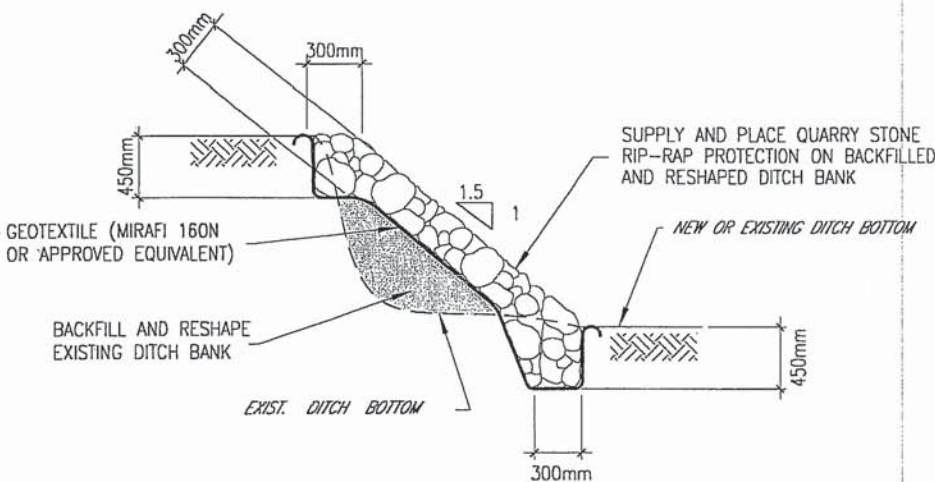
SPRIET ASSOCIATES LONDON LIMITED
CONSULTING ENGINEERS ARCHITECTS

STANDARD
DETAILED
DRAWING
No. 03

Appendix 'A2': Hampton-Scott
Engineer's Report



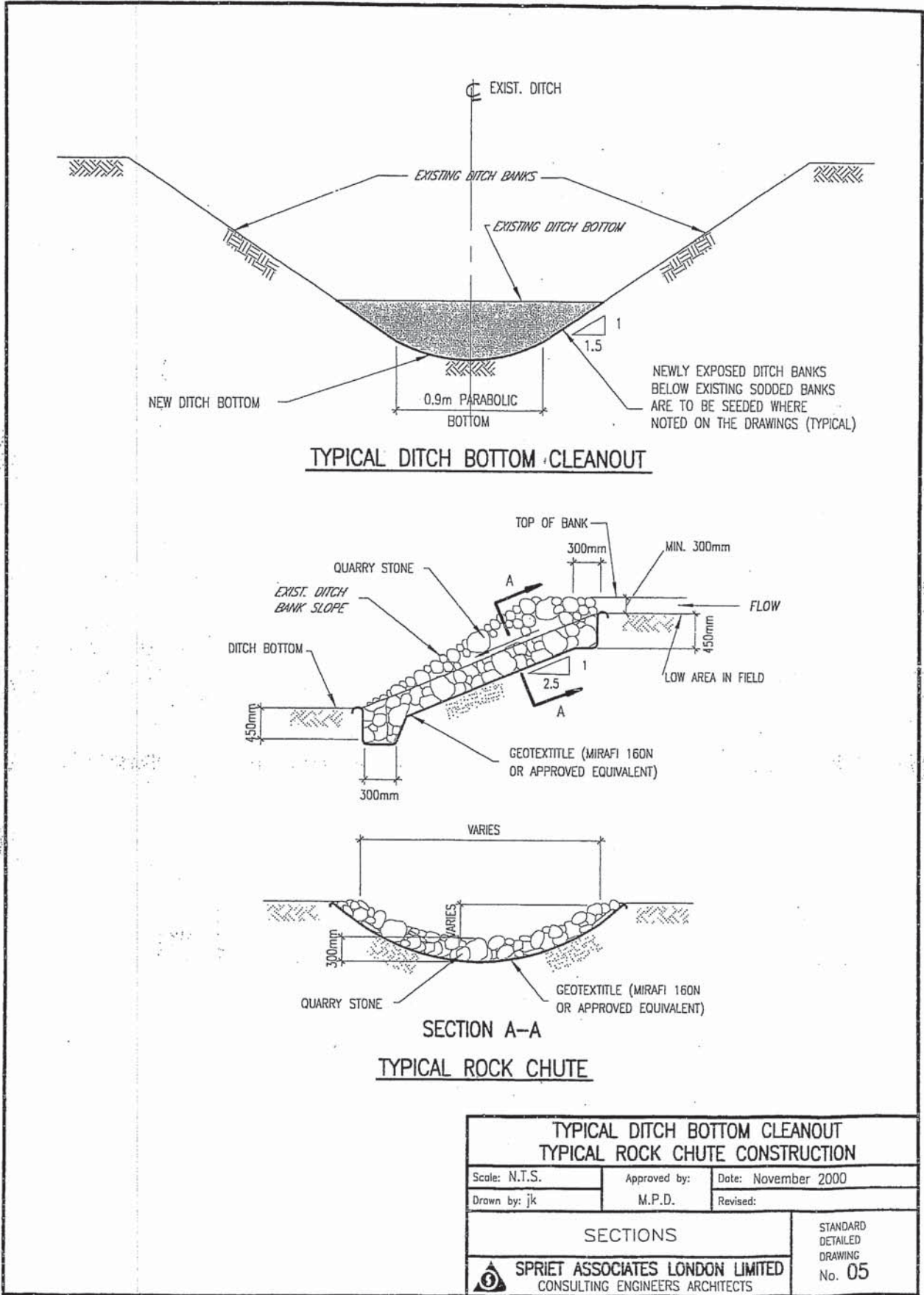
TYPICAL DITCH BANK RIP-RAP



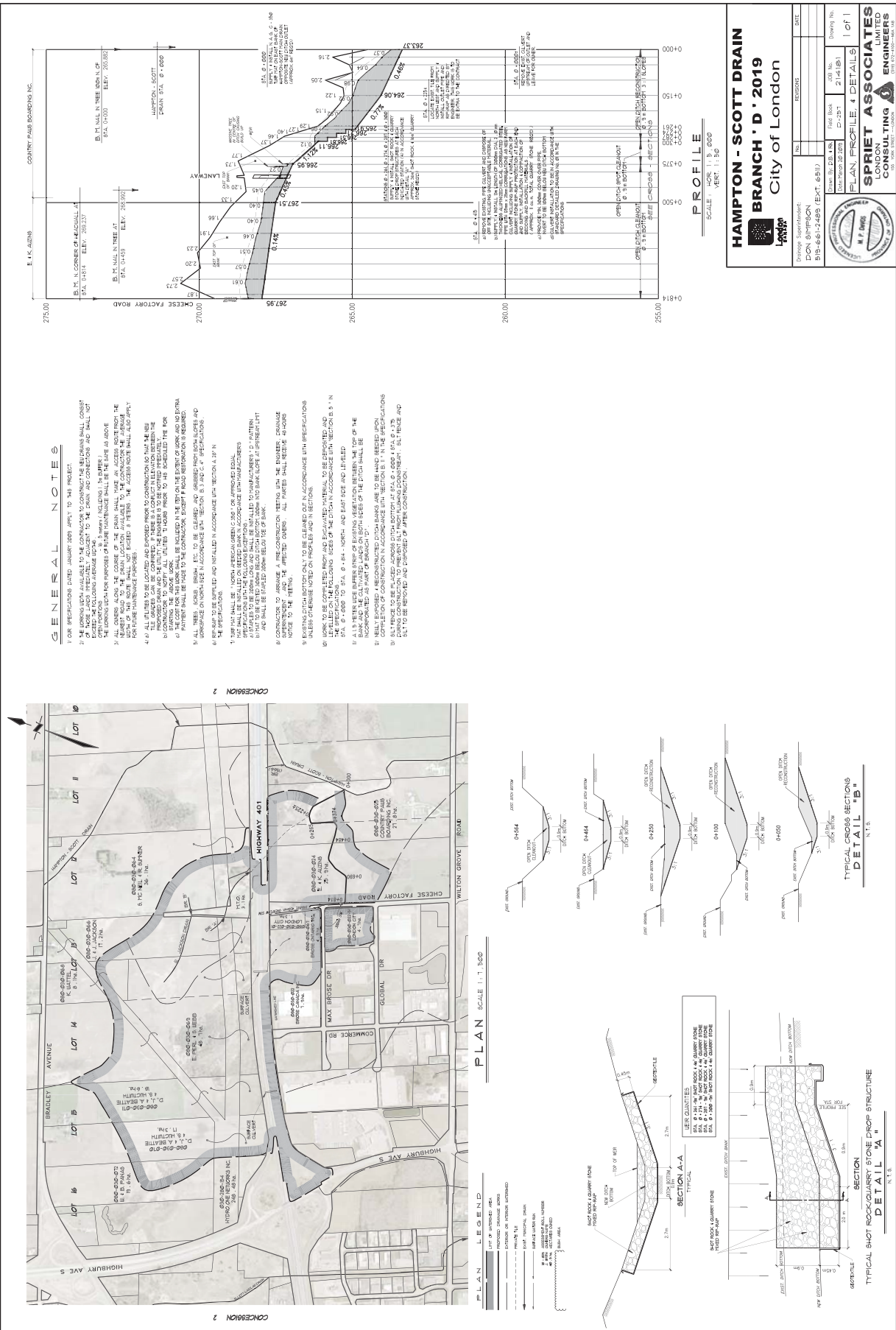
TYPICAL DITCH BANK RIP-RAP
WITH BACKFILLING OF WASHOUT

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			

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Engineer's Report



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Bill No.

By-law No.

A By-law to provide for a Drainage Works in the City of London. (Construction of the Crinklaw-Scott Municipal Drain 2018).

WHEREAS the Municipal Council of The Corporation of the City of London appointed Spriet Associates London Ltd, pursuant to section 4 of the Drainage Act, R.S.O. 1990, Chapter D. 17, to prepare a report on the construction of the Crinklaw-Scott Municipal Drain 2018.

AND WHEREAS the Municipal Council of The Corporation of the City of London at its meeting on June 25, 2019 adopted the said Consulting Engineers' report dated December 20, 2018.

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

1. The report dated December 20, 2018 prepared by Spriet Associates London Limited, for the construction Crinklaw-Scott Municipal Drain 2018 as described as the southwest part of Lot2, southeast part of Lot 3, Concession 3 in the Municipality of Thames Centre and the southwest part of Lot 2, southeast part of Lot 3, Concession 3 in the City of London at an estimated cost of \$44,100.00 is hereby adopted and the undertaking and completion of the drainage works outlined in the said 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 cost estimates for the drainage works set out in Schedule "B" of this by-law are hereby approved.
4. The assessments for construction for this drainage works set out in Schedule "C" of this by-law are hereby approved and shall be levied upon the lands, including roads, listed in Schedule "C" of this by-law.
5. The Corporation of the City of London may borrow on the credit of the Corporation the amount of \$44,100.00, being the amount necessary for the construction of this drainage works.
6. All of the assessments for this drainage works set out in Schedule "C" of this by law are payable in the year in which the assessments are imposed, and any outstanding assessments may be collected in the same manner and at the same time as other municipal taxes are collected.
7. This by-law comes into force on the day it is passed.

PASSED in Open Council on

Ed Holder
Mayor

Catharine Saunders
City Clerk

First Reading – June 25, 2019
Second Reading – June 25, 2019
Third Reading --

Bill No.

By-law No.

A By-law to provide for a Drainage Works in the City of London. (Construction of Branch 'D' of the Hampton-Scott Municipal Drain-2019).

WHEREAS the Municipal Council of The Corporation of the City of London appointed Spriet Associates London Ltd, pursuant to section 4 of the Drainage Act, R.S.O. 1990, Chapter D. 17, to prepare a report on the construction of Branch 'D' of the Hampton-Scott Municipal Drain.

AND WHEREAS the Municipal Council of The Corporation of the City of London at its meeting on June 25, 2019 adopted the said Consulting Engineers' report dated March 20, 2019.

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

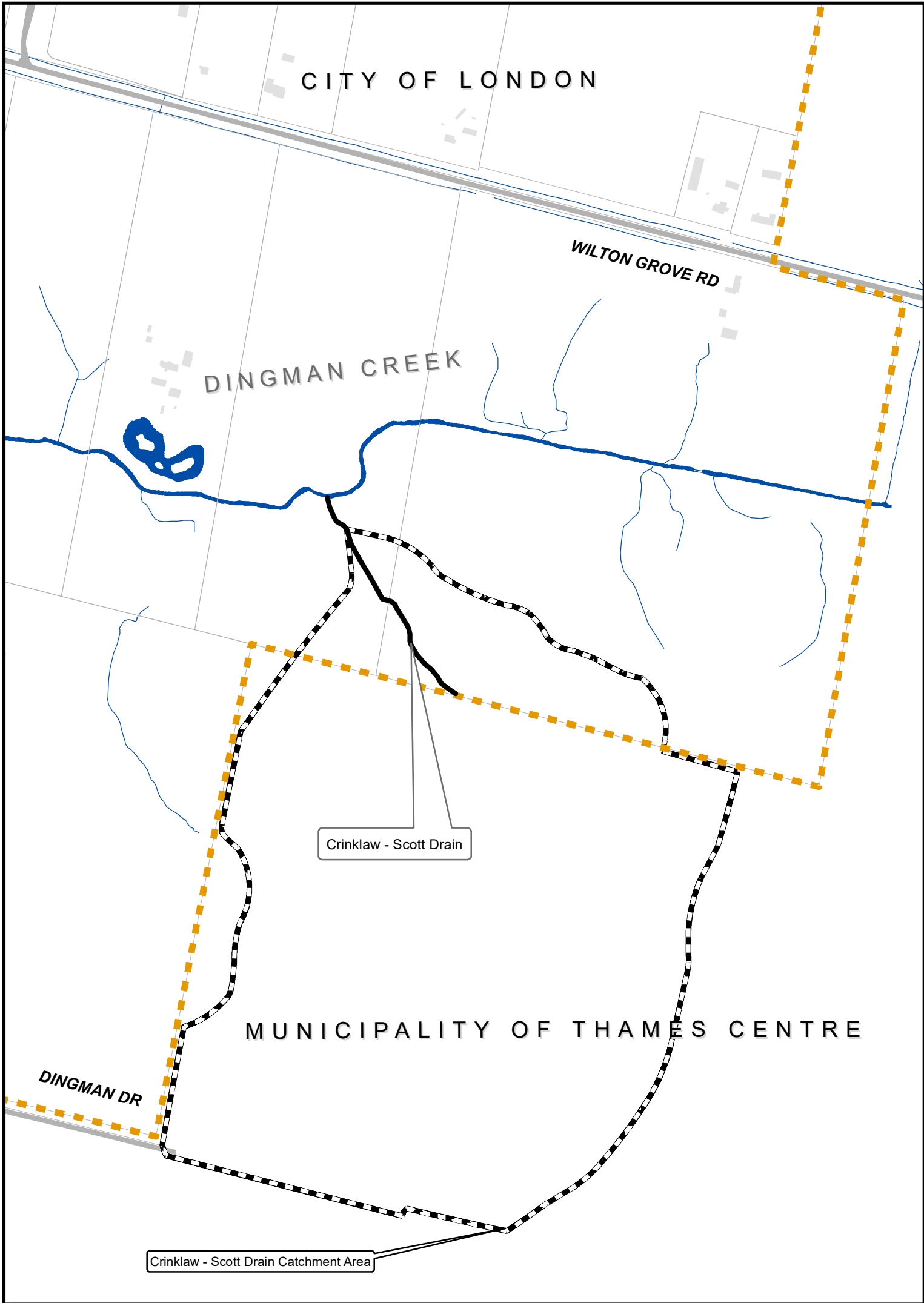
1. The report dated March 20, 2019 prepared by Spriet Associates London Limited, for the construction of Branch 'D' of the Hampton-Scott Municipal Drain as described as parts of the south half of Lots 11 and 12, Concession 2 in the City of London at an estimated cost of \$81,700.00 is hereby adopted and the undertaking and completion of the drainage works outlined in the said 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 cost estimates for the drainage works set out in Schedule "B" of this by-law are hereby approved.
4. The assessments for construction for this drainage works set out in Schedule 'C' of this by-law are hereby approved and shall be levied upon the lands, including roads, listed in Schedule "C" of this by-law.
5. The Corporation of the City of London may borrow on the credit of the Corporation the amount of \$81,700.00, being the amount necessary for the construction of this drainage works.
6. All of the assessments for this drainage works set out in Schedule "C" of this by law are payable in the year in which the assessments are imposed, and any outstanding assessments may be collected in the same manner and at the same time as other municipal taxes are collected.
7. This by-law comes into force on the day it is passed.

PASSED in Open Council on

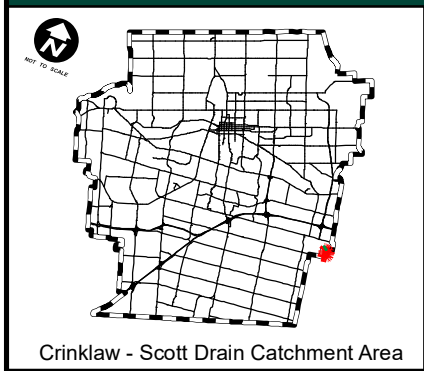
Ed Holder
Mayor

Catharine Saunders
City Clerk

First Reading – June 25, 2019
Second Reading – June 25, 2019
Third Reading --

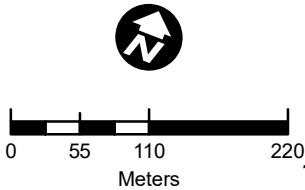


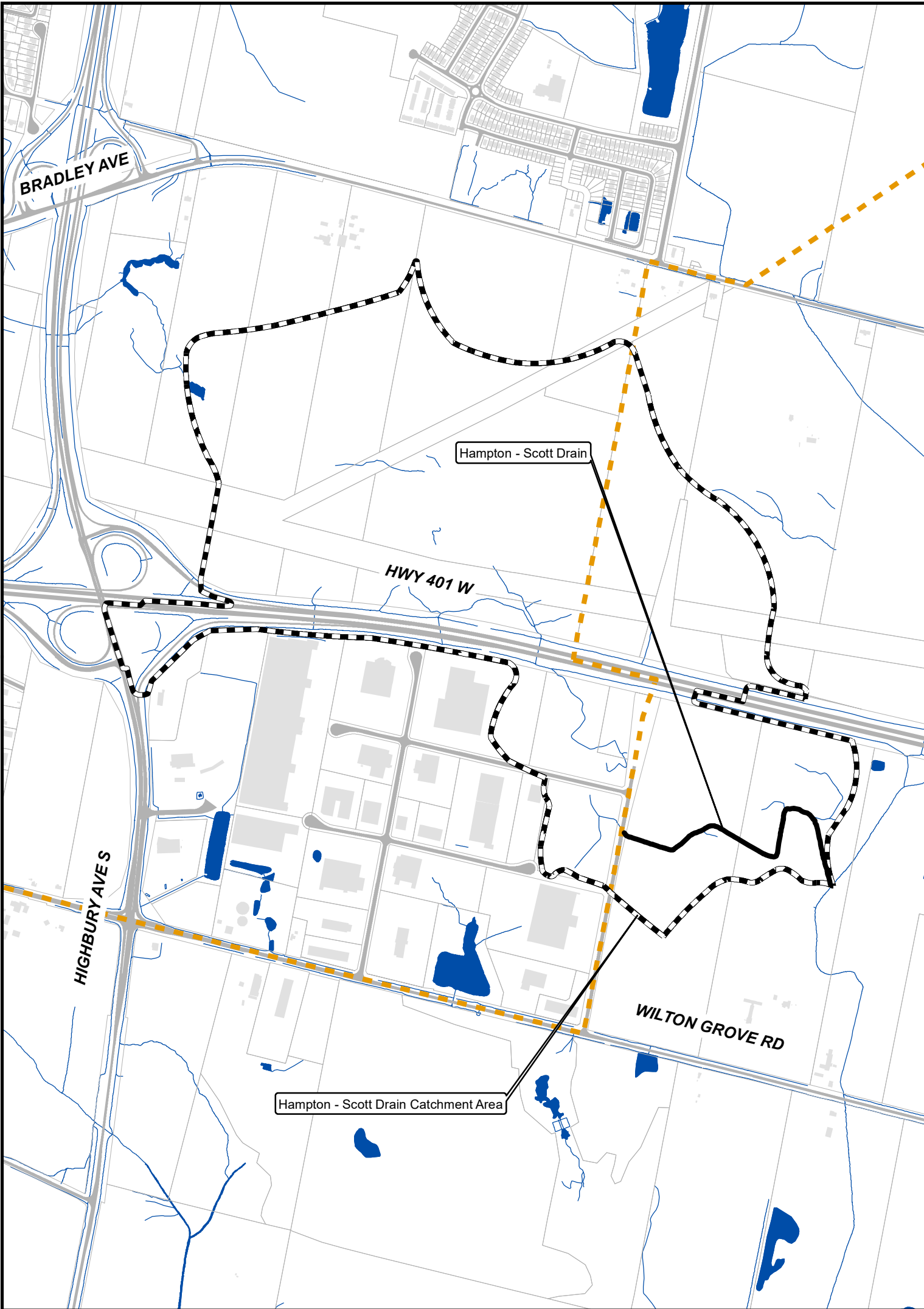
APPENDIX 'C' - LOCATION MAP - CRINKLAW - SCOTT DRAIN



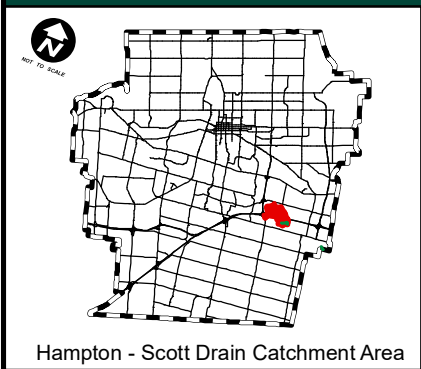
Legend

- Crinklaw-Scott Drain
- City of London Limits
- Crinklaw-Scott Drain Catchment Area
- Major Roads
- Waterways
- Water body



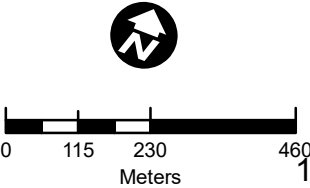


APPENDIX 'C' - LOCATION MAP - HAMPTON - SCOTT DRAIN



Legend

- Hampton-Scott Drain
- Major Roads
- Waterways
- Water body
- Hampton - Scott Drain Catchment Area
- Urban Growth Boundary



Map Produced by
Stormwater Engineering
Printed: May 2019

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London, Ontario
N6A 4L9
www.London.ca



TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON JUNE 18, 2019
FROM:	KELLY SCHERR, P. Eng., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER
SUBJECT:	APPOINTMENT OF CONSULTING ENGINEERS INFRASTRUCTURE RENEWAL PROGRAM

RECOMMENDATION

That on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, the following actions **BE TAKEN** with respect to the appointment of consulting engineers for the Infrastructure Renewal Program:

- a) The following consulting engineers **BE APPOINTED** to carry out consulting services for the identified 2020 – 2021 Infrastructure Renewal Program funded projects, at the upset amounts identified below, in accordance with the estimate on file, and in accordance with Section 15.2(e) of the City of London's Procurement of Goods and Services Policy:
 - (i) AECOM Canada Limited **BE APPOINTED** consulting engineers to complete the pre-design and detailed design of the 2020 City Centre Servicing Strategy Program Phase 3, Richmond Street from York Street to Dundas Street reconstruction, in the total amount of \$358,015.00 (including contingency), excluding HST;
 - (ii) Development Engineering (London) Limited **BE APPOINTED** consulting engineers to complete the pre-design, detailed design and construction administration of the 2020 Infrastructure Renewal Program Contract 1, Oxford Park South Area Reconstruction Phase 1, Britannia Avenue from Riverside Drive to Edinburgh Street, and Tozer Avenue, all, in the total amount of \$224,647.50 (including contingency), excluding HST;
 - (iii) Archibald, Gray and McKay Engineering Limited **BE APPOINTED** consulting engineers to complete the pre-design, detailed design and construction administration of the 2020 Infrastructure Renewal Program Contract 2, Euclid Avenue from Wharncliffe Road to Wortley Road, and Birch Street from Byron Avenue to Euclid Avenue reconstruction, in the total amount of \$372,218.00 (including contingency), excluding HST;
 - (iv) Spriet Associates (London) Limited **BE APPOINTED** consulting engineers to complete the pre-design, detailed design and construction administration of the 2020 Infrastructure Renewal Program Contract 12, Hyla Street from Hamilton Road to Trafalgar Street, and Elm Street from Hamilton Road to Trafalgar Street reconstruction, in the total amount of \$369,245.80 (including contingency), excluding HST;
 - (v) AECOM Canada Limited **BE APPOINTED** consulting engineers to complete the pre-design and detailed design of the 2021 Infrastructure Renewal Program Assignment 'A', English Street from Dundas Street to Princess Avenue, and Lorne Avenue from English Street to 100m east reconstruction in the total amount of \$199,990.00 (including contingency), excluding HST;
- b) Archibald, Gray and McKay Engineering Limited **BE APPOINTED** consulting engineers to complete the pre-design and detailed design of the 2020 Infrastructure Renewal Program Contract 10, Egerton Street Phase 3 reconstruction, in the total amount of \$173,800.00 (including contingency), excluding HST, in accordance with the estimate on file, and in accordance with

Section 15.2(g) of the City of London’s Procurement of Goods and Services Policy;

- c) The financing for the projects identified in (a) and (b) above **BE APPROVED** in accordance with the “Sources of Financing Report” attached, hereto, as Appendix ‘A’;
- d) The Civic Administration **BE AUTHORIZED** to undertake all the administrative acts that are necessary in connection with this work;
- e) The approvals given, herein, **BE CONDITIONAL** upon the Corporation entering into a formal contract with each consultant for the respective project; and
- f) The Mayor and City Clerk **BE AUTHORIZED** to execute any contract or other documents, if required, to give effect to these recommendations.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

- CWC – May 26, 2014 – Appointment of Consulting Engineers, Infrastructure Lifecycle Renewal Program 2015-2016;
- CWC – July 17, 2017 – Appointment of Consulting Engineers, Infrastructure Renewal Program 2017-2019;
- CWC – March 19, 2018 – Contract Award: Tender No. 18-03, 2018 Infrastructure Renewal Program Egerton Street and King Street Phase 1 Reconstruction Project;
- CWC – February 20, 2019 – Contract Award: Tender No. RFT 19-02, 2019 Infrastructure Renewal Program Egerton Street, Brydges Street and Pine Street Phase 2 Reconstruction Project; and
- CWC – May 28, 2018 – Revised Grouped Consultant Selection Process.

2019 – 2023 STRATEGIC PLAN

The following report supports the 2019 – 2023 Strategic Plan through the strategic focus area of Building a Sustainable City including:

- London’s infrastructure is built, maintained, and operated to meet the long-term needs of our community; and
- London has a strong and healthy environment.

BACKGROUND

Purpose

The purpose of this report is to award engineering consultant appointments for the Infrastructure Renewal Program. These consultant appointments will lead to infrastructure construction projects in 2020 and 2021, including several phased and multi-year projects. A detailed project list, including timing and project limits, is contained in Appendix ‘B’. Project maps are contained in Appendix ‘C’.

Context

The Infrastructure Renewal Program is an annual program intended to maintain the lifecycle and operation of municipal infrastructure at an acceptable performance level. The engineering consultants work with City staff to complete the Infrastructure Renewal Program projects and meet the challenging infrastructure lifecycle replacement needs. The engineering consulting work recommended within this report will support the reconstruction of an estimated \$20,000,000.00 of capital infrastructure over two construction seasons.

DISCUSSION

Procurement Process: 2020 – 2021 Infrastructure Renewal Program

The engineering consultant selection procedure for the 2020 – 2021 Infrastructure Renewal Program utilized a grouped consultant selection process developed in partnership with the Purchasing and Supply Division, and subsequently endorsed by Council (CWC May 28, 2018). This two-stage grouped procurement process is in accordance with Section 15.2(e) of the Procurement of Goods and Services Policy.

The first stage of the process is an open, publicly advertised Request for Qualifications. Statement of Qualifications submissions were received from a province wide group of seventeen prospective consultants. The Statement of Qualifications were evaluated by the Environmental Engineering Services Department resulting in a short-list group of twelve engineering consulting firms. This short-list of twelve firms will be retained for a two year period (through the 2021 procurement period). After this period, the Request for Qualifications process will be initiated again.

The second stage of the process is a competitive Request for Proposal. Consultants from the short listed group are invited to submit a formal proposal to undertake a specific preferred engineering assignment identified by the consultant in their Statement of Qualifications submission. Three consultants were invited to submit a proposal for each of the identified project assignments.

An evaluation of the proposals was undertaken by the Environmental Engineering Services Department including both a technical and cost component. Engineering consultants are recommended based on their knowledge and understanding of project goals, their experience on directly related projects, their project team members, capacity and qualifications, and overall project fee.

The construction administration fee portion of the engineering consultant assignments is included for those projects of lower complexity, and for projects where construction administration fees can be reasonably estimated prior to the start of the design. Including the construction administration fees as part of the initial consultant assignment reduces the number of required reports to committee and reduces the time required to award the final construction contract. Of the five projects, the construction administration fee is included in three of the consultant assignments.

Work Description

The Infrastructure Renewal Program projects include watermain and sewer replacement/repairs, as well as restoration of areas disturbed by the construction activity. The scope of each project varies in length and depends on the infrastructure components requiring rehabilitation or replacement. In some cases full road reconstruction, including traffic signal and street light replacement, will be part of the overall project.

The City infrastructure design groups within each engineering division work closely together to co-ordinate infrastructure repair, rehabilitation and replacement. City staff prepare a list of the highest priority projects, taking into consideration condition assessment, capacity, criticality of the infrastructure link, and the safety and social impacts should the infrastructure link fail. City staff meet regularly throughout the year to co-ordinate their respective priorities, with the goal of aligning construction projects so more than one infrastructure element can be renewed, which significantly reduces social disruption and saves on construction costs. Design work starts early in the budget cycle, which allows projects to be tendered early in the new calendar year, so the most competitive construction pricing can be realized.

This report recommends the appointment of engineering consultants for five projects assignments as identified in Appendix 'B'. Four of the projects are scheduled for construction in 2020, and one will be constructed in 2021. The project planned to be

constructed in 2021 is a larger and more complex project and includes a design phase that will span two years. The proposed construction year and physical limits of the project assignments are summarized in Appendix ‘B’ and a location map is provided for each project in Appendix ‘C’.

Funds have been budgeted in the transportation, water and sewer capital budgets to support the engineering design work for the projects identified in Appendix ‘A’, “Sources of Financing Report”. The design and construction administration fees for the new projects, recommended for approval in this report, are summarized in Table 1 below. All values below include 10% contingency and exclude HST.

Table 1 – New Project Approval Summary

Contract	Street	Consultant	Design Fee	Construction Administration Fee	Total Fee
2020 City Centre Servicing Strategy Program Phase 3	Richmond Street	AECOM Canada Limited	\$358,015.00	-	\$358,015.00
2020 Infrastructure Renewal Program 1	Oxford Park South Phase 1 – Britannia Avenue & Tozer Avenue	Development Engineering (London) Limited	\$103,279.00	\$121,368.50	\$224,647.50
2020 Infrastructure Renewal Program 2	Euclid Ave and Birch Street	Archibald, Gray and McKay Engineering Limited	\$189,293.50	\$182,924.50	\$372,218.00
2020 Infrastructure Renewal Program 12	Elm Street and Hyla Street	Spriet Associates (London) Limited	\$167,099.90	\$202,145.90	\$369,245.80
2021 Infrastructure Renewal Program ‘A’	English Street and Lorne Avenue	AECOM Canada Limited	\$199,990.00	-	\$199,990.00

2020 Infrastructure Renewal Program Contract 10, Egerton Street Phase 3

This report also recommends appointment of Archibald, Gray and McKay Engineering Limited to complete the pre-design and detailed design for the 2020 Infrastructure Renewal Program Contract 10, Egerton Street Phase 3 reconstruction project. It is recommended that the existing consultant continue with the design assignment to achieve efficiencies in the delivery and execution of this multi-phase project.

The recommended Phase 3 design fee is \$173,800.00 (including contingency), excluding HST. The total fee to date for the project, including the Phase 1 design fee of \$471,680.00 (CWC May 26, 2014), the Phase 2 design fee of \$334,401.00 (CWC July 17, 2017), the Phase 1 construction administration fee of \$480,656.00 (CWC March 19, 2018), the Phase 2 construction administration fee of \$429,880.00 (CWC February 20, 2019) and the recommended Phase 3 design fee within this report, is \$1,890,417 (including contingency), excluding HST. For context, the total construction cost to date for the project, including the Phase 1 tender award of \$5,799,999.00 (CWC March 19, 2018), the Phase 2 tender award of \$5,723,375.76 (CWC February 20, 2019) and the Phase 3 preliminary cost estimate of \$3,720,000.00 is \$15,243,374.76 (including contingency), excluding HST. It is noted that if the performance of the consultant

continues to be of high quality and their fees are appropriate, a future recommendation will be made for a construction administration assignment in tandem with the award of the construction contract for Phase 3. The proposed construction year and physical limits of the project assignment is summarized in Appendix ‘B’ and a location map is provided in Appendix ‘C’.

It is recommended that Archibald, Gray and McKay Engineering Limited continue with the design assignment because of their satisfactory completion of previous work on the project, and the ensuing nature of the additional design efforts.

This approach is consistent with section 15.2(g) of the Procurement of Goods and Services Policy. Section 15.2(g) of the Procurement of Goods and Services Policy provides that a consulting firm, which has satisfactorily partially completed a project, may be recommended for award of the balance of a project without competition, subject to satisfying all financial, reporting and other conditions contained within this policy. This should be financially beneficial to the city because such a consultant has specific knowledge of the project and has undertaken work for which duplication would be required if another firm were to be selected.

CONCLUSIONS

Replacing infrastructure at the end of its lifecycle is essential to building a sustainable city. The recommended engineering consultant assignments for the 2020 – 2021 Infrastructure Renewal Program are another step forward in replacing London’s aging infrastructure. The projects discussed within this report have been identified as high priority due to the age, poor condition and associated risk of failure associated with the infrastructure.

In the spirit of continuous improvement, the process for undertaking engineering consultant appointments will continue to evolve ensuring the City achieves the best value through a transparent, fair and competitive process. All the firms recommended through this engineering consultant appointment have shown their competency and expertise with infrastructure replacement projects of this type. The Infrastructure Renewal Program will continue to ensure high value and endeavour to achieve a consistently high degree of public satisfaction.

Acknowledgements:

This report was prepared by Kyle Chambers, Environmental Services Engineer; David Gough, Environmental Services Engineer; and Doug Harron, Senior Technologist.

SUBMITTED BY:	SUBMITTED BY:
TOM COPELAND, P. ENG. DIVISION MANAGER WASTEWATER AND DRAINAGE ENGINEERING	AARON ROZENTALS, P.ENG. DIVISION MANAGER WATER ENGINEERING DIVISION
REVIEWED AND CONCURRED BY:	RECOMMENDED BY:
SCOTT MATHERS, MPA, P.ENG. DIRECTOR, WATER AND WASTEWATER ENGINEERING	KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER

AR/dh

Attach: Appendix 'A' – Sources of Financing
Appendix 'B' – Project Information List
Appendix 'C' – Location Maps
cc. John Freeman, Manager, Purchasing and Supply
Gary McDonald, Budget Analyst
AECOM Canada Ltd, 410 – 250 York Street, Citi Plaza, N6A 6K2
Spriet Associates, 155 York Street, N6A 1A8
Archibald, Gray & McKay Engineering, 3514 White Oak Road, N6E 2Z9
Development Engineering Ltd., 41 Adelaide St N, Unit 71, N6B 3P4

Chair and Members
Civic Works Committee

June 18, 2019
(Appoint Consulting Engineers)

RE: Infrastructure Renewal Program
Capital Project ES241419 - Sewer Infrastructure Lifecycle Renewal
Capital Project ES242818 - Erosion Remediation Open Watercourses Management and Reclamation
Capital Project EW376519 - Water Infrastructure Lifecycle Renewal
Capital Project TS144619 - Road Networks Improvements (Main)
Capital Project TS512318 - Street Light Maintenance
AECOM Canada Limited - \$358,015.00 (excluding H.S.T.) - Phase 3 - (Subledger WW200001)
Development Engineering (London) Limited - \$224,647.50 (excluding H.S.T.) - Contract 1 - (Subledger WS20C001)
Archibald, Gray & McKay Engineering Limited - \$372,218.00 (excluding H.S.T.) - Contract 2 - (Subledger WS20C002)
Spriet Associates (London) Limited - \$369,245.80 (excluding H.S.T.) - Contract 12 - (Subledger WS20C012)
AECOM Canada Limited - \$199,990.00 (excluding H.S.T.) - Assignment 'A' - (Subledger WS21C00A)
Archibald, Gray & McKay Engineering Limited - \$173,800.00 (excluding H.S.T.) - Contract 10 - (Subledger WS20C010)

FINANCE & CORPORATE SERVICES REPORT ON THE SOURCES OF FINANCING:

Finance & Corporate Services confirms that the cost of this project can be accommodated within the financing available for it in the Capital Works Budget and that, subject to the adoption of the recommendations of the Managing Director, Environmental & Engineering Services & City Engineer, the detailed source of financing for this project is:

SUMMARY OF ESTIMATED EXPENDITURES	Approved Budget	Revised Budget	Committed to Date	This Submission	Balance for Future Work
<u>ES241419-Sewer Infra. Lifecycle Renewal</u>					
Engineering	\$2,500,000	\$2,500,000	\$564,321	\$741,673	\$1,194,006
Construction	10,858,000	10,858,000	9,106,627		1,751,373
Construction (PDC Portion)	191,600	191,600	191,600		0
Construction (London Hydro)	7,500	7,500	7,500		0
Construction (Bell)	841,680	841,680	841,680		0
City Related Expenses	20,000	20,000	77		19,923
	14,418,780	14,418,780	10,711,805	741,673	2,965,302
<u>ES242818-Erosion Remediation Open Watercourses Management and Reclamation</u>					
Engineering	266,059	266,059	235,931	30,128	0
Construction	426,997	426,997	643		426,354
	693,056	693,056	236,574	30,128	426,354
<u>EW376519-Water Infra. Lifecycle Renewal</u>					
Engineering	1,500,000	1,500,000	357,042	735,053	407,905
Construction	8,000,000	8,000,000	3,025,269		4,974,731
	9,500,000	9,500,000	3,382,311	735,053	5,382,636
<u>TS144619-Road Networks Improvements</u>					
Engineering	995,411	995,329	367,549	182,262	445,518
Construction	12,923,889	12,923,971	12,923,971		0
	13,919,300	13,919,300	13,291,520	182,262	445,518
<u>TS512318-Street Light Maintenance</u>					
Engineering	257,990	293,795	255,111	38,684	0
Construction	1,991,088	1,955,283	1,390,923		564,360
Relocate Utilities	1,351,364	1,351,364	460,781		890,583
	3,600,442	3,600,442	2,106,815	38,684	1,454,943
NET ESTIMATED EXPENDITURES	<u>\$42,131,578</u>	<u>\$42,131,578</u>	<u>\$29,729,025</u>	<u>\$1,727,800</u>	<u>\$10,674,753</u>
<u>SUMMARY OF FINANCING:</u>					
<u>ES241419-Sewer Infra. Lifecycle Renewal</u>					
Capital Sewer Rates	\$8,978,000	\$8,978,000	\$8,978,000		\$0
Federal Gas Tax	4,400,000	4,400,000	693,025	741,673	2,965,302
Other Contributions (Bell, London Hydro)	849,180	849,180	849,180		0
Cash Recovery from Property Owners (PDC Portion)	191,600	191,600	191,600		0
	14,418,780	14,418,780	10,711,805	741,673	2,965,302
<u>ES242818-Erosion Remediation Open Watercourses Management and Reclamation</u>					
Capital Sewer Rates	693,056	693,056	236,574	30,128	426,354
<u>EW376519-Water Infra. Lifecycle Renewal</u>					
Capital Water Rates	7,692,100	7,692,100	3,382,311	735,053	3,574,736
Drawdown from Capital Water Reserve Fund	1,246,900	1,246,900			1,246,900
Federal Gas Tax	561,000	561,000			561,000
	9,500,000	9,500,000	3,382,311	735,053	5,382,636
<u>TS144619-Road Networks Improvements</u>					
Capital Levy	3,269,714	3,269,714	3,269,714		0
Drawdown from Capital Infrastructure Gap Reserve Fund	803,560	803,560	175,780	182,262	445,518
Federal Gas Tax	9,846,026	9,846,026	9,846,026		0
	13,919,300	13,919,300	13,291,520	182,262	445,518

APPENDIX 'A'

#19082

Chair and Members
Civic Works Committee

June 18, 2019
(Appoint Consulting Engineers)

RE: Infrastructure Renewal Program
Capital Project ES241419 - Sewer Infrastructure Lifecycle Renewal
Capital Project ES242818 - Erosion Remediation Open Watercourses Management and Reclamation
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Archibald, Gray & McKay Engineering Limited - \$372,218.00 (excluding H.S.T.) - Contract 2 - (Subledger WS20C002)
Spriet Associates (London) Limited - \$369,245.80 (excluding H.S.T.) - Contract 12 - (Subledger WS20C012)
AECOM Canada Limited - \$199,990.00 (excluding H.S.T.) - Assignment 'A' - (Subledger WS21C00A)
Archibald, Gray & McKay Engineering Limited - \$173,800.00 (excluding H.S.T.) - Contract 10 - (Subledger WS20C010)

	Approved Budget	Revised Budget	Committed to Date	This Submission	Balance for Future Work
TS512318-Street Light Maintenance					
Capital Levy	3,533,477	3,533,477	2,106,815	38,684	1,387,978
Drawdown from Capital Infrastructure Gap Reserve Fund	66,965	66,965			66,965
	3,600,442	3,600,442	2,106,815	38,684	1,454,943
TOTAL FINANCING	\$42,131,578	\$42,131,578	\$29,729,025	\$1,727,800	\$10,674,753

1) FINANCIAL NOTE: (EXCLUDING H.S.T.)	ES241419	ES242818	EW376519	TS144619	TS512318
Listed by Engineer and Contract					
AECOM Canada Limited - Phase 3	\$107,412	\$6,238	\$100,908	\$121,177	\$22,280
Development Engineering (London) Limited - Contract 1	110,957	2,734	110,957		
Archibald, Gray and McKay Engineering Limited-Contract 2	182,677	6,864	182,677		
Spriet Associates (London) Limited - Contract 12	182,096	5,054	182,096		
AECOM Canada Limited - Assignment A	87,769	8,717	87,769		15,735
Archibald, Gray and McKay Engineering Limited-Contract 10	57,933		57,933	57,933	
TOTAL PER CAPITAL PROJECT (EXCLUDING H.S.T.)	\$728,844	\$29,607	\$722,340	\$179,110	\$38,015

	TOTAL PER CONTRACT	
	Excluding HST	Incl. HST
FINANCIAL NOTE (continued)		
Listed by Engineer and Contract		
AECOM Canada Limited - Phase 3	\$358,015	\$364,316
Development Engineering (London) Limited - Contract 1	224,648	228,602
Archibald, Gray and McKay Engineering Limited - Contract 2	372,218	378,769
Spriet Associates (London) Limited - Contract 12	369,246	375,745
AECOM Canada Limited - Assignment A	199,990	203,510
Archibald, Gray and McKay Engineering Limited-Contract 10	173,799	176,858
TOTAL PER CAPITAL PROJECT (EXCLUDING H.S.T.)	\$1,697,916	\$1,727,800

2) Financial Note: (Charges per Capital Project)	ES241419	ES242818	EW376519	TS144619	TS512318
Contract Price	\$728,844	\$29,607	\$722,340	\$179,110	\$38,015
Add: HST @13%	94,750	3,849	93,904	23,284	4,942
Total Contract Price Including Taxes	823,594	33,456	816,244	202,394	42,957
Less: HST Rebate	81,921	3,328	81,191	20,132	4,273
Net Contract Price	\$741,673	\$30,128	\$735,053	\$182,262	\$38,684

Financial Note:(Charges per Capital Project)	
continued	
Contract Price	TOTAL
Add: HST @13%	\$1,697,916
Total Contract Price Including Taxes	220,729
Less: HST Rebate	1,918,645
Net Contract Price	190,845
	\$1,727,800

JG

Jason Davies
Manager of Financial Planning & Policy

Appendix B – Project Information List

2020 – 2021 Infrastructure Renewal Program						
Contract	Consultant	Street	From	To	Length (m)	Anticipated Construction Year
CCSS [†] Program Phase 3	AECOM Canada Limited	Richmond Street	York Street	Dundas Street	265	2020
1	Development Engineering (London) Limited	Britannia Avenue	Riverside Drive	Edinburgh Street	425	2020
		Tozer Avenue	all	-	350	
2	Archibald, Gray and McKay Engineering Limited	Euclid Avenue	Wharncliffe Road	Wortley Road	500	2020
		Birch Street	Byron Avenue	Euclid Avenue	60	
10	Archibald, Gray and McKay Engineering Limited	Egerton Street Reconstruction Phase 3				2020
		Egerton Street	Ormsby Avenue	Hamilton Road	155	
		Trafalgar Street	Egerton Street	Price Street	190	
		Hamilton Road	Egerton Street	Hydro Street	120	
12	Spriet Associates (London) Limited	Hyla Street	Trafalgar Street	Hamilton Road	300	2020
		Elm Street	Trafalgar Street	Hamilton Road	210	
‘A’	AECOM Canada Limited	English Street	Dundas Street	Princess Avenue	455	2021
		Lorne Avenue	English Street	100m East	100	

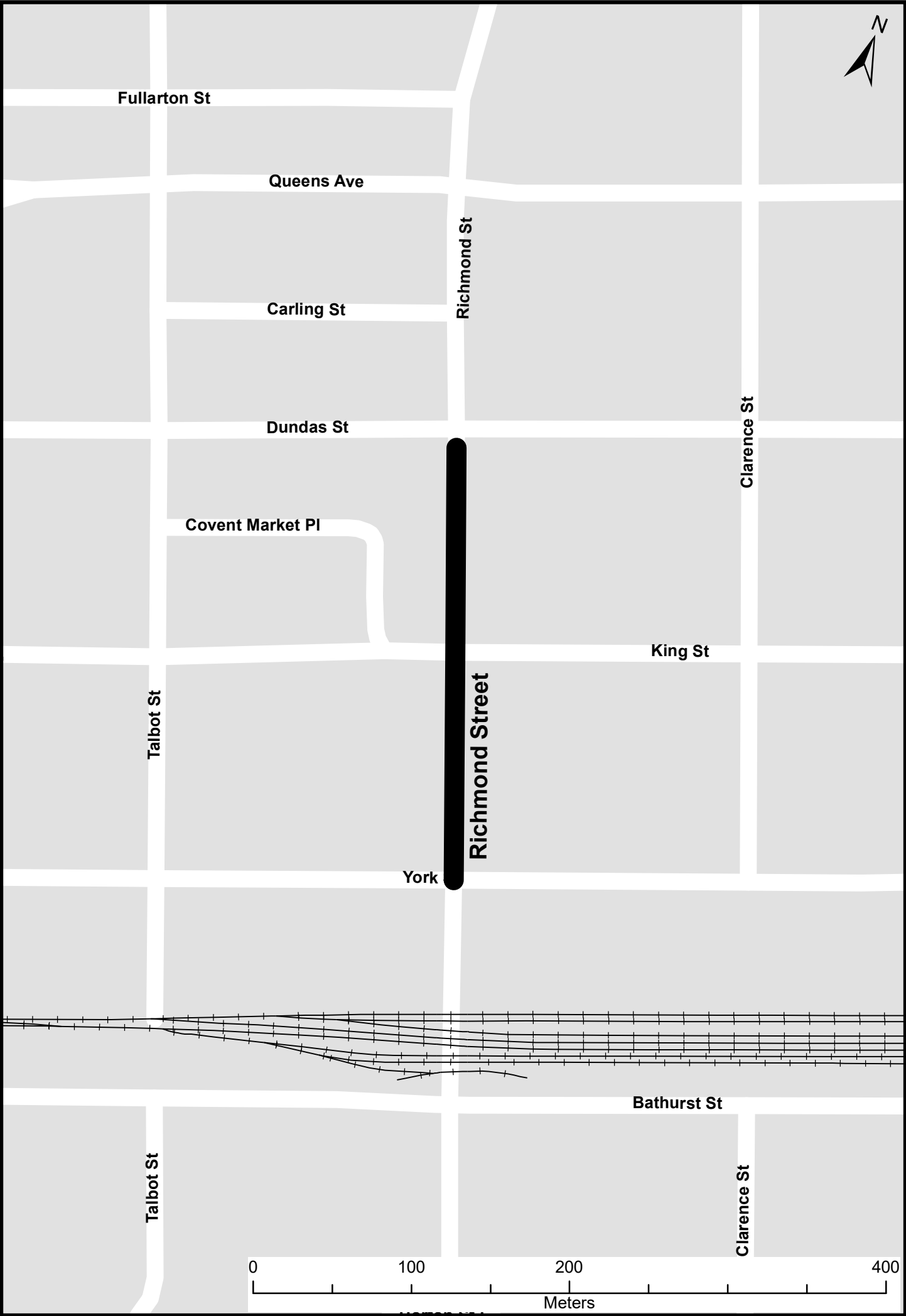
[†] - City Centre Servicing Strategy

Appendix C



City Centre Servicing Strategy Program Phase 3

Richmond Street from Dundas Street to York Street

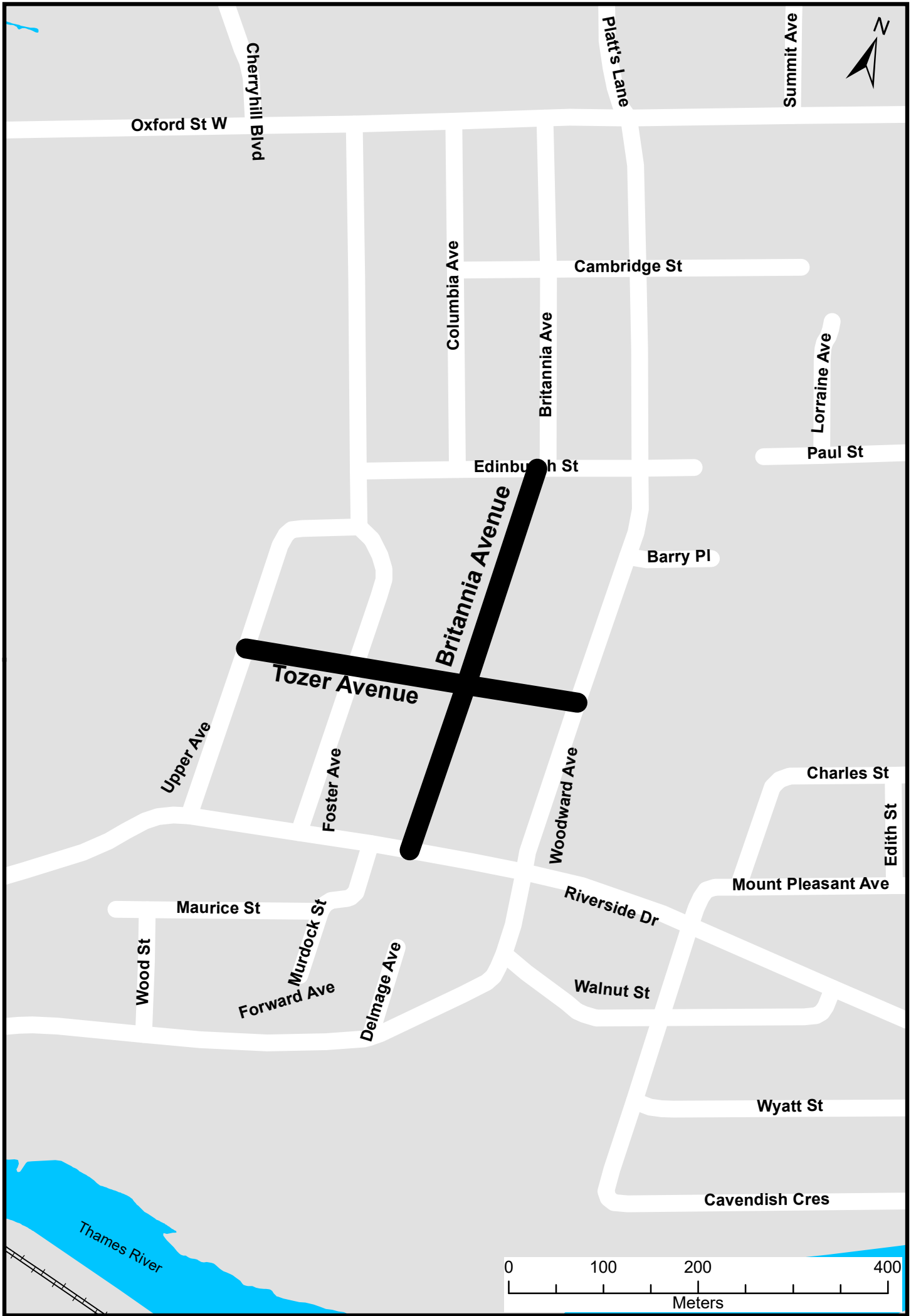


Appendix C



2020 Infrastructure Renewal Program Contract 1

Oxford Park South Reconstruction Phase 1
Britannia Avenue from Riverside Drive to Edinburgh Street
Tozer Avenue from Woodward Avenue to Upper Avenue

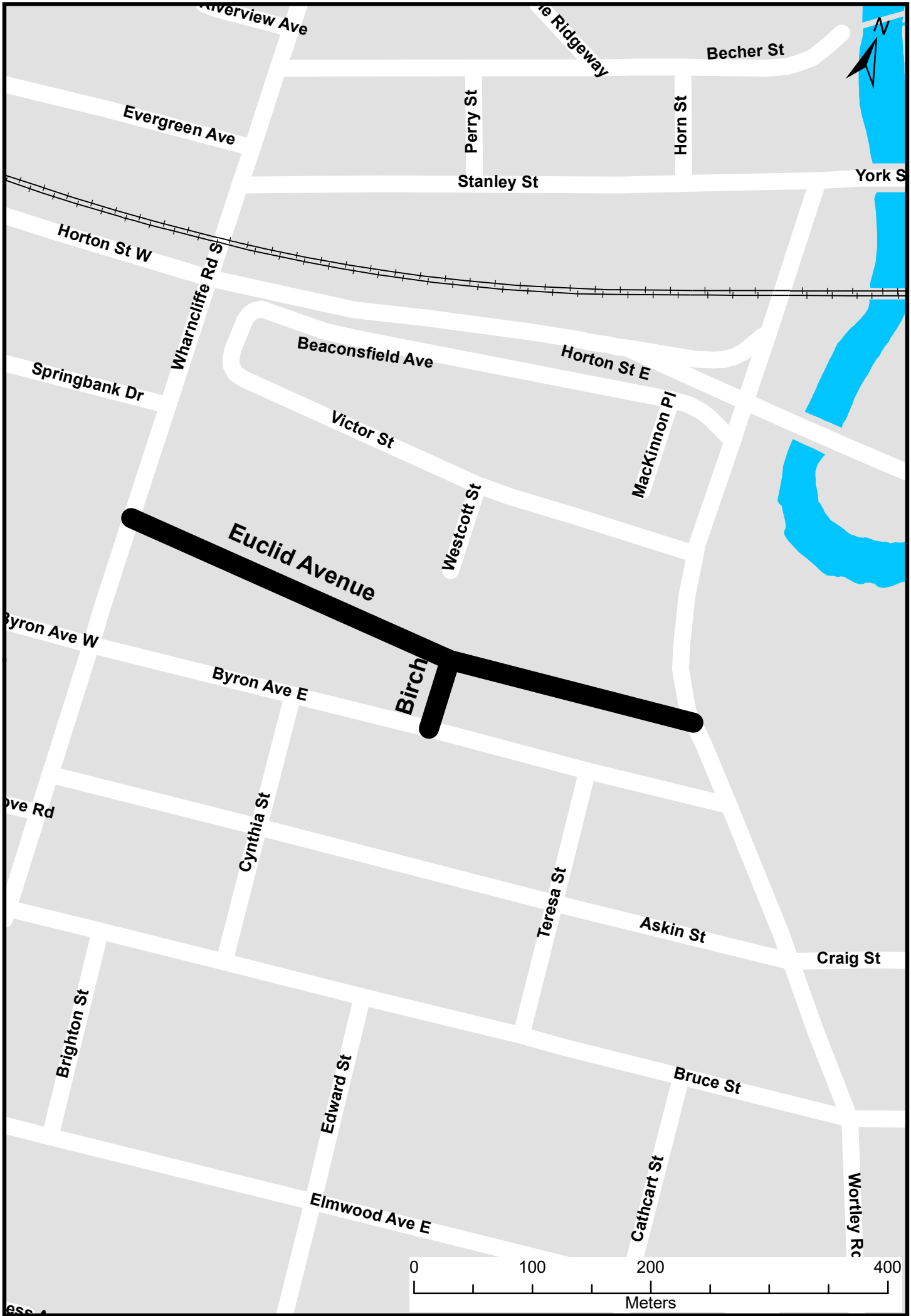


Appendix C



2020 Infrastructure Renewal Program Contract 2

Euclid Avenue from Wharncliffe Road S to Wortley Road
Birch Street from Euclid Avenue to Byron Avenue

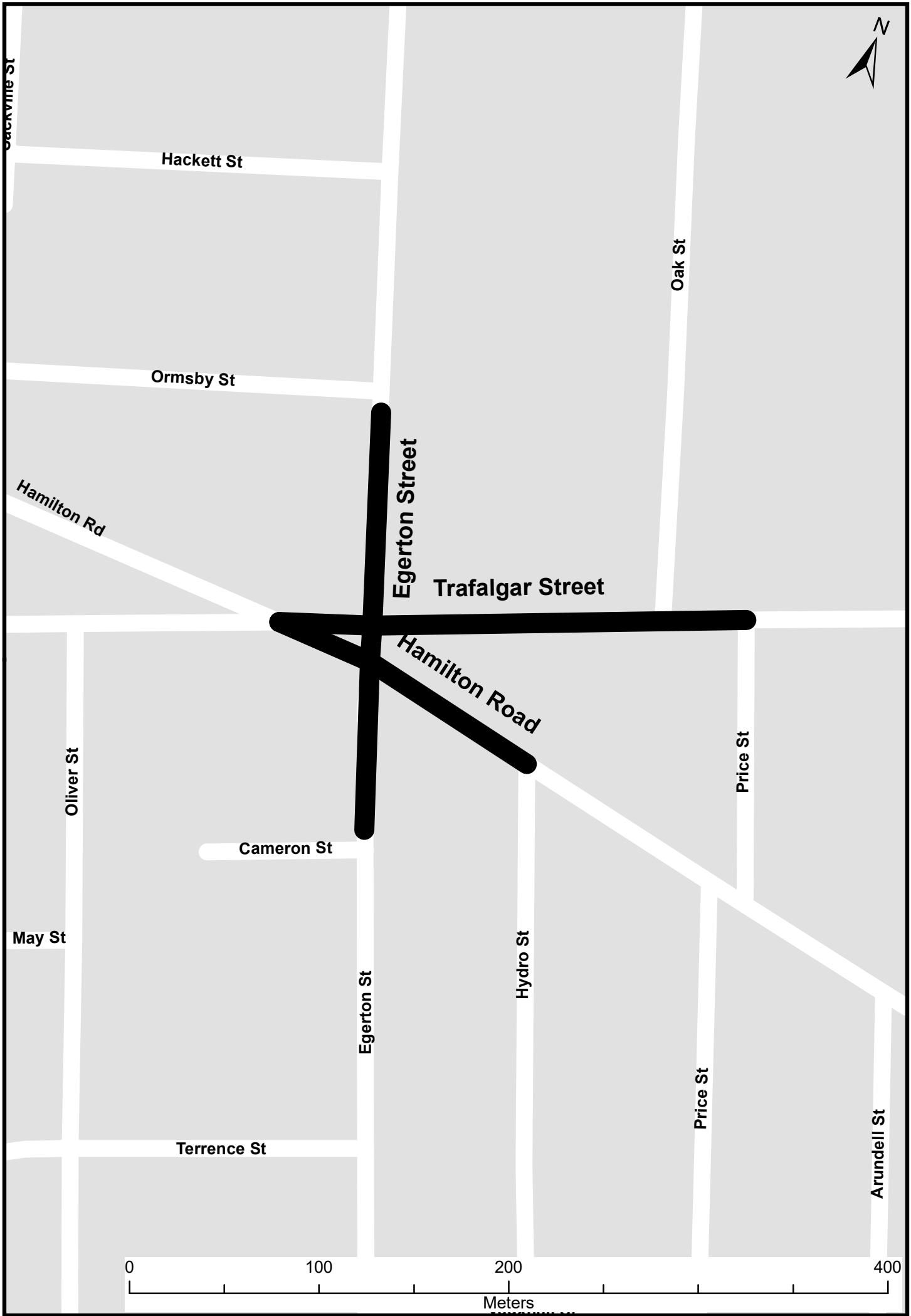


Appendix C



2020 Infrastructure Renewal Program Contract 10

Egerton Street from Ormsby Street to Cameron Street
Hamilton Road from Trafalgar Street to Hydro Street
Trafalgar Street from Hamilton Road to Price Street

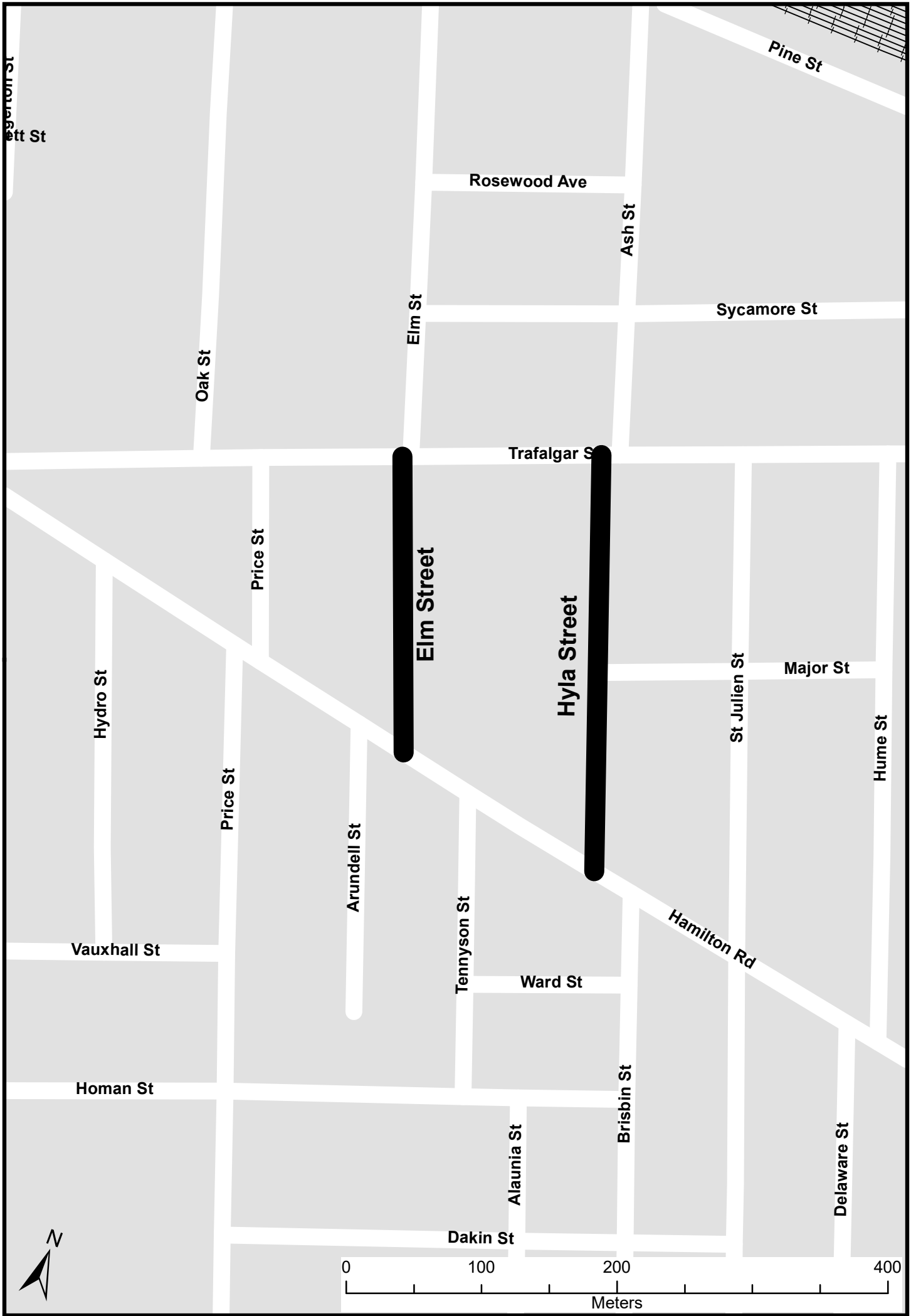


Appendix C



2020 Infrastructure Renewal Program Contract 12

Hyla Street from Trafalgar Street to Hamilton Road
Elm Street from Trafalgar Street to Hamilton Road

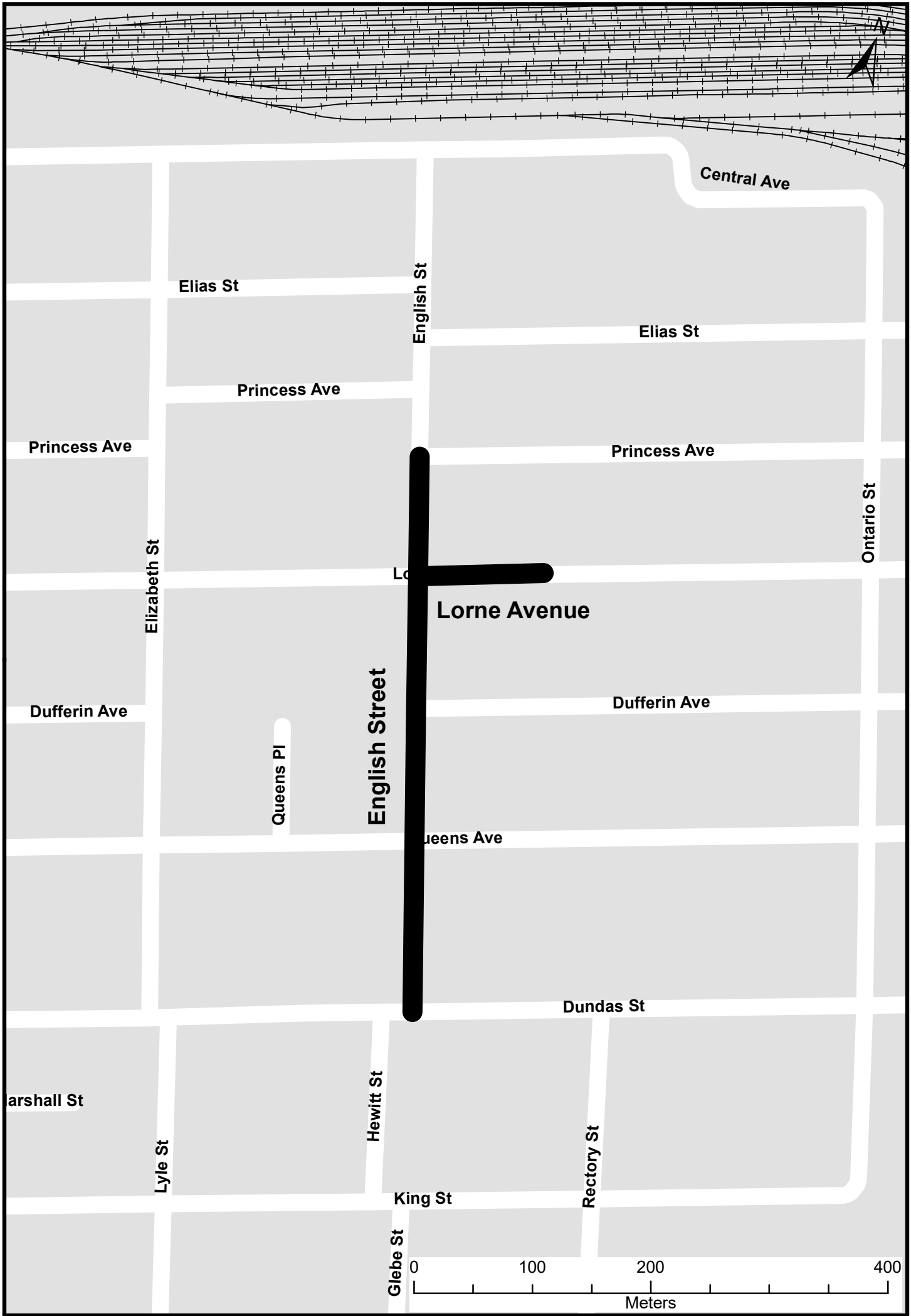


Appendix C



2020 Infrastructure Renewal Program Design Assignment A

English Street from Dundas Street to Princess Avenue
Lorne Avenue from English Street to 100 m easterly



TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON JUNE 18, 2019
FROM:	KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER
SUBJECT:	CLARKE ROAD IMPROVEMENTS ENVIRONMENTAL STUDY REPORT

RECOMMENDATION

That, on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, the following actions **BE TAKEN** with respect to the Clarke Road Improvements Environmental Study Report:

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

PREVIOUS REPORTS PERTINENT TO THIS MATTER
--

- Civic Works Committee – June 19, 2012 – London 2030 Transportation Master Plan.
- Strategic Priorities and Policy Committee – June 23, 2014 – Approval of 2014 Development Charges By-Law and DC Background Study.
- Civic Works Committee – May 9, 2017 – Clarke Road Widening Environmental Assessment VMP North Extension to Fanshawe Park Road East Appointment of Consulting Engineer
- Strategic Priorities and Policy Committee – March 25, 2019 – 2019 Development Charges Covering Report and Proposed By-Law

COUNCIL’S 2019-2023 STRATEGIC PLAN

The following report supports the Strategic Plan through the strategic focus area of Building a Sustainable City by building new transportation infrastructure to meet the long term needs of our community.

BACKGROUND

Purpose

This report provides an overview of the Municipal Class Environmental Assessment (EA) for the Clarke Road improvements from Fanshawe Park Road East to the Veterans Memorial Parkway (VMP) North Extension and also seeks the approval to

finalize this study. The Environmental Study Report (ESR) highlights the process undertaken throughout the Environmental Assessment.

Related Initiatives

Smart Moves – The 2030 Transportation Master Plan

On June 26, 2012, Council approved the Smart Moves Transportation Master Plan (TMP). Of the five “Smart Moves” that form the basis of the TMP, the improvements on Clarke Road to widen from two lanes to four lanes and to include a multi-use pathway align with the following Smart Moves:

- More Strategic Program of Road Network Improvements
- Greater Investment in Cycling and Walking Infrastructure

The London Plan

The London Plan, which encompasses the objectives and policies for the City’s short and long-term physical land development, classifies this portion of Clarke Road as an expressway because the VMP extension connects smoothly to Clarke Road. This section of Clarke is also classified as having walking and cycling routes.

The expressway classification places a priority on high volumes of vehicle and freight movements, cycling and walking routes on one side of the road, and upholds the quality of standard in urban design.

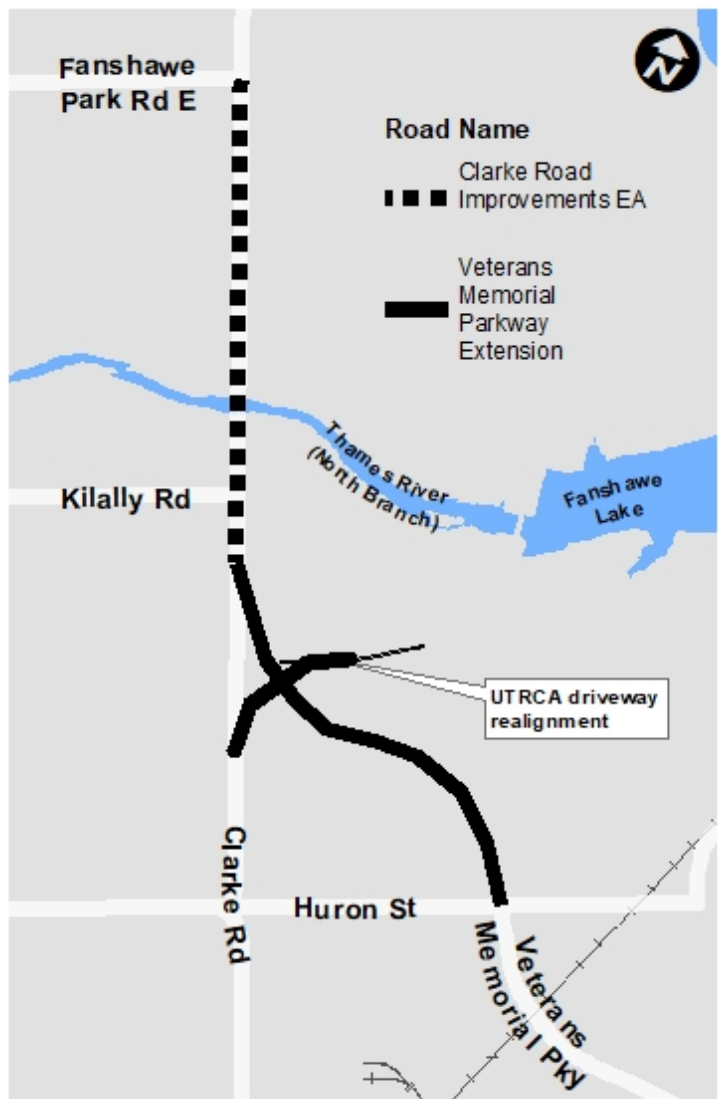
Due to the potential increase in development growth leading to rising traffic volumes, the London Plan and the 2030 Transportation Master Plan highlight the importance of infrastructure improvements to the Clarke Road corridor for all modes of transportation. An EA is required due to the anticipated impacts associated with reconstructing the road to address the forecasted area growth and rising traffic volumes.

Veterans Memorial Parkway North Extension

The detailed design of the Veterans Memorial Parkway North Extension is currently underway. The project scope entails constructing a two lane expressway from Veterans Memorial Parkway at Huron Street to Clarke Road near the Upper Thames River Conversation Authority Entrance. Future expansion to four lanes as the widening progresses north of Oxford Street is accommodated in the planning and design.

The objective of this project is to improve transportation circulation and connectivity in the northeast part of the city and to alleviate traffic congestion at the intersections of Clarke Road/Huron Street and VMP/Huron Street. This extension will increase traffic capacity on both Clarke Road and VMP, as well as improve the level of service for vehicle commuters at intersections. See the map of project area below. Currently, this project is planned for construction in 2021, which is contingent on additional property approvals.

Area Map



Veterans Memorial Parkway Interchange Environmental Assessment

The Veterans Memorial Parkway Interchange Environmental Assessment was a long range planning exercise to identify interchange locations along the entire length of the Veterans Memorial Parkway from Wilton Grove Road to Kilally Road. Interchanges and flyovers allow the expressway to best meet functional requirements of the Veterans Memorial Parkway in a full built out condition. Full build out of the Veterans Memorial Parkway refers to a four lane expressway with interchanges and flyovers.

DISCUSSION

Project Description

The Clarke Road Improvements Class EA was carried out in accordance with Schedule ‘C’ of the Municipal Class Environmental Assessment (Class EA) document. 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 ESR documents the process followed to determine the recommended undertaking 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 study area for this Class EA include the Clarke Road corridor from its intersections with the future VMP extension to the intersection of Fanshawe Park Road East. The study area includes the intersection of the Upper Thames River Conservation Authority (UTRCA) access road and Kilally Road. The study area also includes the J.W. Carson Bridge, which crosses the Thames River north of Kilally Road.

The ESR identifies solutions for traffic growth, intersection and active transportation improvements. Improvements to the Clarke Road corridor are needed to accommodate the increased traffic volumes as a result of the VMP extension, and potential development in the area.

The ESR 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 Executive Summary for the ESR is attached in Appendix A.

Planning and Analysis of Alternatives

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:

- Growth Management: Need to accommodate growth of traffic on Clarke Road as a result of the future VMP extension, industrial development south of the study area, and residential development in the area.
- Intersection issues: Decreased level of service at intersections within the study area require modifications, including turning lanes, improved traffic control or roundabouts.
- Active Transportation: Need to improve active transportation facilities within the study area and provide system connections, as per the City's Cycling Master Plan and the London Plan.

Phase II of the MCEA process includes an inventory of the existing socio-economic, cultural and natural environments to identify alternative solutions (planning alternatives) to address the problem/opportunity statement. Alternative solutions are identified and evaluated based on their ability to reduce impacts to the socioeconomic, natural, cultural and technical environments. Alternative solutions considered for the study area included:

- Do Nothing
- Improve Other Roads in the Transportation Network
- Accommodate Other Travel Demands
- Provide Additional Travel Lanes and Intersection Improvements.

Widening Clarke Road to provide additional through lanes, cycling facilities, pedestrian pathways and intersection improvements was identified as the preferred solution to accommodate future travel demands. This solution was determined to be the most consistent with municipal planning initiatives, based on its ability to support future development, the extension of VMP, improvements to pedestrian and cycling facilities, and the intended function of Clarke Road.

Design Alternatives

Phase III of the MCEA process involves the development and evaluation of alternative design concepts. The main outcome in this phase of the study was developing road cross-sections and layout concepts for the recommended planning solution.

Identification of the land requirements for this project was a key outcome to identify appropriate mitigation measures such as minimizing cultural, socio-economic and environmental impacts, while still meeting the City's design standards. Three road widening design alternatives were developed and examined, which can be seen in the below figure:

- Alternative 1 – Widening to the East of the Centreline
- Alternative 2 – Widening to the West of the Centreline
- Alternative 3 – Widening Symmetrically about the Centreline



Alternative 1 - Widening to the East of the Centreline



Alternative 2 - Widening to the West of the Centreline



Alternative 3 - Widening Symmetrically about the Centreline

The recommended road widening alternative is 'Alternative 3 – Widening Symmetrically about the Centreline', with the ability to accommodate the ultimate widening to six lanes. This alternative is recommended as it reduces overall impacts to property and entrances along Clarke Road, reduces significant impacts to the utility corridor on the east side, and reduces impacts to the key natural heritage features.

Similarly, the J.W. Carson Bridge was evaluated with a number of potential alternatives. 'Do Nothing' was not considered as a feasible alternative for the J.W. Carson Bridge with the widening of Clarke Road. Bridge design alternatives were developed based on observed condition of the existing structure, and the environmental sensitivities associated with the underlying aquatic and terrestrial environment.

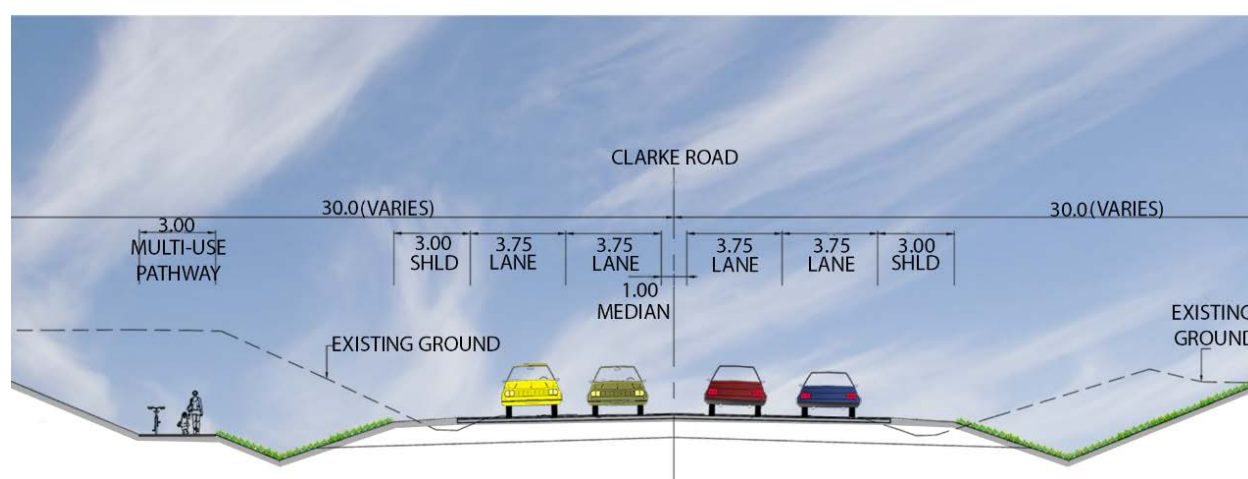
Consultation with MNRF and UTRCA provided clear guidance on the importance of minimizing the new footprint and number of construction events in order to limit environmental disturbance. Based on these considerations and the recommended road widening alternative, “Widening Symmetrically about the Centreline”, three structural design alternatives were evaluated for the bridge:

- Alternative A - Rehabilitate and widen the existing structure
- Alternative B - Replace existing structure with a single span option
- Alternative C - Replace existing structure with a multi-span option

Based on the evaluation, the preferred bridge design alternative is ‘Alternative C - Replace the existing structure with a multi-span bridge. This alternative was more favourable as it allowed for one construction event over a 75+ year service life of the structure which minimizes the natural environment disturbance. In addition, the required sub-structure elements (ie, piers and abutments) could be constructed to accommodate the ultimate widening to six lanes to avoid future in-water work.

Project Description

The recommended road widening along Clarke Road consists of widening the road symmetrically about the centreline to accommodate four traffic lanes, with consideration to an ultimate build out to six lanes. The widened roadway is proposed to be comprised of four 3.75 m lanes with a 1.0 m flush median and 3.0 m outside paved shoulder. The proposed cross section will facilitate a 2% cross-fall on both sides of the road centreline, as well as a separated 3.0 m multi-use pathway along the west side of the road corridor.



The bridge replacement is recommended due to the emphasis on minimizing both long-term and short-term environmental disturbances to the underlying aquatic and terrestrial environment. The proposed bridge will have four 3.75m lanes with 1.5m shoulders and a separated 3.0 m multi-use pathway.

The new multi-span bridge will consist of two spans, with an ultimate lifespan of 75+ years. During construction, the works can be staged such that two lanes of traffic can be maintained with localized road closures, therefore minimizing impacts to road users along the Clarke Road corridor.

The 3.0 m multi-use pathway has also been recommended along the west side of the Clarke Road corridor to provide a broader range of cycling facilities. This will contribute to a continuous and connected network of both on and off road cycling facilities, including a connection to the nearby Fanshawe Lake Conservation Area. The pathway will accommodate a range of cyclists' needs and abilities. The multi-use pathway network includes and supports a broader range of users with various design considerations.

The preferred design best addresses the project problem statement based on the detailed evaluation and feedback received from the public and external agencies which included UTRCA and MNRF.

Public and Agency Consultation

Consultation was a key component of this Class EA study in order to provide an opportunity for stakeholder groups and the public to gain an understanding of the study process and provide feedback. The consultation plan was organized around key study milestones, including the two Public Information Centres (PIC’s), stakeholder engagement and participation of technical review/regulatory agencies. The key stakeholders included residents, interested public, agencies, Indigenous Communities and those who may be affected by the project.

A Notice of Study Commencement was issued in June 2017. The study team received correspondence from the public and agencies indicating their interest in the study and requesting to be kept informed.

Public Information Centre No. 1 was held on September 21, 2017 to present the study, including information on existing conditions, alternative planning solutions, evaluation criteria and design considerations. It served as an opportunity for the public to review the project information, ask questions, and provide input to the members of the study team.

Public Information Centre No. 2 was held on July 11, 2018 as an opportunity for attendees to review the impact of the proposed road improvement options on the social, cultural, economic, and natural environments as well as review the preliminary preferred design.

Agencies and stakeholders which required information updates pertaining to them were notified at study milestones and during specific phases of the study. In addition to formal public events, the project team conducted in-person meetings with stakeholders and agencies as requested and required. Staff met with UTRCA and the Ministry of Natural Resources and Forestry throughout the EA process. Presentations were made to the City of London Environmental and Ecological Planning Advisory Committee (EEPAC), Cycling Advisory Committee (CAC) and Transportation Advisory Committee (TAC) throughout the project.

In general all agencies and stakeholders understand the need for roadway improvements. Some had concerns regarding natural heritage impacts and protection for environment throughout the detailed design. Mitigation of potential impacts involves the avoidance or minimization of potential impacts through good design, construction practices and/or restoration and enhancement activities. If mitigation is not possible then compensation is possible to achieve a no net-impact for particular natural heritage features. Detailed mitigation measures will be finalized in consultation with impacted property owners, City, UTRCA, and MNRF as part of detailed design.

IMPLEMENTATION

Construction Staging

The implementation of the preferred widening of Clarke Road from two to four lanes is recommended to begin construction in 2033, which is based on the 2019 Development Charges Background Study. The timing for the improvements is also dependent upon the City’s available funding as well as coordination with other City projects. Dates are subject to change based on future Development Charges Studies.

Property will be acquired on a proactive basis as opportunities arise. The design process would begin a few years prior to implementation. Coordination with property owners, Hydro One and regulatory agencies is planned for early in the design process, providing ample time for consultation.

Network traffic management and a communications plan will be developed during detailed design to inform road users, outline detours during closures and instruct local

traffic movement. Access to commercial and industrial properties will be maintained during construction.

FINANCIAL CONSIDERATIONS

Preliminary Cost Estimates

The estimated total project cost associated with the proposed improvements, including engineering, roadway construction, earthworks, structural, utility relocations, landscaping, staging, and other project costs is approximately \$25,560,000.

Capital Cost	Estimated \$
Roadwork	\$5,089,000
Structural	\$13,200,000
Electrical	\$250,000
Miscellaneous	\$200,000
Sub Total	\$18,739,000
Property Acquisition	\$1,200,000
Contingency (10%)	\$1,924,790
Environmental Mitigation	\$300,000
Utility Relocations (10%)	\$508,900
Engineering (15%)	\$2,887,185
Total Estimated Cost	\$25,560,000

The 2019 Development Charges Background Study includes a cost estimate of \$24,917,500. This estimate was based on the best available information at the time and is close to the EA estimate. The final cost of the project will be influenced through detailed design, as mitigation measures and environmental compensations are fully developed.

CONCLUSION

Improvements to Clarke Road from Fanshawe Park Road East to the proposed Veteran’s Memorial Parkway North Extension are necessary as development in the vicinity continues to create growth along this major corridor. A Municipal Class Environmental Assessment (EA) was undertaken to confirm the preferred solution to proceed in coordination with the required corridor improvements. The ESR is ready for final public review. The Clarke Road Improvements Class EA Study was carried out in accordance with Schedule C of the Municipal Class Environmental Assessment process.

Three road design alternatives were developed which included three additional bridge alternatives to address the problems and opportunities. The preferred planning solution is to widen the road symmetrically while also replacing the J.W. Carson Bridge with a multi-span bridge option. This alternative was more favourable as it minimizes the environmental disturbance, and impacts to property owners.

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

Pending Council approval, a Notice of Study Completion will be filed, and the ESR will be placed on public record for a 30-day review period. Stakeholders and the public are encouraged to provide input and comments regarding the study during this time period. Should the public and stakeholders feel that the EA process has not been adequately addressed, they may request a Part II Order to the Minister of the Environment, Conservation and Parks within the 30-day review period per MECP instructions on their website.

The project is planned to be implemented in 2033, based on the 2019 Development Charges Background Study.

Acknowledgements

This report was prepared with assistance from Peter Kavcic, P.Eng., of the Transportation Planning and Design Division.

PREPARED BY:	REVIEWED AND CONCURRED BY:
GARFIELD DALES, P. ENG. DIVISION MANAGER, TRANSPORTATION PLANNING AND DESIGN	DOUG MACRAE, P.ENG., MPA DIRECTOR, ROADS AND TRANSPORTATION
RECOMMENDED BY:	
KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER	

Attach: Appendix A – Environmental Study Report Executive Summary
c: Isaac Bartlett, Stantec Consulting Ltd.

Executive Summary
May 10, 2019

Appendix A Environmental Study Report Executive Summary

The City of London retained Stantec Consulting Ltd. to identify transportation corridor improvements along Clarke Road between Fanshawe Park Road East and the Veterans Memorial Parkway (VMP) extension, which is currently under detailed design.

The City's 2030 *Smart Moves Transportation Master Plan* (TMP) and the 2014 *Development Charges Background Study* identified the need to widen Clarke Road from 2 to 4 lanes with consideration given to the ultimate build-out of 6 lanes. The widening was identified as a priority project to address future traffic volumes associated with future improvements being implemented along VMP.

In accordance with the Municipal Class Environmental Assessment (MCEA) (Municipal Engineers Association, 2000, as amended in 2007, 2011, and 2015), this study is being planned as a Schedule C undertaking, which includes the completion of Phases 1 through 4 of the MCEA study process.

Consultation

A contact list was developed at the outset of the study, which includes relevant government and regulatory agencies, utilities, community organizations, interested members of the public, and Indigenous communities. Project notices, including the Notice of Study Commencement, Notice of Public Information Centres (PICs), and the Notice of Completion were published in the *Londoner* in two consecutive editions, posted on the City's study website.

<http://www.london.ca/residents/Environment/EAs/Pages/Clarke-Road-Improvements.aspx>

A Technical Agencies Committee (TAC) was established to facilitate discussions among relevant City departments and approval bodies. Two PICs were held throughout the study to ensure stakeholders have an understanding of the project, and to provide opportunities for stakeholders to provide input into the alternatives, evaluation criteria, and design details.

All input from the public, review agencies/ministries, and other stakeholders has been documented. All consultation with Indigenous communities has also been documented in a consultation log.

Phase 1 – Problems and Opportunities

Phase 1 of the MCEA process includes a review of a number of planning and policy documents, related studies and reports, and initial traffic review. A number of policy documents were reviewed to understand the existing and planned conditions and objectives within the study area and surrounding neighborhoods, and to provide the framework for identifying improvements. Relevant policy documents include the Provincial Policy Statement, Endangered Species Act, City of London Transportation Master Plan, City of London Official Plan, the London Plan, and London ON Bikes Cycling Master Plan.

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:

- Growth Management - Need to accommodate growth of traffic on Clarke Road as a result of the future VMP extension, industrial development south of the study area, and residential development in the area.
- Intersection Issues - Decreased level of service at intersections within the study area and require modifications, including turning lanes, improved traffic control or roundabouts.

CLARKE ROAD IMPROVEMENTS

SCHEDULE C MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT

Executive Summary
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- Active Transportation - Need to improve active transportation facilities within the study area and provide system connections (as per the City's Cycling Master Plan and the London Plan).

Improvements to the Clarke Road corridor are needed to accommodate increased traffic volumes as a result of the future VMP extension, and future industrial and residential development in the area. The improved transportation corridor will serve the needs of the transportation system including active transportation and area growth to 2031 and beyond.

Phase 2 – Existing Conditions

Phase 2 of the MCEA process includes an inventory of the existing socio-economic, cultural, and natural environments. Background information was collected from various sources to characterize the existing features within the study area.

The existing transportation network, including roads, transit, and active transportation facilities were reviewed to understand the current conditions. Existing and future land use patterns were identified to evaluate the current socio-economic conditions prior to determining alternative solutions.

An Environmental Impact Study was conducted to assess the study area, identify constraints and sensitivities, and determine the general connectivity of natural features within study limits and surrounding area. Field investigations included the characterization of vegetation communities, botanical surveys, a wildlife habitat assessment, and an aquatic habitat assessment. Drainage and watershed characteristics were identified, and analysis conducted to determine flow levels and connectivity.

A Stage 1 Archaeological Assessment and Cultural Heritage Assessment were completed to determine archaeological potential, identify built heritage resources and cultural heritage landscapes present within the study area. The findings of the existing conditions were considered throughout the development and evaluation of alternative solutions and designs for the corridor.

Alternative Solutions

Alternative solutions are identified and evaluated based on their ability to reduce impacts to the socio-economic, natural, cultural and technical environments. Alternative solutions considered for the study area included Do Nothing, Improve Other Roads in the Transportation Network, Accommodate Other Travel Demands, and Provide Additional Travel Lanes and Intersection Improvements.

Widening Clarke Road to provide additional through lanes, cycling facilities, pedestrian pathways and intersection improvements was identified as the preferred solution to accommodate future demands associated with auto and other travel demands. This solution was determined to be the most consistent with municipal planning initiatives, based on its ability to support future development, the extension of VMP, pedestrian and cycling facilities, and the intended function of Clarke Road.

Design Alternatives

Three road widening design alternatives were developed and assessed including "Widening to the East of the Centreline", "Widening to the West of the Centreline", and "Widening Symmetrically about the Centreline". "Widening Symmetrically about the Centreline" was identified as the preferred design alternative.

Based on the recommended road widening alternative, "Widening Symmetrically about the Centreline", three structural design alternatives were considered for the J.W. Carson Bridge over the Thames River, including "Rehabilitate and Widen the Existing Structure", "Replace Existing Structure with a Clear Span Option", and "Replace Existing Structure with a Multi-Span Option". Replacement of the existing J.W. Carson

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Bridge with a multi-span bridge option was identified as the preferred structural alternative to accommodate the new four lanes, with consideration given to the ultimate build-out of six lanes.

Project Description

The recommended road widening along Clarke Road consists of widening the road symmetrically about the centreline to accommodate four traffic lanes, with consideration to an ultimate build out to six lanes.

The widened roadway is proposed to be comprised of four 3.75 m lanes with a 1.0 m flush median and 3.0 m outside paved shoulder to accommodate cyclists. The proposed cross section will facilitate a 2% cross-fall on both sides of the road centreline, as well as a separate multi-use pathway along the west side of the road corridor.

The bridge replacement is recommended due to the age of the existing structure and the emphasis on minimizing both long-term and short-term environmental disturbances to the underlying aquatic and terrestrial environment. The new abutments and footings for the ultimate build out to six lanes could be constructed at the time the new bridge structure is required for the four-lane expansion to minimize the number of construction events and limit disturbances to the underlying aquatic environment associated with the Thames River corridor.

The new multi-span bridge will consist of two spans, with an ultimate lifespan of 75+ years. During construction, the works can be staged such that two lanes of traffic can be maintained, which will allow for continued access along the Clarke Road corridor.

The active transportation facilities proposed along Clarke Road incorporates a fully paved shoulder for on-road use. A 3.0 m multi-use pathway has also been recommended along the west side of the Clarke Road corridor to provide a broader range of cycling facilities. This will contribute to a continuous and connected network of both on- and off-road cycling facilities, including a connection to the nearby Fanshawe Conservation Area pathways, and accommodate a range of cyclists’ needs from the commuter cyclist to the recreational cyclist. The multi-use pathway network (the Thames Valley Parkway) includes and supports a broader range of users with various design considerations.

Preliminary Cost Estimate

The capital costs associated with the bridge replacement and associated roadwork is estimated to be approximately \$25,559,875.

Capital Cost	Estimated \$
Roadwork	\$5,089,000
Structural	\$13,200,000
Electrical	\$250,000
Miscellaneous	\$200,000
Sub Total	\$18,739,000
Contingency (10% Sub Total + Utilities)	\$1,924,790
Environmental Mitigation	\$300,000
Property	\$1,200,000
Utilities (10% Roadworks)	\$508,900
Engineering (15% Sub Total + Utilities)	\$2,887,185
Total Estimated Cost	\$25,559,875

Implementation and Timing

The implementation of the preferred widening of Clarke Road from two to four lanes is recommended to begin construction in 2033, which is based on the 2019 Development Charges Background Study. The timing for the improvements is also dependent upon

CLARKE ROAD IMPROVEMENTS
SCHEDULE C MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT

Executive Summary
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the City's available funding as well as coordination with other City projects. Dates are subject to change based on future Development Charges Studies.

Based on construction commencing in 2033, a preliminary schedule of the process can be seen below. Coordination with property owners, Hydro One, and regulatory agencies is planned for early in the design process, providing ample time for consultation.

- Detail Design – 2031 - 2032
- Tendering – late 2032
- Construction – 2033

Potential Impacts and Proposed Mitigation

Many of the environmental concerns related to this project have been mitigated through the process by which the preferred design was selected. The anticipated impacts and proposed mitigation measures have been described in Section 8. A list of specific commitments developed with the Upper Thames River Conservation Authority (UTRCA) and the Environmental and Ecological Planning Advisory Committee (EEPAC) to be carried forward to Phase 5 of the Municipal Class EA process, Implementation (detailed design and construction) is provided in Section 9. The City of London will work with UTRCA, EEPAC and the Ministry of Environment, Conservation and Parks (MECP) during detailed design and prior to the start of construction to ensure that the proposed works are acceptable and to obtain required permits.

TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON JUNE 18, 2019
FROM:	KELLY SCHERR, P. ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER
SUBJECT:	AMENDMENTS TO THE TRAFFIC AND PARKING BY-LAW

RECOMMENDATION

That on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, the attached proposed by-laws (Appendix ‘A’ and ‘B’) **BE INTRODUCED** at the Municipal Council meeting to be held on June 25, 2019, for the purpose of amending the Traffic and Parking By-law (PS-113).

2019-23 STRATEGIC PLAN

The following report supports the Strategic Plan through the strategic focus area of **Building a Sustainable City** by improving safety, traffic operations and residential parking needs in London’s neighbourhoods.

BACKGROUND

The Traffic and Parking By-law (PS-113) requires amendments (Appendix A) to address traffic safety, operations and parking concerns. The following amendments are proposed:

1. Accessible Parking Stalls

The new standard for accessible parking stalls includes an access aisle at the ends or beside the stall to allow people to enter and exit the vehicle without being impeded by other vehicles parked too close to the accessible stall. The current Traffic and Parking By-law requires the installation of ‘No Stopping Anytime’ signs delineating the area; however, there are many stalls that were constructed before these signs were required. Vehicles that park within these aisles can block access/egress to legally parked vehicles. In order to address this issue with these older parking stalls, it is recommended to amend the definition of “designated parking space” to include the access aisle. It is also recommended to add to Section 77 Parking Space for Disabled Persons, “no person shall park more than one vehicle in any one parking space at any one time” and “no person shall park a vehicle in a parking space that is partly or completely occupied by another vehicle”.

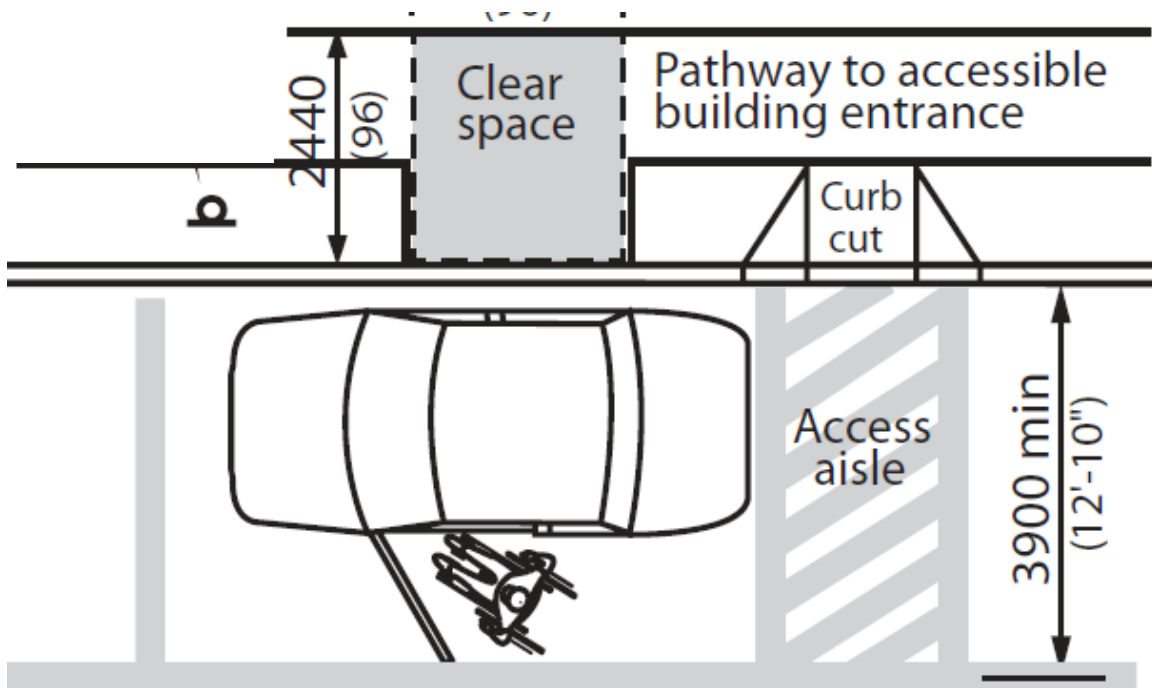


Figure 1: Example of a Rear Access Aisle



Figure 2: Accessible Stalls with Access Aisle Beside the Stall Without 'No Stopping Anytime' Signs

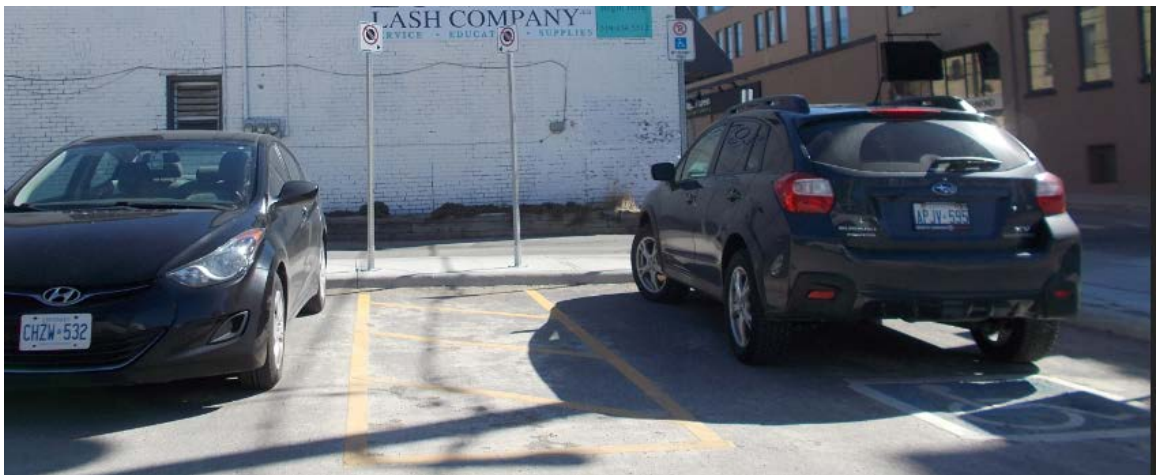


Figure 3: Accessible Stalls with Access Aisle Beside the Stall With 'No Stopping Anytime' Signs

Ammendments are required to PS-113 Traffic and Parking By-law Section 72 and Section 77 (Parking Space for Disabled Persons) to address the above changes.

2. No Parking Anytime

The 2019 New Sidewalk program includes the construction of a sidewalk on Jellicoe Crescent, which will reduce the travelled portion of the road from 8.5 m to 6.9 m. A new sidewalk is also to be constructed on Wayne Road reducing the travelled portion from 8.5 m to 6.6 m.

As a result of the road narrowing, 'No Parking Anytime' zones are recommended at the following locations:

- the east and north sides of Jellicoe Crescent from Wayne Road to 62 m north of Wayne Road; and
- the north side of Wayne Road from Jellicoe crescent to 45 m east of Jellicoe Crescent.

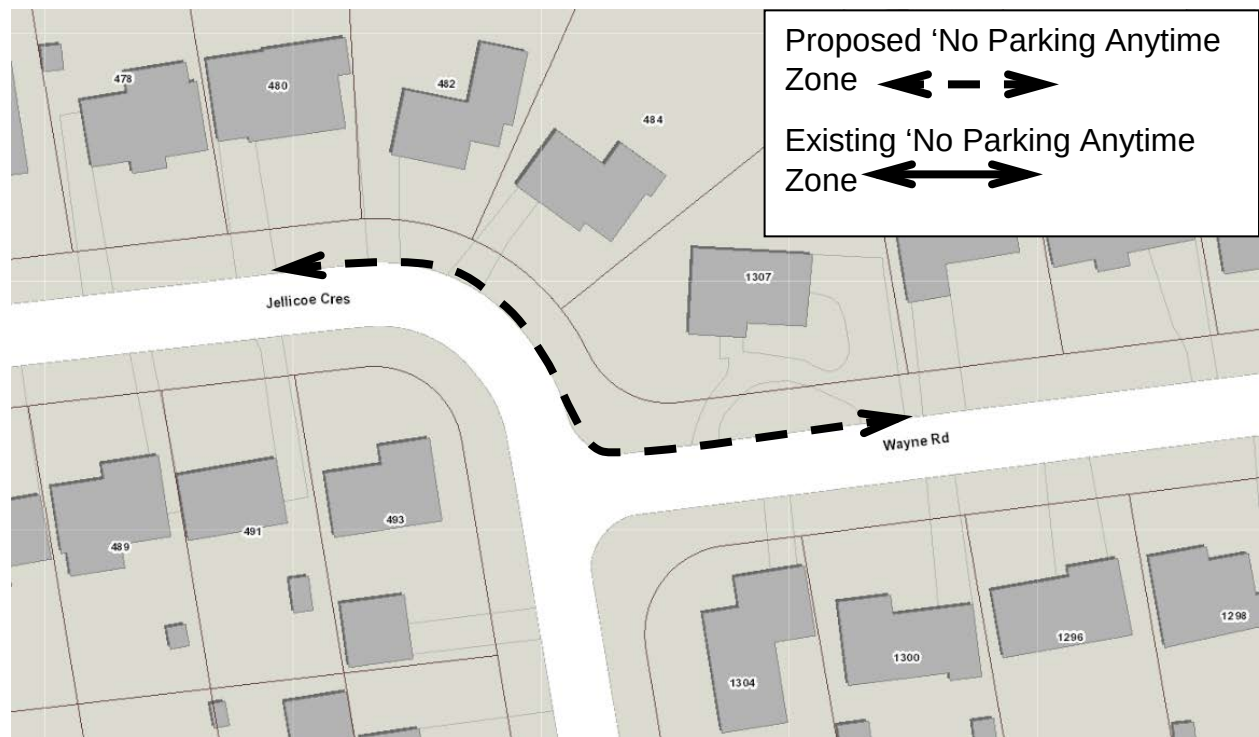


Figure 4: Jellicoe Crescent and Wayne Road

Amendments to No Parking (Schedule 2) are required to address the above changes.

3. Loading Zones

Picton Street

Staff received a request from the apartment building manager at 22 Picton Street to implement a 'Loading Zone' for the bay in front of the building due to vehicles parking for extended periods of time. The 'Loading Zone' will allow residents and visitors of the building to load and unload people and/or goods as necessary. There is an existing 'No Parking Anytime' zone for Picton Street adjacent to the bay which is enforceable for the street only.

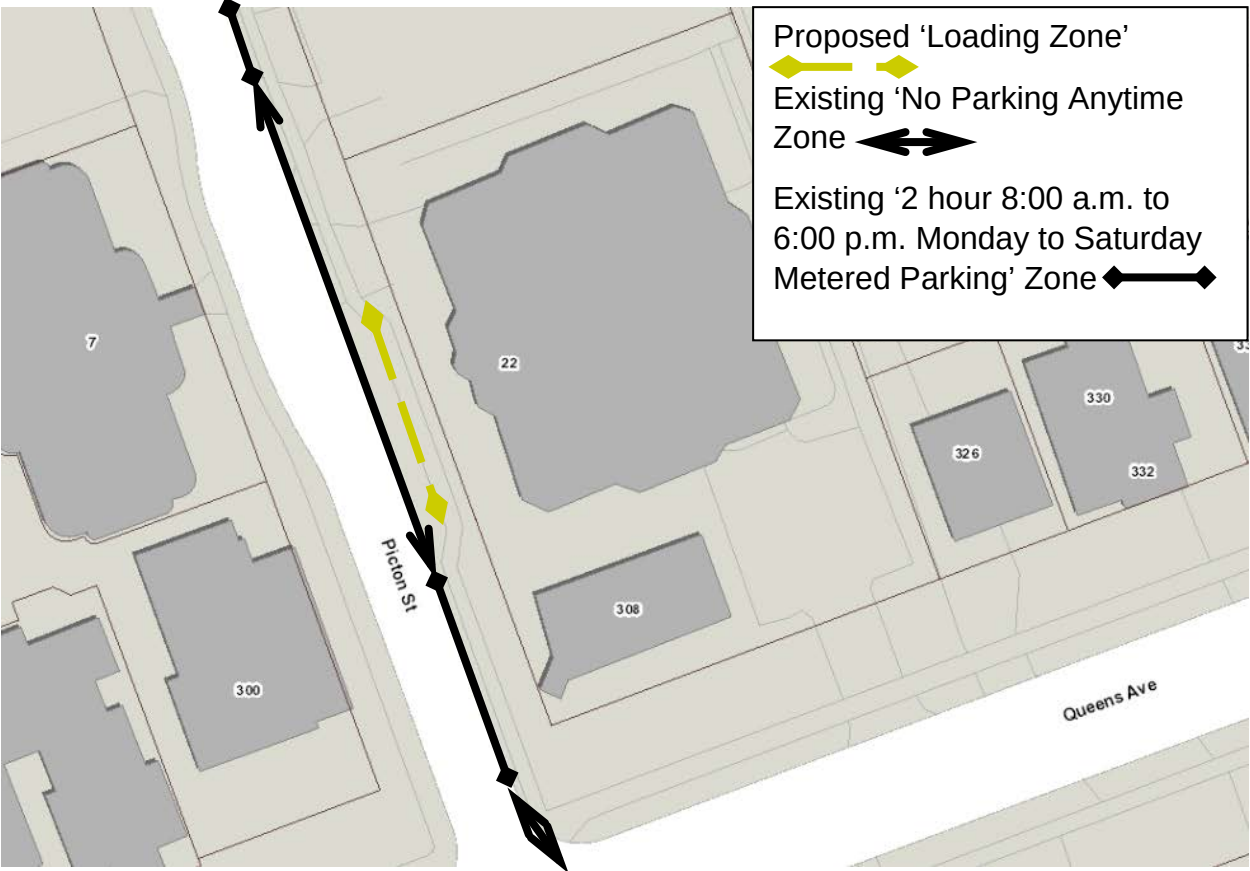


Figure 5: Picton Street

An ammendment to Schedule 5 (Loading Zones) is required to address the above change.

4. **Prohibited Turns**

Wonderland Road North at Sarnia Road

It is recommended that a ‘No U-Turn’ condition be implemented for all legs of the Wonderland Road North at Sarnia Road intersection to address identified safety concerns.

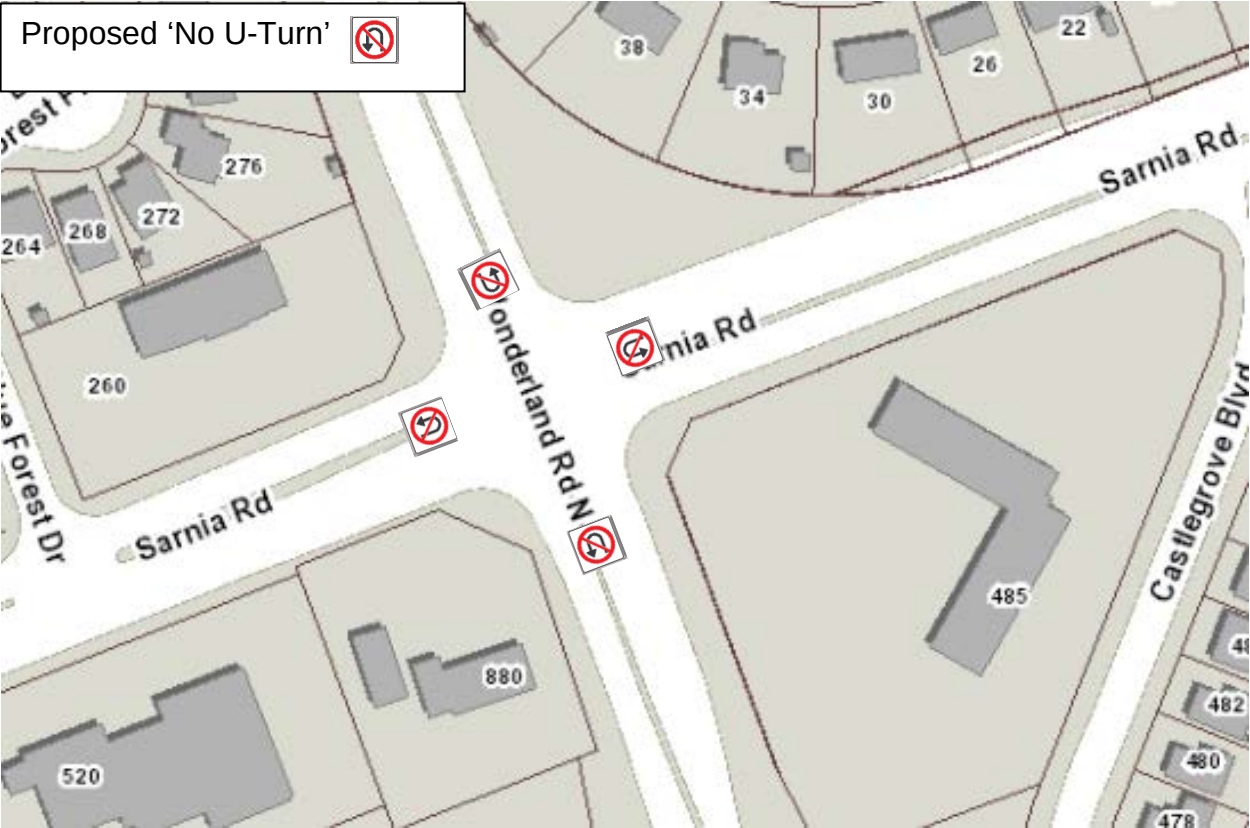


Figure 6: Wonderland Road North at Sarnia Road

An amendment is required to Schedule 8 (Prohibited Turns) to address the above change.

5. Regulatory Signs

Foxhollow Subdivision

Figure 6 shows the recommended traffic controls for the Foxhollow Subdivision.

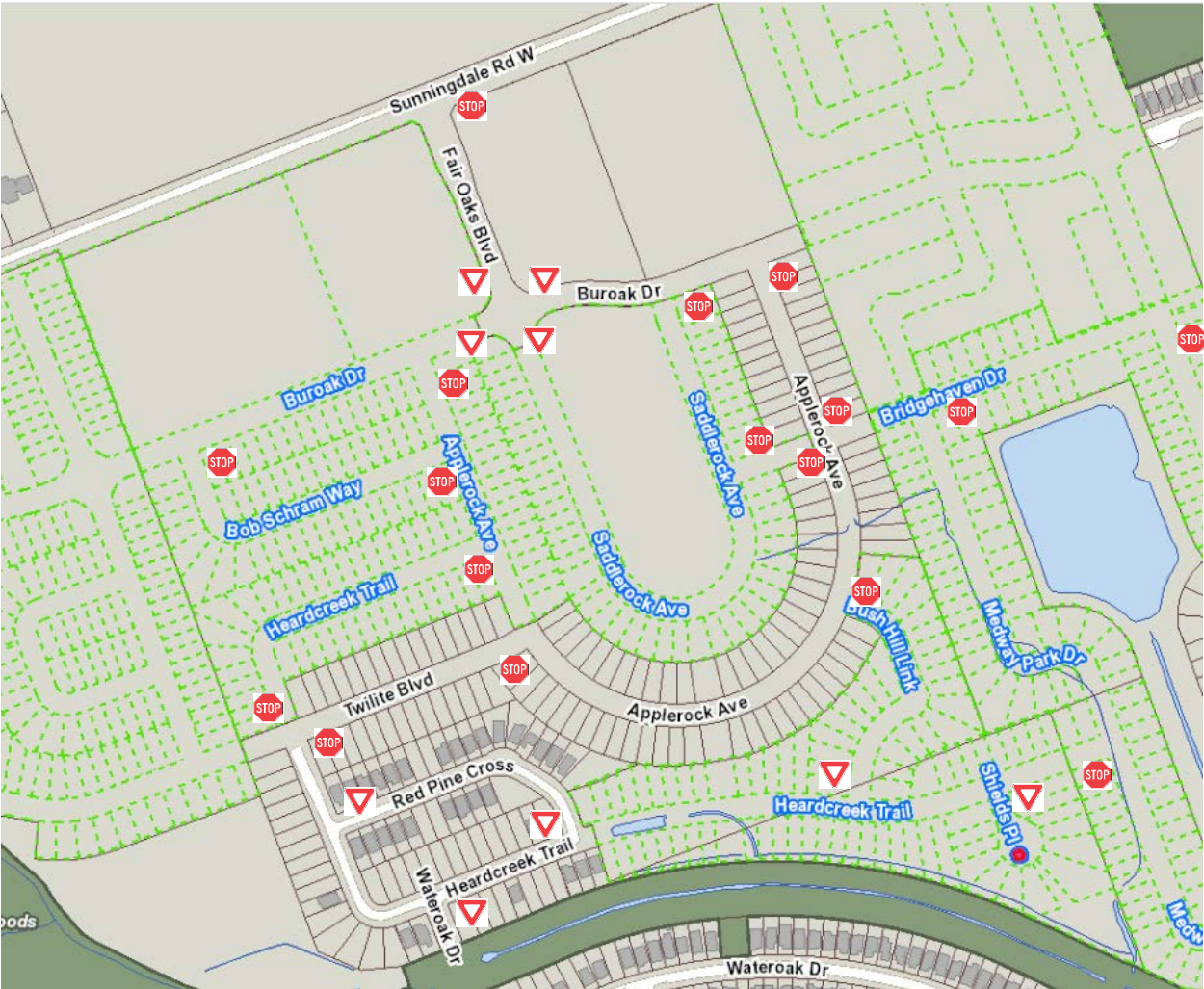


Figure 7: Foxhollow Subdivision

Amendments are required to Schedule 10 (Stop Signs), Schedule 11 (Yield Signs) and Schedule 13 (Through Highways) to implement the above.

6. **Bike Lane**

The 2019 construction plans include a separated bicycle lane on the south side of King Street from Ridout Street N to Colborne Street. The implementation of the bicycle lane requires changes to the permitted parking zones, loading zones, no parking zones and no stopping zones. The proposed by-law amendments are consistent with the plan approved by Municipal Council with the exception of additional parking stalls that have been recently added.

‘No right-turns on red’ are recommended at northbound Talbot Street at King Street, northbound Waterloo Street at King Street, northbound Colborne Street at King Street and westbound Queens Avenue at Colborne Street intersections to allow for two-stage crossings to allow cyclists to wait in a “bicycle box” before turning left.



Figure 8: Two Stage Bike Crossing

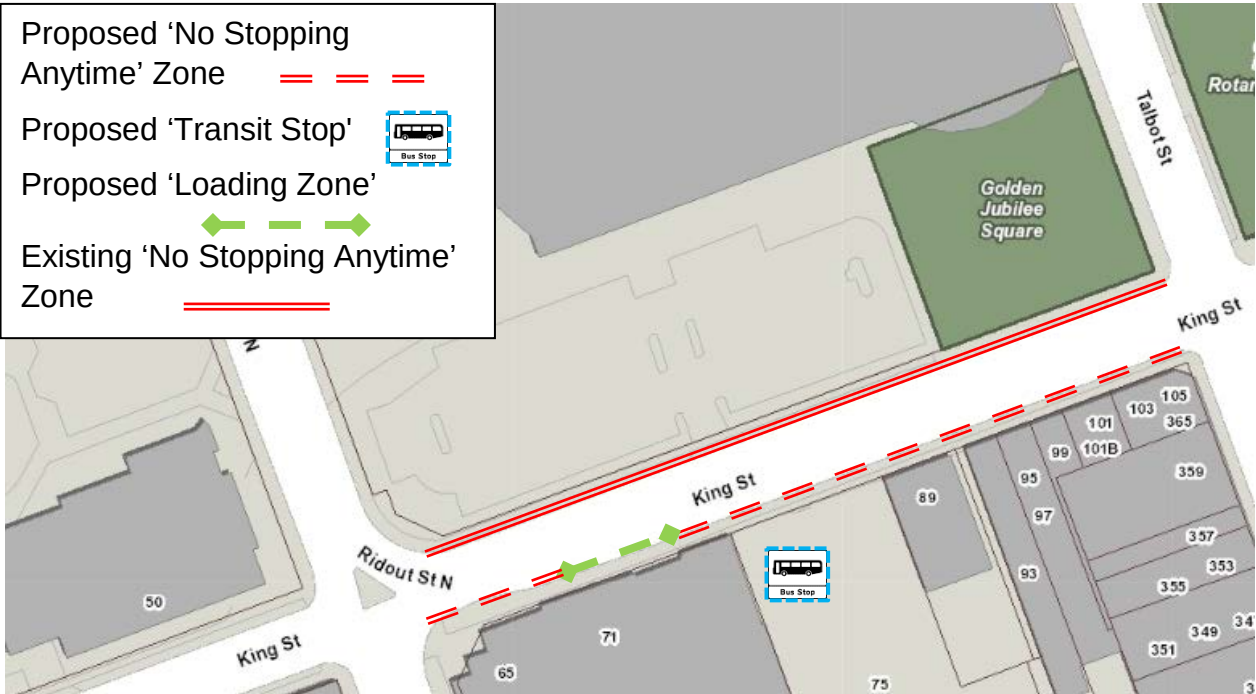


Figure 9: King Street from Ridout Street North to Talbot Street

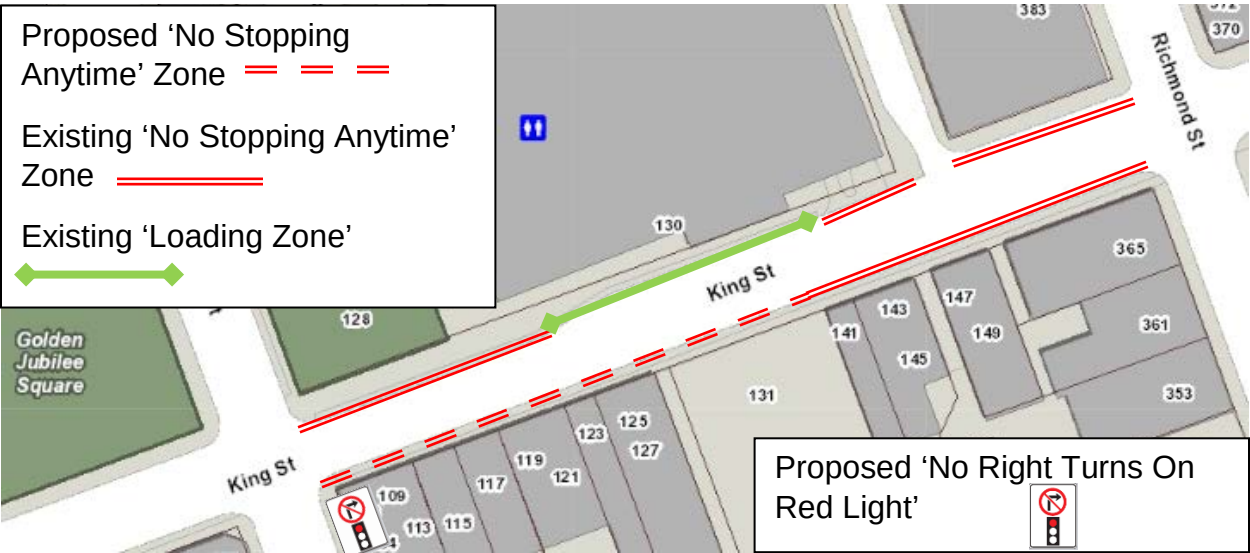


Figure 10: King Street from Talbot Street to Richmond Street

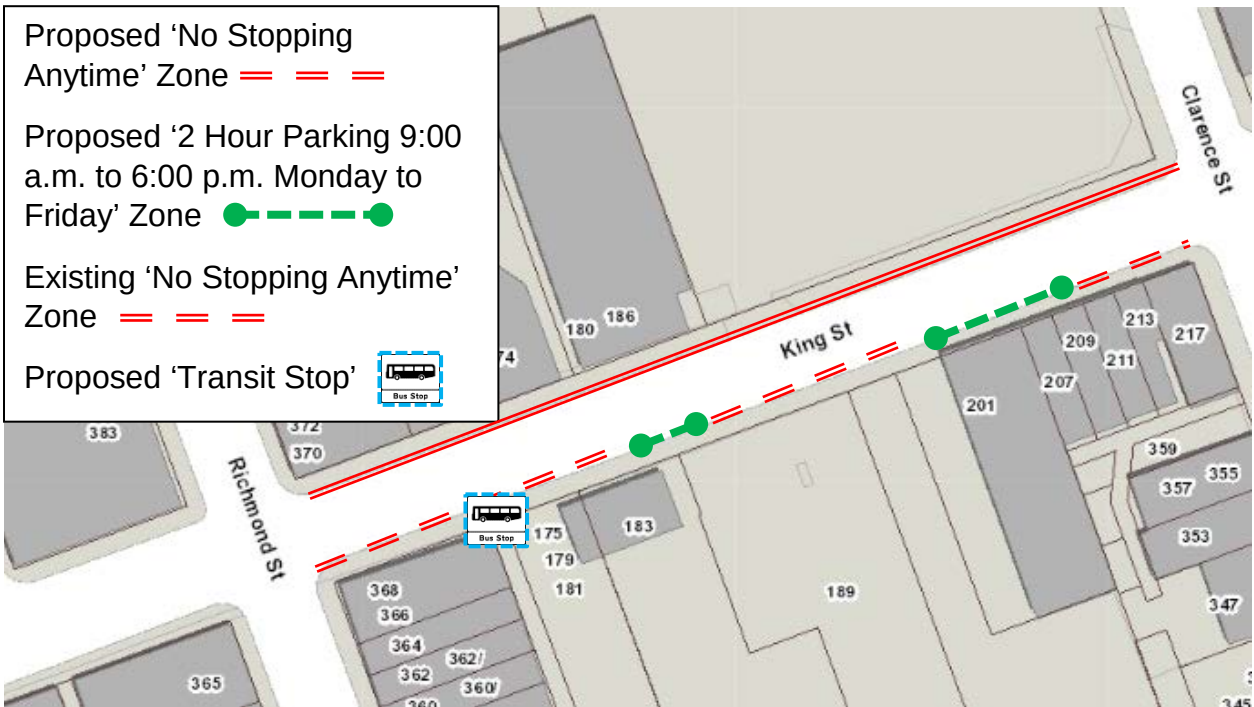


Figure 11: King Street from Richmond Street to Clarence Street

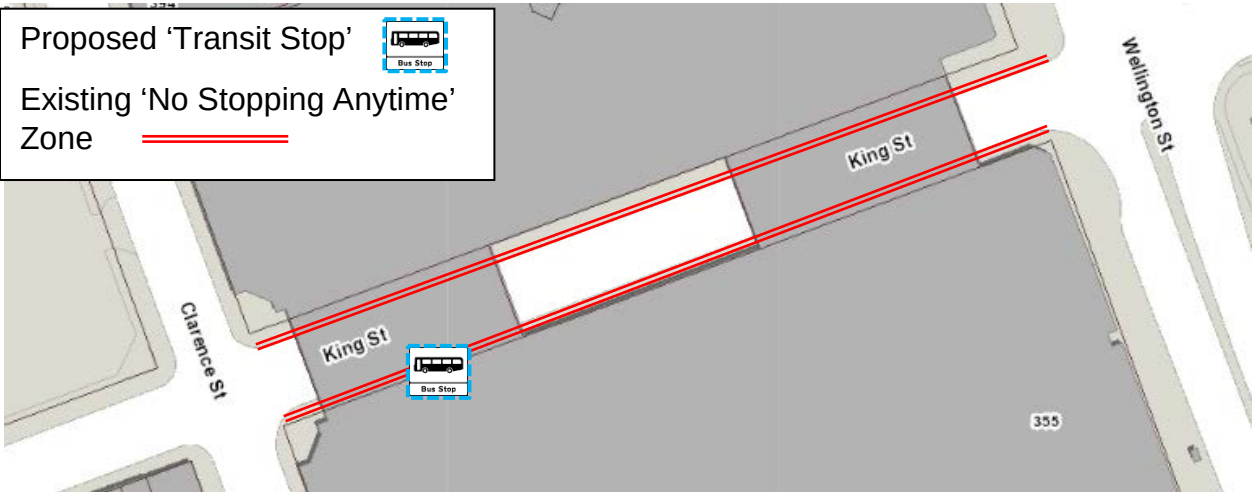


Figure 12: King Street from Clarence Street to Wellington Street

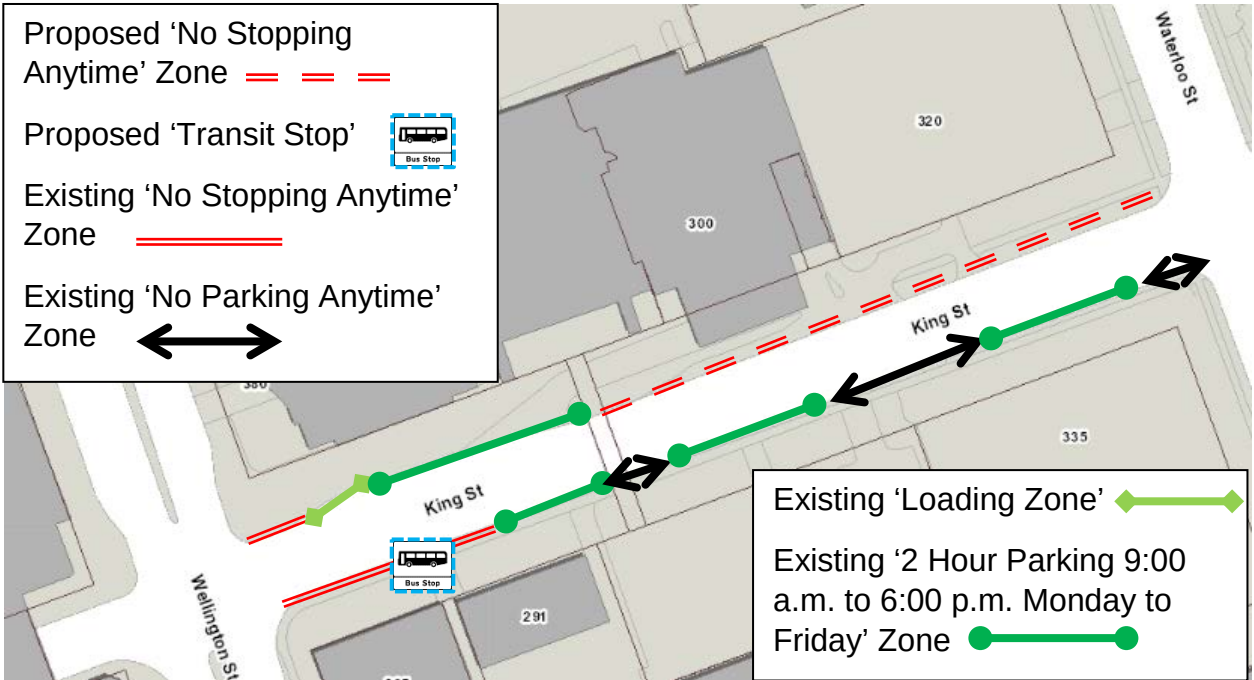


Figure 13: King Street from Wellington Street to Waterloo Street

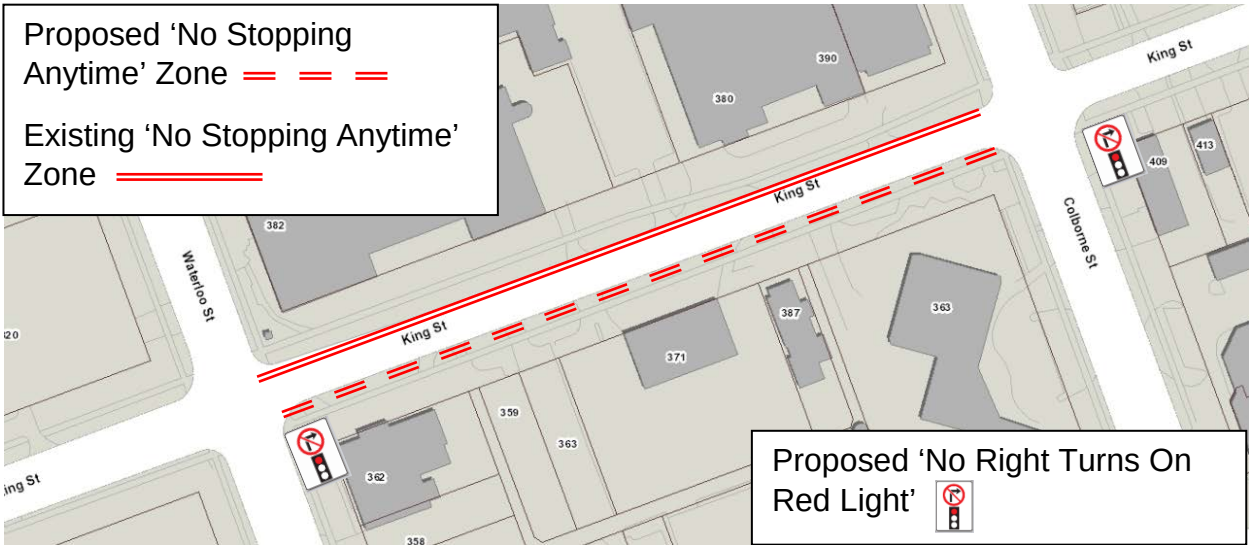


Figure 14: King Street from Waterloo Street to Colborne Street

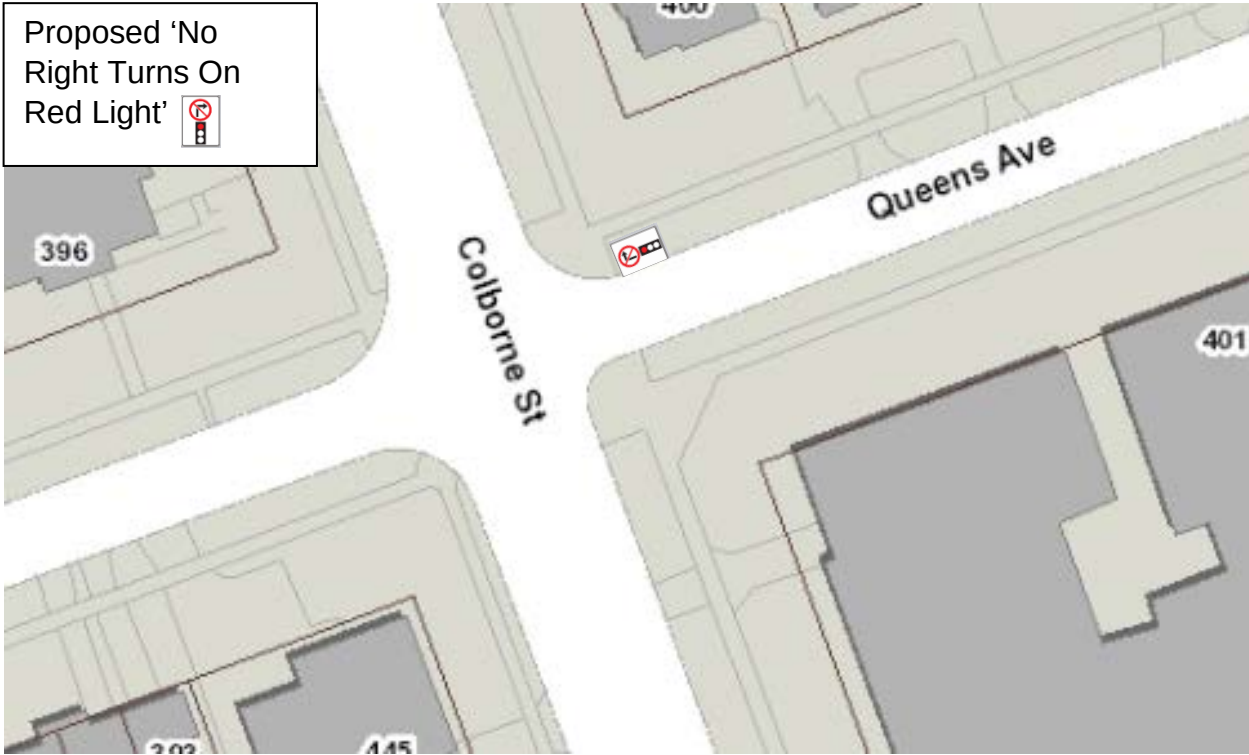


Figure 15: Colborne Street at Queens Avenue

Amendments to Schedule 1 (No Stopping), Schedule 2 (No Parking), Schedule 5 (Loading Zones), Schedule 8 (Prohibited Turns) and Schedule 20 (On-Street 2 Hour Metered Zones)

ACKNOWLEDGEMENT:

This report was prepared with the assistance of Doug Bolton of the Roadway Lighting and Traffic Control Division.

PREPARED BY:	REVIEWED AND CONCURRED BY:
SHANE MAGUIRE, P. ENG. DIVISION MANAGER, ROADWAY LIGHTING AND TRAFFIC CONTROL	DOUG MACRAE, P.ENG., MPA DIRECTOR, ROADS AND TRANSPORTATION
RECOMMENDED BY:	
KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER	

Y:\Shared\Administration\COMMITTEE REPORTS\Civic Works\2019\FINAL\06-18\CWC - TRAFFIC PARKING BY-LAW AMENDMENTS CWC.docx

May 31, 2019/db

Attach: Appendix 'A': Proposed Traffic and Parking By-Law Amendments
 Appendix 'B': Proposed Traffic and Parking By-Law Amendments related
 to Accessible Parking Stalls

cc. City Solicitor's Office
 Parking Office

APPENDIX A

BY-LAW TO AMEND THE TRAFFIC AND PARKING BY-LAW (PS-113)

Bill No.

By-law No. PS-113

A by-law to amend By-law PS-113 entitled, “A by-law to regulate traffic and the parking of motor vehicles in the City of London.”

WHEREAS subsection 10(2) paragraph 7. Of the *Municipal Act, 2001*, S.O. 2001, c.25, as amended, provides that a municipality may pass by-laws to provide any service or thing that the municipality considers necessary or desirable to the public;

AND WHEREAS subsection 5(3) of the *Municipal Act, 2001*, as amended, 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. No Stopping

Schedule 1 (No Stopping) of the PS-113 By-law is hereby amended by **deleting** the following rows:

King Street	South	A point 53 m west of Talbot Street	Talbot Street	Anytime
King Street	South	A point 76 m west of Richmond Street	Richmond Street	Anytime
King Street	South	Clarence Street	A point 48 m east of Wellington Street	Anytime

Schedule 1 (No Stopping) of the PS-113 By-law is hereby amended by **adding** the following rows:

King Street	South	Ridout Street N	A point 34 m east of Ridout Street N	Anytime
King Street	South	A point 54 m east of Ridout Street N	A point 71 m east of Richmond Street	Anytime

King Street	South	A point 77 m east of Richmond Street	A point 50 m west of Clarence Street	Anytime
King Street	South	A point 21 m east of Clarence Street	A point 44 m west of Wellington Street	Anytime
King Street	South	A point 95 m west of Waterloo Street	A point 55 m west of Waterloo Street	Anytime
King Street	South	A point 24 m west of Waterloo Street	Colborne Street	Anytime

2. **No Parking**

Schedule 2 (No Parking) of the PS-113 By-law is hereby amended by **adding** the following rows:

Jellicoe Crescent	East & North	Wayne Road	A point 62 m north of Wayne Road	Anytime
Wayne Road	North	Jellicoe Crescent	A point 45 m east of Jellicoe Crescent	Anytime

3. **Loading Zones**

Schedule 5 (Loading Zones) of the PS-113 By-law is hereby amended by **deleting** the following rows:

King Street	South	From a point 49 m east of Talbot Street to a point 66 m easterly from the said street	8:00 a.m. to 6:00 p.m.
King Street	South	From a point 25 m east of Ridout Street to a point 40 m east of said street	

Schedule 5 (Loading Zones) of the PS-113 By-law is hereby amended by **adding** the following rows:

Picton Street	East	The portion which lies east of the roadway from 35 m north of Queens Avenue to 65 m north of Queens Avenue	
King Street	South	From a point 34 m east of Ridout Street N to a point 54 m east of Ridout Street N.	

4. **Prohibited Turns**

Schedule 8 (Prohibited Turns) of the PS-113 By-law is hereby amended by **adding** the following rows:

Colborne Street with King Street	Northbound	Right
Queens Avenue at Colborne Street	Westbound	Right
Sarnia Road with Wonderland Road N	Eastbound and Westbound	“U” Turn
Talbot Street with King Street	Northbound	Right
Waterloo Street with King Street	Northbound	Right
Wonderland Road N with Sarnia Road	Northbound and Southbound	“U” Turn

5. **Stop Signs**

Schedule 10 (Stop Signs) of the PS-113 By-law is hereby amended by **adding** the following rows:

Westbound	Bridgehaven Drive	Saddlerock Avenue
Eastbound	Heardcreek Trail	Medway Park Drive
Northbound and Southbound	Heardcreek Trail	Twilite Boulevard
Northbound and Southbound	Medway Park Drive	Bridgehaven Drive

6. **Yield Signs**

Schedule 11 (Yield Signs) of the PS-113 By-law is hereby amended by **adding** the following rows:

Westbound	Buroak Drive	Fair Oaks Boulevard
Eastbound	Buroak Drive	Saddlerock Avenue
Southbound	Bush Hill Link	Heardcreek Trail
Southbound	Fair Oaks Boulevard	Buroak Drive
Southbound	Red Pine Cross	Heardcreek Trail
Westbound	Red Pine Cross	Heardcreek Trail
Northbound	Saddlerock Avenue	Buroak Drive
Northbound	Shields Place	Heardcreek Trail
Northbound	Wateroak Drive	Heardcreek Trail

7. **Through Highways**

Schedule 13 (Through Highways) of the PS-113 By-law is hereby amended by **adding** the following rows:

Applerock Avenue	Buroak Drive (west intersection)	Buroak Drive (west intersection)
Buroak Drive	Twilite Boulevard except the intersections with Jordan Boulevard, Fair Oaks Boulevard, Saddlerock Avenue, Tokala Trail and Denview Avenue	Eagletrace Drive
Tokala Trail	Twilite Boulevard except intersections with Dyer Drive, Dalmagarry Road, Aldersbrook Gate, Wateroak Drive, Medway Park Drive	Buroak Drive

8. 2 hour Metered Zones

Schedule 20 (2 Hour Metered Zones) of the PS-113 By-law is hereby amended by **deleting** the following row:

King Street	South	A point 40 m west of Ridout Street	Waterloo Street	8:00 a.m. to 6:00 p.m.
-------------	-------	------------------------------------	-----------------	------------------------

Schedule 20 (2 Hour Metered Zones) of the PS-113 By-law is hereby amended by **adding** the following rows:

King Street	South	A point 71 m east of Richmond Street	A point 77 m east of Richmond Street	8:00 a.m. to 6:00 p.m.
King Street	South	A point 50 m west of Clarence Street	A point 21 m west of Clarence Street	8:00 a.m. to 6:00 p.m.
King Street	South	A point 44 m east of Wellington Street	A point 95 m west of Waterloo Street	8:00 a.m. to 6:00 p.m.
King Street	South	A point 55 m west of Waterloo Street	A point 24 m west of Waterloo Street	8:00 a.m. to 6:00 p.m.

This by-law comes into force and effect on the day it is passed.

PASSED in Open Council on June 25, 2019

Ed Holder, Mayor

Catharine Saunders, City Clerk

First Reading – June 25, 2019

Second Reading – June 25, 2019

Third Reading – June 25, 2019

APPENDIX B

BY-LAW TO AMEND THE TRAFFIC AND PARKING BY-LAW (PS-113) RELATED TO ACCESSIBLE PARKING STALLS

Bill No.

By-law No. PS-113

A by-law to amend By-law PS-113 entitled, “A by-law to regulate traffic and the parking of motor vehicles in the City of London.”

WHEREAS subsection 10(2) paragraph 7. Of the *Municipal Act, 2001*, S.O. 2001, c.25, as amended, provides that a municipality may pass by-laws to provide any service or thing that the municipality considers necessary or desirable to the public;

AND WHEREAS subsection 5(3) of the *Municipal Act, 2001*, as amended, 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. Definitions

By-law PS-113 is hereby amended by **adding** the following:

“access aisle” means an area designated by pavement markings adjacent to a designated parking space for the purpose of allowing access/egress to vehicles parked within the designated parking space;

2. Parking Spaces for Disabled Persons

By-law PS-113 is hereby amended by **deleting** the following:

- (2) No person shall park, stand, stop, or leave a motor vehicle in an access aisle for a parking space for persons with disabilities when “No Stopping” signs have been erected and are on display.

The PS-113 By-law is hereby amended by **adding** the following to Section 77:

- (2) No person shall park, stand, stop, or leave a motor vehicle in an access aisle.
- (3) No person shall park more than one vehicle in any one parking space at any one time.
- (4) No person shall park a vehicle in a parking space that is partly or completely occupied by another vehicle.

This by-law comes into force and effect September 30, 2019.

PASSED in Open Council on June 25, 2019

Ed Holder, Mayor

Catharine Saunders, City Clerk

First Reading – June 25, 2019

Second Reading – June 25, 2019

Third Reading – June 25, 2019

TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON JUNE 18, 2019
FROM:	KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER
SUBJECT:	2020 ANNUAL NEW SIDEWALK PROGRAM

RECOMMENDATION

That, on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, the sidewalk candidates proposed for the 2020 Annual New Sidewalk Program **BE ENDORSED** for implementation in 2020.

PREVIOUS REPORTS PERTINENT TO THIS MATTER
--

- Civic Works Committee – April 4, 2018 – 2018 Annual Warranted Sidewalk Program
- Civic Works Committee – September 25, 2018 – Byron South Neighbourhood Sidewalk Connectivity Plan
- Civic Works Committee – February 20, 2019 – 2019 Annual New Sidewalk Program

COUNCIL’S 2019-2023 STRATEGIC PLAN

The following report supports the Strategic Plan through the strategic focus area of Building a Sustainable City by building new transportation infrastructure to meet the long term needs of our community.

BACKGROUND

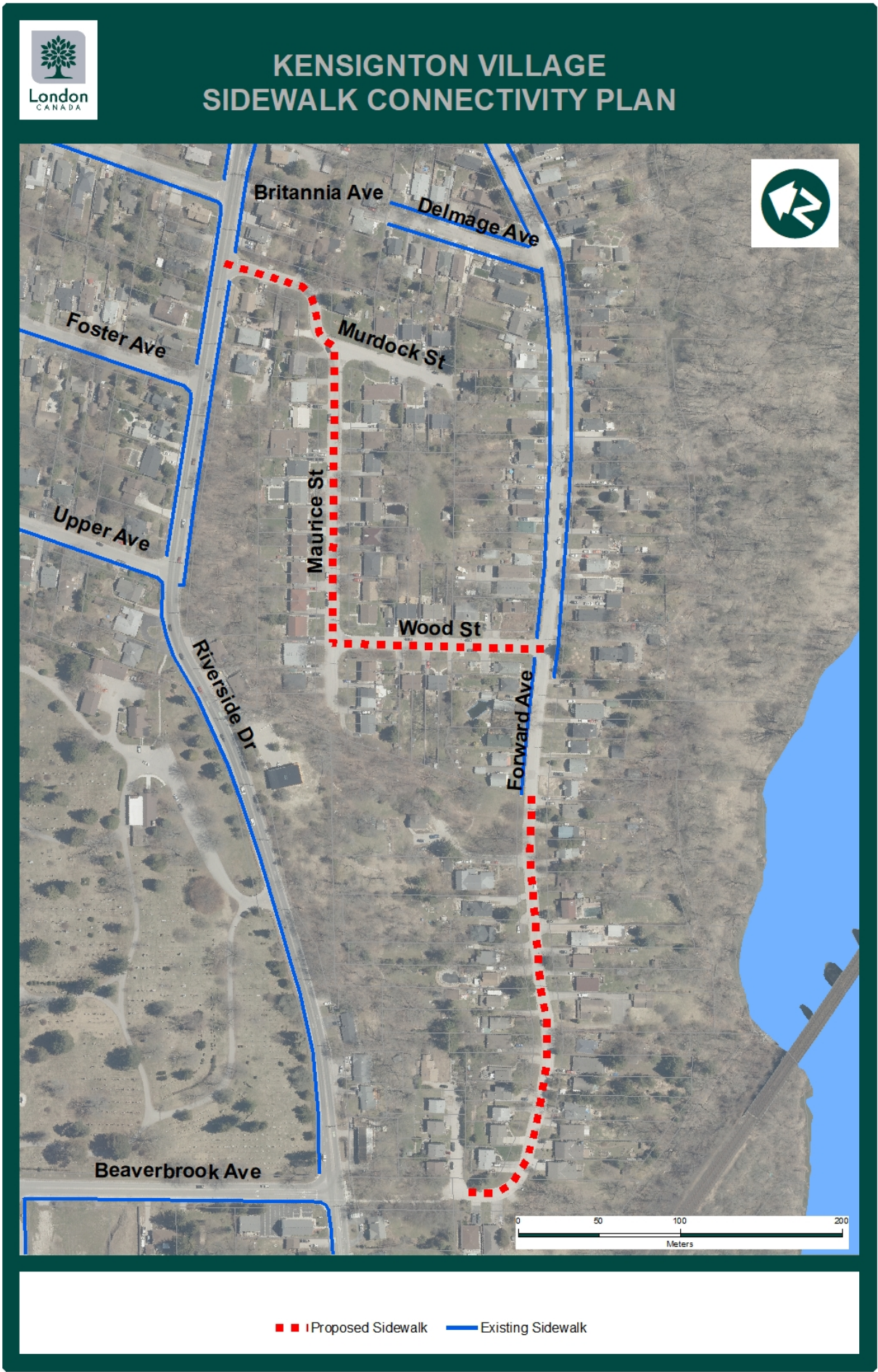
The New Sidewalk Program is an ongoing annual program responding to resident requests to improve walkability and accessibility in their neighbourhoods through the installation of sidewalks.

Subject to Council approval, the sidewalk candidates described herein will be implemented via the 2020 Annual New Sidewalk Program.

DISCUSSION

The 2020 Annual New Sidewalk Program will include approximately 1110 m of new sidewalks improving pedestrian safety, connectivity and accessibility. The proposed sidewalk locations include streets contributing towards the Kensington Village Sidewalk Connectivity Plan and a sidewalk on Hyde Park Road from Fanshawe Park Road West to Dyer Road; these streets can be seen below in the figures and tables throughout the discussion.

Kensington Village Sidewalk Connectivity Plan



Kensington Village Sidewalk Connectivity Plan		
Location	From	To
Forward Avenue	Existing sidewalk west of Wood Street	west end
Wood Street	Forward Avenue	Maurice Street
Maurice Street	Wood Street	Murdock Street
Murdock Street	Maurice Street	Riverside Drive

The Kensington Village neighbourhood is within the Eagle Heights Public School catchment area, but students are not provided bussing. The lack of sidewalks pose a safety risk to pedestrians, especially during peak traffic times and winter months, when the shared roadway width is decreased due to the presence of parked vehicles or snowbanks. Sidewalks provide a comfortable and separated space for pedestrians, especially children, the elderly or pedestrians with mobility assistance devices.

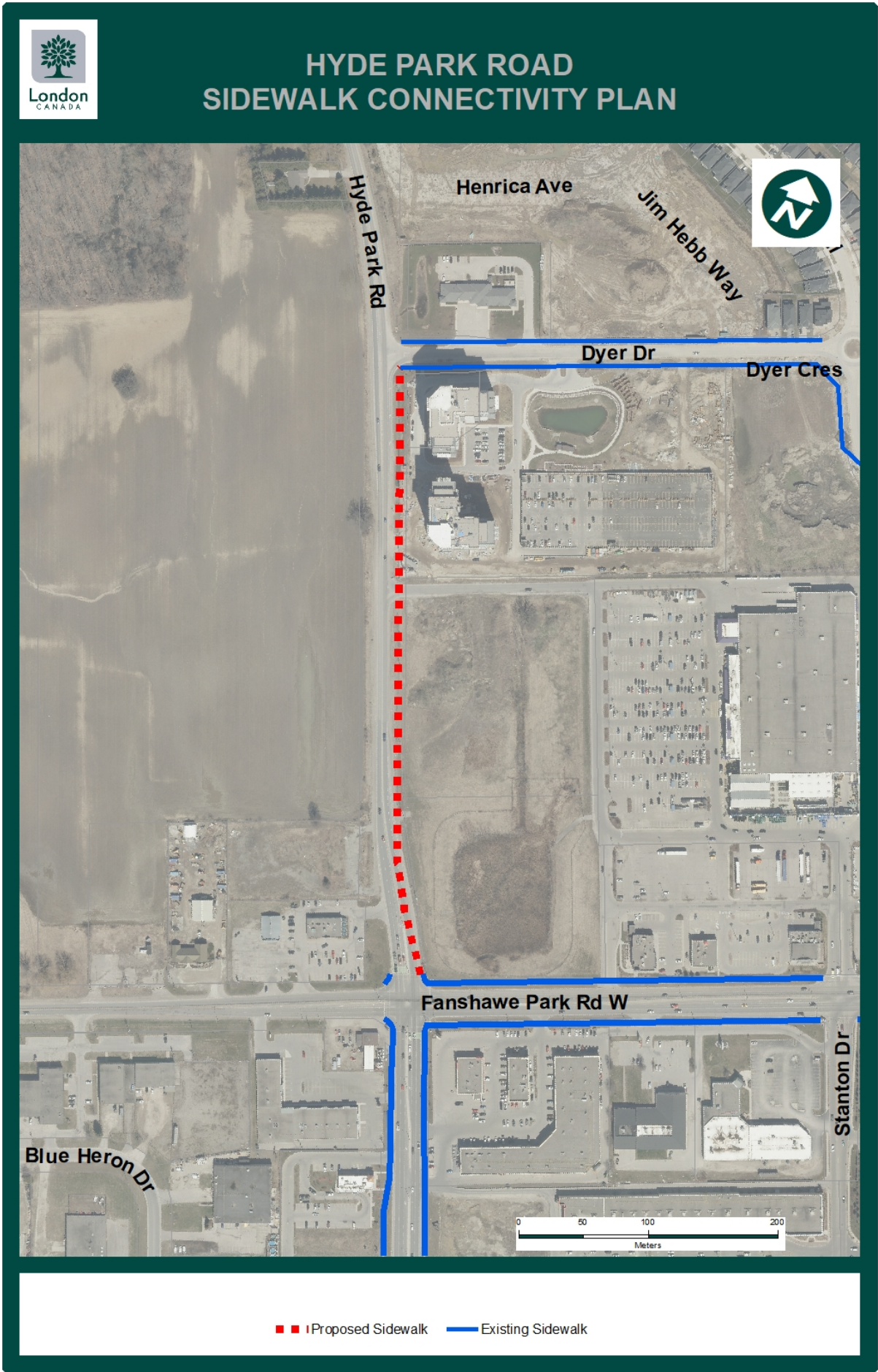


A typical Kensington Village street without sidewalk

Public Consultation

On Monday, February 28, 2019, City staff held a public information centre (PIC) at London Christian Academy, to receive public input for the Kensington Village Sidewalk Connectivity Plan. The PIC was attended by 15 residents; another 10 residents provided comments through email. 60% of the attendees were in support of the draft sidewalk connectivity plan, and another 15% did not state an opinion. A few key comments received during the PIC were to include an asphalt path to access Wood Street Park, consideration to accommodate people with mobility issues at nearby intersections, and to restrict parking on many of the streets in this neighbourhood. The main concerns of residents who did not support the proposed plan were impacts to their driveway and loss of trees on their front lawn. Many of these concerns can be mitigated in the design process, as staff assess the impacts and investigate strategies to minimize resident disruption. All comments received from the PIC were reviewed and staff feels the proposed plan will improve accessibility and connectivity, while balancing the impacts to residents within the City right of way.

Missing Connection in the Existing Sidewalk Network



Missing Connections in the Existing Sidewalk Network		
Location	From	To
Hyde Park Road	Fanshawe Park Road West	Dyer Road

Hyde Park Road from Fanshawe Park Road West to Dyer Road is a missing link in the sidewalk network, and installing a sidewalk will provide pedestrian connectivity to this neighbourhood as development continues to grow. Implementing new sidewalks is part of a complete streets approach to make neighbourhood streets welcoming, equitable, safe and accessible for community members of all ages and abilities.

DESIGN AND IMPLEMENTATION

Walking is an active mode of transportation promoted by the Smart Moves 2030 Transportation Master Plan and the London Plan; it is an integral part of a transit trip.

Subject to endorsement of the 2020 New Sidewalk Program, City staff will complete the sidewalk design for the proposed candidates. Letters will be sent out notifying affected residents of the sidewalk design. If residents in the neighbourhood request further information, staff will plan additional consultation opportunities to address resident concerns. Staff also periodically bring this program to the Transportation Advisory Committee to allow for additional comments that could improve the sidewalk design and receive feedback on the future year’s program.

During the design of the sidewalks, staff will complete an assessment of potential impacts and mitigation strategies to address resident and neighbourhood concerns. Several impacts and mitigation strategies that staff have encountered on past sidewalk projects can be seen in the table below.

Potential Impacts on City Right of Way	Mitigation Strategies
Tree conflicts	• Bend sidewalk around trees, or • Install new tree • Install sidewalk into the road, narrowing the roadway width
Loss of parking as sidewalk crosses driveway	• Install sidewalk strategically so that resident parking spots are maintained as much as possible
Damage to landscaping or privately installed irrigation	• Provide residents early notice, allowing ample time for residents to relocate
Driveway damaged during construction	• All driveways will be restored to existing or better condition after construction

Following the design phase communications, staff will send an additional notice before construction providing residents with an anticipated construction schedule that will include project manager contact information. During the installation of these sidewalks, City staff will minimize impacts to tree removals, utility relocations, and driveway disturbances.

CONCLUSION

The 2020 New Sidewalk Program supports the City of London's Vision Zero Road Safety Strategy by increasing safety and providing healthy equitable mobility for all. The program is also linked to the City of London's 2019-2023 Strategic Plan by Building a Sustainable City by building new transportation infrastructure to meet the long term needs of our community.

The plans propose a neighbourhood strategy to pedestrian connectivity and identify infrastructure that will create strategic connections while balancing resources within the annual program. The plan will add approximately 1250 m of new sidewalk to improve pedestrian safety, accessibility and connectivity. The installation of sidewalks will provide a comfortable space for pedestrians where one does not currently exist.

Staff will continue to engage affected residents throughout the next stages of design and construction and work together to make this program a success by improving safety for all.

Acknowledgements

This report was prepared by John Bos, C.E.T., Technologist II, and Peter Kavcic, P.Eng., Transportation Design Engineer, both from the Transportation Planning and Design Division.

PREPARED BY:	REVIEWED AND CONCURRED BY:
GARFIELD DALES, P.ENG. DIVISION MANAGER TRANSPORTATION PLANNING AND DESIGN	DOUG MACRAE, P. ENG., MPA DIRECTOR ROADS AND TRANSPORTATION
RECOMMENDED BY:	
KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER	

Attach: Appendix A 2020 New Sidewalk Annual Program List

- cc: Councillor Arielle Kayabaga
 Councillor Josh Morgan
 Gabor Sass, Kensington Village Association
 Transportation Advisory Committee

Appendix A

2020 New Sidewalk Annual Program List (as of May 10, 2019)

(Sections proposed for construction in 2020 are highlighted)

	Rating				Length	Road
Est Cost	125 Max.	LOCATION	FROM	TO	(m)	Class
\$45,375	90	Florence Street	60m east of Oakland Avenue	Highbury Avenue	165	A
\$45,500	85	Windemere Road	Windemere on the Mount	Sisters of St. Joseph	260	A
\$123,375	80	Downing Crescent	North Millbank Intersection	South Millbank Intersection	705	L
\$93,625	80	Riverside Drive	Sunninghill Avenue	Dunedin Drive	535	A
\$87,500	80	Tewksbury Crescent	Sorrel Road	Perth Avenue	500	L
\$152,250	75	Burnside Drive	Bow Street	Holgate Road	870	L
\$37,625	75	Cairn Street	Three Valleys Crescent	Burlington Crescent	215	L
\$22,925	75	Cleveland Avenue	Burlington Street	Cairn Street	131	L
\$157,500	75	Sunningdale Road E	East of Skyling (Existing)	Villagewalk Boulevard	900	A
\$69,125	75	Wood, Maurice, & Murdock	Forward Avenue	Riverside Drive	395	L
\$59,500	75	Huron Street	Clarke Road	Oakville Avenue	340	A
\$125,125	75	Glenrose Drive	Boler Road	Colville Boulevard	715	L
\$58,625	75	Norman Avenue	Boler Road	Brock Street	335	L
\$7,525	70	Adelaide St N	Existing at Huron	South existing	43	A
\$82,250	70	Braesyde Avenue	Hamilton Road	Gore Road	470	L
\$145,250	70	Clarke Road	Hamilton Road	375m S of Gore Road	830	A
\$203,875	70	Colonel Talbot Road	Byron Baseline Road	Fourwinds Road	1165	A
\$70,000	70	Coombs Avenue	West end of Trott Drive	North end of Fox Avenue	400	L
\$45,500	70	Cramston Crescent	Valetta Street	Adevon Avenue	260	L
\$208,250	70	Griffith Street	Baseline Road	Commissioners Road W.	1190	C
\$80,500	70	Oxford Street	Existing just east of Clarke Rd	780m east of Clarke Rd	460	A
\$249,375	70	Pond Mills Road	Bradley Avenue	Wilton Grove Road	1425	A
\$40,250	70	Southdale Road & Wharncliffe Road	Old Wharncliffe Road	Old Wharncliffe Road	230	A

\$63,875	70	Stoneybrook Crescent	100m NE of Geary Avenue	Fanshawe Park Road.	365	L
\$46,375	70	Vesta Road	Fuller Street	Hillcrest Avenue	265	L
\$145,250	70	Wharncliffe Road	Savoy Street	Wonderland Road	830	A
\$74,025	70	Windermere Road	693 Windemere Road	65m West of Adelaide	423	A
\$253,750	70	Commissioners Road West	Boler Road	Byron Baseline Road	1450	A
\$27,125	70	Gould Street	East Street	Elgin Street	155	L
\$24,500	70	Tennant Avenue	AB Lucas Secondary School	Glengarry Avenue	140	L
\$175,000	70	Fanshawe Park Road East	Highbury Avenue	Cedar Hollow Boulevard	1000	A
\$16,625	70	Colville Boulevard	Byron Baseline Road	Glenrose Drive	95	L
\$63,000	65	Briarhill Avenue	Huron Street	Melsandra Avenue	360	C
\$58,625	65	Centre Street	27 Centre Street	Wharncliffe Road	335	L
\$13,475	65	Chippendale Crescent South leg	King Edward Avenue	Existing S/W at School	77	L
\$231,875	65	Clarke Road	Huron Street	Oxford Street	1325	A
\$175,000	65	Colonel Talbot Road	4685 Colonel Talbot Road	Existing S/W	1000	A
\$322,875	65	Hamilton Road	Gore Road	Clarke Road	1845	C
\$81,375	65	Hyde Park Road	Dyer Drive	Fanshawe Park Road.	465	A
\$63,000	65	Nottingham Road	Commissioners Road. West	Village Green Road.	360	C
\$90,125	65	Stoneybrook Crescent	Fanshawe Park Road	Phillbrook Drive	515	L
\$63,000	65	Sunningdale Road E	Bluebell Road	360m east of Bluebell Road	360	A
\$119,000	65	The Parkway	Sunset Drive	Sherwood Avenue	680	L
\$124,600	65	Webster Street	Jensen Road	Killaly Road	712	C
\$78,750	65	Prince of Wales Gate	Gainsborough Road	South Carriage Road	450	L
\$52,500	60	Base Line Road	Beachwood Avenue	20m W of West Street.	300	C
\$44,625	60	Belvedere Avenue	Lola Street	Byron Baseline Road	255	L
\$242,375	60	Clarke Road	95m North of Oxford Street	Huron Street	1385	A
\$11,375	60	Colonel Talbot Road	Outer Drive	4690 Col. Talbot Road	65	A
\$39,550	60	Commissioners Road West	Longworth Road	Crestwood Drive	226	A

\$37,625	60	Ford Crescent	South end of N/S portion	North end of N/S portion	215	L
\$43,750	60	Forward Avenue	End	100m W of Wood Street.	250	L
\$242,375	60	Industrial Road	Oxford Street East	Dundas Street	1385	A
\$49,000	60	Kenmore Place	Melsandra Avenue	Kipps Lane	280	L
\$52,500	60	Mark Street	Susan Avenue	West End of Street	300	L
\$85,750	60	Micheal Street	Irving Place	East End of Street	490	L
\$123,375	60	Middlewoods Drive	Lawson Road	Sarnia Road	705	L
\$115,500	60	Newbold Street	Adelaide Street	Bradley Avenue	660	C
\$78,750	60	Patann Drive	Godfrey Drive	Irving Place	450	L
\$14,000	60	Regis Avenue	Wayne Road	Regis Place	80	L
\$17,500	60	Regis Place	Regis Avenue	West End	100	L
\$43,750	60	Royal Crescent	Mun. No. 1925	Garland Crescent	250	L
\$126,000	60	Whitney Street	Saskatoon Street	40m East of Hilton Avenue	720	L
\$26,250	60	Wortley Road	Mountsfield Crescent	Commissioners Road	150	C
\$17,500	60	Meadowdown Drive	Mayfair Drive	Epworth Avenue	100	L
\$52,500	60	Baseline Road	Beachwood Avenue	West Street	300	C
\$33,250	55	Cavendish Crescent	Walnut Street	115 Cavendish Crescent	190	L
\$15,750	55	Col. Talbot Road	Lambeth Walk	James Street	90	A
\$14,875	55	Cornish Street	Brydges Street	Cronyn Crescent	85	L
\$17,150	55	Danielle Lane	River Run Terrace	Pochard lane	98	L
\$45,500	55	Everglade Crescent	Mahogany Road	Cypress Crescent	260	L
\$99,750	55	Hillcrest Avenue	Regal Drive	Highbury Avenue	570	L
\$28,000	55	Horace Street	St. Julien Street	Madison Avenue	160	L
\$84,000	55	Inverness Avenue	Laurel Street	Deer Park Circle	480	L
\$37,450	55	King Edward Avenue	114m W of Scenic Drive	Thompson Road	214	C
\$99,750	55	Kiwanis Park Drive	Wavell Street	Spruce Avenue	570	L
\$9,625	55	Longworth Road	Commissioners Road. West	Existing	55	C
\$70,000	55	Magee Street	Highbury Avenue	Hale Street	400	C
\$105,000	55	Neville Drive/Edgar Drive	Dead End of Neville Drive	Coombs Avenue	600	L
\$14,000	55	Oliver Street	Vauxhall Street	Terrence Street	80	L

\$50,400	55	Old Wonderland Road	Teeple Terrace	Eaton Park Drive	288	L
\$43,750	55	Penrith Crescent	Grasmere Crescent.	Ambleside Drive	250	L
\$40,250	55	Regent Street	William Street	Adelaide Street	230	L
\$7,875	55	Royal York Road	Manchester Road	Oxford Street	45	C
\$35,000	55	Salway Street	Quinton Road	Valetta Street	200	L
\$38,500	55	Scotchpine Crescent	Limberlost Road	Homestead Crescent	220	C
\$26,250	55	Selkirk Drive	Braesyde Avenue	East End of Selkirk Drive	150	L
\$157,500	55	Sunningdale Road E	East of Skyline (Existing)	Villagewalk Boulevard	900	A
\$52,500	55	Sunnyside Drive	Richmond Street	Masonville Crescent	300	L
\$25,375	55	Topping Lane	559 Topping Lane	Commissioners Road W	145	C
\$92,750	55	Trafalgar Street	Veterans Memorial Parkway	Crumlin Road	530	A
\$64,750	55	Wellingsboro Road	Southdale Road	Dearness Drive	370	L
\$48,125	55	Wellington Road	Bradley Avenue	White Oaks Mall	275	A
\$35,000	55	Whitney Street	West end parking lot	Edgeworth Ave	200	L
\$49,000	55	Howard Avenue	David Street	Sunray Avenue	280	
\$42,000	50	Casson Way	Legendary Drive	Paulpeel Avenue	240	L
\$107,625	50	Crestwood Drive	Commissioners Road. West	Longworth Road	615	L
\$243,250	50	Crumlin Side Road	Trafalgar Street	Dundas Street	1390	A
\$63,875	50	Edgar Drive	Coombs Avenue	Edgar Drive	365	L
\$108,500	50	Southdale Road W	Bostwick Road	270m west of Wonderland Rd	620	A
\$105,000	50	Royal York Road	Manchester Road	Hyde Park Road	600	C
\$103,250	50	Donegal Drive	inverness Avenue	Sherene Terrace	590	L
\$64,750	45	Fairview Avenue	Whetter Avenue	35m N of Base Line Road	370	C
\$39,375	45	Geraldine Avenue	Kathryn Drive	Louise Boulevard	225	L
\$84,875	45	Kathryn Drive	Brian Avenue	McClure Drive	485	L
\$8,750	45	Mahogany Road	Everglade Street	Woodborough Crescent	50	L
\$26,250	45	McClure Drive	Smallman Drive	Louise Boulevard	150	L
\$61,250	45	Pond View Road	Glenroy Road	Milan Place	350	L
\$47,250	45	Regal Drive	Hillcrest Avenue	Fuller Street	270	L

\$70,000	45	Ridout Street	Dufferin Avenue	Albert Street	400	C
\$17,500	45	Sunninghill Avenue	Riverside Drive	Embassy Road	100	L
\$110,250	45	Tetherwood Boulevard & Tetherwood Court	Windermere Road	End of Street	630	L
\$26,250	40	Ann Street	St. George Street	East End	150	L
\$36,750	40	Barker Street	Victoria Street	Cheapside Street	210	C
\$70,000	40	Briarhill Avenue	Briarhill Court	Kipps Lane	400	L
\$35,000	40	Consortium Court	Newbold Street	End	200	L
\$10,500	40	Ealing Street	South End	Ex Walk west of Oliver	60	L
\$15,750	40	Edinburgh Street	Brittania Avenue	Woodward Drive	90	L
\$26,250	40	Midale Road	Grenfell Drive	Midale Crescent East	150	L
\$113,750	40	Newbold Street	Hargrieve Street	Adelaide Street	650	C
\$70,000	40	Northbrae Avenue	Monsarrat Avenue	Kipps Lane	400	L
\$175,000	40	Palmtree Avenue	Riverside Drive	Plantation Road	1000	L
\$38,500	40	Redford Road	Sunningdale Road E	Uplands Drive	220	L
\$70,000	40	Regent Street	Christie Street	Wellington Street	400	C
\$78,750	30	First Street	Oxford Street East	Commercial Crescent	450	C
\$42,000	25	Appel Street	Rabb Street	Cheapside Street	240	L
\$17,500	25	Oakridge Drive	Valetta Street	Kingsway Avenue	100	C

Dear CWC colleagues,

At our meeting, I would like to move some changes to the 2020 new sidewalk program.

Delete Forward St and Hyde Park in order to add:

A) Chippendale Cres and Cleveland Ave where children have a cut-through path between two streets that funnels them on to the road.

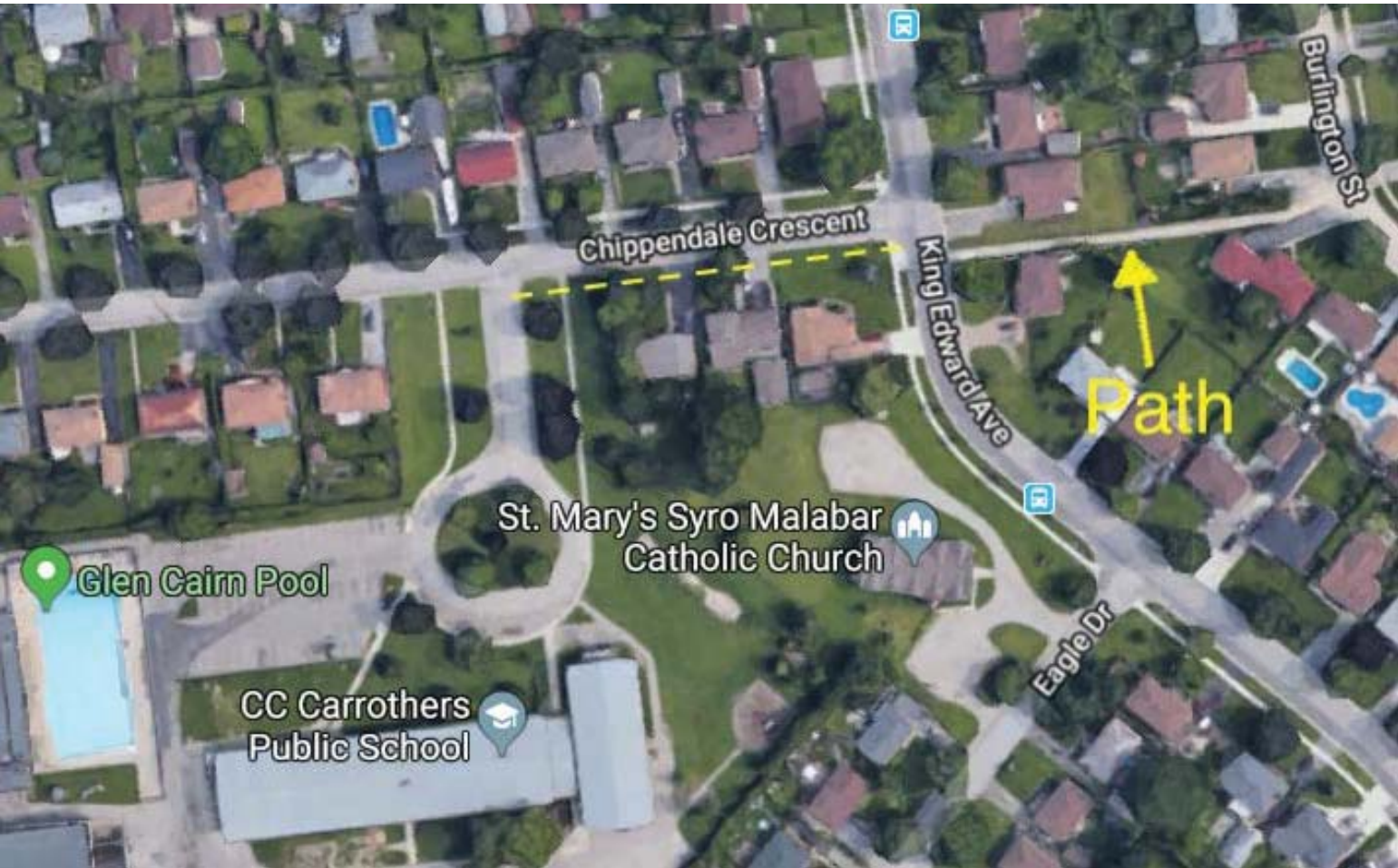
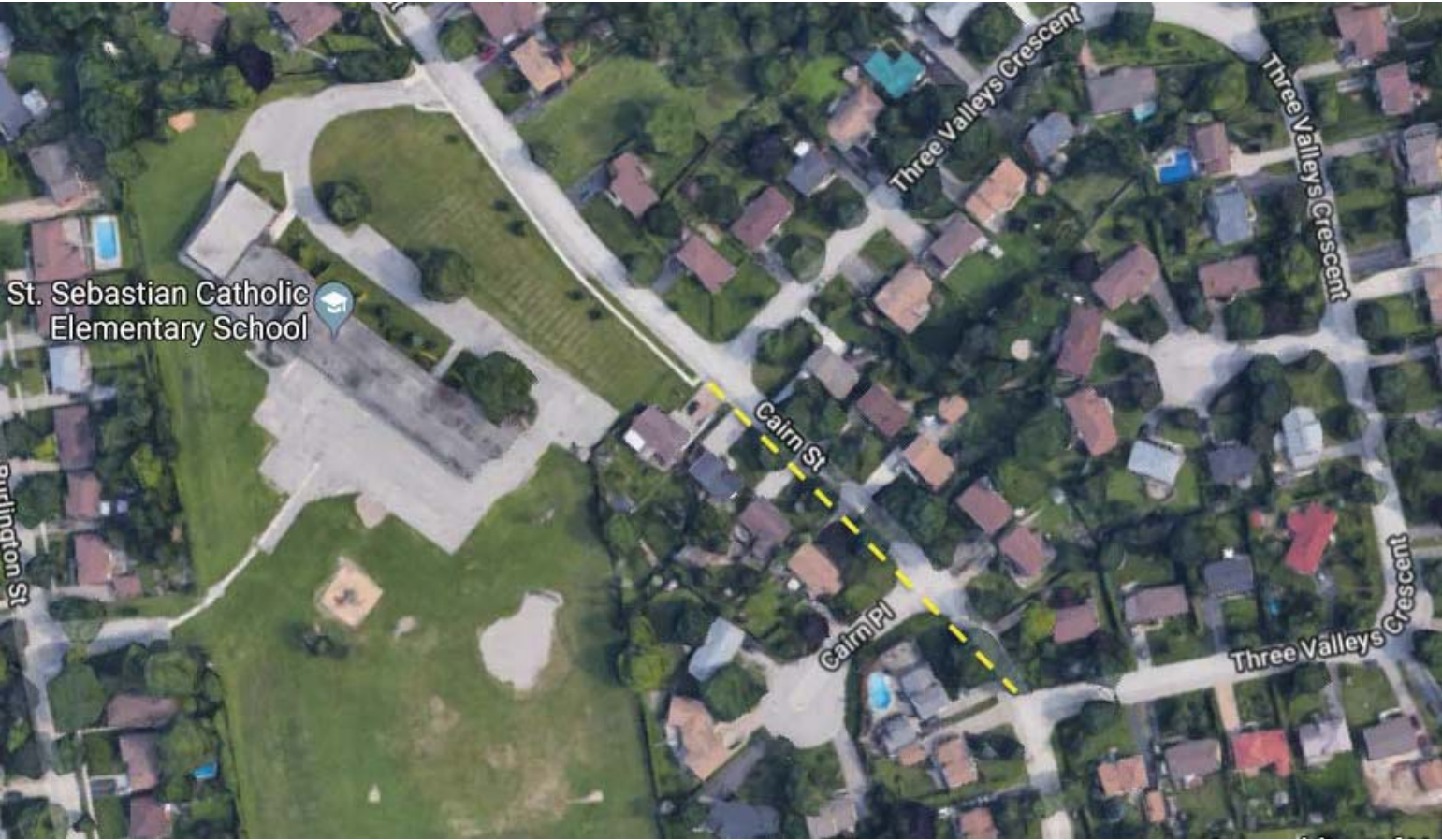
B) Oliver Street near Trafalgar school which is taking traffic diversions from Hamilton Road and will be worse next year when the major intersection is reworked at Egerton.

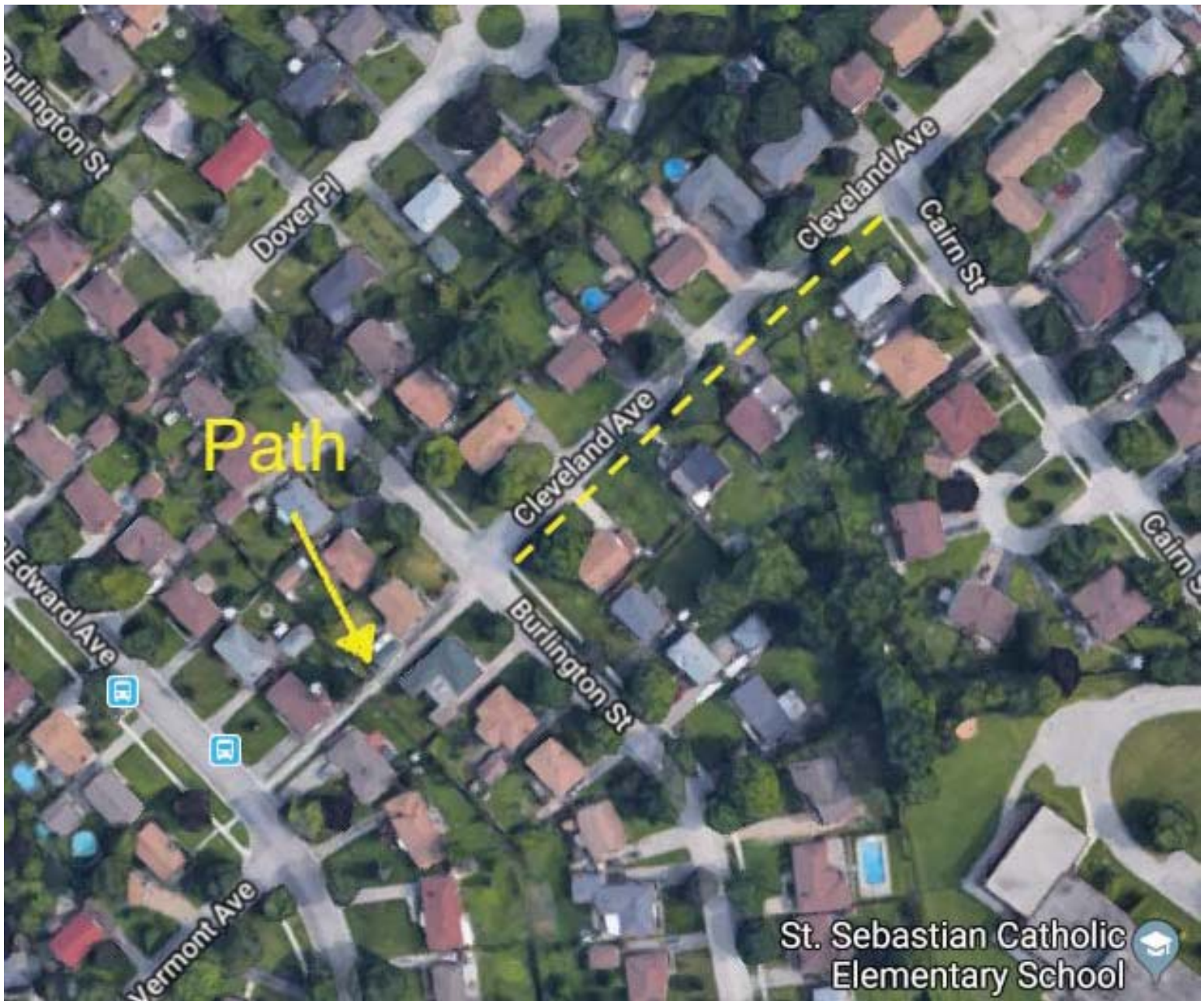
C) Cairn Street near St. Sebastian's School where safety concerns have been raised consistently but the project, though previously scheduled, has been put off.

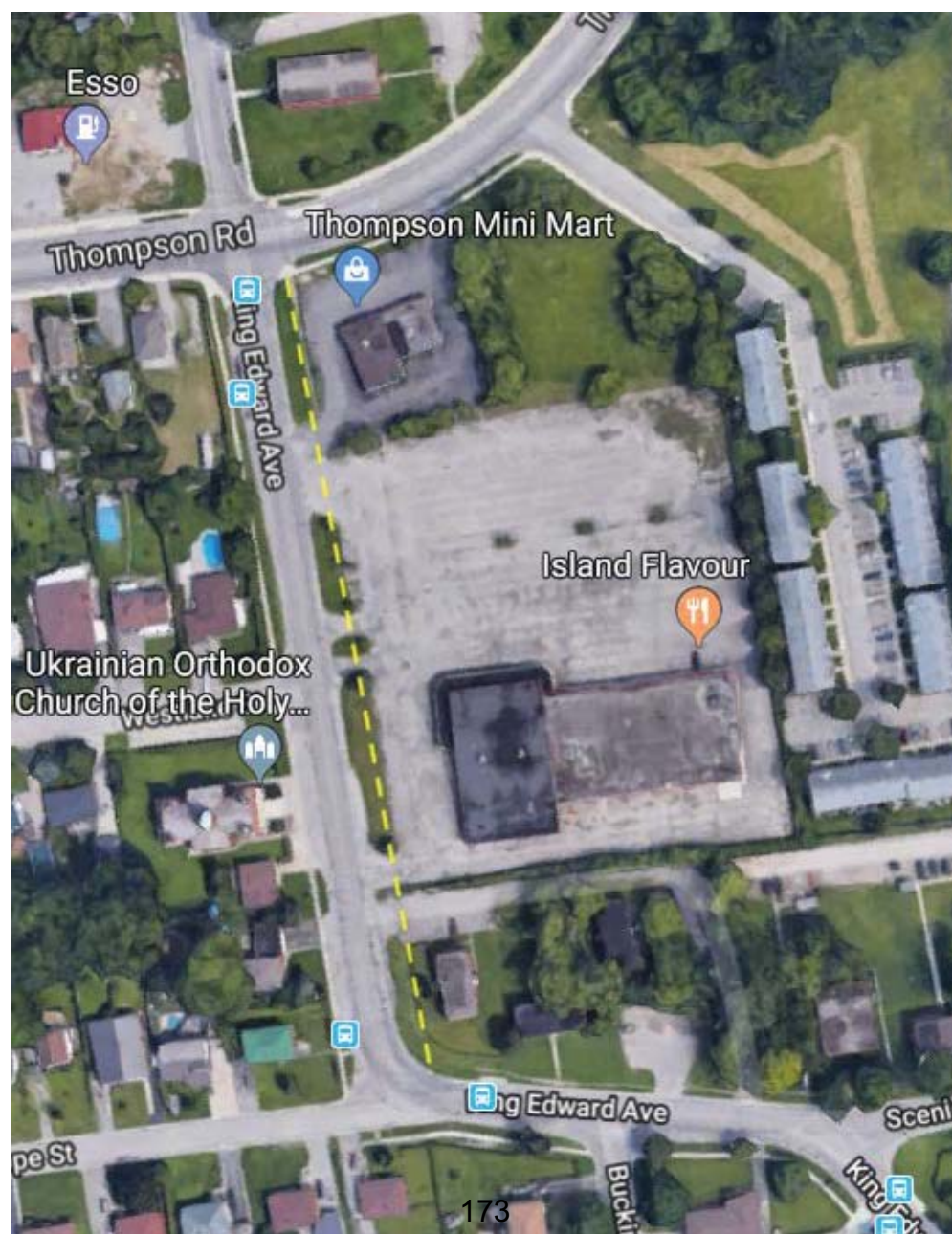
D) King Edward along the struggling commercial plaza.

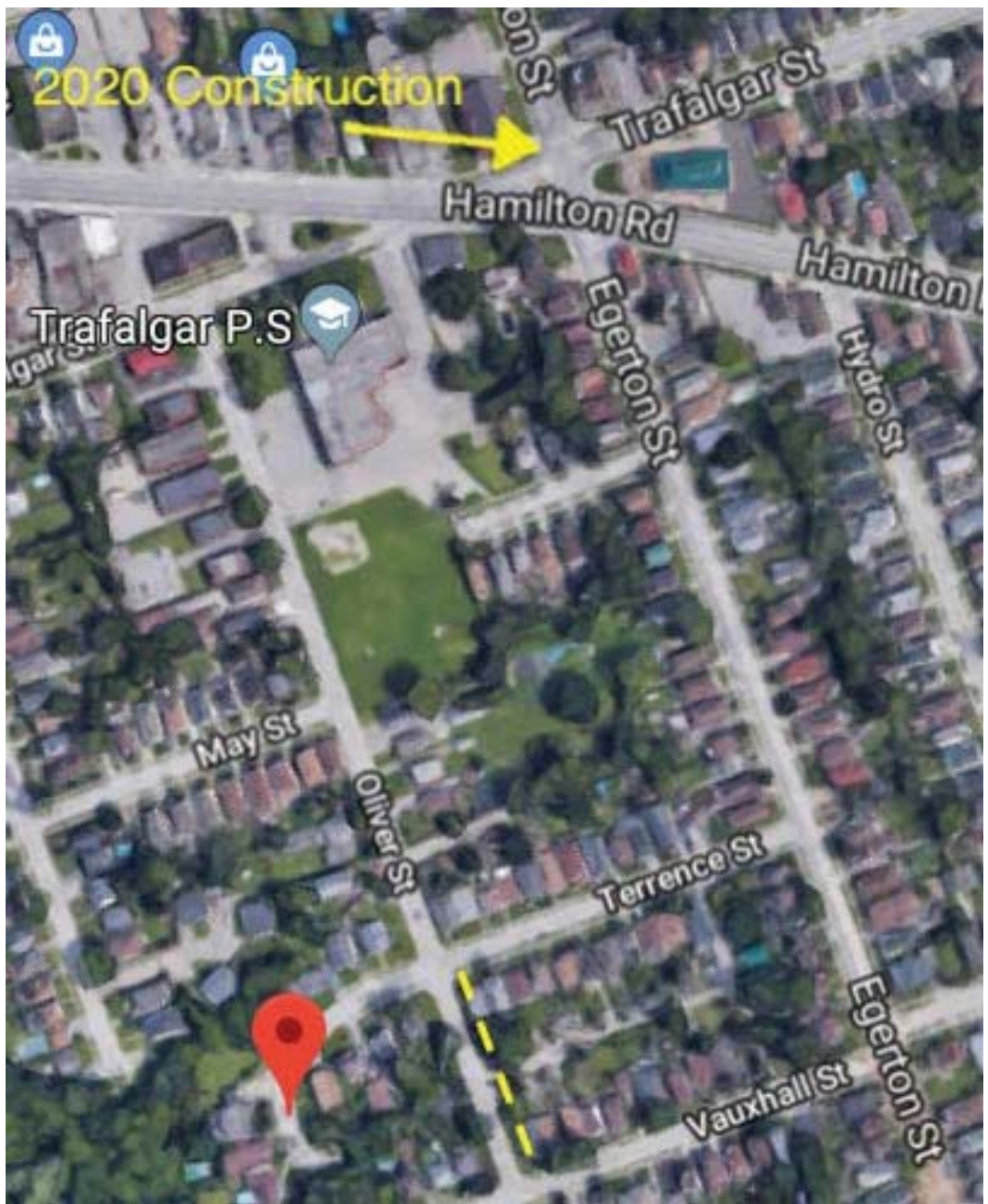
Thanks,

Michael van Holst









TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON JUNE 18, 2019
FROM:	KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR - ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER
SUBJECT:	AWARD OF CONTRACT (RFP 19-22) – FOUR (4) COMPRESSED NATURAL GAS (CNG) REAR-LOADING WASTE COLLECTION TRUCKS

RECOMMENDATION

That, on the recommendation of the Managing Director, Environmental and Engineering Services & City Engineer, the following actions **BE TAKEN**:

- a) The submission from Team Truck Centers Inc., 795 Wilton Grove Road London, Ont. N6N 1N7, **BE ACCEPTED**; for the supply and delivery of four (4) CNG Rear Loading Waste Collection Trucks at a total purchase price of \$1,090,920 (\$272,730 per unit) excluding HST;
- b) Civic Administration **BE AUTHORIZED** to undertake all the administrative acts that are necessary in connection with this purchase;
- c) Approval hereby given **BE CONDITIONAL** upon the Corporation entering into a formal contract or having a purchase order, or contract record relating to the subject matter of this approval; and
- d) That the funding for this purchase **BE APPROVED** as set out in the Source of Financing Report attached hereto as Appendix “A”.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

Relevant reports that can be found at www.london.ca under City Hall (Meetings) include:

- Business Case – Switching to Compressed Natural Gas (CNG) Waste Collection Trucks, September 25, 2018 meeting of the Civic Works Committee, Item #2.12

COUNCIL’S 2019-2023 STRATEGIC PLAN

Municipal Council has recognized the importance of solid waste management and climate change in its 2019-2023 - Strategic Plan for the City of London as follows:

Building a Sustainable City
London has a strong and healthy environment (Conserve energy and increase actions to respond to climate change and severe weather through Corporate Energy Management Conservation Demand Management Plan featuring Green Fleet Initiatives and Community Energy Action Plan)

Leading in Public Service
Londoners experience exceptional and valued customer service (Londoners experience exceptional and valued customer service and the City of London is a leader in public service as an employer, a steward of public funds and an innovator of service)

BACKGROUND

Purpose

The purpose of this report is to provide background information on the Request for Proposals (RFP) process to purchase four compressed natural gas (CNG) rear loading packers to replace four diesel packers that have reached the end of their life-cycle and seek Committee and Council approval for the recommended bidder (Figure 1).



Figure 1

Context

Solid Waste Collection Program

The Solid Waste Collection program involves a fleet of thirty seven collection trucks. The large majority of which are rear loading residential collection units. Four (4) of the units have reached the end of their optimum service life and require replacement.

As part of the fuel switching business case, Fleet Services and Solid Waste initiated a Request for Proposal (RFP) with Purchasing and Supply for four (4) Compressed Natural Gas (CNG) powered waste collection trucks to replace the current diesel powered units.

As part of the replacement process the retiring vehicles were evaluated based on performance, maintenance costs, condition and risk to ensure they should be replaced. The retiring units all met the criteria for end of optimum service life. The existing units to be replaced are listed below:

#	Truck #	Type of Chassis/ Packer Body	Kilometres	Years of Service
1	09-018	2009 Freightliner 8.3L with Fanotech 25 cu.yd. rear loading packer body	194,330	10
2	09-019	2009 Freightliner 8.3L with Fanotech 25 cu.yd. rear loading packer body	190,229	10
3	09-020	2009 Freightliner 8.3L with Fanotech 25 cu.yd. rear loading packer body	200,923	10
4	09-021	2009 Freightliner 8.3L with Fanotech 25 cu.yd. rear loading packer body	191,477	10

In the RFP – Section 5: Options and Innovative Extras the proponents were asked to provide trade in values for the retiring assets for consideration by the Fleet Services Division and the Manager of Purchasing. The target salvage remarketing value for end of life vehicle and equipment assets is 15% of replacement value.

Addressing the Need for Action on Climate Change

On April 23, 2019, the following was approved by Municipal Council with respect to climate change:

Therefore, a climate emergency be declared by the City of London for the purposes of naming, framing, and deepening our commitment to protecting our economy, our eco systems, and our community from climate change.

Switching diesel garbage packers to CNG packers is an example of this declaration (e.g., “deepening our commitment) in action.

Each CNG packer reduces GHG emissions by about 5 tonnes per year. Once all 37 CNG waste collection trucks are in place, it is estimated that the switch from B5 biodiesel to CNG will reduce annual fleet GHG emissions by around 200 tonnes per year. This represents a 12% reduction in waste collection GHG emissions and a 3% reduction in overall fleet GHG emissions.

Using CNG as a fuel will also have significant air pollutant emission reductions, with an estimated 50% reduction in tailpipe fine particulate emissions, 90% reduction in nitrogen oxides, and the elimination of emissions of sulphur dioxide, diesel soot, and polycyclic aromatic hydrocarbons.

CNG waste collection vehicles will enhance quality of life in our communities by producing less noise than diesel trucks when operating through residential neighbourhoods during collection cycles. This is an important feature for waste collection service delivery especially during early morning waste pickup.

DISCUSSION

Purchasing Process

On May 14, 2019, the Request for Proposal (RFP 19-22) closed and Purchasing & Supply received two submissions for evaluation as follows:

Vendor	Model
Freightliner/Fanotech London Team Truck Centers 795 Wilton Grove Road London, Ontario	2020 Freightliner 114SD Chassis with Fanotech Rear Loading Compactor Body
Freightliner/JJEI/Labrie Cambridge Team Truck Centers 45 High Ridge Court, Cambridge, Ontario	2020 Freightliner 114SD Chassis with Labrie 2R-III Rear Loading Compactor Body through Joe Johnson Equipment (JJEI)

The RFP evaluation process included representation from Purchasing and Supply, Fleet Maintenance, Fleet Planning and Fleet Asset Management. The panel rated the submissions based on specific pre-determined criteria made available to the vendors.

The evaluation categories included the following:

- 1. Company Certification, Experience and Past Performance
- 2. Specifications
 - Part a) Cab and Chassis
 - Part b) Rear Loader Body and Equipment
- 3. Safety and Regulatory Compliance
- 4. Service Agreement Delivery, Training and Warranty
- 5. Options and Innovative Extras
- 6. Price

Each section was weighted based on their criticality, importance and value to the City of London.

Results

Upon completion of the evaluation process and scoring it was determined that the London Team Truck Centre (Freightliner/Fanotech) submission scored the highest and met all the mandatory specifications and conditions therefore is being recommended. The bid from London Team Truck Centre was also the lowest financial submission.

In addition, the Fanotech rear loading compaction units have the same configuration and design of our existing fleet which is exclusively Fanotech compactor bodies for rear loaders. This provides additional efficiencies associated with standardization such as parts and inventory, Technician training, and operator familiarization.

Trade in allowances offered did not meet the target salvage value and will not be accepted as part of this RFP. The retiring assets will be sold at public auction through Fleet Planning and Purchasing and Supply.

Financial Impact

The funding for replacement of four (4) diesel rear load collection trucks with CNG models is included in the approved fleet capital budget in capital project ME201801.

Due to market changes with raw materials costs, currency exchange rates, trade/tariffs, and inflation the 2019 estimated replacement budget for four (4) vehicles was set at \$1,148,000 (\$287,000 per unit) excluding HST. The recommended submission from Freightliner/Fanotech – London Team Truck Centres was \$1,090,920 (\$272,730 per unit) excluding HST. This results in a budget savings of \$57,080 excluding HST (or \$58,085 including the non-refundable portion of HST

Ongoing operating costs for fuel, maintenance, inspection/service, and capital replacement are funded through the internal rental rate process and charged to the program. The amounts are calculated based on historical cost experience averaged over three years of operation for similar units in the equipment class.

Fuel savings realized from the implementation of CNG collection vehicles will be used over the next 8 years (2020-2027) to repay the Efficiency, Effectiveness & Economy reserve. Per the September 25, 2018 Civic Works Committee report this reserve was the source of funding for changes at the City’s operations facilities that are required to support the maintenance of CNG vehicles.

Source of financing is attached as Appendix “A”.

CONCLUSION

Based on the discussion and analysis above, Fleet Services in conjunction with Purchasing and Supply recommend that RFP 19-22 - CNG Waste Collection Trucks be awarded to London Team Truck Centres, 795 Wilton Grove Road, London, Ontario, N6N 1N7.

The (Freightliner/Fanotech) London Team Truck Centre submission scored the highest in the evaluation criteria and had the lowest bid price and is within the estimated budget forecast for the project. In addition, staff both in operations and within fleet services have familiarity and experience with the Freightliner chassis and Fanotech bodies that will provide value and efficiencies with respect to training, parts inventory/supply, knowledge/experience and process standardization.

Acknowledgements

This report was prepared with input from Barrie Galloway, Manager Fleet Maintenance, Steve Mollon, Manager of Fleet Planning and Sarah Denomy Procurement Officer, Purchasing and Supply.

SUBMITTED BY:	REVIEWED & CONCURRED BY
MIKE BUSHBY, BA DIVISION MANAGER, FLEET & OPERATIONAL SERVICES	JAY STANFORD, MA, MPA DIRECTOR, ENVIRONMENT, FLEET & SOLID WASTE
RECOMMENDED BY:	
KELLY SCHERR, P. ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER	

Appendix A Source of Financing

- C:
- John Freeman, Manager of Purchasing & Supply

Steve Mollon, Manager of Fleet Planning

Barrie Galloway, Manager of Fleet Maintenance

Sarah Denomy, Procurement Officer

APPENDIX 'A'

#19081

Chair and Members
Civic Works Committee

June 18, 2019
(Award Contract)

RE: RFP19-22 CNG Rear Loading Waste Collection Trucks
(Work Order 2442389-2442392)
Capital Project ME201801 - Vehicle & Equipment Repl - TCA
Team Truck Centres Inc. - \$1,090,920.00 (excluding H.S.T.)

FINANCE & CORPORATE SERVICES REPORT ON THE SOURCES OF FINANCING:

Finance & Corporate Services confirms that the total cost of this project can be accommodated within the financing available for it in the Capital Works Budget and that, subject to the adoption of the recommendations of the Managing Director, Environmental & Engineering Services & City Engineer, the detailed source of financing for this project is:

SUMMARY OF ESTIMATED EXPENDITURES	Approved Budget	Committed To Date	This Submission	Balance for Future Work
Vehicle & Equipment	\$6,522,741	\$1,252,296	\$1,110,121	\$4,160,324
NET ESTIMATED EXPENDITURES	\$6,522,741	\$1,252,296	\$1,110,121 1)	\$4,160,324
SUMMARY OF FINANCING:				
Capital Levy	\$250,000	\$50,000	\$200,000	\$0
Drawdown from Vehicles & Equipment Replacement R.F.	6,219,379	1,148,934	910,121	4,160,324
Drawdown from Self Insurance R.F.	42,500	42,500		0
Funded From Operations	10,862	10,862		0
TOTAL FINANCING	\$6,522,741	\$1,252,296	\$1,110,121	\$4,160,324

1) **Financial Note:**

Contract Price	\$1,090,920
Add: HST @13%	141,820
Total Contract Price Including Taxes	1,232,740
Less: HST Rebate	122,619
Net Contract Price	\$1,110,121

lp

Jason Davies
Manager of Financial Planning & Policy

TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON JUNE 18, 2019
FROM:	KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR - ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER
SUBJECT:	AWARD OF CONTRACT (RFP 19-26) – ONE (1) COMPRESSED NATURAL GAS (CNG) TOP-LOADING WASTE COLLECTION TRUCK

RECOMMENDATION

That, on the recommendation of the Managing Director, Environmental and Engineering Services & City Engineer, the following actions **BE TAKEN**:

- a) The submission from Vision Truck Group 1220 Franklin Blvd. Cambridge Ontario N1R 8B7 for the supply and delivery of one (1) CNG Top Loading Waste Collection Truck for the purchase price of \$425,990 excluding HST, **BE ACCEPTED**;
- b) Civic Administration **BE AUTHORIZED** to undertake all the administrative acts that are necessary in connection with this purchase;
- c) Approval hereby given **BE CONDITIONAL** upon the Corporation entering into a formal contract or having a purchase order, or contract record relating to the subject matter of this approval; and
- d) That the funding for this purchase **BE APPROVED** as set out in the Source of Financing Report attached hereto as Appendix “A”.

PREVIOUS REPORTS PERTINENT TO THIS MATTER
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Relevant reports that can be found at www.london.ca under City Hall (Meetings) include:

- Assessment Growth Funding Allocation, March 4, 2019 meeting SPPC, Item #2.1
- Business Case – Switching to Compressed Natural Gas (CNG) Waste Collection Trucks, September 25, 2018 meeting of the CWC, Item #2.12

COUNCIL’S 2019-2023 STRATEGIC PLAN

Municipal Council has recognized the importance of solid waste management and climate change in its 2019-2023 - Strategic Plan for the City of London as follows:

Building a Sustainable City

London has a strong and healthy environment (Conserve energy and increase actions to respond to climate change and severe weather through Corporate Energy Management Conservation Demand Management Plan featuring Green Fleet Initiatives and Community Energy Action Plan)

Leading in Public Service

Londoners experience exceptional and valued customer service (Londoners experience exceptional and valued customer service and the City of London is a leader in public service as an employer, a steward of public funds and an innovator of service)

BACKGROUND

Purpose

The purpose of this report is to provide background information on the Request for Proposals (RFP) process to purchase one compressed natural gas (CNG) top loading packer and seek Committee and Council approval for the recommended bidder (Figure 1). The top-loading packer was approved during Council deliberations on growth assessment.



Figure 1

Context

The Solid Waste Collection Program

The Solid Waste Collection program involves a fleet of thirty seven collection trucks. Five of these units are top loading bulk lift trucks used to empty bulk lift containers that are placed at various commercial, institutional and high density residential collection locations across the City.

On March 4, 2019 a Top Loading Waste Collection Truck was approved from growth as the amount of bulk lift collections have exceeded the capacity of our existing fleet resources.

Addressing the Need for Action on Climate Change

On April 23, 2019, the following was approved by Municipal Council with respect to climate change:

Therefore, a climate emergency be declared by the City of London for the purposes of naming, framing, and deepening our commitment to protecting our economy, our eco systems, and our community from climate change.

Switching diesel garbage packers to CNG packers is an example of this declaration (e.g., “deepening our commitment) in action.

Each CNG packer reduces GHG emissions by about 5 tonnes per year. Once all 37 CNG waste collection trucks are in place, it is estimated that the switch from B5 biodiesel to CNG will reduce annual fleet GHG emissions by around 200 tonnes per year. This represents a 12% reduction in waste collection GHG emissions and a 3% reduction in overall fleet GHG emissions.

Using CNG as a fuel will also have significant air pollutant emission reductions, with an estimated 50% reduction in tailpipe fine particulate emissions, 90% reduction in nitrogen oxides, and the elimination of emissions of sulphur dioxide, diesel soot, and polycyclic aromatic hydrocarbons.

CNG waste collection vehicles will enhance quality of life in our communities by producing less noise than diesel trucks when operating through residential neighbourhoods during collection cycles. This is an important feature for waste collection service delivery especially during early morning waste pickup.

DISCUSSION

Purchasing Process

On April 26, 2019 Fleet Services and Solid Waste initiated a Request for Proposal (RFP) with Purchasing and Supply for One (1) Compressed Natural Gas (CNG) powered Top Loading Waste Collection Truck.

On May 29, 2019, the Request for Proposal (RFP 19-26) closed and Purchasing & Supply received two submissions that were compliant for evaluation. The summary of the submissions are shown below:

Vendor	Model
Federated Signal (FST) Joe Johnson Equipment (JJE)	2020 Peterbilt 520 Chassis Compressed Natural Gas (CNG) / Labrie Whittke Front Loader
Vision Truck Group	2020 Mack LR Chassis Compressed Natural Gas (CNG) / Labrie Whittke Front Loader

The RFP evaluation process included representation from Purchasing and Supply, Fleet Maintenance, Solid Waste Collection, Fleet Planning and Fleet Asset Management. The panel rated the submissions based on specific pre-determined criteria made available to the vendors.

The evaluation categories included the following:

- 1. Company Certification, Experience and Past Performance
- 2. Specifications
 - Part a) Cab and Chassis
 - Part b) Top Loader Body and Equipment
- 3. Safety and Regulatory Compliance
- 4. Service Agreement Delivery, Training and Warranty
- 5. Options and Innovative Extras
- 6. Price

Each section was weighted based on their criticality, importance and value to the City of London.

Results

Upon completion of the evaluation process and scoring it was determined that the Vision Truck Group submission scored the highest and met all the mandatory specifications and conditions and therefore is being recommended.

The recommended submission scored well in all the areas of the selection criteria with strengths in the following areas:

- Cab and chassis design and body specifications.
- Cab configuration safety and visibility
- Overall warranty terms cab and chassis, transmission, CNG engine and forklift/ compaction body
- Good local and mobile service support including parts accessibility
- Operator and Mechanic familiarity
- Experience and references
- Lowest pricing

Financial Impact

One-time funding for an additional top loading waste collection truck was approved in 2019 Assessment Growth Business Case #3. The approved budget at that time was \$380,000 including HST.

The lowest and recommended submission from Vision Truck Group is \$425,990 excluding HST. The additional costs are attributed to the specialization of this equipment and the continued price pressure and cost increases due to demand, market challenges, US manufacturing, raw material costs, currency exchange rates, and trade/tariff impacts.

In addition the purchase price includes an additional CNG tank for added capacity and a fast fill CNG assembly to maximize efficiency and utilization of the assets.

The additional funding required for this truck is \$45,990 excluding HST and will be funded via transfer from ME201801. The CNG rear loading collection trucks RFP 19-22 was below budget by \$57,080 excluding HST (or \$58,085 including the non-refundable portion of HST) which can be used to supplement the shortfall of \$53,488, including HST, on this purchase.

Once this new vehicle is put into service the ongoing operating costs for fuel, maintenance, inspection/service, and capital replacement are funded through the internal rental rate process and charged to the program. The amounts are calculated based on historical cost experience averaged over three years of operation for similar units in the equipment class.

Fuel savings realized from the implementation of CNG collection vehicles will be used over the next 8 years (2020-2027) to repay the Efficiency, Effectiveness & Economy reserve. Per the September 25, 2018 Civic Works Committee report this reserve was the source of funding for changes at the City’s operations facilities that are required to support the maintenance of CNG vehicles.

Source of financing is attached as Appendix “A”.

CONCLUSION

Based on the discussion and analysis above, Fleet Services in conjunction with Purchasing and Supply recommend that RFP19-26 - CNG Top Loading Waste Collection Truck be awarded to Vision Truck Group.

The Vision Truck Group submission scored the highest in the evaluation criteria and had the lowest bid price. The cab and chassis design and the compactor body are quality products that meet all our specifications and conditions.

Acknowledgements

This report was prepared with input from Barrie Galloway, Manager Fleet Maintenance, Steve Mollon, Manager of Fleet Planning, Kevin Springer Manager of Solid Waste Collection and Sarah Denomy Procurement Officer, Purchasing and Supply.

SUBMITTED BY:	REVIEWED & CONCURRED BY
MIKE BUSHBY, BA DIVISION MANAGER, FLEET & OPERATIONAL SERVICES	JAY STANFORD, MA, MPA DIRECTOR, ENVIRONMENT, FLEET & SOLID WASTE
RECOMMENDED BY:	
KELLY SCHERR, P. ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER	

Appendix A Source of Financing

- C:
- John Freeman, Manager of Purchasing & Supply

Steve Mollon, Manager of Fleet Planning

Barrie Galloway, Manager of Fleet Maintenance

Sarah Denomy, Procurement Officer

APPENDIX 'A'

#19090

Chair and Members
Civic Works Committee

June 18, 2019
(Award Contract)

RE: RFP19-26 CNG Top Loading Waste Collection Truck
(Work Order 2442393)
Capital Project SW6055 - Top Loading Packer Operations Collection Truck
Vision Truck Group - \$425,990.00 (excluding H.S.T.)

FINANCE & CORPORATE SERVICES REPORT ON THE SOURCES OF FINANCING:
Finance & Corporate Services confirms that the total cost of this project cannot be accommodated within the financing available for it in the Capital Works Budget and that, subject to the adoption of the recommendations of the Managing Director, Environmental & Engineering Services & City Engineer, the detailed source of financing for this project is:

<u>SUMMARY OF ESTIMATED EXPENDITURES</u>	<u>Approved Budget</u>	<u>Additional Requirement</u>	<u>Revised Budget</u>	<u>This Submission</u>
Vehicle & Equipment	\$380,000	\$53,488	\$433,488	\$433,488
NET ESTIMATED EXPENDITURES	<u>\$380,000</u>	<u>\$53,488</u>	<u>\$433,488</u>	<u>\$433,488</u> 1)
<u>SUMMARY OF FINANCING:</u>				
Capital Levy	\$380,000		\$380,000	\$380,000
Drawdown from Vehicle & Equipment R.F. - tsf from ME201801 2)		53,488	53,488	53,488
TOTAL FINANCING	<u>\$380,000</u>	<u>\$53,488</u>	<u>\$433,488</u>	<u>\$433,488</u>

1) Financial Note:	
Contract Price	\$425,990
Add: HST @13%	55,379
Total Contract Price Including Taxes	481,369
Less: HST Rebate	47,881
Net Contract Price	<u>\$433,488</u>

2) The additional funding requirement of \$53,488 (including H.S.T.) is available as a transfer from ME201801 Vehicle & Equipment Repl - TCA due to the tender for RFP19-22 CNG Rear Loading Waste Collection Trucks being below budget by \$58,085 (including H.S.T.).

lp

Kyle Murray
Director of Financial Planning & Business Support

TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON JUNE 18, 2019
FROM:	KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER
SUBJECT:	LONG TERM WATER STORAGE OPTIONS MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT: NOTICE OF COMPLETION

RECOMMENDATION

That, on the recommendation of the Managing Director Environmental & Engineering Services and City Engineer, the following actions **BE TAKEN** with respect to the Long Term Water Storage Options Municipal Class Environmental Assessment:

- (a) The Long Term Water Storage Municipal Class Assessment Executive Summary attached as Appendix 'A', **BE ACCEPTED**;
- (b) A Notice of Completion **BE FILED** with the Municipal Clerk; and,
- (c) The Project File for the Long Term Water Storage Options Municipal Class Environmental Assessment **BE PLACED** on public record for a 30-day review period.

PREVIOUS REPORTS PERTINENT TO THIS MATTER
--

Civic Works Committee - April 17, 2018 - Appointment of Consulting Engineering Services for Long Term Water Storage Options - Environmental Assessment

Civic Works Committee - April 2, 2012 - Contract Award: Springbank Reservoir #2 Rehabilitation Project No. EW3617 Tender No. 12-52

Environment and Transportation Committee - October 27, 2008 - Water System Risk Management Continuous Improvement Update

Environment and Transportation Committee - April 23, 2007 - Water System Risk Management Exercise and Evaluation

2019 – 2023 STRATEGIC PLAN

This report supports the Strategic Plan in the following areas:

- Building a Sustainable City: Improve London's resiliency to respond to potential future challenges; Build infrastructure to support future development and protect the environment; Maintain or increase current levels of service; manage the infrastructure gap for all assets.
- Leading in Public Service: Increase opportunities for residents to be informed and participate in local government; improve public accountability and transparency in decision making.

BACKGROUND

Purpose

The purpose of this report is to identify the preferred alternative for the Long Term Water Storage Options Schedule ‘B’ Municipal Class Environmental Assessment (EA), and recommend filing the Notice of Completion for the study to initiate the statutory 30-day public review period.

Context

The City of London has a robust water supply system, being fed from two Great Lakes, and having considerable stored water available in and around London. Water systems are required to have water storage to balance maximum day demands, fire needs and emergency storage. The City of London’s storage is required to meet these needs, but also to provide back-up supply in the event the Lake Huron pipeline were to fail, as occurred in 1983,1988, and 2010.

One of the City’s existing reservoirs, Springbank Reservoir #2 was constructed in the 1920’s and is nearing the end of its useful life. Unlike the other City reservoirs which have fixed concrete roofs, Springbank Reservoir Two has a flexible floating cover. The risk of breaching this cover has been identified as one of the highest risks of biological contamination to the City of London water system. An Environmental Assessment has been completed in order to consider how the reservoir will be reconstructed or replaced. This environmental assessment has also analyzed the long-term storage needs city-wide considering the current need for emergency storage and the servicing needs of future urban growth.

DISCUSSION

In April 2018, the City of London appointed Aecom Canada Ltd. (Aecom) to complete the Municipal Class Environmental Assessment (EA) and conduct a preliminary design for Long Term Storage Needs in the City of London. As well as part of the scope, consideration was given to the Environmental Assessment Requirements with respect to:

- decommissioning of Springbank Reservoir #2,
- decommissioning the McCormick Reservoir,
- decommissioning the existing White Oaks Filter Plant, and
- reviewing the need for backup power for the Arva Pumping Station.

The evaluation of alternative solutions was completed with consideration to social, environmental and other technical factors.

The preferred recommended alternative consists of constructing a new 100 ML Reservoir on Site A1, the location of the existing Springbank Reservoir #2 on an expanded footprint. This area is known as Reservoir Hill and has two other drinking water reservoirs as well as a park called Reservoir Park. The site has been home to most of the City of London’s drinking water storage dating back to the beginning of our system in the 1870’s. The major advantage of this site is that its elevation allows it to supply sufficient pressure to the majority of the City by gravity which is known as “Floating Storage”. This provides the same function as a water tower for a fraction of the cost. The use of this site and its protection has long been a major advantage for the City’s water system.

Public/Stakeholder Consultation

As part of the study, two Public Information Centre was conducted. Notifications for the meeting were published in the two weeks preceding the Public Information Centre as well as on the City's webpage. PIC #1 was held on June 20, 2018 at City Hall in Committee Room #1. The meeting was attended by 6 members of the public, including some adjacent property owners from the Springbank site area and the Northeast area. Notifications of the project were also sent to applicable federal, provincial, and municipal stakeholders, and local First Nations communities. PIC #2 was held November 28, 2018 at City Hall in Committee Room # 2. This meeting was attended by 3 members of the public. Notifications of the project were also sent to applicable federal, provincial, and municipal stakeholders, and local First Nations communities.

Preferred Alternative

The preferred alternative is to construct a new reservoir on Springbank Reservoir Site A1. This is in the same location as the current Springbank 2 Reservoir, but on a footprint widened to the east as shown in Appendix 'B' Executive Summary, Figure ES3 Preferred Alternative.

Construction of the preferred alternative would result in a number of benefits for the City. These include:

- Replacing infrastructure that has reached the end of its useful life;
- New reservoir fixed roof decreases the drinking water quality risk posed by the existing floating cover on Springbank #2. This cover has been identified as among the largest drinking water quality risks in the City;
- Ensures the City can continue to supply water for 48 hours after the loss of its primary supply. Assumes one max (peak) day followed by one average day after the loss of supply from Lake Huron;
- Allows greater operational flexibility, and;
- Accommodates future growth.

Construction of the preferred alternative represents good value to the City of London and will satisfy the City's drinking water storage needs through 2044.

Agency Comments

The Ministry of Environment, Parks and Conservation provided comments at the time of the Notice of Commencement to indicate that Source Water Protection and Climate Change should be considered during the EA. Very few comments were offered on the Draft EA which included standard comments related to ground water and source water protection. These comments can be addressed through the detailed design of the project.

First Nations Consultation

Consultation with First Nations is a mandatory component of the Municipal Class EA process and is required as a result of the Crown's Duty to Consult. At the beginning of the Study, a comprehensive list of was developed by the project team. Several First Nations responded that the project was outside their area of concern. Chippewas of the Thames First Nation responded to the Notice of Commencement and indicated that the project was identified to be of Moderate Concern and requested additional information. Through subsequent exchanges of information and Consultation, it was determined that the Chippewas of the Thames First Nations would like to monitor further activities related to Archeological Assessment for the project and the Environmental Impact Study.

Natural Heritage, Archeological, and Cultural Considerations

Delegation status and a presentation was made to the Environmental and Ecological Planning Advisory Committee on April 11, 2019. The committee asked a few technical questions but was supportive of the overall project and approach with the understanding that an Environmental Impact Study (EIS) would be completed for the preferred site.

The London Advisory Committee on Heritage (LACH) Advised that the London Advisory Committee on Heritage (LACH) supports the conclusions of the Cultural Heritage Screening Memo, contained within the Long Term Water Storage Municipal Class Environmental Assessment dated March 26, 2019, from AECOM; it being noted that the LACH supports the preferred alternative of the Springbank Reservoir and that a Stage 1-2 Archeological Assessment and a Cultural Heritage Screening Report should be completed for the preferred alternative. Delegation Status and a presentation was made to LACH on April 10, 2019.

Financial Implications

The cost of constructing this new reservoir is estimated at approximately \$36M. The replacement of Springbank Reservoir #2 had been previously scheduled for 2023 in Water’s 20-year Financial Plan to align with the remaining life on its floating cover. This replacement budget was only approximately \$15M since it contemplated replacing Springbank #2 with the same size reservoir whereas this study recommends significantly increasing the capacity. As part of the 2020-2023 budget process, priorities in the Water budget will be reassessed in order to establish funding for this work.

Next Steps

The following steps will be taken to finalize the Long Term Water Storage Options EA:

- Upon Acceptance by Council, publish a “Notice of Completion” and commence the 30-day review period.
- Stakeholders can provide written notification within the 30-day review period to the Minister of the Environment, Conservation and Parks requesting further consideration. This process is termed a “Part II Order”. Subject to no requests for a Part II Order being received, the Project File will be finalized.
- The Preliminary Design will be completed in 2019. The study work will include completing the archeological assessments and cultural heritage reports, and Environmental Impact Study (EIS).
- As part of the 2020-2023 budget determine the timing of the final design and construction of the reservoir.

CONCLUSIONS

The Long Term Water Storage Options Environmental Assessment was undertaken to Identify a preferred location for additional storage to address needs for the City of London in order to have adequate storage to allow the abandonment of the existing Springbank #2 Reservoir and to address needs for growth. The preferred alternative provides a strong technical solution that also substantially mitigates environmental impacts. Staff recommend that the preferred servicing alternative identified in the EA be posted for the 30-day public review period.

Acknowledgements

This document has been prepared by Patricia Lupton, Environmental Services Engineer in the Water Engineering Division.

SUBMITTED BY:	REVIEWED AND CONCURRED BY:
AARON ROZENTALS, P. ENG. DIVISION MANAGER WATER ENGINEERING	SCOTT MATHERS, MPA, P. ENG. DIRECTOR, WATER AND WASTEWATER
RECOMMENDED BY:	
KELLY SCHERR, P. ENG., FEC MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER	

June 10, 2019

Attach: Appendix 'A' – Executive Summary - Long Term Water Storage Municipal
 Class Environmental Assessment Project File
 Appendix 'B' – Preferred Alternative

Cc. John Haasen, Aecom
 Alan Dunbar, City of London
 Jason Davies, City of London

Executive Summary

Appendix 'A'

1. Introduction

The City of London (“the City”) has completed a Municipal Class Environmental Assessment (EA) study for the provision of additional drinking water storage capacity (100 Million Litres (ML)). Additional storage capacity is needed to address aging infrastructure, emergency backup requirements and future growth needs within the City. The Study Area covers the City of London’s water supply and distribution system as shown in **Figure ES1**.

This Municipal Class EA was completed in accordance with the Ontario Environmental Assessment Act (EAA) and followed the Schedule B planning process of the Ontario Municipal Engineers Association (MEA) “Municipal Class Environmental Assessment” document, dated October 2000, as amended in 2007, 2011 and 2015.

Background

The City of London’s water system provides safe drinking water to residents, businesses and industry within the City limits and is supplied with water from two lake-based sources, the Lake Huron Water Supply System (LHWSS) and the Elgin Area Water Supply System (EAWSS) (Lake Erie). The City utilizes several water storage facilities including the Arva Reservoir (LHWSS) and Pump Station (City), the Southeast Reservoir (City) and Pump Station, the Springbank Reservoir complex (City), which has three storage reservoirs that can gravity feed the entire City, and the Elgin-Middlesex Reservoir and Pump Station (EAWSS). Springbank Reservoir #2 has both an aging membrane liner that has ongoing issues with its floating cover and requires continued maintenance and repair. The reservoir is reaching the end of its service life and the City would like to consider retiring the facility when it reaches the end of its life expectancy anticipated in 2022. As a result, comparable reservoir capacity of 45 ML will need to be replaced or better located within the City’s water system. Additional water storage (150 ML) is necessary to meet future growth needs to 2054 and beyond.

Problem and Opportunity Statement: The City of London utilizes water storage and distribution from the Arva, Elgin-Middlesex, Southeast and Springbank reservoirs. From these sources, water is provided for drinking water, daily household use, business and industrial needs and fire protection. Water can also be provided during water disruptions or if pressures within the City’s water system are reduced. However, the existing water system is not able to provide flows at a supply rate and pressure necessary to meet peak demand, fire and/or emergency needs based on future growth. Additionally, Springbank Reservoir 2 is subject to ongoing maintenance associated with this aging facility and is nearing the end of its service life.

In response to the above Problem and Opportunity Statement, the following potential and shortlisted Water Storage Alternative Solutions were identified as part of the Municipal Class EA process (**Figure ES2**):

1. Alternative 1: On-Site Reservoir Expansion Options. Expand the Arva Reservoir and Pump Station or Springbank Reservoir and/or Southeast Reservoir and pump station.
2. Alternative 2: Off-Site Reservoir Siting Options. Identify land that is currently vacant or open space that meets the storage need and configuration requirements, considering elevation.
3. Alternative 3: Do Nothing

2. Preferred Solution

A long list of nine alternative storage locations were developed and assessed to arrive at a refined short list of alternatives (See Figure ES2).

Based on the evaluation of alternative solutions, the preferred alternative is:

Site A1: Springbank Expansion – Construct a 100 ML in-ground reservoir at the existing Springbank Reservoir Site by 2024 to replace the existing 45 ML of storage to be retired as part of the recommendations to meet storage deficit/growth projections at that time as shown on Figure ES3.

The preferred alternative results in the least amount of impacts overall and for Technical and Economic aspects and the second lowest impacts for Health and Safety/ Cultural aspects. Although natural environment aspects are greater, than 2 of the other alternatives, these can be mitigated for the terrestrial and wildlife aspects of significance. Additionally, the preferred alternative has reasonable approvals certainty, straightforward construction, and capital/operating costs are lower than expanding the existing Arva Reservoir.

Associated Backup Power or standby power systems are needed to ensure pumping can maintain service in the event that primary power supplies fail. The installation of a generator at the existing Arva Pump Station is recommended in order to meet the City's day to day, peak and/or emergency needs.

A further 100 ML of additional storage capacity is also recommended to be implemented at the existing Arva Reservoir Site by 2044 to meet storage deficit/growth projections at that point in time. Additional Storage capacity at the existing Southeast Reservoir Site is recommended to be implemented once the Elgin Water Supply System treatment and supply capacity is expanded to meet future growth needs in addition to, or as part of, the further 100 ML of additional storage capacity recommended at the Arva Reservoir Site.

3. Capital Cost Estimate and Implementation Schedule

The proposed project has an estimated capital cost of approximately \$35 M (additional \$2.5 M for Arva Generator). Assuming funding is in place then the project could move forward based on the following schedule:

- Environmental Impact Study (EIS): 2019
- Preliminary Detailed Design: 2020/2021
- Permits/Approvals: 2021
- Construction: 2023-2024

The City will implement the recommended solution pending completion of the EA study, further regulatory and/or budget approvals, and co-ordination with other planned infrastructure projects in the area.

4. Property Requirements

The implementation of Site A1 (Springbank Reservoir) will not require the acquisition of any property. The City owns the Springbank property, which is currently used as open space. Loss of open space and parkland can be replaced in part. Property agreements and/or temporary easements are not required to facilitate construction.

5. Consultation

As part of the Municipal Class EA planning process, several steps have been undertaken to inform government agencies, affected landowners, the local community and the general public of the study and to solicit comments at key stages of the study process. Methods included:

- Publication of newspaper notices for all project milestones, including Notices of Study Commencement, PICs and Study Completion;
- Placement of notices and other materials on the City's website;
- Three direct mailing of project milestone notices to stakeholders, study area residents, businesses and review agencies;
- Two PICs to engage and obtain input from the public, review agencies and stakeholders;
- Individual meetings with key agencies and stakeholders as required or as opportunities arose; and,
- Consultation with 32 the Indigenous communities, one of which has indicated interest in participating in subsequent project phases.

All comments received during the course of the study were responded to by the Study Team. There were no outstanding comments at the time of the Project File filing for the 30-day review period, during which the public, and other interested stakeholders have an opportunity to comment on the project.

6. Conclusion and Recommendation

This Municipal Class EA has fulfilled the requirements for a Schedule B Project under the MEA Municipal Class EA document. The Municipal Class EA planning process requires initial screening for a project of this type, and this initial screening has not identified any significant impacts that cannot be addressed by incorporating the recommended mitigation measures during construction. Consultation requirements of the Municipal Class EA have been fulfilled through two PICs, agency consultation, Indigenous consultation, and the submission of this Project File for the 30-day review period.

The recommended preferred solution (Alternative A1 – Springbank Reservoir) includes the design and construction of a 100 ML reservoir at the Springbank Reservoir Site to meet the future storage need projections. This alternative resolves the problems identified in this report and indicates only minor impacts, which are addressed by recommended mitigation measures presented in the Project File.

At the same time, the installation of a backup generator at the Arva Pump Station is recommended to maintain adequate water system pressure under emergency conditions.

A further 100 ML of additional storage capacity is recommended for future implementation by 2044 at the existing Arva Reservoir Site.

Considering the above, it is recommended that:

1. Following EA documentation filing and clearance, and securing appropriate funding, the recommended works proceed to the design phase including permitting/approvals; and,
2. Mitigation measures are outlined in the main report for implementation during detailed design and construction.

City of London Long Term Water Storage Environmental Assessment Schedule 'B'

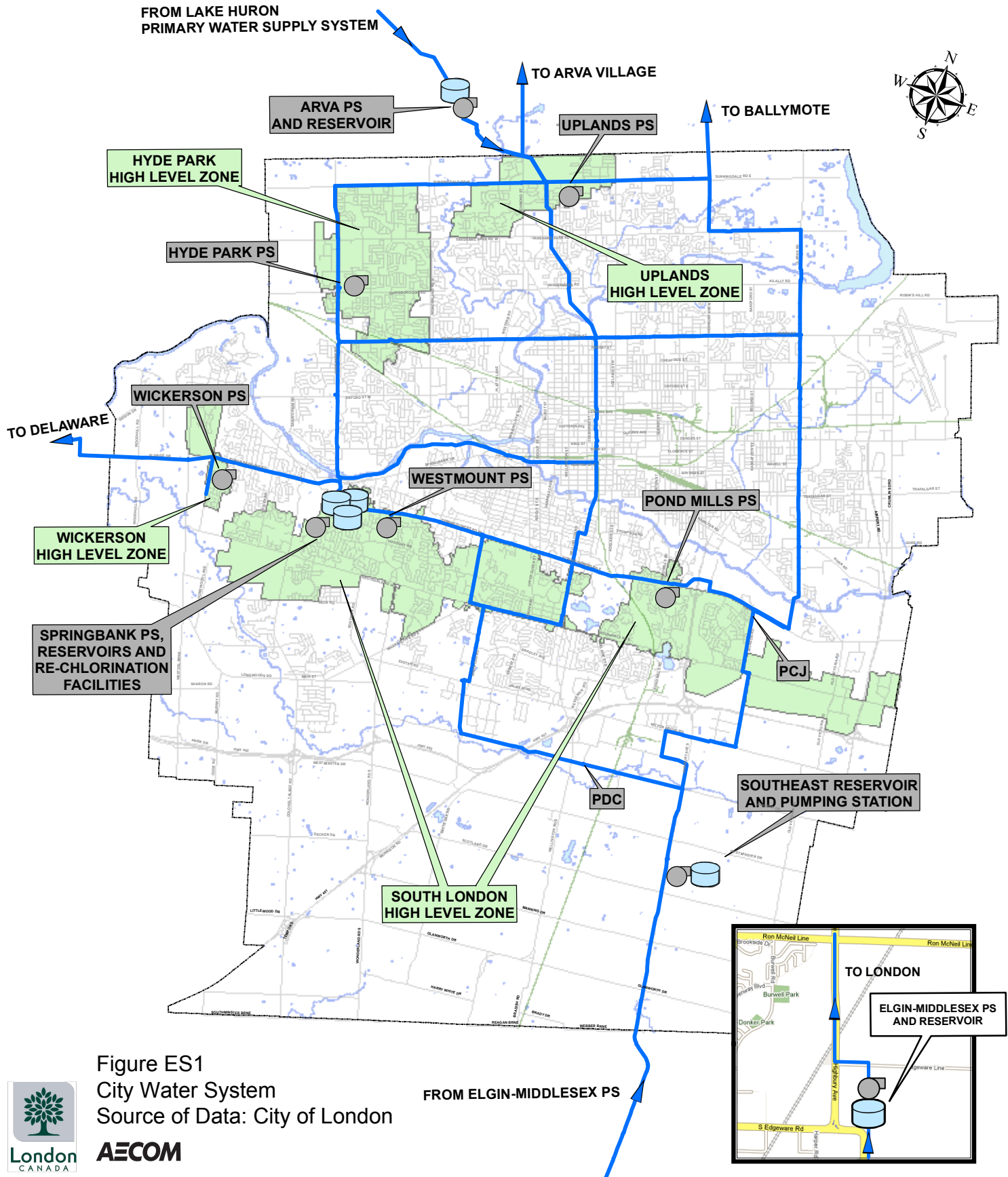
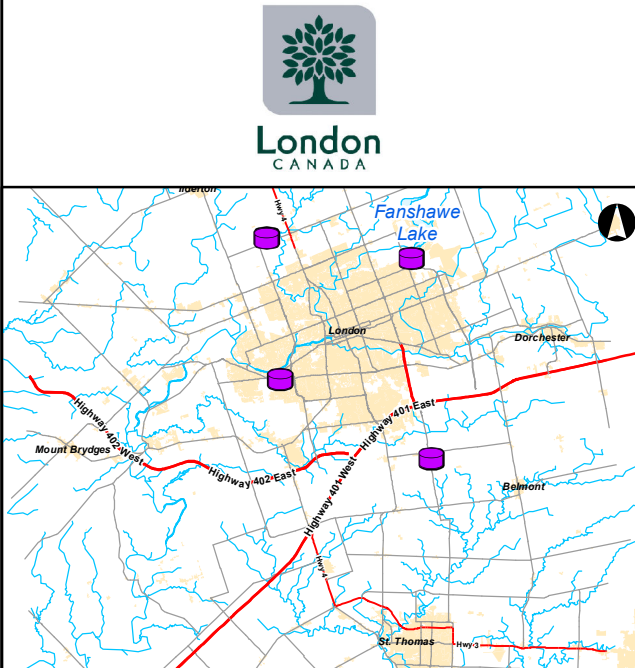
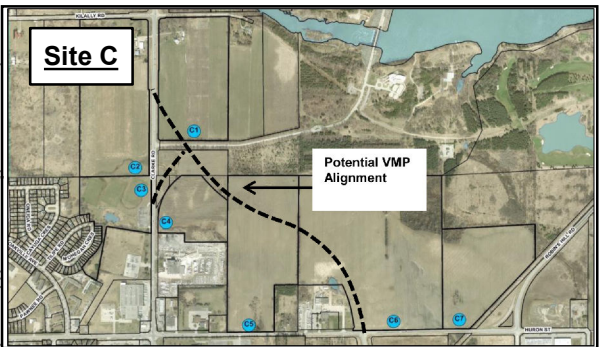
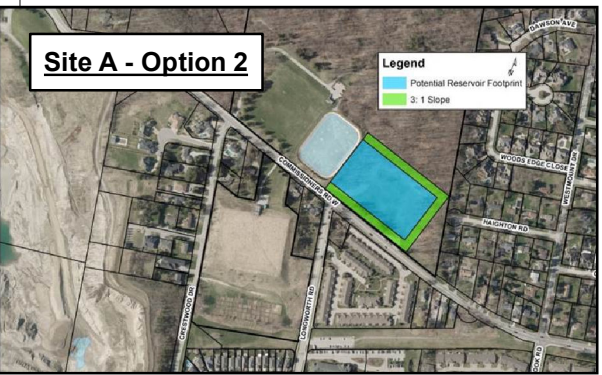
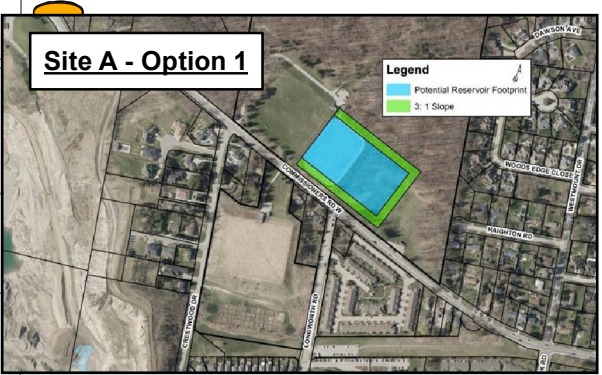
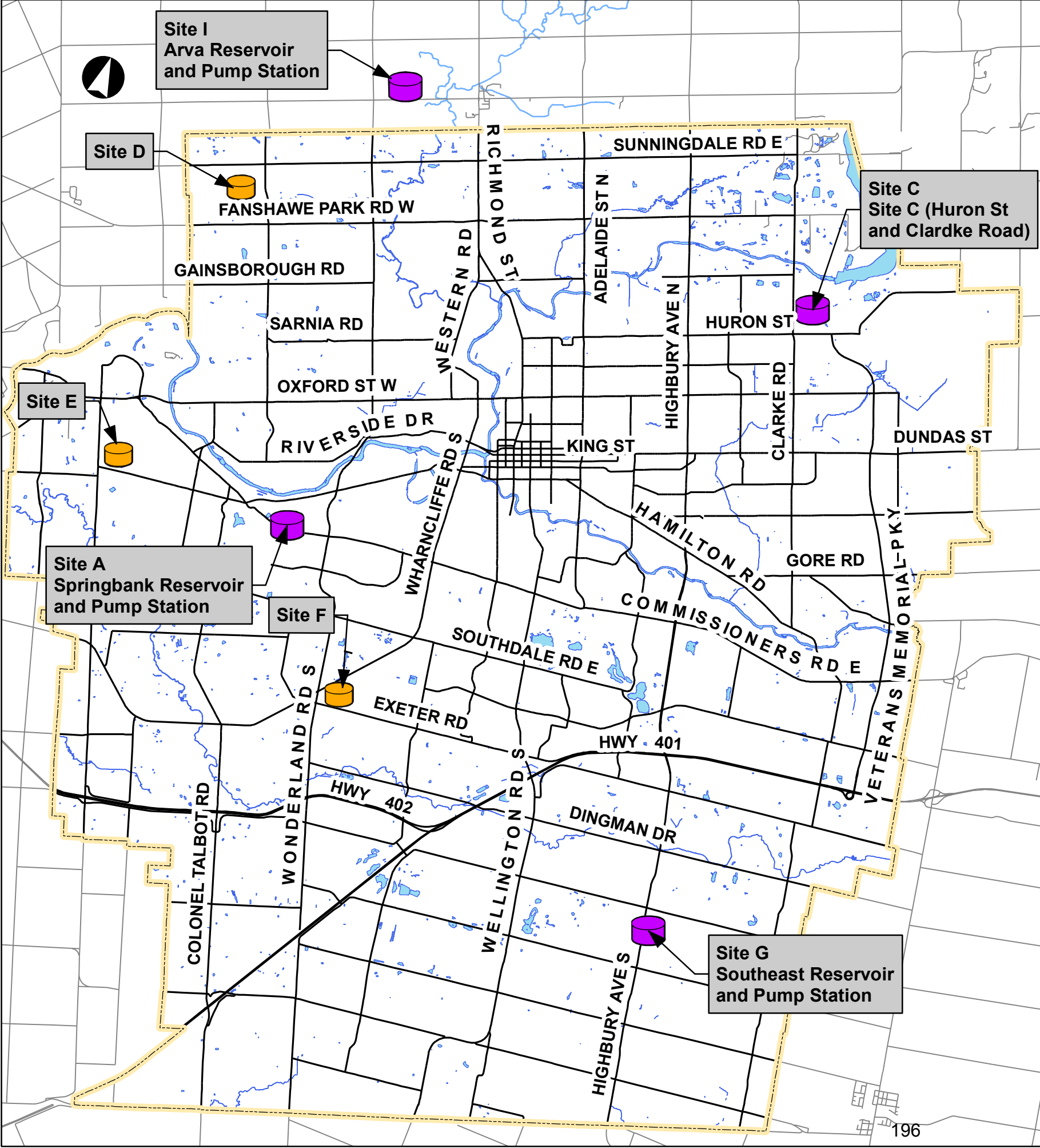


Figure ES1
City Water System
Source of Data: City of London

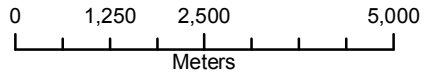


AECOM



Legend

-  Short Listed Potential Sites
-  Potential Sites
-  CityBoundary
-  Roads
-  Water



**City of London
Long Term Water Storage
Environmental Assessment
Schedule 'B'**

Alternative Sites

April 2019	1:100,000	Datum: NAD83 UTM17 Source: LIO 2016, City of London 2017
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P#: 60565856

V#:



Figure ES2

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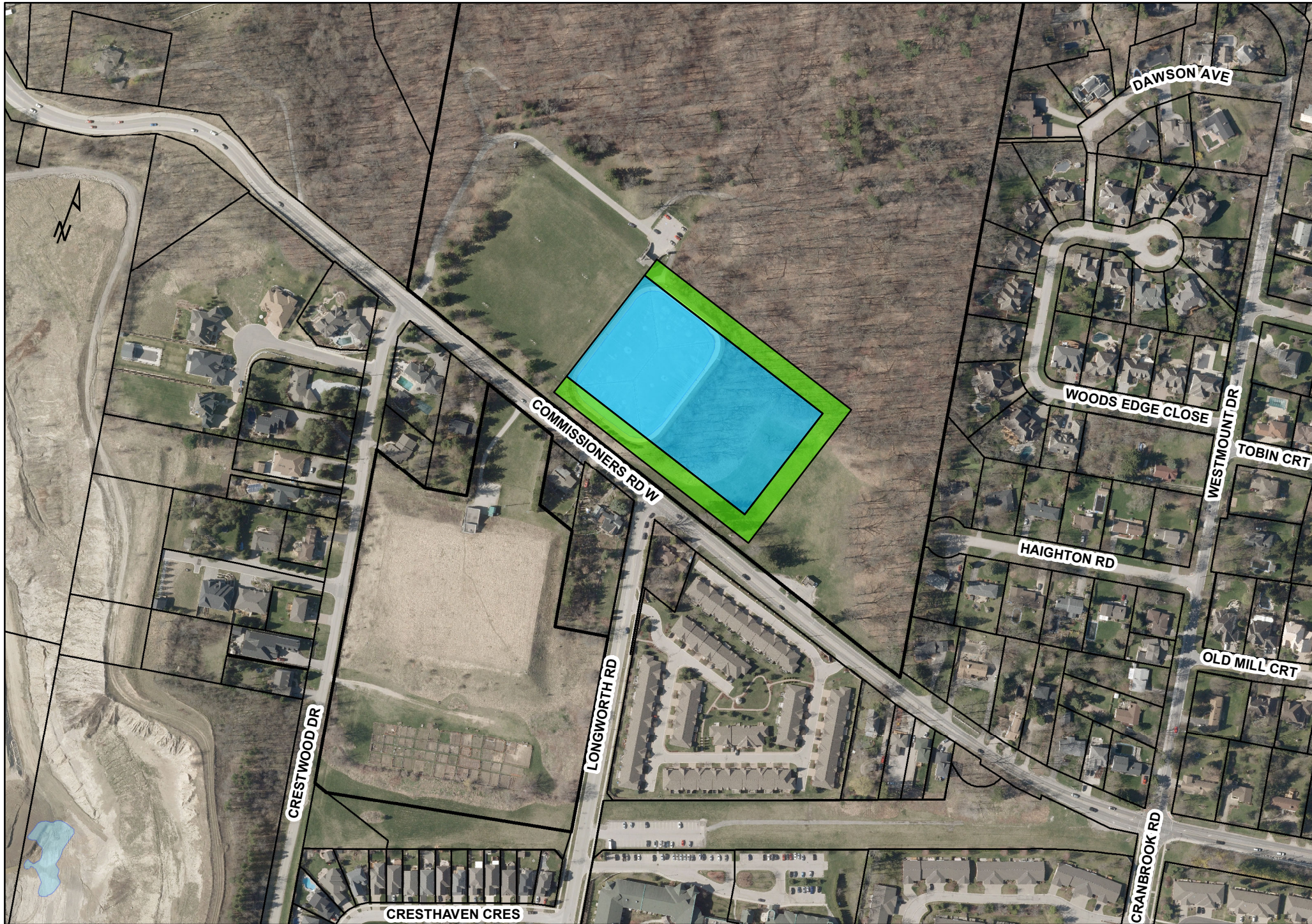


Figure ES3
Preferred Alternative

City of London Long Term Water Storage Environmental Assessment Schedule 'B'

Legend

- Potential Reservoir Footprint
- 3: 1 Slope

AECOM



Appendix 'B' Preferred Alternative - Site A

Option 1 - Reservoir on Reservoir #2 footprint



TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON JUNE 18, 2019
FROM:	KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER
SUBJECT:	ADELAIDE STREET NORTH GRADE SEPARATION MEMORANDUM OF UNDERSTANDING WITH CANADIAN PACIFIC RAILWAY

RECOMMENDATION

That on the recommendation of the Managing Director, Environmental & Engineering Services and City Engineer, the following actions **BE TAKEN** with respect to the Adelaide Street North Grade Separation Project:

- a) the attached proposed by-law (Appendix A) **BE INTRODUCED** at the Municipal Council meeting to be held on June 25, 2019 to:
 - i) Authorize and approve the Memorandum of Understanding attached as Schedule 1 of Appendix A, between The Corporation of the City of London and Canadian Pacific Railway Company, to set out the terms under which the parties have agreed to proceed with the Project;
 - ii) Authorize the Mayor and City Clerk to execute the Memorandum of Understanding; and,
- b) Authority **BE DELEGATED** to the Managing Director of Environmental & Engineering Services and City Engineer, or their designate, to execute any financial reports required as a condition of the Memorandum of Understanding authorized and approved in a) above.

PREVIOUS REPORTS PERTINENT TO THIS MATTER
--

- Environment and Transportation Committee – November 28, 2005 – Priority Setting Factors for Future Rail / Road Grade Separations
- Civic Works Committee – October 28, 2013 – Adelaide Street North / Canadian Pacific Railway Grade Separation Report
- Civic Works Committee – January 5, 2016 – Environmental Assessment Appointment of Consulting Engineer
- Civic Works Committee – December 12, 2016 – Environmental Assessment Update
- Civic Works Committee – September 26, 2017 – Transport Canada Grade Crossing Regulations and Railway Funding Application
- Civic Works Committee – May 28, 2018 – Railway Rationalization
- Civic Works Committee – August 13, 2018 – Environmental Study Report
- Civic Works Committee – January 8, 2019 – Detailed Design & Tendering Appointment of Consulting Engineer

2019-23 STRATEGIC PLAN

The following report supports the Strategic Plan through the strategic focus area of *Building a Sustainable City* by implementing and enhancing safe and convenient mobility choices for transit, automobile users, pedestrians, and cyclists. A new road-rail grade separation on Adelaide Street North at the Canadian Pacific Railway (CPR) tracks will improve safety for all modes of transportation by removing the potential for conflict between pedestrians, cyclists, drivers and CPR operations, manage congestion and travel times, and provide route reliability for emergency services and local transit. The grade separation provides an opportunity to improve active transportation choices, facilities and linkages. The implementation of the grade separation is a strategic component of London’s comprehensive program of transportation improvements.

BACKGROUND

Purpose

The purpose of this report is to seek the approval from Municipal Council on the Memorandum of Understanding (MoU) to be signed by the City of London and Canadian Pacific Railway Company for the Adelaide Street North Grade Separation Project.

The MoU establishes the general terms under which the City of London and CPR agree to move forward with the implementation of the Adelaide Street North Grade Separation Project, prior to the execution of the formal Construction Agreement and Crossing & Maintenance Agreement. The MoU provides commitment towards the project as well as financial clarity to both parties moving forward with the project. While the MoU establishes the framework and general terms on how the project will move forward, subsequent agreement(s) will be required to put into effect the terms of the MoU.

Context

The project environmental assessment (EA) and detailed design assignments were approved by Council in August 2018 and January 2019, respectively. The project timelines and complexity provide unique challenges for the design and construction. The project team has been in communications with CPR through the EA process and in the early stages of the detailed design phase to work through technical aspects of the project and to establish the cost sharing agreement outlined in the MoU for this new grade separation.

The cost sharing discussions have been guided by the Canadian Transportation Agency Cost Apportionment Resource Tool. The cost apportionment for the project is in line with the tool and the contribution from CPR towards the project is a fixed lump sum of \$8.75M, equating to 15% of the estimated total project costs. The cost apportionment reflects that the project was initiated by the City and no new rail facilities are proposed.

The total cost estimate for the project is approximately \$58.3M that includes roadway construction, temporary detour road, the railway grade separation structure, stormwater management and pumping station, street lighting and signalization, utility relocation, landscaping, traffic control, sanitary sewers, watermain, staging, and property acquisitions. The estimated project cost is reflected in the approved capital budget.

CONCLUSION

Implementation of the City’s highest priority grade separation at Adelaide Street North and CPR is a strategic component of London’s comprehensive program of transportation improvements that will mitigate the impact of rail activity in the City of London.

The project schedule envisions the CPR bridge construction commencing in 2021 with early works such as utility relocations being started as early as 2020 subject to property acquisition and necessary approvals. CPR is major stakeholder and partner on this project and establishment of the MoU at this time aims to support the project schedule.

Acknowledgements

This report was prepared with the assistance of Ardian Spahiu, P.Eng, Transportation Design Engineer.

SUBMITTED BY:	REVIEWED AND CONCURRED BY:
GARFIELD DALES, P. ENG. DIVISION MANAGER, TRANSPORTATION PLANNING AND DESIGN	DOUG MACRAE, P.ENG., MPA DIRECTOR, ROADS AND TRANSPORTATION
RECOMMENDED BY:	
KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER	

Attachment: Appendix A – By-Law.
Appendix A – Schedule 1 – Memorandum of Understanding

cc. Tom Twigge – Canadian Pacific Railway,1290 Central Parkway West, Suite 600
Mississauga ON L5C-4R3

Bill No.

By-law No.

A By-law to authorize a Memorandum of Understanding (MoU) between The Corporation of the City of London and Canadian Pacific Railway Company (CPR) for the project responsibilities of the Adelaide St North Grade Separation at CPR project; and to authorize the Mayor and City Clerk to execute the MoU.

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 8 provides that the powers of a municipality shall be interpreted broadly so as to confer broad authority on the municipality to enable it to govern its affairs as it considers appropriate and to enhance its ability to respond to municipal issues;

AND WHEREAS subsection 10(1) 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 WHEREAS it is deemed expedient for the Corporation of the City of London (the “City”) to enter into an Agreement with Canadian Pacific Railway Company (CPR) for defining the project responsibilities of the Adelaide St North Grade Separation at CPR project (the “MoU”);

AND WHEREAS it is appropriate to authorize the Mayor and City Clerk to execute the Agreement on behalf of the City;

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

1. The MoU attached as Schedule “A” to this By-law, being an Agreement between the Corporation of the City of London and Canadian Pacific Railway Company (CPR) for the project responsibilities in implementing the Adelaide Street North Grade Separation at CPR is hereby AUTHORIZED AND APPROVED substantially in the form attached and as approved by the City Solicitor.
2. The Mayor and City Clerk are authorized to execute the MoU authorized and approved under section 1 of this by-law.
3. This by-law shall come into force and effect on the day it is passed.

PASSED in Open Council , 2019

Ed Holder
Mayor

Catharine Saunders
City Clerk

First reading – June 25, 2019
Second reading – June 25, 2019
Third reading – June 25, 2019

Memorandum of Understanding

made this day of , 2019 between

Canadian Pacific Railway Company (the “Railway”)

and

The Corporation of the City of London (the “Road Authority”)

BACKGROUND:

1. The Road Authority plans to construct a subway “road under rail” Grade Separation on Adelaide Street North CPR crossing Mileage 113.73 Galt Subdivision between Central Ave and McMahan Street to replace the existing At-Grade Crossing (the “Project”);
2. The Road Authority completed a Municipal Class Environmental Assessment (Class EA) for the project in 2018;
3. The Project will include a new four lane underpass grade separation with elevated sidewalks, a temporary road detour and permanent utility corridor on the east side of Adelaide Street, storm and ground water management infrastructure and other features as outlined in the Environmental Study Report;
4. The Project will benefit the Road Authority and the Railway by improving safety at the crossing and eliminating conflicts between road and train traffic.
5. Implementation of the main grade separation works is expected to be in 2021 and 2022, with the likelihood of early works such as utility relocations being completed in 2020. Construction of the road, structure, services and utilities will be administered by a City-managed contractor with an exception that implementation of track and signal works will be coordinated and executed by the Railway.
6. The parties wish to establish the terms under which they have agreed to proceed with the Project, prior to the execution of a formal Construction Agreement and Crossing & Maintenance Agreement.

UNDERSTANDING AND AGREEMENT OF THE PARTIES:

1. The Road Authority and the Railway agree that the cost apportionment for the Project be dealt with via a contribution from the Railway to the Road Authority at a fixed lump sum amount of \$8,750,000, minus CP realty impacts. The preliminary value of the CP realty impacts (disturbance cost to 620 Adelaide Street and railway advertisement billboard) is estimated at \$461,000 and is subject to a realty process that requires a third party appraisal to be completed.
2. The payment of the Railway contribution to the Road Authority as identified above shall be paid in four equal installments between 2019 and 2022, due on April 1 of each year. The payment shall not be subjected to overheads, audit or adjustment based on actual construction costs.
3. The maintenance costs for the Project shall be apportioned in accordance with the Canadian Transportation Agency (CTA) maintenance cost guidelines for a subway as follows: the Railway company pays all maintenance costs of the substructure and the superstructure of a subway with the exception of aesthetic repairs and the Road Authority pays all other maintenance costs of a subway,

including cost of maintaining the road approaches, retaining walls, road surfaces, sidewalks, drainage and lighting.

4. The parties agree on the project scope of work and timelines as identified in the Class EA, noting that there are specific design and construction elements that require further design and review.
5. The Railway agrees to make the property at 620 Adelaide Street North (Plan 386 PT BLK A & B PT Lots 1 to 7) available to the City of London and its contractors for the purposes of the project construction at no cost to the City and subject to restoration to pre-existing conditions upon completion of the project. Use of the property will be subject to the execution of a Licence agreement between the Road Authority and the Railway.
6. The Railway agrees to provide flagging services in accordance with the latest CTA Guide to Railway Charges publication.
7. The Railway agrees to waive the permit application, processing and occupancy licencing fees for all municipal and private utilities being relocated to the utility corridor and the detour road leasing fees.
8. The Road Authority and Railway agree to the following project design features:
 - o The construction of the temporary road detour to be implemented on the east side of Adelaide Street over the king switch and be between the heel blocks and the frog. This configuration will not require yard track realignment. This work includes installation of a new temporary rail crossing warning system.
 - o The main track be realigned, in order to provide sufficient clearance for the structure.
 - o The details of the structure are subject to detailed design and technical approvals.

This MOU sets out the terms under which the Railway and the Road Authority have agreed to proceed with the Project. The parties agree to negotiate in good faith and to use their respective best efforts to conclude the necessary agreements to give effect to the terms of this MOU.

IN WITNESS WHEREOF the parties hereto have executed this MOU.

THE CORPORATION OF THE CITY OF LONDON

Per: _____
Mayor Ed Holder

Per: _____
Catharine Saunders, City Clerk

CANADIAN PACIFIC RAILWAY COMPANY

Per: _____
Justin Meyer – Vice President Engineering

Per: _____
I\We have authority to bind the Corporation

TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON JUNE 18, 2019
FROM:	KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER
SUBJECT:	CONTRACT AWARD: TENDER NO. RFT19-56 FOX HOLLOW STORMWATER MANAGEMENT FACILITY NO. 1 - NORTH CELL (ESSWM-FH1)

RECOMMENDATION

That, on the recommendation of the Managing Director, Environmental & Engineering Services & City Engineer, the following actions **BE TAKEN** with respect to the award of contract for the Fox Hollow Stormwater Management Facility No. 1 North Cell project:

- (a) the bid submitted by DeKay Construction (1987) Ltd., at its tendered price of \$2,962,027.20, excluding HST, **BE ACCEPTED**; it being noted that the bid submitted by DeKay Construction (1987) Ltd., was the lowest of five (5) bids received;
- (b) The budget adjustment to increase Development Charges funding for project ESSWM-FH1 **BE APPROVED** to the Fox Hollow Stormwater Management Facility #1 North Cell, with a total budget increase of \$600,000 and an overall budget total in the amount of \$3,700,000;
- (c) the financing for this project **BE APPROVED** as set out in the Sources of Financing Report attached hereto as Appendix 'A';
- (d) the Civic Administration **BE AUTHORIZED** to undertake all the administrative acts that are necessary in connection with this project;
- (e) the approval given herein **BE CONDITIONAL** upon the Corporation entering into a formal contract or issuing a purchase order for the material to be supplied and the work to be done relating to this project (Tender No. RFT19-56); and
- (f) the Mayor and City Clerk **BE AUTHORIZED** to execute any contract or other documents, if required, to give effect to these recommendations.

PREVIOUS REPORTS PERTINENT TO THIS MATTER
--

Civic Works Committee – February 6, 2018 – Appointment of Consulting Engineer for the Functional and Detailed Design and Contract Administration of Fox Hollow Stormwater Management Facility No. 1 – North Cell (ESSWM-FH1)

2015 – 2019 STRATEGIC PLAN

- The following report supports the 2015 – 2019 Strategic Plan through the strategic focus areas of Building a Sustainable City including:
- Robust Infrastructure 1B – Manage and improve water, wastewater, and stormwater infrastructure; and
 - Responsible Growth 5B – Build new transportation, water, wastewater and stormwater infrastructure as London grows.

BACKGROUND

Purpose

This report recommends the award of a tender to a contractor for construction of the Fox Hollow Stormwater Management Facility No. 1 North Cell project (location map

provided in Appendix ‘B’) which is the final major component of the stormwater servicing for the Fox Hollow development area. This is the second phase (North Cell) of Fox Hollow SWM Facility No. 1 with the first phase (South Cell) constructed in 2015.

Context

In May 2010, the City engaged Stantec for the functional and detailed design of the stormwater servicing and sanitary servicing works for the Fox Hollow development area. Since this time, Stantec has completed the bulk of the stormwater management servicing work for the Fox Hollow development area including the engineering and construction administration of the Fox Hollow Stormwater Management Facility No. 1 - South Cell which was completed in March 2015.

Construction of the Fox Hollow SWM Facility No. 1 - North Cell will be the fifth and final municipally built component of the Fox Hollow development area stormwater system. The facility will have a catchment area of 70 hectares (ha), of which 20.7 ha is currently draft plan approved for residential development containing approximately 587 units (324 single family and 263 medium density units). As per the 2018 Growth Management Implementation Strategy (GMIS), the SWM facility timing was moved forward from 2022 to 2019 to provide additional serviced lot supply in the northwest portion of the City.

DISCUSSION

Tender Summary

Tenders for construction of the Fox Hollow Stormwater Management Facility No. 1 North Cell project were opened on May 31, 2019. Five (5) contractors submitted tender prices as listed below, excluding HST.

Contractor		Tender Price Submitted
1.	DeKay Construction (1987) Ltd.	\$2,962,027.20
2.	CH Excavating (2013)	\$3,625,029.58
3.	J-AAR Excavating Limited	\$4,150,031.15
4.	L82 Construction Ltd.	\$4,924,957.40
5.	Ron Murphy Contracting Co. Ltd.	\$5,392,047.00

All tenders have been checked by the Environmental and Engineering Services Department and the City’s consultant, Stantec.

The tender estimate just prior to tender opening was \$3,500,000, excluding HST. The low tender is approximately 15% below the estimate indicating a competitive bidding environment. All tenders include a contingency allowance of \$600,000.

Financial Considerations

Following the Just-in-Time process, construction of the stormwater pond is required immediately due to near term residential development in the area. The current approved budget amount for the project is \$3,100,000. There are two primary reasons for the required budget increase. To meet unanticipated regulatory requirements, a costly groundwater cut-off wall was required. The purpose of this underground wall is to separate the groundwater regime from the surface water regime per the requirements outlined in the Ministry of Environment and Conservation Parks (MECP)’s Environment Compliance Approval.

The second reason for the required budget increase is due to the 5-year postponement in constructing the stormwater pond. This project was initially budgeted and scheduled to be constructed in 2014. In concert with the Growth Management Implementation Process (GMIS), the Just-In-Time process delays the construction of a stormwater pond until it is needed to facilitate development. As such, the significant construction price

inflation over the last 5 years has contributed to increased construction costs above the initial budget amount.

CONCLUSION

Award of the contract for construction of the Fox Hollow Stormwater Management Facility No. 1 North Cell to DeKay Construction (1987) Ltd. will allow the project to proceed and for development to occur in the Fox Hollow Community Development Area.

This report was prepared by Paul Titus, C.E.T., Program Manager, Stormwater Engineering Division.

SUBMITTED BY:	REVIEWED AND CONCURRED BY:
SHAWNA CHAMBERS, P.ENG., DPA DIVISION MANAGER STORMWATER ENGINEERING	SCOTT MATHERS, MPA, P. ENG. DIRECTOR, WATER AND WASTEWATER
RECOMMENDED BY:	
KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER	

- Attach:

Appendix 'A' – Sources of Financing
Appendix 'B' – Location Map
- cc.

John Freeman, Manager, Purchasing and Supply
Jason Senese, Manager, Development Finance
Jason Davies, Financial Planning and Policy
Chris Ginty, Purchasing and Supply
Gary McDonald, Budget Analyst
DeKay Construction (1987) Ltd.
Stantec Consulting

APPENDIX 'A'

#19088

Chair and Members
Civic Works Committee

June 18, 2019
(Approve Additional Funding & Award Contract)

RE: Fox Hollow Stormwater Management Facility No. 1 - North Cell - Tender No. RFT19-56
(Subledger SWM18003)
Capital Project ESSWM-FH1 - SWM Facility - Fox Hollow No. 1, Phase II
DeKay Construction (1987) Ltd. - \$2,962,027.20 (excluding H.S.T.)

FINANCE & CORPORATE SERVICES REPORT ON THE SOURCES OF FINANCING:

Finance & Corporate Services confirms that the cost of this project cannot be accommodated within the financing available for it in the Capital Works Budget and that, subject to the adoption of the recommendations of the Managing Director, Environmental & Engineering Services & City Engineer, the detailed source of financing for this project is:

SUMMARY OF ESTIMATED EXPENDITURES	Approved Budget	Additional Financing	Revised Budget	Committed to Date	This Submission	Balance for Future Work
Engineering	\$620,000		\$620,000	\$405,500		\$214,500
Construction	2,479,482	600,000	3,079,482	20,352	3,014,159	44,971
City Related Expenses	518		518	518		0
NET ESTIMATED EXPENDITURES	<u>\$3,100,000</u>	<u>\$600,000</u>	<u>\$3,700,000</u>	<u>\$426,370</u>	<u>\$3,014,159</u> ¹⁾	<u>\$259,471</u>
SUMMARY OF FINANCING:						
Drawdown from City Services - Mjr. SWM Reserve Fund (Development Charges) 2&3)	\$3,100,000	\$600,000	\$3,700,000	\$426,370	\$3,014,159	\$259,471
TOTAL FINANCING	<u>\$3,100,000</u>	<u>\$600,000</u>	<u>\$3,700,000</u>	<u>\$426,370</u>	<u>\$3,014,159</u>	<u>\$259,471</u>

1) Financial Note:

Contract Price	\$2,962,027
Add: HST @13%	385,064
Total Contract Price Including Taxes	3,347,091
Less: HST Rebate	332,932
Net Contract Price	<u>\$3,014,159</u>

- 2) Development charges have been utilized in accordance with the underlying legislation and the Development Charges Background Studies completed in 2014.
- 3) The additional financing of \$600,000 is available as an additional drawdown from the City Services - Mjr. SWM Reserve Fund.

JG

Kyle Murray
Director of Financial Planning & Business Support

TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON JUNE 18, 2019
FROM:	KELLY SCHERR, P.ENG. MANAGING DIRECTOR ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER
SUBJECT:	UPPER THAMES RIVER CONSERVATION AUTHORITY AND CITY OF LONDON FLOOD PROTECTION PROJECTS

RECOMMENDATION

That, on the recommendation of the Managing Director Environmental & Engineering Services and City Engineer, the following action **BE TAKEN** with respect to City of London’s contribution to infrastructure:

- a) The Upper Thames River Conservation Authority **BE AUTHORIZED** to carry out the following projects in concert with the City by increasing the City’s share by \$657,500 including contingency, excluding HST, in order to complete the following 2018 approved works:
 - i. Phase 4 of the West London Dyke reconstruction project;
 - ii. Phase 5 of the Fanshawe Dam concrete and dam repair;
- b) The Upper Thames River Conservation Authority **BE AUTHORIZED** to carry out the Phase 5 of the West London Dyke detailed design with the City’s share being \$69,750 including contingency, excluding HST;
- c) The Upper Thames River Conservation Authority **BE AUTHORIZED** to carry out the Phase 6 of the West London Dyke detailed design with the City’s share being \$33,250 including contingency, excluding HST;
- d) The Upper Thames River Conservation Authority **BE AUTHORIZED** to carry out the Fanshawe Dam Safety Study with the City’s share being \$38,500 including contingency, excluding HST;
- e) The financing for this work **BE APPROVED** as set out in the Sources of Financing Report attached hereto as Appendix ‘A’, and,
- f) The Civic Administration **BE AUTHORIZED** to undertake all the administrative acts that are necessary to give effect to these recommendations.

PREVIOUS REPORTS PERTINENT TO THIS MATTER
--

Civic Works Committee, July 17, 2018 – Water and Erosion Control Infrastructure (WECI) Program: 2018 Provincially Approved Project Funding (Sole Sourced)

Civic Works Committee, July 17, 2017 – Water and Erosion Control Infrastructure (WECI) Program: 2017 Provincially Approved Project Funding (Sole Sourced)

Civic Works Committee, July 29, 2016 – Water and Erosion Control Infrastructure (WECI) Program: 2016 Provincially Approved Project Funding (Sole Sourced)

Civic Works Committee, February 2, 2016 – West London Dyke Master Repair Plan Municipal Class Environmental Assessment Study

Strategic Priorities and Policy Committee – January 28, 2016 – Downtown Infrastructure Planning and Coordination

Council, March 21, 2011 – UTRCA 2010 and 2011 Levies for Remediating Flood/Erosion Control, Dykes and Dam Structures within the City

2019 – 2023 STRATEGIC PLAN

This report aligns with the Strategic Plan’s “Building a Sustainable City” strategic area of focus by supporting the following expected results:

- Improve London’s resiliency to respond to potential future challenges;
- Build infrastructure to support future development and protect the environment; and
- Maintain or increase current levels of service; manage the infrastructure gap for all assets.

BACKGROUND

Purpose

To recommend funding to facilitate 2019 capital projects for dykes and dams in the City of London.

Context

The City of London owns flood and erosion control structures throughout the watershed that are maintained by the Upper Thames River Conservation Authority (UTRCA) under the terms of a Memorandum of Understanding (MOU). The MOU defines a collaborative approach to operation and maintenance and capital improvements to the flood and erosion control structures in which the City and UTRCA share an interest.

As the regulator of the floodplain, the UTRCA is in the best position to coordinate work on these structures and can also access funding from the provincial and federal governments for maintenance and capital improvement of these structures that is not available to municipalities.

Because of the importance of the flood and erosion control structures to both the City and UTRCA, there is a long history of cooperation on the construction and maintenance of these structures. The City of London annually provides funding to the UTRCA to complete necessary dyke and dam capital and maintenance works.

DISCUSSION

The UTRCA has identified the following capital construction and design work to be completed in 2019:

West London Dyke – Phase 4 Finishing Work

The majority of the reconstruction work for Phase 4 was completed by the end of December 2018. This was primarily focused on the removal of the existing concrete revetment and installation of reinforced concrete block wall. Some general grading and stabilizing of the site for the winter and spring was also completed. The remainder of the work for completion this year is to finish the hand rail installation, electrical and lighting installation, and landscaping. The estimated value of this work is \$437,500.

Fanshawe Dam Phase 5 and 6 Paint and Concrete Repairs

The Fanshawe Dam paint and repair work for Phase 5 began in 2018 but its final completion has been carried into the spring of 2019. Much of the work was completed in 2018, however, a late start, weather issues, and unforeseen need to operate the dam at higher water levels required that the project continue into 2019. To remobilize to

complete Phase 5 and undertake Phase 6, an additional \$220,000 of funding is required.

West London Dyke Phases 5 and 6 Design

The continuation of the West London Dykes Phases 5 and 6 project will extend the reconstructed section of the dyke approximately 325 meters, from the north side of Blackfriars Bridge to St. Patrick Street.

Phases 5 and 6 of the project will be combined as one tender package with construction to commence in July. Combining the two phases results in more efficient construction access and techniques while also reducing the duration of construction within the neighbourhood by one season.



Figure 1: West London Dykes Phase 4 (2018)

Consulting fees for the detailed design of Phases 5 and 6 are approximately \$67,750 and \$33,250, respectively. These fees include contingency and exclude HST, and will be awarded to a consultant through the UTRCA’s procurement processes.

Fanshawe Dam Safety Study

The Canadian Dam Association recommends that a full Dam Safety Review be undertaken once every 10 year period, especially for Flood Control Dams. The last full report, completed by Acres International, for the Fanshawe Dam was 2007. The proposed 2019 Dam Safety Study for the Fanshawe Dam will be the first stage for the full review, which is expected to be completed over a multi-year period. The intent for this phase is to enter into an engineering agreement with a qualified consultant in order to prepare the terms of reference for the full review and perform any necessary inspections and testing to facilitate a complete report.

Total of 2019 Projects

The total requested amount to fund the dykes and dams projects for 2019 results in a total amount of:

Project	Full Project Amount	DMAF Funding	London Share
West London Dyke Phase 4 Finishes	\$437,500		\$437,500
Fanshawe Dam Phases 5 and 6	\$220,000		\$220,000
West London Dyke Phases 5 Detailed Design	\$69,750		\$69,750
West London Dyke Phases 6 Detailed Design	\$55,350	\$22,100	\$33,250
Fanshawe Dam Safety Study	\$38,500		\$38,500
Total (excluding HST)			\$799,000

Potential Funding Impacts

There have been two recent developments that may impact the funding for the rehabilitation of the City's dyke and dam infrastructure:

1. A new funding announcement from Infastructure Canada’s Disaster Mitigation

and Adaptation Fund (DMAF) that will support reconstruction and raising of the West London Dyke.

2. Potential changes to the province's funding from the Ministry of Natural Resources and Forestry's Water and Erosion Control Infrastructure (WECI) program.

1. Disaster Mitigation and Adaptation Fund (DMAF)

The DMAF is a two-billion dollar merit-based national program provided by Infrastructure Canada to support large scale infrastructure projects that reduce the risks of natural hazards. In order to be eligible, projects must have a minimum cost of \$20 million and must be able to be completed by 2027-2028. The level of cost sharing varies by the recipient.

The UTRCA and City successfully applied to this program for phases 5 through 13 of the West London Dyke Reconstruction (Appendix 'A'; DMAF Approved West London Dyke Phases). The federal government confirmed by a funding announcement on March 27th, 2019 to commit \$10 million of the project's estimated \$25 million dollar total cost over the next ten years. For this project, the program funds up to 40% of the engineering design and construction costs up to the approved program total.

The DMAF will allow the City and UTRCA to continue to focus on upgrading the West London Dyke to further protect properties in the Blackfriars neighbourhood and improve climate change resiliency to extreme rain events.

2. Water and Erosion Control Infrastructure (WECI) Program

Over the last 15 years, the UTRCA in partnership with the City, has been successful in securing approximately \$12,000,000 in WECI funding through the Ministry of Natural Resources and Forestry (MNRF) to repair and reconstruct City-owned flood control infrastructure. Due to the cost sharing nature of the WECI program, the Remediating Flood Control Works within City Limits (ES2474) account has been able to achieve twice the work for the budget available.

Unfortunately, the WECI program is in question for 2019 and beyond. The UTRCA received a letter from the MNRF at the end of March 2019 requesting submissions; however, the letter indicated that the program is still subject to provincial funding commitments and may not be realized this year. The request for submissions was sent out about two months later in the year than usual, which limits the projects that will be ready to be undertaken. The UTRCA has submitted a 2019 WECI application requesting funding for projects, including a request for up to \$1,500,000 for West London Dyke Phases 5 and 6 reconstruction.

The potential cancellation or reduction in funding available through WECI would result in a substantial increase to the City's capital budget or the need to reduce the number of projects that can be completed each year.

Financing Upcoming Work

The ES2474 UTRCA Dykes and Dam account currently has an available budget of \$3,600,000. Following the recommended 2019 commitments, there will be approximately \$2,800,000 in funding available to finance the Phase 5/6 dyke construction.

The estimated construction cost of the combined West London Dyke Phases 5 and 6 is \$4,900,000. The DMAF will fund 40% of this project or approximately \$1,900,000. Therefore, the City share would be approximately \$3,000,000, noting that there is the potential to reduce the City's share further if WECI funding is provided.

If the WECl funding is not received, the City may need to draw from the reserve funds to finance the WLD project and meet the commitments to the DMAF. A subsequent report to committee will detail the City share of the WLD Phase 5/6 project following the tender process and provide an update regarding the status of the WECl program. The impact of the DMAF funding and any changes to the WECl funding program will be incorporated into the wastewater financial plan as part of the 2019-2023 multi-year budget process.

CONCLUSIONS

Due to a need to complete the carryover projects from 2018, two existing purchase orders will need to be increased. Furthermore, three new projects are recommended to proceed in 2019 including the detailed design of Phases 5 and 6 of the West London Dyke reconstruction and the Fanshawe Dam Safety Study. The City’s share for these projects will be sourced out of the existing budget from the ES2474 account.

A subsequent report to Committee will be prepared to commit the City share of Phases 5 and 6 West London Dyke Construction following the tender results. A status update of the WECl funding program will also be provided at this time.

Acknowledgements

This document has been prepared by Chris McIntosh, P.Eng., Environmental Services Engineer.

SUBMITTED BY:	REVIEWED AND CONCURRED BY:
SHAWNA CHAMBERS, P.ENG., DPA DIVISION MANAGER, STORMWATER MANAGEMENT	SCOTT MATHERS, MPA, P. ENG. DIRECTOR, WATER AND WASTEWATER
RECOMMENDED BY:	
KELLY SCHERR, P. ENG., FEC MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER	

June 10, 2019

Attach: Appendix ‘A’ – Source of Financing
 Appendix ‘B’ – West London Dyke DMAF Phases

cc: Fraser Brandon-Sutherland – UTRCA
 Dave Charles – UTRCA
 Debbie Gibson – Financial Business Support
 Gary McDonald –Tangible Capital Assets

Chair and Members
Civic Works Committee

RE: Upper Thames River Conservation Authority and City of London Flood Protection Projects
Phase 4 West London Dyke - (Subledger SWM1804E)
Phase 5 Fanshawe Dam (Subledger SWM19006)
Phase 5 West London Dyke (Subledger SWM1904A)
Phase 6 West London Dyke (Subledger SWM1905A)
Fanshawe Dam Safety Study (Subledger SWM19007)
Capital Project ES2474 - UTRCA - Remediating Flood Control Works within City Limits
Upper Thames River Conservation Authority - \$657,500 (excluding H.S.T.) Ph. 4 West London Dyke & Ph.5 Fanshawe Dam
Upper Thames River Conservation Authority - \$69,750 (excluding H.S.T.) Ph. 5 West London Dyke
Upper Thames River Conservation Authority - \$33,250 (excluding H.S.T.) Ph. 6 West London Dyke
Upper Thames River Conservation Authority - \$38,500 (excluding H.S.T.) Fanshawe Dam Safety Study

FINANCE & CORPORATE SERVICES REPORT ON THE SOURCES OF FINANCING:
Finance & Corporate Services confirms that the cost of this project can be accommodated within the financing available for it in the Capital Works Budget and that, subject to the adoption of the recommendations of the Managing Director, Environmental & Engineering Services & City Engineer, the detailed source of financing for this project is:

SUMMARY OF ESTIMATED EXPENDITURES	Approved Budget	Committed to Date	This Submission	Balance for Future Work
Engineering	\$2,754,803	\$1,784,355	\$143,991	\$826,457
Construction	8,469,155	5,866,193	669,072	1,933,890
City Related Expenses	75,000	48,286		26,714
NET ESTIMATED EXPENDITURES	\$11,298,958	\$7,698,834	\$813,063 1)	\$2,787,061

SUMMARY OF FINANCING:				
Capital Sewer Rates	\$1,000,000	\$1,000,000		\$0
Debenture By-law No. W.-5610-251	2,750,000			2,750,000
Drawdown from Sewage Works Reserve Fund	7,497,213	6,647,089	813,063	37,061
Other Contributions	51,745	51,745		0
TOTAL FINANCING	\$11,298,958	\$7,698,834	\$813,063	\$2,787,061

1) **Financial Note: (Construction)**
Contract Price
Add: HST @13%
Total Contract Price Including Taxes
Less: HST Rebate
Net Contract Price

Construction		
Ph. 4 West London Dyke	Ph. 5 Fanshawe Dam	Total
\$437,500	\$220,000	\$657,500
56,875	28,600	85,475
494,375	248,600	742,975
49,175	24,728	73,903
\$445,200	\$223,872	\$669,072

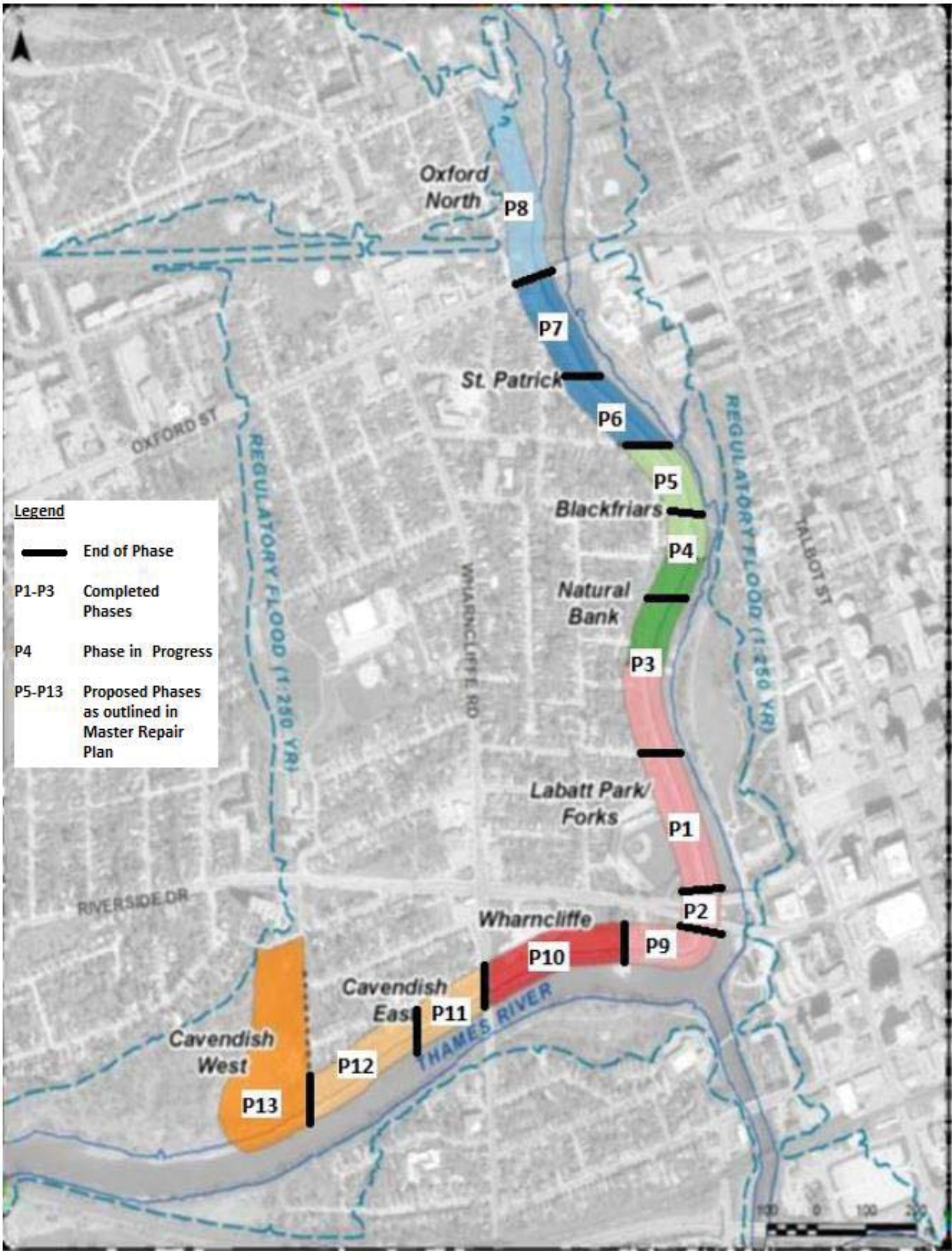
Financial Note: (Engineering)
Contract Price
Add: HST @13%
Total Contract Price Including Taxes
Less: HST Rebate
Net Contract Price

Engineering			
Ph. 5 West London Dyke	Ph. 6 West London Dyke	Fanshawe Dam Safety Study	Total
\$69,750	\$33,250	\$38,500	\$141,500
9,068	4,323	5,005	18,396
78,818	37,573	43,505	159,896
7,840	3,738	4,327	15,905
\$70,978	\$33,835	\$39,178	\$143,991
TOTAL CONSTRUCTION & ENGINEERING			\$813,063

JG

Jason Davies
Manager of Financial Planning & Policy

Appendix B - West London Dyke DMAF Phasing



TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON JUNE 18, 2019
FROM:	KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER
SUBJECT:	REDAN-MARMORA-NELSON STREETS LANE CLOSING

RECOMMENDATION

That, on the recommendation of the Managing Director, Environmental & Engineering Services and City Engineer the following actions be taken with respect to the closing and disposing of certain City owned public lane bounded by Redan Street, Nelson Street and Marmora Street;

- a) the closing of the above noted lane BE APPROVED;
- b) the attached proposed by-law (Appendix 'A') being : "A by-law to stop up and close the Lane bounded by Redan, Nelson and Marmora Streets" BE INTRODUCED at the Municipal Council meeting to be held on June 25th, 2019;
- c) the above-noted lane BE DECLARED SURPLUS;
- d) the Civic Administration BE AUTHORIZED to make all decisions and undertake all necessary steps required to divide and transfer the closed lane to the abutting property owners as fairly and equitably as possible, where possible, subject to the following guidelines;
 - i) no portion of the lane shall be disposed of that would result in the sole legal vehicular access to a property being lost;
 - ii) property owner objections to disposing of the untraveled lane by reason of potential for future use will not be considered;
 - iii) property owners abutting the subject closed lane shall be given the first right of refusal to acquire the portion of the lane abutting their property to the middle of the lane (one-half the lane width). If that option is not exercised, the surplus land will be made available to the other abutting property owners. In general, the City will support any lane disposition that is agreed to by property owners and that eliminates or minimizes the creation of remnant parcels;
 - iv) the subject lane land will be offered to the abutting property owners for the nominal sum of \$1 with the City being responsible for all land transfer costs. The City will pay for the preparation of a reference plan and the property owner will be required to retain a lawyer to facilitate the transfer of the subject land. Subject to pre-approval by the City Solicitor, the City will be responsible for all reasonable legal fees and disbursements relating to the transfer. The property owner's lawyer must agree to provide an undertaking acceptable to the City Solicitor, committing to consolidating the property's Property Identification Numbers (PIN's) post conveyance, the cost of which will be included in the approved legal fees;

- v) any required fence relocations and obstruction removal made necessary by the transfer of land will be the sole responsibility of the property owners; and,
- vi) where circumstances prevent the lane or a portion thereof from being conveyed, the lane will be retained by the City and will continue to be available for use by the abutting property owners and be subject to the City's Lane Maintenance Policy until such time it can be disposed of;

It being noted that subject to passing and registration of the above noted by-law, any utility easements shall be conveyed to utility owners if needed, and a municipal easement will be retained by the City if required.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

- Community and Neighbourhoods Committee – January 18th, 2011 – Marmora Lanes Closing
- Civic Works Committee – April 16, 2019 - Public Lane Policy Review

2019-23 STRATEGIC PLAN

The following report supports the Strategic Plan through the strategic focus area of Strengthening Our Community by facilitating inclusive and engaged neighbourhoods.

BACKGROUND

Municipal Council at its meeting April 23, 2019 resolved:

That the following actions be taken with respect to the Redan Public lane:

- a) the Civic Administration BE DIRECTED to survey the impacted property owners, with the intent to close the lane and divest the property, at the cost of \$1 to each the property owners and with all other land transfer costs to be assumed by the City; and,
- b) that staff BE DIRECTED to report back to Civic Works Committee with recommendations for future potential lane closure subsidies. (3.1/8/CWC)

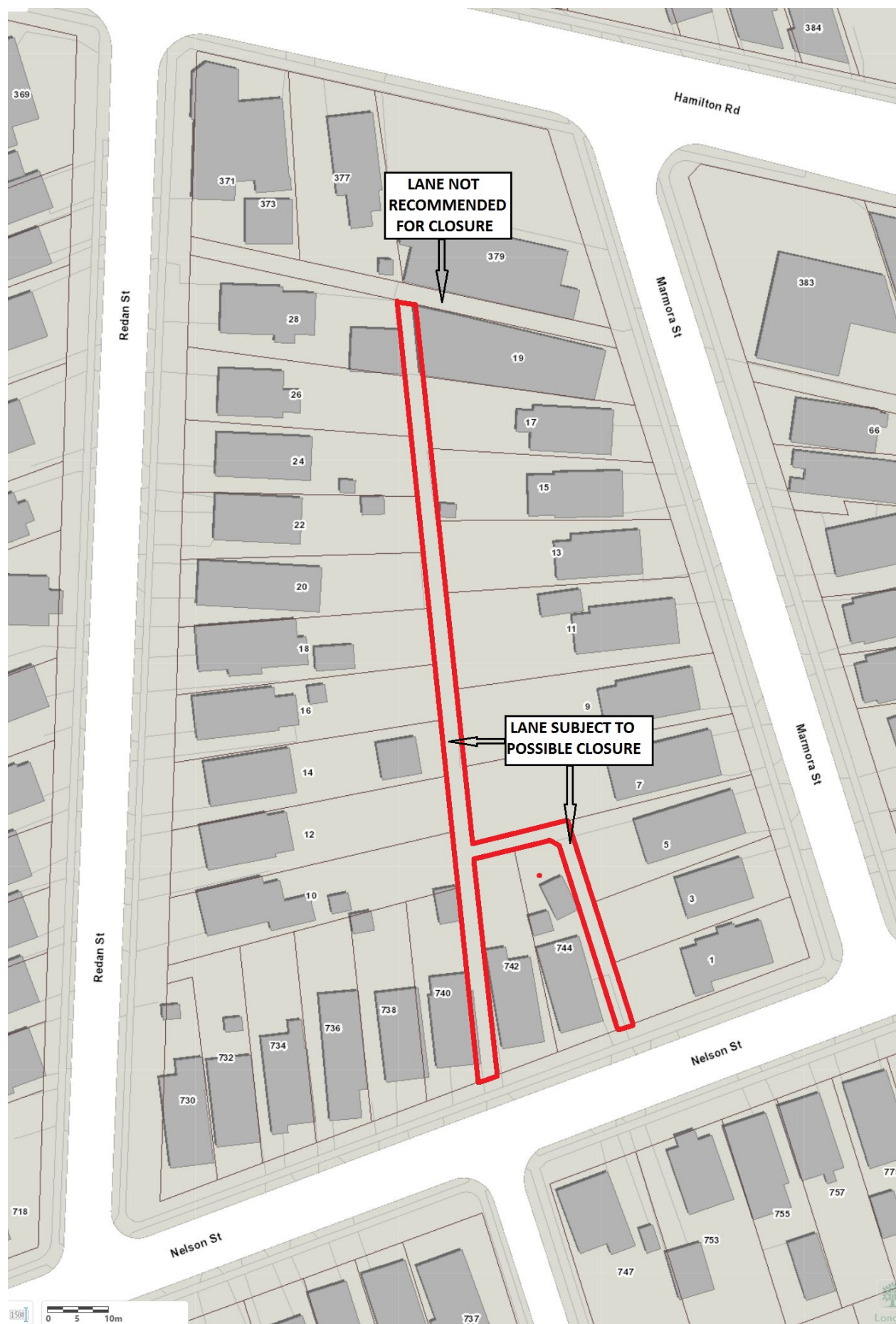
Purpose

This report is in response to part a) in the above resolution, it being noted that part b) will be the subject of a future report.

DISCUSSION

The subject lane recommended for closing is highlighted in the graphic below. The section of the lane running between Redan Street and Marmora Street behind the properties fronting on Hamilton Road is not recommended for closing. Transportation Engineering recommends the City retain public lanes that serve properties fronting on arterial roads so they can be used to enhance traffic safety and efficiency should properties commercialize in the future. It is also noted this portion of the lane is fully traveled.

Lane Sketch



In accordance with the above noted resolution, the property owners abutting the subject lane were surveyed to determine the level of support for permanently closing the lane. Of the twenty-three property owners surveyed, a total of seventeen responses (74%) have been received as of the date of this report, all in favour of closing the lane. There are no objections to closing the lane. This represents significant support for permanently closing the lane, which is the recommendation of this report.

Of the seventeen responses received, twelve property owners have expressed an interest in acquiring a portion of the lane abutting their property. This is a sufficient number to ensure the lane can be largely incorporated into the abutting properties once the transfers of land have been completed and fences are relocated, and ultimately help the community address the previously cited problems associated with this untraveled vacant lane.

Since not all property owners are interested in acquiring a portion of the lane abutting their property and the City cannot force a property owner into taking it, there is a real possibility that the City will end up owning some remnant land locked parcels. The creation of inaccessible land-locked parcels is never desirable as they create some risk for the City. But since most untraveled lanes cannot be accessed due to obstructions anyway, the incremental risk to the City could be viewed as being limited. Regardless, the potential for creating land-locked parcels is something the City will have to accept if the City is to take a more proactive stance to assist property owners in addressing the problems associated with vacant lanes by way of closure and disposition. In accordance with City's lane policies, the City will not maintain any remnant lane parcels that remain in the City's ownership; maintenance will continue to be left to the abutting owners to deal with.

Assuming Council directs Civic Administration to proceed, the next step will be to develop and circulate a plan of disposition amongst the property owners for approval with the goal to dispose of as much of the lane as possible. Developing the plan requires that a topographic survey be completed and title searches be undertaken on behalf of the property owners to confirm their property access rights. Armed with this information, the City will work with the property owners to divide the lane as equitably as possible. It should be noted, however, that some potential disagreements between property owners have already been identified and if the property owners cannot agree on a solution, some portions of the lane will have to remain in the City's ownership.

The estimated cost to complete the survey and reference plan and cover legal fees and disbursements is expected to be approximately \$3000 per property, which equates to an estimated total cost of \$36,000 based on the number of property owners expressing an interest in acquiring the lane. Since no source of financing has been identified for this initiative, funds will have to be found in the current operating budget.

CONCLUSION

Strong interest has been expressed by the abutting property owners to close the subject lane bounded by Redan, Nelson and Marmora Streets. It is therefore recommended the lane be closed as public highway, declared surplus to the City’s needs, and that Civic Administration be authorized to make all decisions and take all reasonable steps necessary to dispose of the lane amongst the abutting owners as equitably as possible, notwithstanding the likelihood that the process may result in the creation of remnant landlocked parcels owned by the City.

PREPARED BY:	REVIEWED AND CONCURRED BY:
A GARY IRWIN, OLS, OLIP MANAGER OF GEOMATICS AND CITY SURVEYOR	DOUG MACRAE, P.ENG., MPA DIRECTOR ROADS AND TRANSPORTATION

RECOMMENDED BY:
KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER

May 29, 2019

cc. J. Wills
D. Mounteer

APPENDIX 'A'

Bill No. _____

2019

By-law No. S - _____

A by-law to stop up and close the lane bounded by Redan, Nelson and Marmora Streets.

WHEREAS it is expedient to stop up and close the lane on Registered Plan 110(3rd) and Registered Plan 437(3rd) bounded by Redan, Nelson and Marmora Streets in the City of London;

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

1. The following lane on Registered Plan 110(3rd) and Registered Plan 437(3rd) shall be stopped up and forever closed and cease to be and form public highway:
 - a) Lane abutting Lots 19 and 20 on Registered Plan 437(3rd) in the City of London and County of Middlesex; and
 - b) Lane abutting the rear of Lots 113, 114, 119 and 120 on Registered Plan 110(3rd), and the rear of Lots 1 to 9, both inclusive, on Registered Plan 437(3rd) in the City of London and County of Middlesex.
2. The lands comprising the said lane hereby stopped up and closed shall continue to be vested in The Corporation of the City of London to be dealt with from time to time as the Council of the Corporation may see fit and deem proper.
3. This by-law comes into force and effect on the day it is passed.

PASSED in Open Council on _____

Ed Holder
Mayor

Catharine Saunders
City Clerk

First Reading –
Second Reading –
Third Reading –

TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON JUNE 18, 2019
FROM:	KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER
SUBJECT:	AWARD OF TENDER 19-64 MILL AND OVERLAY OF VARIOUS CITY STREETS IRREGULAR RESULT

RECOMMENDATION

That, on the recommendation of the Managing Director, Environmental & Engineering Services and City Engineer, the following actions **BE TAKEN** with respect to the award of contract for the Mill and Overlay of Various City of London Streets:

- (a) The bid submitted by Dufferin Construction Company at their tendered price of \$760,875.00, (excluding HST) **BE ACCEPTED**, it being noted that the bid submitted by Dufferin Construction Company was an irregular result (only one bid received), however, was below the estimated expenditure and meets the City’s specifications and requirements in all areas;
- (b) That the funding for this project **BE APPROVED** as set out in the Sources of Financing Report attached hereto as Appendix ‘A’;
- (c) Civic Administration **BE AUTHORIZED** to undertake all the administrative acts that are necessary in connection with this appointment;
- (d) Approval hereby given **BE CONDITIONAL** upon the corporation entering into a formal contract or having a purchase order, or contract record relating to the subject matter of this approval; and,
- (e) The Mayor and City Clerk **BE AUTHORIZED** to execute any contract or other documents, if required, to give effect to these recommendations.

2019-2023 STRATEGIC PLAN

The following report supports the Strategic Plan through the strategic focus area of Building a Sustainable City by improving mobility for Londoners.

DISCUSSION

Purpose and Description

The purpose of this report is to recommend the award of a tender for repaving of various city streets as per the City of London’s Procurement of Goods and Services Policy. This report is required because the contract award is an irregular result as a result of receiving one tender submission.

The ongoing management of roads assets is guided by guided by field observations and monitoring. Every year, repaving in response to recent accelerated pavement deterioration is required at various locations across the transportation network. This

program typically addresses short sections of road. The work locations are variable based on local conditions and recent pavement deterioration. The contract tender items include pavement rehabilitation work such as asphalt milling and paving operations for typical road sections.

Purchasing Process

The City issued a tender through Bids and Tenders for the Mill and Overlay of Various Streets which closed Friday May 24th, 2019.

One (1) bid was received from Dufferin Construction Company. The submission was reviewed by staff from Purchasing and Supply and Road Operations and Forestry to ensure compliance to the tender requirements. The bid met the City's specifications and requirements in all areas. The results are within the estimate for this work and are comparable to other recent competitive tenders.

CONCLUSION

It is recommended that the contract be awarded to Dufferin Construction Company as an irregular result in accordance with the Procurement of Goods and Services Policy. The award of this contract helps the City respond to changing road conditions.

Acknowledgements

This report was prepared by John Parsons, Road Operations & Forestry and Ian Harris, Purchasing and Supply.

SUBMITTED BY:	REVIEWED AND CONCURRED BY
JOHN PARSONS, CET DIVISION MANAGER ROADSIDE OPERATIONS & FORESTRY	DOUG MACRAE, P. ENG., MPA DIRECTOR ROADS & TRANSPORTATION
RECOMMENDED BY:	
KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER	

Attach: Appendix 'A' – Source of Financing

cc: John Freeman, Manager of Purchasing and Supply
 Dufferin Construction Company, 2200 Jetstream Road, London, Ontario,
 N6A 4V7

APPENDIX "A"

RE: T19-64 Mill and Overlay of Various City Streets - Irregular Result
(Subledger RD190002)
Capital Project TS331019 - Road Surface Treatment
Operating Business Unit 510101 - Trans Ops - Summer Mtce
Operating Business Unit 500101 - Roadside - Road Maintenance
Dufferin Construction Company - \$760,875.00 (Excluding H.S.T.)

FINANCE & CORPORATE SERVICES REPORT ON THE SOURCES OF FINANCING:
Finance & Corporate Services confirms that the cost of this project can be accommodated with the financing available in the Capital Works Budget, and that, subject to the adoption of the recommendations of the Managing Director, Environmental & Engineering Services and City Engineer, the detailed source of financing for this project is:

SUMMARY OF ESTIMATED EXPENDITURES	Approved Budget	Committed to Date	This Submission	Balance for Future Work
<u>TS331019 - Road Surface Treatment</u>				
Construction	\$400,000		\$400,000	\$0
<u>Business Unit 510101 (Trans Ops - Summer Mtce)</u>				
Other Purchased Services (510101.355000)	300,062	2,495	279,840	17,727
<u>Business Unit 500101 (Roadside - Road Maintenance)</u>				
Other Purchased Services (500101.355000)	298,286	17,121	94,427	186,738
NET ESTIMATED EXPENDITURES	\$998,348	\$19,616	\$774,267	1) \$204,465
<u>SOURCE OF FINANCING</u>				
<u>TS331019 - Road Surface Treatment</u>				
Capital Levy	\$400,000		\$400,000	\$0
<u>Business Unit 510101 (Trans Ops - Summer Mtce)</u>				
Other Purchased Services (510101.355000)	300,062	2,495	279,840	17,727
<u>Business Unit 500101 (Roadside - Road Maintenance)</u>				
Other Purchased Services (500101.355000)	298,286	17,121	94,427	186,738
TOTAL FINANCING	\$998,348	\$19,616	\$774,267	\$204,465
1) <u>Financial Note:</u>	TS331019	BU 510101	BU 500101	Total
Contract Price	\$393,081	\$275,000	\$92,794	\$760,875
Add: HST @13%	51,101	35,750	12,063	98,914
Total Contract Price Including Taxes	444,182	310,750	104,857	859,789
Less: HST Rebate	44,182	30,910	10,430	85,522
Net Contract Price	<u>\$400,000</u>	<u>\$279,840</u>	<u>\$94,427</u>	<u>\$774,267</u>

lp

Jason Davies
Manager of Financial Planning & Policy

TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON JUNE 18, 2019
FROM:	KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER
SUBJECT:	CLOSING OF ISAAC DRIVE

RECOMMENDATION

That, on the recommendation of the Managing Director, Environmental & Engineering Services and City Engineer, the following actions be taken with respect to closing Isaac Drive north of Clayton Walk:

- (a) the closing of Isaac Drive north of Clayton Walk **BE APPROVED**; and,
- (b) the attached proposed by-law (Appendix 'A') for the purpose of closing Isaac Drive north of Clayton Walk **BE INTRODUCED** at the June 25th, 2019 Council Meeting,

it being noted that subject to the passing and registration of the attached closing by-law in the Land Registry Office, utility easements shall be conveyed to utility owners as needed and the City will retain a municipal services easement over the lands to be conveyed.

PREVIOUS REPORTS PERTINENT TO THIS MATTER
--

None.

2019-23 STRATEGIC PLAN

The proposed road closing By-law supports the Strategic Plan through the strategic focus area of *Leading in Public Service* by providing excellent service delivery.

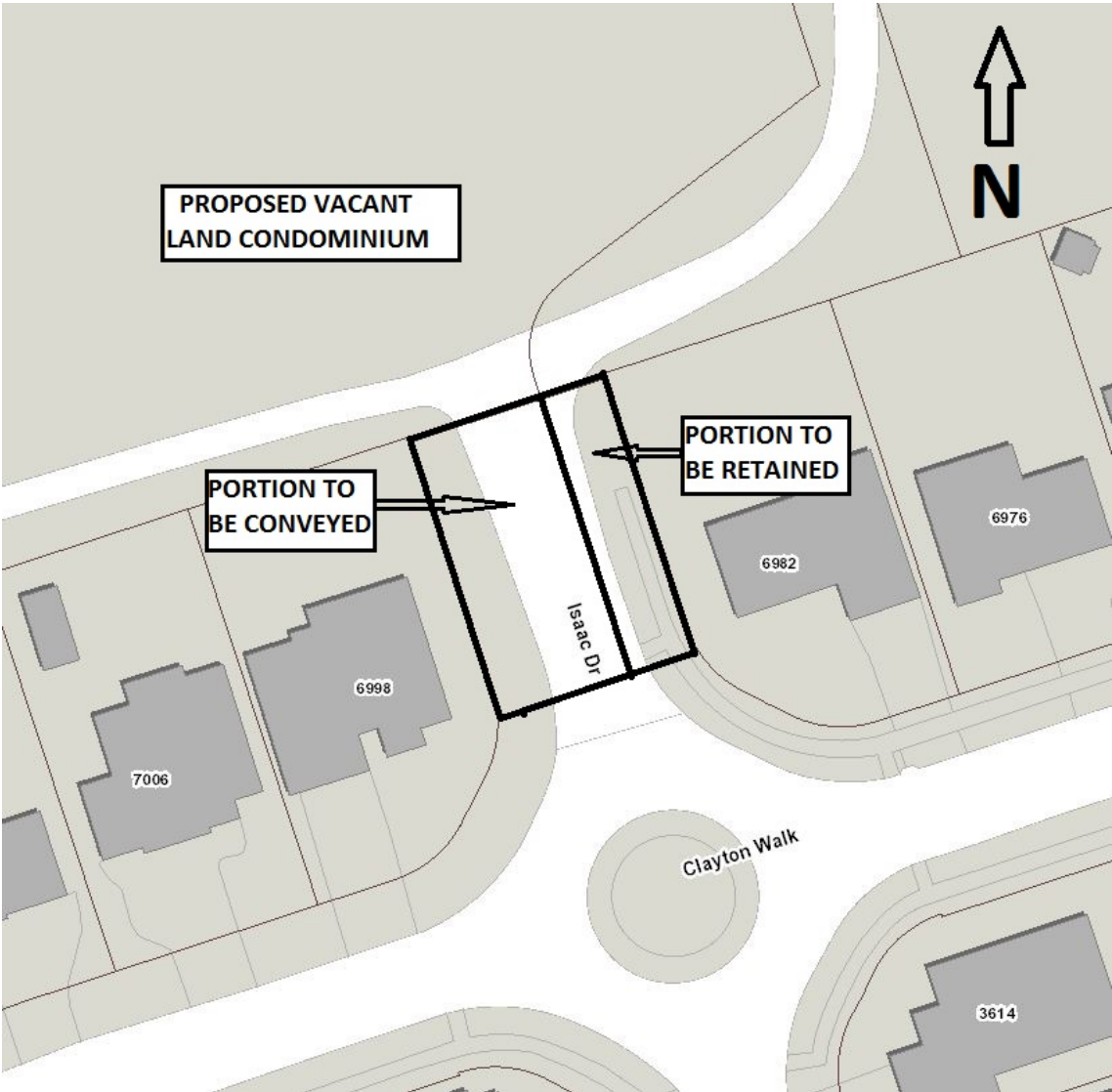
BACKGROUND

Isaac Drive north of Clayton Walk is a “stub street” originally established by Plan 33M-524 to provide a future road link to the undeveloped lands north of the subdivision. When changing development patterns lead to the situation where a street is no longer required for public usage but can be converted to a private entrance, the City requires that the street be transferred to private ownership. As a prerequisite to the conveyance, the street must first be legally closed as public highway which is the purpose of this report.

DISCUSSION

As a condition of site plan approval, the owner of vacant lands immediately north of Isaac Drive on 33M-524, namely 2219008 Ontario Limited, has applied to close and acquire a portion of Isaac Drive so that it can be incorporated into a proposed vacant land condominium to be used as a private entrance. Due to changes in area development patterns, Isaac Drive is no longer needed as a public road and it is in both the developer's and City's best interest that the street be closed and the surplus portion transferred to the developer to be incorporated into the proposed condominium. This provides the developer with full control over the entrance to the private development and relieves the City from the responsibilities for future maintenance. The street is not being used for public travel and the flanking lots on Isaac Drive front onto, and are serviced from, Clayton Walk. Therefore Isaac Drive can be closed and conveyed without effecting the public or abutting property owners.

The City will be retaining a 7 metre wide strip of land along the east side of the road allowance to accommodate a public pathway link from Clayton Walk to and through the open space on the lands to the north. The City will also be retaining a municipal services easement for trunk sewers and will be conveying any utility easements that may be required.



Once the road allowance has been legally closed as public highway by by-law, Realty Services will seek approval for the transfer of the surplus portion of the road allowance to the developer by way of a separate report to the Corporate Services Committee.

CONCLUSION

Since Isaac Drive north of Clayton Walk is not required for public travel, it is recommended the street be stopped up and legally closed as public highway so that the westerly portion of the street can be conveyed to the owner of abutting lands in support of a proposed condominium development.

PREPARED BY:	REVIEWED AND CONCURRED BY:
A. GARY IRWIN, OLS, OLIP CITY SURVEYOR AND DIVISION MANAGER, GEOMATICS	DOUG MACRAE, P.ENG., MPA DIRECTOR, ROADS AND TRANSPORTATION
RECOMMENDED BY:	
KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER	

May 23, 2019

Appendix A: Proposed By-law

cc: Dan FitzGerald
 Adam Ostrowski

APPENDIX 'A'

Bill No. _____

2019

By-law No. S - _____

A By-law to stop up and close Isaac Drive north of Clayton Walk.

WHEREAS it is expedient to stop up and close Isaac Drive north of Clayton Walk on Plan 33M-524 in the City of London;

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

1. Isaac Drive shall be stopped up and forever closed and cease to be and form public highway:

Isaac Drive north of Clayton Walk on Plan 33M-524 designated as Parts 3 and 4 on Plan 33R-20114, in the City of London and County of Middlesex.

2. The lands comprising the said street hereby stopped up and closed shall continue to be vested in the Corporation of the City of London to be dealt with from time to time as the Council of the Corporation may see fit and deem proper.

3. This By-law comes into force and effect on the day it is passed.

PASSED in Open Council on _____

Ed Holder
Mayor

Catharine Saunders
City Clerk

First Reading –
Second Reading –
Third Reading –

TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON JUNE 18, 2019
FROM:	KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER and GEORGE KOTSIFAS, P.ENG. MANAGING DIRECTOR, DEVELOPMENT & COMPLIANCE SERVICES & CHIEF BUILDING OFFICIAL
SUBJECT:	WORK APPROVAL PERMIT PROGRAM ENHANCEMENTS

RECOMMENDATION

That, on the recommendation of the Managing Director, Environmental & Engineering Services and City Engineer and Managing Director, Development & Compliance Services & Chief Building Official, the Work Approval Permit Program BE MODIFIED in general accordance with the recommendations contained in the staff report dated June 18, 2019 and entitled “Work Approval Permit Program Enhancements”;

It being noted that the proposed Work Approval Permit Program modifications may be further refined based on available resources and future adjustments that may be required;

It being further noted that proposed fee changes will be brought forward for consideration at a future Public Participation Meeting before the Strategic Priorities and Policy Committee as part of the annual review of City’s Fees and Charges By-law.

PREVIOUS REPORTS

- March 19, 2018 - Civic Works Committee - Private Works Impacting the Transportation Network

2019-23 STRATEGIC PLAN

The proposed enhancements to the Work Approval Permit Program supports the Strategic Plan through the strategic focus area of *Leading in Public Service* by increasing efficiency and effectiveness of service delivery.

BACKGROUND

At the December 12, 2017 Municipal Council meeting, the following was resolved:

That the Managing Director, Environmental and Engineering Services and City Engineer BE DIRECTED to:

- a) review, either through Lean Six Sigma or more generally, the process of issuing permits for approved works, including consultation with key stakeholders such as the Utilities Coordinating Committee, emergency services, the London Development Institute, business improvement associations and others who are likely to apply for permits for approved works on major roads; and
- b) report back to the Civic Works Committee, by the end of March 2018, on:
 - i) ways to improve communication with affected business, organizations and residents about the timing, duration and impacts of permits for approved works, including unexpected developments;
 - ii) ways to improve the scheduling and coordination of private and public projects affecting roadways and sidewalks that carry significant pedestrian, cyclist, transit and auto traffic;
 - iii) resources required to implement these improvements; and
 - iv) any other improvements identified through the review. (2017-T04)

At the March 19, 2018 Civic Works Committee, the 'Private Works Impacting the Transportation Network' report addressed many of the items in the previous resolution. At the March 27, 2018 Municipal Council meeting the following was resolved:

That, on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer and the Managing Director, Development and Compliance Services and Chief Building Official, the following actions be taken with respect to the staff report dated March 19, 2018 with respect to private and public works impacting the transportation network:

- a) the Civic Administration BE DIRECTED to develop options based on industry best practices for a revised Works Approval Permit process, including consideration related to a new fee model, enhanced monitoring/reporting, roadway inspection requirements and roadway occupancy restrictions; and,
- b) the utility companies, construction service providers and development industry BE ENGAGED to provide feedback on the potential changes to the Works Approval Permit process. (2018-T08) (2.2/5/CWC)

Purpose

This report outlines improvements made to the Work Approval Permit Program since the March 28, 2018 Council Resolution (2018-T08) (2.2/5/CWC) and describes necessary enhancements related to the inspection and enforcement model.

Current State

The City of London (City) manages rights-of-way (ROW) that accommodate numerous assets and utilities that provide important services to Londoners. The City-owned assets include transportation, water and sewer infrastructure. Utility infrastructure includes telecommunications companies, natural gas, hydro and district energy. Road occupation is frequently necessary to build and maintain these assets and also adjacent

developments. Coordination of permissions to work in the ROW via the permit process is required to:

- Manage and communicate road user impacts. Management of the transportation network during construction season is a challenge due to the number of road occupants.
- Ensure proper work methods. Inadequate reinstatement of road pavement structures can reduce the service life of transportation infrastructure.
- Mitigate risk through the review of traffic control plans, insurance and financial security mechanisms.

There are three Full Time Employees (FTE) with the job title of Special Events and Approval Technologists (SEAT) in the Public Property Compliance Area, within Development & Compliance Services. The main duties of two of the three FTE include intake, review, coordination and issuance of all Work Approval Permits. In addition, these two positions conduct one-year warranty inspections on all Work Approval Permits that involve the removal of a road surface, sidewalk or curb, or where significant grassed surface disturbance occurs. These duties account for approximately 90% of their workload.

The third FTE position is responsible for enforcement of various by-laws (Streets (S-1), Drainage (WM-4), Parks and Recreation Area (PR-2), and Election Sign (E.-186-81)). Enforcement duties specifically related to ‘unauthorized road occupancy’ (occupying the road allowance without obtaining a Work Approval Permit) account for approximately 5% of this position’s time. It being noted that, this number is not in direct correlation to the amount of ‘unauthorized road occupancy’ occurrences but rather the available time to enforce these types of violations.

Permit Fees

The following table represents a summary of current fees associated with Work Approval Permits. These fees are in accordance with the fees set out in Schedule 1 of the City of London’s Fees and Charges By-law (A-53).

Table 1

Service/Activity	Unit of Measure	Fee
Permit for Approved Works, where the works do not involve road cuts, traffic management plans or disruptions within the travelled portion of the roadway.	Per City Work Approval Permit	\$110.00 plus vehicle fee of \$10.00 per vehicle to undertake works on adjacent property
Permit for Approved Works	Per City Work Approval Permit	\$275.00
Permit renewal (if work exceeds permit time period)		\$100.00 per day

The current Work Approval Permit Program does not achieve full cost recovery even with the recent increase in permit volumes (see Table 2), and as a result the revenue shortfall is offset by the tax base.

Historical Summary of Issued Work Approval Permits

The following table represents a summary of issued Work Approval Permits and the current staffing complement (Special Events and Approval Technologist (SEAT)).

Table 2

Year	Number of Permits	Number of SEAT
2012	360	3
2013	350	3
2014	635	3
2015	384	3
2016	458	3
2017	522	3
2018	1071	3
2019 projected*	1528	3

***2019 year to date permit count was 637 as of May 29, 2019**

In May of 2018, the Work Approval Permit Program was realigned to meet the requirements of Streets By-law S-1 with respect to: when a Work Approval Permit is required, permit extensions, required documents at time of application, securities and restorations. Stakeholders (utility companies and construction service providers) were notified and provided detailed program guidelines. The result, in part to this realignment, was an approximate 100% increase in issued Work Approval Permits. The realignment focused on work processes but no permit fee analysis was conducted at that time.

Inspections

Currently, a warranty inspection is conducted within one year following permit issuance to ensure the restoration of the road, sidewalk, curb and/or grassed surfaces has remained compliant to City specifications. If deterioration has occurred, the permit holder is required to fix these deficiencies in a timely manner to City specifications. If compliance is not achieved, the City will restore the work and the applicant’s security will be drawn upon to cover the associated costs. It should be noted that due to the recent increase in permit applications and current staff levels, these warranty inspections have become increasing difficult to complete.

PROGRAM ENHANCEMENTS

Enhanced Inspections and Enforcement

In an effort to improve this program, additional inspections will be implemented, the goal of which is to ensure:

- All work on City road allowance is scheduled and coordinated;
- That impacts on mobility are managed and mitigated;
- Work is done in a safe manner;
- Insurance is in place;
- Appropriate financial guarantees and warranties are provided; and,
- Restoration work is done in accordance with City standards.

The following table outlines a detailed list of proposed enhanced inspections and their purpose.

Table 3

Inspection	When	Purpose
Setup Inspection	Start date of Work Approval Permit	▪ To ensure works/occupancy has started ▪ To ensure traffic controls are set up in accordance with accepted and approved plans ▪ To ensure compliance with Accessibility for Ontarians with Disabilities Act (AODA) requirements ▪ To ensure boulevard tree protection barriers are present ▪ To ensure all permit conditions are adhered to
Weekly Inspection (when applicable)	Once a week for duration of permit	▪ To ensure traffic control continues to be set up in accordance with accepted and approved plans and in a safe manner ▪ To ensure continued compliance with AODA requirements ▪ To ensure boulevard tree protection barriers continue to be present ▪ To ensure works/occupancy continue to be in accordance with approved plans and conditions ▪ To ensure restoration is to City standards and specification
Monthly Inspection (when applicable)	Once a month for duration of permit	▪ To ensure traffic control continues to be set up in accordance with accepted plans and in a safe manner ▪ To ensure continued compliance with AODA requirements ▪ To ensure works/occupancy continue to be in accordance with approved plans and conditions
Expiration Inspection	Expiration date of Work Approval Permit	▪ To ensure works/occupancy is no longer present ▪ To ensure final restoration is complete (“passed”) or temporary restoration measures are in place (if applicable) ▪ To verify final road cut dimensions (if applicable)
Warranty Inspection	Within one year from “passed” final restoration inspection	▪ To ensure the restoration of the road, sidewalk, curb and/or grassed surfaces remain compliant with City specifications

Based on permit volumes from 2018 and the projected permit volumes for 2019, Table 4 below indicates the number of warranty inspections that the City would undertake and the number of additional inspections that would be conducted based on the ‘Enhanced Inspections’ outlined in Table 3 above.

Table 4

Year	# of Permits	# of Warranty Inspections	# of Additional Inspections	Totals # of Inspections
2018	1074	837	4813	5650
2019 (projected)	1528	1190	6842	8032

Enhanced inspections will also provide the opportunity to conduct concurrent pro-active By-law enforcement of unauthorized road occupancies. Having additional “eyes on the street” enforcement will help minimize the associated traffic and pedestrian disruptions. Violators will be provided educational information and be required to achieve compliance by way of a Work Approval Permit, which will enable City staff to coordinate occupancy and ensure it complies with all applicable requirements, while also ensuring risks and disruptions to the public are minimized. If violations are repeated or compliance is not achieved, alternative enforcement tools can be utilized.

Cost Recovery Permit Fee Model

The proposed enhanced inspection process would require additional resources funded through a cost-recovery process. Table 5 and Table 6 below outline the proposed permit fee model to support the enhancements. A tiered fee schedule is proposed based on the nature of the occupancy and degree of inspection required.

Table 5 - Work Approval Permit - Occupancy

Work	Fee	Comment
Where the work does not involve excavation, traffic management/control plan review or disruptions within the travelled portion of the road allowance	\$300.00*	Permit review Setup Inspection Expiration Inspection
Where the work does not involve excavation but traffic management/control plan review is required	\$400.00*	Permit review Traffic Control Plan Review Setup Inspection Expiration Inspection
*Monthly inspection (additional fee) Exemption: tower cranes	\$75.00 per month or part thereof	Applies if permit exceeds thirty (30) consecutive days
Moving or construction bin on a local road allowance	\$50.00 per day	Permit review Setup Inspection Expiration Inspection
Permit renewal	\$150.00 plus monthly inspection fee(s) as applicable	

Table 6 - Permit for Approved Works – Construction

Work	Fee	Comment
Where the work involves excavation within the soft surface boulevard within the road allowance and does not require traffic management/control plan review	\$375.00**	Permit review Setup Inspection Expiration Inspection Warranty Inspection
Where the work involves excavation of hard surfaces within the road allowance	\$475.00**	Permit review Traffic Control Plan Review Setup Inspection Expiration Inspection Warranty Inspection
**Weekly inspection (additional fee)	\$75.00 per week or part thereof	Applies if permit exceeds three (3) consecutive days
Permit renewal	\$150.00 plus weekly inspection fee(s) as applicable	

STAKEHOLDER ENGAGEMENT

Civic Administration met with representatives from utility companies, construction service providers and the development industry to provide an overview and solicit feedback on the enhanced inspections, enforcement and new user fee model. No major concerns were expressed at the stakeholder meetings.

CONCLUSION

The coordination of road occupations and construction activities is important for traffic management, accessibility, asset management and risk management perspectives. A more active approach is necessary to properly manage these challenges and provide a better level of service to Londoners.

With the substantial increase in Work Approval Permit volumes, the addition of enhanced inspections and associated proactive enforcement, additional staff resources will be required. The proposed fee model will cover the cost of these positions and bring the program into a full cost recovery.

The proposed fee changes will be brought forward for consideration at a future Public Participation Meeting before the Strategic Priorities and Policy Committee as part of the annual review of City’s Fees and Charges By-law.

PREPARED BY:	CONCURRED BY:
ADAM SALTON MANAGER, ZONING AND PUBLIC PROPERTY COMPLIANCE	PETER KOKKOROS, P.ENG. DEPUTY CHIEF BUILDING OFFICIAL

CONCURRED BY:	RECOMMENDED BY:
DOUG MACRAE, P.ENG., MPA DIRECTOR, ROADS AND TRANSPORTATION	G. KOTSIFAS, P. ENG. MANAGING DIRECTOR, DEVELOPMENT & COMPLIANCE SERVICES AND CHIEF BUILDING OFFICIAL

RECOMMENDED BY:	
KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER	



June 13, 2019

Attention:
Members of the Civic Works Committee
City of London

Re: Work Approval Permit Program Enhancements

On behalf of the members of the London Home Builders' Association, we support the city's concern for public safety on city sidewalks and roads in consideration of the increasing use by pedestrians, cyclists, transit and auto traffic. We also support the objective of the above program, as directed by Council, to ensure construction works (public or private) affecting the transportation network are carried out in an orderly and managed manner.

Renovations occur for a variety of purposes; from green upgrades to increase energy efficiency and home livability, to enhanced accessibility for aging or disabled family members or repair and remodelling of an aging structure and features. Often the front lawn needs to be temporarily fenced to store equipment and building materials and / or movement of trades vehicles.

In reviewing this report and in conversations with city staff, we understand that renovators on behalf of their homeowners would be subject to permit fees, inspections and licensing fees for use of the portion of a homeowner's front lawn that is city right-of-way, (see examples below) even when there is no use of sidewalks, boulevards or roads and thus no threat to public safety.

EXAMPLES:

For the purposes of the following examples, modest yard sizes have been used. The portion of the front lawn that is city right-of-way can vary significantly as the attached pictures indicate. Waterloo Street – 7.97m from the sidewalk; Winding Way Crescent – 1.51m from the sidewalk

Example 1 - Renovation taking 3 months:

	Outside city core	Inside city core
Base permit	\$300	\$300
Inspections (3 monthly inspections @ \$75 ea.)	\$225	\$225
Licensing Fee (use 12m x 5m prorated 3 months)		
Outside City core @ \$14.29 / sq. m.		
Inside City Core @\$25.72 / sq. m.	\$215	\$386
TOTAL	\$740 + HST	\$911 + HST

Example 2 - Renovation of a whole home taking 8 months:

	Outside city core	Inside city core
Base permit	\$300	\$300
Inspections (8 monthly inspections @ \$75 ea.)	\$600	\$600
Licensing Fee (use 12m x 5m prorated 8 months)		
Outside City core @ \$14.29 / sq. m.		
Inside City Core @\$25.72 / sq. m.	\$572	\$1029
TOTAL	\$1472 + HST	\$1929+ HST

Keeping home renovations affordable for Londoners is a challenge for our industry and on behalf of our members' homeowners, we ask that the city provide an exemption from the terms of this program, for the use of the city right-of-way, in situations where sidewalks and roads are not used and public safety is not impacted.

Yours truly,



Lois Langdon, CEO
London Home Builders' Association

Copied:

K. Scherr, Managing Director, Environmental & Engineering Services and City Engineer
G. Kotsifas, Managing Director, Development & Compliance Services & Chief Building Official
D. MacRae, Director, Roads & Transportation
P. Kokkoros, Deputy Chief Building Official
A. Salton, Manager, Zoning and Public Property Compliance

London Home Builders' Association

Mission Statement - LHBA is committed to provide a forum for its members to share information and experience; promote ethical building and business practices; be the voice of the residential construction industry in London and to work towards the betterment of our community.

571 Wharncliffe Rd. S., London N6J 2N6 (519) 686-0343 www.lhba.on.ca newhomes@lhba.on.ca



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Transportation Advisory Committee

Report

The 5th Meeting of the Transportation Advisory Committee
May 28, 2019
Committee Room #4

Attendance PRESENT: D. Foster (Chair), G. Bikas, S. Brooks, D. Doroshenko, T. Khan, P. Moore; and P. Shack (Acting Committee Secretary)

ABSENT: H. Moussa, L. Norman and S. Wraight

ALSO PRESENT: M. Elmadhoun, Sgt. S. Harding, J. Kostyniuk, T. Macbeth, T. MacDaniel and A. Miller

The meeting was called to order at 12:20 PM.

1. Call to Order

1.1 Disclosures of Pecuniary Interest

That it BE NOTED that no pecuniary interests were disclosed.

2. Scheduled Items

2.1 Automated Speed Enforcement

That Civic Administration BE REQUESTED to consider installing signage and housing in ALL school zones in the City of London, with a rotation of the cameras, with respect to the Automated Speed Enforcement; it being noted that the Transportation Advisory Committee heard a verbal update from J. Kostyniuk, Traffic and Transportation Engineer with respect to this matter.

3. Consent

3.1 4th Report of the Transportation Advisory Committee

That it BE NOTED that the 4th Report of the Transportation Advisory Committee from its meeting held on April 23, 2019, was received.

3.2 Notice of Completion - Southdale Road West Improvements - Pine Valley Boulevard to Colonel Talbot Road - Municipal Class Environmental Assessment

That it BE NOTED that the Notice of Completion, dated April 25, 2019 from T. Koza, City of London and P. McAllister, AECOM Canada, with respect to the Southdale Road West Improvements-Pine Valley Boulevard to Colonel Talbot Road Municipal Class Environmental Assessment, was received.

3.3 Notice of Public Information Centre No. 2 - Adelaide Street North Municipal Class Environmental Assessment Study

That it BE NOTED that the Notice of Public Information Centre No. 2, from M. Davenport, City of London and H. Huotari, Parsons Inc., with respect to the Adelaide Street North Municipal Class Environmental Assessment Study, was received.

3.4 TAC Work Plan Update - D. Foster

That it BE NOTED that the Transportation Advisory Committee 2019 Work Plan, as at May 20, 2019, was received.

3.5 TAC Work in Progress Document Update - D. Foster

That it BE NOTED that the Transportation Advisory Committee Work in Progress Document, as of May 20, 2019, was received.

4. Sub-Committees and Working Groups

None.

5. Items for Discussion

None.

6. Deferred Matters/Additional Business

6.1 (ADDED) Notice of Public Information Centre #1 - Dingman Drive East of Wellington Road to Highway 401 and Area Intersections Municipal Class Environmental Assessment

That it BE NOTED that the Notice of Public Information Centre #1 from M. Elmadhoon, City of London and P. McAllister, AECOM Canada, with respect to the Dingman Drive East of Wellington Road to Highway 401 and Area Intersections Municipal Class Environmental Assessment, was received.

6.2 (ADDED) 71 King Street

That it BE NOTED that the Transportation Advisory Committee heard from P. Moore with respect to Paratransit's difficulty of picking up and dropping off passengers at 71 King Street, due to cycle tracks.

7. Adjournment

The meeting adjourned at 1:05 PM.

Best Practices for Investing in Energy Efficiency and GHG Reduction

Michael van Holst – June 10, 2019

Dear Chair and members of the Civic Works Committee,

I attended an inspiring talk at the recent London Environmental Forum, where the speaker contrasted some very strong investments, in terms of energy savings and GHG reductions, with some very weak investments.

We have recently invested in two projects with savings of \$600,000 per year in electricity. One had a 20-year payback while the other was four years. The advantage of investing in projects with a short payback is that the recovered capital costs can be rolled into another project to produce additional savings. The table below compares the savings of our two previous investments with a 10-year payback investment (such as solar panels) and the kinds of projects discussed by the presenter having paybacks of one year. Note the dramatic difference in net gain over 20 years, based on reinvesting the capital.

	20-year payback	10-year payback	4 -year payback	1-year payback
Year 1	\$600,000	\$600,000	\$600,000	\$600,000
Year 2	\$600,000	\$600,000	\$600,000	\$1,200,000
Year 3	\$600,000	\$600,000	\$600,000	\$1,800,000
Year 4	\$600,000	\$600,000	\$600,000	\$2,400,000
Year 5	\$600,000	\$600,000	\$1,200,000	\$3,000,000
Year6	\$600,000	\$600,000	\$1,200,000	\$3,600,000
Year 7	\$600,000	\$600,000	\$1,200,000	\$4,200,000
Year 8	\$600,000	\$600,000	\$1,200,000	\$4,800,000
Year 9	\$600,000	\$600,000	\$1,800,000	\$5,400,000
Year 10	\$600,000	\$600,000	\$1,800,000	\$6,000,000
Year 11	\$600,000	\$1,200,000	\$1,800,000	\$6,600,000
Year 12	\$600,000	\$1,200,000	\$1,800,000	\$7,200,000
Year 13	\$600,000	\$1,200,000	\$2,400,000	\$7,800,000
Year 14	\$600,000	\$1,200,000	\$2,400,000	\$8,400,000
Year 15	\$600,000	\$1,200,000	\$2,400,000	\$9,000,000
Year 16	\$600,000	\$1,200,000	\$2,400,000	\$9,600,000
Year 17	\$600,000	\$1,200,000	\$3,000,000	\$10,200,000
Year 18	\$600,000	\$1,200,000	\$3,000,000	\$10,800,000
Year 19	\$600,000	\$1,200,000	\$3,000,000	\$11,400,000
Year 20	\$600,000	\$1,200,000	\$3,000,000	\$12,000,000
Total Savings	\$12,000,000	\$18,000,000	\$36,000,000	\$126,000,000

Capital Costs	\$12,000,000 (1 x \$12M)	\$12,000,000 (2 x \$6M)	\$12,000,000 (5 x \$2.4M)	\$12,000,000 (20 x \$0.6M)
Net Gain	\$0	\$6,000,000	\$24,000,000	\$114,000,000

Not all investments that “save on energy” are of equal value so we should develop some guidelines to make sure our taxpayer’s money is spent most effectively. The same can be said of investments that reduce GHG emissions, so metrics should be developed to evaluate them. For this reason, I am asking that the following motion be supported:

That staff develop a set of guidelines to evaluate energy efficiency and GHG reduction investments and provide some suggested best practices.

DEFERRED MATTERS

CIVIC WORKS COMMITTEE (as of June 17, 2019)

Item No.	File No.	Subject	Request Date	Requested/ Expected Reply Date	Person Responsible	Status
1.	75.	<u>Options for Increased Recycling in the Downtown Core</u> That, on the recommendation of the Director, Environment, Fleet and Solid Waste, the following actions be taken with respect to the options for increased recycling in the Downtown core: b) the Civic Administration BE DIRECTED to report back to the Civic Works Committee in May 2017 with respect to: i) the outcome of the discussions with Downtown London, the London Downtown Business Association and the Old East Village Business Improvement Area; ii) potential funding opportunities as part of upcoming provincial legislation and regulations, service fees, direct business contributions, that could be used to lower recycling program costs in the Downtown core; iii) the future role of municipal governments with respect to recycling services in Downtown and Business Areas; and, iv) the recommended approach for increasing recycling in the Downtown area.	Dec 12/16	3rd Quarter 2019	K. Scherr J. Stanford	
2.	76.	<u>Rapid Transit Corridor Traffic Flow</u> That the Civic Administration BE DIRECTED to report back on the feasibility of implementing specific pick-up and drop-off times for services, such as deliveries and curbside pick-up of recycling and waste collection to local businesses in the downtown area and in particular, along the proposed rapid transit corridors.	Dec 12/16	2nd Quarter 2019	K. Scherr J. Ramsay	

3.	78.	<u>Garbage and Recycling Collection and Next Steps</u> That, on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, with the support of the Director, Environment, Fleet and Solid Waste, the following actions be taken with respect to the garbage and recycling collection and next steps: b) the Civic Administration BE DIRECTED to report back to Civic Works Committee by December 2017 with: i) a Business Case including a detailed feasibility study of options and potential next steps to change the City's fleet of garbage packers from diesel to compressed natural gas (CNG); and, ii) an Options Report for the introduction of a semi or fully automated garbage collection system including considerations for customers and operational impacts.	Jan 10/17	3rd Quarter 2019	K. Scherr J. Stanford	2 nd Quarter 2019
4.	93.	<u>Public Notification Policy for Construction Projects</u> That the Civic Administration BE DIRECTED to amend the "Public Notification Policy for Construction Projects" to provide for a notification process that would ensure that property owners would be given at least one week's written notice of the City of London's intent to undertake maintenance activities on the City boulevard adjacent to their property; it being noted that a communication from Councillor V. Ridley was received with respect to this matter.	Nov 21/17	3rd Quarter 2019	U. DeCandido	

5.	94.	<u>Report on Private Works Impacting the Transportation Network</u> b) report back to the Civic Works Committee, by the end of March 2018, on: i) ways to improve communication with affected business, organizations and residents about the timing, duration and impacts of permits for approved works, including unexpected developments; ii) ways to improve the scheduling and coordination of private and public projects affecting roadways and sidewalks that carry significant pedestrian, cyclist, transit and auto traffic; iii) resources required to implement these improvements; and iv) any other improvements identified through the review resources required to implement these improvements; and	Dec 4/17	3rd Quarter 2018	G. Kotsifas	George to provide new date
6.	105	<u>Environmental Assessment</u> That the Managing Director, Environmental and Engineering Services & City Engineer BE REQUESTED to report on the outstanding items that are not addressed during the Environmental Assessment response be followed up through the detailed design phase in its report to the Civic Works Committee.	July 25, 2018	2nd Quarter 2019	S. Mathers P. Yeoman	