Civic Works Committee

Report

13th Meeting of the Civic Works Committee
September 25, 2018

PRESENT: Councillors V. Ridley, T. Park, P. Hubert, P. Squire, H. Usher
ABSENT: Mayor M. Brown
ALSO PRESENT:

Councillors M. Cassidy, J. Helmer, A. Hopkins, M. van Holst and J. Zaifman; W. Abbott, M. Bushby, S. Chambers, T. Copeland, J. Davies, M. Elmadhoon, M. Feldberg, A. Giesen, K. Grabowski, P. Kavcic, M. Losee, D. MacRae, S. Maguire S. Mathers, M . Ribera, K. Scherr, P. Shack, J. Stanford, B. Westlake-Power, S. Wise and P. Yeoman

The meeting was called to order at 4:00 PM

1. Disclosures of Pecuniary Interest

That it BE NOTED that Councillor V. Ridley disclosed a pecuniary interest in clause 2.12 of this Report, having to do with the Business Case-Switching to Compressed Natural Gas (CNG) Waste Collection Vehicles, by indicating her spouse works for Union Gas.

2. Consent

Moved by: P. Hubert
Seconded by: H. Usher

That items 2.1-2.16, excluding items 2.3, 2.4, 2.7 and 2.12 BE APPROVED.

Yeas: (5): V. Ridley, T. Park, P. Hubert, P. Squire, and H. Usher

Absent: (0): Mayor M. Brown

Motion Passed (5 to 0)

2.1 4th Report of the Waste Management Working Group

Moved by: P. Hubert
Seconded by: H. Usher

That it BE NOTED that the 4th Report of the Waste Management Working Group, from its meeting held on August 15, 2018, was received.

Motion Passed

2.2 Single Source – Trailer-Mounted Recycled Asphalt Heaters

Moved by: P. Hubert
Seconded by: H. Usher

That, on the recommendation of the Managing Director - Environmental and Engineering Services and City Engineer; the following actions be taken with respect to Trailer-Mounted Recycled Asphalt Heaters:

a) single source recommendation BE APPROVED to negotiate pricing for four (4) Trailer-Mounted Recycled Asphalt Heaters from Heat Design Equipment Inc. 1197 Union Street, Kitchener Ontario, N2H 6N6;

b) funding for this purchase BE APPROVED as set out in the Source of Financing Report as appended to the staff report dated September 25, 2018;

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

d) the 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. (2018-F18)

Motion Passed

2.5 Richmond Street - Fanshawe Park Road - Intersection Improvements - Environmental Study Report

Moved by: P. Hubert
Seconded by: H. Usher

That, on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, the following actions be taken with respect to the Richmond Street and Fanshawe Park Road Intersection Improvements Environmental Assessment:

a) the Richmond Street and Fanshawe Park Road Intersection Improvements Municipal Class Environmental Study Report BE ACCEPTED;

b) a Notice of Completion for the project BE FILED with the Municipal Clerk; and,

c) the project Environmental Study Report BE PLACED on public record for a 30 day review period. (2018-E05)

Motion Passed

2.6 Rail Safety Week

Moved by: P. Hubert
Seconded by: H. Usher

That, on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, the report dated September 25, 2018 with respect to Rail Safety Week BE RECEIVED. (2018-P15)

Motion Passed

2.8 Riverside Drive Bridge Over CNR Rehabilitation - Detailed Design, Tendering, and Contract Administration - Appointment of Consulting Engineer

Moved by: P. Hubert
Seconded by: H. Usher

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 a Consulting Engineer for the Riverside Drive Bridge over CNR Rehabilitation (No. 1-BR-08):

(a) Stantec Consulting Ltd. BE APPOINTED Consulting Engineers to complete the detailed design, tendering, and contract administration

services in the amount of $170,538.50 (excluding HST), in accordance with Section 15.2 (e) of the Procurement of Goods and Services Policy;

(b) the financing for this appointment BE APPROVED as set out in the Sources of Financing Report as appended to the staff report dated September 25, 2018;

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

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

(e) the Mayor and the City Clerk BE AUTHORIZED to execute any contract or other documents, including rail agreements, if required, to give effect to these recommendations. (2018-T04)

Motion Passed

2.9 Amendments to the Traffic and Parking By-law

Moved by: P. Hubert
Seconded by: H. Usher

That, on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, the proposed by-law as appended to the staff report dated September 25, 2018 BE INTRODUCED at the Municipal Council meeting to be held on October 2, 2018, for the purpose of amending the Traffic and Parking By-law (PS-113). (2018-T08)

Motion Passed

2.10 Hyde Park Community Storm Drainage and Stormwater Management Servicing - Municipal Class Environmental Assessment Addendum - Schedule B Master Plan - Notice of Study Completion

Moved by: P. Hubert
Seconded by: H. Usher

That, on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, the following actions be taken with respect to the Hyde Park Community Storm Drainage and Stormwater Management Servicing Municipal Class Environmental Assessment Addendum: Schedule ‘B’ Master Plan:

(a) the preferred servicing alternative, executive summary as appended to the staff report dated September 25, 2018, BE ACCEPTED in accordance with the Municipal Class Environmental Assessment process requirements;

(b) a Notice of Study Completion BE FILED with the Municipal Clerk; and,

(c) the Municipal Class Environmental Assessment project file BE PLACED on public record for a 30-day review period. (2018-E08)

Motion Passed

2.11 Sewer Private Drain Connection Policy Review

Moved by: P. Hubert
Seconded by: H. Usher

That, on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, a review of the current private drain connection policies BE ENDORSED, noting that the review process will include consultation with external stakeholders prior to a recommendation being advanced to Council. (2018-E01)

Motion Passed

2.13 Potential Savings in Consultant Costs

Moved by: P. Hubert
Seconded by: H. Usher

That, on the recommendation of the Managing Director of Environmental and Engineering Services, City Engineer, the Managing Director of Corporate Services, City Treasurer and Chief Financial Officer, the opportunity to shift services currently provided by consultants to increased in-house delivery for the corporation BE CONSIDERED as a potential area of more detailed evaluation in the upcoming Service Review ("Deep Dive") process. (2018-A05)

Motion Passed

2.14 Appointment of Consulting Services for Municipal Class Environmental Assessment - Kilally South, East Basin (ESSWM-KILSE)

Moved by: P. Hubert
Seconded by: H. Usher

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 a consultant for the Kilally South, East Basin Municipal Class Environmental Assessment:

a) Ecosystem Recovery Inc. BE APPOINTED consulting engineer to carry out the Municipal Class Environmental Assessment of the Kilally South, East Basin, in the total amount of $178,272 (including contingency), excluding HST, and in accordance with Section 15.2 (d) of the City of London's Procurement of Goods and Services Policy;

b) the financing for the project BE APPROVED in accordance with the "Sources of Financing Report" as appended to the staff report dated September 25, 2018;

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

d) the approvals given herein BE CONDITIONAL upon the Corporation entering into a formal contract; and,

e) the Mayor and the City Clerk BE AUTHORIZED to execute any contract or other documents, if required, to give effect to these recommendations. (2018-E03)

Motion Passed

2.15 Mockingbird Crescent Low Impact Development - Voluntary Pilot Project

Moved by: P. Hubert
Seconded by: H. Usher

That, on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, the Civic Administration BE DIRECTED to proceed with a voluntary pilot project on Mockingbird Crescent to install low impact development technologies on private property to mitigate sump pump discharge where no storm sewer exists. (2018-E03)

Motion Passed

2.16 Municipal Waste and Resource Materials Collection By-law Amendment

Moved by: P. Hubert
Seconded by: H. Usher

That, on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, the draft amending by-law as appended to the staff report dated September 25, 2018 BE INTRODUCED at the Municipal Council meeting to be held on October 2, 2018 to amend the Municipal Waste & Resource Collection By-law (WM-12) to move the Container Exemption Period that follows the three day Thanksgiving weekend in October to the week after the four day Easter weekend. (2018-E07)

Motion Passed

2.3 Road Traffic Noice Impact Study - Highbury Avenue From Bradley Avenue to the Thames River

Moved by: P. Hubert
Seconded by: T. Park

That, on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, the following actions be taken with respect to the Road Traffic Noise Impact Study of Highbury Avenue from Bradley Avenue to the Thames River:

a) the residential rear yard noise measurements on the west side of Highbury Avenue from Bradley Avenue to the Thames River BE RECEIVED for information; and,

b) the Civic Administration BE DIRECTED to undertake a review of comparator municipal noise abatement local improvement procedures to inform a potential update to the City of London administrative practices and procedures.

c) Civic Administration BE DIRECTED to communicate the process being undertaken with all potential impacted property owners and to survey them regarding our local improvement process as well as the suggested barrier proposed by staff. (2018-T08)

Yeas: (5): V. Ridley, T. Park, P. Hubert, P. Squire, and H. Usher

Absent: (0): Mayor M. Brown

Motion Passed (5 to 0)

2.4 Byron South Neighbourhood Sidewalk Connectivity Plan

Moved by: P. Hubert
Seconded by: H. Usher

That, on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, the Byron South Neighbourhood Sidewalk Connectivity Plan BE ENDORSED for implementation in the 2019 Annual New Sidewalk Program.

it being noted that the Civic Works Committee heard a verbal presentation from A. Gilbert, Vice Principal Byron Southwood Public School, and also received a communication from R. Ellis, with respect to this matter. (2018-T04)

Yeas: (5): V. Ridley, T. Park, P. Hubert, P. Squire, and H. Usher

Absent: (0): Mayor M. Brown

Motion Passed (5 to 0)

2.7 Downtown King Street Cycling Improvements

Moved by: T. Park
Seconded by: H. Usher

That, on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, the following actions be taken with respect to the Downtown King Street Cycling Improvements:

(a) the information related to initiatives to make King Street safer for cycling as outlined in the staff report dated September 25, 2018, BE RECEIVED for information;

(b) the King Street cycling facility alternative, identified in the above-noted report as Alternative 1d, and generally described as a south side cycle track separated by parking and transit islands BE IMPLEMENTED in 2019; and,

it being noted that that the following communications were received:

a communication from B. Cowie, J. Roberts and S. Cozens.

it being noted that further consultations will occur in the future about the future cycling in the downtown that may not necessarily be on King Street. (2018-T05)

Yeas: (4): V. Ridley, T. Park, P. Squire, and H. Usher

Nays: (1): P. Hubert

Absent: (0): Mayor M. Brown

Motion Passed (4 to 1)

2.12 Business Case - Switching to Compressed Natural Gas (CNG) Waste Collection Vehicles

Moved by: P. Hubert
Seconded by: H. Usher

That, on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, the following actions be taken with respect to switching to compressed natural gas (CNG) Waste Collection Vehicles:

a) the Civic Administration BE AUTHORIZED to proceed with the Compressed Natural Gas (CNG) vehicle switching project by purchasing CNG waste collection vehicles as per the vehicle replacement schedule;

b) the Civic Administration BE AUTHORIZED to negotiate a CNG purchase agreement with Union Gas at the Highbury Road South and Highway 401 (Flying J) fuelling station;

c) the Civic Administration BE AUTHORIZED to spend up to $1,382,625 on facility modifications for the Exeter Road Operations Centre (EROC) Fleet Maintenance Facility to be CNG compliant and any City-specific capital upgrades to the fast fill CNG waste collection vehicles at the Highbury Road South and Highway 401 (Flying J) fuelling station, as part of the agreement noted in b) above;

d) the Civic Administration BE AUTHORIZED to undertake all administrative acts in regard to project development and implementation;

e) the Civic Administration BE AUTHORIZED to revise the sources of financing for the previously approved capital project ME1208 – CNG Fuel Switching Project as set out in the Source of Financing Report as appended to the staff report dated September 25, 2018; and,

f) the Civic Administration BE DIRECTED to report back on progress on this project to the Civic Works Committee in late 2019. (2018-F11)

Yeas: (3): T. Park, P. Hubert, and H. Usher

Recuse: (1): V. Ridley

Absent: (0): P. Squire, and Mayor M. Brown

Motion Passed (3 to 0)

3. Scheduled Items

3.1 Proposed Terms of Reference - Environmental Assessment of the Proposed W12A Landfill Expansion

Moved by: H. Usher
Seconded by: T. Park

That, on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, with the support of the Waste Management Working Group, the following actions be taken with respect to the Proposed Terms of Reference for the Environmental Assessment of the Proposed W12A Landfill Expansion, as included the staff report dated September 25, 2018;

a) the above-noted Terms of Reference BE APPROVED; and,

b) the Civic Administration BE AUTHORIZED to submit the Proposed Terms of Reference to the Ministry of Environment, Conservation and Parks (MECP) for approval by the Minister of the Environment, Conservation and Parks.

it being pointed out that at the public participation meeting associated with these matters, the individual indicated on the attached public participation meeting record made an oral submission regarding these matters. (2018-E07)

Yeas: (5): V. Ridley, T. Park, P. Hubert, P. Squire, and H. Usher

Absent: (0): Mayor M. Brown

Motion Passed (5 to 0)

Additional Votes:

Moved by: T. Park
Seconded by: H. Usher

Motion to open the public participation meeting.

Yeas: (5): V. Ridley, T. Park, P. Hubert, P. Squire, and H. Usher

Absent: (0): Mayor M. Brown

Motion Passed (5 to 0)

Moved by: H. Usher
Seconded by: T. Park

Motion to close the public participation meeting.

Yeas: (5): V. Ridley, T. Park, P. Hubert, P. Squire, and H. Usher

Absent: (0): Mayor M. Brown

Motion Passed (5 to 0)

3.2 60% Waste Diversion Action Plan

Moved by: P. Hubert
Seconded by: H. Usher

That, on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, the following actions be taken, with respect to the 60% Waste Diverson Action Plan:

a) the 60% Waste Diversion Action Plan (Action Plan) containing programs and initiatives to be phased in between 2019 and 2022 to achieve 60% waste diversion BE APPROVED;

b) the Civic Administration BE DIRECTED to refine cost estimates, develop implementation plans, determine operational requirements and draft an implementation schedule for the Action Plan taking into consideration available financial and staffing resources; and,

c) the Civic Administration BE DIRECTED to examine financing options for the Action Plan and submit final cost estimates and the draft Implementation Plan to Civic Works Committee and Council in early 2019,

it being noted that any additional funding required would be considered alongside other funding requests as part of the 2020-2023 Multi-year budget process.

it being pointed out that at the public participation meeting associated with these matters, the individuals indicated on the attached public participation meeting record made oral submissions regarding these matters. (2018-E07)

Yeas: (5): V. Ridley, T. Park, P. Hubert, P. Squire, and H. Usher

Absent: (0): Mayor M. Brown

Motion Passed (5 to 0)

Additional Votes:

Moved by: P. Hubert
Seconded by: H. Usher

Motion to open the public participation meeting.

Yeas: (4): V. Ridley, P. Hubert, P. Squire, and H. Usher

Absent: (0): T. Park, and Mayor M. Brown

Motion Passed (4 to 0)

Moved by: T. Park
Seconded by: P. Hubert

Motion to close the public participation meeting.

Yeas: (5): V. Ridley, T. Park, P. Hubert, P. Squire, and H. Usher

Absent: (0): Mayor M. Brown

Motion Passed (5 to 0)

3.3 Public Participation Meeting - Renaming of Pleasantview Drive

Moved by: P. Hubert
Seconded by: H. Usher

That the Consent Authority BE ADVISED that Municipal Council will take no action to rename Pleasantview Drive, noting the existing conditions relating to the two unconnected portions of Pleasantview Drive have existed for over twelve years, and are know to the residents in the area;

it being pointed out that at the public participation meeting associated with these matters, the individuals indicated on the attached public participation meeting record made oral submissions regarding these matters.

Yeas: (4): V. Ridley, P. Hubert, P. Squire, and H. Usher

Absent: (0): T. Park, and Mayor M. Brown

Motion Passed (4 to 0)

Additional Votes:

Moved by: H. Usher
Seconded by: P. Squire

Motion to open the public participation meeting.

Yeas: (4): V. Ridley, P. Hubert, P. Squire, and H. Usher

Absent: (0): T. Park, and Mayor M. Brown

Motion Passed (4 to 0)

Moved by: P. Hubert
Seconded by: P. Squire

Motion to close the public participation meeting.

Yeas: (4): V. Ridley, P. Hubert, P. Squire, and H. Usher

Absent: (0): T. Park, and Mayor M. Brown

Motion Passed (4 to 0)

4. Items for Direction

4.1 8th Report of the Cycling Advisory Committee

Moved by: P. Hubert
Seconded by: H. Usher

That the following actions be taken with respect to the 8th Report of the Cycling Advisory Committee, from its meeting held on August 15, 2018:

a) the Civic Administration BE REQUESTED to designate Highbury Avenue South of Hamilton Road as a no bicycle lane with proper signage:

it being noted that the Notice of Completion from B. Hutson, Dillon Consulting Limited and M. Elmadhoon, City of London, with respect to the Environmental Assessment Study, was received; and

b) clauses 1.1, 2.1 to 3.3, 4 to 6.1 BE RECEIVED.

Yeas: (4): V. Ridley, P. Hubert, P. Squire, and H. Usher

Absent: (0): T. Park, and Mayor M. Brown

Motion Passed (4 to 0)

4.2 Traffic Signalization at Priority Intersections

Moved by: P. Squire
Seconded by: H. Usher

That the Civic Administration BE DIRECTED take the following actions with respect to traffic signalization at priority intersections:

a) conduct detailed design work on the following intersections of Pack Road and Colonel Talbot Road; Blackwater Rad and Adelaide Street; and Sunningdale Road and South Wenige Drive-thus, when they meet the warrant, traffic signals can be installed without further delay;

b) conduct an updated traffic study at Oxford Street and Riverbend Road, and Stackhouse Avenue and Fanshawe Park Road; and,

c) review the current warrant system and best practices in other municipalities and report back with possible changes to the way we prioritize intersections for traffic signalization where appropriate;

it being noted the Civic Works Committee received communication from Councillors A. Hopkins and M. Cassidy with respect to this matter.

Yeas: (4): V. Ridley, P. Hubert, P. Squire, and H. Usher

Absent: (0): T. Park, and Mayor M. Brown

Motion Passed (4 to 0)

4.3 Unassumed Laneways

Moved by: P. Hubert
Seconded by: H. Usher

That Staff BE REQUESTED to report back to the appropriate standing committee with respect to the current process, and potential improvements, with respect to unassumed laneways, and the request for

delegation from M. Koch Denomme BE APPROVED and BE REFERRED to the meeting when this matter will be considered.

Yeas: (4): V. Ridley, P. Hubert, P. Squire, and H. Usher

Absent: (0): T. Park, and Mayor M. Brown

Motion Passed (4 to 0)

4.4 Public Education and Empathy Program and Speed Markers

Moved by: P. Hubert
Seconded by: H. Usher

That the communication from Councillor M. van Holst with respect to Public Education and Empathy Program and Speed Markers BE RECEIVED. (2018-T08).

Yeas: (4): V. Ridley, P. Hubert, P. Squire, and H. Usher

Absent: (0): T. Park, and Mayor M. Brown

Motion Passed (4 to 0)

5. Deferred Matters/Additional Business

5.1 Deferred Matters List

Moved by: P. Squire
Seconded by: P. Hubert

That the Civic Works Committee Deferred List, as at September 17, 2018, BE RECEIVED.

Yeas: (4): V. Ridley, P. Hubert, P. Squire, and H. Usher

Absent: (0): T. Park, and Mayor M. Brown

Motion Passed (4 to 0)

6. Adjournment

The meeting adjourned at 7:36 PM.

Waste Management Working Group
Report

4th Meeting of the Waste Management Working Group
August 15, 2018
Committee Room #1

Attendance

PRESENT: Mayor M. Brown (Acting Chair); Councillors M. Cassidy, J. Helmer and H. Usher and J. Bunn (Secretary)

ABSENT: Councillors S. Turner and M. van Holst

ALSO PRESENT: W. Abbott, M. Losee, K. Scherr and J. Stanford

The meeting was called to order at 4:07 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 Update Report #11 – Proposed Terms of Reference

That, on the recommendation of the Director, Environment, Fleet and Solid Waste, the release of the Proposed Terms of Reference related to the Environmental Assessment of the Proposed W12A Landfill Expansion Site for a public participation meeting on September 25, 2018, BE SUPPORTED by the Waste Management Working Group; it being noted that the attached presentation from J. Stanford, Director, Environment, Fleet and Solid Waste, was received with respect to this matter.

3. Consent

3.1 3rd Report of the Waste Management Working Group

That it BE NOTED that the 3rd Report of the Waste Management Working Group, from its meeting held on July 13, 2018, was received.

4. Items for Discussion

None.

5. Deferred Matters/Additional Business

None.

6. Adjournment

The meeting adjourned at 4:48 PM.

Proposed Terms of Reference Expansion of the W12A Landfill

Waste Management Working Group

August 15, 2018

Outline

1. ToR Process
2. Overview - ToR
3. Summary of Comments
4. Other

August 3, 2018

Volume I

Proposed Terms of Reference

Environmental Assessment of the Proposed W12A Landfill Expansion, City of London

GOLDER

London

1. Terms of Reference Process (ToR)

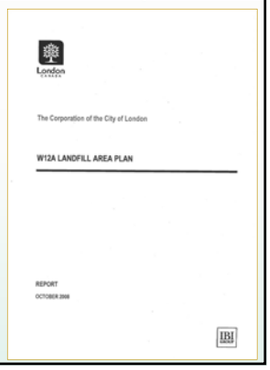
1. ToR Process (Develop)

Initial ToR Development	March 2017 to January 2018
Preliminary Draft Proposed ToR	January to March 2018, Released by Council
Draft Proposed ToR	April to July 2018
Proposed ToR	We are here
Submit after Sept. 25 PPM at CWC, Council	
ToR	Early 2019 to Spring 2019

City Led | MECP Led

2:ToR Overview (Disposal Method)

Expansion of the W12A Landfill is the most appropriate disposal option based on previous waste plan studies (2008)



2: ToR Overview (Diversion)

2: ToR Overview (Planning Period)

Plan for additional 25 years
(2025 – 2050)

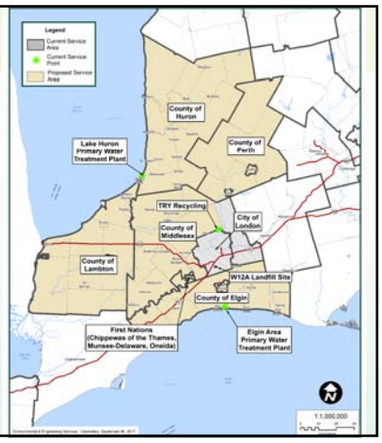
- Maximum supported by MECP staff
- The London Plan in effect until 2035
- Waste disposal security for at least 6 terms of Municipal Council
- Consistent with *Waste-Free Ontario Act*

2: ToR Overview (Limit on Annual Tonnage)

- Current limit = 650,000 tonne/year
- **Proposed limit = 500,000 tonne/year**

Consideration	Average (Tonnes)	Peak (Tonnes)
Existing Service Area	370,000	380,000
Expanded Service Area	24,000	40,000
Contingency	-	80,000
Total	**-**	**500,000**

2: ToR Overview (Regional Service Area)



2. ToR Overview (EA Studies)

Category	Environmental Component	Environmental Sub-components
Environmental	Atmosphere	• Air quality (including dust, odour and greenhouse gases) • Noise
	Biology	• Aquatic ecosystems • Terrestrial ecosystems
	Geology & Hydrogeology	• Groundwater quality
	Surface Water	• Surface water quality • Surface water quantity
Social	Agriculture	• Agriculture
	Archaeology	• Archaeology
	Culture	• Cultural heritage landscapes • Cultural heritage resources (including built heritage)
	Land Use	• Current and planned future land uses
	Socio-economic	• Local economy • Residents and community
	Visual	• Visual
Technical	Design and Operations	• Technical Considerations • Financial Considerations
	Transportation	• Traffic

Provincial Direction

Year	Gov't	*Act*/Direction	Diversion Level
2018 -	PC		
2003 - 2018	**Liberal**	***Waste-Free Ontario Act, 2016***	**Adjusted - 30% by 2020; 50% by 2030; 80% by 2050**
		60% Waste Diversion Goal (2004)	**Added** - 60% by 2008
1995 - 2003	PC	*Waste Diversion Act, 2002*	**Added** - 60% recovery of Blue Box materials
1990 - 1995	NDP	*Environmental Protection Act* (3Rs Regs – 1994)	**Confirmed** - 50% by 2000
1985 - 1990	Liberal	Waste Reduction Action Plan (1989)	50% by 2000 25% by 1992
1981 - 1985	PC	Blueprint for waste management (1983)	

3. Summary of Comments

	Stakeholder	Comments #	Comments Subject
GRT	MECP (EA)	40	EA Process/ General
	MECP (Air Quality)	10	Air Quality
	MTCS	6	Archaeology & Built Heritage
	MTO	5	Transportation
	KCCA	7	Surface Water
Public	Written comments (1 person)	12	General
	Project website (6 persons)	6	General
Total		86	

3. Summary of Comments

No change/Minor Changes (46)

Additional Details/Clarification (35)

Examples…

- More details on where MHSW goes
- More details on MRF
- Difference between phase 1 and 2 portions of the landfill

3. Summary of Comments

Change to Technical Studies (1)

Will consider developing site-specific emission rates for air contaminants

Changes to EA Process (1)

Alternatives methods (expansion alternatives) to be finalized in EA

3. Summary of Comments

Changes to List of Commitments (2)

Commit to:

1. 60% residential diversion
2. Meet outside of planned pubic engagement

3. **Post-closure commitments**
4. **Share final (technical study) workplans**

3. Summary of Comments

Change to Undertaking (1)

Reduction in waste from proposed regional service area.

- 1.3 million tonnes down to 0.6 million tonnes
- No change to proposed service area
- Potential increase in net landfill cost
- Minor reduction in landfill height

4: Other Updates

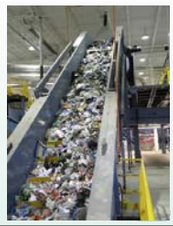
60% Waste Diversion Action Plan

- Project website – Feedback Request
- Circulation to stakeholders
- Gather on the Green II (August 19)
- WMCLC (August 20)
- ACE (September 5)
- PPM (September 25)

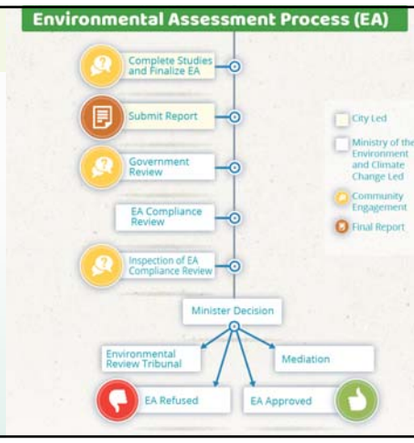
4: Other Updates

Resource Recovery

- Request for Information
  - ✓ 26 responses
  - ✓ Further review underway
- London Waste to Resources Innovation Centre
  - ✓ ICFAR NSERC initiative



4. EA Process



TO:	**CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON SEPTEMBER 25, 2018**
FROM:	**KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR – ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER**
SUBJECT:	**SINGLE SOURCE TRAILER-MOUNTED RECYCLED ASPHALT HEATERS**

RECOMMENDATION

That, on the recommendation of the Managing Director - Environmental & Engineering Services & City Engineer,

a) Single Source recommendation **BE ACCEPTED** to negotiate pricing for four (4) Trailer-Mounted Recycled Asphalt Heaters from Heat Design Equipment Inc. 1197 Union Street, Kitchener Ontario, N2H 6N6;

b) Funding for this purchase **BE RELEASED** as set out in the Source of Financing Report attached hereto as Appendix “A”;

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

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.

STRATEGIC PLAN 2015-2019

Leading in Public Service
Excellent Service Delivery

Strengthening our Community
Healthy, Safe and Accessible City

BACKGROUND

Purpose
To provide background information and seek Committee and Council approval to proceed with Single Source supply and delivery of Four (4) Trailer-Mounted Asphalt Heaters from Heat Design Inc. (Figure 1).

Figure 1

Context
Recycled asphalt heaters have become an integral piece of equipment for service delivery for the Roads and Transportation program, particularly for road patching. These propane heated asphalt trailers allow crews to create and use hot mix asphalt in the off season to provide enhanced quality pothole and road defect repairs.

The four new trailer mounted asphalt heaters are replacing five current earlier generation units (four truck mounted heater box units and one trailer unit) that have all reached the end of their optimum lifecycle and need replacement.

This single source approval and the alignment of the replacement cycles provides the City with an excellent opportunity to reduce the total number of equipment assets dedicated to this service and standardize the asphalt heaters to purpose built Heat Design Inc. trailer mounted units which have proven results, efficiencies and safety benefits.

DISCUSSION

The Transportation and Roadside Operations is responsible for inspecting, documenting and repairing a large range of defects on over 3600 lane km of road. The level of expected service is governed by the Minimum Maintenance Standards (MMS) guidelines and regulations developed by the province and adopted by Committee and Council.

Potholes and other pavement defects are one of the most common problems found during MMS inspections. Maintaining the specified repair/service standard is very important both for liability reasons and for customer service to Londoners. Late fall, winter and early spring seasons are particularly vulnerable for potholes with the freeze thaw cycles in the London area and to make matters worse this season corresponds with the closing of asphalt plants so hot mix asphalt is not available to make quality repairs.

The addition of propane fired asphalt heaters has enabled the service area to create their own hot mix in the winter season from recycled asphalt. The first units of this kind purchased by the City of London were truck mounted heater box units that were installed in the winter on specific Roads and Transportation crew trucks. Through experience, staff have learned that these type of units are not ideal as they require additional handling of the asphalt material and present ergonomic safety concerns to the staff as they work from the heater boxes in the back of the service truck down to the road surface when patching potholes (a length of approximately 2.5 metres). Also the truck mounted units limit the uses of the service trucks once installed.

The newer units purchased are trailer mounted and towed behind the service truck when in service. This configuration is lower to the ground so it is safer and more ergonomically friendly for workers. Also the trailers provide a more effective and efficient method of road patching as the ovens can be positioned very close to the pothole and repaired very quickly with minimum material handling. Trailer configurations have also demonstrated the added benefits of freeing up service trucks for other purposes when not patching and created flexibility to have several mobile patching crews deployed very quickly.

It has been determined by Transportation and Roadside Operations that they no longer wish to have any truck mounted units and want to standardize to only trailer type units in the fleet complement. There are currently three trailer mounts and four truck mounts in the fleet. This report specifically deals with replacing the four truck mount units with three (3) trailer mount units and the replacement of one current trailer mount unit that has reached the end of its optimum lifecycle.

Purchasing Process

Fleet Services in consultation with Purchasing and Supply reviewed options for procurement of the new units. Suppliers for mobile asphalt heaters is very limited and when it comes to small maneuverable asphalt recycling units mounted on purpose built trailers the unit from Heat Design Inc. is the only available.

Our previous purchases of these units (November 2016) also resulted in a single source procurement as there was no other vendor that could meet our needs, specifications and budget. The other units available were designed for larger paving operations and lacked maneuverability and functionality for small scale patching purposes required by the City.

Fleet Planning also verified with another municipality that recently issued a Request for Proposals (RFP) for an Asphalt Recycling Trailer and only the Heat Design Inc. unit was compliant and met specifications and requirements. The other bids were for much larger asphalt recycling units used for overlays and paving larger areas like driveways and road cuts.

As a result, Fleet Services and Purchasing and Supply believe the best option again is to single source directly with the specified vendor in this case.

Financial Impact
Capital funding for these replacements was identified in approved 2016-2019 multi-year fleet capital replacement budget. The estimated cost per unit pending negotiation and finalization of a firm price with the vendor is expected to be $18,900.00 excluding HST per unit. The total value of this project for the four (4) units is $75,600.00 excluding HST. Source of Financing Report is attached (Appendix “A”).

Operating costs and future capital replacement contributions going forward for these assets will be funded through internal rental rates within service area operating budgets.

CONCLUSION

Fleet Services in conjunction with Purchasing and Supply recommend that the Single Source provisions of the Procurement of Goods and Services Policy 14.4(d)(e) be utilized to procure four (4) Trailer-Mounted Recycled Asphalt Heaters directly from Heat Design Equipment Inc. 1197 Union Street, Kitchener Ontario, N2H 6N6.

These compact trailer mounted recycled asphalt heater units are available from only one supplier and the proven design provides specific value, efficiency and enhanced health and safety for the City of London.

ACKNOWLEDGEMENTS
This report was prepared in conjunction with Steve Mollon, Manager Fleet Planning; Dave Fawcett, Fleet Planning Specialist and Ian Harris, Procurement Specialist.

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

cc: John Freeman, Manager, Purchasing & Supply
John Parsons, Division Manager, Transportation and Roadside Operations

APPENDIX 'A'

#18160

Chair and Members
Civic Works Committee

September 25, 2018
(Award Contract)

RE: Single Source Trailer-Mounted Recycled Asphalt Heaters
(Subledger FLT18138)
Capital Project ME201701 - Vehicles & Equipment Replacement - TCA
Heat Design Equipment Inc. - $75,600.00 (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 and City Engineer, the detailed source of financing for this project is:

ESTIMATED EXPENDITURES	**Approved Budget**	**Committed to Date**	**This Submission**		**Balance for Future Work**
Vehicles & Equipment	$5,082,078	$4,390,978	$76,931		$614,169
NET ESTIMATED EXPENDITURES	**$5,082,078**	**$4,390,978**	**$76,931**	1)	**$614,169**
SOURCE OF FINANCING:					
Capital Levy	$45,558	$45,558			$0
Drawdown from Vehicles & Equipment Replacement R.F.	5,001,090	4,309,990	76,931		614,169
Drawdown from Self Insurance R.F.	35,430	35,430			0
TOTAL FINANCING	**$5,082,078**	**$4,390,978**	**$76,931**		**$614,169**

Financial Note:

1)	Contract Price	$75,600
	Add: HST @13%	9,828
	Total Contract Price Including Taxes	85,428
	Less: HST Rebate	8,497
	Net Contract Price	$76,931

lp

Jason Davies
Manager of Financial Planning & Policy

TO:	**CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON SEPTEMBER 25, 2018**
FROM:	**KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER**
SUBJECT:	**ROAD TRAFFIC NOISE IMPACT STUDY HIGHBURY AVENUE FROM BRADLEY AVENUE TO THE THAMES RIVER**

RECOMMENDATION

That, on the recommendation of the Managing Director, Environmental & Engineering Services and City Engineer, the following actions be taken with respect to the Road Traffic Noise Impact Study of Highbury Avenue from Bradley Avenue to the Thames River:

(a) The residential rear yard noise measurements on the west side of Highbury Avenue from Bradley Avenue to the Thames River **BE RECEIVED** for information; and,

(b) Civic Administration **BE DIRECTED** to undertake a review of comparator municipal noise abatement local improvement procedures to inform a potential update to the City of London administrative practices and procedures.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

- Environment and Transportation Committee - September 26, 2005 - Local Improvement Policy Amendment and Irving Place / Highbury Avenue Noise Wall
- Environment and Transportation Committee - April 03, 2006 - 2006 Highbury Avenue Noise Attenuation Barrier Irving Place
- Built and Natural Environment Committee - March 28, 2011 - Veterans Memorial Parkway & Highbury Avenue Noise Study
- Built and Natural Environment Committee - May 16, 2011 - Public Participation Meeting - Veterans Memorial Parkway & Highbury Avenue Noise Study
- Civic Works Committee, January 6, 2014 - Veterans Memorial Parkway Noise Attenuation Wall
- Civic Works Committee - November 21, 2017 - Hydro One Grant for Tree Planting

BACKGROUND

Purpose

In 2017, Hydro One Networks Inc. (HONI) undertook maintenance operations within their corridor which cleared the underbrush and trees adjacent to Highbury Avenue South. The corridor is between 90 and 100 m in width between Highbury Avenue and the rear of the residential properties on the west side. Part of Hydro One's corporate social responsibility includes a focus on environmental stewardship and working with communities to mitigate environmental impacts of their operations. A report to the Civic Works Committee (November 21, 2017) identified a $5,000 grant for new tree plantings in the area. Council identified concerns as to the noise impact for the homes along Highbury Avenue resulting from the removal of trees in the area by HONI.

A council resolution passed on November 28, 2017 directed Civic Administration "*to investigate and report back on possible options to address the noise impacts being experienced by homes abutting Highbury Avenue resulting from the recent removal of trees by Hydro One, including the costs for implementing such options; it being noted that the Civic Administration would, as part of the investigation, review the City's policy on local improvements, as it relates to noise attenuation barriers, as well as past projects*". This report provides Committee and Council with the results of requested noise measurements.

POLICY REVIEW

City of London

EES Practices and Procedures

The most relevant City guidance for noise abatement for existing residential outdoor amenity areas receiving noise from a road source are found in the Environmental and Engineering Services Practices and Procedures associated with Local Improvements.

The Noise Attenuation Barriers administrative procedure applies to retrofit abatement on roads where adjacent residential development exists and where a road is not being widened. It specifies that the following project qualification criteria to be met:

- *A sufficient petition in accordance with the provisions of the Municipal Act;*
- *Adjacent to arterial roadways whose present traffic volume exceeds 10,000 vehicles per day;*
- *On a total block basis;*
- *On receipt of a sufficiently signed petition in conformity with the provisions of the Municipal Act.*

The Street Services Implementation and Financing identifies the cost sharing for local improvements. The cost of local improvement noise barriers are apportioned two thirds to the property owner and one third to the City.

The London Plan

The London Plan provides noise wall guidance. Clause 241 states that noise walls in association with road widenings are to be avoided where possible. Clause 1768 also encourages new development patterns to minimize noise walls and Clause 1769 refers to the canyon effect created by noise walls. The Plan states that where such walls are necessary, innovative design techniques will be used relating to the materials, texture, colour, lighting, variability and overall design composition to mitigate impacts on the pedestrian environment and streetscape. Clause 1767 refers to provincial and agency input to determine attenuation measures in the absence of a City guideline.

Noise Barrier Walls on Fanshawe Park Road West

Design Specifications and Requirements Manual

The Design Specifications and Requirements Manual provides design guidance. The Manual states that noise attenuation measures can be setbacks, building orientation, earthen berms, noise walls, or any combination necessary to achieve an acceptable noise level, based on MOE Criteria.

Provincial Policies

Noise mitigation policies vary between provincial authorities depending on the circumstances. Ministry of Transportation Ontario (MTO) Environmental Guide for Noise establishes the criteria for provincial highway widenings and retrofit situations. The MTO's Retrofit Policy is the most relevant criteria for the Highbury Avenue South corridor. It states that noise control measures should be considered along existing freeways where existing adjacent noise sensitive areas are experiencing 24-hour average daytime noise levels over 60 dBA.

For comparison, when planning new developments, the criteria specified by the Ministry of Environment, Conservation and Parks (MECP) takes precedent. The MOE Noise Assessment Criteria in Land Use Planning: Requirements, Procedures and Implementation document generally requires noise mitigation for new developments with predicated daytime (16 hour) outdoor amenity noise levels above 60 dBA. It requires a noise reduction of 5 dBA where technically, economically and administratively feasible. Application of a 16-hour criteria is more stringent than the 24-hour MTO criteria.

Other Ontario Municipalities

An initial cursory review of comparator Ontario municipalities indicates that retrofit situations implemented under local improvement processes are often subject to a minimum noise criteria. The value is typically consistent with the MTO noise threshold

of 60 dBA but using the 16-hour daytime measure. The municipal local improvement cost sharing ratios were variable.

REVIEW OF PAST PROJECTS

Many noise walls exist across the City of London, and they have been installed through various methods. The following is a list of several examples:

Road Widenings

When the City undertakes road widening projects, existing conditions are reviewed and the impacts of the proposed widening are assessed in an environmental study report as part of the municipal class environmental assessment process. In some cases, road widenings occur adjacent to residential areas that, at the time of development, were not subject to noise mitigation requirements. In these situations, the widening may increase noise levels in noise sensitive areas by bringing the noise source (road) closer to the outdoor living area of the adjacent dwellings. When this occurs, the City undertakes a noise impact assessment. Where mitigation is warranted, noise attenuation measures are included in the construction costs.

Examples of recent road widening projects where the City has constructed noise walls include:

- Sarnia Road from Wonderland Road North to Sleightholme Avenue
- Fanshawe Park Road East from Adelaide Street North to Highbury Avenue North
- Hyde Park Road from Oxford Street West to Fanshawe Park Road West
- Commissioners Road West from Wonderland Road South to Viscount Road

For City ROW installations, noise wall types that are approved for use on the provincial Designated Sources of Materials (DSM) list are used because of the product testing, known durability and lower ongoing operating costs. These walls tend to be precast concrete.

New Development

As part of all planning and development applications new developments are required to avoid side/rear yard amenity areas adjacent to existing arterial roadways. Where this is not possible the developer is required to conduct a noise impact assessment. If the appropriate warrants are met, the developer must provide attenuation at the development cost. Noise attenuation measures that are constructed as part of development are situated on private property and maintenance is the responsibility of the property owner. The wall types are variable and include precast concrete, wood and plastic.

Veterans Memorial Parkway

In 2005, Veterans Memorial Parkway was widened from two lanes to four. At the time of construction, noise walls were not implemented because the widening was easterly, away from the existing residential dwellings and therefore not predicted to increase noise levels in the westerly rear yard amenity areas located between Dundas Street and Trafalgar Street. In 2014, the City of London subsequently funded and installed a noise wall after additional noise monitoring detecting noise levels above 60 dBA and council direction. The Council direction included the noise wall type which was not identified on

the DSM and was a lower cost plastic wall alternative with lesser known life cycle maintenance costs.

Highbury Avenue North

In 2006, a noise attenuation barrier was the subject of a Local Improvement Program for residential dwellings on Irving Place where six rear yards are adjacent to Highbury Avenue North. Pursuant to the Municipal Act provisions (formerly the Local Improvement Act) and the City of London's Local Improvement Policy, the wall was constructed with the property owners paying for 50% of the implementation costs. The wall is shown below.

Irving Place / Highbury Noise Barrier Wall

The petition for the Irving Place / Highbury Avenue wall was received in 1994, when the Local Improvement Policy stated that the construction cost portion to property owners was 50%. In 1995, the Local Improvement Policy was amended such that 100% of the construction costs would be borne by the property owner. Following the Highbury Avenue North (Irving Place) local improvement program, the City's Local Improvement Policy was amended again to the current rate of two-thirds property owner and one-third City.

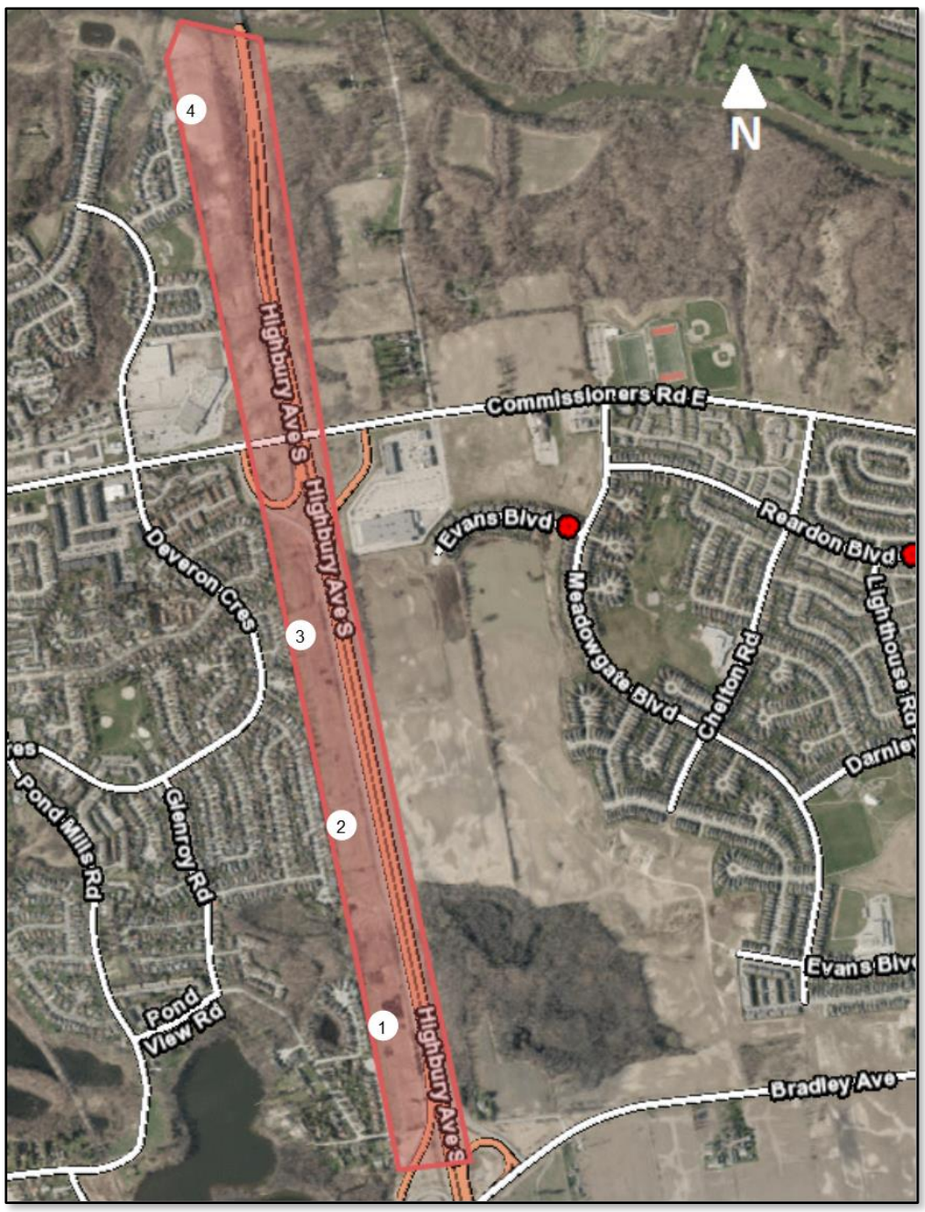
NOISE MONITORING

Valcoustics Canada Ltd. was retained to conduct a road traffic noise impact study along the west side of Highbury Avenue South between Bradley Avenue and the Thames River. The focus of the study was the noise levels experienced within the side and rear yard outdoor amenity areas of the dwellings located west of Highbury Avenue South on the west side of the HONI corridor. The consultant report, excluding its appendices, is attached as Appendix A.

The study involved placing noise monitoring equipment at four locations along the corridor as shown below. Based on the distance between the dwellings and the noise source being approximately 120 metres (i.e. from the west edge of the travelled roadway to the rear property line) and the typical shallow depth of rear yards, it was determined that equipment setup at the edge of the Hydro One corridor, adjacent to the property line would provide an accurate measurement with a negligible variance in the

results (0.3 dBA) from not being installed within the amenity areas and would minimize the potential for extraneous noise.

Locations (1 to 4) of the Noise Monitoring Equipment



The noise monitoring equipment shown in the figure below was installed on June 19, 2018 and left in place for almost two weeks; being removed on June 28, 2018. The equipment actively recorded the entire time.

Noise Monitoring Equipment Setup

The analysed data has been provided in the table below.

Measured Sound Levels

Date	**Location 1** $L_{eq\ Day}$(dBA)	**Location 2** $L_{eq\ Day}$(dBA)	**Location 3** $L_{eq\ Day}$(dBA)	**Location 4** $L_{eq\ Day}$(dBA)
19 June 2018	60	61	60	57
20 June 2018	61	62	60	55
21 June 2018	63	66	64	62
22 June 2018	64	67	66	58
23 June 2018	60	62	62	57
24 June 2018	61	62	60	64
25 June 2018	62	64	61	58
26 June 2018	63	66	64	57
27 June 2018	61	63	62	57
28 June 2018	61	60	59	57
Average	**62**	**63**	**62**	**58**

* $L_{eq\ Day}$ is the average energy sound exposure level for daytime 16-hours (0700 to 2300)

Locations 1, 2 and 3 are representative of rear-lotted residential rear yards adjacent to the HONI corridor south of Commissioners Road. Location 4 is representative of rear yards on Eula White Place adjacent to the HONI corridor. Rear yards on Phair Crescent are protected by existing wood noise walls so would have lower noise levels and were not assessed.

Part of the noise impact study is to compare these actual sound level results with the predicted sound levels for the amount of traffic on the corridor. Standard practice for new developments is to simulate sound levels using the Ministry of Environment, Conservation and Parks (MECP) computerized road traffic prediction modeling software, ORNAMENT (Ontario Road Noise Analysis Method for Environment and Transportation). The model predicted levels based on current Highbury Avenue traffic counts are close to the actuals and validate the data. A comparison of the predictions to the measured sound levels indicates that the measured sound levels are marginally higher than the predictions. This could be due to a variety of factors including traffic travelling faster than the posted speed, wet road conditions, wind, etc.

The removal of the HONI corridor vegetation created concerns from several residents. Noise measurements in 2011 identified typical average daytime sound levels of 56 dBA

in the side/rear yard amenity areas of the residential dwellings along the west side of Highbury Avenue South between Commissioners Road East and Bradley Avenue. This indicates that noise levels have increased since 2011. While difficult to definitively explain, it does appear that the HONI vegetation removal contributed to increased noise levels in combination, to a lesser extent, with incremental traffic volume growth.

Mitigation Options

The City of London local improvement procedures has no noise criteria. With consideration of comparator provincial policies, the daytime sound levels at dwellings represented by Locations 1, 2 and 3 are noted as being higher than 60 dBA and could be considered for a local improvement sound barrier retrofit by applying the MTO criteria.

The installation of sound barriers along the private/HONI property line is predicted to be the most effective. Residential properties backing onto the HONI corridor and Highbury Avenue between Commissioners Road and Bradley Avenue would require a 2.5 m high sound barrier along the property line, adjacent to the HONI corridor. In this location, the barrier is predicted to provide about 5.8 dBA of sound attenuation and lower the typical average daytime sound levels to 55.8 dBA. The potential locations are shown in the following figures.

Potential Local Improvement Noise Barrier

Milan Place

Potential Local Improvement Noise Barrier

Banbury Cres, Sundridge Cres & Ct, Lysanda Ave & Ct

Mitigation alternatives such as a noise barrier wall and earth berms along the Highbury Avenue Right-of-Way adjacent to HONI property, would need to be much taller and longer to effectively reduce noise levels. In addition, the continuous barrier would limit HONI access to the corridor from Highbury Avenue South.

Land ownership is an issue for noise abatement suggested along the private/HONI property line. The City does not own land for construction and maintenance. Future implementation would be subject to HONI approval of a construction and maintenance access easement. It is anticipated that an earth berm would not be acceptable to HONI because it would impede hydro tower maintenance equipment and a wall would be required if approved.

The MOE requirements state that sound barriers are to be of solid construction with no holes, gaps or cracks and must have a minimum face density of 20 kg/m^2. Materials used for noise mitigation construction can include: wood, vinyl, masonry, glass, acrylic, earth berms or a combination of these materials. The City typically constructs noise wall types for City ROW installations that are approved for use on the provincial Designated Sources of Materials (DSM) list due to the established quality control, known durability and lower ongoing operating costs. These walls tend to be precast concrete.

Cost Estimate for Potential Mitigation Option

Assuming HONI approval, a preliminary cost estimate was created. Based on the recommended lengths noted in the study by Valcoustics, an estimate for placing a noise attenuation wall in conformance with City requirements would be:

1500m of 2.5m wall @ $1200/m	$1,800,000
1750m of 4.0m gravel access roadway	$ 150,000
Engineering incl. Geotechnical & Surveying	$ 140,000
Contingency	$ 200,000
Estimated Total	**$2,300,000 + HST**

The above cost estimate is for a noise wall type listed on the DSM which is the approach applied to City ROW installations. The City would require HONI easements for construction access and maintenance. The nature of the access requirements and associated costs are unknown at this time. The estimate does not consider any costs arising from negotiations with Hydro One for easements or any special measures for restoration through HONI land. Any costs arising from the negotiations that are directly related to the construction of noise mitigation measures would also be subject to the costing agreement under the local improvement process.

CONCLUSION

A recent Road Traffic Noise Impact Study along Highbury Avenue South from Bradley Avenue to the Thames River has measured existing average daytime 16 hour noise levels of 58 to 63 dBA.

London's local improvement procedure would apply to the installation of noise attenuation along existing residential development where no road widening is planned. London's procedure has no consideration of noise levels. However, a cursory review of other municipal and provincial policies indicates 60 dBA as a common trigger for

installation. Application of the 60 dBA criteria that is found in provincial guidelines and some municipal comparators suggest that the back lotted rear yards adjacent to the HONI corridor between Bradley Avenue and Southdale Road could qualify for application of the noise barrier local improvement process.

The installation of a 2.5 m high noise attenuation wall along the edge of the HONI ROW could reduce the sound in the rear yard amenity areas by approximately 5 dBA. The estimated cost of this noise wall is in the order of $2.3 M plus any associated HONI realty and restoration costs. Initiation of a project would be subject to the receipt of a sufficiently signed petition. Implementation would then be subject to approval of Hydro One Networks Inc. since the City of London does not own the property adjacent to the residential rear yards and access for installation and maintenance would be required.

The local improvement procedure is infrequently used for the installation of new noise mitigation measures for retrofit situations. The procedure has no consideration for noise levels. Additionally, an initial review of municipal comparators indicates variable cost sharing arrangements. It is recommended that a thorough policy review of other Ontario municipalities be undertaken and modifications to the City of London local improvement procedures be considered as determined appropriate. This review would consider noise level warrants considering costs and urban design considerations, cost sharing ratios and wall types.

After the policy review and any changes to the relevant procedures, the measured noise level data would be communicated to relevant homeowners along the HONI corridor with supplementary information regarding the local improvement process as appropriate.

Acknowledgements

This report was prepared with the assistance of Karl Grabowski, P.Eng., Transportation Design Engineer and Matt Davenport, EIT, Engineer in Training of the Transportation Planning & Design Division.

SUBMITTED BY:	**RECOMMENDED BY:**
DOUG MACRAE, P.ENG. **DIVISION MANAGER** **TRANSPORTATION PLANNING & DESIGN**	**KELLY SCHERR, P.ENG., MBA, FEC** **MANAGING DIRECTOR,** **ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER**

Appendix A: Road Traffic Noise Impact Study; Highbury Avenue, Bradley Avenue to the Thames River, London, Ontario (excluding appendices)

c: J. Emeljanow, P.Eng. – Valcoustics Canada Ltd.

VALCOUSTICS
Canada Ltd.
Sound solutions to acoustical challenges
Celebrating over 60 years
30 Wertheim Court, Unit 25
Richmond Hill, Ontario, Canada, L4B 1B9
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web • www.valcoustics.com
telephone • 905 764 5223
fax • 905 764 6813

September 14, 2018

City of London
Transportation Planning & Design
P.O. Box 5035
300 Dufferin Avenue
London, Ontario
N6A 4L9

Attention: Mr. Matthew Davenport
mdavenport@london.ca

VIA E-MAIL

Re: Road Traffic Noise Impact Study
Highbury Avenue
Bradley Avenue to the Thames River
London, Ontario
VCL File: 118-0033

Dear Mr. Davenport:

We have completed our analysis of the road traffic noise from Highbury Avenue between Bradley Avenue and the Thames River onto the existing residential dwellings to the west. See Figure 1 for the study area. Our findings and conclusions are outlined herein.

Sound levels were assessed at the residential dwellings along Highbury Avenue within the study area. The residential lands are to the west of Highbury Avenue. This residential area is separated from Highbury Avenue by a high voltage Ontario Hydro corridor that is approximately 90 m wide. The closest residential dwellings either back or side onto the hydro corridor. Typically, the back yards have a chain link fence along the common boundary with the hydro corridor. With the exception of Phair Crescent, which already has a sound barrier fence, there are no other existing sound barrier fences, either along Highbury Avenue or as part of the residential development, within the study area.

1.0 NOISE GUIDELINES

The noise guideline documents below have been used to complete the noise assessment and to determine whether noise mitigation measures are warranted.

1.1 CITY OF LONDON REQUIREMENTS

The City of London Administrative Procedures provide the City's local improvements policies. The procedures are summarized below.

Where a road is not being widened or improved, the construction of new noise barriers will only be considered:

- Where dwellings are adjacent to arterial roadways whose current traffic volume exceeds 10,000 vehicles per day;
- On a total block basis;
- On receipt of a sufficiently signed petition in conformity with the provisions of the *Local Improvement Act*, R.S.O. 1990, C. L.26.

The City of London procedures do not provide any information on how to assess the noise impacts at the affected residents nor how to determine whether noise mitigation measures are warranted. Thus, guidance has been taken from the policies of the Ontario Ministry of Transportation (MTO).

Implementation of noise mitigation will be prioritized by:

- Chronological order of certification by the City Clerk of the sufficiency of the petition requesting noise mitigation; and
- Sufficient funds being available in the current year's Capital Works Budget. It is intended that projects will maintain their priority but may be delayed beyond a current year until sufficient funding becomes available.

1.2 MTO NOISE BARRIER RETROFIT POLICY

The MTO Noise Barrier Retrofit Policy is Appendix B to their Environmental Guide for Noise, latest version April 2007. The MTO developed the policy to alleviate noise impacts on existing noise sensitive areas, such as the outdoor living areas at residential dwellings, adjacent to provincial freeways. The policy is based on the principle that existing Noise Sensitive Areas (NSAs) exposed to high noise levels due to their proximity to a freeway should receive some consideration.

It should be noted that it is not the intent of the MTO policy to provide noise barriers at all sites. Some sites may not be suitable for a number of reasons such as the inability to achieve perceptible sound reduction, excessive costs to provide mitigation for only a few homes, or physical limitations which would make it impossible to provide mitigation. Full implementation of the MTO policy is dependent upon budget allocations and subject to prioritization of candidate sites.

Retrofit noise control measures will be considered where NSAs receive noise levels in excess of 60 dBA if such measures can reduce the noise levels by at least 5 dBA averaged in the first row of dwellings. It must be noted that the 60 dBA limit is consistent with the Ministry of Environment, Conservation and Parks (MECP) sound level limit recommended for the outdoor amenity areas of new residential developments.

2.0 SOUND LEVEL ASSESSMENT

Sound barriers are provided to protect outdoor amenity areas, such as rear yards, only. They are not intended to provide acoustical screening for the dwelling facades such that sound levels propagated indoors through open windows are attenuated. Thus, only dwellings that side or back towards Highbury Avenue have been considered in this assessment. Dwellings fronting towards Highbury Avenue will inherently have their rear yard amenity areas protected by the dwellings themselves.

Sound levels in the rear yards of the residences were determined through sound level measurements, sound level predictions using traffic counts completed at the time of the measurements and sound level predictions using traffic counts published by the City of London.

2.1 SOUND LEVEL MEASUREMENTS

Sound measurements were done from about noon June 19, 2018 until about noon June 28, 2018. The sound monitoring was done on the Hydro One Networks Inc. (HONI) corridor, up against the rear lot line of the residential dwellings. The four monitoring locations are shown on Figure 2.

Sound level meters were set up in the HONI corridor with the microphone set to be adjacent to the rear lot line of the residential dwellings. The measurements were done at 1.5 m above grade, in accordance with MECP requirements. However, since the measurements were done at the rear of the residential lot and not at 3 m from the rear wall of the dwelling, as per the assessment location indicated in the MECP guidelines, the measured sound levels are slightly higher than they would be at the MECP rear yard assessment location. Our analysis indicates that the adjustment is less than 0.3 dBA and is considered to be insignificant and has been ignored as part of this assessment.

At all of the measurement locations, sound levels were monitored continuously over the measurement duration. The sound level meters were left unattended. However, in addition to monitoring sound levels, audio recordings were also made over the entire measurement duration. Thus, if unusual results were obtained, it would be possible to listen to the actual sounds that were being monitored to try to determine the source of the unusual result.

In accordance with MECP requirements, the sound level meters were calibrated before and after the measurements.

2.1.1 NOISE MONITORING RESULTS

Table 1 below shows the results of the sound level measurements. L_{eqDay} is the energy average sound exposure level for the daytime period which extends from 0700 to 2300 hours.

TABLE 1: MEASURED SOUND LEVELS

Date	Location 1	Location 2	Location 3	Location 4
	L_{eqDay}	L_{eqDay}	L_{eqDay}	L_{eqDay}
19 June 2018	60	61	60	57
20 June 2018	61	62	60	55
21 June 2018	63	66	64	62
22 June 2018	64	67	66	58
23 June 2018	60	62	62	57
24 June 2018	61	62	60	64
25 June 2018	62	64	61	58
26 June 2018	63	66	64	57
27 June 2018	61	63	62	57
28 June 2018	61	60	59	57

Note the results for 19 June 2018 and for 28 June 2018 only captured a portion of these two days. Time histories for all of the measurement days are included in Appendix A to this letter report.

Valid sound measurements cannot be made when it is very windy and/or raining since the wind and rain will cause the meter to record higher sound levels than would be obtained otherwise. Weather information from the London International Airport for the measurement dates was obtained from Environment Canada. The weather information is attached to this letter report.

Review of the weather data indicates that there were significant periods of time that were not suitable for sound measurement. The times when the weather was not suitable are highlighted in blue on the time histories. For the days when weather conditions were not ideal for sound measurement, the results presented in Table 1 could be somewhat higher than expected. However, review of the measurement data and comparison to days with suitable weather indicate that the results were not significantly different when the weather was not ideal. Thus, no measurement data was ignored in completing the assessment.

2.2 SOUND LEVEL PREDICTIONS

The sound levels were also determined at the residences using ORNAMENT, the MECP computerized road traffic noise prediction model. This model is used to assess the noise impacts from road traffic at essentially all new residential developments across the Province of Ontario.

The acoustical model accounts for the distance from the source (Highbury Avenue in this case) to the receptors (the point of reception in the rear yard), soft sound absorptive ground between the source and the receptors and no acoustical screening since there are no existing sound barriers. There are some trees and brush present. However, they are not deep enough to provide any significant acoustical screening. Thus, acoustical screening from trees and brush was also not taken into account.

The distance from Highbury Avenue to the residences is essentially constant along the entire length of the study area. The only exception is at the very north end, the dwellings on Phair Crescent and Eula White Place are further from Highbury Avenue.

Traffic data was obtained from:

- Traffic counts that were done during the first week of the sound measurements (i.e. from June 19, 2018 to June 25, 2018); and
- Traffic data posted on the City of London website.

The traffic data is included as Appendix C.

The analysis results are presented in Table 2. Note that traffic counts were only done for one week. Sound level measurements were extended due to the amount of unsuitable weather during the first week of monitoring. Since traffic counts were done by others, it was not possible to extend the traffic counts for a second week.

TABLE 2: PREDICTED SOUND LEVELS

Date	L_{eqDay} (dBA) at Locations 1, 2 and 3		L_{eqDay} (dBA) at Location 4	
	Actual Count	London Data	Actual Count	London Data
19 June 2018	61	62	59	59
20 June 2018	61	62	59	59
21 June 2018	61	62	59	59
22 June 2018	62	62	59	59
23 June 2018	60	62	59	57
24 June 2018	59	62	59	57
25 June 2018	61	62	59	59
26 June 2018		62	59	
27 June 2018		62	59	
28 June 2018		62	59	

As can be seen from the results in Table 2, the predicted sound levels are similar whether using the actual traffic counts or the City of London traffic data.

3.0 DISCUSSION

The sound level predictions at Locations 1, 2, 3 and 4 using the City of London traffic data are essentially the same as those done using the actual traffic counts. This is expected since the City of London traffic data is similar to the volumes obtained through the traffic counts.

Comparison of the predictions to the measured sound levels indicates that the measured sound levels are slightly higher than the predictions. This could be due to a variety of factors including

traffic travelling at higher than the posted speed, wet road conditions, wind, etc. However, the measured sound levels are considered to only be marginally higher than the predicted sound levels.

Based on the measurements and predictions, the daytime sound levels at dwellings represented by Locations 1, 2 and 3 are higher than 60 dBA and qualify for a sound barrier retrofit applying the MTO policies.

At the dwellings represented by Location 4, which are the dwellings on Phair Crescent and Eula White Place, the distance the dwellings are from Highbury Avenue increase as you go northward. The measurement location was at the north end of this area and represents the lowest sound levels this section of dwellings would receive.

The dwelling on Phair Crescent have an existing sound barrier. Thus, accounting for the sound barrier results in existing sound levels well below the 60 dBA threshold. Thus, the residences along Phair Crescent do not qualify for a sound barrier retrofit since their existing sound levels do not exceed 60 dBA.

At Location 4, the predictions indicate a daytime sound level of 59 dBA. The measurement results also indicate the daytime sound level is generally below 60 dBA except for two of the days where the sound level was greater than 60 dBA. Based on this, the residences along Eula White Place also do not qualify for a sound barrier retrofit since their existing sound levels are generally at or below 60 dBA.

Note that there are a series of dwellings along Pondview Terrace, at the very southern end of the study area, that front towards Highbury Avenue. Since the intent of a sound barrier is to protect the rear yard amenity area from road traffic noise and these dwellings already have their rear yard protected by the dwelling itself, a sound barrier is not required for the dwellings on Pondview Terrace. Accounting for the screening provided by the dwellings themselves results in daytime sound levels well below the 60 dBA threshold.

There is also a residential condominium townhouse development between Pondview Road and Worthington Avenue near the north end of the study area that has residential dwellings backing towards Highbury Avenue. These dwellings are more than 300 m from Highbury Avenue and are predicted to receive daytime sound levels of 55 dBA or less. Thus, these dwellings do not qualify for a sound barrier retrofit

3.1 MITIGATION

As outlined herein, noise mitigation measures need to be considered when existing daytime sound levels exceed 60 dBA. The noise mitigation measures need to provide at least 5 dBA and should mitigate the daytime sound levels to the MECP objective of 55 dBA or lower.

To achieve the above objectives, a 2.5 m high sound barrier is recommended for most of the study area. A 2.5 m high sound barrier is predicted to attenuate the daytime sound levels to 55.8 dBA, just slightly above the 55 dBA objective, and provides about 5.8 dBA of sound attenuation. See Figures 3 and 4 for the recommended sound barrier heights and locations.

Sound barriers are most effective (i.e. provide the greatest amount of sound attenuation for a given height) when they are either very close to the sound source or to the receptor locations. At this location, sound barriers are recommended to be located closest to the receptor locations, along their rear lot lines.

Sound barriers could be constructed adjacent to Highbury Avenue. However, since the sound barrier would be significantly further from the noise source (i.e. road traffic on Highbury Avenue, particularly the northbound lanes), than the distance the barrier is from the receptor location in the option presented above, a higher sound barrier is needed to provide the minimum 5 dBA of sound attenuation. Our analysis indicates that a sound barrier along Highbury Avenue would need to be about 4.5 m in height to provide the minimum 5 dBA of sound attenuation. In addition, the sound barrier along Highbury Avenue would need to be significantly longer to provide the same amount of acoustical screening (i.e. constructing the sound barrier along Highbury Avenue would result in significant views around the ends of the sound barrier to the residents to the west).

To meet MECP requirements, sound barriers must be of solid construction with no holes, gaps or cracks and must have a minimum face density of 20 kg/m^2. A variety of materials can be used including wood, vinyl, masonry, glass, acrylic, earth berms or a combination of the above materials. The sound barrier has been assumed to be located on the rear lot line of the dwellings. Constructing the barrier further from the residents (i.e. on the hydro right of way) would reduce the barrier effectiveness and would require a 4.5 m high and significantly longer sound barrier to provide the same amount of sound attenuation. If earth berms were used, a significant area in plan would be needed. Typically 3:1 side slopes are provided. Thus, to have the barrier centred on the rear lot line would require the toe of the berm to extend at least 7.5 m into the residential rear yard and 7.5 onto the hydro lands.

4.0 CONCLUSIONS

Sound level monitoring and predictions were completed to quantify the noise impacts existing dwellings are receiving along Highbury Avenue. The results indicate that for most of the dwellings in the study area, they are experiencing sound levels above the 60 dBA threshold and would qualify for noise mitigation measures. Except for the dwellings on Phair Crescent and Eula White Place, a 2.5 m high sound barrier is recommended for the remaining dwellings in the study area.

If there are any questions or if additional information is needed, please do not hesitate to call.

Yours truly,

VALCOUSTICS CANADA LTD.

Per:

LICENSED PROFESSIONAL ENGINEER
09/14/18
J. EMELJANOW
PROVINCE OF ONTARIO

John Emeljanow, B.Eng., P.Eng.

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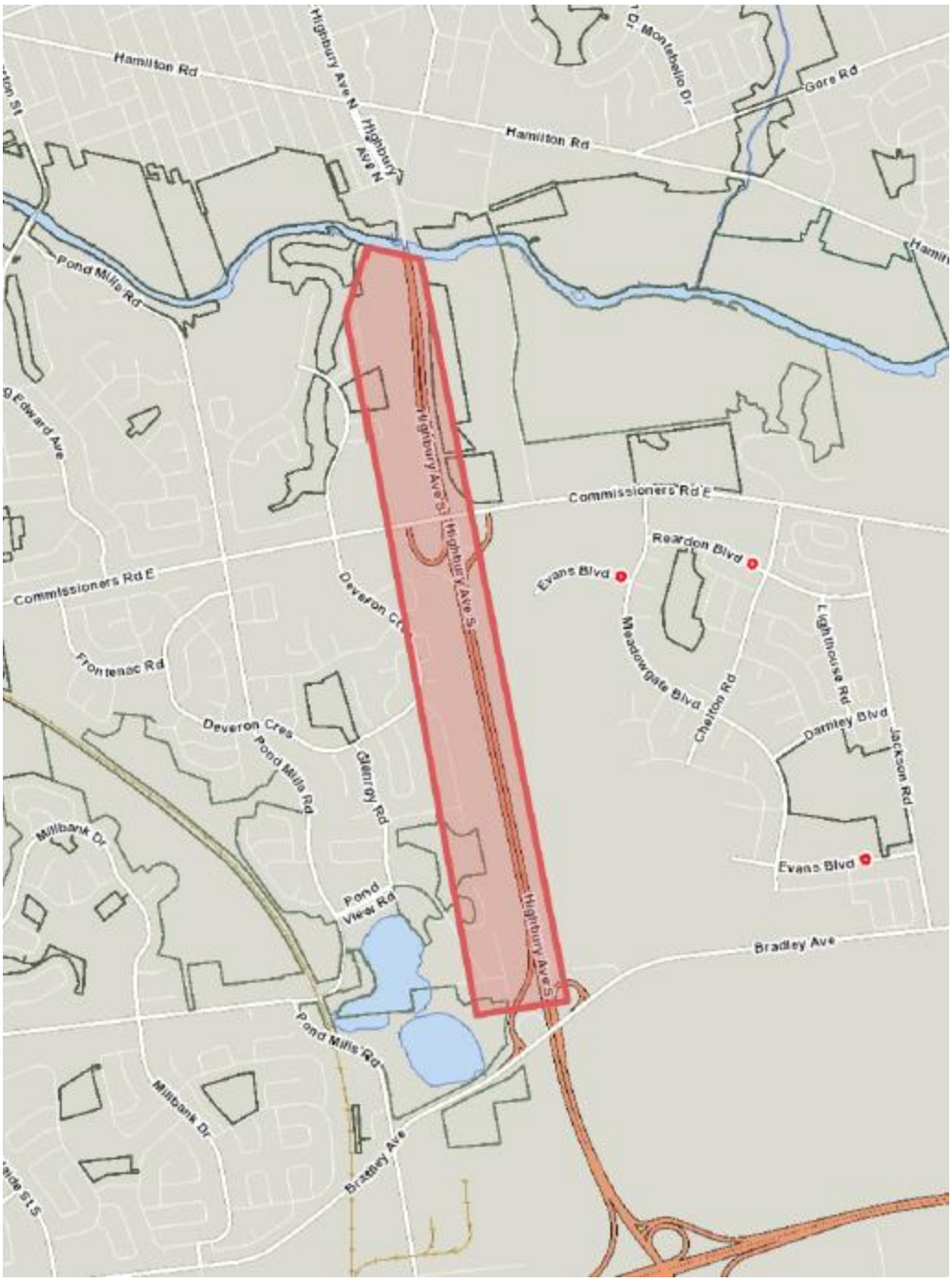
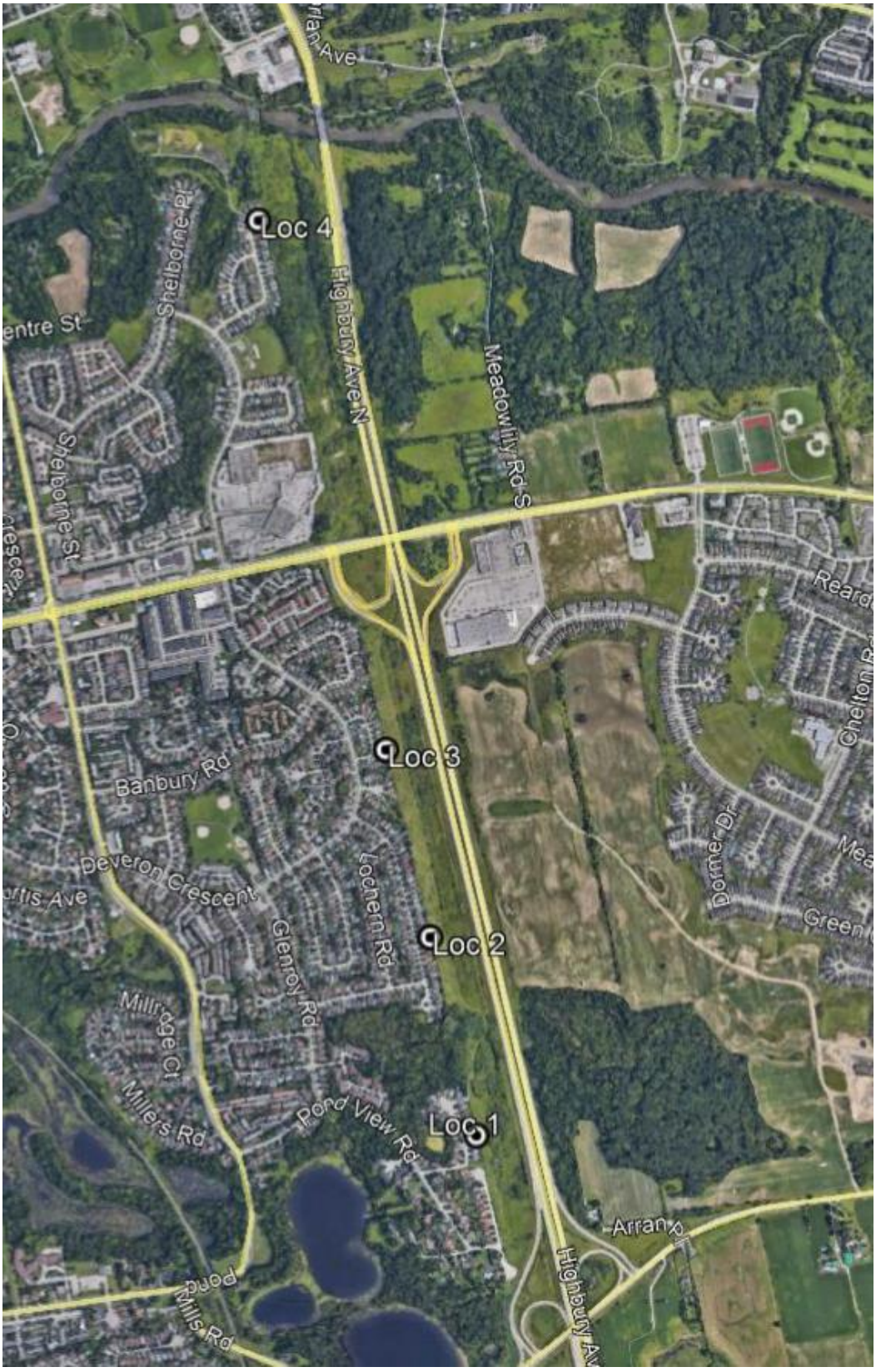
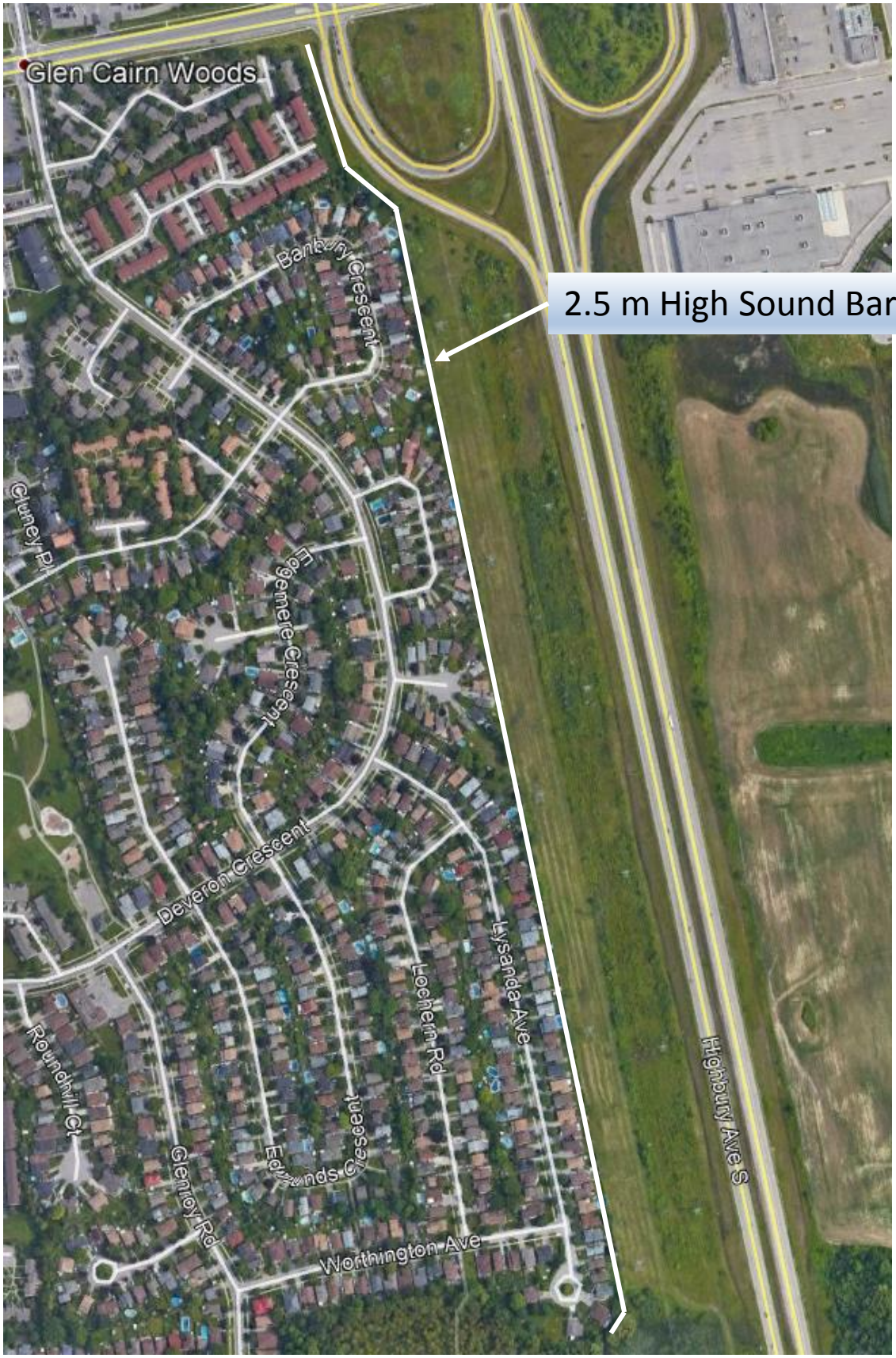


VALCOUSTICS Canada Ltd.	Title Study Area	Date 13 Sept 2018	Figure **1**
	Project Name Highbury Avenue Noise Impact Assessment	Project No. 118-0033	



VALCOUSTICS Canada Ltd.	Title Measurement Locations	Date 13 Sept 2018	Figure 2
	Project Name Highbury Avenue Noise Impact Assessment	Project No. 118-0033	

VALCOUSTICS Canada Ltd.	Title Recommended Sound Barriers	Date 13 Sept 2018	Figure 3
	Project Name Highbury Avenue Noise Impact Assessment	Project No. 118-0033	

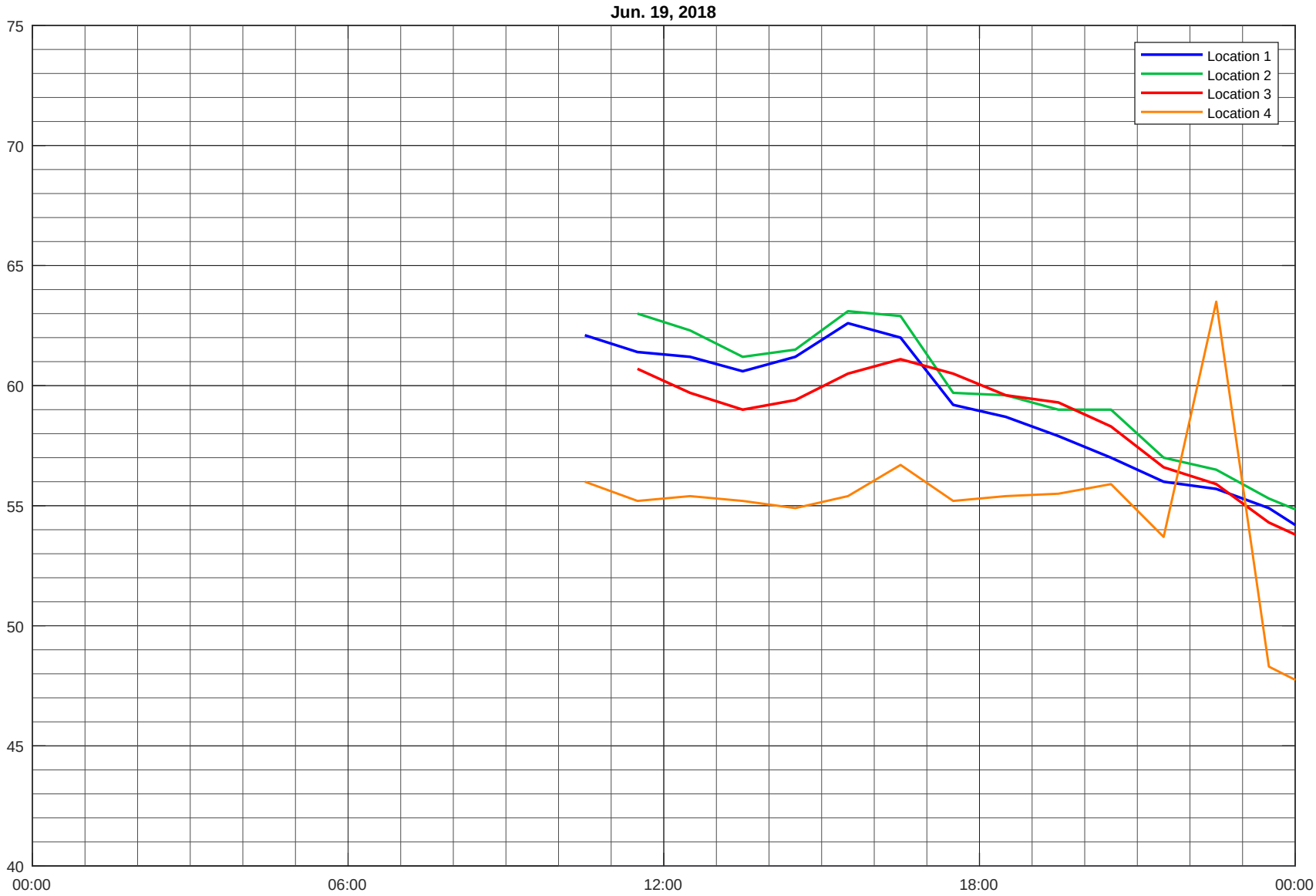


VALCOUSTICS Canada Ltd.	Title Recommended Sound Barriers	Date 13 Sept 2018	Figure 4
	Project Name Highbury Avenue Noise Impact Assessment	Project No. 118-0033	

VALCOUSTICS Canada Ltd.	Title Recommended Sound Barriers	Date 13 Sept 2018	Figure 5
	Project Name Highbury Avenue Noise Impact Assessment	Project No. 118-0033	

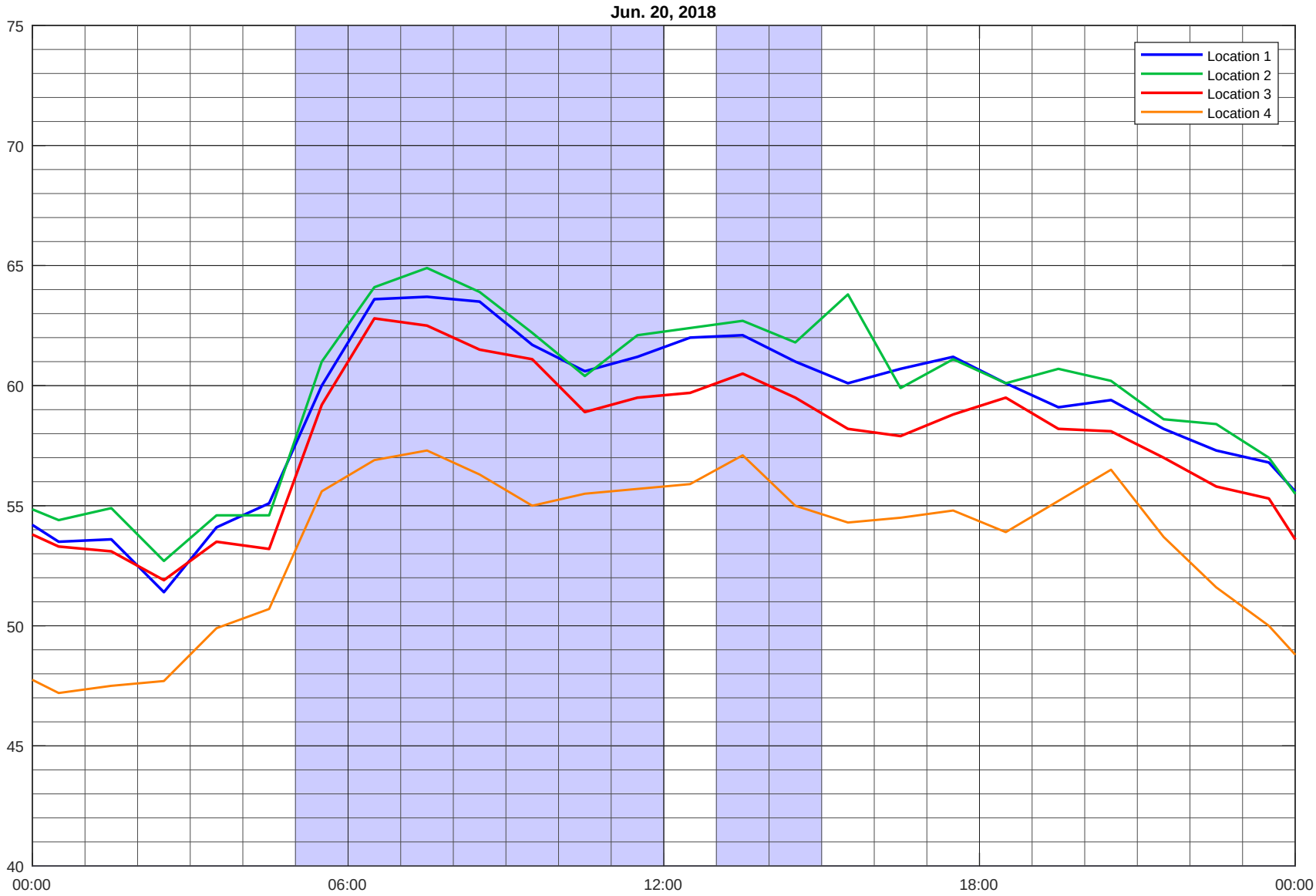
APPENDIX A

MEASUREMENT TIME HISTORIES

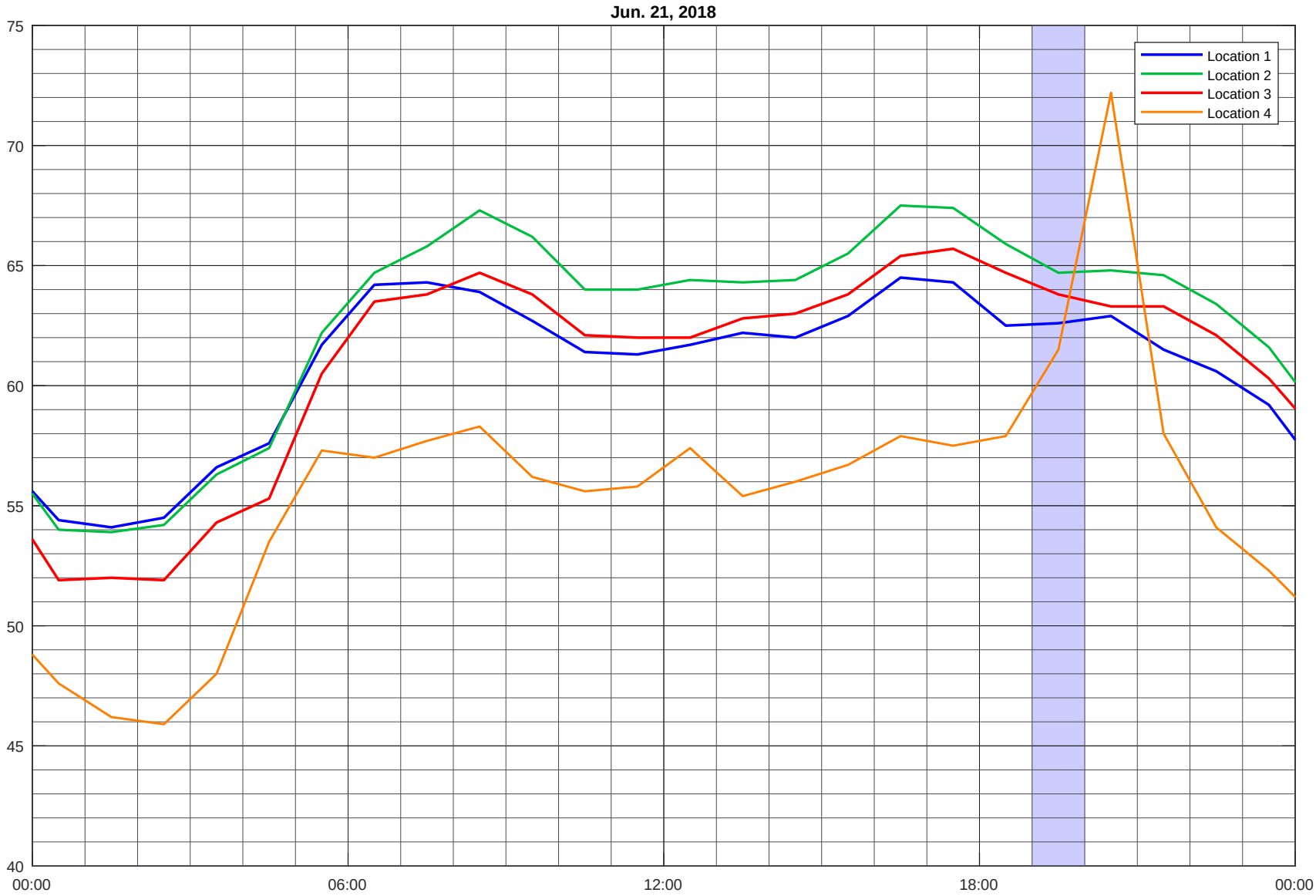


VALCOUSTICS Canada Ltd.

Title **Measured Sound Levels**	**Date** **2018-07-20**	**Figure** **1**
Project Name **Highbury Avenue Noise Monitoring**	**Project Number** **118-0033**	

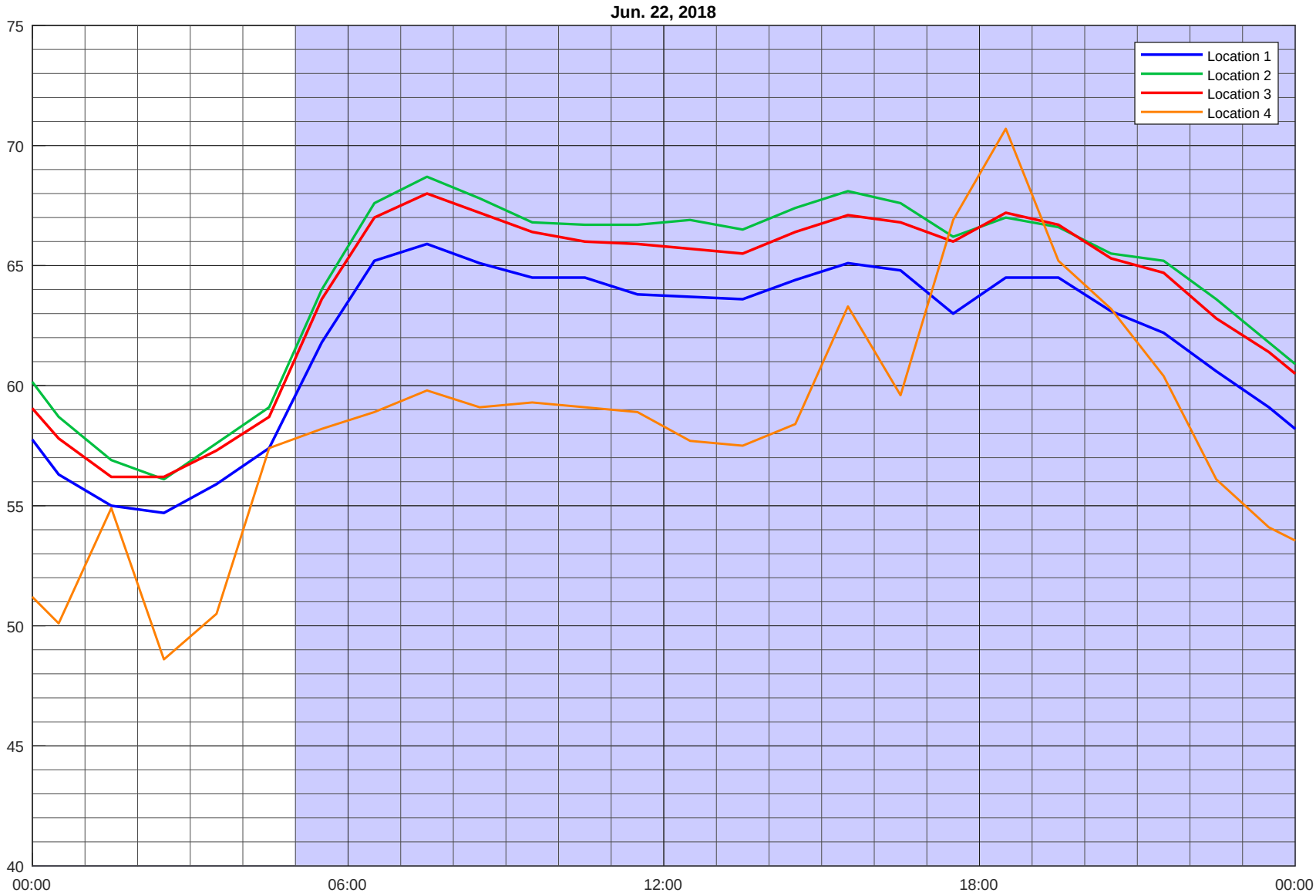


VALCOUSTICS Canada Ltd.	**Title** **Measured Sound Levels**	**Date** **2018-07-20**	**Figure** **2**
	Project Name **Highbury Avenue Noise Monitoring**	**Project Number** **118-0033**	

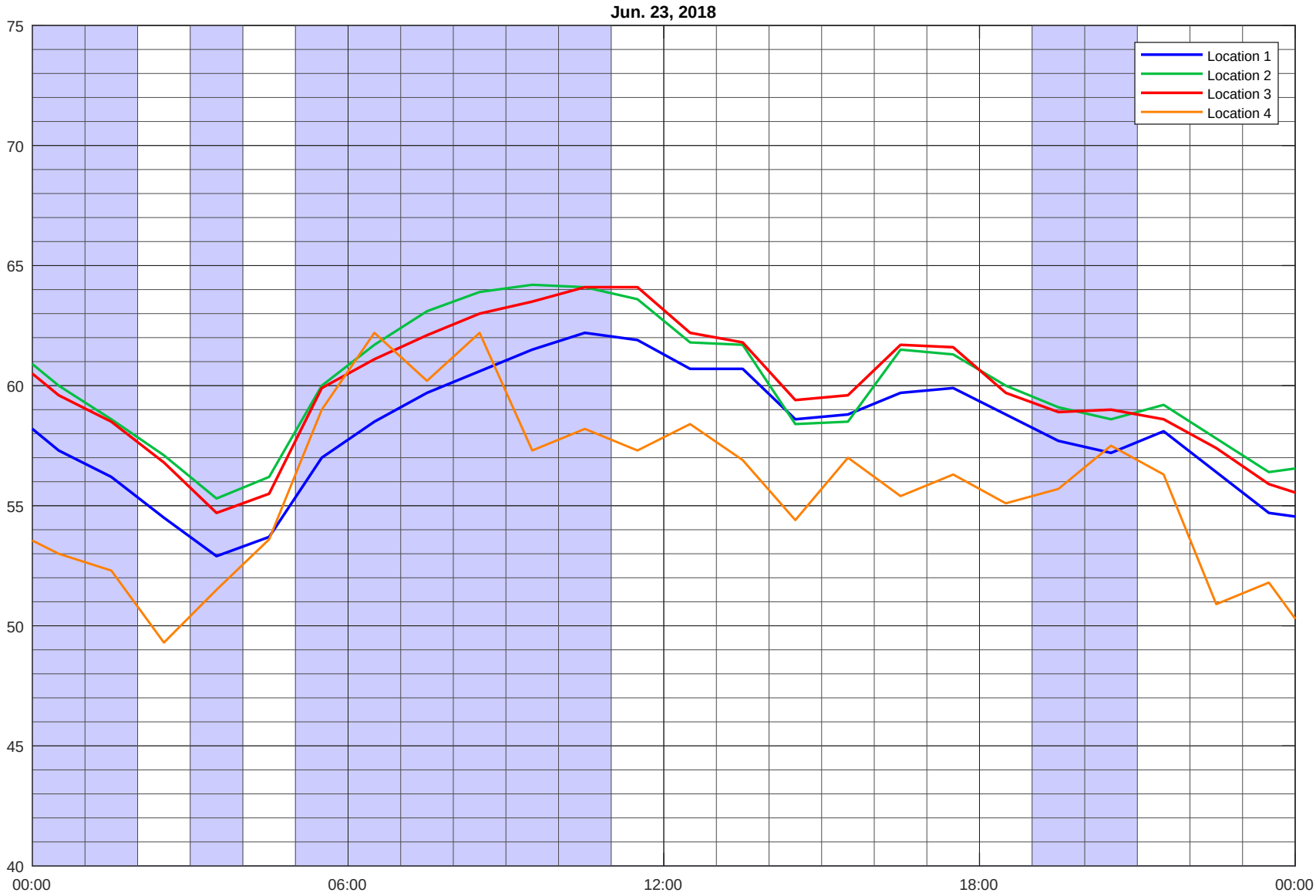


VALCOUSTICS Canada Ltd.

Title **Measured Sound Levels**	**Date** **2018-07-20**	**Figure** **3**
Project Name **Highbury Avenue Noise Monitoring**	**Project Number** **118-0033**	

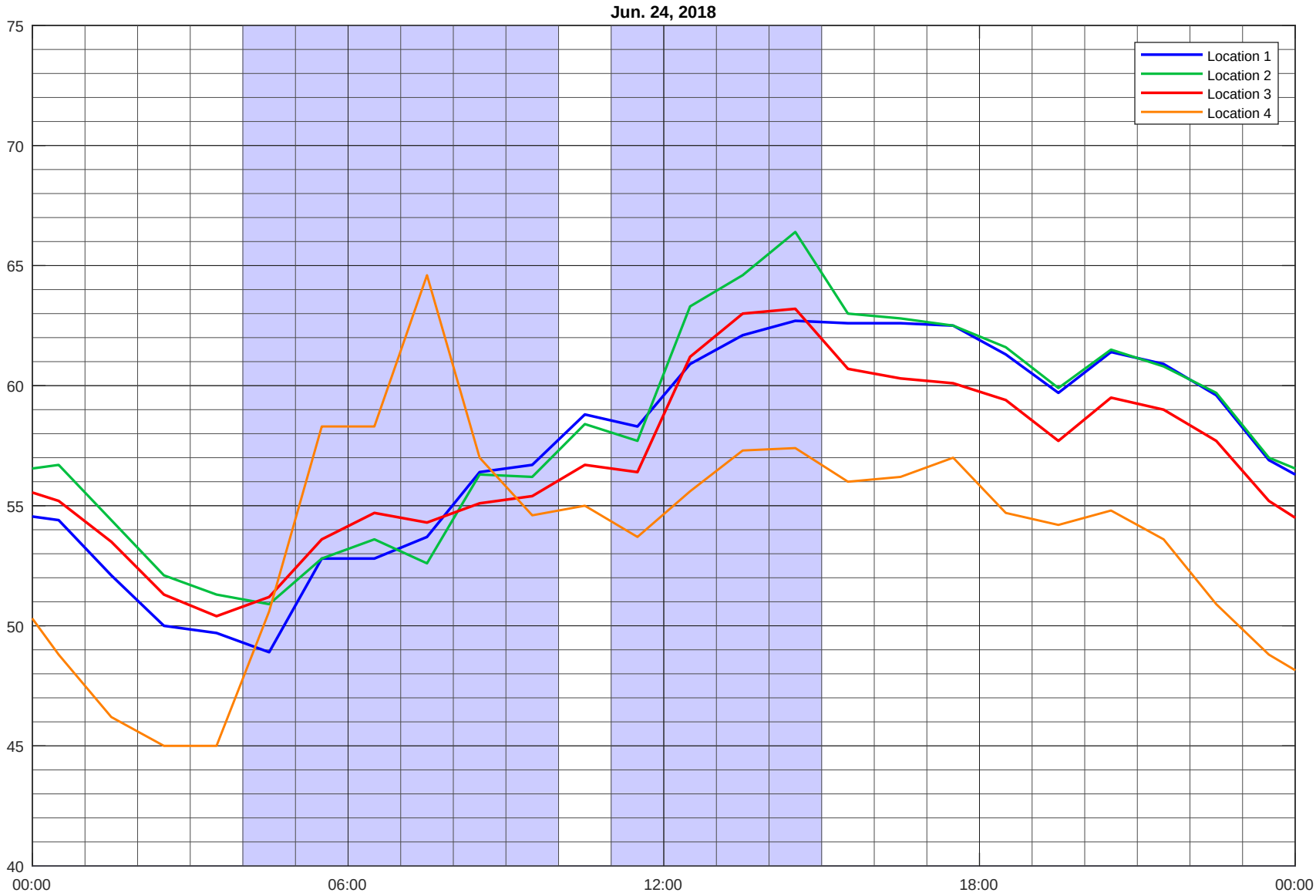


VALCOUSTICS Canada Ltd.	**Title** **Measured Sound Levels**	**Date** **2018-07-20**	**Figure** **4**
	Project Name **Highbury Avenue Noise Monitoring**	**Project Number** **118-0033**	



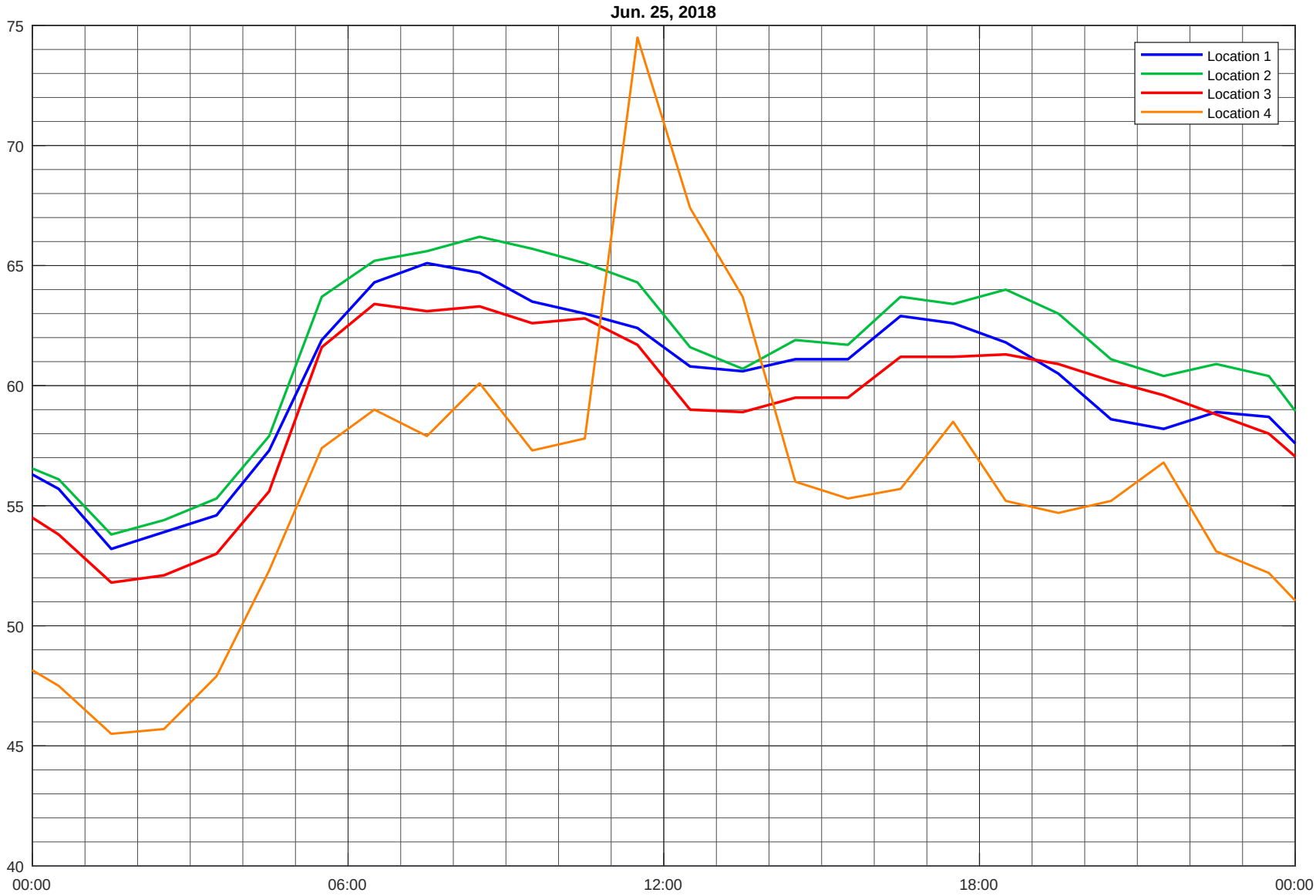
VALCOUSTICS Canada Ltd.

Title **Measured Sound Levels**	**Date** **2018-07-20**	**Figure** **5**
Project Name **Highbury Avenue Noise Monitoring**	**Project Number** **118-0033**	

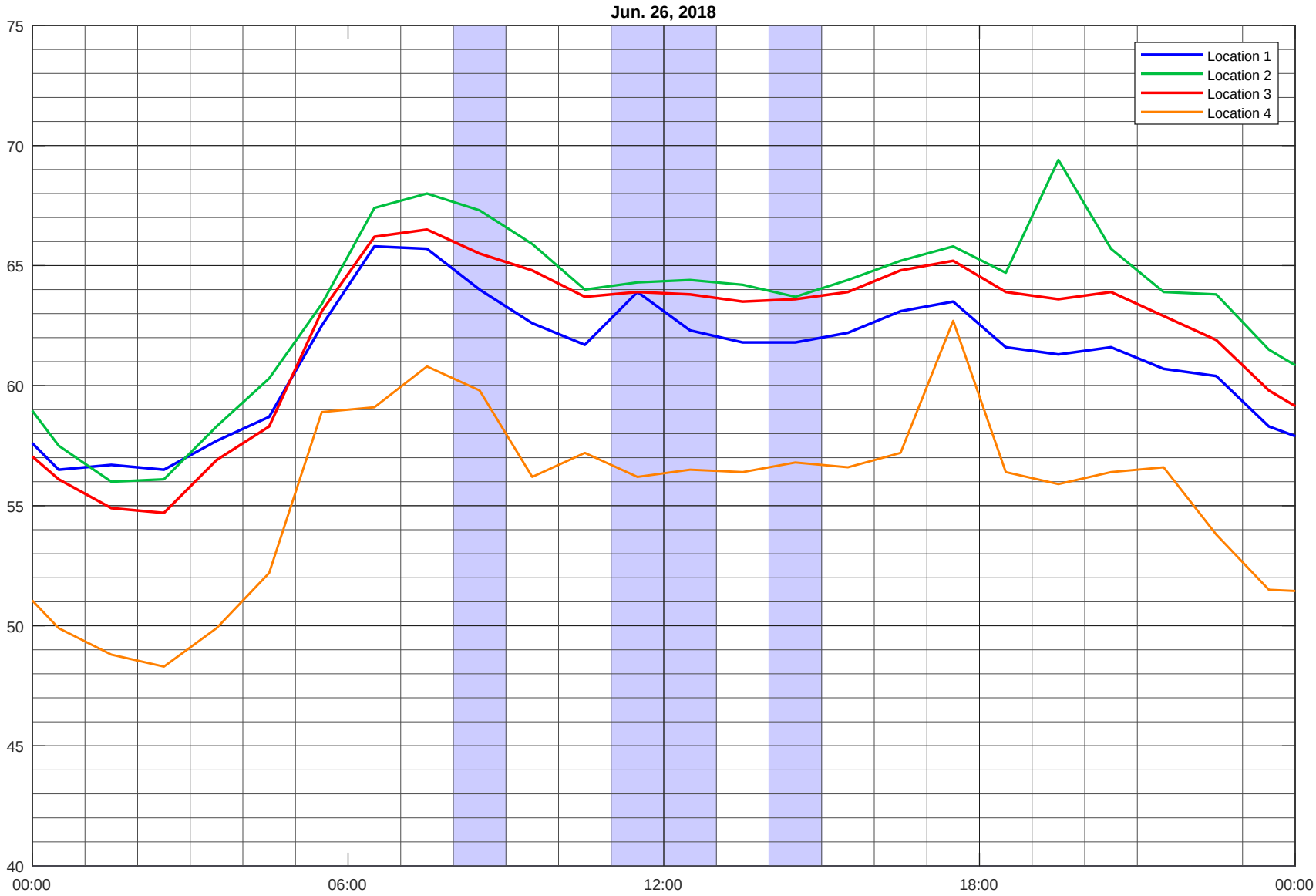


VALCOUSTICS Canada Ltd.

Title **Measured Sound Levels**	**Date** **2018-07-20**	**Figure** **6**
Project Name **Highbury Avenue Noise Monitoring**	**Project Number** **118-0033**	

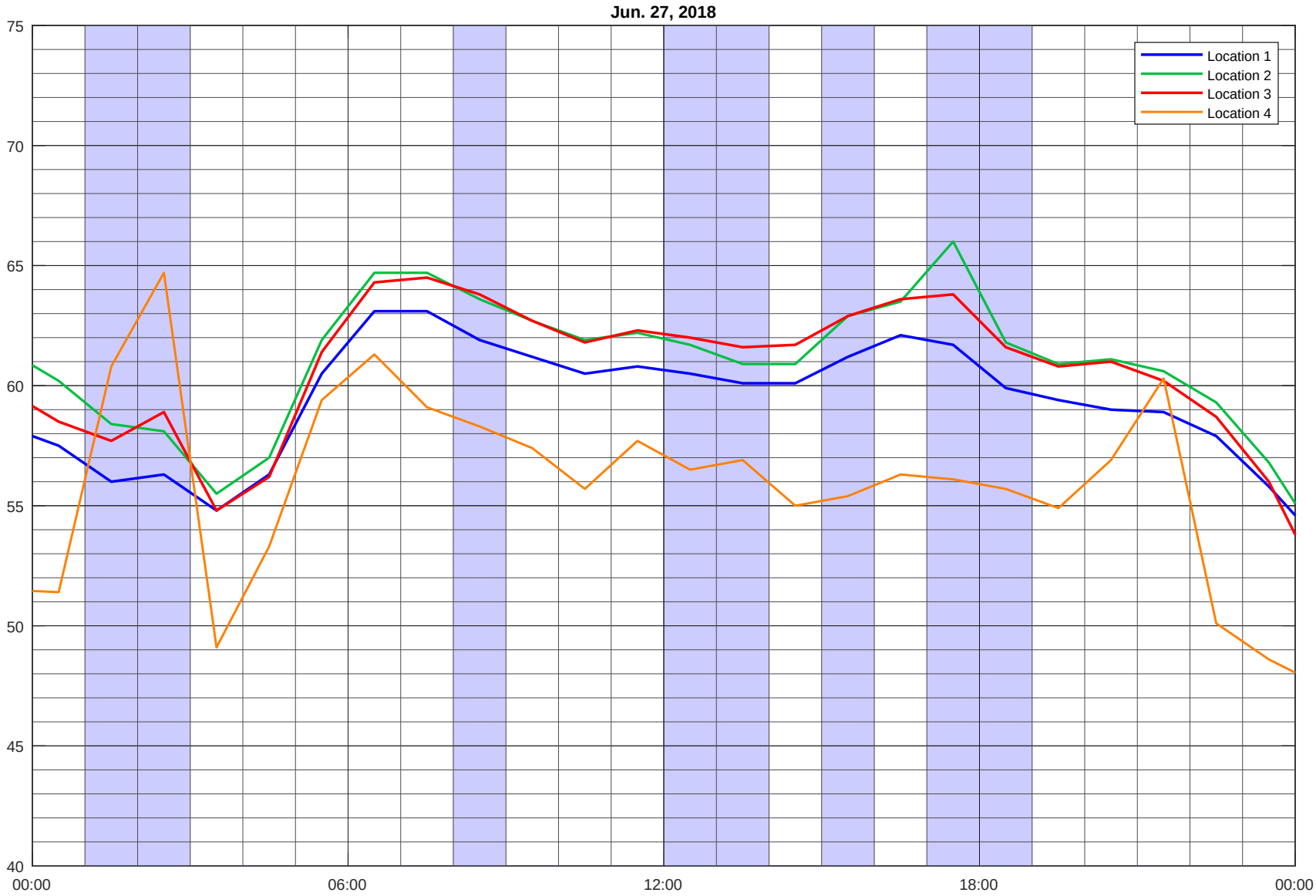


VALCOUSTICS Canada Ltd.	**Title** **Measured Sound Levels**	**Date** **2018-07-20**	**Figure** **7**
	Project Name **Highbury Avenue Noise Monitoring**	**Project Number** **118-0033**	

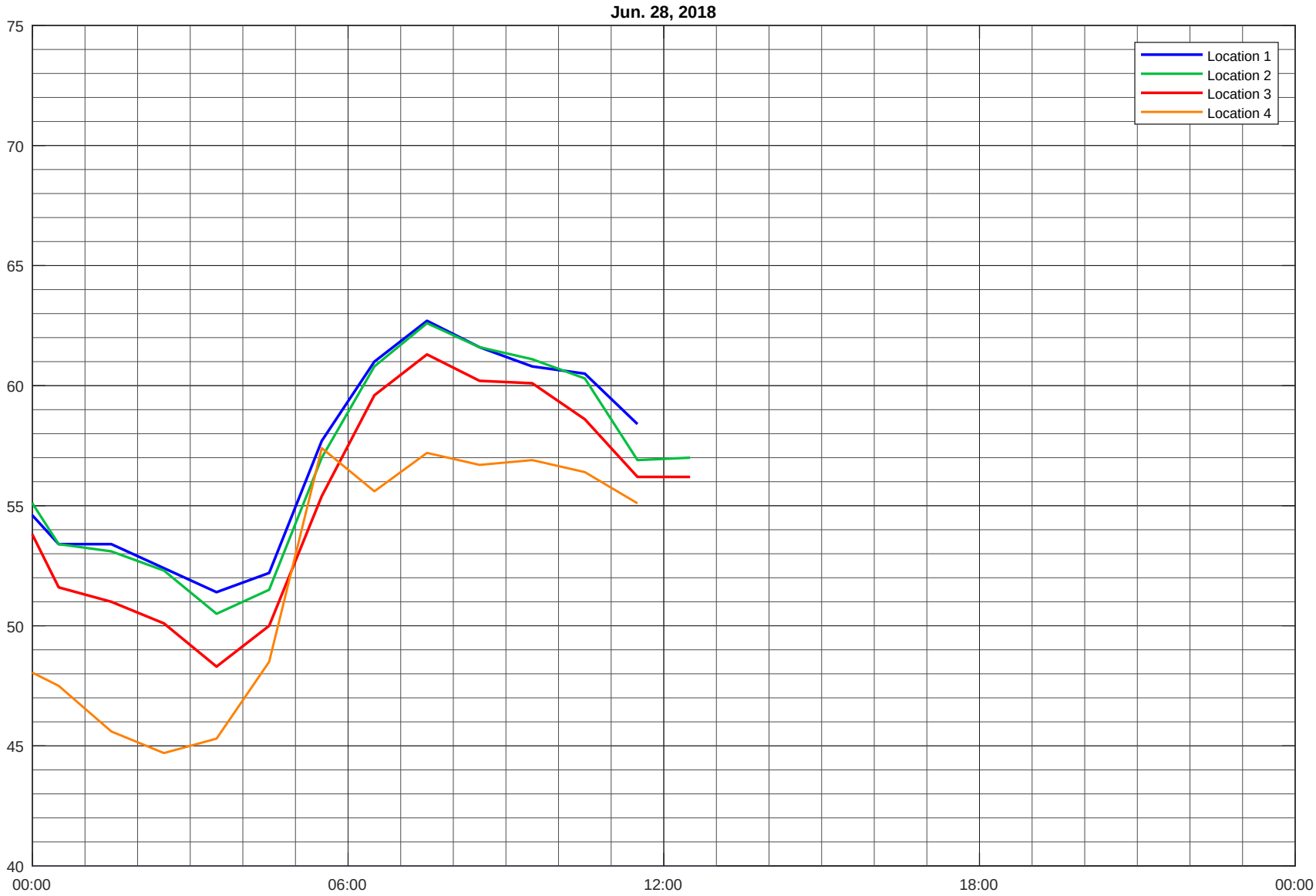


VALCOUSTICS Canada Ltd.

Title **Measured Sound Levels**	**Date** **2018-07-20**	**Figure** **8**
Project Name **Highbury Avenue Noise Monitoring**	**Project Number** **118-0033**	



VALCOUSTICS Canada Ltd.	**Title** **Measured Sound Levels**	**Date** **2018-07-20**	**Figure** **9**
	Project Name **Highbury Avenue Noise Monitoring**	**Project Number** **118-0033**	



VALCOUSTICS Canada Ltd.	**Title** **Measured Sound Levels**	**Date** **2018-07-20**	**Figure** **10**
	Project Name **Highbury Avenue Noise Monitoring**	**Project Number** **118-0033**	

APPENDIX B

WEATHER DATA

Hourly Data Report for June 19, 2018

All times are specified in Local Standard Time (LST). Add 1 hour to adjust for Daylight Saving Time where and when it is observed.

LONDON A
ONTARIO
Current Station Operator: NAVCAN

Latitude:	43°01'59.000" N
Longitude:	81°09'04.000" W
Elevation:	278.00 m
Climate ID:	6144473
WMO ID:	71623
TC ID:	YXU

	Temp °C	Dew Point Temp °C	Rel Hum %	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
TIME										
00:00	20.0	19.0	94	36	9	24.1	98.01	27		NA
01:00	19.8	17.9	89	1	15	24.1	98.05			Mostly Cloudy
02:00	18.7	15.9	83	2	13	24.1	98.13			NA
03:00	17.7	14.0	79	2	10	24.1	98.16			NA
04:00	16.6	12.9	79	2	10	24.1	98.19			Mostly Cloudy
05:00	15.5	13.2	86	36	7	24.1	98.28			NA
06:00	16.4	13.9	85	36	11	24.1	98.36			NA
07:00	19.3	14.3	73	5	10	24.1	98.39			Mainly Clear

	Temp °C	Dew Point Temp °C	Rel Hum %	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
08:00	20.5	15.2	71	7	17	24.1	98.39	25		NA
09:00	21.9	15.1	65	7	14	24.1	98.38	26		NA
10:00	22.9	15.4	62	8	12	24.1	98.37	27		Clear
11:00	23.7	14.6	56	3	12	24.1	98.37	27		NA
12:00	24.3	15.6	58	3	8	24.1	98.36	29		NA
13:00	25.2	14.9	52	3	9	24.1	98.33	29		Mostly Cloudy
14:00	24.9	13.6	49	33	16	24.1	98.29	28		NA
15:00	25.3	14.3	50	33	9	24.1	98.23	29		NA
16:00	24.7	13.8	50	34	9	24.1	98.19	28		Mostly Cloudy
17:00	23.8	16.5	63	30	10	24.1	98.14	29		NA
18:00	22.0	17.4	74	20	15	24.1	98.11	28		NA
19:00	20.9	16.8	77	20	19	24.1	98.16	26		Cloudy
20:00	20.0	16.2	79	20	16	19.3	98.21	25		NA
21:00	19.4	15.6	78	21	16	24.1	98.21			NA
22:00	19.1	15.3	78	20	9	24.1	98.16			Cloudy
23:00	18.7	16.0	84	36	2	24.1	98.15			NA

Legend

- E = Estimated
- M = Missing

- NA = Not Available

Date modified:

2018-07-20

Hourly Data Report for June 20, 2018

All times are specified in Local Standard Time (LST). Add 1 hour to adjust for Daylight Saving Time where and when it is observed.

LONDON A
ONTARIO
Current Station Operator: NAVCAN

Latitude:	43°01'59.000" N
Longitude:	81°09'04.000" W
Elevation:	278.00 m
Climate ID:	6144473
WMO ID:	71623
TC ID:	YXU

	Temp °C	Dew Point Temp °C	Rel Hum %	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
TIME										
00:00	18.7	15.0	79	15	5	24.1	98.13			NA
01:00	17.7	15.8	89	15	4	24.1	98.11			Cloudy
02:00	18.1	16.3	89	11	5	24.1	98.07			NA
03:00	17.9	16.1	89	10	4	24.1	98.01			NA
04:00	17.6	16.3	92	6	4	24.1	98.04			Mostly Cloudy
05:00	17.1	15.7	91	36	2	24.1	98.11			Rain Showers
06:00	16.5	14.9	90	1	10	16.1	98.10			Rain Showers

	Temp °C	Dew Point Temp °C	Rel Hum %	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
07:00	16.3	14.2	87	3	12	16.1	98.08			Rain Showers
08:00	16.7	14.8	88	1	7	16.1	98.07			Rain Showers
09:00	17.6	14.4	81	1	7	16.1	97.99			Rain Showers
10:00	17.9	14.6	81	32	4	16.1	97.97			Rain Showers
11:00	18.3	15.3	82	36	10	16.1	98.01			Rain Showers
12:00	18.4	14.3	77	36	13	24.1	98.00			NA
13:00	19.1	14.1	73	34	11	24.1	97.97			Rain Showers
14:00	19.1	14.0	72	32	7	19.3	97.94			Rain Showers
15:00	20.9	14.8	68	35	8	24.1	97.89	25		NA
16:00	20.9	14.5	66	34	9	24.1	97.85	25		Mostly Cloudy
17:00	21.2	14.7	66	30	10	24.1	97.80	25		NA
18:00	21.0	12.8	59	28	13	24.1	97.76			NA
19:00	19.4	11.3	59	29	9	24.1	97.76			Mostly Cloudy
20:00	17.5	10.2	62	28	9	24.1	97.76			NA
21:00	16.2	10.1	67	30	6	24.1	97.83			NA
22:00	14.9	11.1	78	30	8	24.1	97.91			Cloudy
23:00	14.4	11.2	81	31	12	24.1	97.88			NA

Legend

- E = Estimated
- M = Missing
- NA = Not Available

Date modified:

2018-07-20

Hourly Data Report for June 21, 2018

All times are specified in Local Standard Time (LST). Add 1 hour to adjust for Daylight Saving Time where and when it is observed.

LONDON A
ONTARIO
Current Station Operator: NAVCAN

Latitude:	43°01'59.000" N
Longitude:	81°09'04.000" W
Elevation:	278.00 m
Climate ID:	6144473
WMO ID:	71623
TC ID:	YXU

	Temp °C	Dew Point Temp °C	Rel Hum %	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
TIME										
00:00	13.8	10.6	81	29	7	24.1	97.86			NA
01:00	13.2	10.2	81	34	9	24.1	97.82			Mainly Clear
02:00	12.2	9.9	86	35	10	24.1	97.82			NA
03:00	11.7	9.6	87	35	10	24.1	97.80			NA
04:00	12.2	9.9	86	35	10	24.1	97.82			Clear
05:00	11.0	9.1	88	35	9	24.1	97.87			NA
06:00	14.0	10.9	81	2	4	24.1	97.90			NA
07:00	17.3	13.3	77	5	16	24.1	97.94			Mainly Clear
08:00	19.2	14.2	72	8	18	24.1	97.98			NA

	Temp °C	Dew Point Temp °C	Rel Hum %	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
09:00	20.6	15.0	70	10	16	24.1	98.01	25		NA
10:00	21.7	15.7	69	9	17	24.1	97.98	26		Mostly Cloudy
11:00	22.4	15.7	66	9	18	24.1	97.99	27		NA
12:00	23.1	15.1	60	9	16	24.1	97.99	27		NA
13:00	23.3	15.3	60	9	16	24.1	97.96	27		Mostly Cloudy
14:00	23.3	15.2	60	10	17	24.1	97.94	27		NA
15:00	23.9	15.6	59	11	14	24.1	97.91	28		NA
16:00	24.0	15.5	58	10	18	24.1	97.88	28		Mostly Cloudy
17:00	23.2	14.5	57	10	18	24.1	97.89	27		NA
18:00	22.9	13.7	55	9	20	24.1	97.90	26		NA
19:00	21.3	10.8	51	10	21	24.1	97.92			Mostly Cloudy
20:00	18.8	11.0	60	7	14	24.1	97.92			NA
21:00	16.7	9.4	62	9	13	24.1	98.00			NA
22:00	15.0	7.1	59	9	11	24.1	98.04			Mainly Clear
23:00	15.2	5.9	54	8	15	24.1	98.04			NA

Legend

- E = Estimated
- M = Missing

- NA = Not Available

Date modified:

2018-07-20

Hourly Data Report for June 22, 2018

All times are specified in Local Standard Time (LST). Add 1 hour to adjust for Daylight Saving Time where and when it is observed.

LONDON A
ONTARIO
Current Station Operator: NAVCAN

Latitude:	43°01'59.000" N
Longitude:	81°09'04.000" W
Elevation:	278.00 m
Climate ID:	6144473
WMO ID:	71623
TC ID:	YXU

	Temp °C	Dew Point Temp °C	Rel Hum %	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
TIME										
00:00	14.3	6.6	59	8	16	24.1	98.04			NA
01:00	13.9	6.7	62	7	16	24.1	98.00			Mostly Cloudy
02:00	13.4	7.0	65	8	15	24.1	97.99			NA
03:00	13.4	7.3	66	8	18	24.1	97.98			NA
04:00	13.2	7.3	67	8	19	24.1	97.99			Mainly Clear
05:00	13.2	7.6	69	8	21	24.1	97.98			NA
06:00	14.1	7.6	65	8	24	24.1	97.99			NA
07:00	15.8	7.7	58	8	24	24.1	98.00			Mostly Cloudy
08:00	16.3	6.9	53	8	30	24.1	98.01			NA

	Temp °C	Dew Point Temp °C	Rel Hum %	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
09:00	17.3	7.7	53	9	29	24.1	98.02			NA
10:00	19.2	9.1	52	7	26	24.1	97.99			Cloudy
11:00	20.0	9.4	50	7	27	24.1	97.98			NA
12:00	20.7	11.6	56	8	22	24.1	97.97			NA
13:00	22.2	12.8	55	11	22	24.1	97.91	25		Mostly Cloudy
14:00	21.1	13.1	60	9	24	24.1	97.86			NA
15:00	18.7	13.4	71	7	29	24.1	97.78			Rain Showers
16:00	16.5	13.6	83	9	20	16.1	97.82			Rain Showers
17:00	15.3	14.0	92	8	26	6.4	97.78			Rain Showers,Fog
18:00	15.2	14.4	95	7	28	4.8	97.74			Rain Showers,Fog
19:00	14.8	13.7	93	8	26	16.1	97.73			Rain Showers
20:00	15.0	14.1	94	8	24	8.1	97.69			Rain Showers,Fog
21:00	15.9	15.1	95	9	22	8.1	97.69			Fog
22:00	16.7	15.9	95	10	22	16.1	97.68			Rain Showers
23:00	16.8	16.1	95	11	21	16.1	97.66			Rain Showers

Legend

- E = Estimated
- M = Missing
- NA = Not Available

Date modified:

2018-07-20

Hourly Data Report for June 23, 2018

All times are specified in Local Standard Time (LST). Add 1 hour to adjust for Daylight Saving Time where and when it is observed.

LONDON A
ONTARIO
Current Station Operator: NAVCAN

Latitude:	43°01'59.000" N
Longitude:	81°09'04.000" W
Elevation:	278.00 m
Climate ID:	6144473
WMO ID:	71623
TC ID:	YXU

	Temp °C	Dew Point Temp °C	Rel Hum %	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
TIME										
00:00	16.9	16.1	95	10	23	24.1	97.62			NA
01:00	16.7	15.8	94	10	21	24.1	97.58			Cloudy
02:00	16.7	15.7	94	11	19	24.1	97.54			NA
03:00	16.8	15.6	92	10	21	24.1	97.49			NA
04:00	16.8	15.7	93	10	19	24.1	97.46			Cloudy
05:00	16.7	15.8	94	10	16	24.1	97.46			Rain Showers
06:00	16.5	15.8	95	10	17	16.1	97.45			Rain Showers
07:00	16.7	16.1	96	9	17	16.1	97.47			Rain Showers
08:00	16.8	16.3	96	10	14	12.9	97.46			Rain Showers

	Temp °C	Dew Point Temp °C	Rel Hum %	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
09:00	17.1	16.4	96	9	11	19.3	97.45			Rain Showers
10:00	17.8	16.9	95	11	13	19.3	97.42			Rain Showers
11:00	18.3	17.4	95	13	12	19.3	97.40			NA
12:00	19.3	18.0	92	13	12	24.1	97.39			NA
13:00	20.6	18.6	88	15	13	24.1	97.38	27		Cloudy
14:00	21.7	18.2	80	14	3	24.1	97.35	28		NA
15:00	22.0	18.6	81	10	17	24.1	97.32	28		NA
16:00	22.5	18.8	79	14	12	24.1	97.36	29		Mostly Cloudy
17:00	23.1	18.8	77	10	10	24.1	97.34	30		NA
18:00	21.9	18.6	81	16	7	24.1	97.35	28		NA
19:00	20.7	18.9	89	5	7	6.4	97.40	27		Rain Showers,Fog
20:00	19.7	18.9	95	4	10	4.0	97.45			Rain Showers,Fog
21:00	19.3	18.8	96	9	10	6.4	97.50			Fog
22:00	19.2	18.6	97	10	7	4.8	97.56			Fog
23:00	18.9	18.4	96	10	8	4.0	97.55			Fog

Legend

- E = Estimated
- M = Missing

- NA = Not Available

Date modified:

2018-07-20

Hourly Data Report for June 24, 2018

All times are specified in Local Standard Time (LST). Add 1 hour to adjust for Daylight Saving Time where and when it is observed.

LONDON A
ONTARIO
Current Station Operator: NAVCAN

Latitude:	43°01'59.000" N
Longitude:	81°09'04.000" W
Elevation:	278.00 m
Climate ID:	6144473
WMO ID:	71623
TC ID:	YXU

	Temp °C	Dew Point Temp °C	Rel Hum %	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
TIME										
00:00	18.4	18.0	98	14	6	3.2	97.55			Fog
01:00	18.5	18.1	98	12	10	1.6	97.54			Fog
02:00	18.4	18.1	98	12	9	1.6	97.52			Fog
03:00	18.4	18.0	97	14	8	2.4	97.54			Drizzle,Fog
04:00	18.3	17.9	98	14	8	1.6	97.54			Rain Showers,Fog
05:00	18.3	18.0	98	11	9	2.4	97.56			Rain Showers,Fog
06:00	18.1	17.9	98	10	14	3.2	97.57			Rain Showers,Fog
07:00	17.5	17.1	98	1	11	6.4	97.62			Rain Showers,Fog
08:00	17.9	17.4	97	10	3	16.1	97.67			Rain Showers

	Temp °C	Dew Point Temp °C	Rel Hum %	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
09:00	18.9	18.1	95	32	6	19.3	97.70			Rain Showers
10:00	19.9	18.6	92	32	8	24.1	97.75			Cloudy
11:00	19.3	18.4	94	34	7	8.1	97.79			Rain Showers,Fog
12:00	17.8	16.9	95	35	14	4.0	97.87			Moderate Rain Showers,Fog
13:00	17.9	17.0	95	5	16	8.1	97.90			Rain Showers,Fog
14:00	18.5	17.3	93	36	9	16.1	97.97			Rain Showers
15:00	19.1	17.3	89	36	9	24.1	98.06			NA
16:00	20.2	17.0	82	2	11	24.1	98.13	25		Mostly Cloudy
17:00	21.1	16.8	76	36	14	24.1	98.15	26		NA
18:00	20.2	16.8	80	1	7	24.1	98.23	25		NA
19:00	20.1	16.4	79	36	12	24.1	98.25	25		Mainly Clear
20:00	17.8	15.4	86	35	10	24.1	98.29			NA
21:00	17.8	15.7	88	32	9	24.1	98.39			NA
22:00	16.4	15.2	93	30	11	24.1	98.44			Clear
23:00	15.5	14.6	94	33	8	24.1	98.50			NA

Legend

- E = Estimated
- M = Missing
- NA = Not Available

Date modified:
2018-07-20

Hourly Data Report for June 25, 2018

All times are specified in Local Standard Time (LST). Add 1 hour to adjust for Daylight Saving Time where and when it is observed.

LONDON A
ONTARIO
Current Station Operator: NAVCAN

Latitude:	43°01'59.000" N
Longitude:	81°09'04.000" W
Elevation:	278.00 m
Climate ID:	6144473
WMO ID:	71623
TC ID:	YXU

	Temp °C	Dew Point Temp °C	Rel Hum %	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
TIME										
00:00	14.6	13.9	96	36	8	24.1	98.54			NA
01:00	13.9	13.3	96	35	8	24.1	98.57			Clear
02:00	13.1	12.4	96	36	7	24.1	98.58			NA
03:00	12.3	11.6	96	1	9	24.1	98.62			NA
04:00	12.1	11.3	95	2	5	24.1	98.69			Clear
05:00	11.2	10.7	96	36	6	24.1	98.83			NA
06:00	12.8	11.5	92	2	10	24.1	98.86			NA
07:00	15.1	11.8	81	3	9	24.1	98.91			Mainly Clear
08:00	17.1	11.2	68	5	14	24.1	98.98			NA

	Temp °C	Dew Point Temp °C	Rel Hum %	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
09:00	18.6	9.8	56	6	18	24.1	99.01			NA
10:00	19.7	9.9	53	3	14	24.1	99.04			Mostly Cloudy
11:00	20.4	8.9	47	3	12	24.1	99.05			NA
12:00	21.3	8.2	43	1	9	24.1	99.05			NA
13:00	21.4	7.5	40	4	14	24.1	99.06			Cloudy
14:00	21.9	8.4	42	3	5	24.1	99.04			NA
15:00	22.7	9.8	44	1	10	24.1	99.01			NA
16:00	22.6	10.2	45	35	7	24.1	98.98			Mostly Cloudy
17:00	22.4	8.6	41	7	7	24.1	98.95			NA
18:00	22.3	9.2	43	5	4	24.1	98.95			NA
19:00	21.2	9.6	47	6	7	24.1	98.94			Mainly Clear
20:00	17.9	11.5	66	18	14	24.1	98.94			NA
21:00	16.8	11.7	72	19	8	24.1	98.99			NA
22:00	13.1	11.7	91	36	2	24.1	98.99			Mainly Clear
23:00	12.9	11.6	92	8	5	24.1	99.00			NA

Legend

- E = Estimated
- M = Missing

- NA = Not Available

Date modified:

2018-07-20

Hourly Data Report for June 26, 2018

All times are specified in Local Standard Time (LST). Add 1 hour to adjust for Daylight Saving Time where and when it is observed.

LONDON A
ONTARIO
Current Station Operator: NAVCAN

Latitude:	43°01'59.000" N
Longitude:	81°09'04.000" W
Elevation:	278.00 m
Climate ID:	6144473
WMO ID:	71623
TC ID:	YXU

	Temp °C	Dew Point Temp °C	Rel Hum %	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
TIME										
00:00	11.3	10.8	96	4	5	24.1	99.03			NA
01:00	11.1	10.7	97	4	7	24.1	99.04			Clear
02:00	10.9	10.4	96	5	6	24.1	99.07			NA
03:00	11.3	9.1	86	5	11	24.1	99.03			NA
04:00	11.0	8.8	86	8	10	24.1	99.03			Mainly Clear
05:00	10.6	8.6	87	8	6	24.1	99.03			NA
06:00	12.3	9.0	80	7	16	24.1	98.99			NA
07:00	14.7	10.9	78	11	10	24.1	99.02			Mostly Cloudy
08:00	17.0	10.6	66	10	21	24.1	98.96			NA

	Temp °C	Dew Point Temp °C	Rel Hum %	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
09:00	19.1	10.8	58	10	20	24.1	98.89			NA
10:00	20.8	12.0	56	11	18	24.1	98.85			Mostly Cloudy
11:00	22.3	12.9	55	11	22	24.1	98.76	25		NA
12:00	22.5	12.0	51	13	22	24.1	98.74	25		NA
13:00	23.2	12.0	49	16	19	24.1	98.70	25		Mostly Cloudy
14:00	24.3	12.0	46	14	22	24.1	98.61	27		NA
15:00	24.7	11.6	43	14	18	24.1	98.57	27		NA
16:00	25.2	13.2	47	11	19	24.1	98.48	28		Mostly Cloudy
17:00	24.3	12.8	48	11	18	24.1	98.39	27		NA
18:00	23.4	13.6	54	10	17	24.1	98.33	27		NA
19:00	22.4	14.5	60	10	13	24.1	98.25	26		Cloudy
20:00	20.2	13.7	66	9	20	24.1	98.17			NA
21:00	19.4	13.0	66	8	16	24.1	98.20			NA
22:00	18.1	11.6	65	8	14	24.1	98.18			Cloudy
23:00	17.7	11.4	66	8	17	24.1	98.15			NA

Legend

- E = Estimated
- M = Missing
- NA = Not Available

Date modified:

2018-07-20

Hourly Data Report for June 27, 2018

All times are specified in Local Standard Time (LST). Add 1 hour to adjust for Daylight Saving Time where and when it is observed.

LONDON A
ONTARIO
Current Station Operator: NAVCAN

Latitude:	43°01'59.000" N
Longitude:	81°09'04.000" W
Elevation:	278.00 m
Climate ID:	6144473
WMO ID:	71623
TC ID:	YXU

	Temp °C	Dew Point Temp °C	Rel Hum %	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
TIME										
00:00	17.9	12.2	69	9	17	24.1	98.05			NA
01:00	15.9	15.0	95	9	17	4.0	97.99			Thunderstorms,Rain Showers,Fog
02:00	16.5	15.9	96	10	11	6.4	97.97			Rain Showers,Fog
03:00	16.5	15.9	96	11	10	24.1	97.87			NA
04:00	17.0	16.4	96	11	8	24.1	97.87			Mostly Cloudy
05:00	17.2	16.7	97	9	8	16.1	97.83			NA
06:00	18.0	17.6	97	14	11	8.1	97.77			Fog
07:00	18.6	18.0	97	14	9	9.7	97.82			Fog
08:00	19.4	18.5	95	19	17	8.1	97.77			Rain Showers,Fog

	Temp °C	Dew Point Temp °C	Rel Hum %	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
09:00	19.8	18.8	94	18	12	9.7	97.70			Fog
10:00	20.5	19.2	92	17	16	12.9	97.63	27		Cloudy
11:00	20.2	18.8	91	17	19	12.9	97.62	27		NA
12:00	20.1	19.1	94	19	13	9.7	97.61	27		Rain Showers,Fog
13:00	21.4	19.9	91	17	16	12.9	97.53	29		Rain Showers
14:00	22.4	19.7	84	18	14	24.1	97.48	30		NA
15:00	22.4	20.0	86	19	16	24.1	97.41	30		Rain Showers
16:00	21.2	19.3	89	17	14	24.1	97.38	28		Cloudy
17:00	21.0	19.7	92	17	13	19.3	97.35	28		Rain Showers
18:00	21.4	19.7	90	17	11	19.3	97.34	29		Rain Showers
19:00	21.0	19.6	92	13	7	19.3	97.34	28		Mostly Cloudy
20:00	20.7	19.7	94	16	11	16.1	97.35	28		NA
21:00	20.1	19.3	95	14	9	11.3	97.41	27		NA
22:00	19.8	19.0	95	15	5	11.3	97.43			Mostly Cloudy
23:00	19.0	18.6	98	3	4	11.3	97.47			NA

Legend

- E = Estimated
- M = Missing

- NA = Not Available

Date modified:

2018-07-20

Hourly Data Report for June 28, 2018

All times are specified in Local Standard Time (LST). Add 1 hour to adjust for Daylight Saving Time where and when it is observed.

LONDON A
ONTARIO
Current Station Operator: NAVCAN

Latitude:	43°01'59.000" N
Longitude:	81°09'04.000" W
Elevation:	278.00 m
Climate ID:	6144473
WMO ID:	71623
TC ID:	YXU

	Temp °C	Dew Point Temp °C	Rel Hum %	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
TIME										
00:00	18.6	18.3	98	1	6	11.3	97.47			NA
01:00	19.2	18.9	98	34	7	9.7	97.49			Fog
02:00	19.3	18.9	97	28	7	4.8	97.50			Fog
03:00	18.8	18.4	98	29	11	0.4	97.55			Fog
04:00	17.6	17.3	98	30	11	0.4	97.59			Fog
05:00	17.4	17.1	99	30	12	1.0	97.66			Fog
06:00	16.8	16.6	99	30	13	0.8	97.72			Fog
07:00	16.8	16.6	99	30	14	0.8	97.81			Fog
08:00	18.2	17.4	95	32	12	9.7	97.87			Fog

	Temp °C	Dew Point Temp °C	Rel Hum %	Wind Dir 10's deg	Wind Spd km/h	Visibility km	Stn Press kPa	Hmdx	Wind Chill	Weather
09:00	19.6	17.5	88	32	17	9.7	97.93			Haze
10:00	21.1	17.7	81	29	14	16.1	97.96	27		Mainly Clear
11:00	21.8	18.7	83	29	12	19.3	97.97	28		NA
12:00	21.9	18.0	78	27	16	24.1	98.02	28		NA
13:00	23.1	18.4	75	30	15	24.1	98.00	29		Mainly Clear
14:00	24.5	18.6	69	31	10	24.1	97.95	31		NA
15:00	25.5	18.5	65	27	14	24.1	97.96	32		NA
16:00	26.3	18.1	60	28	8	24.1	97.96	32		Clear
17:00	26.4	18.0	59	28	8	24.1	97.96	32		NA
18:00	26.1	17.5	59	27	13	24.1	97.98	32		NA
19:00	25.2	18.3	65	26	9	24.1	98.01	31		Mainly Clear
20:00	23.7	19.6	78	21	17	24.1	98.06	31		NA
21:00	22.2	19.7	85	21	11	24.1	98.11	30		NA
22:00	21.6	19.4	87	20	9	24.1	98.12	29		Mostly Cloudy
23:00	20.6	18.9	90	23	9	24.1	98.16	27		NA

Legend

- E = Estimated
- M = Missing
- NA = Not Available

Date modified:

2018-07-20

APPENDIX C

TRAFFIC DATA

Ontario Traffic, Inc.
17705 Leslie St., Unit 6
Newmarket, Ontario L3Y 3E3
Tel: (905) 898-7711 Fax: (905) 898-3664

Site Code: 1
Station ID: M2/M3
Highbury Ave S between Thames River & Bradley Ave
Date Start: 18-Jun-18
Date End: 25-Jun-18
Date Start: 18-Jun-18

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/18/18	0	135	26	1	0	1	0	0	3	0	0	0	0	166
01:00	0	99	17	2	0	3	0	1	0	0	0	0	0	122
02:00	2	54	14	0	1	1	0	2	6	0	0	0	0	80
03:00	1	49	10	2	1	3	0	1	2	1	0	0	0	70
04:00	0	49	20	6	0	0	1	0	4	2	0	0	1	83
05:00	1	182	58	5	3	5	0	1	9	0	1	0	3	268
06:00	3	427	171	10	0	18	4	13	9	7	2	0	3	667
07:00	3	822	**219**	13	4	24	**33**	25	13	5	6	**1**	8	1176
08:00	4	**846**	203	**23**	7	**34**	29	**31**	8	**9**	**13**	0	**12**	**1219**
09:00	4	580	210	18	**8**	21	12	25	6	4	5	0	6	899
10:00	**8**	526	204	14	8	15	12	31	10	6	0	0	9	843
11:00	6	621	206	16	6	15	12	12	**21**	5	1	0	6	927
12 PM	6	634	217	11	6	21	18	19	**10**	2	3	2	8	957
13:00	8	732	203	8	**10**	23	18	18	9	2	2	1	7	1041
14:00	15	719	259	10	10	23	11	30	6	4	1	0	6	1094
15:00	**17**	934	**269**	**12**	8	31	**27**	**33**	3	**7**	3	0	**10**	1354
16:00	15	**1029**	213	8	4	**40**	27	24	7	1	4	2	10	**1384**
17:00	7	884	225	12	3	29	19	23	6	6	**8**	2	8	1232
18:00	7	769	198	6	4	19	19	24	7	5	2	1	4	1065
19:00	4	625	152	12	1	23	9	9	2	3	4	0	3	847
20:00	5	585	136	4	1	17	13	12	4	2	3	**4**	3	789
21:00	6	502	96	3	2	10	4	9	1	1	1	1	0	636
22:00	6	453	86	3	1	13	7	6	0	1	0	1	0	577
23:00	4	318	69	5	0	8	2	12	0	1	0	2	6	427
Day Total	132	12574	3481	204	88	397	277	361	146	74	59	17	113	17923
Percent	0.7%	70.2%	19.4%	1.1%	0.5%	2.2%	1.5%	2.0%	0.8%	0.4%	0.3%	0.1%	0.6%	
AM Peak	10:00	08:00	07:00	08:00	09:00	08:00	07:00	08:00	11:00	08:00	08:00	07:00	08:00	08:00
Vol.	8	846	219	23	8	34	33	31	21	9	13	1	12	1219
PM Peak	15:00	16:00	15:00	15:00	13:00	16:00	15:00	15:00	12:00	15:00	17:00	20:00	15:00	16:00
Vol.	17	1029	269	12	10	40	27	33	10	7	8	4	10	1384

Ontario Traffic, Inc.
17705 Leslie St., Unit 6
Newmarket, Ontario L3Y 3E3
Tel: (905) 898-7711 Fax: (905) 898-3664

Site Code: 1
Station ID: M2/M3
Highbury Ave S between Thames River & Bradley Ave
Date Start: 18-Jun-18
Date End: 25-Jun-18
Date Start: 18-Jun-18

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/19/18	1	119	21	2	0	1	0	1	0	0	0	0	0	145
01:00	0	99	16	1	0	2	0	1	1	0	0	0	0	120
02:00	1	54	10	0	1	0	0	1	1	0	0	0	0	68
03:00	0	47	16	3	0	0	0	1	3	0	0	0	0	70
04:00	0	43	15	4	1	0	1	1	2	1	0	0	1	69
05:00	1	161	62	6	2	7	3	5	6	1	1	0	4	259
06:00	2	462	170	8	0	13	7	10	9	6	1	0	1	689
07:00	3	826	218	6	5	23	25	26	**12**	6	4	**2**	6	1162
08:00	7	**900**	194	12	**7**	**35**	**31**	**28**	8	8	**10**	0	**10**	**1250**
09:00	5	564	186	**19**	6	17	18	26	6	4	4	0	7	862
10:00	5	551	175	12	5	20	14	16	8	4	1	0	8	819
11:00	**10**	600	**225**	13	5	11	12	24	10	**11**	0	1	5	927
12 PM	7	582	204	16	5	18	14	18	**12**	6	**3**	1	2	888
13:00	6	658	213	16	**10**	17	14	**41**	8	7	3	0	4	997
14:00	10	711	236	**20**	8	15	16	36	5	**10**	3	0	**9**	1079
15:00	7	946	**306**	14	3	30	**41**	33	7	7	3	1	7	**1405**
16:00	12	**985**	267	8	6	32	38	30	5	4	3	1	9	1400
17:00	**14**	844	229	10	3	**33**	26	28	3	4	2	**3**	6	1205
18:00	10	737	192	9	1	15	12	23	5	9	2	1	2	1018
19:00	7	623	143	6	2	19	10	10	7	5	0	1	3	836
20:00	7	576	134	1	2	18	14	14	6	2	1	2	3	780
21:00	6	460	86	2	0	11	6	11	0	0	1	1	0	584
22:00	4	473	77	0	0	12	9	7	0	0	0	1	0	583
23:00	8	316	67	3	0	8	1	7	0	1	0	1	3	415
Day Total	133	12337	3462	191	72	357	312	398	124	96	42	16	90	17630
Percent	0.8%	70.0%	19.6%	1.1%	0.4%	2.0%	1.8%	2.3%	0.7%	0.5%	0.2%	0.1%	0.5%	
AM Peak	11:00	08:00	11:00	09:00	08:00	08:00	08:00	08:00	07:00	11:00	08:00	07:00	08:00	08:00
Vol.	10	900	225	19	7	35	31	28	12	11	10	2	10	1250
PM Peak	17:00	16:00	15:00	14:00	13:00	17:00	15:00	13:00	12:00	14:00	12:00	17:00	14:00	15:00
Vol.	14	985	306	20	10	33	41	41	12	10	3	3	9	1405

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Highbury Ave S between Thames River & Bradley Ave
Date Start: 18-Jun-18
Date End: 25-Jun-18
Date Start: 18-Jun-18

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/20/18	1	117	27	1	0	0	0	1	1	0	0	0	0	148
01:00	0	89	15	2	0	2	0	0	0	0	0	0	0	108
02:00	0	67	14	0	1	2	0	0	3	0	0	0	0	87
03:00	0	48	12	3	0	0	0	0	3	0	0	0	0	66
04:00	0	49	15	4	2	0	2	1	1	1	0	0	0	75
05:00	0	168	53	4	3	6	1	0	2	0	0	**1**	3	241
06:00	3	410	177	12	1	20	5	17	7	7	2	1	2	664
07:00	2	779	**224**	20	4	22	37	22	**17**	3	7	1	11	1149
08:00	3	**927**	221	**24**	4	**26**	**38**	**28**	6	**9**	**8**	0	**13**	**1307**
09:00	**7**	575	216	14	**11**	18	9	28	5	3	6	0	6	898
10:00	7	576	203	15	5	18	14	21	6	9	1	1	11	887
11:00	7	618	201	17	6	18	13	11	10	6	2	0	7	916
12 PM	4	600	241	16	8	18	19	26	**12**	6	4	1	3	958
13:00	8	734	212	**18**	6	22	11	40	5	**8**	5	0	6	1075
14:00	**16**	726	275	13	**9**	14	15	**47**	3	4	2	0	6	1130
15:00	10	861	**284**	15	4	20	26	36	2	6	2	0	5	1271
16:00	12	**1035**	252	11	4	**31**	**31**	27	3	7	2	1	**9**	**1425**
17:00	9	929	248	12	4	25	28	28	4	6	**7**	0	7	1307
18:00	7	881	226	10	2	24	12	34	6	0	2	0	4	1208
19:00	5	604	153	9	1	18	13	12	2	8	2	0	4	831
20:00	6	537	114	6	1	23	11	9	3	4	2	1	4	721
21:00	5	471	86	3	1	12	4	7	0	1	0	1	2	593
22:00	3	443	82	3	1	16	8	8	0	1	0	1	0	566
23:00	4	352	63	2	0	6	4	8	0	0	0	**2**	1	442
Day Total	119	12596	3614	234	78	361	301	411	101	89	54	11	104	18073
Percent	0.7%	69.7%	20.0%	1.3%	0.4%	2.0%	1.7%	2.3%	0.6%	0.5%	0.3%	0.1%	0.6%	
AM Peak	09:00	08:00	07:00	08:00	09:00	08:00	08:00	08:00	07:00	08:00	08:00	05:00	08:00	08:00
Vol.	7	927	224	24	11	26	38	28	17	9	8	1	13	1307
PM Peak	14:00	16:00	15:00	13:00	14:00	16:00	16:00	14:00	12:00	13:00	17:00	23:00	16:00	16:00
Vol.	16	1035	284	18	9	31	31	47	12	8	7	2	9	1425

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Highbury Ave S between Thames River & Bradley Ave
Date Start: 18-Jun-18
Date End: 25-Jun-18
Date Start: 18-Jun-18

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/21/18	0	125	25	1	0	1	0	0	1	0	0	0	0	153
01:00	0	79	13	0	0	2	0	0	0	0	0	0	0	94
02:00	1	49	16	1	0	1	0	1	1	0	0	0	0	70
03:00	0	58	10	1	1	2	0	0	0	1	0	0	0	73
04:00	0	45	18	4	1	0	0	1	3	1	0	0	1	74
05:00	1	175	57	13	6	3	0	2	12	0	3	0	0	272
06:00	6	440	180	14	0	19	1	8	11	7	1	0	3	690
07:00	2	834	**264**	13	6	24	22	**35**	15	**11**	5	**2**	1	**1234**
08:00	3	**835**	224	18	7	**31**	**23**	31	7	11	**11**	0	10	1211
09:00	4	616	197	**24**	5	22	23	28	7	5	8	1	**15**	955
10:00	**8**	549	197	11	**8**	15	13	30	8	6	0	0	5	850
11:00	4	601	194	11	8	14	10	14	**21**	2	1	0	7	887
12 PM	7	633	237	**18**	**8**	19	18	25	**10**	6	**6**	**2**	3	992
13:00	5	690	224	15	7	17	15	27	10	3	1	0	6	1020
14:00	12	733	229	11	8	20	15	**47**	4	6	5	2	5	1097
15:00	8	894	**281**	14	7	26	25	42	4	5	3	0	**11**	1320
16:00	**14**	**1021**	252	10	5	**34**	**41**	28	3	2	4	1	3	**1418**
17:00	8	918	235	11	2	29	30	27	4	3	6	2	4	1279
18:00	5	715	187	10	1	24	11	28	6	1	2	2	4	996
19:00	7	577	146	7	3	18	12	11	2	**7**	2	1	2	795
20:00	5	577	136	5	2	16	15	8	4	2	3	0	3	776
21:00	6	527	98	3	1	11	7	9	1	0	1	1	0	665
22:00	2	452	79	1	0	13	11	10	0	0	0	0	0	568
23:00	4	351	66	1	1	10	7	8	0	0	0	1	1	450
Day Total	112	12494	3565	217	87	371	299	420	134	79	62	15	84	17939
Percent	0.6%	69.6%	19.9%	1.2%	0.5%	2.1%	1.7%	2.3%	0.7%	0.4%	0.3%	0.1%	0.5%	
AM Peak	10:00	08:00	07:00	09:00	10:00	08:00	08:00	07:00	11:00	07:00	08:00	07:00	09:00	07:00
Vol.	8	835	264	24	8	31	23	35	21	11	11	2	15	1234
PM Peak	16:00	16:00	15:00	12:00	12:00	16:00	16:00	14:00	12:00	19:00	12:00	12:00	15:00	16:00
Vol.	14	1021	281	18	8	34	41	47	10	7	6	2	11	1418

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Highbury Ave S between Thames River & Bradley Ave
Date Start: 18-Jun-18
Date End: 25-Jun-18
Date Start: 18-Jun-18

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/22/18	0	115	25	0	0	0	0	0	2	0	0	0	0	142
01:00	1	92	16	1	0	1	0	1	0	0	0	0	0	112
02:00	0	62	18	0	1	1	0	1	2	0	0	0	0	85
03:00	0	49	14	0	0	1	0	1	1	0	0	0	0	66
04:00	0	54	22	1	0	0	1	0	2	0	0	0	1	81
05:00	2	161	57	9	1	7	0	3	7	2	1	0	0	250
06:00	**6**	427	161	16	1	25	12	12	7	2	3	**1**	4	677
07:00	2	793	216	13	3	26	27	24	11	**9**	9	1	8	1142
08:00	3	**857**	217	21	7	**30**	**28**	**31**	10	7	**11**	1	**11**	**1234**
09:00	3	623	**218**	**22**	**8**	23	19	26	6	5	6	0	10	969
10:00	6	541	196	12	8	20	15	24	**13**	3	0	0	7	845
11:00	4	605	201	17	6	16	14	27	10	4	7	0	6	917
12 PM	4	707	221	18	5	27	20	29	**10**	**12**	2	2	**13**	1070
13:00	5	665	225	**23**	4	17	14	35	9	4	**5**	0	8	1014
14:00	11	768	244	12	**9**	26	15	31	6	7	4	0	9	1142
15:00	10	916	**267**	12	2	23	26	**40**	3	4	3	0	6	1312
16:00	**15**	**1013**	237	9	5	**36**	**33**	24	4	3	3	1	10	**1393**
17:00	5	869	238	11	3	28	30	31	4	5	5	1	6	1236
18:00	3	727	186	9	1	18	10	31	6	4	1	0	3	999
19:00	7	647	149	7	2	23	11	13	3	5	2	1	5	875
20:00	5	581	134	1	2	13	14	11	6	4	1	**4**	6	782
21:00	6	526	94	3	0	12	6	10	0	0	1	1	0	659
22:00	5	465	84	2	1	14	7	8	0	1	0	2	0	589
23:00	6	367	78	4	0	8	4	9	0	1	0	1	4	482
Day Total	109	12630	3518	223	69	395	306	422	122	82	64	16	117	18073
Percent	0.6%	69.9%	19.5%	1.2%	0.4%	2.2%	1.7%	2.3%	0.7%	0.5%	0.4%	0.1%	0.6%	
AM Peak	06:00	08:00	09:00	09:00	09:00	08:00	08:00	08:00	10:00	07:00	08:00	06:00	08:00	08:00
Vol.	6	857	218	22	8	30	28	31	13	9	11	1	11	1234
PM Peak	16:00	16:00	15:00	13:00	14:00	16:00	16:00	15:00	12:00	12:00	13:00	20:00	12:00	16:00
Vol.	15	1013	267	23	9	36	33	40	10	12	5	4	13	1393

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Highbury Ave S between Thames River & Bradley Ave
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06/23/18	2	217	28	**11**	0	3	0	2	2	1	0	2	0	268
01:00	2	119	26	4	1	0	0	2	2	0	0	2	0	158
02:00	1	124	17	2	0	1	0	0	2	0	0	2	0	149
03:00	0	78	9	2	0	0	0	1	3	0	0	1	0	94
04:00	0	43	12	2	0	0	0	1	3	0	0	2	0	63
05:00	0	117	21	1	0	5	1	0	3	0	0	**4**	1	153
06:00	2	200	56	2	2	2	1	2	4	**2**	0	3	**4**	280
07:00	1	343	109	4	0	6	5	4	**6**	1	**1**	0	2	482
08:00	3	477	117	6	1	7	4	11	5	0	1	0	0	632
09:00	1	512	128	4	2	9	12	12	0	0	1	1	4	686
10:00	**5**	603	**187**	4	**3**	16	19	**24**	0	0	1	0	3	865
11:00	4	**717**	179	2	3	**20**	**25**	19	2	2	0	1	2	**976**
12 PM	4	770	173	5	2	21	17	23	2	**4**	**3**	1	3	1028
13:00	**8**	**818**	184	4	1	19	26	**31**	**4**	3	2	0	**4**	**1104**
14:00	7	692	**199**	4	0	15	**31**	23	1	1	2	**2**	1	978
15:00	4	759	170	3	1	**23**	24	28	3	0	2	0	2	1019
16:00	4	752	162	2	**3**	15	13	12	2	1	1	1	4	972
17:00	6	693	171	5	2	21	18	20	0	4	2	0	3	945
18:00	3	646	139	4	1	15	14	8	1	1	2	0	1	835
19:00	3	610	120	3	0	10	7	10	1	2	0	0	0	766
20:00	2	480	108	3	1	4	8	6	2	2	1	0	0	617
21:00	6	476	81	**7**	0	6	8	8	0	0	1	0	0	593
22:00	3	383	71	3	0	2	5	2	1	0	0	0	1	471
23:00	2	316	54	2	0	7	3	1	1	0	0	0	1	387
Day Total	73	10945	2521	89	23	227	241	250	50	24	20	22	36	14521
Percent	0.5%	75.4%	17.4%	0.6%	0.2%	1.6%	1.7%	1.7%	0.3%	0.2%	0.1%	0.2%	0.2%	
AM Peak	10:00	11:00	10:00	00:00	10:00	11:00	11:00	10:00	07:00	06:00	07:00	05:00	06:00	11:00
Vol.	5	717	187	11	3	20	25	24	6	2	1	4	4	976
PM Peak	13:00	13:00	14:00	21:00	16:00	15:00	14:00	13:00	13:00	12:00	12:00	14:00	13:00	13:00
Vol.	8	818	199	7	3	23	31	31	4	4	3	2	4	1104

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06/24/18	2	228	30	**13**	**1**	2	1	4	0	0	0	0	0	281
01:00	0	175	36	0	0	3	0	3	0	0	0	0	0	217
02:00	0	101	11	1	0	2	0	0	0	0	0	0	0	115
03:00	0	57	7	1	0	0	0	1	0	0	0	0	0	66
04:00	0	49	11	0	1	0	0	0	0	0	0	**1**	0	62
05:00	0	81	14	1	0	5	0	0	1	0	0	0	0	102
06:00	0	112	17	0	0	0	0	0	**3**	1	0	0	0	133
07:00	3	204	60	2	1	4	3	2	0	0	**1**	0	0	280
08:00	2	277	77	2	0	1	0	3	0	1	1	0	2	366
09:00	2	426	105	1	0	5	**12**	7	3	**2**	1	0	3	567
10:00	**5**	580	135	5	0	**13**	10	**14**	0	0	1	0	**4**	767
11:00	4	**608**	**153**	3	0	8	12	10	2	2	0	0	0	**802**
12 PM	8	661	158	3	0	12	18	23	0	0	3	0	0	886
13:00	**11**	672	**178**	2	0	19	20	**24**	0	1	3	0	2	**932**
14:00	6	**690**	153	1	**2**	**22**	**24**	10	1	**3**	1	**1**	1	915
15:00	10	682	166	3	2	17	16	19	0	1	4	0	2	922
16:00	5	622	134	3	1	14	16	20	1	1	2	0	1	820
17:00	10	687	124	1	0	15	14	18	0	3	0	0	1	873
18:00	4	634	142	2	0	16	14	13	**2**	3	1	0	**4**	835
19:00	5	628	141	2	0	11	16	12	0	1	**5**	1	1	823
20:00	9	643	126	2	0	15	15	13	1	1	1	0	0	826
21:00	9	545	88	3	0	11	10	12	1	0	2	1	0	682
22:00	4	448	88	2	0	4	7	7	0	1	2	0	0	563
23:00	2	264	43	**13**	0	5	2	1	1	1	0	0	1	333
Day Total	101	10074	2197	66	8	204	210	216	16	22	28	4	22	13168
Percent	0.8%	76.5%	16.7%	0.5%	0.1%	1.5%	1.6%	1.6%	0.1%	0.2%	0.2%	0.0%	0.2%	
AM Peak	10:00	11:00	11:00	00:00	00:00	10:00	09:00	10:00	06:00	09:00	07:00	04:00	10:00	11:00
Vol.	5	608	153	13	1	13	12	14	3	2	1	1	4	802
PM Peak	13:00	14:00	13:00	23:00	14:00	14:00	14:00	13:00	18:00	14:00	19:00	14:00	18:00	13:00
Vol.	11	690	178	13	2	22	24	24	2	3	5	1	4	932

Ontario Traffic, Inc.
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Site Code: 1
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Highbury Ave S between Thames River & Bradley Ave
Date Start: 18-Jun-18
Date End: 25-Jun-18
Date Start: 18-Jun-18

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/25/18	1	123	27	2	0	2	0	1	0	0	0	0	0	156
01:00	1	84	22	1	0	1	0	1	1	0	0	0	0	111
02:00	1	57	10	2	2	1	0	2	0	1	0	0	0	76
03:00	1	37	13	2	1	0	0	0	1	0	0	0	0	55
04:00	0	50	18	1	1	1	2	0	2	0	0	0	1	76
05:00	2	190	70	7	1	11	0	4	5	1	1	0	1	293
06:00	1	479	130	5	2	14	14	13	8	3	3	0	4	676
07:00	4	**835**	196	14	11	28	**28**	28	10	**5**	**12**	**1**	**9**	1181
08:00	6	827	**267**	**20**	**16**	**31**	14	**35**	10	4	10	0	8	**1248**
09:00	4	655	225	16	9	19	13	28	11	2	1	0	3	986
10:00	**8**	567	206	10	6	12	9	17	**19**	5	0	0	4	863
11:00	8	591	191	12	4	21	15	8	10	3	0	1	3	867
12 PM	4	643	198	9	5	19	20	20	**8**	2	1	1	**10**	940
13:00	**13**	691	231	**16**	**10**	15	11	33	8	7	1	0	6	1042
14:00	9	729	238	8	4	16	20	33	2	2	4	0	5	1070
15:00	10	960	231	12	3	28	26	26	5	5	1	0	10	1317
16:00	7	**997**	**255**	12	2	29	**32**	**39**	4	**8**	2	**2**	6	**1395**
17:00	3	927	248	10	3	**31**	21	36	8	3	**5**	1	8	1304
18:00	6	785	182	7	2	20	10	20	2	3	0	1	7	1045
19:00	8	604	144	6	1	29	12	12	5	4	5	0	3	833
20:00	7	595	121	3	0	13	6	7	1	0	2	1	0	756
21:00	1	521	95	1	0	13	6	4	0	0	0	1	0	642
22:00	7	453	79	4	0	9	7	4	0	0	0	1	0	564
23:00	1	383	60	3	0	2	0	3	1	0	0	0	0	453
Day Total	113	12783	3457	183	83	365	266	374	121	58	48	10	88	17949
Percent	0.6%	71.2%	19.3%	1.0%	0.5%	2.0%	1.5%	2.1%	0.7%	0.3%	0.3%	0.1%	0.5%	
AM Peak	10:00	07:00	08:00	08:00	08:00	08:00	07:00	08:00	10:00	07:00	07:00	07:00	07:00	08:00
Vol.	8	835	267	20	16	31	28	35	19	5	12	1	9	1248
PM Peak	13:00	16:00	16:00	13:00	13:00	17:00	16:00	16:00	12:00	16:00	17:00	16:00	12:00	16:00
Vol.	13	997	255	16	10	31	32	39	8	8	5	2	10	1395
Grand Total	892	96433	25815	1407	508	2677	2212	2852	814	524	377	111	654	135276
Percent	0.7%	71.3%	19.1%	1.0%	0.4%	2.0%	1.6%	2.1%	0.6%	0.4%	0.3%	0.1%	0.5%	

Ontario Traffic, Inc.
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Highbury Ave S between Thames River & Bradley Ave
Date Start: 18-Jun-18
Date End: 25-Jun-18
Date Start: 18-Jun-18

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/18/18	0	79	36	0	0	3	0	0	4	0	0	0	1	123
01:00	2	46	14	4	0	1	0	0	3	0	0	0	2	72
02:00	0	55	17	0	1	0	0	1	4	1	0	1	0	80
03:00	1	54	19	2	0	1	0	1	9	0	0	0	0	87
04:00	0	77	44	4	2	1	0	0	3	0	0	0	1	132
05:00	3	307	138	15	4	1	6	8	6	0	1	1	5	495
06:00	5	624	241	**22**	2	15	15	34	6	4	3	0	2	973
07:00	10	**713**	179	17	7	41	**32**	**37**	2	5	6	2	**13**	**1064**
08:00	**16**	654	181	15	10	**44**	15	25	0	1	**9**	**3**	12	985
09:00	5	540	225	17	**14**	21	10	28	9	8	5	2	7	891
10:00	4	493	222	19	2	27	11	32	**14**	5	5	2	8	844
11:00	3	508	**250**	18	13	22	15	23	7	**10**	3	1	10	883
12 PM	6	604	249	11	5	20	20	20	**13**	1	1	0	10	960
13:00	9	670	232	14	**13**	21	16	23	6	7	3	0	**12**	1026
14:00	2	702	254	**25**	7	18	19	37	9	**9**	**6**	2	7	1097
15:00	5	855	**317**	11	4	22	20	33	6	6	4	2	7	**1292**
16:00	5	**946**	216	14	7	30	20	30	2	5	5	0	5	1285
17:00	8	889	226	9	5	**33**	**21**	**39**	2	4	6	**4**	4	1250
18:00	6	811	237	6	3	20	16	21	1	8	3	2	1	1135
19:00	**12**	620	160	6	4	12	6	17	1	3	1	1	2	845
20:00	9	519	173	5	1	8	14	16	6	1	0	3	4	759
21:00	3	458	142	5	1	10	12	13	3	2	1	1	1	652
22:00	0	376	120	3	2	1	3	10	0	0	0	2	2	519
23:00	1	286	86	2	0	6	4	7	5	1	0	0	0	398
Day Total	115	11886	3978	244	107	378	275	455	121	81	62	29	116	17847
Percent	0.6%	66.6%	22.3%	1.4%	0.6%	2.1%	1.5%	2.5%	0.7%	0.5%	0.3%	0.2%	0.6%	
AM Peak	08:00	07:00	11:00	06:00	09:00	08:00	07:00	07:00	10:00	11:00	08:00	08:00	07:00	07:00
Vol.	16	713	250	22	14	44	32	37	14	10	9	3	13	1064
PM Peak	19:00	16:00	15:00	14:00	13:00	17:00	17:00	17:00	12:00	14:00	14:00	17:00	13:00	15:00
Vol.	12	946	317	25	13	33	21	39	13	9	6	4	12	1292

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Highbury Ave S between Thames River & Bradley Ave
Date Start: 18-Jun-18
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SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/19/18	0	64	28	0	0	1	0	0	1	0	1	0	1	96
01:00	0	53	17	2	0	0	0	0	1	0	0	1	1	75
02:00	0	53	14	0	2	1	0	2	1	0	0	0	0	73
03:00	1	63	22	2	0	0	0	1	1	1	0	1	0	92
04:00	1	70	35	3	2	0	0	0	2	0	0	1	1	115
05:00	0	280	155	8	5	3	4	4	4	0	1	1	4	469
06:00	4	680	252	**23**	2	24	16	27	6	5	4	0	1	1044
07:00	**14**	**731**	217	13	6	33	**39**	**30**	2	5	**12**	**4**	9	**1115**
08:00	8	682	143	21	9	**42**	23	27	3	4	5	1	8	976
09:00	6	567	223	18	8	21	14	28	9	5	7	4	**12**	922
10:00	7	440	225	20	**11**	23	15	25	**10**	5	3	0	9	793
11:00	4	482	**254**	13	8	20	14	21	5	**9**	4	1	8	843
12 PM	10	597	204	10	**12**	17	13	19	**17**	6	1	1	**10**	917
13:00	6	655	225	14	12	18	13	31	12	**9**	4	0	8	1007
14:00	2	703	264	14	5	**25**	21	**40**	9	5	5	1	8	1102
15:00	6	856	**317**	12	5	22	20	32	6	4	**7**	2	7	**1296**
16:00	8	**928**	231	**15**	4	18	**29**	31	0	6	4	1	5	1280
17:00	7	916	208	12	5	22	23	28	2	2	5	0	5	1235
18:00	**11**	793	202	3	5	21	26	22	5	1	2	1	8	1100
19:00	10	615	168	4	3	9	8	14	1	2	0	0	1	835
20:00	4	506	152	2	2	8	17	16	0	4	1	2	3	717
21:00	0	435	161	2	0	6	9	15	3	0	0	1	3	635
22:00	4	356	137	2	0	6	5	4	0	0	0	**3**	2	519
23:00	0	323	77	3	2	3	0	2	0	0	0	0	0	410
Day Total	113	11848	3931	216	108	343	309	419	100	73	66	26	114	17666
Percent	0.6%	67.1%	22.3%	1.2%	0.6%	1.9%	1.7%	2.4%	0.6%	0.4%	0.4%	0.1%	0.6%	
AM Peak	07:00	07:00	11:00	06:00	10:00	08:00	07:00	07:00	10:00	11:00	07:00	07:00	09:00	07:00
Vol.	14	731	254	23	11	42	39	30	10	9	12	4	12	1115
PM Peak	18:00	16:00	15:00	16:00	12:00	14:00	16:00	14:00	12:00	13:00	15:00	22:00	12:00	15:00
Vol.	11	928	317	15	12	25	29	40	17	9	7	3	10	1296

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Highbury Ave S between Thames River & Bradley Ave
Date Start: 18-Jun-18
Date End: 25-Jun-18
Date Start: 18-Jun-18

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/20/18	1	69	29	1	0	0	0	0	1	0	0	0	1	102
01:00	1	42	14	3	0	2	0	1	1	1	0	0	0	65
02:00	1	56	11	2	0	1	0	0	2	0	0	0	0	73
03:00	2	61	17	2	0	1	0	1	0	2	0	1	0	87
04:00	1	75	39	4	3	1	1	1	4	0	0	0	1	130
05:00	2	303	146	13	5	8	3	7	1	3	0	0	1	492
06:00	8	634	235	**24**	4	13	**25**	28	4	5	3	2	7	992
07:00	**17**	**753**	165	13	**10**	**41**	21	26	5	2	5	1	4	**1063**
08:00	11	650	193	17	5	29	13	31	2	1	7	**3**	8	970
09:00	8	519	222	19	7	20	12	**32**	6	3	**8**	3	**13**	872
10:00	3	455	214	19	4	21	11	31	**14**	7	4	1	6	790
11:00	6	484	**258**	13	8	18	12	31	6	**16**	5	2	5	864
12 PM	9	592	244	14	7	22	16	22	**13**	2	2	0	8	951
13:00	8	652	224	17	**14**	15	12	30	10	**12**	5	**5**	4	1008
14:00	1	688	251	**28**	10	19	16	**41**	10	12	**7**	2	3	1088
15:00	4	851	**317**	16	5	**23**	21	28	9	6	7	3	**9**	**1299**
16:00	**10**	845	254	17	6	17	**25**	23	7	4	7	5	8	1228
17:00	5	**896**	219	10	5	19	21	26	1	5	6	4	3	1220
18:00	5	813	222	4	4	13	20	17	1	5	5	1	6	1116
19:00	3	584	145	7	2	17	23	18	0	2	3	2	9	815
20:00	5	500	171	5	3	10	12	21	2	2	0	2	5	738
21:00	8	417	145	6	0	6	9	11	7	0	0	0	2	611
22:00	6	395	117	1	0	4	5	7	3	0	0	0	0	538
23:00	1	272	77	6	1	4	1	4	4	0	0	0	0	370
Day Total	126	11606	3929	261	103	324	279	437	113	90	74	37	103	17482
Percent	0.7%	66.4%	22.5%	1.5%	0.6%	1.9%	1.6%	2.5%	0.6%	0.5%	0.4%	0.2%	0.6%	
AM Peak	07:00	07:00	11:00	06:00	07:00	07:00	06:00	09:00	10:00	11:00	09:00	08:00	09:00	07:00
Vol.	17	753	258	24	10	41	25	32	14	16	8	3	13	1063
PM Peak	16:00	17:00	15:00	14:00	13:00	15:00	16:00	14:00	12:00	13:00	14:00	13:00	15:00	15:00
Vol.	10	896	317	28	14	23	25	41	13	12	7	5	9	1299

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Highbury Ave S between Thames River & Bradley Ave
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06/21/18	0	69	31	2	0	5	0	0	0	6	0	0	0	113
01:00	0	54	17	1	0	1	0	0	1	0	0	0	1	75
02:00	0	57	15	0	1	0	0	1	1	1	0	1	0	77
03:00	1	60	11	2	0	1	0	1	3	0	0	0	0	79
04:00	2	85	36	6	1	1	0	0	2	0	0	0	1	134
05:00	4	326	127	19	3	3	8	11	3	1	1	1	5	512
06:00	6	579	237	20	6	22	11	**34**	7	4	4	2	7	939
07:00	16	**789**	136	14	**12**	**50**	**28**	30	5	3	6	2	**10**	**1101**
08:00	**17**	684	175	12	8	37	21	19	3	4	**7**	2	4	993
09:00	6	582	215	**21**	7	20	13	29	**8**	**7**	7	**6**	5	926
10:00	6	480	221	13	2	28	12	27	8	6	4	2	9	818
11:00	6	504	**246**	12	5	22	16	19	6	6	4	1	8	855
12 PM	7	601	209	11	11	16	15	21	**12**	4	2	**2**	7	918
13:00	10	664	231	8	**12**	23	15	29	11	**8**	3	1	9	1024
14:00	3	672	240	**22**	11	18	15	**44**	7	8	6	2	10	1058
15:00	4	862	**301**	10	4	**28**	19	21	10	5	**7**	2	**14**	**1287**
16:00	**14**	868	222	14	7	18	**23**	22	4	4	3	0	7	1206
17:00	10	**932**	203	10	4	21	20	31	1	1	7	0	4	1244
18:00	8	823	235	7	3	24	22	18	2	3	2	1	2	1150
19:00	8	640	144	1	3	12	5	15	1	5	0	0	4	838
20:00	4	462	148	4	3	7	11	17	3	2	0	2	1	664
21:00	7	454	143	1	0	5	11	12	2	2	0	0	2	639
22:00	6	402	132	1	1	4	4	7	1	0	1	1	5	565
23:00	2	273	81	4	1	5	3	7	1	1	0	0	0	378
Day Total	147	11922	3756	215	105	371	272	415	102	81	64	28	115	17593
Percent	0.8%	67.8%	21.3%	1.2%	0.6%	2.1%	1.5%	2.4%	0.6%	0.5%	0.4%	0.2%	0.7%	
AM Peak	08:00	07:00	11:00	09:00	07:00	07:00	07:00	06:00	09:00	09:00	08:00	09:00	07:00	07:00
Vol.	17	789	246	21	12	50	28	34	8	7	7	6	10	1101
PM Peak	16:00	17:00	15:00	14:00	13:00	15:00	16:00	14:00	12:00	13:00	15:00	12:00	15:00	15:00
Vol.	14	932	301	22	12	28	23	44	12	8	7	2	14	1287

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06/22/18	1	63	31	1	0	4	0	0	1	0	0	0	3	104
01:00	0	44	17	2	0	0	0	0	1	0	0	0	0	64
02:00	0	64	13	0	1	1	0	1	1	0	0	0	0	81
03:00	1	63	14	1	0	1	1	1	1	0	0	0	0	83
04:00	0	74	41	1	4	1	1	0	1	0	0	0	0	123
05:00	6	281	156	10	6	5	7	4	3	1	0	0	2	481
06:00	7	613	**250**	18	4	10	16	**37**	6	2	5	2	6	976
07:00	14	**751**	168	20	6	**50**	**31**	34	3	3	8	1	12	**1101**
08:00	**15**	654	209	17	**12**	40	17	22	1	2	**9**	4	13	1015
09:00	9	556	211	**23**	7	19	16	27	4	5	8	**8**	11	904
10:00	6	457	243	19	11	22	14	25	**10**	5	6	0	**14**	832
11:00	4	493	206	10	11	18	10	22	9	**9**	4	3	8	807
12 PM	7	602	**284**	12	8	23	21	24	8	7	2	0	10	1008
13:00	6	577	206	8	9	23	14	28	**12**	**8**	2	0	7	900
14:00	4	692	238	**18**	5	17	20	28	7	5	3	2	6	1045
15:00	16	847	249	17	**12**	**40**	**31**	**38**	6	6	3	0	6	1271
16:00	**17**	**975**	198	12	6	36	24	25	4	3	**6**	0	**11**	**1317**
17:00	5	887	217	11	5	23	22	30	1	5	6	1	3	1216
18:00	9	828	232	4	5	20	22	21	4	3	2	1	4	1155
19:00	6	627	146	3	1	10	15	15	0	2	2	1	6	834
20:00	7	502	183	4	5	9	12	18	1	2	0	2	3	748
21:00	2	419	141	4	0	8	8	11	5	0	1	**3**	3	605
22:00	2	409	125	1	1	5	6	11	2	0	0	0	2	564
23:00	3	278	84	6	0	6	2	5	3	1	0	0	0	388
Day Total	147	11756	3862	222	119	391	310	427	94	69	67	28	130	17622
Percent	0.8%	66.7%	21.9%	1.3%	0.7%	2.2%	1.8%	2.4%	0.5%	0.4%	0.4%	0.2%	0.7%	
AM Peak	08:00	07:00	06:00	09:00	08:00	07:00	07:00	06:00	10:00	11:00	08:00	09:00	10:00	07:00
Vol.	15	751	250	23	12	50	31	37	10	9	9	8	14	1101
PM Peak	16:00	16:00	12:00	14:00	15:00	15:00	15:00	15:00	13:00	13:00	16:00	21:00	16:00	16:00
Vol.	17	975	284	18	12	40	31	38	12	8	6	3	11	1317

Ontario Traffic, Inc.
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Site Code: 1
Station ID: M2/M3
Highbury Ave S between Thames River & Bradley Ave
Date Start: 18-Jun-18
Date End: 25-Jun-18
Date Start: 18-Jun-18

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/23/18	1	140	41	2	1	2	2	6	4	0	0	**2**	1	202
01:00	2	90	37	2	0	0	1	0	2	0	0	1	0	135
02:00	0	86	29	2	1	0	0	0	1	0	0	1	2	122
03:00	1	69	17	1	0	1	0	0	2	1	0	0	0	92
04:00	0	54	21	1	1	0	0	0	1	0	0	0	1	79
05:00	1	153	54	7	1	1	0	2	1	0	0	0	2	222
06:00	1	223	76	7	3	4	5	9	3	1	0	0	0	332
07:00	**4**	354	111	7	0	10	3	8	3	0	2	0	2	504
08:00	1	422	170	8	4	12	11	12	1	**6**	1	0	2	650
09:00	3	526	206	**9**	**5**	15	13	20	**8**	0	**3**	1	3	812
10:00	1	706	230	6	3	**21**	17	**33**	3	2	1	0	**4**	1027
11:00	3	**720**	**246**	8	4	19	**19**	26	1	3	1	0	0	**1050**
12 PM	4	801	219	**6**	2	19	**24**	29	2	2	2	**2**	3	1115
13:00	2	**812**	235	0	**5**	**22**	23	21	**3**	**5**	**4**	0	1	**1133**
14:00	5	782	**236**	3	3	17	22	**36**	2	3	2	1	1	1113
15:00	**7**	744	208	3	4	18	24	30	2	1	3	2	**4**	1050
16:00	2	780	216	2	1	21	19	21	2	3	0	0	3	1070
17:00	5	621	196	2	2	13	21	14	0	4	0	0	1	879
18:00	2	606	203	3	3	14	9	12	0	1	2	0	0	855
19:00	4	478	169	5	1	3	13	16	0	2	0	0	1	692
20:00	3	483	139	3	0	10	13	9	2	1	1	0	1	665
21:00	3	508	149	4	1	11	11	17	0	2	0	1	0	707
22:00	3	374	105	1	1	6	6	4	2	0	1	0	1	504
23:00	6	258	71	5	0	1	2	6	1	0	0	0	0	350
Day Total	64	10790	3384	97	46	240	258	331	46	37	23	11	33	15360
Percent	0.4%	70.2%	22.0%	0.6%	0.3%	1.6%	1.7%	2.2%	0.3%	0.2%	0.1%	0.1%	0.2%	
AM Peak	07:00	11:00	11:00	09:00	09:00	10:00	11:00	10:00	09:00	08:00	09:00	00:00	10:00	11:00
Vol.	4	720	246	9	5	21	19	33	8	6	3	2	4	1050
PM Peak	15:00	13:00	14:00	12:00	13:00	13:00	12:00	14:00	13:00	13:00	13:00	12:00	15:00	13:00
Vol.	7	812	236	6	5	22	24	36	3	5	4	2	4	1133

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Highbury Ave S between Thames River & Bradley Ave
Date Start: 18-Jun-18
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Date Start: 18-Jun-18

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/24/18	1	224	49	0	0	1	1	0	1	0	0	0	0	277
01:00	0	128	35	1	0	3	2	1	0	0	0	0	0	170
02:00	0	100	29	1	0	1	0	1	0	0	0	0	1	133
03:00	1	59	12	1	0	0	0	0	0	0	0	0	0	73
04:00	1	35	11	1	0	0	0	0	0	0	0	**1**	2	51
05:00	0	71	15	0	0	1	1	2	1	0	0	0	0	91
06:00	0	175	44	0	0	0	0	4	2	0	0	0	1	226
07:00	1	180	76	0	0	4	4	4	1	0	0	0	0	270
08:00	3	309	88	**13**	2	9	3	5	0	1	0	0	2	435
09:00	2	434	157	2	1	9	11	18	**3**	0	1	0	2	640
10:00	**6**	630	183	5	2	13	25	22	1	0	**2**	1	0	890
11:00	3	**720**	**252**	2	**3**	**22**	**28**	**23**	2	**2**	0	0	**3**	**1060**
12 PM	**13**	**789**	**227**	2	1	9	21	30	1	**5**	0	0	0	**1098**
13:00	9	744	223	1	**3**	15	**24**	23	0	3	**2**	**1**	0	1048
14:00	10	742	204	2	0	**19**	17	**34**	0	4	2	0	2	1036
15:00	8	692	202	1	0	9	15	23	2	0	2	0	1	955
16:00	4	618	193	2	1	13	17	13	0	4	1	0	2	868
17:00	3	661	197	2	2	11	16	20	**5**	3	1	1	0	922
18:00	6	578	168	2	2	15	18	19	3	2	1	1	1	816
19:00	12	489	156	2	0	13	13	13	2	2	0	0	1	703
20:00	9	455	134	2	2	13	9	15	0	1	0	0	**4**	644
21:00	3	435	110	**3**	2	5	10	11	0	1	1	0	1	582
22:00	4	357	101	3	0	2	3	6	3	0	0	0	1	480
23:00	4	178	57	2	1	2	2	3	1	0	0	0	0	250
Day Total	103	9803	2923	50	22	189	240	290	28	28	13	5	24	13718
Percent	0.8%	71.5%	21.3%	0.4%	0.2%	1.4%	1.7%	2.1%	0.2%	0.2%	0.1%	0.0%	0.2%	
AM Peak	10:00	11:00	11:00	08:00	11:00	11:00	11:00	11:00	09:00	11:00	10:00	04:00	11:00	11:00
Vol.	6	720	252	13	3	22	28	23	3	2	2	1	3	1060
PM Peak	12:00	12:00	12:00	21:00	13:00	14:00	13:00	14:00	17:00	12:00	13:00	13:00	20:00	12:00
Vol.	13	789	227	3	3	19	24	34	5	5	2	1	4	1098

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Highbury Ave S between Thames River & Bradley Ave
Date Start: 18-Jun-18
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SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/25/18	0	78	37	0	0	3	0	0	2	0	0	0	0	120
01:00	2	51	15	2	0	1	0	0	1	0	0	0	0	72
02:00	0	55	15	0	2	0	0	1	0	0	0	0	0	73
03:00	1	55	22	4	0	0	0	1	1	0	0	0	0	84
04:00	0	76	41	7	2	0	0	1	2	0	0	0	0	129
05:00	1	308	143	15	6	8	4	9	1	1	0	0	0	496
06:00	2	624	257	23	2	27	14	24	3	**7**	2	1	2	988
07:00	**17**	**756**	180	12	4	**48**	**37**	23	3	3	**14**	1	8	**1106**
08:00	12	638	196	15	**10**	35	17	20	3	5	7	2	7	967
09:00	6	571	224	**24**	10	19	15	**25**	**6**	6	5	**4**	10	925
10:00	4	476	227	21	6	25	14	16	2	4	4	2	7	808
11:00	9	472	**274**	21	10	27	18	20	2	7	2	0	**11**	873
12 PM	5	584	247	11	5	15	21	20	**8**	1	1	0	**13**	931
13:00	5	647	241	14	**9**	23	21	29	5	**6**	3	0	7	1010
14:00	2	707	254	**27**	9	16	12	**39**	4	6	2	0	6	1084
15:00	6	876	**299**	13	3	19	20	30	6	4	3	**2**	6	**1287**
16:00	**18**	892	194	16	8	**34**	20	30	2	1	**6**	0	8	1229
17:00	10	**918**	200	13	4	15	18	28	1	1	4	0	4	1216
18:00	5	837	226	6	3	23	**29**	24	2	5	3	2	3	1168
19:00	7	587	153	4	4	11	12	14	0	3	1	2	6	804
20:00	6	537	138	2	0	7	15	9	0	2	0	0	1	717
21:00	5	424	142	3	0	6	13	10	5	2	0	1	1	612
22:00	2	385	136	0	1	4	8	8	1	0	0	1	2	548
23:00	1	281	85	0	0	4	3	7	2	0	0	1	0	384
Day Total	126	11835	3946	253	98	370	311	388	62	64	57	19	102	17631
Percent	0.7%	67.1%	22.4%	1.4%	0.6%	2.1%	1.8%	2.2%	0.4%	0.4%	0.3%	0.1%	0.6%	
AM Peak	07:00	07:00	11:00	09:00	08:00	07:00	07:00	09:00	09:00	06:00	07:00	09:00	11:00	07:00
Vol.	17	756	274	24	10	48	37	25	6	7	14	4	11	1106
PM Peak	16:00	17:00	15:00	14:00	13:00	16:00	18:00	14:00	12:00	13:00	16:00	15:00	12:00	15:00
Vol.	18	918	299	27	9	34	29	39	8	6	6	2	13	1287
Grand Total	941	91446	29709	1558	708	2606	2254	3162	666	523	426	183	737	134919
Percent	0.7%	67.8%	22.0%	1.2%	0.5%	1.9%	1.7%	2.3%	0.5%	0.4%	0.3%	0.1%	0.5%	

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Highbury Ave S between Thames River & Bradley Ave
Date Start: 18-Jun-18
Date End: 25-Jun-18
Date Start: 18-Jun-18

NB, SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/18/18	0	214	62	1	0	4	0	0	7	0	0	0	1	289
01:00	2	145	31	6	0	4	0	1	3	0	0	0	2	194
02:00	2	109	31	0	2	1	0	3	10	1	0	1	0	160
03:00	2	103	29	4	1	4	0	2	11	1	0	0	0	157
04:00	0	126	64	10	2	1	1	0	7	2	0	0	2	215
05:00	4	489	196	20	7	6	6	9	15	0	2	1	8	763
06:00	8	1051	412	32	2	33	19	47	15	11	5	0	5	1640
07:00	13	**1535**	398	30	11	65	**65**	62	15	10	12	**3**	21	**2240**
08:00	**20**	1500	384	**38**	17	**78**	44	56	8	10	**22**	3	**24**	2204
09:00	9	1120	435	35	**22**	42	22	53	15	12	10	2	13	1790
10:00	12	1019	426	33	10	42	23	**63**	24	11	5	2	17	1687
11:00	9	1129	**456**	34	19	37	27	35	**28**	**15**	4	1	16	1810
12 PM	12	1238	466	22	11	41	38	39	**23**	3	4	2	18	1917
13:00	17	1402	435	22	**23**	44	34	41	15	9	5	1	**19**	2067
14:00	17	1421	513	**35**	17	41	30	**67**	15	**13**	7	2	13	2191
15:00	**22**	1789	**586**	23	12	53	**47**	66	9	13	7	2	17	2646
16:00	20	**1975**	429	22	11	**70**	47	54	9	6	9	2	15	**2669**
17:00	15	1773	451	21	8	62	40	62	8	10	**14**	6	12	2482
18:00	13	1580	435	12	7	39	35	45	8	13	5	3	5	2200
19:00	16	1245	312	18	5	35	15	26	3	6	5	1	5	1692
20:00	14	1104	309	9	2	25	27	28	10	3	3	**7**	7	1548
21:00	9	960	238	8	3	20	16	22	4	3	2	2	1	1288
22:00	6	829	206	6	3	14	10	16	0	1	0	3	2	1096
23:00	5	604	155	7	0	14	6	19	5	2	0	2	6	825
Day Total	247	24460	7459	448	195	775	552	816	267	155	121	46	229	35770
Percent	0.7%	68.4%	20.9%	1.3%	0.5%	2.2%	1.5%	2.3%	0.7%	0.4%	0.3%	0.1%	0.6%	
AM Peak	08:00	07:00	11:00	08:00	09:00	08:00	07:00	10:00	11:00	11:00	08:00	07:00	08:00	07:00
Vol.	20	1535	456	38	22	78	65	63	28	15	22	3	24	2240
PM Peak	15:00	16:00	15:00	14:00	13:00	16:00	15:00	14:00	12:00	14:00	17:00	20:00	13:00	16:00
Vol.	22	1975	586	35	23	70	47	67	23	13	14	7	19	2669

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Highbury Ave S between Thames River & Bradley Ave
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06/19/18	1	183	49	2	0	2	0	1	1	0	1	0	1	241
01:00	0	152	33	3	0	2	0	1	2	0	0	1	1	195
02:00	1	107	24	0	3	1	0	3	2	0	0	0	0	141
03:00	1	110	38	5	0	0	0	2	4	1	0	1	0	162
04:00	1	113	50	7	3	0	1	1	4	1	0	1	2	184
05:00	1	441	217	14	7	10	7	9	10	1	2	1	8	728
06:00	6	1142	422	31	2	37	23	37	15	11	5	0	2	1733
07:00	**17**	1557	435	19	11	56	**64**	**56**	14	11	**16**	**6**	15	**2277**
08:00	15	**1582**	337	33	**16**	**77**	54	55	11	12	15	1	18	2226
09:00	11	1131	409	**37**	14	38	32	54	15	9	11	4	**19**	1784
10:00	12	991	400	32	16	43	29	41	**18**	9	4	0	17	1612
11:00	14	1082	**479**	26	13	31	26	45	15	**20**	4	2	13	1770
12 PM	17	1179	408	26	17	35	27	37	**29**	12	4	2	12	1805
13:00	12	1313	438	30	**22**	35	27	72	20	**16**	7	0	12	2004
14:00	12	1414	500	**34**	13	40	37	**76**	14	15	8	1	**17**	2181
15:00	13	1802	**623**	26	8	52	61	65	13	11	**10**	3	14	**2701**
16:00	20	**1913**	498	23	10	50	**67**	61	5	10	7	2	14	2680
17:00	**21**	1760	437	22	8	**55**	49	56	5	6	7	3	11	2440
18:00	21	1530	394	12	6	36	38	45	10	10	4	2	10	2118
19:00	17	1238	311	10	5	28	18	24	8	7	0	1	4	1671
20:00	11	1082	286	3	4	26	31	30	6	6	2	**4**	6	1497
21:00	6	895	247	4	0	17	15	26	3	0	1	2	3	1219
22:00	8	829	214	2	0	18	14	11	0	0	0	4	2	1102
23:00	8	639	144	6	2	11	1	9	0	1	0	1	3	825
Day Total	246	24185	7393	407	180	700	621	817	224	169	108	42	204	35296
Percent	0.7%	68.5%	20.9%	1.2%	0.5%	2.0%	1.8%	2.3%	0.6%	0.5%	0.3%	0.1%	0.6%	
AM Peak	07:00	08:00	11:00	09:00	08:00	08:00	07:00	07:00	10:00	11:00	07:00	07:00	09:00	07:00
Vol.	17	1582	479	37	16	77	64	56	18	20	16	6	19	2277
PM Peak	17:00	16:00	15:00	14:00	13:00	17:00	16:00	14:00	12:00	13:00	15:00	20:00	14:00	15:00
Vol.	21	1913	623	34	22	55	67	76	29	16	10	4	17	2701

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06/20/18	2	186	56	2	0	0	0	1	2	0	0	0	1	250
01:00	1	131	29	5	0	4	0	1	1	1	0	0	0	173
02:00	1	123	25	2	1	3	0	0	5	0	0	0	0	160
03:00	2	109	29	5	0	1	0	1	3	2	0	1	0	153
04:00	1	124	54	8	5	1	3	2	5	1	0	0	1	205
05:00	2	471	199	17	8	14	4	7	3	3	0	1	4	733
06:00	11	1044	412	36	5	33	30	45	11	12	5	**3**	9	1656
07:00	**19**	1532	389	33	14	**63**	**58**	48	**22**	5	12	2	15	2212
08:00	14	**1577**	414	**41**	9	55	51	59	8	10	**15**	3	**21**	**2277**
09:00	15	1094	438	33	**18**	38	21	**60**	11	6	14	3	19	1770
10:00	10	1031	417	34	9	39	25	52	20	16	5	2	17	1677
11:00	13	1102	**459**	30	14	36	25	42	16	**22**	7	2	12	1780
12 PM	13	1192	485	30	15	40	35	48	**25**	8	6	1	11	1909
13:00	16	1386	436	35	**20**	37	23	70	15	**20**	10	5	10	2083
14:00	17	1414	526	**41**	19	33	31	**88**	13	16	9	2	9	2218
15:00	14	1712	**601**	31	9	43	47	64	11	12	9	3	14	2570
16:00	**22**	**1880**	506	28	10	**48**	**56**	50	10	11	9	**6**	**17**	**2653**
17:00	14	1825	467	22	9	44	49	54	5	11	**13**	4	10	2527
18:00	12	1694	448	14	6	37	32	51	7	5	7	1	10	2324
19:00	8	1188	298	16	3	35	36	30	2	10	5	2	13	1646
20:00	11	1037	285	11	4	33	23	30	5	6	2	3	9	1459
21:00	13	888	231	9	1	18	13	18	7	1	0	1	4	1204
22:00	9	838	199	4	1	20	13	15	3	1	0	1	0	1104
23:00	5	624	140	8	1	10	5	12	4	0	0	2	1	812
Day Total	245	24202	7543	495	181	685	580	848	214	179	128	48	207	35555
Percent	0.7%	68.1%	21.2%	1.4%	0.5%	1.9%	1.6%	2.4%	0.6%	0.5%	0.4%	0.1%	0.6%	
AM Peak	07:00	08:00	11:00	08:00	09:00	07:00	07:00	09:00	07:00	11:00	08:00	06:00	08:00	08:00
Vol.	19	1577	459	41	18	63	58	60	22	22	15	3	21	2277
PM Peak	16:00	16:00	15:00	14:00	13:00	16:00	16:00	14:00	12:00	13:00	17:00	16:00	16:00	16:00
Vol.	22	1880	601	41	20	48	56	88	25	20	13	6	17	2653

Ontario Traffic, Inc.
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Highbury Ave S between Thames River & Bradley Ave
Date Start: 18-Jun-18
Date End: 25-Jun-18
Date Start: 18-Jun-18

NB, SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/21/18	0	194	56	3	0	6	0	0	1	6	0	0	0	266
01:00	0	133	30	1	0	3	0	0	1	0	0	0	1	169
02:00	1	106	31	1	1	1	0	2	2	1	0	1	0	147
03:00	1	118	21	3	1	3	0	1	3	1	0	0	0	152
04:00	2	130	54	10	2	1	0	1	5	1	0	0	2	208
05:00	5	501	184	32	9	6	8	13	15	1	4	1	5	784
06:00	12	1019	417	34	6	41	12	42	18	11	5	2	10	1629
07:00	18	**1623**	400	27	**18**	**74**	**50**	**65**	20	14	11	4	11	**2335**
08:00	**20**	1519	399	30	15	68	44	50	10	**15**	**18**	2	14	2204
09:00	10	1198	412	**45**	12	42	36	57	15	12	15	**7**	**20**	1881
10:00	14	1029	418	24	10	43	25	57	16	12	4	2	14	1668
11:00	10	1105	**440**	23	13	36	26	33	**27**	8	5	1	15	1742
12 PM	14	1234	446	29	**19**	35	33	46	**22**	10	8	**4**	10	1910
13:00	15	1354	455	23	19	40	30	56	21	11	4	1	15	2044
14:00	15	1405	469	**33**	19	38	30	**91**	11	**14**	11	4	15	2155
15:00	12	1756	**582**	24	11	**54**	44	63	14	10	10	2	**25**	2607
16:00	**28**	**1889**	474	24	12	52	**64**	50	7	6	7	1	10	**2624**
17:00	18	1850	438	21	6	50	50	58	5	4	**13**	2	8	2523
18:00	13	1538	422	17	4	48	33	46	8	4	4	3	6	2146
19:00	15	1217	290	8	6	30	17	26	3	12	2	1	6	1633
20:00	9	1039	284	9	5	23	26	25	7	4	3	2	4	1440
21:00	13	981	241	4	1	16	18	21	3	2	1	1	2	1304
22:00	8	854	211	2	1	17	15	17	1	0	1	1	5	1133
23:00	6	624	147	5	2	15	10	15	1	1	0	1	1	828
Day Total	259	24416	7321	432	192	742	571	835	236	160	126	43	199	35532
Percent	0.7%	68.7%	20.6%	1.2%	0.5%	2.1%	1.6%	2.3%	0.7%	0.5%	0.4%	0.1%	0.6%	
AM Peak	08:00	07:00	11:00	09:00	07:00	07:00	07:00	07:00	11:00	08:00	08:00	09:00	09:00	07:00
Vol.	20	1623	440	45	18	74	50	65	27	15	18	7	20	2335
PM Peak	16:00	16:00	15:00	14:00	12:00	15:00	16:00	14:00	12:00	14:00	17:00	12:00	15:00	16:00
Vol.	28	1889	582	33	19	54	64	91	22	14	13	4	25	2624

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Highbury Ave S between Thames River & Bradley Ave
Date Start: 18-Jun-18
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Date Start: 18-Jun-18

NB, SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/22/18	1	178	56	1	0	4	0	0	3	0	0	0	3	246
01:00	1	136	33	3	0	1	0	1	1	0	0	0	0	176
02:00	0	126	31	0	2	2	0	2	3	0	0	0	0	166
03:00	1	112	28	1	0	2	1	2	2	0	0	0	0	149
04:00	0	128	63	2	4	1	2	0	3	0	0	0	1	204
05:00	8	442	213	19	7	12	7	7	10	3	1	0	2	731
06:00	13	1040	411	34	5	35	28	49	13	4	8	3	10	1653
07:00	16	**1544**	384	33	9	**76**	**58**	**58**	14	12	17	2	20	2243
08:00	**18**	1511	426	38	**19**	70	45	53	11	9	**20**	5	**24**	**2249**
09:00	12	1179	429	**45**	15	42	35	53	10	10	14	**8**	21	1873
10:00	12	998	**439**	31	19	42	29	49	**23**	8	6	0	21	1677
11:00	8	1098	407	27	17	34	24	49	19	**13**	11	3	14	1724
12 PM	11	1309	505	30	13	50	41	53	18	**19**	4	2	**23**	2078
13:00	11	1242	431	**31**	13	40	28	63	**21**	12	7	0	15	1914
14:00	15	1460	482	30	**14**	43	35	59	13	12	7	2	15	2187
15:00	26	1763	**516**	29	14	63	**57**	**78**	9	10	6	0	12	2583
16:00	**32**	**1988**	435	21	11	**72**	57	49	8	6	9	1	21	**2710**
17:00	10	1756	455	22	8	51	52	61	5	10	**11**	2	9	2452
18:00	12	1555	418	13	6	38	32	52	10	7	3	1	7	2154
19:00	13	1274	295	10	3	33	26	28	3	7	4	2	11	1709
20:00	12	1083	317	5	7	22	26	29	7	6	1	**6**	9	1530
21:00	8	945	235	7	0	20	14	21	5	0	2	4	3	1264
22:00	7	874	209	3	2	19	13	19	2	1	0	2	2	1153
23:00	9	645	162	10	0	14	6	14	3	2	0	1	4	870
Day Total	256	24386	7380	445	188	786	616	849	216	151	131	44	247	35695
Percent	0.7%	68.3%	20.7%	1.2%	0.5%	2.2%	1.7%	2.4%	0.6%	0.4%	0.4%	0.1%	0.7%	
AM Peak	08:00	07:00	10:00	09:00	08:00	07:00	07:00	07:00	10:00	11:00	08:00	09:00	08:00	08:00
Vol.	18	1544	439	45	19	76	58	58	23	13	20	8	24	2249
PM Peak	16:00	16:00	15:00	13:00	14:00	16:00	15:00	15:00	13:00	12:00	17:00	20:00	12:00	16:00
Vol.	32	1988	516	31	14	72	57	78	21	19	11	6	23	2710

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Highbury Ave S between Thames River & Bradley Ave
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NB, SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/23/18	3	357	69	13	1	5	2	8	6	1	0	**4**	1	470
01:00	4	209	63	6	1	0	1	2	4	0	0	3	0	293
02:00	1	210	46	4	1	1	0	0	3	0	0	3	2	271
03:00	1	147	26	3	0	1	0	1	5	1	0	1	0	186
04:00	0	97	33	3	1	0	0	1	4	0	0	2	1	142
05:00	1	270	75	8	1	6	1	2	4	0	0	4	3	375
06:00	3	423	132	9	5	6	6	11	7	3	0	3	4	612
07:00	5	697	220	11	0	16	8	12	**9**	1	3	0	4	986
08:00	4	899	287	**14**	5	19	15	23	6	**6**	2	0	2	1282
09:00	4	1038	334	13	**7**	24	25	32	8	0	**4**	2	**7**	1498
10:00	6	1309	417	10	6	37	36	**57**	3	2	2	0	7	1892
11:00	**7**	**1437**	**425**	10	7	**39**	**44**	45	3	5	1	1	2	**2026**
12 PM	8	1571	392	**11**	4	40	41	52	4	6	5	**3**	6	2143
13:00	10	**1630**	419	4	**6**	**41**	49	52	**7**	**8**	**6**	0	5	**2237**
14:00	**12**	1474	**435**	7	3	32	**53**	**59**	3	4	4	3	2	2091
15:00	11	1503	378	6	5	41	48	58	5	1	5	2	6	2069
16:00	6	1532	378	4	4	36	32	33	4	4	1	1	**7**	2042
17:00	11	1314	367	7	4	34	39	34	0	8	2	0	4	1824
18:00	5	1252	342	7	4	29	23	20	1	2	4	0	1	1690
19:00	7	1088	289	8	1	13	20	26	1	4	0	0	1	1458
20:00	5	963	247	6	1	14	21	15	4	3	2	0	1	1282
21:00	9	984	230	11	1	17	19	25	0	2	1	1	0	1300
22:00	6	757	176	4	1	8	11	6	3	0	1	0	2	975
23:00	8	574	125	7	0	8	5	7	2	0	0	0	1	737
Day Total	137	21735	5905	186	69	467	499	581	96	61	43	33	69	29881
Percent	0.5%	72.7%	19.8%	0.6%	0.2%	1.6%	1.7%	1.9%	0.3%	0.2%	0.1%	0.1%	0.2%	
AM Peak	11:00	11:00	11:00	08:00	09:00	11:00	11:00	10:00	07:00	08:00	09:00	00:00	09:00	11:00
Vol.	7	1437	425	14	7	39	44	57	9	6	4	4	7	2026
PM Peak	14:00	13:00	14:00	12:00	13:00	13:00	14:00	14:00	13:00	13:00	13:00	12:00	16:00	13:00
Vol.	12	1630	435	11	6	41	53	59	7	8	6	3	7	2237

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Highbury Ave S between Thames River & Bradley Ave
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06/24/18	3	452	79	13	1	3	2	4	1	0	0	0	0	558
01:00	0	303	71	1	0	6	2	4	0	0	0	0	0	387
02:00	0	201	40	2	0	3	0	1	0	0	0	0	1	248
03:00	1	116	19	2	0	0	0	1	0	0	0	0	0	139
04:00	1	84	22	1	1	0	0	0	0	0	0	**2**	2	113
05:00	0	152	29	1	0	6	1	2	2	0	0	0	0	193
06:00	0	287	61	0	0	0	0	4	5	1	0	0	1	359
07:00	4	384	136	2	1	8	7	6	1	0	1	0	0	550
08:00	5	586	165	**15**	2	10	3	8	0	2	1	0	4	801
09:00	4	860	262	3	1	14	23	25	**6**	2	2	0	**5**	1207
10:00	**11**	1210	318	10	2	26	35	**36**	1	0	**3**	1	4	1657
11:00	7	**1328**	**405**	5	**3**	**30**	**40**	33	4	**4**	0	0	3	**1862**
12 PM	**21**	**1450**	385	5	1	21	39	**53**	1	5	3	0	0	**1984**
13:00	20	1416	**401**	3	**3**	34	**44**	47	0	4	5	**1**	2	1980
14:00	16	1432	357	3	2	**41**	41	44	1	**7**	3	1	3	1951
15:00	18	1374	368	4	2	26	31	42	2	1	**6**	0	3	1877
16:00	9	1240	327	5	2	27	33	33	1	5	3	0	3	1688
17:00	13	1348	321	3	2	26	30	38	**5**	6	1	1	1	1795
18:00	10	1212	310	4	2	31	32	32	5	5	2	1	**5**	1651
19:00	17	1117	297	4	0	24	29	25	2	3	5	1	2	1526
20:00	18	1098	260	4	2	28	24	28	1	2	1	0	4	1470
21:00	12	980	198	6	2	16	20	23	1	1	3	1	1	1264
22:00	8	805	189	5	0	6	10	13	3	1	2	0	1	1043
23:00	6	442	100	**15**	1	7	4	4	2	1	0	0	1	583
Day Total	204	19877	5120	116	30	393	450	506	44	50	41	9	46	26886
Percent	0.8%	73.9%	19.0%	0.4%	0.1%	1.5%	1.7%	1.9%	0.2%	0.2%	0.2%	0.0%	0.2%	
AM Peak	10:00	11:00	11:00	08:00	11:00	11:00	11:00	10:00	09:00	11:00	10:00	04:00	09:00	11:00
Vol.	11	1328	405	15	3	30	40	36	6	4	3	2	5	1862
PM Peak	12:00	12:00	13:00	23:00	13:00	14:00	13:00	12:00	17:00	14:00	15:00	13:00	18:00	12:00
Vol.	21	1450	401	15	3	41	44	53	5	7	6	1	5	1984

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06/25/18	1	201	64	2	0	5	0	1	2	0	0	0	0	276
01:00	3	135	37	3	0	2	0	1	2	0	0	0	0	183
02:00	1	112	25	2	4	1	0	3	0	1	0	0	0	149
03:00	2	92	35	6	1	0	0	1	2	0	0	0	0	139
04:00	0	126	59	8	3	1	2	1	4	0	0	0	1	205
05:00	3	498	213	22	7	19	4	13	6	2	1	0	1	789
06:00	3	1103	387	28	4	41	28	37	11	**10**	5	1	6	1664
07:00	**21**	**1591**	376	26	15	**76**	**65**	51	13	8	**26**	2	**17**	**2287**
08:00	18	1465	463	35	**26**	66	31	**55**	13	9	17	2	15	2215
09:00	10	1226	449	**40**	19	38	28	53	17	8	6	**4**	13	1911
10:00	12	1043	433	31	12	37	23	33	**21**	9	4	2	11	1671
11:00	17	1063	**465**	33	14	48	33	28	12	10	2	1	14	1740
12 PM	9	1227	445	20	10	34	41	40	**16**	3	2	1	**23**	1871
13:00	18	1338	472	30	**19**	38	32	62	13	**13**	4	0	13	2052
14:00	11	1436	492	**35**	13	32	32	**72**	6	8	6	0	11	2154
15:00	16	1836	**530**	25	6	47	46	56	11	9	4	2	16	2604
16:00	**25**	**1889**	449	28	10	**63**	**52**	69	6	9	8	2	14	**2624**
17:00	13	1845	448	23	7	46	39	64	9	4	**9**	1	12	2520
18:00	11	1622	408	13	5	43	39	44	4	8	3	**3**	10	2213
19:00	15	1191	297	10	5	40	24	26	5	7	6	2	9	1637
20:00	13	1132	259	5	0	20	21	16	1	2	2	1	1	1473
21:00	6	945	237	4	0	19	19	14	5	2	0	2	1	1254
22:00	9	838	215	4	1	13	15	12	1	0	0	2	2	1112
23:00	2	664	145	3	0	6	3	10	3	0	0	1	0	837
Day Total	239	24618	7403	436	181	735	577	762	183	122	105	29	190	35580
Percent	0.7%	69.2%	20.8%	1.2%	0.5%	2.1%	1.6%	2.1%	0.5%	0.3%	0.3%	0.1%	0.5%	
AM Peak	07:00	07:00	11:00	09:00	08:00	07:00	07:00	08:00	10:00	06:00	07:00	09:00	07:00	07:00
Vol.	21	1591	465	40	26	76	65	55	21	10	26	4	17	2287
PM Peak	16:00	16:00	15:00	14:00	13:00	16:00	16:00	14:00	12:00	13:00	17:00	18:00	12:00	16:00
Vol.	25	1889	530	35	19	63	52	72	16	13	9	3	23	2624
Grand Total	1833	187879	55524	2965	1216	5283	4466	6014	1480	1047	803	294	1391	270195
Percent	0.7%	69.5%	20.5%	1.1%	0.5%	2.0%	1.7%	2.2%	0.5%	0.4%	0.3%	0.1%	0.5%	

TO:	**CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON SEPTEMBER 25, 2018**
FROM:	**KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER**
SUBJECT:	**BYRON SOUTH NEIGHBOURHOOD SIDEWALK CONNECTIVITY PLAN**

RECOMMENDATION

That, on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, the Byron South Neighbourhood Sidewalk Connectivity Plan **BE ENDORSED** for implementation in the 2019 Annual New Sidewalk Program.

2015-19 STRATEGIC PLAN

The 2015-2019 Strategic Plan through the strategic focus area of Building a Sustainable City. The plan identifies the implementation and enhancement of road safety measures for all users as a means to deliver convenient and connected mobility choices.

BACKGROUND

Purpose

On April 10, 2018, Council directed staff to develop a neighbourhood strategy for the implementation of sidewalks surrounding the Byron Southwood Public School.

Subject to Council approval, the Byron South Neighbourhood Sidewalk Connectivity Plan described, herein, will be implemented via the 2019 Annual New Sidewalk Program.

DISCUSSION

The Byron South neighbourhood existing sidewalk network is limited and has many missing connections, which forces forcing pedestrians to share the road with vehicles (see Figure 1 below).

The lack of sidewalks poses 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 snowbanks. Sidewalks provide a safe and separated space for pedestrians, especially children, the elderly or pedestrians with mobility assistance devices.

Typical Byron South Street without Sidewalk

Public Consultation

The neighbourhood sidewalk connectivity plan was developed with the input of the staff at Byron Southwood Public School. The school administration provided information regarding school travel patterns, entry points and property management. The school board intends to construct a new access point east for the school on Boler Road. There are ongoing discussions between City staff, school board administration and their consultant to review plans and functionality of the proposed parking and drop-off area. Currently, there is no timeline for construction.

On Wednesday, June 20, 2018 City staff held a public information centre (PIC) at Byron United Church to receive public input for the Byron South Neighbourhood Sidewalk Connectivity Plan. (See below.) The PIC was well attended with 36 residents. Over 68% of the attendees were in support of the draft sidewalk connectivity plan. A few key comments received during the PIC were to install sidewalks on Regis Avenue and Regis Place, install sidewalks on Jellicoe Crescent from Blake Street to Lola Street, and to restrict parking on many of the streets in this neighbourhood. 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.

Byron South Neighbourhood Connectivity Plan

To improve pedestrian safety, connectivity and accessibility, the Byron South Neighbourhood Sidewalk Connectivity Plan will include approximately 1,100 m of new sidewalk in the area of Byron Southwood Public School. The proposed sidewalk locations that are included in the Byron South Neighbourhood Sidewalk Connectivity Plan are illustrated in the figure below, with new sidewalks itemized in the following table.

BYRON SOUTH NEIGHBOURHOOD SIDEWALK CONNECTIVITY PLAN

Legend

OTHER IMPROVEMENTS
- Proposed Byron Southood School Parking Develpment

SIDEWALKS
- Existing Sidewalk
- Proposed Sidewalk

PEDESTRIAN CROSSOVERS (PXO)
- Existing PXO
- Proposed PXO (D)

LTC BUS ROUTES
- 5 - Byron to Downtown
- 17A - Argyle Mall to Byron/ Riverbend
- Bus Stop

Byron South Neighbourhood Sidewalk Connectivity Plan Proposed Sidewalks		
Location	**From**	**To**
Wayne Road	Boler Road	Jellicoe Crescent
Jellicoe Crescent	Wayne Road	Lola Street
Blake Street	Lola Street	Byron Baseline Road
Collingwood Avenue	Wayne Road	Belvedere Avenue

Along with the installation of sidewalks, the plan includes intersection control upgrades at Jellicoe Crescent/Blake Street and Belvedere Avenue/Lola Street from a yield sign to a stop sign. Additionally, a pedestrian crossover (PXO) will be implemented south of the intersection of Belvedere Avenue/Lola Street to provide a safe crossing from the existing sidewalk on Belvedere Avenue.

Design and Implementation

If the Byron South Neighbourhood Sidewalk Connectivity Plan is endorsed, 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 will also attend the Transportation Advisory Committee to allow for additional comments that could improve the sidewalk design.

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 ROW	Mitigation Strategies
Tree conflicts	• Bend sidewalk around trees, or • Install new tree
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 Byron South Neighbourhood Sidewalk Connectivity Plan 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 2015-2019 Strategic Plan by Building a Sustainable City with convenient and connected mobility choices.

The Plan proposes a neighbourhood strategy to pedestrian connectivity and identifies infrastructure that will create strategic connections while balancing resources within the annual program and considering community input. The plan will add approximately 1,100 m of new sidewalk to improve pedestrian safety, accessibility and connectivity. The installation of sidewalks will provide a safe 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 Peter Kavcic, P.Eng. Transportation Design Engineer, with input from Samantha Smith, Engineering Intern, in the Transportation Planning and Design Division.

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

c: Mr. D. Clark, Principal, Byron Southwood Public School
Cllr Anna Hopkins
Transportation Advisory Committee

THAMES VALLEY DISTRICT SCHOOL BOARD

BYRON SOUTHWOOD P.S.
1379 LOLA STREET
LONDON, ON
N6K 3R6

2018 September 13

City Works Committee
300 Dufferin Ave, PO Box 5035
London, ON
N6A 4L9

As Vice-Principal of Byron Southwood Public School, I want to express my thorough support for the anticipated plans of sidewalk installations near our school. The safety and well-being of our children depend on it.

Firstly, our biggest priority is that our students are safe, both at school and on the way to school. I am reminded daily of the dangerous position we put our students in when they have no protected space to walk. The constant competition between parked cars, moving cars and school buses is relentless, leaving no room for pedestrians, much less neighbours with accessibility demands.

Secondly, I firmly believe more students would walk, or cycle, to school if there were sidewalks. Having sidewalks connect our school to both Byron Baseline and Boler Road fills in the missing links. Without that infrastructure, our attempts at encouraging active lifestyles in our future generations fail.

I anticipate astounding support for the sidewalk initiative.

Sincerely,

Annette Gilbert, Vice-Principal
Byron Southwood P.S.

September 17, 2018

To whom it may concern,

I am writing this letter to voice my support for the installation of sidewalks on both sides of the street on Lola St, as well as other streets in the neighbourhood around Byron Southwood Public School. I support the installation of sidewalks as a Byron Southwood parent and a resident of that neighbourhood. I also support the installation of sidewalks as a community organizer and a PhD candidate in Geography whose work focuses primarily on urban landscapes.

As a parent of three children who attend Byron Southwood P.S., I want to feel certain that my children are safe when walking to and from school every day. Active transportation (walking as well as cycling) is an important aspect of my family's healthy lifestyle and my children are expected to walk to school every day. These walks allow them to not only get some exercise but to feel connected to our neighbourhood and to have some engagement with nature. However, when they have to walk on the street as part of their journey to school I, and they, worry about their safety. This worry is not unfounded. According to the Canadian Paediatric Society, the leading cause of "unintentional injury deaths" for children from ages 1 to 19 are motor vehicle accidents[1].

From my own experience as a pedestrian in Byron, not all drivers watch for, slow down for or expect pedestrians to be on the street, even in sidewalk-less neighbourhoods. One of the most striking things I noticed when I moved from central London to Byron, was the lack of people walking around the neighbourhood in Byron, especially during the daytime and later evening. Suburban areas built for cars have, unsurprisingly, become dominated by them. As a woman, walking around empty streets feels quite unsafe, something I spoke to the media about earlier this year[2]. I believe sidewalks on both sides of all streets in Byron will have a positive effect on encouraging more people, including children, to walk.

As an urban geographer and community organizer I believe that we need to create livable, human-scale cities that encourage people to engage in active transportation. I draw inspiration from the work of urban organizer and scholar Jane Jacobs, who argued 57 years ago that cities are safest, healthiest, and most vibrant when people are out on the sidewalks and city streets interacting with their neighbours and other community members[3].

Originally the developers of sidewalk-less neighbourhoods may have hoped that the streets would become multi-use, allowing for cars, pedestrians, and cyclists to share the space. This is not how these streets are used or experienced in everyday life. On sidewalk-less streets, car drivers continue to drive fast and to expect an unobstructed roadway. I believe these streets are less safe but, more importantly, they *feel* less safe to people and, thus, discourage active transportation something supported by numerous academic studies[4].

Additionally, I firmly believe that sustainable cities will help urban-dwellers to mitigate and adapt to climate change. Active transportation, both walking and cycling, will be an important part of urban climate change mitigation and adaptation. We need

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[1] https://www.cps.ca/en/documents/position/child-and-youth-injury-prevention

[2] Please see https://lfpress.com/news/local-news/london-begins-long-journey-to-become-a-safer-city-for-women. Interestingly, academic studies have shown a gender difference in parents' perceptions of street safety for children, so this is very much a gendered issue https://www.sciencedirect.com/science/article/pii/S2214140515006805

[3] Please see Jacobs 1961 book *The Life and Death of Great American Cities*

[4] For example: https://europepmc.org/abstract/med/22217568

to redesign cities in North America that encourage active transportation and public transit and this requires the appropriate infrastructure.

London has an opportunity to create a more vibrant, sustainable city. Sidewalks on both sides of city streets may seem like a small thing compared to other initiatives, but I believe it will have a positive impact, increasing safety for pedestrians and encouraging people to engage in active transportation.

Thank-you,

Rebecca Ellis

Byron South P.S. parent & Byron resident
PhD candidate in Geography, Western University
Resident of the Rotman Institute of Philosophy, Western University

TO:	**CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON SEPTEMBER 25, 2018**
FROM:	**KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER**
SUBJECT:	**RICHMOND STREET AND FANSHAWE PARK ROAD INTERSECTION 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 Richmond Street and Fanshawe Park Road Intersection Improvements Environmental Assessment:

(a) The Richmond Street and Fanshawe Park Road Intersection Improvements Municipal Class Environmental Study Report **BE ACCEPTED**;

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

(c) The project Environmental Study Report **BE PLACED** on 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 Development Charges Background Study.
- Civic Works Committee – March 23, 2015 – Environmental Assessment Study Appointment of Consulting Engineer

COUNCIL'S 2015-19 STRATEGIC PLAN

The following report supports the Strategic Plan through the strategic focus area of *Building a Sustainable City* by implementing and enhancing mobility choices for cyclists, transit, automobile users and pedestrians. The environmental assessment identifies the solution to improve operations and safety at this intersection in coordination with the Bus Rapid Transit (BRT) north corridor terminal.

DISCUSSION

Purpose

This report provides Committee and Council with an overview of the Richmond Street and Fanshawe Park Road Intersection Improvements Municipal Class Environmental Assessment (EA) and seeks approval to finalize the study. The completed Environmental Study Report (ESR) documents the EA and decision-making process for the intersection improvements.

Background

The need to improve the intersection of Richmond Street and Fanshawe Park Road was identified in the Smart Moves 2030 Transportation Master Plan (TMP), and it was carried forward into the 2014 update of the Development Charges Background Study for near-term implementation subject to approvals and funding. The TMP identified travel demands across the east-west routes in the north half of the city and recommended road network improvements to provide the additional capacity needed to avoid significant levels of congestion in the future.

Richmond Street is four lanes wide and serves as a northern gateway into the City. Forming a primary link in London's arterial road network, it connects the Masonville, Stoneybrook, Sunningdale and Uplands Planning Districts to London's downtown. It also provides access to regional facilities including Western University. The current traffic volume on Fanshawe Park Road is 33,000 vehicles per day. Traffic volume on Richmond Street south of Fanshawe Park Road is 27,000 vehicles per day and lower north of the intersection at 17,000 vehicles per day.

During the weekday afternoon peak period, the intersection of Richmond Street and Fanshawe Park Road is above capacity and operates poorly due to intersection congestion and high delays. The northbound left turn and westbound through movements are operating very poorly as well with more than three minutes of delay per vehicle. With no improvements to the intersection, conditions on current critical movements are predicted to worsen and the intersection will continue to fail.

The intersection improvements will include measures to improve pedestrian and cyclist accommodation. Sidewalks are provided on both sides of Fanshawe Park Road and Richmond Street at and beyond the intersection, but the existing channelized islands at the intersections do not provide a pedestrian friendly environment. Richmond Street, south of Fanshawe Park Road, does not currently have defined cycling facilities. Boulevard bike paths are located on the south side of Fanshawe Park Road and sporadically on the north side in the area of the intersection.

Project Description

The EA for improvements to the Richmond Street and Fanshawe Park Road intersection satisfies the requirements of the *Municipal Class EA* (October 2000, as amended in 2007, 2011, and 2015) for a Schedule 'C' project. Improvements to the intersection are required to address existing and future traffic volumes, intersection safety, and pedestrian and cyclist needs.

Dillon Consulting Limited was retained to complete the EA for improvements to the Richmond Street and Fanshawe Park Road intersection. The study area for the project is shown on Figure 1.

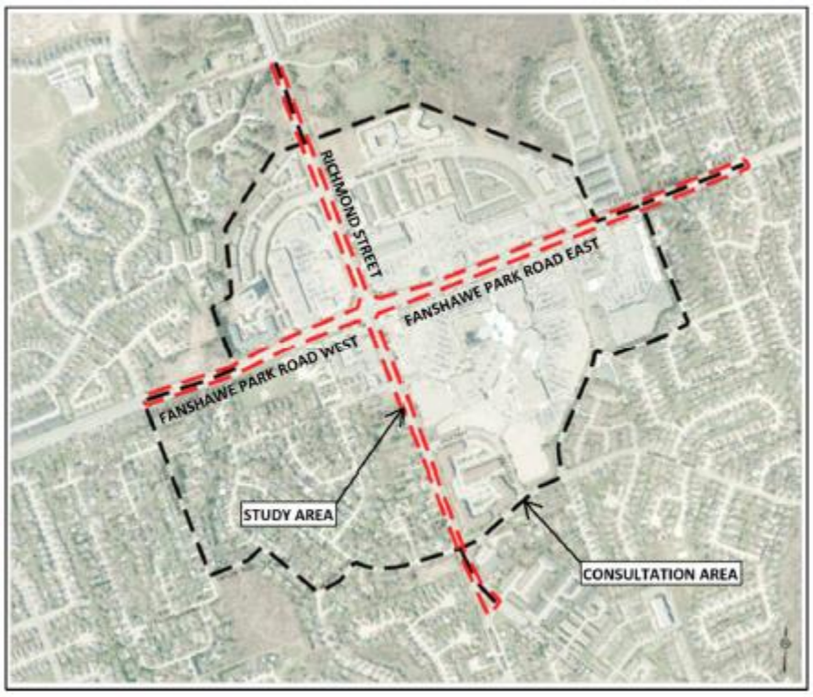


Figure 1: Study Area

The Bus Rapid Transit Network was approved by Council on May 16, 2017. The consultant for the BRT project is currently finalizing the Environmental Project Report (EPR) that builds on the Rapid Transit Master Plan. Coordination between the Richmond Street and Fanshawe Park Road Intersection Improvements EA and the BRT initiative was key throughout the EA process to be consistent with the preliminary design of rapid transit on Richmond Street for the section south of Fanshawe Park Road.

The approved BRT alignment south of Fanshawe Park Road will extend on Richmond Street from Hillview Boulevard southerly to Western Road and continuing on Western Road. The north BRT Terminal will utilize the existing bus terminal at Masonville Place. Implementation of the north BRT corridor on Richmond Street is expected to begin in the 2022/2023 timeframe subject to EPR approval.

ENVIRONMENTAL ASSESSMENT SUMMARY

The Environmental Study Report (ESR) documents the process followed to determine the recommended undertaking and the environmentally significant aspects of the planning, design and construction of the proposed intersection 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. A copy of the Executive Summary for the ESR is contained in Appendix A.

Planning and Analysis of Alternatives

Phase 1 of the Municipal Class EA process involved the problem and opportunity statement identification. It was determined that improvements are needed at this Intersection to address existing and future road/traffic operational deficiencies, future BRT transit terminal and transit needs, intersection safety, pedestrian and cyclist needs, access management issues, and long-term vision for the transit village intersection.

Phase 2 of the EA process involved a review and update to alternative solutions to the problem/opportunity statement. The 2030 TMP recommended that the Fanshawe Park

Road/Richmond Street intersection be improved by adding through lanes, additional left turn lanes, and improvements to pedestrian and cycling facilities. As part of this review, the intersection improvements recommended by the TMP were refined to address the issues associated with the major traffic movements at the intersection.

Phase 3 of the EA process involved the identification of the design options. Based on the Phases 1 and 2 review and update, five design options were developed and evaluated to address the problems and opportunities identified for the Richmond Street and Fanshawe Park Road intersection. In addition to the preferred access management changes, all options include the following improvements:

- Westbound dual left turn lanes
- Northbound dual left turn lanes
- Improved cycling facilities and pedestrian environment

In addition to the above improvements, Design Options 1 to 5 included the following improvements:

Design Option 1:

- Additional northbound through lane, southbound right turn lane and removal of all channelized islands

Design Option 2:

- Additional northbound, eastbound and westbound through lanes, southbound right turn lane and removal of all channelized islands

Design Option 3:

- Northbound and southbound right turn lanes and addition of northbound channelization

Design Option 4:

- Additional northbound, eastbound and westbound through lanes, southbound right turn lane and addition of a northbound right lane with channelization

Design Option 5:

- Additional eastbound and westbound through lanes, addition of northbound right turn lane, removal of existing westbound right turn lane and removal of all channelized islands

Comparative Evaluation of Design Options

A comparative evaluation of Design Options 1 to 5 was completed to determine the preferred option. Reflecting existing and future conditions potentially affected by the options, the evaluation covered transportation planning and traffic operations, road design, construction, land uses and socio-economic environment and relative costs.

Based on the comparative evaluation, Design Option 5 was chosen as the preferred option. In summary, it improves traffic operations, better accommodates pedestrians and is compatible with the BRT design, the “Main Street”, “Transit Village” and “Rapid Transit Boulevard” designations of the London Plan, and future widening of Fanshawe Park Road. It also facilitates the incorporation of urban design elements to implement the London Plan’s policies and enhance the gateway function of the intersection.

The preferred design for intersection improvements is shown on Figure 2 below and the cross-sections of the proposed roadway improvements are shown on Figures 3 to 6.

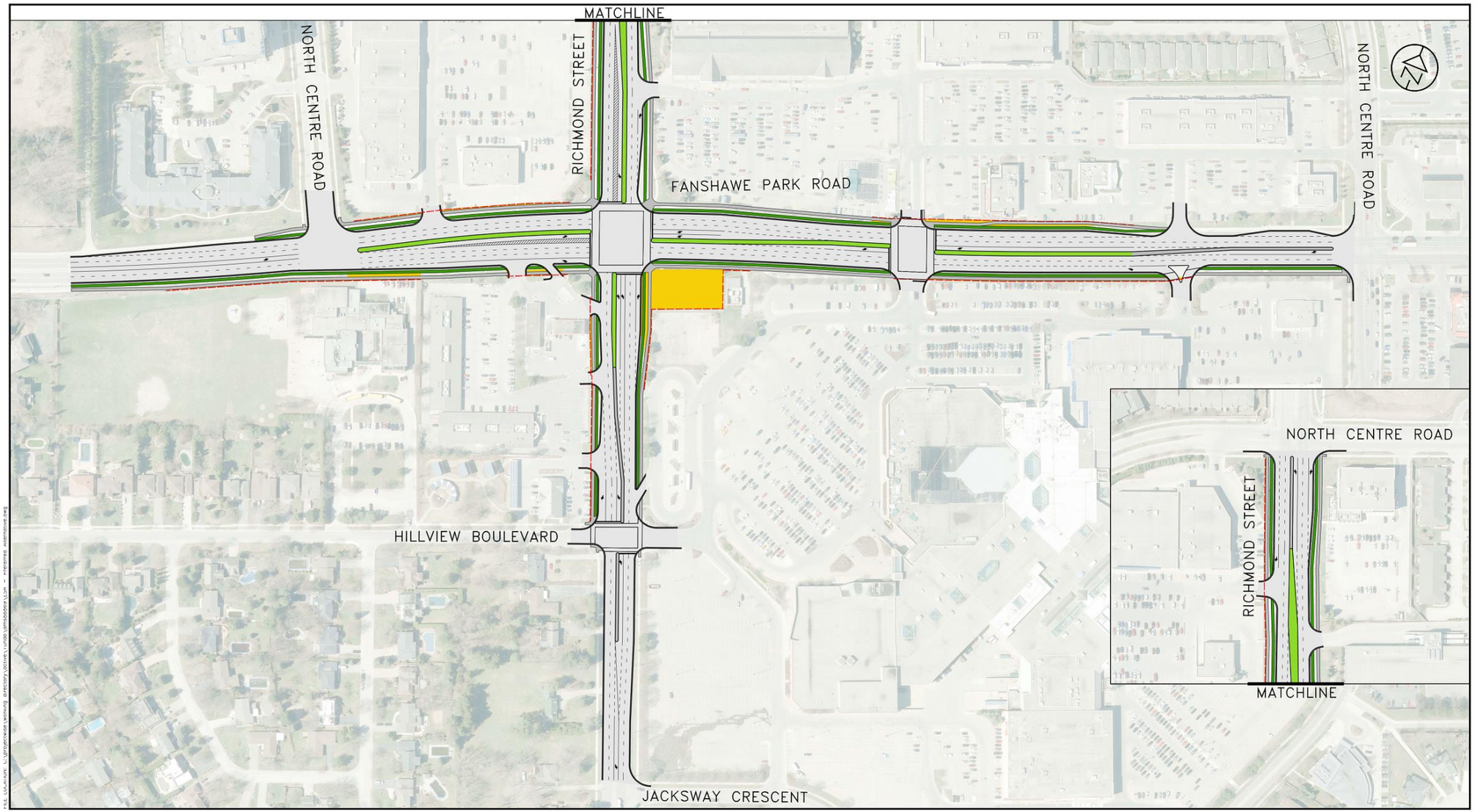


Figure 2: Preferred Design for Intersection Improvements

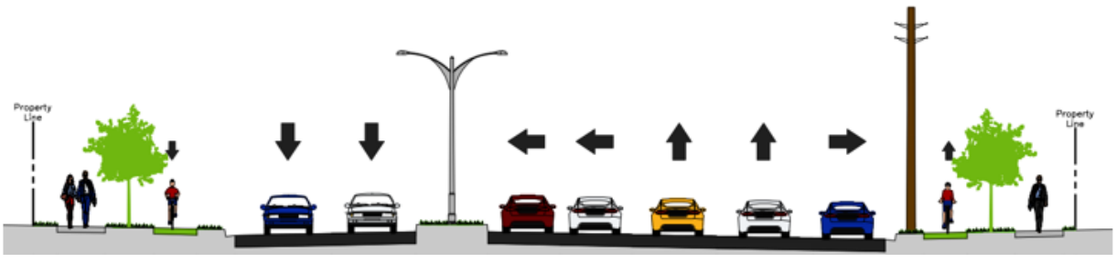


Figure 3: Preferred Richmond Street Cross-Section, South of Fanshawe Park Road (Looking North)

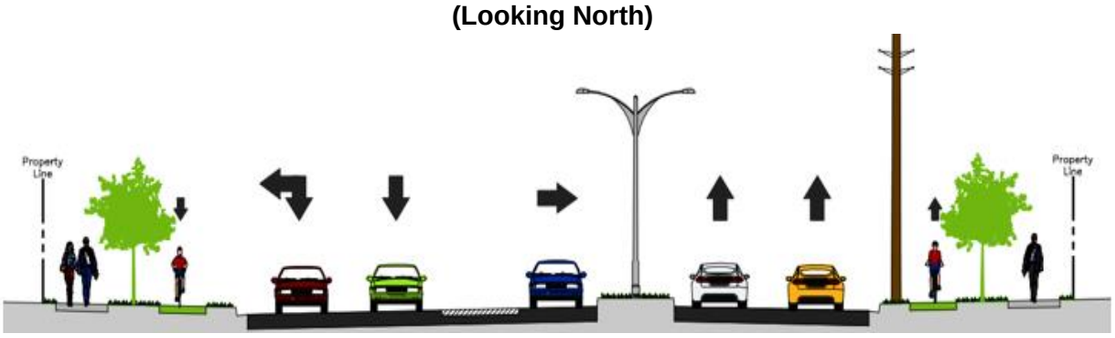


Figure 4: Preferred Richmond Street Cross-Section, North of Fanshawe Park Road (Looking North)

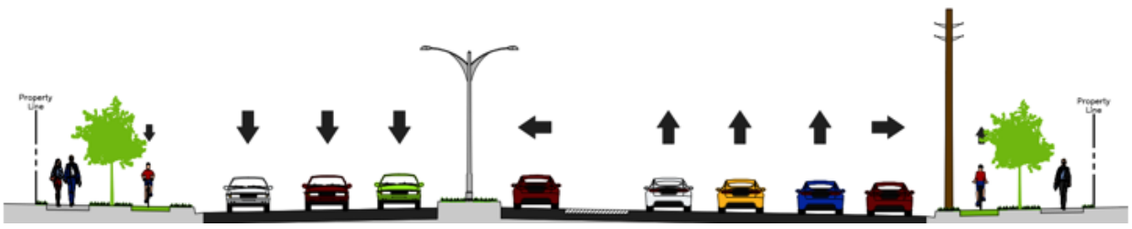


Figure 5: Preferred Fanshawe Park Road Cross-Section, West of Richmond Street (Looking East)

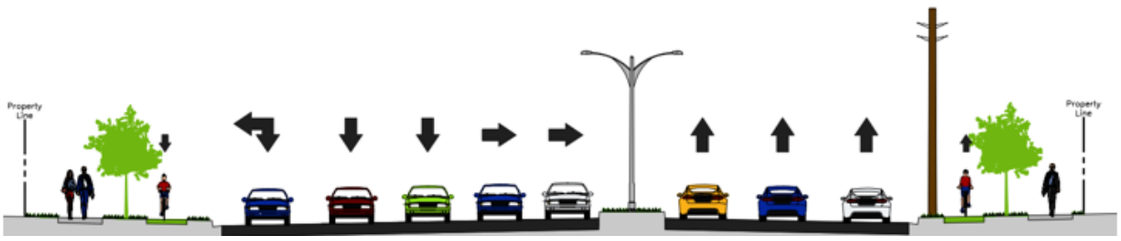


Figure 6: Preferred Fanshawe Park Road Cross-Section, East of Richmond Street (Looking East)

Property Impacts

The preferred design requires property from all quadrants of the intersection. Property requirements at the southeast quadrant will result in the removal of a commercial building. Figure 7 shows the property required for the preferred design.

The City will continue consultation with impacted property owners in the future to discuss and negotiate compensation for property impacts as a result of the proposed plan.

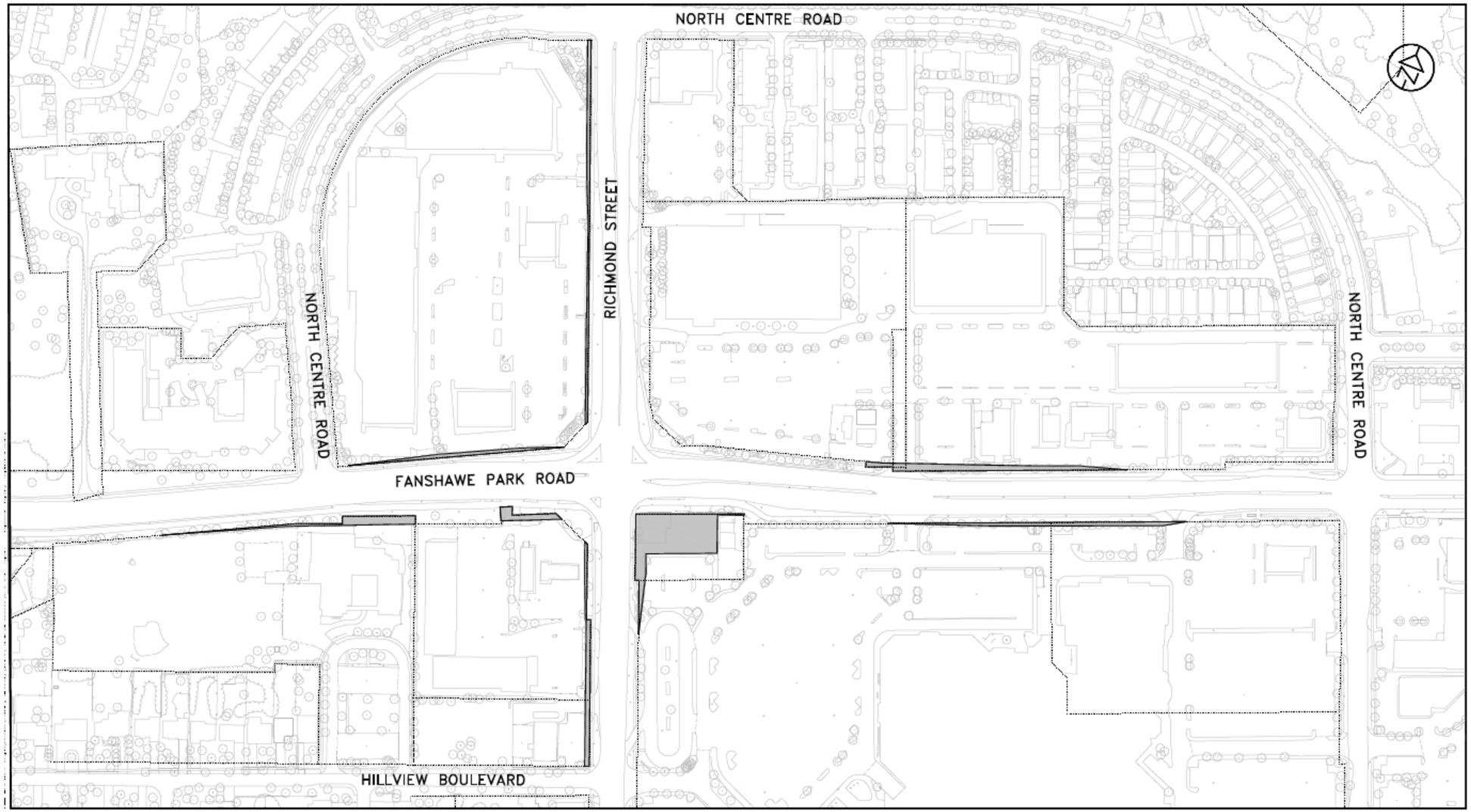


Figure 7: Property Required for the Preferred Design

CONSULTATION

A Notice of Study Commencement for the project was issued in August 2015. Replies were received from the Ministry of Environment and Climate Change (MOECC), Masonville Place and the Old Masonville Ratepayers Association. Two residents expressed concerns about pedestrian safety.

Public Information Centre (PIC) 1 was held on October 22, 2015. The purpose of PIC 1 was to obtain public and agency input on the work completed during the review and update of Phases 1 and 2 of the Class EA process, including the alternative design components developed for the intersection improvements.

In general, most of the PIC attendees agreed that intersection improvements are required to relieve traffic congestion and improve traffic and pedestrian safety. Concerns included traffic infiltration into the surrounding neighbourhoods, the timing and length of construction, traffic signal timing and the movement of pedestrian and cyclists. Only one written submission was received during the comment period.

Public Information Centre (PIC) 2 was held on June 16, 2016. The purpose of PIC 2 was to present the design options developed for the proposed improvements, the comparative evaluation of the options and the preferred option. Design Option 5 was identified as the preferred design.

Most of the PIC attendees appeared to agree with the proposed intersection improvements and the selection of Design Option 5 as the preferred design. Comments included many of the same concerns expressed at PIC 1, including traffic infiltration, the timing and length of construction, traffic signal timing and pedestrian and cyclist safety.

Consultation with First Nations

The Ministry of the Environment and Climate Change (MOECC) provided information and resources to assist the City and Dillon with First Nations consultation. According to MOECC's Preliminary Assessment Checklist, First Nation and Metis Community Interests and Rights, the intersection improvements do not trigger any interests or rights. The Notice of Study Commencement and the notices for Public Information Centres 1 and 2 were mailed to the First Nations on the project contact list by letters issued by the City. No concerns were identified from the First Nations.

Meetings with Impacted Property Owners and Businesses

A meeting was held early in the process in July 2016 with the owners of the commercial property at the southeast corner accommodating Hakim Optical

Prior to PIC 2, the City of London advised several businesses by letter dated June 10, 2016, that their property would be potentially impacted by proposed access management changes or property acquisitions. Meetings have been held with engaged businesses including Cadillac Fairview (the owner of Masonville Place), IVEST Properties (the owner of the plaza on the southwest quadrant), Copia Developments (the owner of the building at the southeast corner), and Suncor/ Petro-Canada (the owner of Petro-Canada at the southwest corner of the intersection).

Subsequent to PIC 2, meeting invitations were extended to all property owners impacted by the intersection improvements. Meetings were held with property owners impacted by the proposed property acquisition including, Thames Valley District School Board (related to Masonville School) and Bentall Kennedy (owner of property on northwest quadrant). The owners of the commercial property at the southeast corner were contacted again after PIC 2.

Meetings will also to be coordinated between the rapid transit team and the property owners impacted by the BRT project including, TD Canada Trust and Richmond and Fanshawe Centre Inc. These properties are located on the west side of Richmond Street, south of Fanshawe Park Road and north of Hillview Boulevard.

FINANCIAL IMPLICATIONS AND IMPLEMENTATION

A preliminary cost estimate summary for the Richmond Street and Fanshawe Park Road intersection improvements is illustrated below. The costs include roadway construction, traffic signals and illumination, storm sewers, sanitary sewers, watermains, utility relocation, property acquisition and miscellaneous costs.

Item	Estimated Cost ($)
Intersection Improvement Investments	
Road works and Earthworks	3,039,000
Storm Sewers and Appurtenances	305,000
Traffic Signals and Illumination	1,025,000
Miscellaneous	205,000
Utility Relocations	1,438,000
Retaining Walls and Associated Work	215,000
Sub-total	**6,227,000**
Contingency (15%)	934,000
Engineering and Consulting (15%)	934,000
Property Acquisition	4,155,000
TOTAL PRELIMINARY COST ESTIMATE	**12,250,000**
Coordinated Lifecycle Renewal Investments	
Sanitary Sewers and Appurtenances	151,000
Watermains and Appurtenances	526,000
Sub-total	**677,000**
Contingency (15%)	101,500
Engineering and Consulting (15%)	101,500
Lifecycle Renewal Sub-total	**880,000**
TOTAL PRELIMINARY COST ESTIMATE	**13,130,000**

The initial 2014 DC estimates were based on a very preliminary review of the intersection and limited property impacts were known when the budget for the intersection was allocated in the 2014 Development Charges Background Study. A placeholder budget of $7.9 M for the project was identified in the 2014 Development Charges Background Study. After more thorough analysis and scoping through the EA process, the transportation improvements are estimated at $12.25 M. Lifecycle renewal investments in sanitary sewer and watermain were coordinated with the project for cost-effectiveness and are valued at an additional $880,000.

The previous suggested implementation year for the project was 2018. The project EA schedule was adjusted to coordinate with the BRT progress and a new project implementation schedule will be considered in the formulation of the upcoming 2019 Development Charges Bylaw and capital budget updates. The revised Development Charges Background Study budgeting and schedule will account for the updated project

cost estimate and an involved property acquisition schedule. The project implementation schedule is tentatively identified for construction start in 2022.

The development of design alternatives was completed with consideration for compatibility with the future rapid transit (BRT) design. Property acquisition requirements north of Hillview Boulevard have also been incorporated such that these properties are only impacted once. These requirements are included in this EA as shown in Figure 7. South of the Hillview Boulevard / Masonville Mall entrance, additional property will be required in the future as part of the BRT project.

The preliminary design has also been coordinated with London Hydro to determine impacts on existing hydro infrastructure and relocation requirements. The preferred relocation strategy for London Hydro is for their plant to be relocated underground prior to the road work due to significant corridor constraints. This work will be completed on a standard utility cost sharing basis and the City portion of this cost is included in the preliminary cost estimate for the project.

Implementation

Coordination with the BRT project will also be considered as the projects progress. To accommodate the future rapid transit (BRT) design, work on Richmond Street between Fanshawe Park Road and Hillview Blvd has been designed as an interim construction step in this EA to minimize future construction cost. Within these limits, the outside curbs and boulevards can be maintained with minor southbound lane reconfiguration and new median work to occur during rapid transit construction. An interim southbound right-turn lane is provided on Richmond Street at Hillview Boulevard to accommodate the ultimate location of future southbound through lanes under the BRT construction project. The extent of the interim/future work as part of this EA is shown in Figure 8 below. Ultimate boulevard configurations and property requirements south of Hillview Boulevard are to be included in the rapid transit EA Study.

Due to the increased roadway and boulevard widths, significant boulevard tree removals will be required within the proposed limits of the ROW. New tree planting locations and species will be determined in the detailed design phase as part of a landscape planting plan. The centre islands, the northeast corner, and northwest corner of the intersection also provide potential opportunity space for urban design elements at the intersection. These elements could include: public art, shade trees, pedestrian seating, waste receptacles, cyclist wayfinding and rest areas. Locations and features will be determined in detailed design.

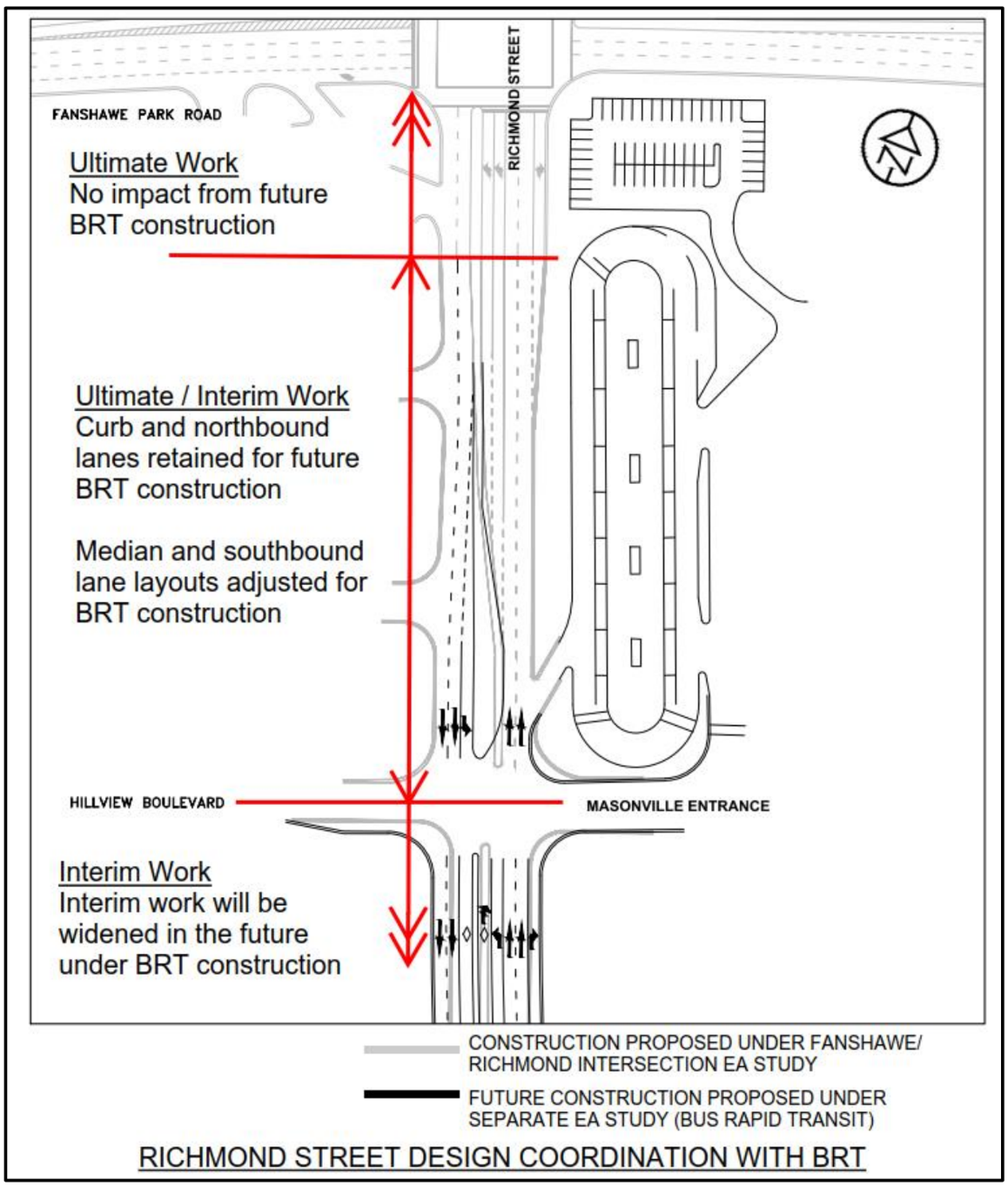


Figure 8: Construction Coordination with BRT Project

CONCLUSION

The provincial Environmental Assessment Act requires the completion of an EA for projects of this scope. A Municipal Class EA was undertaken for the improvements of Hamilton Road and Highbury Avenue intersection. An ESR has been completed and is ready for final public review. The EA was prepared with input from external agencies, utilities, emergency service providers, and other stakeholders, and property owners in proximity to the study area.

Based on a comparative evaluation, the design option that was selected improves overall future intersection traffic operations while minimizing impacts on the surrounding residential and commercial properties, compared to the other options. The selected design option also provides improved cycling and pedestrian facilities and includes design features such as landscaping and urban design elements to be consistent with the transit village vision.

Pending Council approval, a Notice of 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 issues have not been adequately addressed, they may provide written notification within the 30-day review period to the Minister of the Environment and Climate Change requesting further consideration.

Acknowledgements

This report was prepared with assistance from Maged Elmadhoon, Traffic and Transportation Engineer in the Transportation Planning and Design Division.

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

Attach: Appendix A: Environmental Study Report Executive Summary

c: Brian Huston, P.Eng., Dillon Consulting Limited

Appendix A

Environmental Study Report Executive Summary

Executive Summary

Introduction

The City of London retained Dillon Consulting Limited to complete an Environmental Assessment (EA) Study for improvements to the Fanshawe Park Road/Richmond Street intersection following the requirements of the *Municipality Class EA* (October 2000, as amended in 2007, 2011, and 2015) for a Schedule 'C' project. Building on the recommendations of the City's 2030 *Smart Moves Transportation Master Plan* (May 2013), the EA Study assessed the need for additional through and turning lanes at the intersection, access management modifications, transit considerations and pedestrian and cyclist friendly design features at the intersection.

The study followed Phases 1 to 4 of the Class EA process. Phases 1 and 2 of the process were covered by the City's TMP and reviewed and updated as part of this Class EA.

Phase 1 Review and Update, Problem/Opportunity Identification

The following Problem/Opportunity Statement was developed as part of the review and update of Phase 1 of the Class EA process. The statement is based on an overview of planning, engineering and environmental conditions potentially affected by the proposed intersection improvements.

Improvements to the Fanshawe Park Road/Richmond Street intersection are required to address:

- Existing traffic volumes (2015 data):
    - During the weekday morning (AM) peak hour, the overall intersection is above capacity at a Level of Service (LOS) 'E', and operates poorly with intersection congestion and high delays. The northbound left turn movement has significant delays of more than three minutes and is above capacity at LOS 'F' with more than three minute delays
    - During the weekday afternoon (PM) peak hour, the intersection is above capacity at LOS 'F'. The northbound left turn and westbound through movements are operating above capacity at LOS 'F' with more than three minute delays. Also, the eastbound left turn and through movements are operating above capacity at LOS 'F', approaching three minute delays
    - During the Saturday peak hour, the intersection is above capacity at LOS 'D'. The westbound left turn movement is operating above capacity at LOS 'F' with nearly two minute delays

- Future traffic volumes (2015 data projected to 2026 using a 1.5% annual growth rate):
    - During the morning (AM) peak hour, the intersection will operate at LOS 'F'. The northbound left turn movement will continue to operate above capacity at LOS 'F' with nine minute delays. The southbound through right and eastbound through movements are approaching capacity and are now at LOS 'F'
    - During the afternoon (PM) peak hour, the intersection will operate at LOS 'F'. The eastbound left turn, eastbound through, northbound left turn and

westbound through movements operate above capacity at LOS 'F' with six minute delays for the northbound left turn movement
    - During the Saturday peak hour, the intersection will also operate at LOS 'F' with the westbound, northbound and southbound left turn movements operating above capacity at LOS 'F' and delays ranging from 2.5 minutes to more than three minutes. The eastbound and westbound through movements are both operating above capacity at LOS 'F'
- Intersection safety:
    - According to 2014 London Police collision reports, there were 293 reported collisions at the intersection from 2007 to 2014. Out of the total number of collisions, 63% were rear end collisions
- Access management issues:
    - Individual access points to commercial entrances in close proximately of the intersection are contributing to the existing queuing and collision issues
- Transit needs, including future Bus Rapid Transit (BRT) routes
- Pedestrian and cyclist needs.

Phase 2 Review and Update, Alternative Solutions

The TMP recommended that the Fanshawe Park Road/Richmond Street intersection be improved by adding through lanes, additional left turn lanes (to create westbound and northbound dual lefts) and a northbound pedestrian-friendly channelized right turn lane. As part of the Phase 2 review and update, the intersection improvements recommended by the TMP were refined. The following work was completed for Phase 2:

- An overview of planning, engineering and environmental conditions potentially affected by the proposed improvements to the intersection
- The "Do Nothing" alternative (maintaining the intersection "as is" with no improvements) was dismissed from further consideration as it does not address existing or future traffic capacity, queuing and collision issues, future transit needs, or pedestrian and cyclist needs
- Options for improving access management at the intersection were identified and evaluated. Preferred access management options were subsequently incorporated into all of the Design Options developed for the improvements. These options included restricting some access points to right-in-right-out access using medians to physically restrict left-turn movements out of entrances close to the intersection. Closure of the exit from the existing bus terminal will be required
- Alternative design components were evaluated to address the issues associated with the major traffic movements at the intersection. Examples of the components include increase green time for traffic signals, increase capacity by adding straight-through lanes on Fanshawe Park Road, providing dual-left or longer turn lanes and increase the storage length for turns. The most effective components were carried forward and incorporated into the Design Options developed for the intersection improvements.

Phase 3, Design Options

Design Options

Based on the Phases 1 and 2 review and update, five Design Options were developed and evaluated. In addition to the preferred access management changes, all options include the following improvements:

- Westbound dual left turn lanes
- Northbound dual left turn lanes
- Southbound slotted left turn lane
- Eastbound slotted left turn lane
- Improved cycling and pedestrian facilities.

In addition to these improvements, Design Options 1 to 5 included the following improvements:

- Design Option 1 – additional northbound through lane, southbound right turn lane and removal of all channelized islands
- Design Option 2 – additional northbound, eastbound and westbound through lanes, southbound right turn lane and removal of all channelized islands
- Design Option 3 – northbound and southbound right turn lanes and addition of northbound channelization
- Design Option 4 – additional northbound, eastbound and westbound through lanes, southbound right turn lane and addition of a northbound right lane with channelization
- Design Option 5 – additional eastbound and westbound through lanes, addition of northbound right turn lane, removal of existing westbound right turn lane and removal of all channelized islands.

The lane configurations of the five Design Options developed for the intersection improvements, along with the existing layout, are summarized in **Table ES1**.

Table ES1: Lane Configuration of Design Options

	Existing	Option 1	Option 2	Option 3	Option 4	Option 5
Fanshawe Park Road Eastbound						
Through lanes	2	2	3	2	3	3
Left turn lane	Single	Single	Single	Single	Single	Single
Right turn lane	Yes*	Yes	Yes	Yes*	Yes*	Yes
Bike lanes	Yes**	Yes**	Yes**	Yes**	Yes**	Yes**
Fanshawe Park Road Westbound						
Through lanes	2	2	3	2	3	3
Left turn lane	Single	Dual	Dual	Dual	Dual	Dual
Right turn lane	Yes*	Yes	Yes	Yes*	Yes*	No
Bike lanes	No	Yes**	Yes**	Yes**	Yes**	Yes**
Richmond Street Northbound						
Through lanes	2	3	3	2	2	2
Left turn lane	Single	Dual	Dual	Dual	Dual	Dual
Right turn lane	No	No	No	Yes*	Yes*	Yes
Bike lanes	Sharrow	Yes**	Yes**	Yes**	Yes**	Yes**
Richmond Street Southbound						
Through lanes	2	2	2	2	2	2
Left turn lane	Single	Single	Yes	Single	Single	Single
Right turn lane	No*	Yes	Yes	Yes*	Yes*	No
Bike lanes	No	Yes**	Yes**	Yes**	Yes**	Yes**

*with channelized island
**in-boulevard bike lanes will be provided.

Comparative Evaluation of Design Options

A comparative evaluation of Design Options 1 to 5 was completed to determine the preferred option. Reflecting existing and future conditions potentially affected by the options, the evaluation covered transportation planning and traffic operations, road design, construction, land uses and socio-economic environment and relative costs. For this project, the most important criteria are future Level of Service, pedestrian and cyclist safety, and compatibility with the City's on-going *rapid transit* initiative and the London Plan (adopted by Council in June 2016).

Based on the comparative evaluation, Design Option 5 was chosen as the preferred option. In summary, the results of the comparative evaluation showed that:

- Design Option 4 provided the most significant intersection operation improvements, with slightly shorter delays than Design Option 5
- Design Option 1, Design Option2 and Design Option 5 better accommodate pedestrians by removing channelization (not considered pedestrian friendly)
- Design Option 2, Design Option 4 and Design Option 5 are most compatible with rapid transit and the "Main Street" designation of the London Plan
- Design Option 2, Design Option 4 and Design Option 5 facilitate more boulevard space to incorporate urban design elements to implement the London Plan's policies and enhance the gateway function of the intersection.

Public and Agency Consultation

A Notice of Study Commencement for the project was issued in August 2015. Replies were received from the Ministry of Environment and Climate Change (MOECC), Masonville Place and the Old Masonville Ratepayers Association. Two residents expressed concerns about pedestrian safety.

Public Information Centre (PIC) 1 was held on October 22, 2015, at the Masonville Branch of the London Public Library. The purpose of PIC 1 was to obtain public and agency input on the work completed during the review and update of Phases 1 and 2 of the Class EA process, including the alternative design components developed for the intersection improvements.

A total of 26 individuals attended PIC 1. Almost all of the attendees were residents of the surrounding neighbourhoods. Representatives of London Hydro, the Middlesex-London Health Unit, Masonville Ratepayers Association, Masonville Mall and Copia Developments also attended. In general, most of the PIC attendees agreed that intersection improvements are required to relieve traffic congestion and improve traffic and pedestrian safety. Concerns included traffic infiltration into the surrounding neighbourhoods, the timing and length of construction, traffic signal timing and the movement of pedestrian and cyclists. Only one written submission was received during the comment period. A resident requested that speed bumps be installed on North Centre Road to slow traffic and improve pedestrian safety. Adding a London Transit bus route past Richmond Woods Retirement Village was also suggested.

PIC 2 was held on June 16, 2016, at the Richmond Woods Retirement Centre on North Centre Road. The purpose of PIC 2 was to present the Design Options developed for the proposed improvements, the comparative evaluation of the options and the preferred option. Design

Option 5 was identified as the preferred design. A total of 37 individuals signed the Record of Attendance.

Most of the PIC attendees appeared to agree with the proposed intersection improvements and the selection of Design Option 5 as the preferred design. Concerns included many of the same concerns expressed at PIC 1, including traffic infiltration, the timing and length of construction, traffic signal timing and pedestrian and cyclist safety.

Meetings with Impacted Businesses

Prior to PIC 2, the City of London advised several businesses by letter dated June 10, 2016, that their property is potentially impacted by proposed access management changes or property acquisitions. Meetings have been held with:

- representatives of Cadillac Fairview (the owner of CF Masonville Place)
- IVEST Properties (the owner of the plaza on the southwest quadrant)
- Copia Developments (the owner of the building at the southeast quadrant), and
- Suncor/ Petro-Canada (the owner of Petro-Canada at the southwest corner of the intersection).

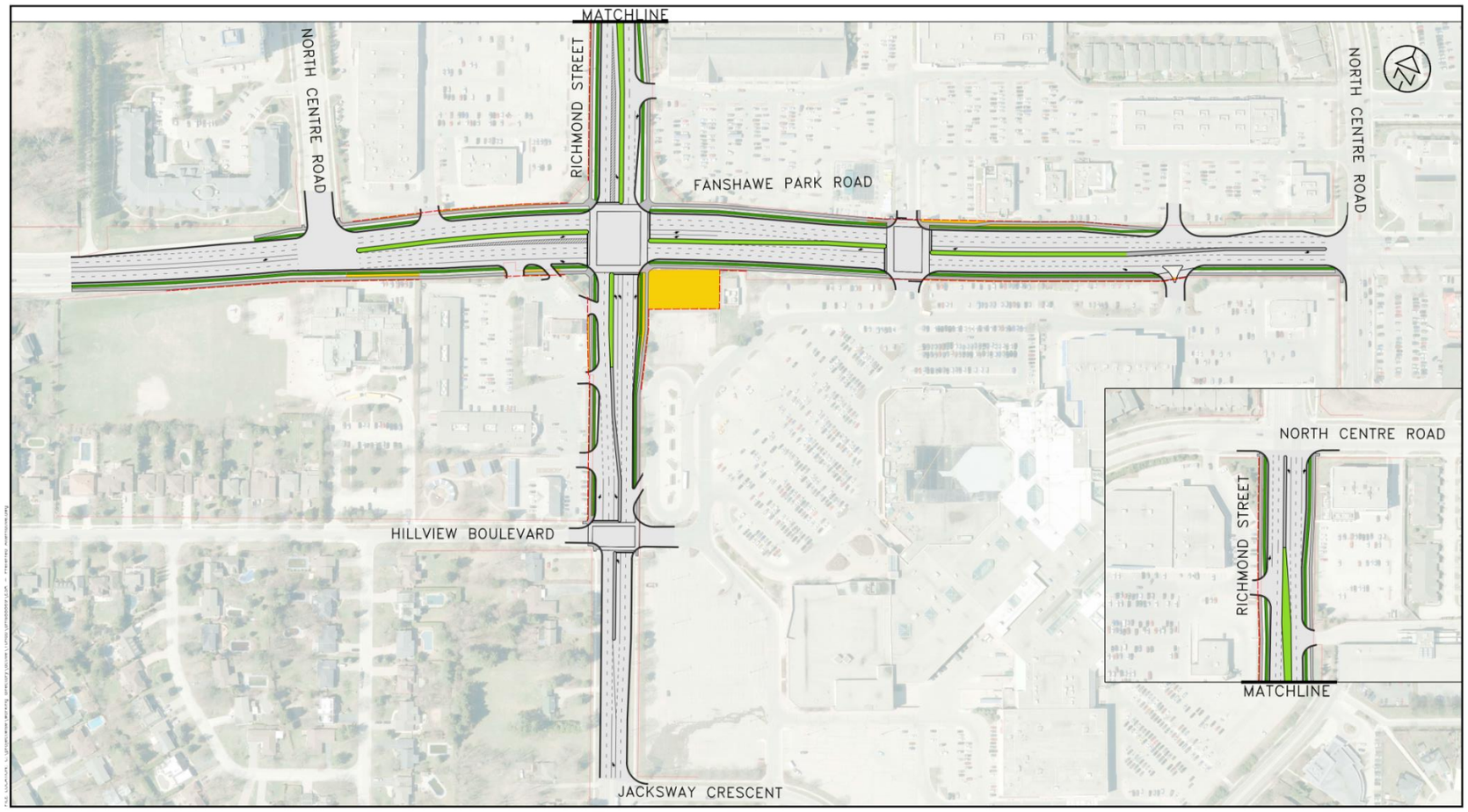
Subsequent to PIC 2, meetings were held or to be held with other property owners impacted by the proposed property acquisition:

- Thames Valley District School Board (with respect to Masonville School on Hillview Boulevard)
- Bentall Kennedy (owner of property on northwest quadrant)
- RioCan (owner of property on north side of Fanshawe Park Road, east of Richmond Street)
- Choice Properties (owner of property on northeast corner of Fanshawe Park Road and Richmond Street intersection).

The rapid transit team will hold meetings with property owners impacted by the BRT project including, TD Canada Trust and Richmond and Fanshawe Centre Inc. These properties are located on the west side of Richmond Street, south of Fanshawe Park Road and north of Hillview Boulevard.

Preferred Design

In summary, Design Option 5 was chosen as the preferred design as it provides a balance between improvements in overall traffic operations, pedestrian safety, compatibility with the *rapid transit* initiative and the ability to incorporate urban design features outlined in The London Plan. As shown in **Figures ES1 to ES6**, the preferred design includes westbound dual left turn lanes, northbound dual left turn lanes, a southbound slotted left turn lane, an eastbound slotted left turn lane and northbound and eastbound right turn lanes as well as additional through lanes westbound and eastbound in the vicinity of the intersection. The existing southbound and westbound right turn lanes and all right turn channelization will be removed. Other design features include improved pedestrian and cycling facilities, landscaping and urban design elements.



CITY OF LONDON
RICHMOND STREET &
FANSHAWE PARK ROAD
INTERSECTION IMPROVEMENTS
ENVIRONMENTAL ASSESSMENT STUDY

TS-11-34

CORPORATION OF THE CITY OF LONDON

EXISTING ROW

ROW AND PROPERTY REQUIRED

PROPOSED SIDEWALK

PROPOSED IN-BOULEVARD BIKE LANES

PROPOSED PLANTED CURBED MEDIAN (3m WIDTH)

PROPOSED CONCRETE CURBED MEDIAN (2m WIDTH)

SCALE - HORZ.
20m 0 40m

PROJECT No. 15-1918
DATE: AUGUST 2018

DILLON CONSULTING

RICHMOND STREET AND
FANSHAWE PARK ROAD
INTERSECTION IMPROVEMENTS

PREFERRED DESIGN
FIGURE ES1

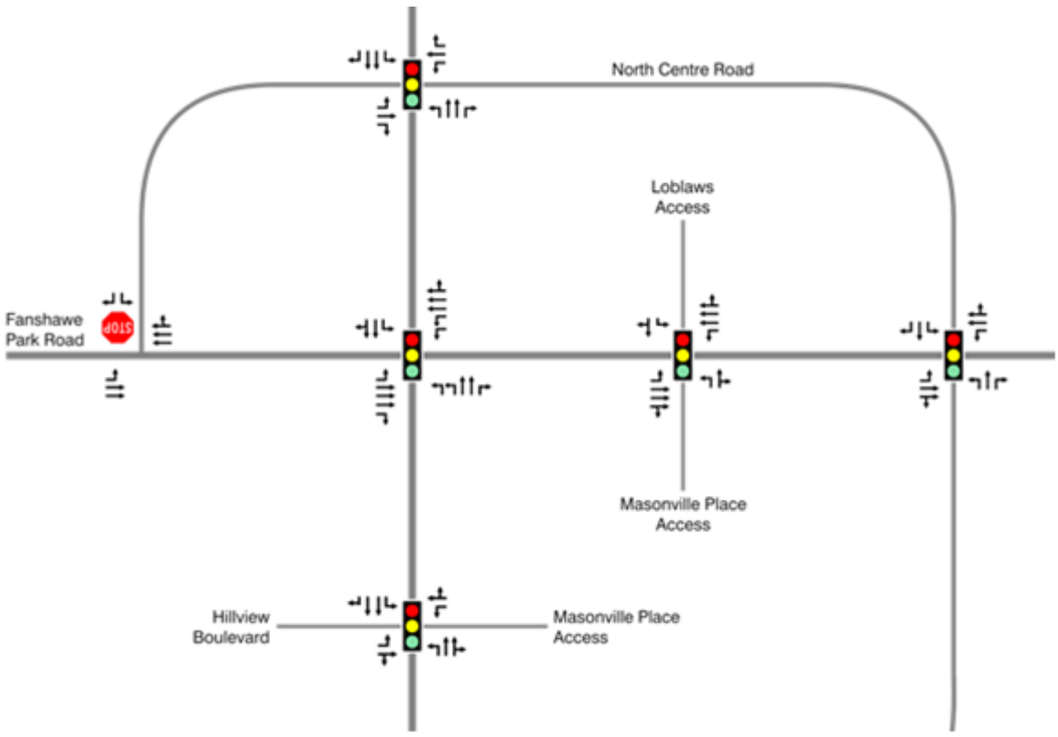


Figure ES2: Preferred Design, Lane Configuration and Traffic Control Measures

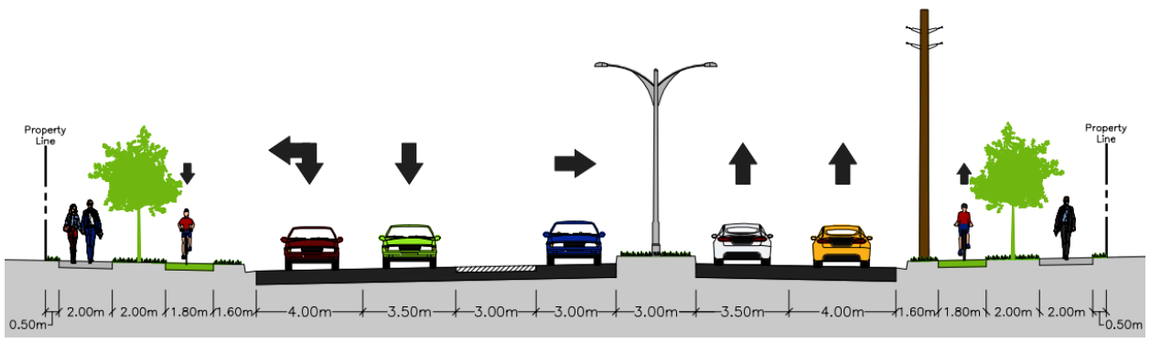


Figure ES3: Preferred Richmond Street Cross-Section, North of Fanshawe Park Road

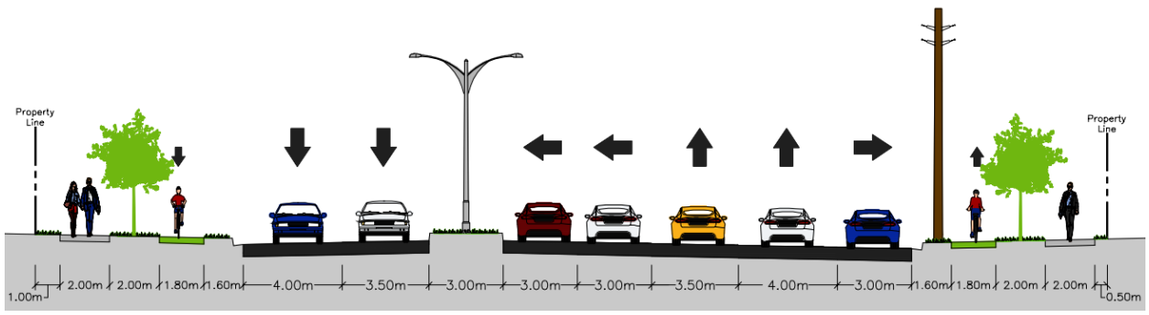


Figure ES4: Preferred Richmond Street Cross-Section, South of Fanshawe Park Road

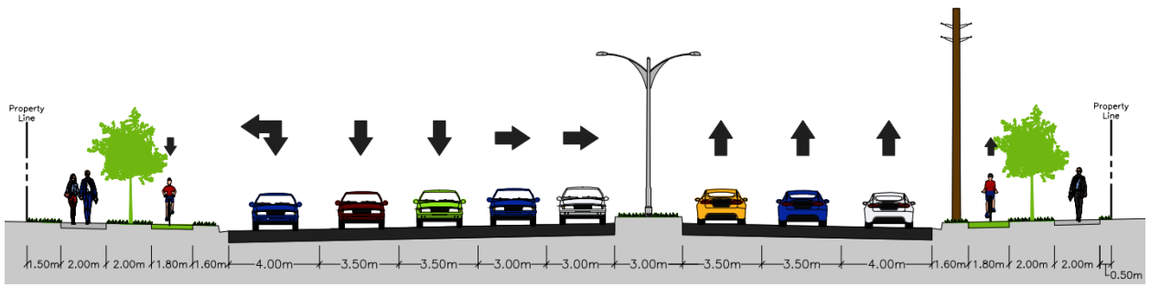


Figure ES5: Preferred Fanshawe Park Road Cross-Section, East of Richmond Street

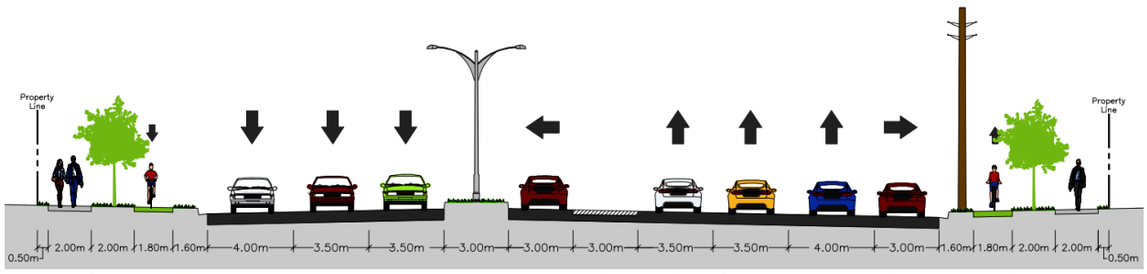


Figure ES6: Preferred Fanshawe Park Road Cross-Section, West of Richmond Street

The development of design alternatives was completed with consideration for compatibility with the future rapid transit (RT) design. To accommodate the future bus rapid transit (BRT) design, work on Richmond Street between Fanshawe Park Road and Hillview Boulevard has been designed as an interim construction step in this EA to minimize future construction cost. This is illustrated in **Figure ES7**. North of Hillview Boulevard, construction completed on the northbound lanes will be maintained in the RT design. An interim southbound right-turn lane is provided on Richmond Street at Hillview Boulevard to set the future westerly curb line for future through lanes under the BRT project. This curb and boulevard can be maintained with minor lane reconfigurations and median work to occur during RT construction. Property acquisition requirements north of Hillview Boulevard have also been incorporated such that these properties are only impacted once. These requirements are included in this EA. South of Hillview Boulevard / Masonville Mall entrance, additional property will be required in the future as part of the RT project.

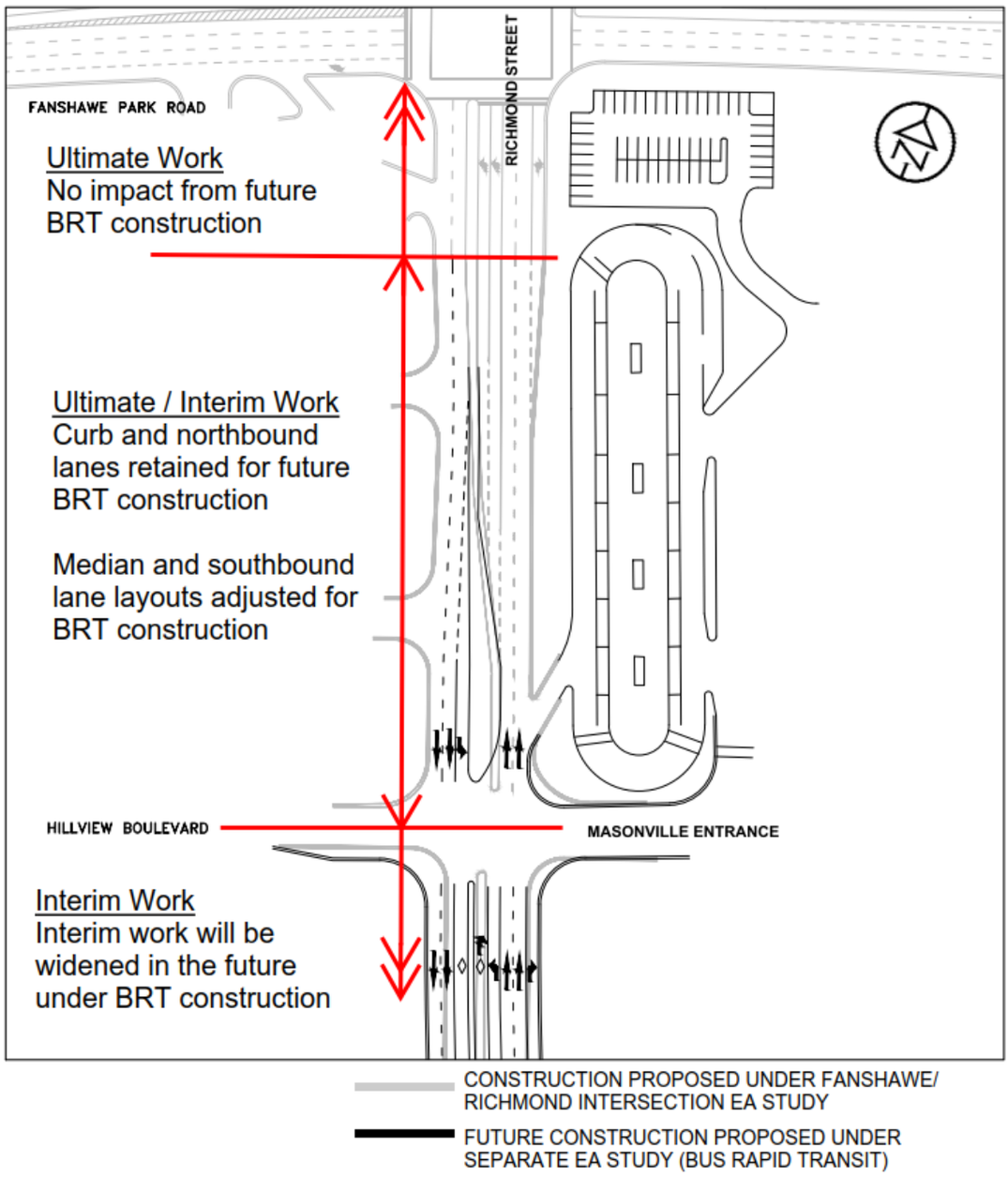


Figure ES7: Ultimate and Interim Work Coordination with RT EA

Due to the increased roadway and boulevard widths, significant tree removals will be required within the proposed limits of the ROW. New tree planting locations and species will be determined in the Detailed Design phase as part of a landscape planting plan. **Figure ES8** shows the potential locations for urban design elements at the intersection. These elements could include: public art, shade trees, pedestrian seating, waste receptacles, and cyclist wayfinding and rest areas. Locations and features will be determined in detailed design.

Utility Relocations

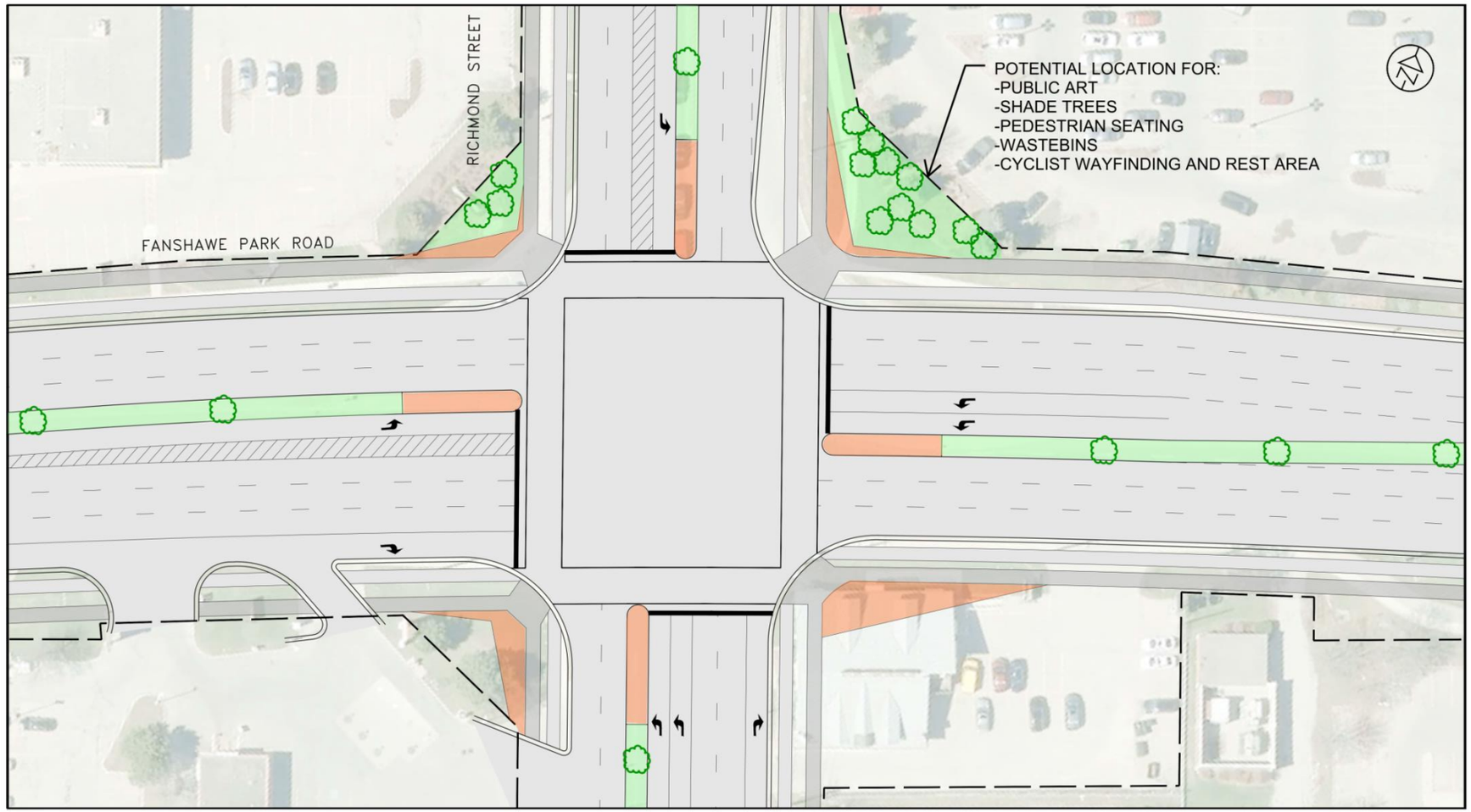
The preliminary design was coordinated with London Hydro to determine impacts on existing hydro infrastructure and relocation requirements. The preferred relocation strategy for London Hydro is for their plant to be relocated underground ahead of the roadway work. This work will be completed on a 50/50 cost sharing basis and the City portion of this cost is included in the preliminary cost estimate for the project.

Construction Timing and Traffic Management during Construction

The proposed schedule for intersection improvements is under review and subject to budget availability, completion of Detailed Design and receipt of all required approvals. Utility relocations, property acquisitions and tree clearing will be completed prior to construction.

A detailed traffic staging plan will be developed during detailed design. During construction:

- Temporary lane reductions will be required on Fanshawe Park Road and Richmond Street
- Access to residential and commercial properties will be maintained
- Temporary traffic signals will be in operation at the intersections.



CITY OF LONDON
RICHMOND STREET &
FANSHAWE PARK ROAD
INTERSECTION IMPROVEMENTS
ENVIRONMENTAL ASSESSMENT STUDY

TS-11-34

CORPORATION OF THE CITY OF LONDON

PROPOSED ROW
AREA OF LOW-LAYING DESIGN ELEMENTS ONLY
POTENTIAL LOCATIONS FOR URBAN DESIGN ELEMENTS
PROPOSED SIDEWALK
PROPOSED IN-BOULEVARD BIKE LANES

SCALE - HORZ.
5m 0 10m

PROJECT No. 15-1918
DATE: AUGUST 2018

DILLON CONSULTING

RICHMOND STREET AND
FANSHAWE PARK ROAD
INTERSECTION IMPROVEMENTS

POTENTIAL URBAN DESIGN ELEMENTS
FIGURE ES8

Preliminary Construction Cost Estimate

As shown in **Table ES2**, the preliminary construction sot estimate for the proposed intersection improvements, including the City's share of utility relocations, is $13,130,000 million.

Table ES2: Preliminary Construction Cost Estimate

Item	Estimated Cost ($)
Intersection Improvement Investments	
Road works and Earthworks	3,039,000
Storm Sewers and Appurtenances	305,000
Traffic Signals and Illumination	1,025,000
Miscellaneous	205,000
Utility Relocations	1,438,000
Retaining Walls and Associated Work	215,000
Sub-total	**6,227,000**
Contingency (15%)	934,000
Engineering and Consulting (15%)	934,000
Property Acquisition	4,155,000
TOTAL PRELIMINARY COST ESTIMATE	**12,250,000**
Coordinated Lifecycle Renewal Investments	
Sanitary Sewers and Appurtenances	151,000
Watermains and Appurtenances	526,000
Sub-total	**677,000**
Contingency (15%)	101,500
Engineering and Consulting (15%)	101,500
Lifecycle Renewal Sub-total	**880,000**
TOTAL PRELIMINARY COST ESTIMATE	**13,130,000**

TO:	**CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON SEPTEMBER 25, 2018**
FROM:	**KELLY SCHERR, P.ENG., MBA MANAGING DIRECTOR, ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER**
SUBJECT:	**RAIL SAFETY WEEK**

RECOMMENDATION

That, on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, the following report regarding Rail Safety Week **BE RECEIVED** for information.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

- Civic Works Committee – August 13, 2018 – Rail Safety Improvement Program Agreement for Grade Crossing Improvements
- Civic Works Committee – April 24, 2017 – Rail Safety Week
- Civic Works Committee – March 29, 2016 – Grade Crossing Regulation
- Civic Works Committee – April 28, 2014 – Rail Safety Week

2015-19 STRATEGIC PLAN

The 2015-2019 Strategic Plan through the strategic focus area of Building a Sustainable City. The plan identifies the implementation and enhancement of road safety measures for all users as a means to deliver convenient and connected mobility choices.

BACKGROUND

Purpose

The purpose of this report is to promote Operation Lifesaver's 16th annual Rail Safety Week, which takes place on September 23 to September 29, 2018. This year's Rail Safety Week aligns with the United States Rail Safety Week.

Rail Safety Week's mission is to save lives by raising awareness of rail safety and to highlight the ongoing commitment of the rail industry and government to make the rail network safer.

Context

London is serviced by a network of railway lines that move freight and passengers. The network is comprised of railways owned and operated by Canadian National Railway (CNR), Canadian Pacific Railway (CPR) and Goderich-Exeter Railway (GEXR), which account for 64 at-grade crossings and 27 grade separated crossings within London. The railways are crucial to the economic prosperity of London and Southwestern Ontario as they provide a reliable and affordable way to transport goods and people.

The City of London continues to take a proactive approach when it comes to rail crossing safety. Safety reviews of railway crossings in London were completed by the City in partnership with Transport Canada (TC), CN, CPR, and GEXR in 2007 and 2013. The subsequent improvements included signage, pavement markings, vegetation and fencing to improve safety for all motorized and non-motorized road users by helping to prevent collisions.

In 2014, Council approved the London Road Safety Strategy which has a vision of safer road environments for all transportation users in London, with a goal to reduce injury and fatal collisions by 10% over five years. The plan includes educational, engineering and enforcement actions as part of the strategy. The citizens of London are benefitting from the many road safety programs that will result from the London Road Safety Strategy. The vision of the strategy is a path to a safer road environment for all transportation users in London.

In 2016, the City of London began to work with the rail companies to complete railway crossing safety assessments at each at-grade crossing in compliance with new Transport Canada Grade Crossing Regulations. Currently, the City has undertaken the detailed safety assessments of the crossings required by the regulations identified any deficiencies that exist and developed a plan for upgrades with the railways. The City is currently implementing the safety improvements at several of these crossings. Recently, the City received funding from Transport Canada under the Rail Safety Improvement Program (RSIP) to complete safety improvements at ten at-grade crossings.

Railway safety is a function of education, engineering, and enforcement. The City has been working and continues to work with our railway partners to help promote education regarding railway safety.

DISCUSSION

Railway Safety Education

Education is an important component that reduces and eliminates railway incidents. The Railway Association of Canada and Transport Canada operate the Operation Lifesaver (www.operationlifesaver.ca) program. Operation Lifesaver uses education, engineering and enforcement to prevent rail collisions and trespassing incidents that can lead to serious injury or death.

Every year in Canada approximately 240 collisions and trespassing incidents that result in the death or serious injury of more than 100 people occur at highway/railway crossings and along railway tracks. Virtually all of these incidents could be avoided.

During Rail Safety Week, Operation Lifesaver engages in a number of local events and activities across Canada, including crossing blitzes, mock incident scenarios, public service announcements, and presentations by volunteers to schools, youth clubs, drivers associations, and community groups. The goal of educating people of all ages about the dangers of railway crossings and the seriousness of trespassing on railway property prevents serious injury or death.

The City of London and Operation Lifesaver are working together on the “Look Listen Live” Community Safety Partnership Program at three crossings within London. This program encourages municipalities to work to prevent pedestrian-train incidents by installing “Look Listen Live” surface decals at select crossings in their community, similar to the illustration shown below. The City of London and Operation Lifesaver are implementing this program at the following three crossings during Rail Safety Week:

- Richmond Street just south of Piccadilly Street;
- Rectory Street between York and Little Simcoe; and
- Colborne Street between York and Bathurst.

In addition to the decals being installed at these three crossings, an official launch event that includes participation of City officials and local media is planned, which will include community engagement regarding the program and rail safety.

"Look Listen Live" Decal Example
(provided by Operation Lifesaver)

Key Rail Safety Week Education Messages

The following are key messages:

- Be aware, attentive and prepare to stop at railway crossings.
- Listen for warning bells and/or whistles of an approaching train.
- Obey all signs and signals. Never attempt to drive or walk under a gate as it is closing or around a closed gate. If the gate begins to close while you're underneath, keep moving ahead until you clear the crossing.
- It is against the law to trespass on railway property. (Railway property is private property.)
- Playing or walking on railway tracks and bridges is dangerous and illegal. Teach children to find safe, supervised and open areas (i.e. neighborhood parks) to have fun.
- The only way to cross railway tracks is to use designated railway crossings.
- If children must cross railways, for instance on their way to and from school, teach them to stop, look, and listen before crossing railway tracks.

Additional railway safety information from Operation Lifesaver and "Look Listen Live" can be found at the following links:

Web: http://www.operationlifesaver.ca/
Facebook: www.facebook.com/oplifesaver
Twitter: www.twitter.com/oplifesaver
YouTube: www.youtube.com/user/OperationLifesaverCA

CONCLUSION

Railway safety is a function of education, engineering and enforcement. The goal of Rail Safety Week from September 23 to September 29, 2018 is to raise awareness among residents. The City is working with our partners at CNR, CPR and GEXR to promote these safety messages through the local media, social media, and educational campaigns.

Acknowledgements

This report was prepared with the assistance from Sam Shannon, C.E.T., Technologist II and Peter Kavcic, P. Eng., Transportation Design Engineer, in the Transportation Planning & Design Division.

SUBMITTED BY:	**RECOMMENDED BY:**
DOUG MACRAE, P.ENG., MPA **DIVISION MANAGER,** **TRANSPORTATION PLANNING & DESIGN**	**KELLY SCHERR, P.ENG., MBA** **MANAGING DIRECTOR,** **ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER**

c: Operation Lifesaver c/o Gisèle Bernier, Director of Corporate Partnerships, 901-99 Bank Street, Ottawa, ON, K1P 6B9

Canadian National Railway c/o Drew Redden, Lead Community Affairs Ontario Region, 4 Welding Way off Administration Road, Vaughan, ON, L4K 1B9

Canadian Pacific Railway c/o Nathan Cato, Director, Government Affairs, 81 Metcalf St Suite 1110, Ottawa, ON, K1P 6K7

Goderich Exeter Railway c/o Lou Mastandrea, Public Works, 101 Shakespeare St. 2nd Floor Stratford, ON, N5A 3W5

Transportation Advisory Committee

TO:	**CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON SEPTEMBER 25, 2018**
FROM:	**KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER**
SUBJECT:	**DOWNTOWN KING STREET CYCLING IMPROVEMENTS**

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 Downtown King Street Cycling Improvements:

(a) The information regarding initiatives to make King Street safer for cycling **BE RECEIVED** for information; and,

(b) The King Street cycling facility alternative, identified herein as Alternative 1d, and generally described as a south side cycle track separated by parking and transit islands **BE IMPLEMENTED** in 2019.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

- Strategic Priorities and Policy Committee – January 28, 2016 – Downtown Infrastructure Planning and Coordination
- Civic Works Committee – September 7, 2016 – London ON Bikes Cycling Master Plan
- Civic Works Committee – October 4, 2016 – Infrastructure Canada Phase One Investments Public Transit Infrastructure Fund
- Civic Works Committee – January 10, 2017 – Queens Avenue and Colborne Street Cycle Tracks
- Civic Works Committee – September 26, 2017 – Transit Rerouting off Dundas Street in Downtown
- Planning and Environment Committee – December 4, 2017 – Parking Strategy for Downtown London

2015-19 STRATEGIC PLAN

The Downtown King Street Cycling Improvements support the City’s 2015-2019 Strategic Plan of building a sustainable city by implementing and enhancing safe mobility choices for all road users.

BACKGROUND

Purpose

On July 24, 2018, Council directed staff to complete the following actions for the King Street Bike Lanes;

a) develop recommended options and associated costs that will enhanced safety for cyclists using the bike lane on King Street between Ridout Street and Colborne Street, and the new north-south cycle track with possible options that may include, but not limited to, reduced parking on the south side of King Street, installation of barriers, such as planters, to create a protected bike lane and appropriate signage; it being noted that there are physical constraints in this area, with frequent public transit stops located along this route;

b) consult with affected stakeholders such as the London Transit Commission, the Downtown Business Improvement Association and the City of London Cycling Advisory Committee to seek input with respect to possible interim options to address the concerns raised by members of the public;

c) enhance communication efforts to improve driver awareness of cyclists using King Street and the need to ensure the safety of all road users; and,

d) request that the London Police Services increase enforcement in this area with a focus on driver behaviours that may adversely impact the safety of cyclists.

This report addresses the above action items and provides an in-depth analysis of eight bike lane improvement alternatives, with a staff recommendation for a preferred alternative for implementation.

Current Conditions and Related Initiatives

Traffic volumes on King Street are higher than previous years, with approximately 3,450 vehicles during the morning peak period between 7:00 am and 9:00 am. A recent count identified 55 cyclists on King Street during this same time period. For context, a recent data for the Colborne Street cycle track identified 49 cyclists during the morning peak from 7:00 am – 9:00 am. The current congestion is a result of construction projects on the parallel Dundas Street and York Street routes. Dundas Street is closed for the construction of Dundas Place until late 2019. York Street (Thames Street to Talbot Street) is closed for sewer separation construction in 2018 and is planned to be closed again next year (Talbot St. to Clarence St.) for the second phase of a nine-phase downtown core sewer separation program. A future phase of the sewer separation project is planned on King Street between Richmond and Wellington. The King Street sewer separation may potentially commence as early as 2021 and would likely coincide with the implementation of BRT surface works, pending prior phases proceed as scheduled. Upon the completion of the Dundas and York Street construction, alternate routes will be available for cyclists. In particular, Dundas Place has been designed as a unique shared space street that will provide a more comfortable environment for active transportation including cycling.

The following provides a brief description of related initiatives.

Transit Rerouting off Dundas

On September 13, 2016, Council passed a resolution directing Civic Administration to work with the London Transit Commission to move the existing bus routes in the downtown core section off Dundas Street. On September 25, 2017, staff, in coordination with LTC, presented a plan to support LTC transit rerouting onto King Street and Queens Avenue. The effect on King Street was predominantly the elimination and displacement of localized areas of on-street parking in the south parking lane to create dedicated space for bus stops.

Rerouting transit to King Street between Ridout Street and Wellington Street has resulted in one eastbound bus every 1 to 2 minutes during peak hours. Prior to rerouting transit the frequency of eastbound buses on King Street between Ridout Street and Wellington Street during peak hours was one bus every 7 minutes. The frequency of buses east of Wellington Street to Colborne Street are much less, at approximately one bus every 30 minutes. The increase in transit and traffic volumes from construction and transit rerouting creates operational challenges. The cycle lane is on the inside/north side of the parking lane and bus stops requiring buses to cross the cycle lane.

Bus Rapid Transit

On May 16th, 2017, Council approved the Bus Rapid Transit (BRT) network which included a one-way transit couplet on King Street eastbound and Queens Avenue westbound. The current BRT plans include a one way cycle lane on King Street east of Wellington Street but no cycling facilities are currently proposed on King Street between Ridout Street and Wellington Street due to the corridor constraints. Construction of the Bus Rapid Transit program is anticipated to commence in the near term meaning that the infrastructure improvements identified in this report are short-term and would be removed upon construction of the BRT project.

Queens Avenue Two-Way Cycle Track

The Cycling Master Plan identified a bidirectional cycle track on Queens Avenue through the Downtown. The goal of the Queens Avenue cycle track was to provide cyclists a connected east-west separated cycling facility through the Downtown and connecting to the Old East Village. The development of the Bus Rapid Transit downtown couplet plan, including Queens Avenue, displaced the opportunity to implement the Queens Avenue cycle track in the Downtown due to space constraints.

Downtown East-West Cycling Feasibility Study

The current Downtown East-West Cycling Feasibility Study is evaluating new alternatives for a long-term east-west corridor that provides safe and connective cycling between the Downtown and the Old East Village. The four corridors identified for evaluation are Dundas Street, York Street, Dufferin Street and a King Street/Queens Avenue couplet.

An interactive public meeting was hosted on June 27, 2018 at the Aeolian Hall. The meeting attendees expressed preferences for both the King/Queens couplet and Dundas Street over the other alternatives. Additional consultation is planned for this study in coordination with the Old East Village Secondary Plan.

Downtown Parking Strategy

In 2017, the City finalized its Downtown Parking Strategy, which included a review of existing parking conditions as well as an assessment of future parking needs within the Downtown. The assessment of parking needs accounted for the removal of parking lots due to potential developments and on-street parking under a number of existing plans such as Bus Rapid Transit and Dundas Place. The strategy identified satisfactory current parking supply, a modest need for future parking and recommended a coordinated approach to establish parking in conjunction with future development.

As part of the Bus Rapid Transit plan, King Street is proposed to have bus lanes eastbound between Ridout Street and Wellington Street and bus lanes in both directions between Wellington Street and Ontario Street. The proposed Bus Rapid Transit plans aim to minimize impacts on parking and loading zones where there is sufficient space but will remove sections of on-street parking on King Street.

CONSULTATION

The process to develop alternatives to enhance safety for cyclists on King Street between Ridout Street and Colborne Street has been an accelerated detailed exercise. Each road configuration that enables cycling lanes was considered carefully due to the high frequency of transit vehicles and general traffic, combined with frequent intersections and the interactions with adjacent land uses.

Stakeholder Consultation

Throughout the alternative creation and evaluation process, staff have been proactive in reaching out to interested stakeholders for feedback and comments on the infrastructure alternatives and communication tactics. The meetings and presentations with all stakeholders have been effective.

London Transit Commission

LTC is an important partner in this project given the new transit reliance on the King Street corridor. LTC buses currently operate at 1 to 2 minute frequencies on King Street. City staff have had an ongoing dialogue with London Transit Commission (LTC) staff and met formally on August 9 and 30, 2018 to discuss the alternatives.

Cycling Advisory Committee

City staff presented alternatives and draft communication strategy concepts to the Cycling Advisory Committee (CAC) on August 15, 2018. Committee members were very helpful providing feedback on the alternatives and communication strategy. The three priorities that committee members agreed upon were to have a dedicated bike lane, a buffer and parking adjacent to the buffer to further separate cyclists from the traffic lane.

The committee's preferred alternatives during this discussion were Alternative 2a and Alternative 3. It is important to note that Alternatives 1c and 1d were not presented because the CAC meeting was early in the alternative creation process. These alternatives became evident after further detailed evaluation and consultation. City staff subsequently distributed the additional alternatives for initial individual feedback and formal discussion at the September 19, 2018 CAC meeting.

Downtown London Business Improvement Association

Downtown London assisted City staff by facilitating an interactive drop-in information centre on August 21, 2018. Interested BIA members on King Street were invited to discuss their concerns and provide feedback on the alternatives. Much of the feedback provided by business owners related to current traffic operational concerns. There was a general consensus that King Street needed to have two through lanes for traffic. Several business owners east of Talbot Street expressed concern regarding reduction of on-street parking for both parking and transitional uses. The importance of the loading zones near the Tricar Renaissance Tower on the south side of King Street and the Covent Garden Market on the north side were identified. Mid-block crossings by pedestrians at the Convention Centre were also noted as a concern. Many of the business owners expressed a preference for Alternative 1d (south side cycle lane). Concerns were expressed regarding the north cycle lane alternatives and resultant interactions with the Covent Market loading zone users and concerns with traffic conflicts at the parking garage access.

London Cycle Link

On August 20, 2018, City staff met with members of the cycling advocacy group London Cycle Link. The Cycle Link members proposed a south side cycle track with transit islands similar to Alternative 1d. Throughout the discussion, Cycle Link members noted that safety for all road users and education along critical conflict areas is important. Staff and Cycle Link members reviewed the cross sections and were willing to take part in communication initiatives to improve safety along King Street.

London Police Service

City staff and London Police Services discussed how enforcement can be improved along King Street. Police Services acknowledged that because of the increased congestion and narrow pavement widths, enforcement would be best focused on distracted driving. Police Services reviewed King Street and have increased enforcement in distracted driving since the council resolution.

CYCLING INFRASTRUCTURE EVALUATION

Existing Conditions

The existing conditions on King Street typically comprise a four lane cross-section with the curb lanes serving on-street parking areas, loading zones and localized turn lanes. The existing bike lane is located between the parking and the general purpose vehicle lane. The cycle lane markings are sporadic through the corridor. With the rerouting of transit on King Street, some south side parking has been displaced by bus stops and buses merge in and out of the south lane and across the cycle lane. Buses sometimes encroach onto the cycling lane due to vehicle width.

Alternative Evaluation

Eight road configuration alternatives were developed to improve safety for cyclists on King Street from Ridout Street to Colborne Street. This assessment recognizes that any recommendation would be an interim solution until the corridor is reconfigured under Bus Rapid Transit configurations. BRT is scheduled to potentially begin as early as 2021 in conjunction with King Street sewer separation in the centre of the subject area between Richmond Street and Wellington Street with additional subsequent phases.

The evaluation criteria used for the King Street bike lane improvements is similar to the previous Queens Avenue and Colborne Street feasibility studies evaluation process and is shown below.

Alternative Evaluation Criteria

1. Conflict mitigation – minimizing conflicts with motorists, transit, cyclists and pedestrians	**5. Traffic Operations** – impacts to road capacity and levels of service
2. Constructability – ability to construct sooner and re-use construction material	**6. Cost** – anticipated implementation cost
3. Parking – impact to on-street parking	**7. Equity** – providing a safe and accessible road experience for users
4. Transit Operations – impacts to transit and loading zones	

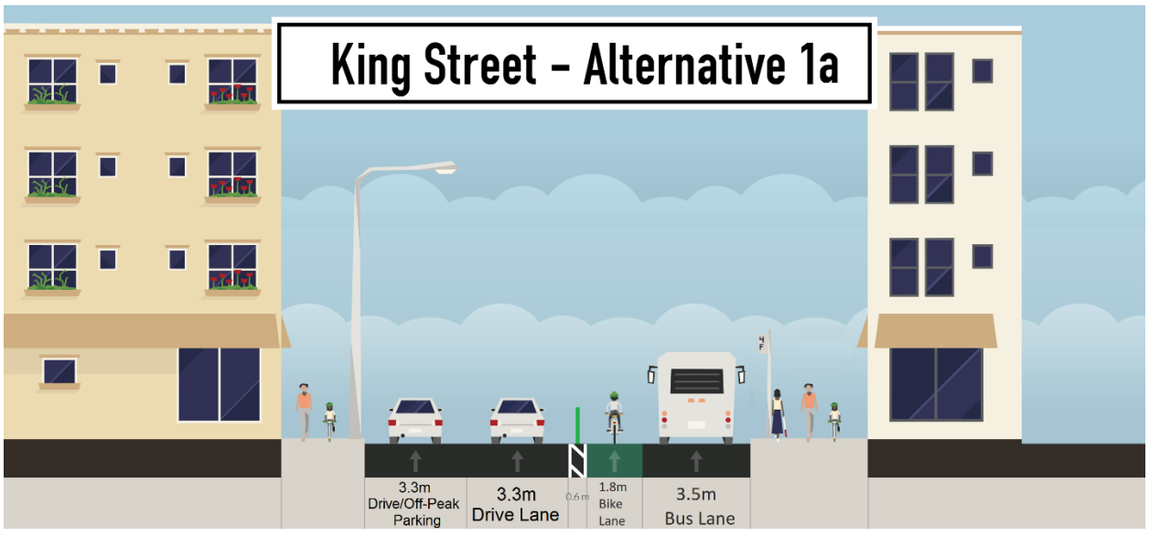
The following pages provide a brief summary of each alternative and the associated strengths and weaknesses. The typical cross sections were created looking eastbound with north on the left side of the figures. All road designs match the existing typical 12.5 m pavement width. This would minimize construction costs and reduce the impacts to road users while King Street serves as an important detour route for parallel road construction projects. This pavement width applies through much of the corridor but narrows between Talbot Street and Richmond Street; in this area the standard cross sections would require modification. The identified impacts such as parking and locating zone impacts are estimates and subject to detail design scrutiny and mitigations. All alternatives maintain the loading zone by the Covent Garden Market. Cost estimates are provided. These include the cost to reconstruct traffic signals where new signal operating phases trigger this need.

The alternatives are designated as follows:

Alternative	**Description**
1a, 1b, 1c, 1d	Cycling facility in the south half of King Street
2a, 2b, 2c	Cycling facility on the north side of King Street
3	Bidirectional facility on the north side of King Street

A summary of the evaluation can be seen in Appendix A.

Alternative 1a – South Cycle Lane and Dedicated Bus Lane with Off-Peak Parking on North

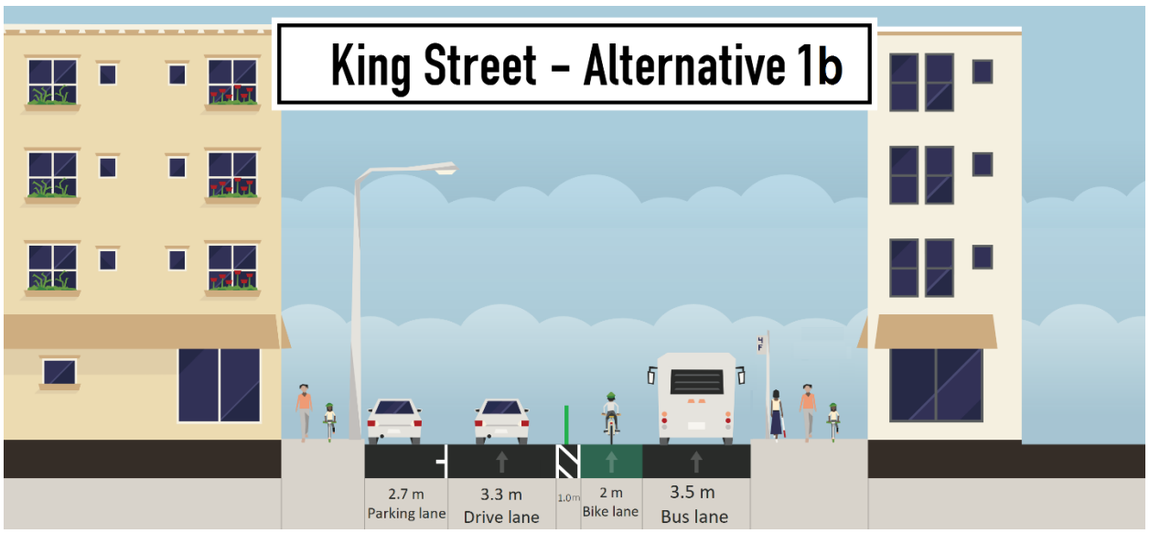


Alternative 1a would remove parking on the right/south side and create a dedicated bus-only lane on the south side with a partially buffered bike lane on the left. The left/north lane would accommodate traffic during the morning peak and parking at other times.

	Strengths	Weaknesses
Alternative 1a **Estimated Capital Cost = $358,000**	• Provides a dedicated bike lane and buffer with barriers for much of corridor • Improves Transit operations with dedicated lane • Maintains two travel lanes	• Cycling turns would be challenging • Bus and cycle lane merge into shared space along Talbot and Richmond block • Discontinuity in bike lane barrier separation required in two blocks to accommodate left turning buses merging across bike lane • Estimated 47 parking spots on south side removed, 50 parking spots on north side removed during morning peak, and 2 all-day parking spots on north side removed between Ridout and Talbot for lane shift near Covent Market loading zone • Five loading zones impacted including the loading zone by Renaissance Tower

Alternative 1a presents operational challenges associated with creating a dedicated bus lane adjacent to a cycle lane along King Street from Ridout Street to Colborne Street. Cyclist turn movements would also be challenging. Between Talbot and Richmond, the pavement width narrows forcing transit and cyclists to share a dedicated space and transit would be required to yield to cyclists. There would also be less physical separation such as bollards, planters or pre-cast curbs along the block where transit and cyclists share a lane and where transit is required to turn left at Wellington Street and Richmond Street.

Alternative 1b – South Cycle Lane and Dedicated Bus Lane with Parking on North

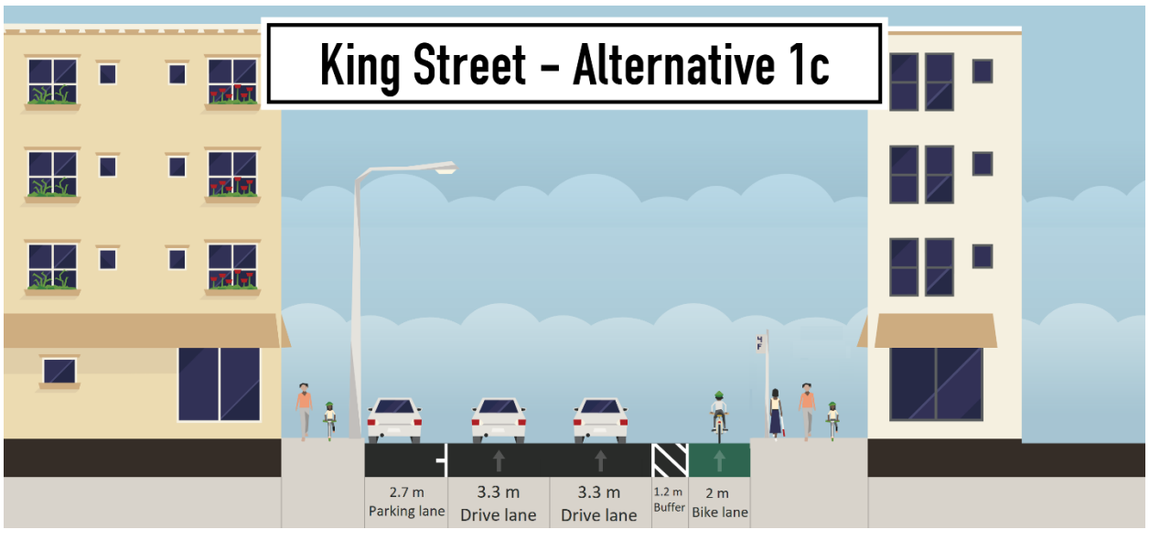


Alternative 1b is the same as 1a with the exception that the north/left lane would accommodate parking at all times.

	Strengths	Weaknesses
Alternative 1b **Estimated Capital Cost = $360,000**	• Provides a dedicated bike lane and buffer with barriers • Improves transit operations improved with a dedicated lane • Transit is not required to yield to cyclists through Talbot and Richmond block	• Cycling turns would be challenging • Discontinuity in bike lane barrier separation required in two blocks to accommodate left turning buses merging across bike lane • Creates significant congestion by reducing traffic capacity to one lane and reduces intersection level of service • Estimated 47 parking spots on south side removed, 3 parking spots on north side removed between Talbot and Richmond due to narrow pavement width, and 19 parking spots on the north side between Waterloo and Colborne • Two loading zones impacted including the loading zone by Renaissance Tower

Alternative 1b presents challenges with providing a dedicated bus lane and cycle lane with one through lane for traffic. Reducing traffic capacity to one through lane will result in extensive traffic delays and negatively impact the level of service at each intersection. There is more physical protection for cyclists when compared to alternative 1a, as transit and cyclists aren't required share a lane between Talbot and Richmond.

Alternative 1c – South Cycle Lane with Transit Ramps and Parking on North

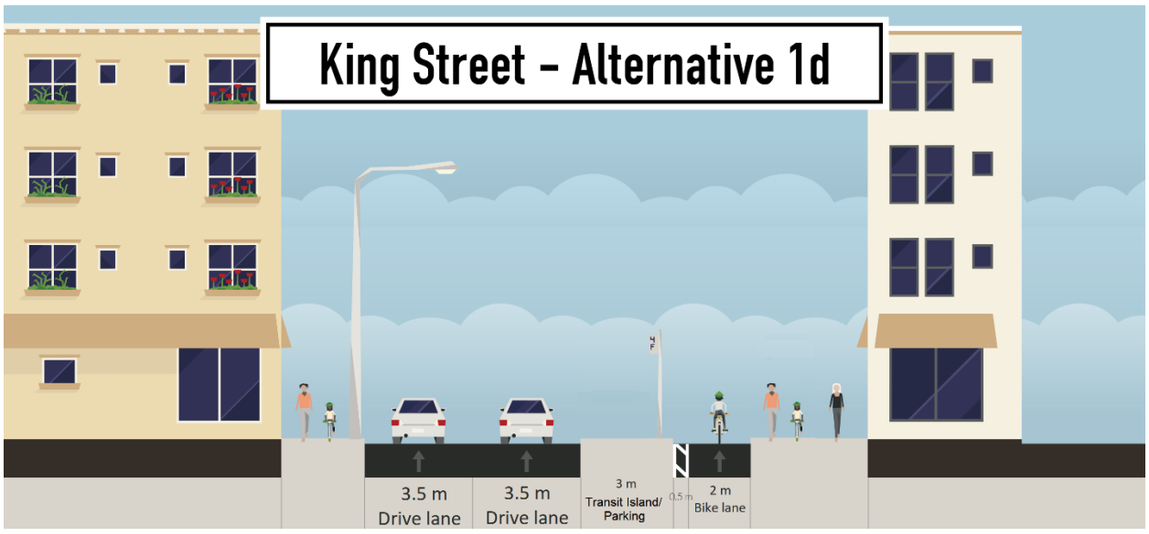


Alternative 1c proposes two general purpose lanes and a curb side cycle track. Buses would stop in the right lane and transit riders would board and alight across the cycle track which would be raised to curb level at these locations.

	Strengths	Weaknesses
Alternative 1c **Estimated Capital Cost = $607,000**	• Provides a dedicated bike lane and buffer with barriers • Intuitive position for cycling facility • Avoids interaction between cyclists and left turning bus and vehicle movements at Wellington and Richmond Streets • Less interruptions in physical separation • Maintains two travel lanes	• Significant concern with conflicts between cyclists and passengers boarding/alighting buses • Additional construction required for raised cycling facility through bus stops • Significant negative impacts to cyclist travel • Estimated 28 parking spots on south side removed, 3 parking spots on the north side removed between Talbot and Richmond, and 19 parking spots on the north side removed between Waterloo and Colborne • Two loading zones impacted including the loading zone by Renaissance Tower

Alternative 1c provides an intuitive position for a cycling facility, as it is adjacent to the south curb. Cyclists will feel the most comfortable cycling adjacent to the curb, especially in a separated facility. This alternative removes the conflicts with left turning buses at Wellington Street and Richmond Street. The most significant concern for this alternative is the high frequency of conflicts between transit passengers and cyclists. London transit Commission expresses significant concerns regarding transit riders boarding and alighting immediately into a bike lane. Additionally, the bus accessibility ramp would need to be mobilized across the bike buffer when used. This approach will also result in some delays for cyclists as they would be required to frequently stop for transit passengers crossing and potentially waiting on the cycle track. Cyclists may be required to make two-stage left turns similar to pedestrians which may require northbound right-turn-on-red prohibitions on cross streets. .

Alternative 1d – South Cycle Lane with Raised Transit Island and Parking on South

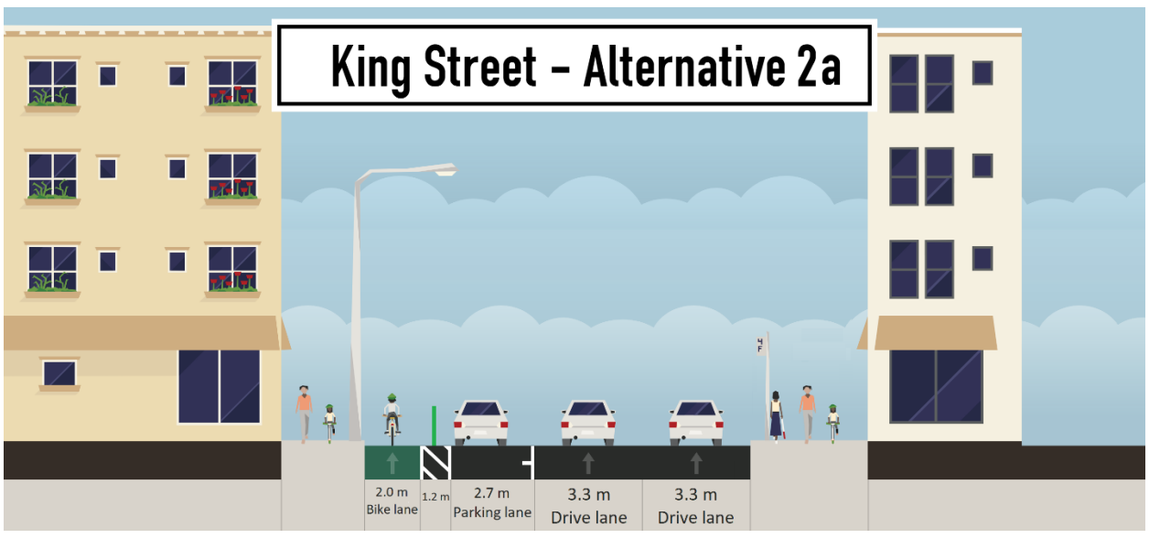


Alternative 1d proposes a similar cycle track configuration as Alternative 1c but with an island to accommodate waiting transit riders between the cycle track and travel lane. Parking is located adjacent to the cycle track between the transit island locations.

	Strengths	Weaknesses
Alternative 1d **Estimated Capital Cost = $582,000**	• Provides a dedicated bike lane and buffer with barriers • Intuitive position for cycling facility • Provides additional separated space with parking lane adjacent to bike lane • Avoids interaction between cyclists and buses for bus left turning movements at Wellington and Richmond Streets • Less interruptions in physical separation • Maintains two travel lanes	• Additional construction as raised transit island is required • Conflicts between cyclists and passengers boarding/alighting buses • Estimated 52 parking spots on north side removed and 23 parking spots on the south side removed for transit stop platform locations • Four loading zones impacted • Minor shifting of some transit stops

Alternative 1d provides an intuitive position for a cycling facility, as it is adjacent to the south curb. Having parking adjacent to the cycle lane further separates cyclists from moving traffic. Cyclists will feel the most comfortable cycling adjacent to the curb, especially in a separated facility. This alternative removes the conflicts with left turning buses at Wellington Street and Richmond Street. Conflicts between transit riders and cyclists exist similar to Alternative 1c but this alternative is an improvement because it proposes a bus stop refuge for passengers who are waiting to board the bus. This provides the best operations for cyclists; however, cyclists may be required to make left turns in two stages similar to a pedestrian and this may require northbound right-turn-on-red prohibitions on cross streets. This option was endorsed by London Cycle Link and several BIA meeting attendees, is supported by LTC and meets the three criteria provided by the Cycling Advisory Committee.

Alternative 2a – North Cycle Lane with Parking on North



Alternative 2a proposes a cycle track on the left/north side with parking in the adjacent lane.

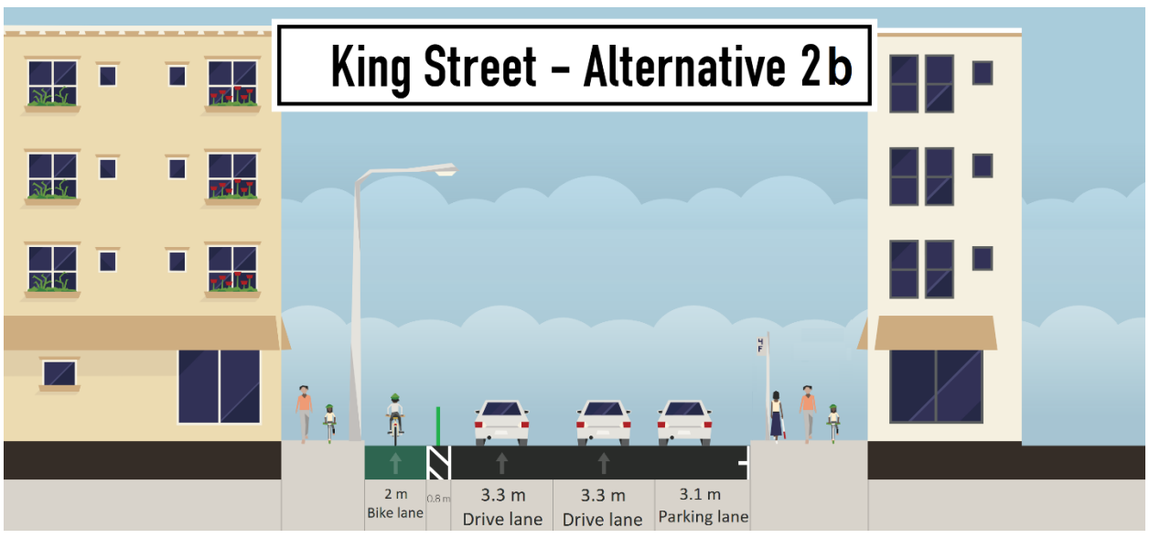
	Strengths	Weaknesses
Alternative 2a **Estimated Capital Cost = $ 1,571,000**	• Provides a dedicated bike lane and buffer with barriers • Provides additional separated space with parking lane adjacent to bike lane • Avoids interaction between cyclists and buses during loading/alighting • Maintains two travel lanes • Transit operations improved as weaving between parked cars is eliminated and bike lane relocated away from through lane with bus	• More construction as traffic signal reconstructions are required to provide a cyclist phase separate from left turn vehicle movements • Conflicts with left turning buses reducing cyclist protection • Estimated 28 parking spots on south side removed, 3 parking spots removed on the north between Talbot and Richmond, and 19 parking spots on north side removed between Waterloo and Colborne • Two loading zones impacted, including loading zone at Renaissance Tower • Complications for north/south transition of bike lane at ends of project • Conflicts with Covent Garden Market loading zone operations

Alternative 2a provides a cycling space separated from transit operations. Having parking adjacent to the cycle lane further separates cyclists from moving traffic. The north cycle lane requires Covent Market loading zone users to cross the cycle track.

This alternative presents challenges at both ends of this treatment. The Ridout/King intersection would require cyclists to transition from a south bike lane to the north side. This could result in confusion and delays for cyclists. The transition back from north to south could occur at Wellington Street or Colborne Street. Transitioning at Wellington Street would avoid the left turn conflicts but would require an abnormally large bike box treatment.

The construction would require a full rebuild of the traffic signals to include a separate cycling signal phase will require to accommodate the left side cycle track.

Alternative 2b – North Cycle Lane with Parking on South



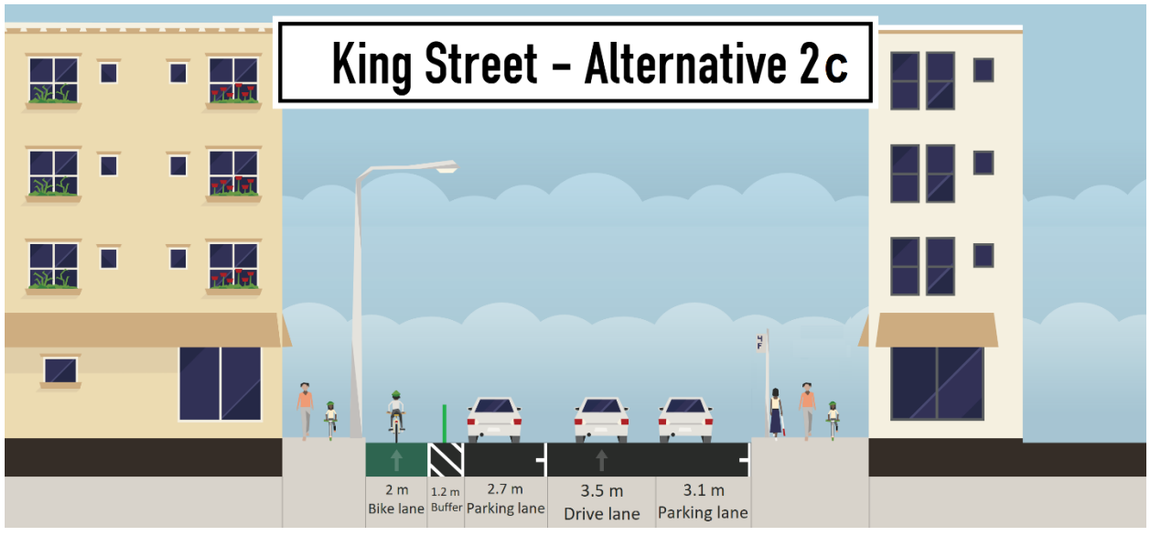
This alternative is similar to Alternative 2a but with parking on the right/south side instead of adjacent to the cycle track.

	Strengths	Weaknesses
Alternative 2b **Estimated Capital Cost = $ 1,571,000**	• Provides a dedicated bike lane and buffer with barriers • Avoids interaction between cyclists and buses during loading/alighting • Maintains two travel lanes	• Traffic signal reconstructions are required in order to provide separate cyclist phase from left turn vehicle movements • Conflicts with left turning buses reducing cyclist protection • 52 parking spots on north side removed, 13 parking spots removed on the south side between Talbot and Richmond • Impacts four loading zones • Complications for north/south transitions of bike lane at ends of project • Conflicts with Covent Market loading zone operations

Alternative 2b is similar to alternative 2a with parking shifted to the south side. This alternative, requires the same awkward north/south side cycling transitions as Alternatives 2a and 2b. The north cycle lane also requires Covent Market loading zone users to cross the cycle track.

Similar to Alternative 2a, this alternative would be challenging to construct as the construction at each intersection to include a separate cycling signal phase would require a full rebuild of the traffic signals. A separated cyclist phase is required because having the cyclists along the left side of traffic is unconventional and concerns have been experienced in similar situations in other jurisdictions.

Alternative 2c – North Cycle Lane with Parking on North and South



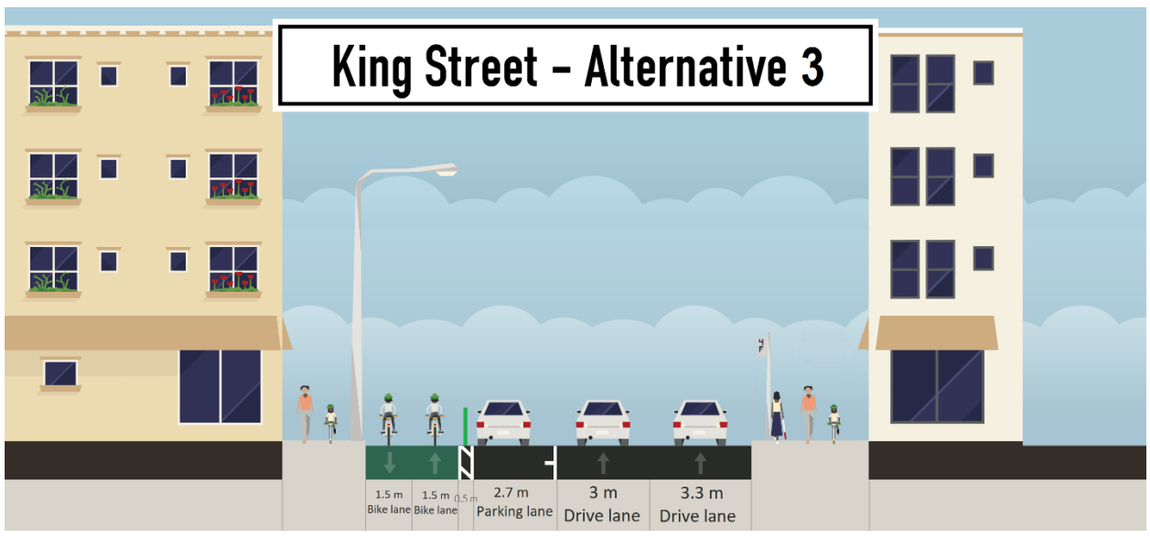
This alternative is similar to 2a and 2b but with parking on both sides and one through lane.

	Strengths	Weaknesses
Alternative 2c **Estimated Capital Cost = $ 1,570,000**	• Provides a dedicated bike lane and buffer with barriers • Avoids interaction between cyclists and buses during loading/alighting • Removes minimal parking spots. 3 parking spots on the north and 13 parking spots on the south between Talbot and Richmond • Provides additional separated space with parking lane adjacent to bike lane	• Reduces traffic capacity to one lane for traffic and bus stops resulting is significant congestion • Additional construction as traffic signal reconstructions are required in order to provide separate cyclist phase from left turn vehicle movements • Conflicts with left turning buses reduce cyclist separation • No anticipated loading zone impacts • Complications for north/south transitions of bike lane at ends of project • Conflicts with Covent Market loading zone operations • Negatively impacts transit capacity causing delays for other commuters with one shared through lane

Alternative 2c retains parking on both sides and reduces traffic capacity to one through lane. Reducing the traffic capacity to one through lane will drastically reduce the level of service throughout this corridor and result in long delays. This alternative, requires the same awkward north/south side cycling transitions as Alternatives 2a and 2b.The north cycle lane also requires Covent Market loading zone users to cross the cycle track.

This alternative would also be challenging to construct as the construction at each intersection to include a separate cycling signal phase will require a full rebuild of the traffic signals. A separated cyclist phase is required because having the cyclists along the left side of traffic is unconventional and concerns have been experienced in similar situations in other jurisdictions.

Alternative 3 – Two Way Cycle Track with Parking on North



This alternative proposes a two-way cycle track on the right/north side with parking in the adjacent lane.

	Strengths	Weaknesses
Alternative 3 **Estimated Capital Cost = $1,715,000**	• Provides a dedicated bike lane and buffer with barriers for eastbound and westbound cyclists • Avoids interaction between cyclists and buses during loading/alighting • Maintains two travel lanes • Improves transit operations slightly improved as weaving between parked car is removed • Improves cycling connection to the TVP	• Conflicts with left turning buses reducing cyclist protection • Introduces new unconventional conflicts with westbound cyclist movements, especially at two parking garage entrances • Requires significant rebuild of all intersections and traffic signals to accommodate westbound cyclists • Increased conflicts with loading zone by Covent Garden Market • 28 parking spots on south side removed, 3 parking spots on the north side removed between Talbot and Richmond, and 19 parking spots on the north side removed between Waterloo and Colborne • Impacts two loading zones, including the loading zone at Renaissance Tower

Alternative 3 is not recommended for this interim situation as the number of conflicts increase and the construction cost is significant.

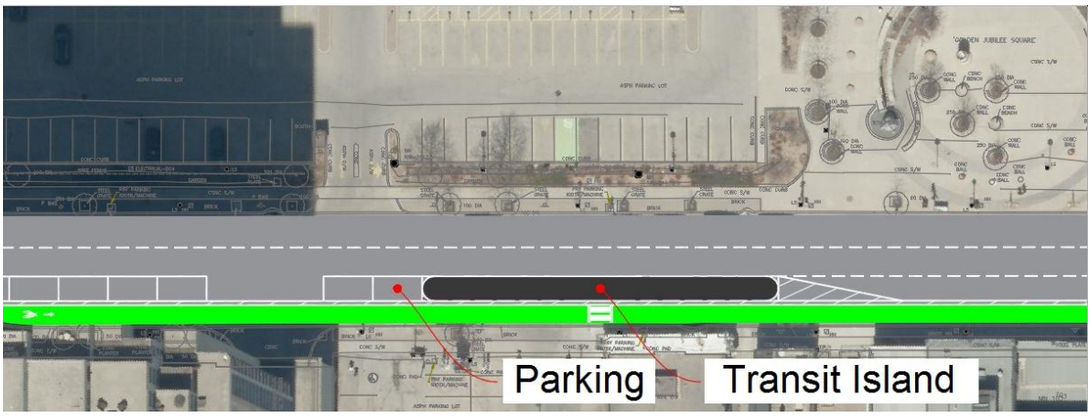
The number of accesses and intersections along King Street present concern for a bi-directional cycling facility. The intersections along King Street would need to be rebuilt in order to accommodate the additional phases required for a westbound cycle lane.

This alternative would be challenging to construct as there is significant construction required at all intersections to be able to incorporate a westbound cycling facility.

Preferred Alternative

Alternative 1d is recommended as a right/south side cycle lane along the curb is most intuitive alternative for cyclists and motorists. It can provide optimal separation for the cycle track while maintaining two through lanes for traffic. The parking impacts with this proposal are significant; however, the loading zones near the Covent Garden Market and Renaissance Tower identified as high priority during the BIA business owner meeting are retained.

The picture below illustrates how the raised transit island and parking occupy space adjacent to the south cycle lane.



Below is a previously prepared visual rendering of how the transit islands had been planned to be incorporated into the Queens Avenue cycle track. This is a similar configuration to the proposed King Street transit islands with a one-way cycle track.

The proposed improvements will enhance the eastbound cycling currently facilitated on King Street. Westbound cycling is achieved via other routes. Queens Avenue is the other half of the King couplet that may also be receiving detoured traffic. Queens Avenue is currently supplemented by Dufferin Avenue, a parallel high-use cycling route one block north. Civic Administration has not received similar concerns regarding westbound cycling on Queens Avenue. As such, interim westbound improvements are not deemed necessary, considering the pending east-west bikeway recommendations and completion of construction on Dundas Place.

Implementation

The recommended alternative includes coordinated civil works to construct the raised transit islands and pavement marking adjustments. Implementation of pavement markings is weather-dependent. Additionally, these types of contractor services are challenging to schedule late in the construction season. Therefore, accelerated implementation is limited to Spring/Summer 2019.

Staff scrutinized the implementation timing with a local contractor to explore whether any alternatives could be implemented in 2018. Only alternatives 1a and 1b create a possibility for a partial implementation in 2018. However, confidence levels for successful implementation in 2018 are low. This would be highly weather dependent and implementation of important green bicycle and red bus lane pavement markings required for these alternative would likely not be installed until the following spring. Due to the risk and likely partial implementation, this is not recommended.

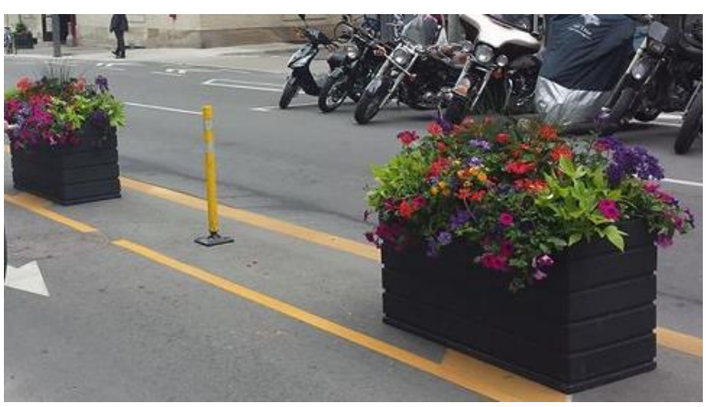
Construction of the preferred alternative will be challenging with the current traffic detour dependency and congestion on King Street. The work will be scheduled to minimize impacts in coordination with the other capital projects.

Financial Considerations

Expenditures

The construction estimate for the preferred alternative 1d is $582,000. Approximately $115,000 of the cost estimate represents items that could likely be salvaged and reused on future cycling projects upon the termination of this interim King Street solution.

All initial cost estimates have assumed the implementation of bollards similar to what was recently implemented on the Colborne Cycle Track. Planter boxes will be assessed for implementation where feasible in the buffer areas of the proposed cycle track. This would incur a minor incremental costs and additional operating costs. Community partnerships could be possible to assist.



Funding

The bike lane improvements proposed to be implemented on King Street in 2019 can be funded through the Cycling Facilities Capital Account. This project is able to be funded under this account as previous projects have been successfully completed under budget and future cycling projects can be reprioritized.

The incremental annual operational costs associated with the maintenance of the recommended cycling facility are estimated at $39,600.

The cycling improvements on King Street would accelerate the removal of on-street parking envisioned under the Downtown Parking Strategy. The strategy identified an adequate downtown parking supply so displacement to other local parking locations is expected. Displacement locations would include on-street and to private and City-owned lots. Impacts to parking revenues are difficult to estimate and can be assessed as this and other projects progress.

COMMUNICATIONS AND ENFORCEMENT

Communications

To develop an interim plan to enhance communication efforts to improve drivers' awareness of cyclists using King Street and the safety of all road users, the City of London met with the previously identified key stakeholders to better understand their perspective on current challenges and opportunities to better inform the public. Through engagement, insights gained from cyclist submissions at the July 17 Civic Works Committee meeting and comments on social media, we learned that cyclists would like to see more education about:

1. Cyclists' rights on the road
2. Safely navigating congested urban areas
3. How cycling infrastructure improves road safety for all

This feedback, combined with demographic data obtained about our downtown and neighbourhoods in close proximity to the TVP, was considered as part of the campaign development process.

In alignment with London's Road Safety Strategy, interim communications will focus on encouraging safe road user behaviours as we work towards improving infrastructure. The first phase of communication will be tailored to address some of the key points of conflict identified by the local cycling community and aim to increase awareness about behaviours that will result in a safe roadway for all. Some examples of conflict points and how the City is raising awareness include:

1. **Dooring**
   The City of London will work with our partners at CAA to distribute mirror stickers as part of a parked car blitz to remind drivers to shoulder check before opening their door.

2. **Conflicts with buses**
   The City of London will work with the London Transit Commission (LTC) to enhance training activities and increase yield-to-bus reminders.

3. **Intersections**
   The City of London will create warning signs that encourage drivers to look for cyclists before proceeding through key intersections.

These initiatives will be complimented with on-street engagement and the promotion of road safety resources (education) along King Street and online. The City will work with the London Police to ensure communications are consistent with their short-term enforcement plan.

Until the infrastructure is modified, City staff will continue to liaise with Downtown London and London Middlesex Road Safety Committee, as well as volunteers from the cycling community, to refine messaging and ensure tactics implemented support Vision Zero, highlight vulnerabilities associated with active modes of transportation and effectively share the stories of real cyclists who commute on King Street.

Once the alternative for infrastructure has been selected, City staff will continue to work with the local cycling community to further refine the communications plan.

CONCLUSION

The rerouting of eastbound transit from Dundas Street to King Street, combined with the temporary construction closures of Dundas Street and York Street has resulted in concerns from cyclists. Current conditions will be transitional as Dundas Place construction is completed in late 2019, downtown sewer separation projects advance and Bus Rapid Transit redefines the King Street corridor potentially beginning as early as 2021.

Staff created and evaluated eight alternatives with various cycling facility, parking zone, loading zone and travel lane configurations that fit within the existing road width. Allocations of space in a confined corridor like King Street involves trade-offs. The assessment was complimented by consultation with LTC, Downtown London businesses, Cycling Advisory Committee, and London Police.

The alternatives with the cycling facility adjacent to the south curb ranked highest in the evaluation in recognition of the conventional cycling location consistent with road user expectations. Of these two alternatives, Alternative 1d that identifies transit islands at bus stops with parking between the islands is recommended. Alternative 1d reduces the conflict risk between transit riders and cyclists, has the support of LTC and has a slightly lower cost estimate than Alternative 1c. Alternative 1d is recommended for implementation.

Alternatives 1a and 1b require less capital investment than Alternative 1d but introduce significant operational challenges between transit and cyclists. These alternatives create awkward cyclist turn movements and decrease the amount of physical separation for cyclists where buses need to merge left across the bike lane. Separation was one of the key priorities from the Cycling Advisory Committee.

The north side cycling facilities would require additional traffic signal phases which would trigger the need for traffic signal reconstruction at most intersections at much greater cost. They would also create awkward transitions at each end of the project. Additionally, a north side bidirectional cycling facility would introduce unconventional conflicts, particularly at the parking garage locations, which has created concerns in other jurisdictions and is not recommended for an interim condition.

The acceleration of parking displacements is of concern to some business owners. With Council approval, the design phase of the project would scrutinize the parking and loading zones further in order to minimize and mitigate impacts. Several other design aspects will also require scrutiny including cyclist left-turn movements, transit stop modifications and coordination of transit islands with existing accesses.

Alternative 1d has an anticipated capital cost of $582,000 and an ongoing operating cost of $39,600. Approximately $115,000 of the cost estimate represents items that could likely be salvaged and reused for future cycling projects. The bike lane improvements on King Street are proposed to be implemented in early 2019 and funded through the Cycling Facilities Capital Account.

Implementation is desired as soon as possible and would be targeted as early in 2019 as possible. This would include coordination with other downtown construction projects that are currently relying on this corridor as a detour route in order to mitigate disruptions to road users. In the meantime, complimentary communications tactics are being implemented to increase safety awareness with respect to cyclist interactions with parked cars, buses and intersection traffic.

Acknowledgements

This report was prepared by Peter Kavcic, P.Eng. and Andrew Giesen, CET of the Transportation Planning & Design Division and Megan Hutchison of the Communications Division with input from others in the Environmental and Engineering Services Department.

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

Attach: Appendix A King Street Evaluation Summary

c: Katie Burns, London Transit Commission
Sergeant Sean Harding, London Police Service
Janette MacDonald, Downtown London
Cycling Advisory Committee

Summary of King Street Evaluation

OPTION	Ridout to Richmond	Richmond to Wellington	Wellington to Colborne	Total Score	Rank
1A	15	13	19	47	4
1B	16	13	18	47	4
1C	17	18	18	53	2
1D	19	20	18	57	1
2A	15	15	18	48	3
2B	12	12	17	41	5
2C	10	12	15	37	6
3	10	12	13	35	7

Appendix A
King Street Evaluation Summary

* Scores are established using the seven evaluation criteria: Conflict mitigation, Constructability, Parking, Transit Operations, Traffic Operations, Cost and Equity

Downtown King Street Cycling Improvements

Civic Works Committee – September 25, 2018

Study Area

King Street from Ridout Street to Colborne Street

2

Consultation

- London Transit Commission
- Cycling Advisory Committee
- Downtown Business Improvement Association (BIA)
- London Cycle Link
- London Police Services

Input on Infrastructure & Communications

3

Cycling Infrastructure Evaluation

4

Cycling Infrastructure Evaluation

Alternative Evaluation

- Eight road configurations that fit within the existing curbs

Alternative	Description
1a, 1b, 1c, 1d	Cycling facility in the south half of King Street
2a, 2b, 2c	Cycling facility on the north side of King Street
3	Bidirectional facility on the north side of King Street

5

Cycling Infrastructure Evaluation

6

Cycling Infrastructure Evaluation

7

Cycling Infrastructure Evaluation

8

Cycling Infrastructure Evaluation

Preferred Alternative

9

Cycling Infrastructure Evaluation

King Street – Alternative 1d

10

Cycling Infrastructure Evaluation

11

Cycling Infrastructure Evaluation

12

Cycling Infrastructure Evaluation

Cycling Infrastructure Evaluation

Recommended Alternative

Alternative 1d

- right side is most intuitive for cyclists and motorists
- provides good separation while maintaining two lanes of traffic
- Retains two loading zones highlighted as priority during BIA business owner meeting
- Parking impacts are significant but align with Downtown Parking Strategy

Cost Estimate

- Capital Cost = $582,000
- Re-useable material cost = $115,000
- Operational cost = $39,600

Implementation

- Design Winter 2018/19
- Construction Spring/Summer 2019
- Coordinated with other downtown capital projects

Ben Cowie
London Bicycle Cafe
355 Clarence Street
London ON

Civic Works Committee
City of London
300 Dufferin Street
London, ON

Dear Civic Works Committee,

Safe downtown cycling routes are essential to allow people of all ages and abilities to choose a bike for transportation. Thank you for your efforts thus far to support safe streets by recommending staff examine the King Street cycle route in detail.

I am writing today to encourage you to support the staff recommendation of Option 1d for King Street that will be presented to you at your meeting on September 25, 2018. Option 1d is the closest to the gold standard design for protected bike lanes across North America and Euorpe. This design results in safe transportation options for people who choose a car, a bus, a bike, or their feet to get around. Option 1d is the design that is most consistent with the National Association of City Transportation Officials guidelines, and will be most intuitive for all users.

Thank you for supporting safe streets, and for taking steps toward making Canada a bike friendly country!

Ben Cowie
London Bicycle Cafe

From: Jamieson Roberts
Sent: Monday, September 24, 2018 7:59 AM
To: Saunders, Cathy <csaunder@london.ca>; mbrown <mbrown@london.ca>; van Holst, Michael <mvanholst@london.ca>; Armstrong, Bill <BArmstro@london.ca>; Salih, Mo Mohamed <msalih@london.ca>; Helmer, Jesse <jhelmer@london.ca>; Cassidy, Maureen <mcassidy@london.ca>; Squire, Phil <psquire@london.ca>; Morgan, Josh <joshmorgan@london.ca>; Hubert, Paul <phubert@london.ca>; Hopkins, Anna <ahopkins@london.ca>; Ridley, Virginia <vridley@london.ca>; Turner, Stephen <sturner@london.ca>; Usher, Harold <husher@london.ca>; Park, Tanya <tpark@london.ca>; Zaifman, Jared <jzaifman@london.ca>
Subject: Letter to Civic Works Committee Regarding King Stree Bicycle Lane

Dear Civic Works Committee and all Councillors,

As a downtown resident, parent who bicycles with their child on their bike, and person who is employed in the downtown core it is vital that we make King street safe for all transportation users. I have had countless close calls interacting with various motorized vehicles on King street, which as of right now the only way to traverse the core effectively from east to west. Safe downtown cycling routes are essential to allow people of all ages and abilities to choose a bike for transportation. Thank you for your efforts thus far to support safe streets, by directing staff to examine the King Street cycle route in detail.

I am writing today to encourage you to support the staff recommendation of Option 1d for King Street that will be presented to you at your meeting on September 25, 2018. Option 1d is the closest to the gold standard design for protected bike lanes across North America and Europe. This design results in safe transportation options for people who choose a car, a bus, a bike, or their feet to get around. Option 1d is the design that is most consistent with the National Association of City Transportation Officials guidelines, and will be most intuitive for all users. This design also doesn't conflict with long term goals of BRT on King street and could work quiet effectively even with BRT on King street.

In terms of numbers, yes there is an investment needed on the part of the city, but the projected amount for it is less than 1% that the city spent on road infrastructure in 2018. This is a negligible cost in terms of the city budget, but would have a **massive positive** impact for all forms of transportation, not just cyclists due to the positive impacts of removing points of conflict and confusion on the street.

Thank you for supporting safe streets, and for taking steps toward making Canada a bike friendly country and I hope and request that you will support the **staff recommendation of Option 1d for King Street.**

Sincerely
Jamieson Roberts

Jamieson Roberts
Freelance Web Developer

Dear Committee Members, Please support staff recommendation "Option #1d" for safe cycling along King Street. Downtown needs to be much safer for cyclists to encourage more Londoners to choose the healthy option of cycling over driving. Thank you.
Sally Cozens,
1262 Elson Road

TO:	**CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON SEPTEMBER 25, 2018**
FROM:	**KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER**
SUBJECT:	**RIVERSIDE DRIVE BRIDGE OVER CNR REHABILITATION DETAILED DESIGN, TENDERING, AND CONTRACT ADMINISTRATION APPOINTMENT OF CONSULTING ENGINEER**

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 a Consulting Engineer for the Riverside Drive Bridge over CNR Rehabilitation (No. 1-BR-08):

(a) Stantec Consulting Ltd. **BE APPOINTED** Consulting Engineers to complete the detailed design, tendering, and contract administration services in the amount of $170,538.50 (excluding HST), in accordance with Section 15.2 (e) of the Procurement of Goods and Services Policy;

(b) the financing for this appointment **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 appointment;

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

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

COUNCIL'S 2015-19 STRATEGIC PLAN

The following report supports the Strategic Plan through the strategic focus area of Building a Sustainable City by managing the infrastructure gap by strategically maintaining transportation infrastructure including railway grade separations.

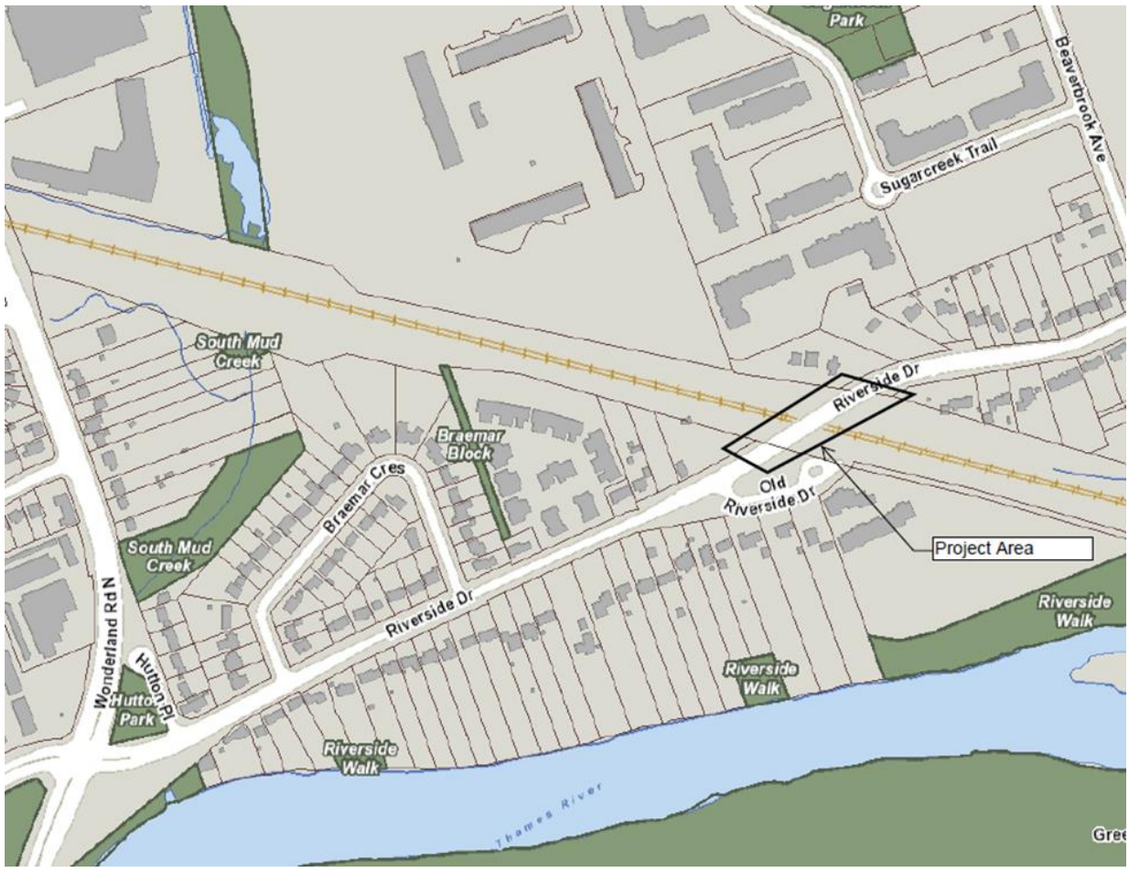
DISCUSSION

Purpose

This report seeks the approval of the Municipal Council to retain an engineering consultant to undertake the detailed design, tendering, and contract administration services for the rehabilitation of the Riverside Drive Bridge over CNR.

Background

The Riverside Drive Bridge is located on Riverside Drive approximately 750 m east of Wonderland Road. The existing bridge has a skew of 44° to the underlying CNR tracks. The existing structure is a four-span precast concrete girder bridge that was constructed in 1974. The structure has an overall deck length of 76 m with a typical curb-to-curb width of 15.6 m, and an overall typical width of 21.0 m which increases at the east end.



Riverside Drive is an east-west corridor for all forms of transportation and includes cycling and walking facilities on the existing bridge.

The only major rehabilitation on this structure was completed in 1998. The past five years have seen the need for annual repairs to the bridge deck.

Project Description

Earlier in 2018, a preliminary structural design report was completed for the Riverside Drive Bridge over CNR (Structure No. 1-BR-08). This investigation found the following:

- Deck overlay is in poor condition, with nearly half of the overlay debonded, and evidence of corrosion in the reinforcing steel;
- Sidewalks are in poor condition with delaminations and cracking;
- Concrete parapet walls and steel railings are generally in good condition;
- Expansion joints show evidence of leaking;
- Precast concrete girders at the ends near the abutments, including the diaphragms, exhibit delamination and spalling from the expansion joint leakage;
- Ballast walls and bearing seats at the abutments and wingwalls show minor deterioration due to expansion joint leaking;
- Guide rail on the approaches are below current standards;
- Piers are in good condition; and,
- Elastomeric bearings are in fair condition.

Three strategies were considered for the long term maintenance of this structure:

i) Minor rehabilitation now followed by a major rehabilitation in ten to fifteen years;
ii) Major rehabilitation now; or
iii) Do nothing now, but complete a major rehabilitation, including full superstructure replacement, in five years.

After evaluating the life cycle cost analysis for the three options, the anticipated needs for bridge repairs within the City's inventory in the coming years and the pressure on the major bridge upgrade capital funding, staff are recommending minor rehabilitation be completed on this structure. Selecting this option may require some ongoing minor maintenance repairs until such time as the major rehabilitation is undertaken in ten to fifteen years; however, this work plan should prevent the need for ongoing annual repairs to the deck and is deemed to be affordable with current budget allocations.

Consultant Assignment

The proposed consultant engineering assignment includes the detailed design, tendering and contract administration services for construction to occur in 2019.

The primary components to be incorporated in this project include, but not limited to, the following:

- Schedule A+ municipal class environmental assessment;
- Detailed design for bridge rehabilitation to include:
    - Replacement of the concrete deck overlay;
    - Replacement of the expansion joint seals;
    - Patching of deteriorated concrete on the sidewalks and parapet walls;
    - Repairs to concrete deterioration at the ends of the girders and diaphragms, and installation of a cathodic protection system to the girder ends;
    - Replacement of the steel beam guide rail at approaches, and updates to structure connections to current standards;
    - Rehabilitation of asphalt within approximately 10 m of the bridge; and
    - Traffic staging.
- Coordination of utility needs, including potential relocation of existing and new infrastructure;
- Inspection of the watermain for both the coating material and the condition of the support and hangar system and confirmation that valving is appropriate in the area;
- Consultation with agencies (ie: London Transit, CN Rail, MOECP, MNRF, etc.);
- Securing all necessary approvals and permits;
- Preparation of the complete tender package, including advertisement, review of the submitted tenders for completeness, and contractor recommendations; and
- Contract administration including part time inspection services during the construction of these works.

Consultant Selection

The consultant procurement process followed a two-stage process beginning with an open advertised Request for Qualifications. Based on the submissions received, a shortlist of three consulting firms was created. Three consultants, AECOM, Dillon, and Stantec were requested to submit detailed proposals with work plans.

Based on the evaluation criteria and best value based selection process identified in the Request for Proposals (RFP), the evaluation committee determined the proposal from Stantec Consulting Limited provides the best value to the City. Stantec Consulting

Limited has an experienced and multi-faceted project team with a clear understanding of the project scope and requirements, including successful completion of the background investigations undertaken on this structure. Their past proven experience on similar projects, combined with a project proposal, confirmed a thorough understanding of the goals and objectives and demonstrated their suitability for the undertaking.

In accordance with Section 15.2 (e) of the Procurement of Goods and Services Policy, Civic Administration is recommending Stantec Consulting Limited be appointed as Consulting Engineers for this detailed design, tendering and contract administration services assignment.

There are no anticipated additional operating costs in the Environmental and Engineering Services budget with approval of this engineering assignment.

CONCLUSION

The ongoing management of the City's transportation structures is conducted through the bridge management system as a component of coordinated corporate asset management processes. The Riverside Drive Bridge over CNR was identified as requiring a rehabilitation of several components. Initiation of detailed design, tendering and contract administration services is required to maintain the structure and best coordinate with other needs. The construction of this project is planned for 2019.

Stantec Consulting Limited has demonstrated an understanding of the City requirements for this project. Stantec has an experienced project team with a clear understanding of the project scope and requirements. Based on a thorough consultant procurement process, it is recommended that Stantec Consulting Limited be awarded the consulting assignment for the detailed design, tendering and contract administration services of the Riverside Drive Bridge over CNR at an upset amount of $170,538.50 (excluding HST).

Acknowledgements

This report was prepared with assistance from Sam Shannon, C.E.T., Technologist II, Jane Fullick C.E.T., Senior Technologist and Karl Grabowski, P. Eng., all of the Transportation Planning and Design Division.

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

Attach: Appendix A – Source of Financing

c: Canadian National Railway
Geoff Smith, CSCMP, Purchasing and Supply
Marta Semeniuk, Financial Planning and Policy
Gary McDonald, Tangible Capital Assets
Isaac Bartlett, Stantec Consulting Limited

APPENDIX 'A'

#18139

Chair and Members
Civic Works Committee

September 25, 2018
(Appoint Consulting Engineer)

RE: 1-BR-08 - Riverside Drive Bridge over CNR - Appointment of Consulting Engineer
(Subledger BR170001)
Capital Project TS176317 - Bridges Major Upgrades
Stantec Consulting Ltd. - $170,538.50 (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 recommendation of the Managing Director, Environmental & Engineering Services and City Engineer, the detailed source of financing for this project is:

ESTIMATED EXPENDITURES	**Approved Budget**	**Committed To Date**	**This Submission**		**Balance for Future Work**
Engineering	$800,000	$757,470			$42,530
Construction	2,708,000	2,133,926	173,540		$400,534
Other City Related Expenses	20,000				$20,000
NET ESTIMATED EXPENDITURES	**$3,528,000**	**$2,891,396**	**$173,540**	1)	**$463,064**
SOURCE OF FINANCING:					
Capital Levy	$1,478,000	$1,478,000			$0
Federal Gas Tax	2,050,000	1,413,396	173,540		463,064
TOTAL FINANCING	**$3,528,000**	**$2,891,396**	**$173,540**		**$463,064**

Financial Note:

1)	Contract Price	$170,538
	Add: HST @13%	22,170
	Total Contract Price Including Taxes	192,708
	Less: HST Rebate	19,168
	Net Contract Price	$173,540

lp

Jason Davies
Manager of Financial Planning & Policy

TO:	**CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON SEPTEMBER 25, 2018**
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-law (Appendix A) **BE INTRODUCED** at the Municipal Council meeting to be held on October 2, 2018, for the purpose of amending the Traffic and Parking By-law (PS-113).

PREVIOUS REPORTS PERTINENT TO THIS MATTER

Civic Works Committee – February 21, 2017. Oakridge area new sidewalks in 2017 & 2018 East Mile Road, Oban Crescent, West Mile Road, North Mile Road and Green Lane

2015-19 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. **No Parking**

   a) Byron Baseline Road

   Bicycle Lanes with 'No Parking Anytime' zones are being added to Byron Baseline Road from Grand View Avenue to Wickerson Road. These will tie into the existing bicycle lane with No Parking Anytime zone on Byron Baseline Road east of Grand View Avenue.

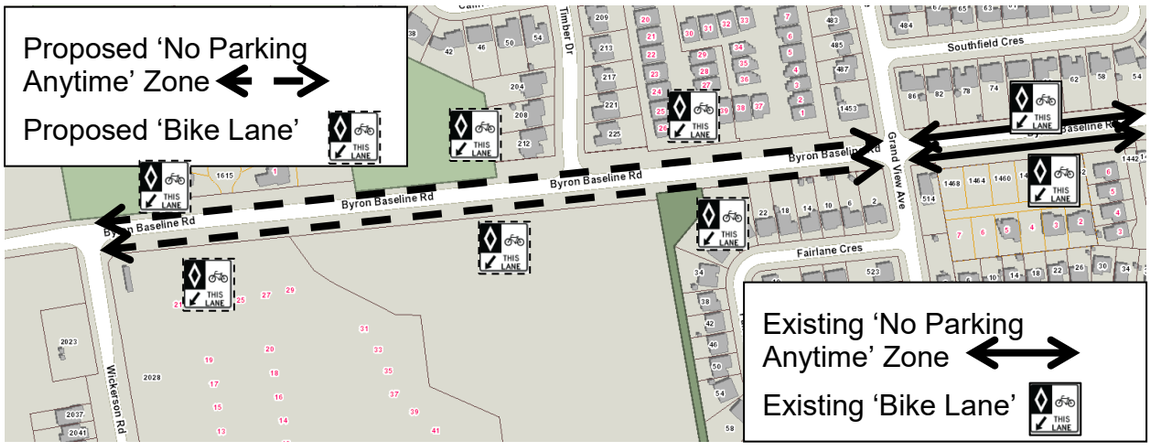


Figure 1: Byron Base Line Road

b) Central Avenue

Staff received a request to implement a ‘No Parking Anytime’ zone on the south side of Central Avenue for an accessible bus to pick-up and drop-off a person with accessible requirements.

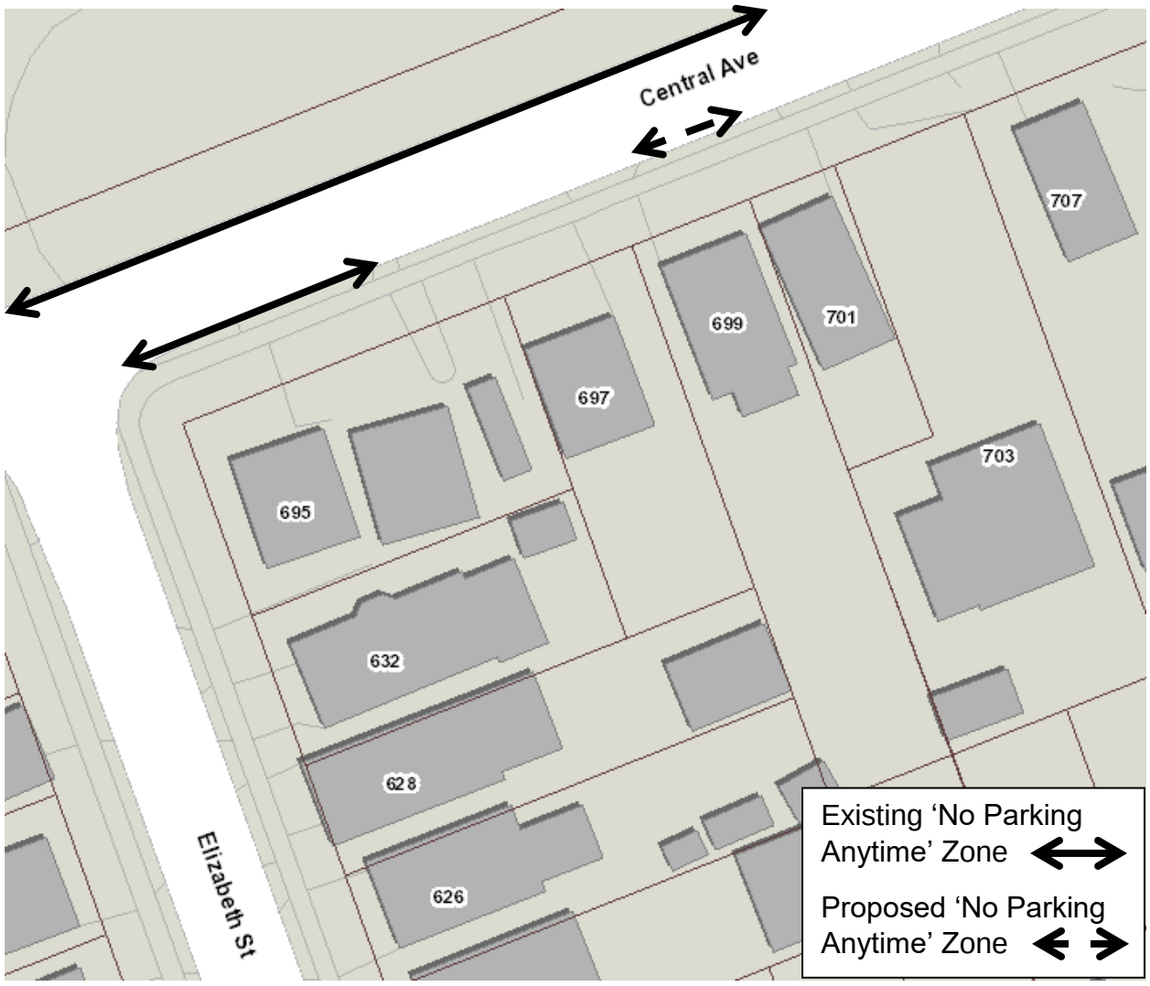


Figure 2: Central Avenue

c) Oakridge Acres Community

At its March 2, 2017 session, Municipal Council approved the following resolution:

> That the following actions be taken with respect to the installation of sidewalks on East Mile Road, Oban Crescent, West Mile Road, North Mile Road, and Green Lane:
>
> a) Curb face sidewalks BE IMPLEMENTED throughout the Oakridge Acres community, specifically on East Mile Road, North Mile Road, West Mile Road, Green Lane, and Oban Crescent;
>
> b) A road width of 7 meters BE IMPLEMENTED; and
>
> c) Parking BE PERMITTED on one side of the road, to alleviate any potential traffic congestion and concerns.

It is recommended that 'No Parking Anytime' zones be implemented at the following locations to address part c) of the above resolution:

- The west side of East Mile Road from Oban Crescent to North Mile Road.
- The north side of Green Lane from West Mile Road to East Mile Road;
- The south side of North Mile Road from West Mile Road to East Mile Road; and
- The east side of West Mile Road from Riverside Drive to North Mile Road.

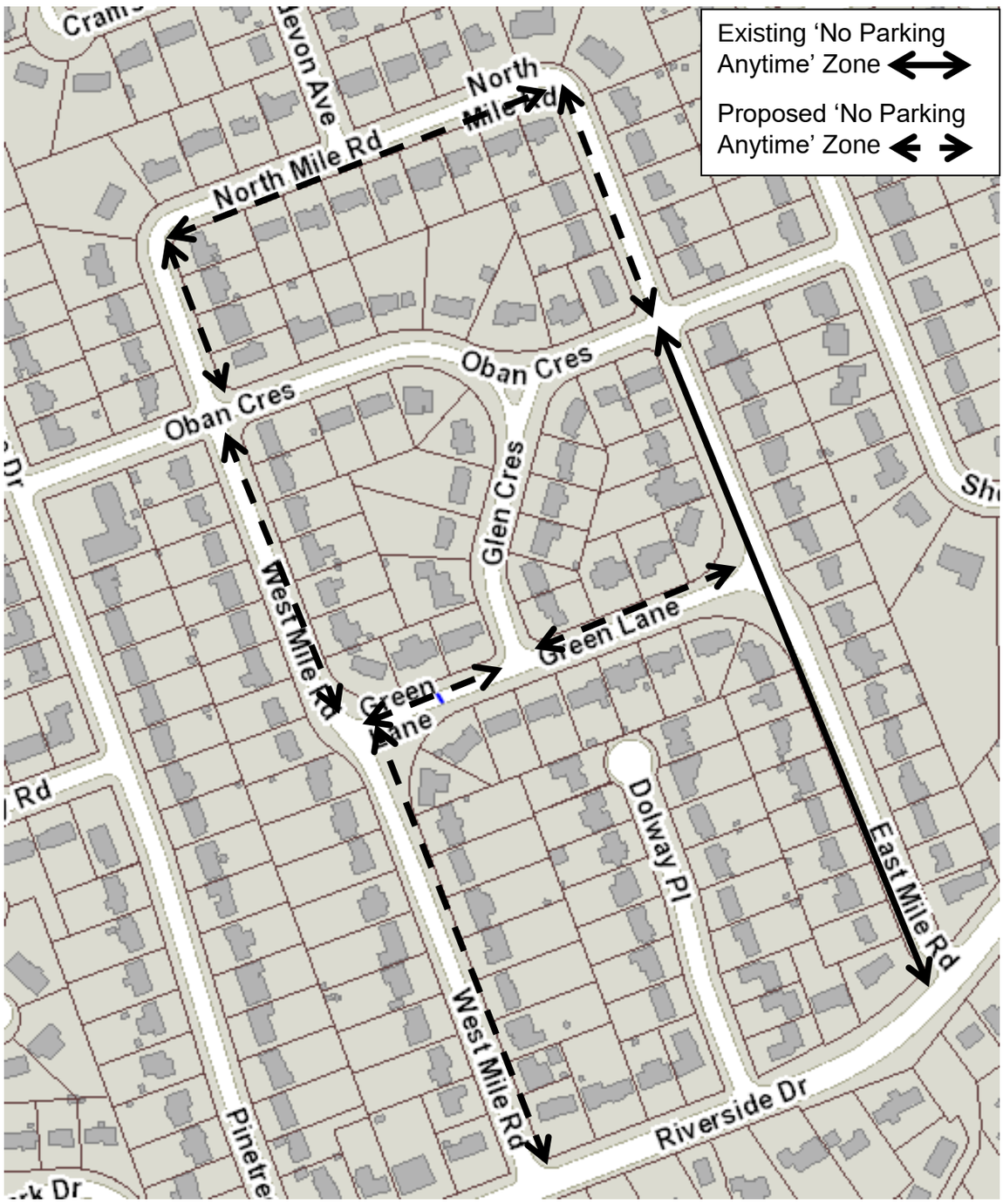


Figure 3: East Mile Road, Green Lane, North Mile Road and West Mile Road

Amendments are required to Schedule 2 (No Parking) and Schedule 9.1 (Reserved Lanes) and for the above changes.

2. **Limited Parking**

At the request of local residents, a mail-back survey was sent to the property owners on Haycock Place where the majority of the respondents supported implementing ‘2 Hour 8:00 a.m. to 6:00 p.m. Monday to Friday’ parking zone on all of Haycock Place.

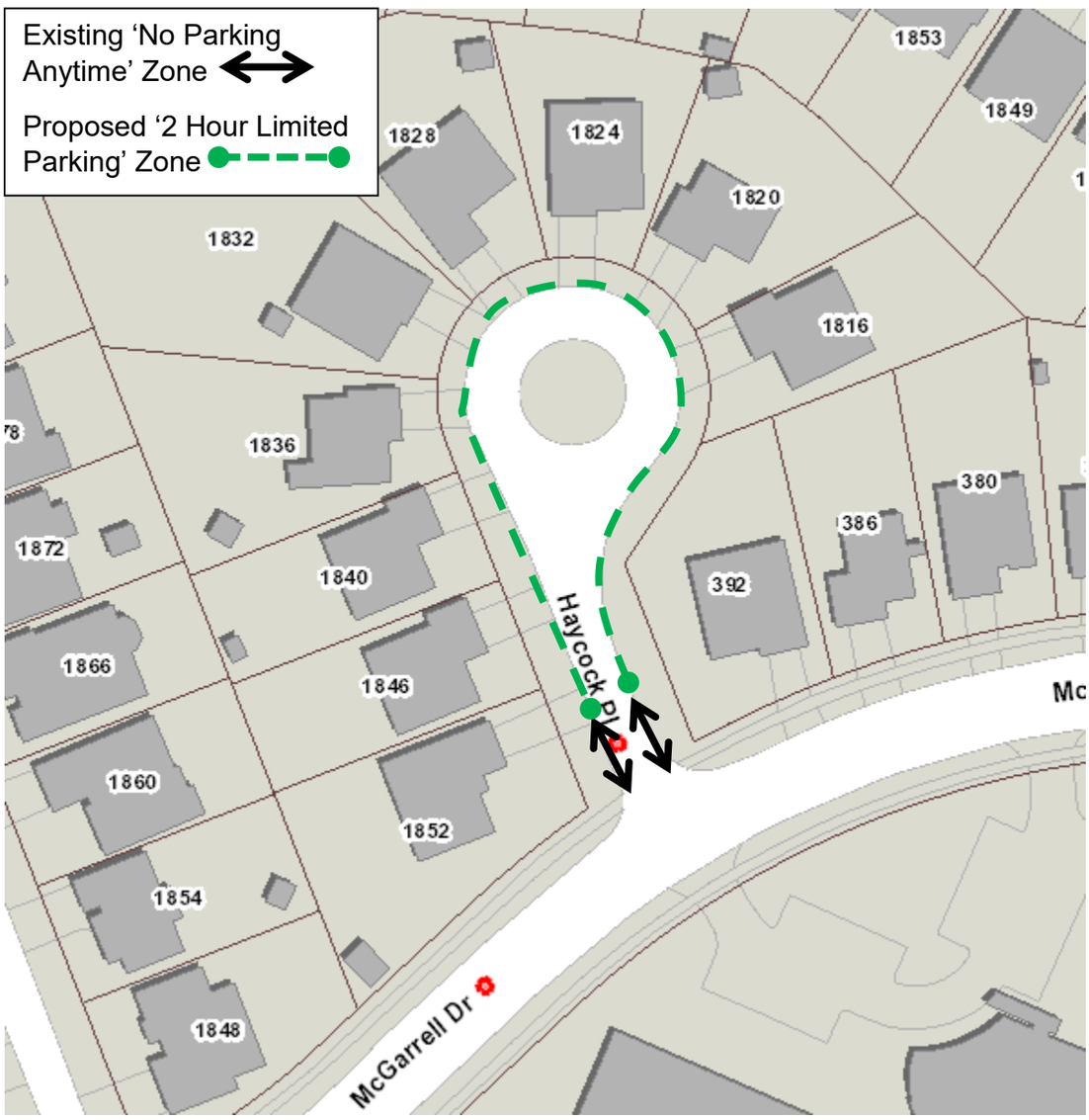


Figure 4: Haycock Place

An amendment is required to Schedule 6 (Limited Parking) is required for the above change.

3. **Prohibited Turns**

It is recommended that 'No Left Turn on Red' be implemented for southbound Wellington Road traffic at the new Intersection Pedestrian Signals (I.P.S.) located at the intersection with Bond Street to address safety concerns.

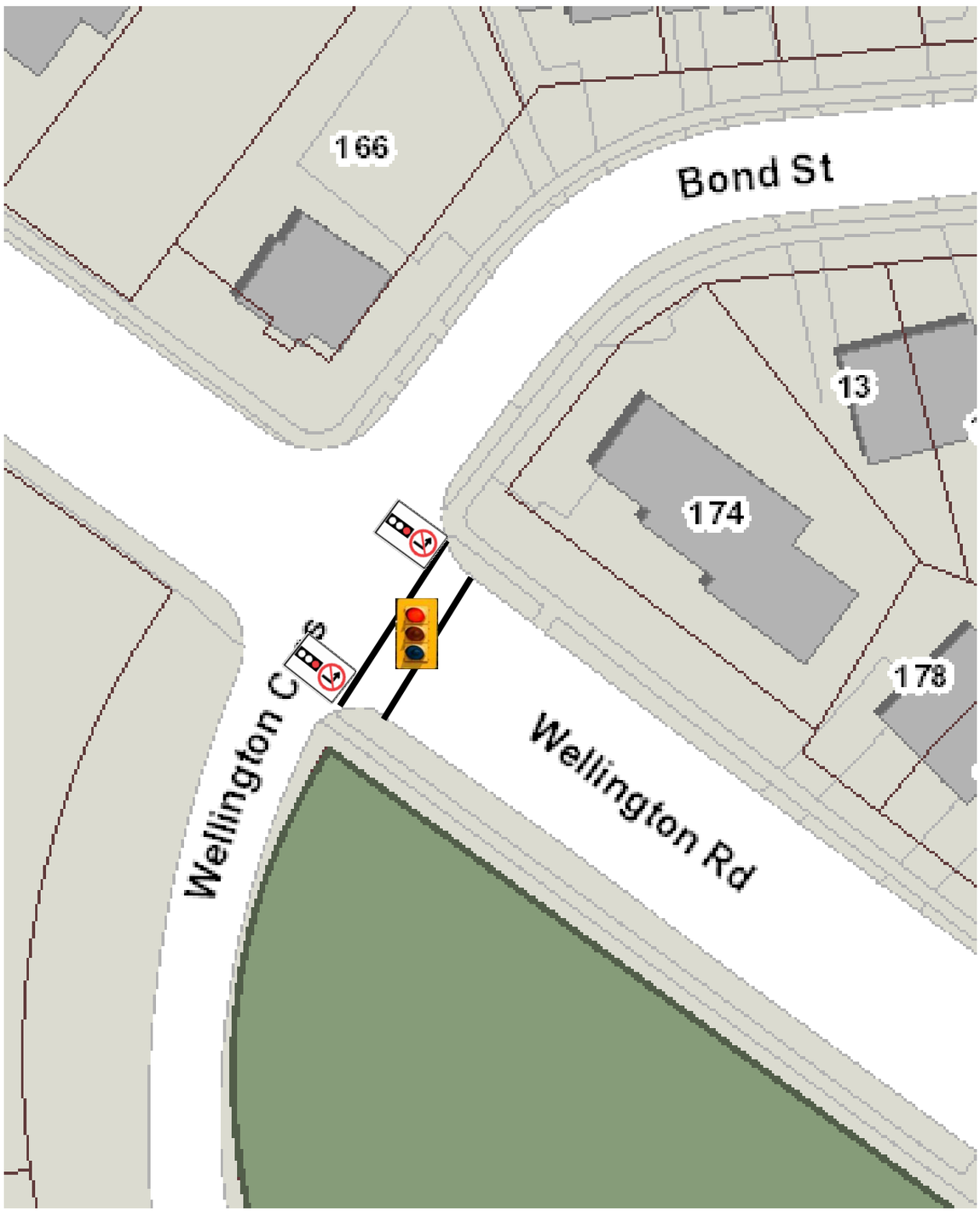


Figure 5: Wellington Road at Bond Street

Amendments are required for Schedule 8 (Prohibited Turns) for the above change.

4. **Regulatory Signs**

a) An All-way Stop warrant was met for the intersection of Grenfell Drive at Stackhouse Avenue.

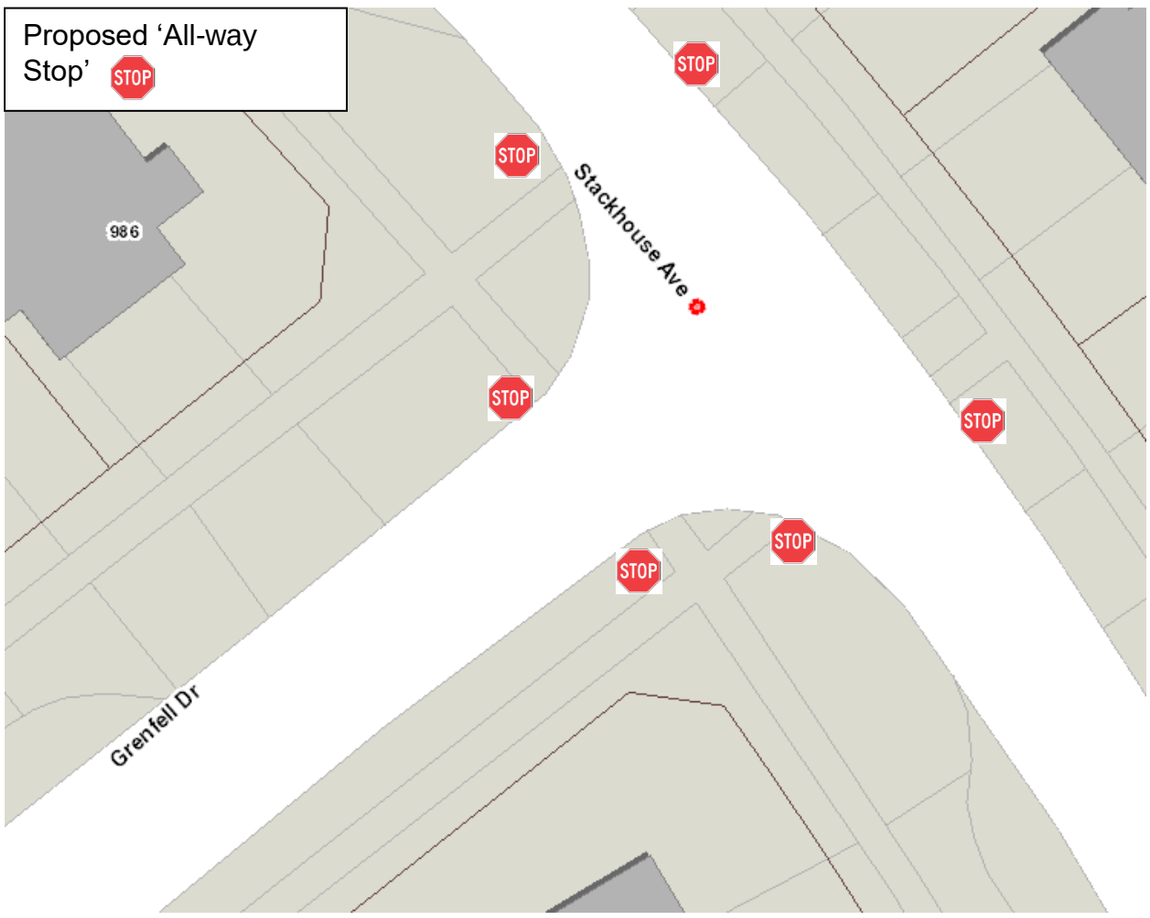


Figure 6: Grenfell Drive at Stackhouse Avenue

b) A review of the traffic operations at the intersections of Freeport Street and Tribalwood Street (east and west intersections) concluded that stop controls should replace existing yield controls.

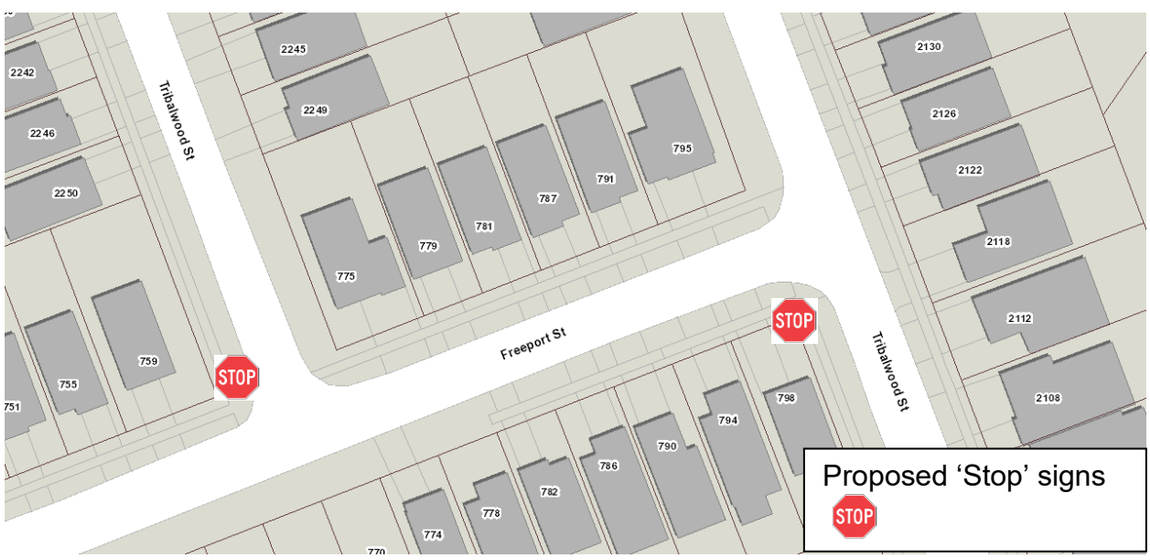


Figure 7: Freeport Street at Tribalwood Street

Amendments are required to Schedule 10 (Entering Highway (Stop Signs on Specified Streets)) and Schedule 11 (Entering Highway (Yield Signs on Specific Streets)) for the above changes.

5. **Higher Speed Limits**

Due to completion of residential construction of Westdel Bourne north of Oxford Street West it is recommended to amend the posted speed limit of 70 km/h to 60 km/h which matches the posted speed limit of Westdel Bourne south of Oxford Street West.

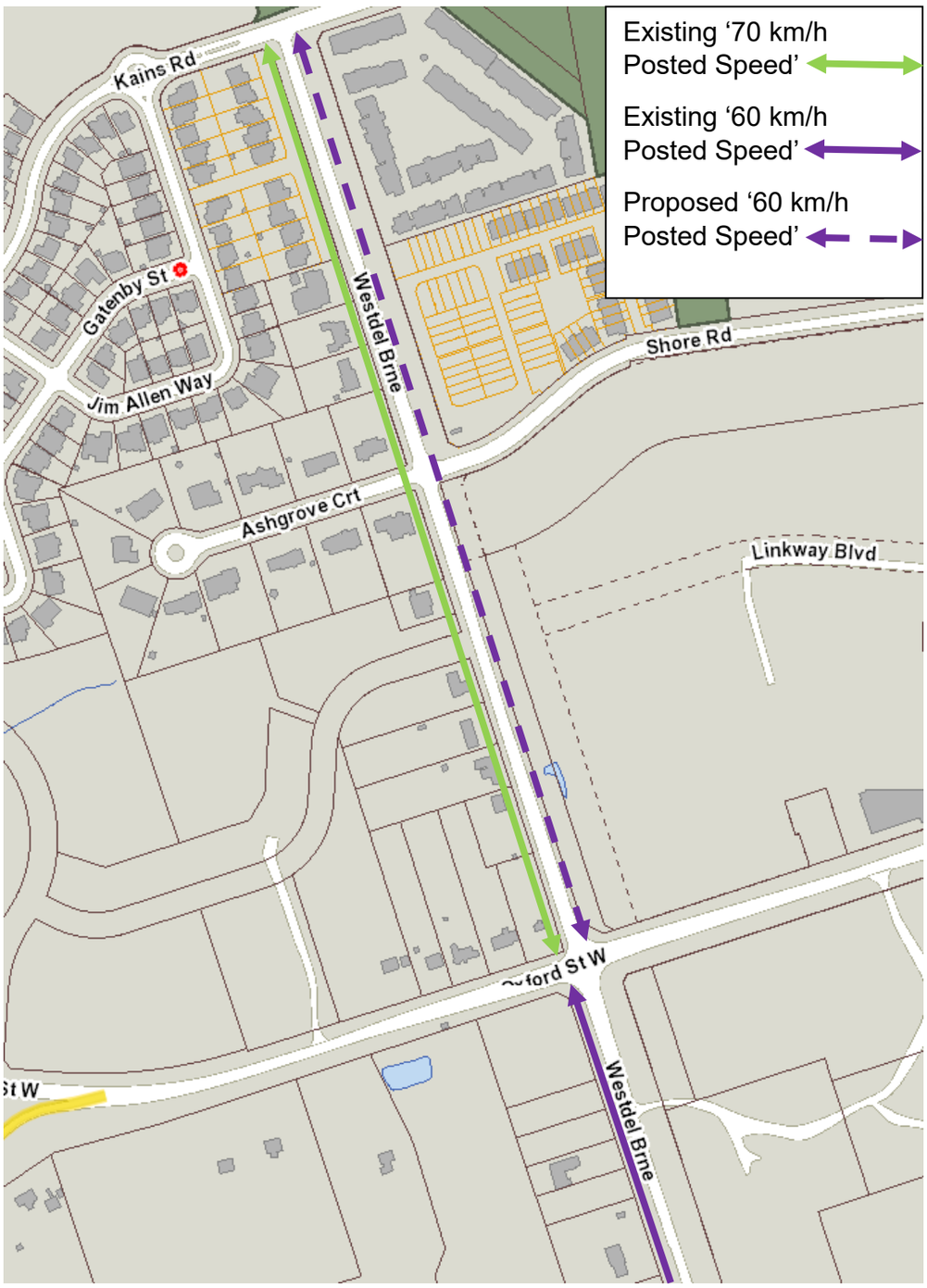


Figure 8: Westdel Bourne

An amendment to Schedule 17.1 (Higher Speed Limits) is required for the above change.

This report was prepared by Doug Bolton and Shane Maguire of the Roadway Lighting and Traffic Control Division.

PREPARED BY:	**RECOMMENDED BY:**
SHANE MAGUIRE, P. ENG. **DIVISION MANAGER,** **ROADWAY LIGHTING AND TRAFFIC CONTROL**	**KELLY SCHERR, P.ENG., MBA, FEC** **MANAGING DIRECTOR,** **ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER**

Y:\Shared\Administration\COMMITTEE REPORTS\PS-113 Amendments\2018\2018-09-25\CWC September 25 2018 Council October 2 2018 (TRAFFIC PARKING BY-LAW AMENDMENTS) Ver. 3.docx

September 12, 2018/db

Attach: Appendix A: Proposed Traffic and Parking By-Law Amendments

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 Parking**

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

Byron Baseline Road	Both	Commissioners Road W	Grand View Avenue	Anytime
East Mile Road	West	Oban Crescent	Riverside Drive	Anytime

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

Byron Baseline Road	Both	Wickerson Road	Commissioners Road West	Anytime
Central Avenue	South	A point 45 m east of Elizabeth Street	A point 56 m east of Elizabeth Street	Anytime
East Mile Road	West	Riverside Drive	North Mile Road	Anytime
Green Lane	North	West Mile Road	East Mile Road	Anytime
North Mile Road	South	West Mile Road	East Mile Road	Anytime

West Mile Road	East	Riverside Drive	North Mile Road	Anytime

2. **Limited Parking**

Schedule 6 (Limited Parking) of the By-law PS-113 is hereby amended by **adding** the following row:

Haycock Place	Both	McGarrell Drive to north limit	8:00 a.m. to 6:00 p.m.	2 Hours Except Saturdays

3. **Prohibited Turns**

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

Wellington Road with Bond Street	Southbound	Left

4. **Reserved Lanes**

Schedule 9.1 (Reserved Lanes) of the PS-113

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

Byron Baseline Road	Grand View Avenue to Colonel Talbot Road	1st lane from south	Anytime	Eastbound	Bicycle
Byron Baseline Road	North Street to Grand View Avenue	1st lane from north	Anytime	Westbound	Bicycle

Schedule 9.1 (Reserved Lanes) of the PS-113 By-law is hereby amended by **adding** the following rows:

Byron Baseline Road	Wickerson Road to Colonel Talbot Road	1st lane from south	Anytime	Eastbound	Bicycle

Byron Baseline Road	North Street to Wickerson Road	1st lane from north	Anytime	Westbound	Bicycle

5. **Stop Signs**

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

Eastbound	Freeport Street (east intersection)	Tribalwood Street
Northbound & Southbound	Stackhouse Avenue	Grenfell Drive
Southbound	Tribalwood Street	Freeport Street (west intersection)

6. **Yield Signs**

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

Eastbound	Freeport Street	Tribalwood Street (east intersection)
Southbound	Tribalwood Street	Freeport Street (west intersection)

7. **Higher Speed Limits**

Schedule 17 (Higher Speed Limit) of the PS-113 By-law is hereby amended by **deleting** the following rows:

Westdel Bourne	North end of street	Oxford Street W	70 km/h
Westdel Bourne	Oxford Street W	A point 400 m south of Southdale Road W	60 km/h

Schedule 17 (Higher Speed Limit) of the PS-113 By-law is hereby amended by **adding** the following row:

Westdel Bourne	North limit of Westdel Bourne	A point 400 m south of Southdale Road West	60 km/h

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

PASSED in Open Council on October 2, 2018

Matt Brown
Mayor

Catharine Saunders
City Clerk

First Reading – October 2, 2018
Second Reading – October 2, 2018
Third Reading – October 2, 2018

TO:	**CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON SEPTEMBER 25, 2018**
FROM:	**KELLY SCHERR, P.ENG. MANAGING DIRECTOR ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER**
SUBJECT:	**HYDE PARK COMMUNITY STORM DRAINAGE AND STORMWATER MANAGEMENT SERVICING MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT ADDENDUM: SCHEDULE B MASTER PLAN NOTICE OF STUDY 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 Hyde Park Community Storm Drainage and Stormwater Management Servicing Municipal Class Environmental Assessment Addendum: Schedule 'B' Master Plan:

(a) The preferred servicing alternative, executive summary attached as Appendix 'A', **BE ACCEPTED** in accordance with the Municipal Class Environmental Assessment process requirements;

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

(c) The Municipal Class Environmental Assessment project file **BE PLACED** on public record for a 30-day review period.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

Civic Works Committee, November 25, 2013 – Hyde Park Nos. 5 and 6 Stormwater Management Facilities

Civic Works Committee, April 7, 2014 – Appointment of Consulting Engineer for Engineering Services for the Functional and Detailed Design of the Hyde Park No. 6 SWMF

Civic Works Committee, April 28, 2014 – Appointment of Consulting Engineer for the Engineering Services for the Functional and Detailed Design of Hyde Park No. 5 SWMF

Civic Works Committee, May 24, 2016 – Appointment of Consulting Engineer: Hyde Park Community Stormwater Servicing Environmental Assessment Addendum Consulting Appointment

Civic Works Committee, August 29, 2017 – Low Impact Development Stormwater Management Guidance Manual (EBR Registry Number: 012-9080)

2015 – 2019 STRATEGIC PLAN

The following report supports the 2015 – 2019 Strategic Plan through the strategic focus area of Building a Sustainable City including:

- Robust Infrastructure 1B – Manage and improve water, wastewater, and stormwater infrastructure.

BACKGROUND

Purpose

To identify the preferred servicing alternative developed in the Hyde Park Community Storm Drainage and Stormwater Management Servicing Municipal Class Environmental Assessment Addendum Study (2018 Hyde Park EA Addendum), and recommend filing the Notice of Study Completion and to initiate the 30-day public review period.

Context

In 2002, the City of London completed a Schedule B Municipal Class Environmental Assessment to meet planned growth and address stormwater quality, quantity and erosion control measures for the Hyde Park area. To date, four of six recommended stormwater management (SWM) facilities have been constructed along with improvements to the Stanton Drain. Several interim SWM facilities have also been constructed to address growth demands as development has occurred.

In consideration of the SWM facilities implemented to date, new SWM methodology and policy, and anticipated development patterns, the City has prepared an update to the original storm drainage and SWM servicing strategy.

DISCUSSION

The Hyde Park Community Storm Drainage and Stormwater Management Servicing Municipal Class Environmental Assessment Study (2002 Hyde Park EA) was completed in 2002 by AECOM Canada Ltd. (formerly EarthTech). The 2002 Hyde Park EA recommended a stormwater servicing plan that included a total of six SWM facilities to mitigate the impacts of growth in the Hyde Park area (See Appendix ‘A’ - Executive Summary for study area).

Since 2002, substantial new development has occurred in the Hyde Park area including numerous parcels of big block commercial, all forms of residential, and major arterial road works. To service this development, the City has constructed four out of the six SWM facilities recommended by the 2002 Hyde Park EA.

The 2002 Hyde Park EA study applied an “end-of-pipe” regional SWM facility approach. This means that the stormwater runoff from development is treated and controlled by large wet ponds located at the downstream end of storm sewers or channels. At the time, this was the accepted methodology for providing SWM.

Today, the methodology and evolving policy for SWM is moving towards the inclusion of “at-source” controls or Low Impact Development (LID). Effectively, at-source controls act as sponges throughout the watershed to soak up rainwater and infiltrate it back into the ground. This may be in the form of a rain garden or wetland or an underground perforated pipe. The utilization of at-source controls looks to distribute SWM throughout the catchment instead of at a singular downstream end-of-pipe location. The benefits provided by the at-source methodology includes reduced conveyance infrastructure, as well as opportunities to promote infiltration of stormwater runoff to help meet water balance, groundwater recharge, and environmental objectives.

In 2016, the City retained AECOM to conduct an addendum to the 2002 Hyde Park EA.

The 2018 Hyde Park EA Addendum recommends new servicing solutions for the undeveloped lands in consideration of the latest SWM practices, including at-source LID measures and the City's permanent private systems policy (adopted in 2012). The scope of the 2018 Hyde Park EA Addendum includes optimizing existing SWM facilities, updating the current development patterns, applying updated computer software, First Nations consultation, and an evaluation of the alternatives in the current planning and environmental context.

Public/Stakeholder Consultation

As part of the study, one public information centre (PIC) was conducted. Notifications for the meeting were published in the two weeks preceding the PIC, as well as on the City's webpage. The meeting was held on June 27, 2017 at Medway Community Centre, located at 119 Sherwood Forest Square. The meeting was attended by the public and affected property owners. Notifications of the project were also sent to applicable federal, provincial, and municipal stakeholders, as well as local First Nations.

The meeting was also a public participation meeting for Hyde Park No. 5 and Hyde Park No. 6 SWM facilities (identified in the 2002 environmental assessment study) as directed by the Council resolution dated December 4, 2013. Notice for the public participation meeting was included as part of the notice issued for the commencement of the 2018 Hyde Park EA Addendum study and for the PIC, including project mail out, City's project webpage and newspaper advertisements.

Preferred Servicing Alternative

The identified preferred servicing alternative for the Hyde Park area eliminates the need for two previously considered end-of-pipe SWM facilities and recommends the retrofit or expansion of the existing SWM facilities. The recommended solution also incorporates at-source LID and permanent private stormwater systems controls.

Based on the updated analysis, the preferred servicing alternative includes the following key solutions.

- Eliminate 2 previously proposed ponds (Hyde Park No. 5 and No. 6).
- Decommission the existing temporary Matthews Hall SWM facility.
- Retrofit four existing ponds (Hyde Park No. 1, 1B1, 3E, and 4) without the need for further land.
- Construct a channel and storm sewer from Sarnia Road to Hyde Park Pond 1B1.
- Remediate a portion of the Stanton Drain between Gainsborough Road and the Canadian Pacific rail-line, incorporating a natural channel design.
- Integrate permanent private stormwater system measures and Low Impact Development technologies as part of future developments and road widenings.
- Provide stormwater drainage enhancements to several existing areas including the North Routledge industrial area, Cantebury Estate subdivision, and Sarnia Road.

Advantages of the Revised Servicing Strategy

Advantages of the preferred servicing strategy recommended through the 2018 Hyde Park EA Addendum include:

- Reduced environmental impacts by removing the need for Hyde Park SWM facility No. 5 whose location potentially had natural heritage impacts.

- Reduced land impacts by optimizing the use of existing City owned lands for SWM facility retrofits / expansion.
- Improved environmental benefits through the infiltration of rainwater to provide water balance and groundwater recharge.
- Decommissioning of an existing temporary SWM facility whose property will be resold and residential building lots.
- Reduced capital costs with the revised strategy.

Agency Comments

The Ministry of the Environment and Climate Change (MOECC) has reviewed and commented on the draft study. The MOECC has commented that it has no surface water concerns with the addendum's recommendations.

The Environmental and Ecological Planning Advisory Committee (EEPAC) has reviewed the study and has no comments to add to the work completed in the study.

Cost Estimate

There is $7.7M in the budget approved to construct the remaining 2002 Hyde Park EA works including SWM Facility 5, SWM Facility 6, and the completion of the Stanton Drain remediation.

The consultant's cost estimate to complete the capital works identified in the 2018 Hyde Park EA Addendum is $6.9M, representing an estimated cost savings of $800,000 within the currently approved budget.

Timing of Next Steps

The following steps will be taken to finalize the 2018 Hyde Park EA Addendum, Schedule 'B' Master Plan:

1. Upon acceptance by Council, commence the 30 day review period:

    - A "Notice of Study Completion" will be published identifying that the study report is available for public review for the mandatory 30 calendar days at City Hall – 9th Floor, City of London Library (Sherwood Branch), and online at: http://www.london.ca/residents/Environment/EAs/Pages/Hyde-Park-Community-Stormwater-Servicing-.aspx

    - Stakeholders are encouraged to provide input and comments regarding this study during the 30-day review period. Should stakeholders feel that issues have not been adequately addressed for specific projects identified within the Schedule B Master Plan, they can provide written notification within the 30-day review period to the Minister of the Environment, Conservation and Parks requesting further consideration via the "Part II Oder Request" form available from the Ontario Provincial Government website. This process is termed a "Part II Order" (informally known as a Bump-Up Request).

2. Construct the Preferred Servicing Alternative

    - The anticipated implementation timing of the stormwater servicing strategy is provided in the Appendix 'A' – Executive Summary, noting that the majority of capital works are proposed for construction within the 2-5 year period. Permits and approvals for the proposed works will be obtained at the detailed design

stage from the appropriate regulatory authorities.

CONCLUSIONS

A holistic approach has been adopted through the 2018 Hyde Park EA Addendum assessment process. The preferred servicing alternative includes the strategic implementation of LID and permanent private stormwater systems, optimization of existing SWM facilities, and construction of new conveyance measures. The preferred servicing alternative has removed the need for two planned SWM facilities and provides a consistent approach with new SWM policy to service the Hyde Park development area. Staff recommends that the preferred servicing alternatives identified be accepted and posted for the 30-day public review period.

Acknowledgements

This document has been prepared by David Gough, P.Eng., Environmental Services Engineer.

SUBMITTED BY:	**REVIEWED AND CONCURRED BY:**
SHAWNA CHAMBERS, P.ENG. **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**	

September 14, 2018

Attach: Appendix ‘A’ – Executive Summary

cc. John Hassan, AECOM
Alan Dunbar, City of London
Jason Davies, City of London

City of London

Hyde Park Community Storm Drainage and Stormwater Management Servicing Municipal Class EA Addendum Executive Summary

Prepared by:

AECOM
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London, ON, Canada N6A 6K2
www.aecom.com

519 673 0510 tel
519 673 5975 fax

July 2018

Project Number: 60508791

1. Executive Summary

1.1 Introduction

AECOM Canada Ltd. on behalf of the City of London completed a Municipal Class Environmental Assessment (EA) Addendum to the *Hyde Park Community Storm Drainage and Stormwater Management Servicing Municipal Class Environmental Assessment* study, completed in 2002. The 2018 EA addendum study (now called Hyde Park Community Storm Drainage and Stormwater Management Servicing Municipal Class EA Addendum) provides an update on recommendations for stormwater management to meet growth needs through the optimization of existing stormwater management facilities (SWMFs), re-evaluation of the location and design of future SWMFs, and the implementation of low impact development (LID) measures and permanent private systems (PPSs). The updated strategy provides the required quantity control, surface water quality control, and erosion control to support existing and future development within the Hyde Park development area (refer to **Figure ES1**).

The EA addendum study was completed in accordance with the Ontario *Environmental Assessment Act* (EAA), and followed Approach #2 of the Municipal Engineers Association (MEA) Master Planning Process.

1.2 Background

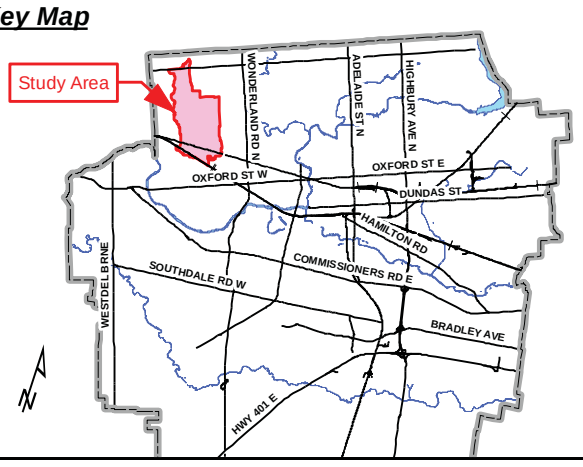
Stormwater drainage and stormwater management (SWM) was originally assessed as part of the City of London's planning initiatives through the Stanton Drain Subwatershed Study (SDSS) and the Hyde Park Community Plan (HPCP) completed in 1994 and 1997, respectively. The SDSS Study reviewed the existing natural heritage of the watershed including the Stanton Drain, and identified objectives for preservation and enhancement of the environmental resources. These overall watershed objectives were translated to specific SWM criteria for the Stanton Drain and subwatershed area. The HPCP reviewed the stormwater management requirements for the study area and identified design criteria for required SWM facilities. Alternative locations for SWMFs were reviewed and preferred locations were identified.

Stormwater management measures were identified for the Hyde Park area through these studies to address existing drainage issues, flood protection and to facilitate future development. AECOM (formerly Earth Tech Canada) finalized the HPCP plan in 2001. The 2002 Hyde Park SWM Class EA was completed by AECOM to properly assess and support the design and construction of the recommended works, many of which have been constructed to date.

In consideration of the SWMFs implemented to date, anticipated development patterns, new City of London stormwater management policy and permitting requirements, and pending Low Impact Development (LID) direction from the Ontario Ministry of Environment and Climate Change (MOECC), an update to the original storm drainage and stormwater management servicing strategy is required.

SUNNINGDALE RD W
FANSHAWE PARK RD W
BLUE HERON DR
HYDE PARK RD
SWMF 4
SWMF 3E
HAWTHORNE RD
GAINSBOROUGH RD
CPR Line
CN Line
SWMF 1
SWMF 1B1
HYDE PARK RD
LAWSON RD
LIMBERLOST RD
SARNIA RD
0 250 500 1,000 Metres

Key Map



Hyde Park Community Storm Drainage and Stormwater Management Servicing Municipal Class EA Addendum

Figure ES1: Study Area

Date:	PN:	Datum: NAD83 UTM17
January 2018	60508791	Source: City of London

Legend

- Railways
- City Boundary
- Watercourse / Drains
- Study Area
- Urban Growth Boundary

AECOM

1.3 Problem and opportunity Statement

The Problem/Opportunity Statement is the principle starting point in the undertaking of a Municipal Class EA and becomes the central theme and integrating element of the project. It also assists in setting the scope of the project. The following problem/opportunity statement was prepared for this EA addendum study in consideration of past studies and current City and MOECC initiatives.

Considering recent changes to permitting requirements and anticipated development patterns, the City needs to revisit the original Class EA assumptions and update the Hyde Park storm drainage and SWM servicing strategy. The recommended strategy will address long term planned growth with consistent stormwater management requirements and minimize impacts to the natural environment while also providing opportunities for enhancements. The recommended strategy will incorporate policy updates including the application of Permanent Private Systems (PPS), Low Impact Development (LID), and Best Management Practices (BMP) for future developments as well as road corridors, where applicable and feasible. It will also maximize the function of the existing and future infrastructure, refine land use assumptions outside of the Urban Growth Boundary, and incorporate interim facilities where appropriate and feasible.

1.4 Storm Drainage and Stormwater Management

1.4.1 Storm Drainage and Stormwater Management

The 2002 EA recommended six stormwater management facilities (SWMFs) to be constructed along with improvements to the Stanton Drain.

- SWMF 1 was constructed in 2007.
- SWMF 1B was constructed in 2011.
- SWMF 3E was constructed in 2009.
- SWMF 4 was constructed in 2013.
- SWMF 5 has not been constructed. The functional design phase of SWMF 5 commenced in 2014, and was put on hold subject to the outcome of this EA addendum.
- SWMF 6 has not been constructed. The functional design phase of SWMF 6 was commenced in 2014, and was put on hold subject to the outcome of this EA addendum. To support development pressures and growth demands in the interim, several interim measures for the service area have been implemented. and are further described in Section 1.4.2 below.

The Stanton Drain was recommended to be remediated from SWMF 5 north to Gainsborough Road and up to the CNR spur line crossing. A major flow channel was recommended to be relocated to the CNR spur line from this point to Fanshawe Park Road. The remediation portion of the work was recommended to provide proper servicing and address flooding problems north of Gainsborough Road.

The recommended remediation of the Stanton Drain and construction of the major flow channel was completed in 2013 from Fanshawe Park Road to approximately 350 m south of Gainsborough Road. The works were completed in conjunction with the construction of SWMF 4. The remediated drain was designed with a nested low flow channel and high flow overbank to sustain diverted major flows from SWMF 4 for quantity and erosion control treatment by SWMF 5 downstream. Due to land access constraints at the time of construction, the final section of the recommended remediation along the proposed SWMF 5 property has not been constructed.

1.4.2 Interim Works

Several interim SWMFs and SWM controls not identified in the 2002 EA have been constructed to address growth demands as development has occurred.

- Interim Mathews Hall Subdivision SWMF was designed and constructed in 2009 to provide interim/temporary water quality and water quantity control for the Mathews Hall residential development, in advance of the construction of SWMF 6. As part of the recent Sarnia Road reconstruction and storm sewer works completed in 2017, a storm sewer connection has been provided to support the future decommissioning of Interim Mathews Hall Subdivision SWMF.
- Interim SWMF 6 and OGS 3. Due to delays in the design and construction of Hyde Park SWMF 6 located west of Hyde Park Road, an interim SWM arrangement for water quality and quantity was implemented
- Hyde Park OGS 4 and 5 were installed as part of the Phase 1 widening of Hyde Park Road in 2016.
- Sarnia Road Bioretention Cells were constructed in 2017 to support the reconstruction of Sarnia Road, from Hyde Park Road to Beaverbrook Avenue.

1.5 SWM Strategy Overview

In consideration of the SWMFs implemented to date, anticipated development patterns, new City of London stormwater management policy and permitting requirements, pending LID direction from the Ontario Ministry of Environment and Climate Change (MOECC), and the need to consider climate change and infrastructure resiliency, an update to the original storm drainage and stormwater management servicing strategy was required.

1.5.1 SWM Objectives

SWM objectives for the study area include:

- water quality,
- water quantity control,
- erosion control, and
- conveyance measures.

As part of the preferred SWM strategy, major and minor flow conveyance is to be improved. New outlets to existing SWMFs or watercourses are to be identified. The preferred strategy will also identify development areas requiring onsite flow attenuation due to identified major and/or minor flow constraints. SWM controls for these areas will be implemented in accordance with the City of London PPS policy, through the implementation of source controls (ex. depressed storage in parking lots, subsurface storage, and roof top storage) or LID measures (ex. bioretention cells, swales, and infiltration trenches).

1.6 Identification and Evaluation of Alternative Solutions

1.6.1 Alternatives Evaluated as Part of EA Addendum

As summarized in **Section 1.4.1**, four of the recommended six SWMFs from the 2002 EA have been implemented to date. Interim stormwater water management measures have also been constructed to meet SWM requirements as development has occurred.

The recommended SWM works from the 2002 EA still to be constructed include

- SWMF 5,
- SWMF 6. and
- remaining Stanton Drain remediation works.

This addendum considers alternative solutions to SWMF 5 and SWMF 6 as recommended in the 2002 EA. The entire Hyde Park drainage area has been re-evaluated to provide an update on the recommendations for stormwater management to meet growth needs. The alternatives considered the optimization of existing SWMFs, re-evaluation of the location and design of future SWMFs, and the implementation of low impact development (LID) measures and permanent private systems (PPSs). The overall strategy is to meet the design objectives and provide the required quantity control, surface water quality control, and erosion control to support existing and future development.

The Stanton Drain remediation works have not been re-evaluated as part of the EA addendum, as the works have commenced and are recommended to be completed. The remaining portion of the Stanton Drain works are identified and further described in **Section 1.7.3**

Alternatives were evaluated under future land use conditions (ultimate build-out) of the Hyde Park Area, including potential expansion and development outside the current City of London Urban Growth Boundary. Interim development scenarios were evaluated to determine triggers for SWM needs.

SWMF 5

Alternatives evaluated for SWMF 5 are illustrated in **Figure ES2**, and further described below.

- Option 1: Do Nothing
- Option 2: 2002 Recommended SWMF 5
- Option 3: SWMF 4 Upsize and Retrofit
- Option 4: New Hyde Park Erosion and Flood Control Facility – Outside Urban Growth Boundary
- Option 5: New Hyde Park Erosion and Flood Control Facility – Inside Urban Growth Boundary

SWMF 6

Alternatives evaluated for SWMF 6 are illustrated in **Figure ES3**, and further described below.

- Option 1: Do Nothing
- Option 2: 2002 Recommended SWMF 6
- Option 3: Trunk Sewer/Channel and Conveyance through Existing CP Rail Crossing
- Option 4: Trunk Sewer/Channel and Conveyance through New CP Rail Storm Sewer

Option 4

Option 3

SWMF 4

BLUE HERON DR

HYDE PARK RD

Stanton Drain

SWMF 3E

GAINSBOROUGH RD

Option 5

Option 2

CPR Line

CN Line

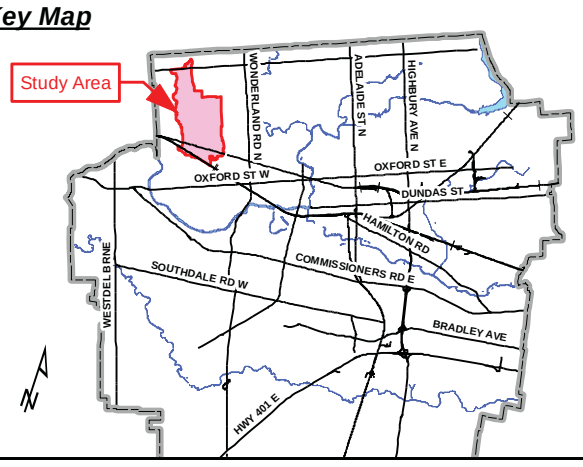
SWMF 1

HYDE PARK RD

SWMF 1B1

0 100 200 400 Metres

Key Map



Hyde Park Community Storm Drainage and Stormwater Management Servicing Municipal Class EA Addendum

Figure ES2: SWMF 5 Alternatives

Date:	PN:	Datum: NAD83 UTM17
January 2018	60508791	Source:City of London

Study Area

Urban Growth Boundary (UGB)

Watercourse / Drains

SWMF 5 Alternatives

Option 2: 2002 EA Recommended SWMF 5

Option 3: SWMF 4 Upsize and Retrofit

Option 4: New Hyde Park EFC Facility - Outside UGB

Option 5: New Hyde Park EFC Facility - Inside UGB

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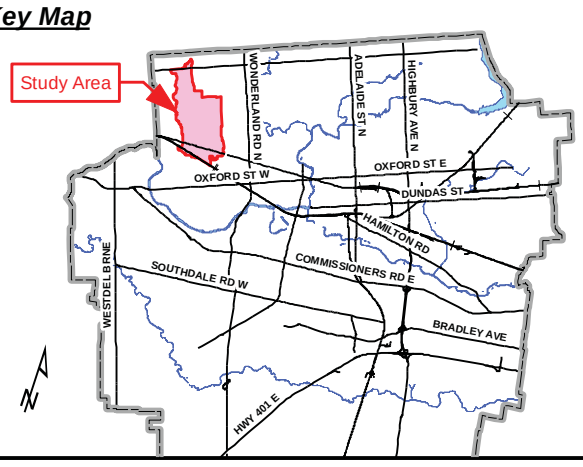
Key Map



Hyde Park Community Storm Drainage and Stormwater Management Servicing Municipal Class EA Addendum

Study Area
Urban Growth Boundary
Watercourse / Drains

Option 2: 2002 EA Recommended SWMF 6
Option 3: Trunk Sewer/Channel and Conveyance through Existing CPRail Culvert Crossing
Option 4: Trunk Sewer/Channel and Conveyance through New CPRail Storm Sewer Crossing
Option 3 and 4: Shared Route

Figure ES3: SWMF 6 Alternatives

Date:	PN:	Datum: NAD83 UTM17
January 2018	60508791	Source: City of London

AECOM

1.6.2 Recommended SWMF 5 Alternative

Based on the criteria and methodology applied as part of the evaluation process, the preferred alternative for SWMF 5 is **Option 3: SWMF 4 Upsize and retrofit** for the following reasons:

- The preferred alternative optimizes the service level of SWMF 4 and removes the need for SWMF 5.
- SWMF 4 would be retrofitted to service all areas naturally draining to the Stanton Drain upstream of SWMF 4, thereby significantly increasing the overall service level and function of the facility.
- Major flows would no longer be diverted from SWMF 4 to be treated by the proposed SWMF 5 downstream.
- To provide the additional water quality, water quantity, and erosion controls required to the Stanton Drain downstream, this alternative would be implemented in conjunction with retrofits of SWMF 3E, LID implementation along Gainsborough Road, PPS/LID controls on future development outside the urban growth boundary, and PPS/LID controls on future development of lands that do not naturally drain to an existing or proposed facility.

1.6.3 Recommended SWMF 6 Alternative

Based on the criteria and methodology applied as part of the evaluation process, the preferred alternative for SWMF 6 is **Option 4: Trunk Sewer/Channel and Conveyance through New CP Rail Storm Sewer** for the following reasons:

- The preferred alternative would optimize the service area of the existing SWMF 1B1 and SWMF 1, remove the need for SWMF 6, and support the decommissioning of Mathews Hall Temporary SWMF.
- Upon the provisional future road widening of Sarnia Road, from Beaverbrook Avenue to Hyde Park Road, the Sarnia Road bioretention cells may be decommissioned with treatment provided by SWMF 1B1 and SWMF 1 downstream.
- The recommended trunk sewer and channel would divert flows north to SWMF 1B1 via a new trunk sewer and channel. A new trenchless outlet through the CPR line embankment is recommended to discharge storm flows directly to the upper tier dry cell of SWMF 1B1.
- Quantity control would be provided by the upper tier dry cell and water quality would be provided by the lower tier wet cell. SWMF 1B1 and SWMF 1 operating in tandem would provide the required water quality, water quantity and erosion control for the increased upstream tributary area.
- As part of this alternative, Interim SWMF 6 and OGS 3 are to become permanent SWM controls for approximately 340 m of Hyde Park Road and a small portion of widened Sarnia Road. PPS controls are required for any future development of lands located west of Hyde Park Road to provide the additional water quality, water quantity, and erosion controls for the Stanton Drain.
- This alternative will provide a segment of a multi-use pathway link, connecting Sarnia Road to Hyde Park SWMF 1B1.

1.7 Preferred Storm Drainage and SWM Strategy: Project Descriptions

Figure ES4 Illustrates the preferred SWM Strategy recommended works described below.

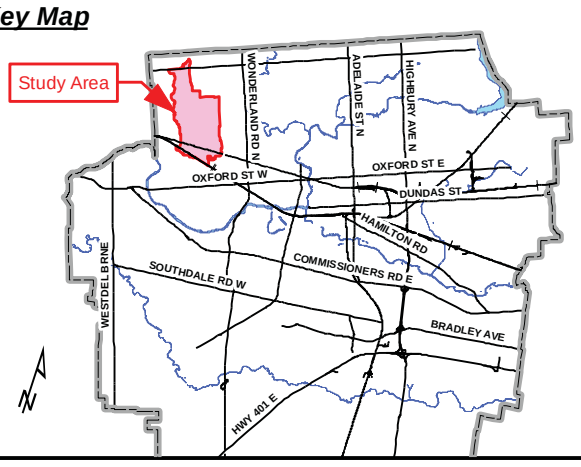
Recommended SWM Strategy

ID	Description	Implementation Timing
1	Integrate PPS/LID on future development outside of the Urban Growth Boundary.	Development Driven
2	Parking Lot Surface Storage at Smart Centres or other PPS/LID measures.	Land Owner Driven
3	Eliminate temporary Smart Centre SWMF through implementation of ID 2 and connection of development to SWMF 3E.	Land Owner Driven
4	Upsize and Retrofit Hyde Park SWMF 4.	2019-2020
5	Upgrade Stanton Drain Outlet for North Rutledge Park Drainage Area.	Development Driven
6	Integrate PPS on future development downstream of SWMFs.	Development Driven
7	Eliminate Requirement for Hyde Park SWMF 5.	2019-2020
8	Future OGS units in Canterbury Estate Development.	In accordance with GMIS
9	Retrofits to Hyde Park SWMF 1.	2019-2020
10	Retrofits to Hyde Park SWMF 1B1, New Inlet.	2019-2020
11	Channel Remediation/Realignment from Sarnia Road to Hyde Park SWMF 1B1.	2019-2020
12	Eliminate Requirement for Hyde Park SWMF 6.	2019-2020
13	Integrate PPS on future development.	Development Driven
14	Integrate PPS on future development.	Development Driven
15	Implement LID retrofits during future road reconstruction.	In accordance with GMIS.
16	Retrofits to Hyde Park SWMF 3E Outlet.	2019-2020
17	Decommissioning of Matthews Hall Temporary SWMF	2019-2020
18	Future Decommissioning of Sarnia Road Bioretention Cells	Provisional Road Widening 2027

SUNNINGDALE RD W
FANSHAWE PARK RD W
BLUE HERON DR
HYDE PARK RD
HAWTHORNE RD
GAINSBOROUGH RD
CPR Line
CN Line
LIMBERLOST RD
LAWSON RD
SARNIA RD

0 250 500 1,000 Metres

Key Map



Hyde Park Community Storm Drainage and Stormwater Management Servicing Municipal Class EA Addendum

Study Area
Urban Growth Boundary
Watercourse / Drains

Recommended SWM Strategy Works

Recommended New Works
Eliminated 2002 EA Recommended Works
Recommended Decommissioning of Interim Works

Figure ES4: Overview of Recommended Works

Date: March 2018
PN: 60508791
Datum: NAD83 UTM17
Source:City of London

AECOM

1.7.1 SWMF Retrofits

The following retrofits are required to address erosion and quantity control for the current and ongoing development of the service area.

- SWMF 1 is recommended to be retrofitted to increase the erosion and quantity control capacity of the facility, through grading works and reduction in the permanent pool elevation. The facility footprint is proposed to be expanded through grading works to the northwest bank, adjacent to Canterbury Park. A new outlet structure is proposed to lower the permanent pool to 236.5 m (1 m deep). A reconstructed outlet is recommended to include a reverse slope pipe, complete with a 200 mm low flow control orifice and high flow weir/orifice structure. A reverse slope outlet pipe will draw water from the bottom of the permanent pool and includes several benefits such as temperature mitigation and reduction in potential blockages/clogging from floating debris and vegetation.
- The upper dry cell of SWMF 1B1 will require grading and inlet works to support the connection of the Sarnia Road Channel/Trunk Sewer, summarized in **Section 1.6.3**. An ECA amendment will be required to support the inlet works. No changes are proposed to the outlet structure or treatment volumes of the upper or lower cells.
- The outlet structure for SWMF 3E is recommended to be retrofitted to optimize the quantity and erosion control volume of the existing facility. It is recommended that the outlet structure is retrofitted to include a 375 mm orifice plate on the outlet sewer, located on the outlet pipe of the high flow catch basin. The proposed orifice plate will restrict outlet flows of the facility, and improve erosion and flooding conditions downstream. The orifice plate will not impact the emergency grate flow capacity, located downstream. The maximum ponding depth will increase for the 100 year event to 270.43 (3.18 m above pond bottom), and maintain a 0.27 m freeboard to the emergency overflow structure. The total active storage utilized in the 100-year event will be increase from 48,600 m3 to 68,600 m3, representing a 41 % increase. No changes to the facility grading are recommended. A total storage of approximately 101,300 m3 (including the permanent pool) is provided to a depth of 3.45 m, prior to activating the emergency grate overflow. The facility will continue to contain the 250 year event, with overflow to the emergency grate overflow structure. Under the 250 year event, a freeboard of 0.36 m is provided to the top of the facility.
- SWMF 4 is recommended to be retrofitted to provide water quantity, water quality, and erosion control to all upstream lands, including lands outside the current urban growth boundary that natural drain to the SWM facility. Lands outside of the urban growth boundary will additionally require onsite PPS/LID. The proposed retrofit includes expansion of the facility to the west, to include a connection to the major flow channel. Major flows will no longer by-pass SWMF4. Habitat enhancement components are recommended to be included in the retrofit of the facility through inclusion of shallow wet pools along west boundary, adjacent to Hyde Park Rotary Link trail system. The outlet of the facility is recommended to be reconstructed to include a low flow reverse slope pipe, complete with a 230 mm low flow control orifice and high flow weir/orifice structure. Due to the significant surface water base flow component to the existing SWMF, it is recommended that a base flow monitoring program is initiated during detailed design to confirm the sizing requirement for the low flow control orifice.

1.7.2 Elimination of 2002 Recommended and temporary SWMFs

The preferred SWM strategy will eliminate two of the recommended SWMFs identified in the 2002 EA, SWMF 5 and SWMF 6, and will also facilitate decommissioning of the Mathews Hall Temporary SWMF.

1.7.3 Conveyance

- The preferred alternative includes the construction of the Sarnia Road Channel/Trunk sewer to convey flows from Sarnia Road north to SWMF 1B1. Stanton Drain Profile Regrading
- The Stanton Drain is recommended to be remediated for a total length of 70 m, from approximately 350 m south of Gainsborough Road southerly towards the CPR line downstream.
- The preferred alternative identifies future outlet upgrades for the North Routledge Park drainage area connecting to the Stanton Drain.
- LIDs are recommended to be included in all future development and municipal infrastructure projects.

1.8 Implementation of Capital Projects

Project Description	Implementation Timing
SWMF 1 – Retrofit to increase erosion and quantity control. Increase footprint and construct new outlet	2019-2020
SWMF 1B1 –Inlet works for Sarnia Road Channel/Trunk Sewer	2019-2020 (timed with Sarnia Road Channel/Trunk Sewer works)
SWMF 3E – Retrofit outlet structure to optimize quantity and erosion control.	2019-2020
SWMF 4 – Expand facility to the west and include a connection to Stanton Drain major flow channel. Reconstruct facility outlet.	2019-2020
Eliminate the requirement for SWMF 5	2019-2020
Eliminate the requirement SWMF 6	2019-2020
Eliminate Matthews Hall Temporary SWMF	2019-2020 (timed with Sarnia Road Channel/Trunk Sewer works)
Sarnia Road Channel – Construct a Channel / Trunk Sewer from Sarnia Road to SWMF 1B1.	2019-2020
Stanton Drain Profile Regrading – Remediate 70m of Stanton Drain from 350m south of Gainsborough Road southerly toward the CPR line.	2019-2023 (timed with maintenance easement acquisition)

TO:	**CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON SEPTEMBER 25, 2018**
FROM:	**KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER**
SUBJECT:	**SEWER PRIVATE DRAIN CONNECTION POLICY REVIEW**

RECOMMENDATION

That, on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, a review of the current private drain connection policies **BE ENDORSED** noting that the review process will include consultation with external stakeholders prior to a recommendation being advanced to Council.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

Flooding Matters Work Plan Phase I (Investigation), Civic Works Committee, June 8, 2016.

2015-19 STRATEGIC PLAN

The 2015 – 2019 Strategic Plan identifies this objective under Building a Sustainable City: 1B – Manage and improve our water, wastewater and stormwater infrastructure and services.

BACKGROUND

Purpose

The purpose of this report is to address Deferred Matters list Item No. 11:

> *"That the Director of Water and Wastewater BE REQUESTED to review the Wastewater and Stormwater By-law WM-28 as it relates to fees and charges for Private Drain Connection (PDC) work undertaken as part of a City of London construction project and report back with respect to a potential blended fee for mixed use properties that is reflective of a balanced charge between the current residential and commercial fees; it being noted that a communication dated January 16, 2018, from Councillor T. Park was received related to this matter."*

Based on the requested review, a number of other policy issues have been identified. To address these issues it is recommended that the initial scope of the review be expanded to consider a comprehensive review of all Private Drain Connections (PDC) related policies in the Wastewater and Stormwater By-law WM-28. It is also recommended that the review include a consultation process that will engage the Urban League, development community, and plumbing community.

Context

Wastewater and Stormwater By-law WM-28 includes many policies related to PDCs. These policies include definition of the ownership, initial construction, replacement, and repair of PDCs. It also provides the details of the City's PDC subsidy program. These policies were developed over many years and when reviewed in a holistic manner, several of these policies are inconsistent and confusing. In order to correct this, it is recommended that a comprehensive review be undertaken with input from key stakeholders including the plumbing community, development community, London Home Builders Association (LHBA) and Urban League.

DISCUSSION

What is a Private Drain Connection (PDC)?

Wastewater from a home travels from the toilet, sinks, and other fixtures through a building's plumbing to a pipe connected to the municipal sanitary sewer system. The portion of this pipe between the building and the property line is called the building sewer, which is regulated by the Ontario Building Code. The portion of the pipe between the property line and the municipal sewer is called the Private Drain Connection or PDC. A property will generally have one sanitary PDC and, depending upon the year of home construction, may also have a storm PDC. The storm PDC would provide an outlet for sump pump discharge or a private side catchbasin. A diagram is provided in Appendix 'A' to help illustrate building sewer and PDC locations and definitions. In London, the PDC is owned by the property owner. The property owner is responsible for the maintenance and ultimately the cost to replace their building's PDC.

PDC By-law Inconsistencies

The City's by-law provisions related to PDCs have been added to, edited, and modified many times over the past 50 years. A comprehensive review of the by-law was completed, as requested by Council, and many different inconsistencies and issues were identified. In addition, it has been the experience of staff that provisions of the by-law are confusing, and staff have received comments from residents that the subsidy provisions are unfair to certain land-use types. As such, it is recommended that the overall PDC policy framework be reconsidered with the goal of providing a policy and associated by-law that is fair, efficient, and transparent.

PDC Policy Framework Review: Focus Areas

The PDC policy framework review will provide a comprehensive update of all PDC related by-law provisions and will focus on the following priority areas:

- Review of the scope of PDC replacements as part of infrastructure renewal construction projects.
- Reconsideration of the subsidy and fee structure related to the installation, repair, or replacement of a PDC (Appendix 'B': Existing PDC Charges).
- Reconsideration the service delivery model for PDC repairs outside of infrastructure renewal projects.
- An assessment of the need and design requirements related to the installation of PDC cleanouts.

Stakeholder Consultation Plan

In order to gain the widest possible perspective as part of the PDC policy review, a stakeholder consultation process will be undertaken that will include all relevant stakeholders. Steps and timelines for the consultation plan are outlined below:

- Individual meetings will be held with stakeholders including the plumbing community, development community, London Home Builders Association (LHBA), and Urban League to gain input and hear suggestions regarding changes to the City's current PDC Policies (Q4-2018).
- A PDC policy in draft form will be circulated to the stakeholders along with a request for input and comment (Q1-2019).
- The final proposed policy and any non-monetary related by-law amendments will be brought to Civic Works Committee for consideration (Q2-2019).
- Any monetary related policy outcomes will be brought forward for consideration during the multi-year budget deliberations (Q4-2019).
- Any monetary related by-law amendments will be brought to Civic Works Committee for consideration following approval of the multi-year budget.

CONCLUSIONS

A comprehensive review of PDC renewal and installation policies is recommended to be undertaken with input from key stakeholders including the plumbing community, development community, LHBA, and Urban League to provide a policy that is fair, efficient, and transparent.

Acknowledgements

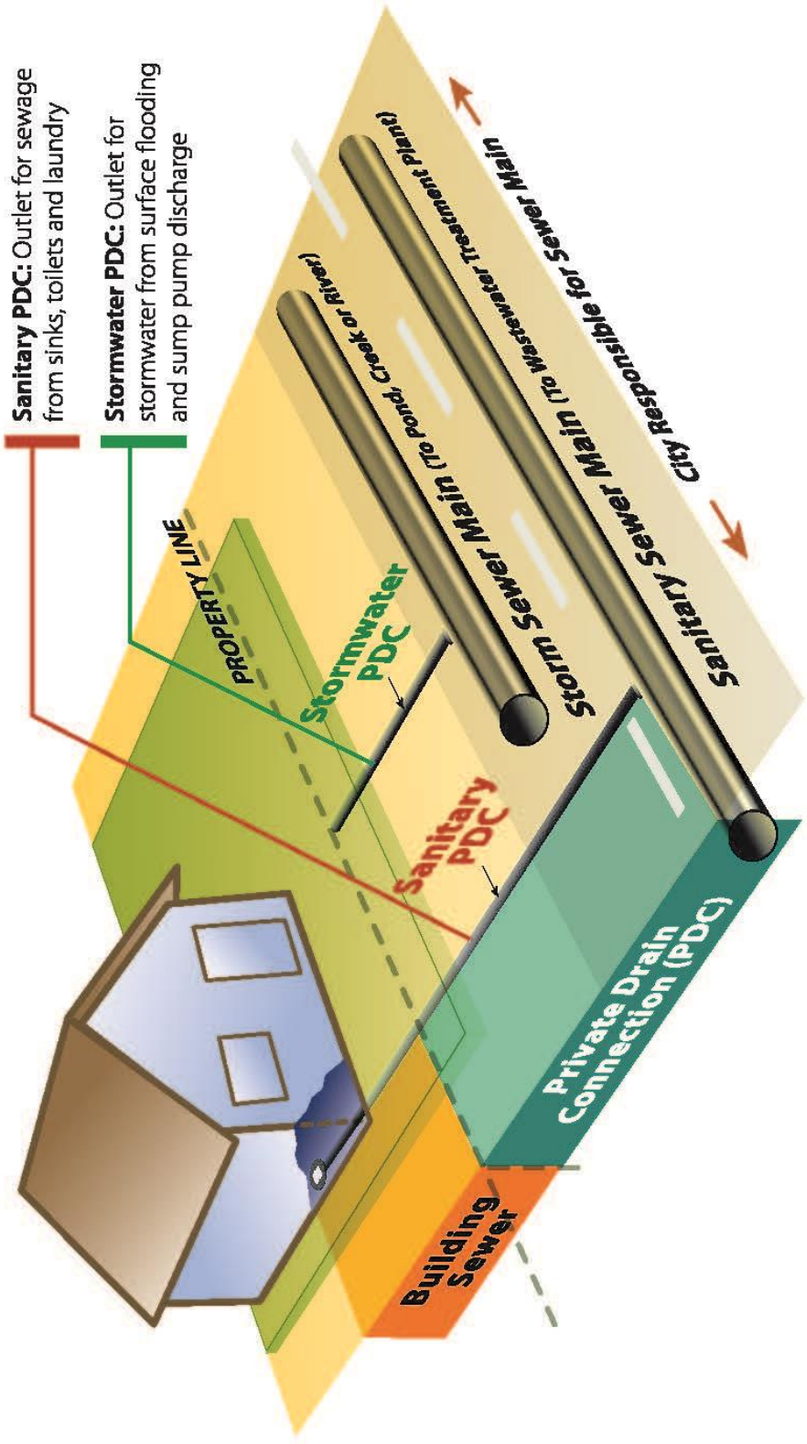
This report was prepared within the Wastewater and Drainage Engineering Division by Kyle Chambers, P. Eng., and Kevin Graham, P.Eng, Environmental Service Engineers.

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

September 17, 2018
KJC/kjc

Attach: Appendix 'A' - Diagram of Building Sewer and PDC Details
Appendix 'B' - Existing PDC Charges
c.c. Debbie Gibson

Appendix ‘A’
Diagram of Building Sewer and Private Drain Connection (PDC) Details



Appendix ‘B’
Existing PDC Replacement Charges

Excerpt from the Wastewater & Stormwater By-law (WM28):

4.2 Private Drain Connection (PDC) Charges

(a) Services provided by the Engineer – repair, replacement, installation – single detached, semi-detached, duplex dwellings – charge	Each PDC **($)**
New PDC installation or existing PDC replacement – construction of Sewer – sanitary (i) the installation or replacement of a Sanitary Sewer PDC to the property line in conjunction with a City construction project that involves the construction of a Sanitary Sewer main;	$2000
New PDC installation or existing PDC replacement – construction of Sewer – storm (ii) the installation or replacement of a Storm Sewer PDC to the property line in conjunction with a City construction project that involves the construction of a Storm Sewer main;	$2000
New PDC installation or existing PDC replacement – excavation (iii) the installation or replacement of an existing Sanitary Sewer PDC in conjunction with a City construction project with excavation below the road structure where the Sanitary Sewer PDC is within the excavated area, but does not involve construction of a Sanitary Sewer main; or the installation or replacement of an existing Storm Sewer PDC in conjunction with a City construction project with excavation below the road structure where the Storm Sewer PDC is within the excavated area, but does not involve construction of a Storm Sewer main; and	$2400
Repair or replace existing PDC – no construction (iv) the repair or replacement of an existing PDC in which subsection (i) through (iii) do not apply.	$5000

(b) Services provided by the Engineer – repair, replacement, installation – property other than detached, semi-detached, duplex dwellings - charge	Each PDC **($)**
New PDC installation or existing PDC replacement – construction of Sewer – sanitary (i) the installation or replacement of a Sanitary Sewer PDC to the property line in conjunction with a City construction project that involves the construction of a Sanitary Sewer main;	$4000
New PDC installation or existing PDC replacement – construction of Sewer – storm (ii) the installation or replacement of a Storm Sewer PDC to the property line in conjunction with a City construction project that involves the construction of a Storm Sewer main; and	$4000
New PDC installation or existing PDC replacement – excavation (iii) the installation or replacement of an existing Sanitary Sewer PDC in conjunction with a City construction project with excavation below the road structure where the Sanitary Sewer PDC is within the excavated area, but does not involve construction of a Sanitary Sewer main; or the installation or replacement of an existing Storm Sewer PDC in conjunction with a City construction project with excavation below the road structure where the Storm Sewer PDC is within the excavated area, but does not involve construction of a Storm Sewer main.	$5000

TO:	**CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON SEPTEMBER 25, 2018**
FROM:	**KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER**
SUBJECT:	**BUSINESS CASE – SWITCHING TO COMPRESSED NATURAL GAS (CNG) WASTE COLLECTION VEHICLES**

RECOMMENDATION

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

a) Civic Administration **BE AUTHORIZED** to proceed with the Compressed Natural Gas (CNG) vehicle switching project by purchasing CNG waste collection vehicles as per the vehicle replacement schedule;

b) Civic Administration **BE AUTHORIZED** to negotiate a CNG purchase agreement with Union Gas at the Highbury Road South and Highway 401 (Flying J) fuelling station;

c) Civic Administration **BE AUTHORIZED** to spend up to $1,382,625 on facility modifications for the Exeter Road Operations Centre (EROC) Fleet Maintenance Facility to be CNG compliant and any City-specific capital upgrades to the fast fill CNG waste collection vehicles at the Highbury Road South and Highway 401 (Flying J) fuelling station as part of the agreement noted in b) above;

d) Civic Administration **BE AUTHORIZED** to undertake all administrative acts in regard to project development and implementation;

e) the Civic Administration **BE AUTHORIZED** to revise the sources of financing for the previously approved capital project ME1208 – CNG Fuel Switching Project as set out in the Source of Financing Report attached, hereto, as Appendix A; and

f) Civic Administration **BE DIRECTED** to report back on progress on this project to the Civic Works Committee in late 2019.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

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

- Ontario Municipal Greenhouse Gas (GHG) Challenge Fund Transfer Payment Agreement for Phase 1 – Fuel Switching Project – Diesel to Compressed Natural Gas (CNG) Transition, March 19, 2018 meeting of Civic Works Committee (CWC).

- Municipal Greenhouse Gas (GHG) Challenge Fund Applications, October 24, 2017 meeting of CWC, Agenda Item #15.

- Community Energy Action Plan – Update and Status, August 29, 2017 Civic Works Committee, Agenda Item #11.

STRATEGIC PLAN 2015-2019

Municipal Council has recognized the importance of solid waste management, climate change and other related environmental issues in its 2015-2019 - Strategic Plan for the City of London (2015 – 2019 Strategic Plan). With respect to this CWC Report, three of the four Areas of Focus address fleet greening activities:

Building a Sustainable City
- Strong and healthy environment
- Robust infrastructure

Growing our Economy
- Local, regional, and global innovation
- Strategic, collaborative partnerships

Leading in Public Service
- Proactive financial management
- Innovative & supportive organizational practices
- Collaborative, engaged leadership
- Excellent service delivery

SUMMARY

The business case supports moving to compressed natural gas (CNG) for the City's waste collection vehicles based on the following benefits:

1. The business case has identified that under the expected case, the average annual savings to the City will be $79,000. This includes paying back the capital loan (plus interest) of $1,382,625 to the Efficiency, Effectiveness & Economy (EEE) Reserve over an 8 year period. Savings per year increase after the loan is repaid.

2. Cheaper fuel costs, less than half the cost of B5 biodiesel that is currently used for the Waste Collection Fleet. As each vehicle is replaced with a CNG powered unit, it will save $8,750 annually in fuel costs with total expected fuel saving of $322,500 annually once the entire fleet of waste collection vehicles is replaced by 2025. This is included in the savings identified in 1. Above.

3. Funding for Green Fleet initiatives that support alternative fuel solutions has been set aside in the capital program.

4. CNG vehicles are significantly cleaner, reducing greenhouse gas (GHG) emissions from the 37 diesel waste collection vehicles by about 200 tonnes annually (a reduction of 12%), and significantly reducing tailpipe emissions of fine particulate matter (about 50% reduction) and nitrogen oxides (about 90% reduction).

5. CNG vehicles operate much quieter than diesel vehicles.

6. Project is in line with future plans to produce and utilize renewable natural gas (RNG) from the W12A Landfill to further reduce GHG emissions by blending this RNG into the CNG used as fuel.

7. Current opportunity to partner with Union Gas and the private sector in the development and use of an off-site, privately owned and operated CNG fuelling station that provides enhancements to our waste collection service and environmental, economic, and social benefits to London. For example, the development and use of the off-site, privately owned and managed fast fill CNG station strategy provides a sound model for moving to an alternative source of transportation fuel without significant upfront capital and ongoing operating expenditures associated with building, operating and managing our own CNG refueling system.

8. Project provides opportunities for economic growth and development in the London area as the CNG fuelling station will be open to the public and other commercial fleets making CNG more commercially available close to Highway 401. It will also be available to transport trailers using the 400 series highway corridors between Quebec and destinations in the United States.

As with any change in process, it comes at a cost and with risks and challenges as follows:

1. Fuel switching to compressed natural gas requires upfront capital to modify the existing waste collection repair garage at the Exeter Road Operations Centre (EROC) to provide adequate safety and environmental controls. Feasibility and engineering work has been done and $681,125 has been budgeted for this work.

2. Capital investment is also required for off-site, fast fill refuelling infrastructure and to support a defuelling system at EROC. The investment in the start-up provides the City of London a service level agreement, priority fuelling lanes during peak periods and a reduced pricing for the CNG fuel. The refuelling capital investment budget has been set at $701,500. Further analysis will occur on this work in relation to defuelling, preferred locations for capital investments and fuelling optimization.

3. CNG waste collection vehicles are more expensive and will cost an estimated $50,000 more per vehicle due to the chassis design, tanks and specialized Cummins Westport CNG Engines. Over the seven year transition period the additional capital required for the entire waste collection fleet (37 units) above the amount allocated in the Vehicle and Equipment Reserve is $1,850,000.

4. There are modest operational impacts expected as crews and technicians will require additional training and time to adjust to the CNG trucks and become accustom to new work procedures and fueling protocols.

5. As a long term potential impact there could be a slight reduction in the salvage value for CNG waste collection trucks locally at end of life.

Moving to CNG for the City's waste collection fleet is a viable and sustainable choice for London. There are upfront capital cost required for startup and ongoing for the vehicles however the investment is recoverable over time as CNG fuel has significantly lower fuel costs.

The transition supports our own strategic priorities of innovation, healthy environment, and climate change reduction strategies. CNG vehicles will reduce hundreds of tonnes of GHG emissions annually from entering the atmosphere and removes harmful pollutants and carcinogens.

Making this investment in CNG now will allow the City to be ready and aligned to move to RNG in the future. RNG opportunities from landfill gas and further waste diversion strategies creates an optimal situation as waste is turned into fuel and used to power the waste collection fleet.

The proposed CNG fuel switching plan also supports local partnerships and economic opportunities. Working with Union Gas and Clean Energy in the development of a local commercial CNG refuelling centre at the Flying "J" (Highbury Road South and Highway 401) opens up great opportunities for London in their efforts to promote low carbon choices and be "open for business" by exhibiting a culture of change, innovation and economic growth in the transportation sector.

BACKGROUND

PURPOSE

The purpose of this report is to provide Civic Works Committee and Council with the business case that supports switching the current waste collection vehicles fuelled by diesel to waste collection vehicles fuelled by compressed natural gas (CNG) as new collection vehicles are needed.

CONTEXT

Examining and/or implementing CNG as a fuel, potential costs savings, environmental and health benefits, etc. are captured in two documents (Community Energy Action Plan and Council's Strategic Plan) and through Council direction as follows:

Community Energy Action Plan (2014 – 2018)
Promoting the use of CNG as a vehicle fuel is referenced in a number of locations within the Community Energy Action Plan (CEAP):

Policy Support for Community Energy Action Planning – under Stakeholder Actions:
6. Union Gas, as described in Your Partner in Integrated Energy Planning, will promote:
d. Transportation – natural gas transport and fleet vehicles

Vehicles and the Transportation System – under Key Strategies for the City of London to 2018:
4. Work with Union Gas to promote the use of compressed natural gas (CNG) and renewable natural gas (purified biogas) as a substitute for diesel fuel for heavy-duty vehicles in London.

Vehicles and the Transportation System – under Stakeholder Actions:
5. Union Gas will:
b. Work with major local fleet operators (e.g., City of London, London Transit, private sector) to encourage the use of CNG in "return-to-base" fleet vehicles

Council Strategic Plan (2015 – 2019)
Examining fuel choices, environmental and health benefits, and cost savings is specifically identified in several areas of Council's Strategic Plan:

Building a Sustainable City of London
1. Robust Infrastructure
E. Fund innovative ways to adapt to Climate Change

Building a Sustainable City
3. Strong and healthy environment
B. Reduce fuel use through innovation and research

Growing our Economy
3. Local, regional and global innovation
B. Lead the Development of new ways to resource recovery, energy recovery and utility and resource optimization with our local and regional partners to keep our operating costs low and assist business with commercialization to help grow London's economy

Leading in Public Service
5. Excellent service delivery
A. Continue to effectively and efficiently deliver nearly 100 services that Londoners rely on each day

Recent Council Direction
The role of CNG and renewable natural gas (RNG) has been a topic of discussion and direction with Council on a number of occasions. These are the most recent directions:

<u>RNG – City Council, October 11, 2016</u>
12. Landfill Gas Utilization Update and Next Steps (Relates to Bill No. 371)
d) the Civic Administration BE DIRECTED to examine renewable natural gas production as the preferred option for utilization of the remaining volume of landfill gas at the W12A Landfill; and
e) the Civic Administration BE DIRECTED to report back to the Civic Works Committee on the options for the production of renewable natural gas from landfill gas;

CNG – City Council, January 17, 2017

13. Updates: 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]

CNG – City Council, March 27, 2018

18. Ontario Municipal Greenhouse Gas (GHG) Challenge Fund Transfer Payment Agreement for Phase 1 - Fuel Switching Project - Diesel to Compressed Natural Gas (CNG) Transition

a) the proposed by-law, as appended to the above-noted staff report BE INTRODUCED at the Municipal Council meeting to be held March 27, 2018 to:

i) authorize and approve the Transfer Payment Agreement, as appended to the above-noted by-law, to be entered into between Her Majesty the Queen in Right of Ontario, as represented by the Minister of the Environment and Climate Change for the Province of Ontario and The Corporation of the City of London, for the provision of funding of a fuel switching project to transition from diesel to compressed natural gas for London under the Ontario Municipal GHG Challenge Fund;

To address Council direction this CWC report is divided into two sections, key questions and a business case. The following key questions are answered in Attachment A:

1. What are the general advantages of switching from diesel-powered waste collection vehicles to CNG-powered vehicles?
2. What are the general disadvantages?
3. Why CNG is being considered for the City of London?
4. What fuel options were considered for the waste collection vehicles?
5. What about past concerns of using CNG as a fuel?
6. What are the fueling options for CNG vehicles?
7. How will the London vehicles be refuelled?
8. How will the vehicles be maintained?
9. How will CNG waste collection vehicles be procured by the City?
10. What additional capital costs will be incurred for CNG vehicles?
11. What are the operating cost comparisons?

In the discussion section below, a business case is presented.

DISCUSSION – BUSINESS CASE

The business case is presented below under the following headings:

1. Environmental Considerations
2. Social Considerations
3. Financial Considerations
4. Sensitivity Analysis
5. Risk Analysis and Mitigation

The key capital and operating parameters of the business case include:

- CNG vehicles (capital) - are approximately $50,000 more per vehicle than their equivalent diesel counterpart. Converting 37 units at $50,000 extra per truck results in a premium of $1,850,000 for using CNG compared to diesel vehicles.

- Garage and fuelling station modifications (capital) – upfront capital to modify the existing waste collection repair garage to provide adequate safety and environmental controls (estimated at $681,125). Investment is required for refuelling infrastructure and to secure adequate capacity and equipment to service the waste collection service needs (estimated at $701,500). A combined budget of $1,382,625

has been allocated to this work. Final details of the location of the work components will take place in the next phase of the project (e.g., final engineering designs, equipment layout, discussions with Union Gas, etc.)

- Fuel savings by switching from B5 biodiesel to CNG (operating) – pricing for CNG will be in the range of $0.50 per diesel litre equivalent (DLE) versus B5 biodiesel at $1.15 per litre.

- Other operating costs – for the purpose of this analysis, minor costs savings on vehicle maintenance are offset by potentially some additional costs on refuelling at an off-site station on some waste collection days.

1. Environmental Considerations

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.

Even more attractive is that the movement to CNG is a precursor to using RNG produced from methane collected at landfills and from organic waste streams for use as fuel for the City's waste collection vehicles. RNG almost completely eliminates GHG emissions. It is estimated that the waste collection trucks would only use a small portion (up to 7%) of the estimated RNG produced that could be produced from the W12A Landfill.

Future plans to divert organic waste from the landfill could also include the use of anaerobic digesters to produce additional biogas to increase RNG production.

2. Social Considerations

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.

Municipal adoption of alternative fuels, fuel switching and low carbon initiatives demonstrate leadership and confidence around change. Being a front runner in the community and among municipalities gives us an opportunity to have conversations about low carbon choices, improved air quality and reducing the impacts of climate change.

Businesses will watch closely as adoption and infrastructure become more readily available, enabling them to move into low carbon alternative fuel space in the transportation sector over time.

Adopting alternative fuel strategies is good for future generations and promotes social responsibility and culture change toward conservation and accountability.

3. Financial Considerations

In March 2018, via Council approval, a budget of $1,382,625 was established for the CNG Fuel Switching project in conjunction with the Municipal Greenhouse Gas (GHG) Challenge Fund (GHG Challenge Fund). At that time, 50% ($691,313) of the project estimate was funded by the City of London via the Efficiency, Effectiveness & Economy (EEE) Reserve, while the other 50% ($691,312) of the project was funded by the province. Cancellation of the provincial Cap & Trade program, which supported the GHG Challenge Fund, has resulted in the loss of the provincial funding.

In the recommended option, funding in the amount of $691,312, is available via an additional drawdown from the EEE Reserve which continues to be the recommended source of financing given the nature and benefits of the proposed project. All (100%) of the amount borrowed from this reserve will be paid back with interest at the City's internal borrowing rate which is the bank prime lending rate less 1.38%. Currently the bank prime lending rate is 3.7% which would result in an internal borrowing rate of 2.32%. The amount borrowed will be paid back through annual savings realized in fuel and maintenance costs. This approach is consistent with the LED Street Light Upgrade project which is funded via the EEE Reserve and generates a return for the City. The estimated payback period for the current CNG project is 8 years assuming annual savings materialize as forecasted.

The business case to proceed with this project weighed the following options:

a. Option 1 - Business-as-Usual – Continue operating with diesel vehicles.

b. Option 2 - 100% City Funded – Switch to CNG fuel vehicles over 9 years and fund the entire project with internal sources of financing.

c. Option 3 - 50% FCM Grant + Loan – Switch to CNG fuel vehicles over 9 years via external financing that is available from the Federation of Canadian Municipalities (FCM) Green Municipal Fund (GMF) Grant and Loan Program. The City would still fund its original 50% of the project as established in March 2018.

Through the options analysis, Civic Administration investigated the potential of acquiring a grant from the FCM GMF low-interest loan and grant program. Under the terms of this program the City would also have to accept a substantial loan for which there is no identified need and subsequently pay interest over a 10 year period. The projected total of these interest costs exceeds the value of the grant that would be received to replace the lost GHG Challenge Fund financing. Due to these facts and the results illustrated in Table 1 below, this option was not recommended.

The options analysis concluded that Option #2 is the best course of action for the City at this time. While this option requires approval of additional capital funding from internal sources it also results in the best overall financial outcome. Table 1 illustrates the results for each option considered.

Table 1 - Operating Budget Impacts Over 10 Years

	Option 1	**Option 2**	**Option 3**
	Business-as-Usual	**100% City Funded Switch to CNG**	**50% FCM Grant + Loan**
Avg. Annual Tax Levy Impact [1]	0.28%[2]	0.27%[3]	0.34%[3]
Avg. Annual Operating Savings (Expense)	$0	$ 79,000[4]	$ (332,000) [4]

Notes:
1. Based on the approved 2018 Annual Update - Tax Supported Revised Net Budget.
2. Included in the current operating budget. Current diesel fuel & maintenance expenses quantified for comparative purposes to establish the baseline.
3. Includes 100% payback of the EEE Reserve.
4. This is the average annual savings / (expense) versus Business-as-Usual (includes payback of the EEE Reserve).

The financing approved in March 2018, and being requested above, is to replace the lost GHG Challenge Fund financing for refuelling station infrastructure and CNG compliant maintenance/repair facility upgrades. Funding for the 37 CNG vehicles is available in the current 10 year capital plan. This includes funding for the $50,000 per vehicle premium of a CNG model over diesel. These costs have been incorporated into

the analysis of each option. Table 2 summarizes the capital investments of the recommended options.

Table 2 – Capital Investments – 100% City Funded Switch to CNG

	Option 1	**Option 2**
	Business-as-Usual	**100% City Funded Switch to CNG**
Filling Station & Maintenance Facility	$0	$1,382,625
Diesel Vehicle Replacement	$10,826,000	$10,826,000
CNG Vehicle Premium	$0	$2,100,000[2]
TOTAL *(Over 10 Years)*	**$10,826,000**	**14,308,625**

Notes:

1. All amounts currently included in the current ten year capital plan.
2. This includes $250,000 to replace the first 5 CNG vehicles purchased in 2019. The funding included in the current capital plan in 2028 is based on replacement of diesel vehicles that would no longer exist. The total premium to replace the current 37 diesel vehicles remains $1,850,000 as noted above.

4. Sensitivity Analysis

A sensitivity analysis was carried out using the following scenarios with the results of each presented in Table 3:

- Best-case: $133,000 lower fuel station and maintenance facility cost, 10% lower CNG vehicle cost premium, 10% higher CNG fuel savings over diesel

- Worst-case: 20% higher CNG vehicle cost premium, 20% lower CNG fuel savings over diesel; no federal carbon tax

Table 3 - Operating Budget Impacts – Sensitivity Analysis Results

	Option 1	**Option 2 Expected Case**	**Option 2 Best Case**	**Option 2 Worst Case**
	Business-as-Usual	**100% City Funded Switch to CNG**	**100% City Funded Switch to CNG**	**100% City Funded Switch to CNG**
Avg. Annual Tax Levy Impact [1]	0.28%[2]	0.27%[3]	0.25%[3]	0.30%[3]
Avg. Annual Operating Savings (Expense)	$0	$ 79,000[4]	$ 181,000[4]	$ (103,000) [4]

Notes:

1. Based on the approved 2018 Annual Update - Tax Supported Revised Net Budget.
2. Included in the current operating budget. Current diesel fuel & maintenance expenses quantified for comparative purposes to establish the baseline.
3. Includes 100% payback of the EEE Reserve.
4. This is the average annual savings / (expense) versus Business-as-Usual (includes payback of the EEE Reserve).

This analysis shows that both the expected and best case scenario's benefit the City financially. The worst case scenario could result in an additional $103,000 annually over 10 years to operate the new CNG facility, fuelling station and vehicles. This potential cost would still be offset by the qualitative benefits of undertaking a project of this nature.

5. Risk Analysis and Mitigation

Several United States and Canadian municipalities and waste collection contractors have successfully moved to CNG for their waste collection vehicles. The design and costs of these projects are quite often unique but share some common risk factors and best practices for implementation. Several barriers to adoption were considered for the business case and are summarized below:

- Escalation of costs for implementation above budget
- Price certainty of CNG fuel
- Business continuity CNG refuelling site
- Poor reliability of CNG units
- Impact on operational efficiency and reliability
- Safety of CNG

The model being proposed for London has a number of unique features that reduce risk and insulate the City against the major adoption concerns above:

- Escalating cost of implementation – A significant amount of work has been done to ensure that the real cost have been fairly evaluated. The start-up costs of the refuelling site, the repair facility modification and the CNG truck designs have been researched and several assessments completed and analysed to predict the real costs.

  The off-site refuelling infrastructure proposal reduces the initial capital investment required so will immediately provide cost control. In addition, the fuelling site will be owned, operated and managed independently, so it relieves pressure and provides protections from escalating costs for items of a CNG system like compressors, dryers, compounds, service, maintenance, and energy costs.

  In terms of the controlling the expense of outfitting the repair facility standard practices will be used to spec and select vendors and products for the work. Union Gas and Clean Energy have been working closely with City engineering and technical staff to design a layout that meets safety and code requirements however is appropriately outfitted for the City's purpose. The use of a defuelling system is key to mitigating the expense of significant building modifications and is part of the scope of work that Union Gas is doing as part of the refuelling infrastructure investment.

- Price certainty of CNG fuel – fuel as a whole is a volatile market and price certainty can be difficult to predict actual costs. The fact that the refuelling strategy operator (Clean Energy) is closely connected the utility authority (Union Gas) provides security and assurances.

  There are factors beyond the control of the supplier like provincial or federal taxation (fuel tax for road and infrastructure investment for example) that could be a threat to the pricing model set forward in the model. Future fuel agreements would need to be negotiated and locked in once the project is approved. The success of the program depends on the price for CNG so this will be closely monitored. Fleet analysts review fuel pricing and fuel usage data daily and fuel management is a critical piece of the rental rate and fleet budgetary processes.

- Business Continuity should the CNG refuelling site go down – The project team has considered the impact to service should the off-site fuelling centre go off line for any reason. During the early stages of the project with the phased in approach of the fleet vehicles (5 to 7 units at a time starting in 2019), the risk of serious service interruption is low. However as the fleet transition expands, the risk increases.

  The partners understand the demand for service on the waste collection vehicles and will be required to provide contingencies and service level agreements as part of the refuelling service agreements. The continuity plan will include identifying contingencies like alternative service suppliers to fill the short term need and mobile CNG fuelling. In addition, the on-site defuelling system at the repair facility will be designed to be able to do some slow fill refuelling in emergency circumstances.

- Poor reliability of CNG units – During the late 1990's and early 2000's there were situations where early adopters of CNG were frustrated with the performance of natural gas engines. In some cases this resulted in discontinued use of natural gas and significant expense to decommission systems and return to diesel powered units.

  City staff have reviewed and discussed these issues and for the most part the problems stemmed with the first generation natural gas engine technology. The CNG engines were basically retrofitted diesel engines with conversion systems. The current technology has undergone several iterations and now the industry standard are not conversion systems but purpose-built CNG engines that are warrantied and approved for use in all the major truck manufacturers that build CNG vehicles. This specialization provides greater certainty, reliability and expertise. Failure analysis and reliability will be key during the initial stages of the implementation to ensure that the service level, reliability and performance is maintained.

- Impact on operational efficiency and reliability – Moving to a model of off-site fuelling will have some operational impacts. There is expected to be additional travel required on certain collection days and the risk of running out of fuel or low fuel in the operational facility or on the road. To mitigate these risks protocols and refuelling procedures will be developed as well as a small defuelling/fuelling system at the operations facility as a back-up. The defuelling system is also a critical piece on the repair facility strategy to reduce costs for building outfitting and manage safety controls and energy costs.

  In consultation with the service area and other CNG adopters, it is anticipated that there will not be any significant operational disruptions directly as a result of the transition to CNG. It should be expected that there will be some logistical concerns and items that will require refining but nothing that would be problematic to service delivery or the project. Moving to a model of off-site fuelling will have some operational impacts which could include additional travel time on certain collection days or the risk of running out of fuel in the operational facility or on the road. However, these concerns will be mitigated through training, route optimization and strict refuelling procedures and protocols.

  The CNG fuel station will be upgraded and designed with the City's investment to minimize the fill time to that comparable to a standard diesel vehicle. This requires additional compression and horsepower as a full time operating engineer at the site at least 8 hours per day. There has been assurances that the design will ensure that the tanks will be filled to meet our requirements even in back to back fill situations at peak periods.

- Safety of CNG - CNG is a clean safe fuel and has been successful as a transportation and heating fuel across the country for decades. However, the properties of natural gas versus traditional diesel and gasoline powered vehicles are different and require special controls. Natural gas used as a transportation fuel has a number of features that actually enhance safety. First, natural gas has a lower specific gravity than air, therefore it is lighter than air, so if there was an unexpected release the gas is going to up and away from the source. Diesel on the other hand, being a liquid fuel, if it is spilled or released it pools around the vehicle. Second, the tanks that the CNG is stored in on the vehicle are very robust and are more resistant to failure or damage than a standard diesel tank. Lastly, CNG systems and tanks have pressure release valves that allow the gas to be released in a controlled way should there be excessive pressure conditions in the tank from things like a collision or a fire.

  To mitigate the risk at the EROC repair facility, several modifications will occur. The building design and control program has been assessed through consultants and engineers to ensure the building will have the appropriate safeguards to operate as a CNG repair facility.

All the current Motor Vehicle (repair) Technicians have Alternative Fuel Certification. They will also receive additional training on the specific units once purchased through the manufacturer. The building control and safety systems will be outfitted to ensure that adequate controls are in place to ensure Technician safety while service the CNG units.

Waste Collection Operators are not expected to have any additional risk as part of moving to CNG vehicles. They will however receive very specific training and safe operating procedures for CNG operations and for refuelling the vehicles and emergency procedures.

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Appendix A Sources of Financing

Attachment A Questions and Answers of CNG Vehicles and Switching to CNG as a Fuel

c Anna Lisa Barbon, Managing Director, Corporate Services & City Treasurer, Chief Financial Officer

ATTACHMENT A
Questions and Answers of CNG Vehicles and Switching to CNG as a Fuel

1. What are the general advantages of switching from diesel-powered waste collection vehicles to CNG-powered vehicles?

- The average annual operating budget for waste collection vehicles is estimated to be $79,000 lower with the use of CNG as a vehicle fuel, which would reduce the average annual tax levy by 0.01%.

- Help the City of London become a cleaner and environmentally friendly City.

- Natural gas is an accessible, plentiful and relatively low cost energy source in Canada.

- Investment in innovation and cleaner fuels could bring additional economic value and technology opportunities to London and region, enhancing growth and business development.

- CNG is a cleaner burning fuel than diesel. CNG-powered vehicles produce an estimated 10% lower greenhouse gas emissions (GHGs), 50% lower particulate matter (PM) emissions and 90% lower nitrogen oxide (NO_x) emissions than diesel-powered vehicles. It also eliminates emissions of hazardous air pollutants, namely diesel soot, which is a known carcinogen.

- The price of CNG, as a fuel, has typically been 35% to 45% lower than diesel. Longer term estimates from the U.S. Energy Information Administration suggests that the price of diesel is going to increase annually at about 6% versus 2% for CNG.

- Natural gas will provide cost and risk control to the new federal carbon tax systems being planned to start in 2019.

- The City may be able to create renewable natural gas (RNG) from landfill gas at the W12A Landfill that could be used to directly or indirectly fuel the garbage packers.

- CNG-powered collection vehicles produce between 10% and 15% less noise than diesel-powered vehicles.

- CNG-powered vehicles are equipped with onboard gas detectors and other safety devices such as tank safety valves.

- Natural gas is lighter than air. Therefore, it will not pool as a liquid or vapour on the ground as it will rise and disperse rapidly. This eliminates environmental concerns around contaminating solid and groundwater from diesel fuel spills and leaking diesel fuel storage tanks.

- Natural gas has a higher ignition temperature than diesel or gasoline; therefore, it is much harder to ignite.

2. What are the general disadvantages?

- Significant capital outlay for both fuelling infrastructure and vehicle equipment assets.

- Fleet maintenance facilities will require capital upgrades to meet the regulatory requirements of the Technical Standards & Safety Authority (TSSA).

- From purely an economic perspective, the CNG investment in infrastructure assets will not reach a return on investment for many years, likely not until the second generation of CNG waste collection trucks are introduced or increasing the number of City high-mileage fleet vehicles to convert to CNG.

- CNG-powered heavy duty vehicles currently have initial capital outlay of up to $50,000 more per vehicle than equivalent diesel-powered vehicles to cover engine technology, chassis design and CNG fuel tanks.

- One CNG fuelling system is currently being developed in London. The limited availability of stations does pose challenges for fleet operators. Similar challenges have been experienced in the electric vehicle market which are currently being overcome through strategic partnerships and user networks.

- Currently the natural gas fuel market has not been exposed to some taxes that diesel fuels have like the federal and provincial fuel excise taxes. If these taxes eventually flow through to natural gas prices this will lessen the current pricing advantage over time.

- The purchase price, maintenance costs, fuel stability and salvage values of CNG-powered collection vehicles are not established, which increases the risk and potential impact to internal rental rates.

- Compared to diesel powered vehicles with a long track record in all Canadian seasons, there is much less experience with CNG-powered vehicles in cold weather climates.

3. Why CNG is being considered?

The City's Solid Waste Collection area provides the majority of curbside waste collection for London. This service also includes collection routes that include bulk lift collections at various high density residential dwellings and apartments and Western University.

Several years ago, City staff began assessing greenhouse gas (GHG) reducing options through the exploration of CNG as an alternative fuel for the City of London's waste collection fleet (37 trucks) that use roughly 600,000 litres of B5 blended diesel fuel (5% biodiesel, 95% diesel) annually. Although this blend produces fewer emissions, it does have its own challenges. For example, B5 blended diesel fuel comes at a premium of between 5 and 7 cents per litre. Also, biodiesel supply has had inconsistent availability in the coldest months, has incurred several delivery challenges for the distributor and at times we have received poor quality biodiesel (clouding) despite the relatively low bio blend. This limits the ability to increase the biodiesel content.

More than half of new waste collection trucks in North American run on CNG instead of diesel. Conversion of a fleet from diesel to CNG results in lower GHG emissions and less annual fuel costs; however, significant initial investment is required to modify garages, install fuelling stations and buy CNG trucks.

CNG is a common solution for waste collection fleets because the operation of waste collection usually involves longer daily distance travelled, and thus is critically reliant on fuel and the cost of that fuel for its service delivery performance. CNG can provide relief from the expensive and volatile diesel fuel market. Additionally, CNG waste collection vehicles provide significantly quieter operation and produce fewer GHG and smog-forming emissions. In addition, many waste collection suppliers that have return to base operations have also opted for an onsite slow fill CNG alternative which provides greater savings and increase tank filling capacity.

Perhaps the most compelling reason for CNG in waste collection fleets is the direct link between waste disposal and the ability to transition seamlessly into renewable natural gas (RNG) over time. The complete cycle of curbside waste being turned into RNG and powering the waste collection vehicles is a very attractive scenario. Some collection operations have not only switched to CNG vehicles, but are also producing RNG from their waste streams and using it to fuel their vehicles. EBI in Quebec is one, the City of Surrey, BC is another. Toronto has begun moving to this solution as well. Using 100% RNG as a fuel would result in about 90% reduction in GHG emissions from waste collection vehicles.

4. What fuel options were considered for the waste collection vehicles?

Three fueling options were considered; CNG, RNG and electricity versus biodiesel and regular diesel. Each was assessed against basic operational requirements determined in consultation representatives of Fleet procurement, maintenance, asset management, solid waste collection, solid waste disposal and environmental programs (air quality).

Basic operational requirements to successfully perform the function of collection operations in London are:

- Sufficient power, range and operational speed to complete routes. London needs vehicles that can travel 150 km with one fill and have a capacity of roughly 10 tonnes)
- Reliable vehicles (maintain “up time”; no need for more back up units; reliable in cold weather conditions)
- Reasonable maintenance regime (parts, tech training, scheduling)
- Dependable accessible supply of fuel (on-hand supply in case of emergencies, and ability to fuel during power outages)
- Acceptable noise levels (no louder than status quo)
- Safe operation (meets applicable safety standards)
- Staff and public acceptance (comfort with safety and noise levels)

<u>CNG/RNG</u>
CNG meet these requirements. Renewable natural gas (RNG) would meet these same requirements; however there is limited supply available at this time. RNG blended with CNG is a scenario that can work technically however the pricing structure is unknown.

<u>Electricity</u>
Electric waste collection trucks are relatively new and use has been limited. Currently, there are no electric waste collection trucks that can meet City requirements of eight to ten hours continuous work time, operation in severe winter conditions, and accommodate travel distances required for a full day of collection services.

The two known examples of electric powered collection trucks reviewed were in Los Angeles and Chicago. These units however have only 4-ton capacity (about 3.5 tonnes versus a normal 10 tonne capacity required for our purposes) with a range of 100 miles (160 km). Further, the electric waste collection truck cost, due to the extremely limited number built, is $1.2 million per truck, compared to $280,000 for diesel trucks and $330,000 for CNG trucks with a 10-ton capacity.

At this time the technology is not at the point it could meet London’s needs.

5. What about past concerns of using CNG as a fuel?

The 2014-2015 Canada Natural Gas Vehicle Market Report notes that conversion to CNG has been much greater in the US than in Canada, and part of that is access to appropriate natural gas supply. In Canada fleet managers could be suffering from ‘once bitten, twice shy’ syndrome as this is not the first time it has explored gas as a road transport fuel. Having invested once already in the late 1990s and early 2000s only to see oil prices collapse and investments wiped out, caution the second time around is understandable.

<u>London Transit Commission’s Past CNG Experience</u>

The LTC implemented CNG as an alternate fuel for its transit fleet in the early 2000s. It was discontinued based on reliability issues. The primary reason was engine issues that resulted in frequent breakdowns, service disruptions and road service calls. At the time these buses had first generation engine technology and since that time CNG engines have undergone significant refinement and technological advancements. The Cummins Westport CNG engine is now the industry standard and is available in most the major truck manufacturers as a factory build. The Cummins Westport CNG engine has provided much greater reliability, warranty and standardization.

6. What are the fueling options for CNG vehicles?

There are essentially three types of CNG fueling stations: slow (time) fill; fast fill and a combination of the two.

Onsite CNG “Return to Base” Slow (Time) Fill Systems
Slow (time) fill stations are used primarily by fleets and work best for vehicles with large tanks that refuel at a central location every night. The time it takes to fuel a vehicle depends on the number of vehicles, compressor size, and the amount of buffer storage. Vehicles generally take several hours to fill. The main industries taking up CNG are waste and transit fleets which consistently return to base (return to works yard) in the evenings. CNG fuelling is done parking stall style – the truck is parked, hooked up to the feeder hose, and left overnight (5 to 7 hours to refuel).

CNG Fast Fill Stations
CNG fast fill stations provide refuelling with service times similar to existing diesel refuelling. Generally, fast fill stations are best suited for retail situations or a combination of retail/dedicated contracts where vehicles of various sizes arrive as required and need to fill up quickly. These stations have a look and feel similar to traditional fuel stations. Fast-fill stations receive fuel from a local gas utility line at a low pressure and then use a compressor on site to compress the gas to a high pressure. Once compressed, the CNG moves to a series of storage tanks for dispensing. CNG can be delivered alongside gasoline or other fuel dispensers.

Combination Fill Stations
These CNG stations combine both slow fill and fast fill options to increase flexibility. These applications will be more common in areas that serve major highways (e.g., for use by transport fleets) and have additional space where vehicles can be parked for longer duration (e.g., to serve a fleet residing in an industrial park).

7. How will City of London waste collection vehicles be refuelled?

City staff examined two options; building a slow fill station at EROC and determining the availability of a fast fill stations in London.

Slow (Time) Fill System
Much of the cost of CNG filling station infrastructure is the compressors and storage tanks required. The home-base for London’s waste collection operations fleet is at the EROC Centre which does not currently have the required high pressure natural gas feed pipe that would be required to effectively install a fuelling station at this location.

A very preliminary cost estimate of a slow fill station at EROC indicated an investment of between $1 and $2 million just for the initial infrastructure and service capability. In addition to those initial cost the City would then have to incur the expense of CNG compression storage and dispensing equipment expected to be several more million as the capacity and demand increased.

This model was not recommended based on these costs, the increased risk and expense involved with operating and managing our own site, and this model did not offer the economic, social and public accessibility benefits of the fast fill off site model.

Commercially Available CNG Fast Fill Station
The London fast fill station was introduced by Union Gas over a year ago and is currently under construction. It includes three distinct partners: Clean Energy Solutions (a non-regulated company of Union Gas) as the CNG fuelling station operator, the Flying “J” Truck Stop (Highbury and Highway 401) which owns the property and Union Gas as the project coordinator and natural gas distributor and supplier.

In this scenario, the City of London would become an “anchor tenant” of the site as transition to CNG waste collection vehicles. The proposed Union Gas/Clean Energy/Flying J site presented an excellent opportunity for the City of London to have a local fuelling source within the city limits along a main transportation corridor. The refuelling supply and operation of the site allows the City to move into the CNG vehicle

transition on a planned and systematic way without the significant investment and ongoing maintenance of onsite compressors, dryer and dispensing equipment.

The partnership with Union Gas and their partners also provides lower pricing for the natural gas for the City of London (in the $0.50 per diesel litre equivalent - DLE - range), dedicated fill lanes during peak refuelling times, extra compression and capacity to meet our needs along with support and technical advice for facility modifications, defuelling systems, and emergency back-up slow fill supply at the operations centre.

8. How will the vehicles be maintained?

CNG vehicles will be maintained and repaired at the Exeter Road Operations Centre (EROC). However, engineering and facility upgrades to the waste collection shop and welding bays are required to facilitate safe repairs and maintenance in those areas.

Natural gas is lighter than air, and therefore can pool in the ceilings of garages. Ceilings have lights, heaters, and electrical wiring that requires adjustment such that natural gas vehicles can be maintained indoors. Many organizations that have moved to CNG have had the benefit of a smaller garage that is dedicated to collections operations trucks exclusively and had simpler construction (City of Toronto), or are building brand new facilities and can design the garage with natural gas safety in mind from the outset (City of Calgary). However, London's collection fleet is maintained in a portion of the bays at the existing EROC which serves as a hub for the maintenance and repair for the waste collection fleet.

The fixed cost for engineering design work, defueling an slow fill systems, sensors, installation, heating and ventilating requirements vary depending on the type of work being done and what condition and configuration the existing building architecture, HVAC and electrical systems are in.

Previous technical consultant work for these modifications has estimated this work to be about $690,000. Funding for some of the general upgrades to maintenance facilities was included in future periods of the capital plan. These savings will be redirected to pay back the amount being borrowed from the EEE reserve fund.

9. How will CNG waste collection vehicles be procured by the City?

Over the next 7 years, all City waste collection vehicles will reach end of life. One of the major advantages of using the Union Gas commercially available CNG fast fill station is that the City's plan can be phased in and aligned with the current vehicle replacement timeline and strategy. As older vehicles are replaced, there will be a shift from diesel to CNG. This will ensure that the life of the existing vehicles are optimized and full value is extracted. This also reducing the capital loss of retiring assets early, allows for smoother transition and less operation change and allows time to build knowledge, confidence and experience with the technology.

Purchases of CNG vehicles would occur as follows:

Number of Collection Vehicles	Expected Retirement Date
5	2019
6	2020
6	2021
6	2022
6	2024
8	2025

10. What additional capital costs will be incurred for CNG vehicles?

CNG vehicles are roughly $50,000 more than their equivalent diesel counterpart. Converting 37 units at $50,000 extra per truck results in a premium of $1,850,000 for using CNG compared to diesel vehicles. Note that trucks are sourced from the United States, therefore changes in currency exchange rates can have a dramatic effect on price. The salvage remarketing value is not clear and needs to be considered as demand at this time is almost negligible. Therefore, the value of CNG trucks when it comes time for disposal may be lower than traditional waste collection vehicles.

11. What are the operating cost comparisons?

Fuel Costs

The fuel savings between diesel and natural gas varies with fluctuations in prices. One litre of diesel is equal to 1.032 cubic metres of natural gas; however natural gas engines are less efficient than diesel. For each litre of diesel used, 1.15 cubic metres of natural is used. Currently natural gas costs roughly 30 cents per cubic metre or approximately 50 cents per diesel litre equivalent, about half of the price of diesel when purchased in bulk.

Fuel System Operation:

Fleet Services operates an automated bulk diesel fuel site at EROC to serve all City services, EMS vehicles and assigned Fire and Police vehicles. The movement away from diesel fuel to CNG fuelling over the next 5 to 7 years will significantly reduce demand for diesel at the EROC site by about 600,000 to 700,000 litres per year.

The new CNG fuelling station will be externally operated and managed by Clean Energy. This is very valuable to the City of London as the responsibility and costs for the operation of the >150hp CNG compressor system falls to the fuel system operator.

Sites of this capacity require an on-site engineer at a cost of up to $150,000 annually as per the current natural gas plant regulations. This provides cost avoidance for the City of London. For example, Toronto has three engineers to cover-off their two CNG fuelling stations.

The private CNG station model saves the City of London money, time and resources on energy and maintenance costs. The compressors for a CNG site like this could have electricity costs over $50,000 annually and annual maintenance costs close to $60,000.

The Flying J CNG station will have dedicated lanes for City waste collection vehicles during peak fueling times but will be open for the general public and other commercial fleets.

Switching from diesel to CNG will also mean fewer hours lost for staff and Fleet Technicians doing diesel engine “re-gens”. Diesel trucks have many starts and stops do not run hot enough at times to burn off particulate in their Diesel Particulate Filter (DPF) Therefore staff regularly need to ‘re-gens’ (vehicle is required to idle at 1500 rpm for 45 minutes to 90 minutes). This activity is required several times per week. CNG trucks do not have to go through this process. This additional capacity in operator time would be offset by the minor increase in time of driving to the Flying J CNG fuelling station.

Vehicle Maintenance

Vehicle maintenance, service and repair costs are reported to be similar or even slightly lower than their diesel counterparts by those municipalities and contractors who have transitioned from diesel to CNG.

Further, it is reasonable to project that in the future CNG engines will be less costly to maintain as the industry gains more experience, improves processes and becomes more efficient.

APPENDIX 'A'

#18162

Chair and Members
Civic Works Committee

September 25, 2018
(Financing Revision)

RE: Switching to Compressed Natural Gas (CNG) Waste Collection Vehicles
Capital Project ME1208 - Fuel Switching Project - Diesel to Compressed Natural Gas (CNG)

FINANCE & CORPORATE SERVICES REPORT ON THE SOURCES OF FINANCING:

Finance & Corporate Services confirms that the cost of this project can be accommodated with a drawdown from the Efficiency, Effectiveness & Economy Reserve, 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:

ESTIMATED EXPENDITURES		**Approved Budget**	**Financing Adjustment**		**Revised Budget**
Engineering		$280,000			$280,000
Construction		1,102,625			1,102,625
NET ESTIMATED EXPENDITURES		**$1,382,625**	**$0**	1)	**$1,382,625**
SOURCE OF FINANCING:					
Drawdown from the Efficiency, Effectiveness & Economy Reserve		$691,313			$691,313
Additional drawdown from the Efficiency, Effectiveness & Economy Reserve	1)		$691,312		$691,312
Ontario Municipal Greenhouse Gas Challenge Fund		691,312	(691,312)		0
TOTAL FINANCING		**$1,382,625**	**$0**		**$1,382,625**

1) The funding of $691,312 is available as a drawdown from the Efficiency, Effectiveness & Economy Reserve. The uncommitted balance will be approximately $9.3 million after the approval of this project.

2) 100% of the amount borrowed from this reserve will be paid back with interest (assuming an internal borrowing rate of 2.32%) through annual savings realized in fuel and maintenance costs. The estimated payback period for this project is 8 years assuming annual savings materialize as forecasted.

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Anna Lisa Barbon
Managing Director, Corporate Services and
City Treasurer, Chief Financial Officer

TO:	**CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON SEPTEMBER 25, 2018**
FROM:	**KELLY SCHERR MANAGING DIRECTOR, ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER AND ANNA LISA BARBON MANAGING DIRECTOR, CORPORATE SERVICES AND CITY TREASURER, CHIEF FINANCIAL OFFICER**
SUBJECT:	**POTENTIAL SAVINGS IN CONSULTING COSTS**

RECOMMENDATION

That, on the recommendation of the Managing Director of Environmental and Engineering Services and City Engineer and the Managing Director of Corporate Services and City Treasurer and Chief Financial Officer, that

a) This report **BE RECEIVED** for information; and;

b) The opportunity to shift services currently provided by consultants to increased in-house delivery for the corporation be considered as a potential area of more detailed evaluation in the upcoming Service Review (“Deep Dive”) process.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

Civic Works Committee, December 1, 2015, Item # 2.12, Appointment of Consulting Engineers for the Designs and Construction of Stormwater Management Facilities

Audit Committee, April 29, 2015, Item # 4.4, Report on Internal Audit Results – Engineering and Environmental Services: Roads and Transportation – Capital Budget Development and Project Costing

Audit Committee, April 29, 2015, Item # 4.5, Report on Internal Audit Results – Engineering and Environmental Services: Roads and Transportation – Project Management and Resource Utilization

Civic Works Committee, May 24, 2016, Item # 2.6, Kilally South Stormwater Management Study – Municipal Class Environmental Study Addendum

Strategic Priorities and Policy Committee, August 29, 2016, Item # 2.5, 2019 Development Charge Study In-house Completion of Master Plan Studies

Civic Works Committee, June 7, 2017, Item # 2.19, Staff Resourcing to Meet the Demands of the Clean Water and Wastewater Fund Program

BACKGROUND

At its meeting on June 2, 2015, Council directed Civic Administration “to review and report back on areas that the City of London could realize consulting cost decreases for

capital projects through the addition of new staff, rather than contracting out those consulting services, so that the City of London would realize net savings." This report provides a qualitative overview of the types of consulting assignments used in Environmental and Engineering Services (EES).

DISCUSSION

Consulting Services Used by EES

The delivery of environmental and engineering services in local government has significantly changed over the last number of years. Anecdotally, most Ontario and Canadian municipalities have moved from a model that saw planning, design and construction of infrastructure occur nearly exclusively in-house to a model that sees substantial work being completed by engineering consultants and contractors.

The reasons for this change are complex and yet almost no independent or academic research exists on the subject. Subjectively, municipalities indicate the change has occurred over several decades and is the result of a variety of factors including: budget cuts and freezes; hiring restrictions; increasing specialization in the engineering profession and its various disciplines; increased project complexity; higher public engagement expectations; technological change; increasing demand and costs of support services and facilities; and, the availability of skilled engineering and technical professionals in the labour market.

The reasons EES uses consultants typically include:

- The project is large. Large projects require a significant dedication of resources. Delivery of these projects in-house would result in the need to either add resources that may not be required once the project is complete or to reassign them from their current work, making it difficult to deliver on other community priorities.

- The project is unique or complex. Complicated or infrequently delivered projects that require the use of specialized resources that are not needed by EES on a regular basis are usually managed via consultant.

- Access to national and international experience. Consultants can sometimes bring direct experience from other jurisdictions, allowing the City to take advantage of new ideas or avoid potential risks.

- Mitigation of design and construction risk is needed. Consulting engineers carry liability insurance for their work, which can mitigate the risk to the City if there are errors or omissions made during design and construction management.

- There is a need to address variable workloads. Municipal infrastructure workloads tend not to be evenly distributed over the course of several years. Changes in legislation, large groups of asset classes needing replacement as an age cohort nears the end of its lifecycle, provincial and federal funding programs, and municipal major project and funding decisions can result in variable demands for engineering and technical services from year-to-year.

Efforts to Date

The Public Transit Infrastructure Fund (PTIF) and Clean Water and Wastewater Fund (CWWF) programs that started in late 2016 have resulted in both large-scale projects and an expanded infrastruture renewal program for London in the past two years. While both programs are complete in 2020, similar workloads are expected to continue with anticipated Investing in Canada Plan that includes streams for both transit ($204 million allocated to London to be spent by 2026) and Green Infrastruture (details pending).

Like most EES workplans, these programs are being delivered by a combination of City staff and consultants. The Rapid Transit Implementation Office was created in 2017 and has added both contract and permanent staff to its complement. CWWF has required the hiring of multiple new technical staff, but pending retirements ensure that there will be sufficient work for these teams when workloads return to more typical levels in the future.

Qualitative Evaluation of Delivery of Engineering Services

Outside of potential cost savings, advantages of delivering more routine projects in-house may include:

- Staff development. Managing design and construction projects can build the competency, confidence and experience of the team. Staff often become better project managers, designers, builders, operators and application reviewers as a result.

- Recruitment and retention. Engineers and other technical professionals may find the opportunity to manage projects, versus contract management, more appealing. This may assist in hiring and retaining technical staff.

- On-going accountability and integration. While EES has successful and long-term business relationships with its many consultants, internal staff undertaking design and construction work may feel an enhanced accountability, especially when it comes to addressing potential concerns from their colleagues who will operate and maintain the asset in the long-term.

Disadvantages of increased delivery of routine projects in-house may include:

- Support staff requirements. Engineering consultants typically bring a full team to City design projects and have the field staff required to see a project through the construction phase should they perform well in prior phases. The City does not currently have the estimators, surveyors, CAD technologists, tender preparation specialists or construction managers that would be required to deliver additional work in-house.

- Access to specialized professional services. Specialized personnel are often difficult to recruit and are typically only needed infrequently, making it impractical to effectively use their skills on a full-time basis. These services can be obtained as individual consultants to the City, but the procurement effort and cost may be more than currently experienced when hiring a consulting office that can access these services within their companies.

- Liability and risk. Consulting engineers carry liability insurance that can protect the City from the costs associated with errors and omissions in the design process. The cost of correcting mistakes or addressing damages to third parties that result from them are the consultant’s responsibility via their insurance; should a City designer make similar mistakes, the City would need to pay

corrective costs or third party damages directly. City-led projects do not have the recourse of a consulting engineer's insurance if problems arise.

- Difficulty in recruitment. Engineering and technical professional positions can be difficult to recruit, as there is demand for their services across the country. This difficulty is exacerbated if the positions are not permanent. The Canadian labour market for technical staff is expected to see additional challenges as large numbers of current practicioners retire in the near future.

- Workload flexibility. When annual programs are smaller, there may be insufficient work to keep technical and support staff busy. Unexpected issues also often arise for City staff over the course of a given year, requiring staff to refocus their efforts to address them. This can make it difficult to continue to manage internally delivered projects on-time and on-budget while staff are responding to emergent issues from Council, the community, other levels of government or unforeseen infrastructure problems.

- Specialized equipment and technology. Many consulting engineering commissions allow the City to access not just specialized personnel, but equipment, software and technology that can be expensive to aquire, maintain and train staff to use.

- Office space needs already significantly exceed supply. Finding a space for one or two new staff members away from the rest of the team creates challenges with on-boarding, coaching and integration of various elements of engineering design.

Preliminary Quantitative Evaluation of Capital Consulting Costs for the City of London

Using 2017 as an example year, EES spent $10.7 million in consulting related capital expenditures. Note that 2017 would represent a higher-than-average year with respect to consulting expenditures in EES due to the need to advance design work to meet the requirements of the Federal Clean Water and Wastewater Fund and Public Transit Infrastructure Fund programs.

The expenditures by project type are as follows:

Project Type	**2017 Value of EES Capital Consulting Contracts**
Growth	$6.05 million
Lifecycle renewal	$3.92 million
Service improvements	$0.71 million

The growth-related expenditures include consultant assignments working on the bus rapid transit project, major roadway expansions and significant upgrades to water, wastewater and stormwater infrastructure. The complex and specialized nature of these projects likely makes them unsuitable for in-house delivery on an ongoing-basis.

Service improvement expenditures on consultants are typically small-dollar value contracts providing short-term services for one-time or emergent issues. There may be some opportunity to group similar service needs in the future and assign them to a new staff member, but the range of contracted services is highly variable and it may not practical to expect that they can be consolidated.

The $3.92 million that was was spent on consulting services to support more routine investments in infrastructure renewal represents the most feasible opportunity to reduce costs by moving more engineering work in-house. The net savings that might occur

from completing more of the engineering associated with infrastructure renewal in-house would likely be a relatively small part of the total annual expenditure, arising from:

- Any differences in salaries and benefits paid to employees;
- Any differences in overhead costs incurred by consultants versus those incurred by the City of London; and
- Consulting profits.

It is difficult to calculate a figure associated with the above. When fees are not based on a percent of construction costs, consultants typically use hourly rates for staff that include salary, benefits, overhead and profit based on experience categories defined by the Ontario Society of Professional Engineers. It is unlikely consulting companies would provide the detailed break down of these numbers that are required to do a position-to-position comparison with City costs for salary, benefits and overhead. Additionally, City data is not tracked in a way that allows for this comparison to readily occur.

It would also be necessary to quantify any start-up and ongoing costs associated with creating additional in-house capacity, including construction of office space, recruitment of engineering and technical staff, and, acquisition of specialized software, vehicles or equipment and add these costs to more standard corporate overhead associated with space, computer equipment, etc.

Due to other project and program priorities, this undertaking cannot be delivered using current resources in EES or Financial Services and it is recommended that it be referred to the “Deep Dive” process as a potential area for more detailed investigation.

CONCLUSION

The City needs to balance a variety of factors in deciding which services it delivers using staff and which services it enlists the support of consultants to deliver. The upcoming “Deep Dive” Service Review process may be an appropriate mechanism to prioritize and complete this work.

RECOMMENDED BY:	**RECOMMENDED BY:**
KELLY SCHERR, P.Eng., MBA, FEC **MANAGING DIRECTOR, ENVIRONMENTAL AND ENGINEERING SERVICES & CITY ENGINEER**	**ANNA LISA BARBON, CPA, CGA** **MANAGING DIRECTOR, CORPORATE SERVICES AND CITY TREASURER, CHIEF FINANCIAL OFFICER**

TO:	**CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON SEPTEMBER 25, 2018**
FROM:	**KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER**
SUBJECT:	**APPOINTMENT OF CONSULTING SERVICES FOR MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT, KILALLY SOUTH, EAST BASIN (ESSWM-KILSE)**

RECOMMENDATION

That, on the recommendation of the Managing Director, Environmental & Engineering Services and City Engineer, the following actions **BE TAKEN** with respect to the appointment of a consultant for the Kilally South, East Basin Municipal Class Environmental Assessment.

a) Ecosystem Recovery Inc. **BE APPOINTED** consulting engineer to carry out the Municipal Class Environmental Assessment of the Kilally South, East Basin, in the total amount of $178,272 (including contingency), excluding HST, and in accordance with Section 15.2 (d) of the City of London's Procurement of Goods and Services Policy;

b) the financing for the project **BE APPROVED** in accordance with 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 approvals given herein **BE CONDITIONAL** upon the Corporation entering into a formal contract; 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

SPPC – May 8, 2018 – Growth Management Implementation Strategy (GMIS): 2019 Annual Review & Update

CWC – May 24, 2016 – Kilally South Stormwater Management Study Municipal Class Environmental Assessment Addendum

Environment Transportation Committee (ETC) – February 9, 2004. Municipal Class Environmental Assessment Schedule B Environmental Screening Report: Recommendation for Proposed Stormwater Management Servicing Work Kilally South Community Area Plan.

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

The purpose of this report is to seek approval to award consulting services to complete a Schedule B Municipal Class Environmental Assessment (EA) for the Kilally South, East Basin drainage area, based on the results of a Request for Proposal process (RFP 18-37). The Kilally South, East Basin EA will determine a preferred stormwater servicing approach for 96 hectares of future development lands, based on a comprehensive evaluation process.

Context

In May 2018, the 2019 Growth Management Implementation Strategy (GMIS) accelerated the timing of construction for the Kilally South, East Basin SWM facility from 2024 to 2022 to increase serviced lot supply. The 2019 GMIS recommended that an EA process commence in 2018 with an associated budget of $250,000. The Kilally South, East Basin EA will provide a preferred stormwater management strategy that will include practical stormwater mitigation measures for the benefit of the natural environment, the downstream Thames River, and area residents.

DISCUSSION

In 2016, the City conducted a scoped EA Addendum to support the construction of the Kilally South, West Basin SWM facility. The 2016 EA Addendum identified the need for a future EA to evaluate appropriate stormwater servicing for the remaining 96 hectares of developable land. The proposed Kilally South, East Basin EA will evaluate potential SWM control options including traditional end-of-pipe SWM facilities as well as Low Impact Development controls and the City's Permanent Private System policy. The EA will develop alternatives based on an assessment of natural heritage, archeological, geotechnical and hydrogeological site conditions. This will ensure a holistic stormwater management approach is recommended to service approximately 96 hectares of future neighbourhood development area.

Procurement Process

In July 2018, the City issued a competitive Request for Proposal (RFP #18-37) for consulting services for a Municipal Class EA to determine a preferred stormwater servicing strategy for the Kilally South, East Basin lands.

Four proposal submissions were received in response to the RFP. Submissions were evaluated by staff from Stormwater Engineering and Purchasing and Supply. All four proposals met the City's requirements for submission acceptance and were evaluated using a weighted scoring system. The proposal submitted by Ecosystem Recovery Inc. received the highest score and demonstrated best value to the City. Ecosystem Recovery Inc. has assembled a strong technical team to demonstrate thorough understanding of both City and specific project requirements while offering best value for consulting services. This consultant proposal approach is consistent with section 15.2(d) of the Procurement of Goods and Services Policy.

Public Engagement

The Notice of Commencement for the EA will be sent to landowners, agencies, appropriate First Nations, and published in the Londoner upon Council approval of the consultant award. There will be one Public Information Centre scheduled to discuss the field work and present the recommended option for comment. In addition, the consultant will meet with stakeholders in the area to determine individual interests. All notices and public review materials will be posted at:

http://www.london.ca/residents/Environment/EAs/

Project Schedule

This study is anticipated to be completed in approximately one year. Study completion in Q4 2019 will allow for detailed design to commence in Q1 2020 with construction anticipated to occur by 2022 as outlined in the 2019 GMIS, all in accordance with the "Just in Time" process established by the 2014 Development Charges By-law.

CONCLUSIONS

The Kilally South, East Basin EA will conduct appropriate environmental background studies to develop and evaluate stormwater infrastructure options to service approximately 96 hectares of undeveloped land. It is recommended Ecosystem Recovery Inc. be appointed as the consulting engineer to carry out the Municipal Class Environmental Assessment, Kilally South East Basin.

Acknowledgements

This document has been prepared by Adrienne Sones, P.Eng. Environmental Services Engineer within the Stormwater Engineering Division.

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

Attach: Appendix 'A' – Sources of Financing
Appendix 'B' – Location Map

cc. John Freeman, Manager, Purchasing and Supply
Chris Moon, Ecosystem Recovery Inc.
Gary McDonald, Budget Analysis

Chris Ginty, Purchasing and Supply
Alan Dunbar, Financial Planning and Policy
Jason Davis, Financial Planning and Policy
Adrienne Sones, Stormwater Engineering

APPENDIX 'A'

#18159

Chair and Members
Civic Works Committee

September 25, 2018
(Appoint Consulting Engineer)

RE: Municipal Class Environmental Assessment, Kilally South, East Basin
(Subledger SWM17003)
Capital Project ESSWM-KILSE - SWM Facility - Kilally SE
Ecosystem Recovery Inc. - $178,272 (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**	**This Submission**		**Balance for Future Work**
Engineering	$250,000	$181,409		$68,591
NET ESTIMATED EXPENDITURES	**$250,000**	**$181,409**	**1)**	**$68,591**
SUMMARY OF FINANCING:				
Drawdown from City Services-Mjr SWM Reserve Fund (Development Charges) 2)	$250,000	$181,409		$68,591
TOTAL FINANCING	**$250,000**	**$181,409**		**$68,591**

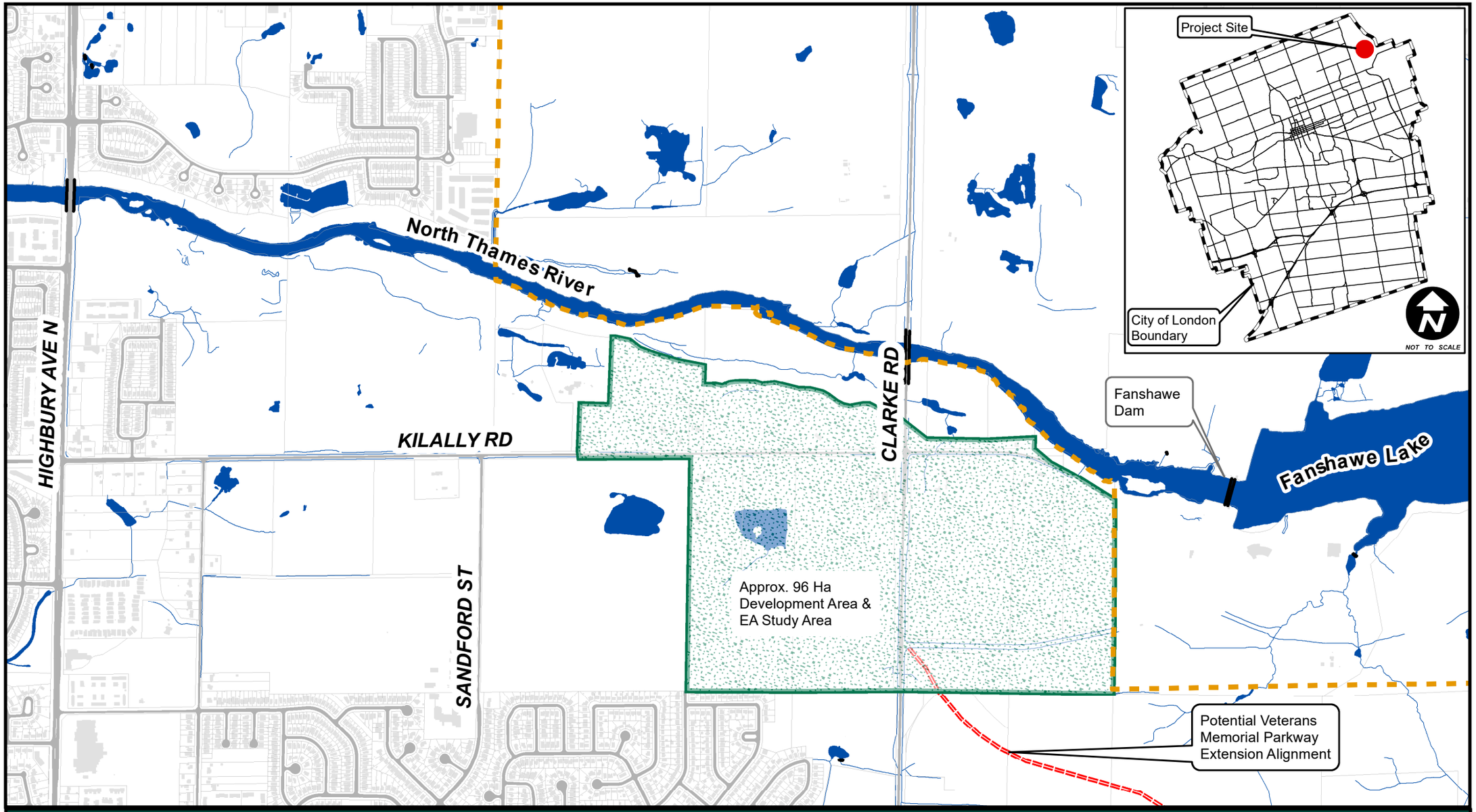
1) **FINANCIAL NOTE:**

Contract Price	$178,272
Add: HST @13%	23,175
Total Contract Price Including Taxes	201,447
Less: HST Rebate	20,038
Net Contract Price	$181,409

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

JG

Jason Davies
Manager of Financial Planning & Policy



APPENDIX 'B' - LOCATION MAP - KILALLY SOUTH EAST BASIN, MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT

0 125 250 500
Meters

Legend:

- Kilally South, East Basin Drainage Lands
- Land Parcel
- Potential Veterans Memorial Parkway Extension Alignment
- Bridge
- Road
- Urban Growth Boundary
- Railroad
- Water Body

Map Produced by
Stormwater Engineering

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

TO:	**CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON SEPTEMBER 25, 2018**
FROM:	**KELLY SCHERR, P. Eng., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER**
SUBJECT:	**MOCKINGBIRD CRESCENT LOW IMPACT DEVELOPMENT VOLUNTARY PILOT PROJECT**

RECOMMENDATION

That on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, the following actions **BE TAKEN** with respect to developing a sump pump discharge to municipal right-of-way management program:

(a) This report **BE RECEIVED** for information; and

(b) that the Civic Administration **BE DIRECTED** to proceed with a voluntary pilot project on Mockingbird Crescent to install low impact development technologies on private property to mitigate sump pump discharge where no storm sewer exists.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

CWC report December 4, 2017: Item 8. Local Improvement Policy Review.

CWC report October 24, 2017: Item 19. Basement Flooding Grant Program By-law Amendment.

2015 – 2019 STRATEGIC PLAN

The following report supports the 2015 – 2019 Strategic Plan through the strategic focus area of Building a Sustainable City including:

- Robust Infrastructure 1B – Manage and improve water, wastewater, and stormwater infrastructure.

BACKGROUND

Purpose

The purpose of this report is to report back on the request made by municipal council at its meeting held on July 24, 2018, (4.6/11.CWC) that the following action be taken with respect to storm sewer connections in residential areas on Mockingbird Crescent:

b) the Civic Administration BE DIRECTED to report back a future meeting of the Civic Works committee with information pertaining to the feasibility of implementing a sump pump discharge mitigation pilot project utilizing low impact development technologies, for properties located on Mockingbird Crescent.

DISCUSSION

Context

A surface flooding issue was brought forward to City staff by residents on Mockingbird Crescent in the spring of 2018. The cause of the issue was determined to be sump

pump discharges to the surface, combined with a high groundwater table throughout the year. The regular sump pump discharge from these homes leads to continually wet conditions during summer months and icing issues on the sidewalk and roadway in the winter months. A portion of Mockingbird Crescent (Appendix 'A': Location Map) was constructed in 1987 and, accordingly, approximately ten homes do not have a fronting storm sewer.

Potential Solutions for Mockingbird Crescent

City staff evaluated three potential options to resolve the surface sump pump discharge issue on Mockingbird Crescent:

1. Use Existing City Grant Programs for Flooding

There are currently two city-funded programs available to eligible individual homeowners who experience basement or surface flooding issues, namely the Basement Flooding Grant Program and the Private Drain Connection Subsidy Program. However, these programs support construction of a connection to the storm sewer as part of the drainage solution. As the impacted homes on Mockingbird Crescent do not have fronting storm sewers, these programs do not apply.

2. Storm Sewer Extension Option

It is possible to undertake a storm sewer extension project through the Local Improvement Act. In accordance with the Act, the cost of the local improvement is shared between the City and the benefitting properties. Municipalities can recover all or part of the cost of the project by imposing local improvement charges on properties that benefit from the work. The cost to each benefitting property owner is typically high due to the significant cost to restore the roadway and curbs.

3. Voluntary Pilot Program – Low Impact Development

As with all engineering disciplines, the management of stormwater is constantly evolving. It was once considered good practice to remove surface runoff as quickly as possible from developed lands and convey it directly to the receiving waters. Now the thought process is changing towards making best possible efforts to retain and infiltrate surface water onsite as much as possible.

Low Impact Development (LID) systems essentially act as sponges on the landscape with layers of porous gravel, sand, or looser soils to promote infiltration. They are designed to soak up rainfall from smaller rain events. In this case, the LID would be designed to accept water from the home's sump pump. This should reduce the frequency and duration that water is ponding on the surface and lessen the amount of water flowing onto the sidewalk or roadway.

City staff could initiate a pilot project in which a consulting engineer would be retained to review and develop appropriate onsite drainage solutions. The onsite solutions may involve LID systems such as soak away pits, infiltration basins, or rain gardens to increase infiltration and reduce surface runoff. Site specific conditions would be assessed as part of this project, including but not limited to grading, groundwater levels, and soil conditions. It is essential that LID features are maintained to ensure that they continue to function and do not become clogged with debris. The long-term maintenance of the LID would be the responsibility of the homeowner.

Cost estimates

A storm sewer extension for Mockingbird Crescent may cost in the order of $350,000 for engineering and construction. This cost would be shared between the ten property owners and the City through a Local Improvement process.

By contrast, the estimated cost for the pilot project to install LID systems for ten properties on Mockingbird Crescent is approximately $5,000 per home and 15% for

engineering. Homeowner participation in this pilot program would be voluntary. The estimated budget for this pilot project would be up to $65,000 subject to 100% participation. There is existing budget for the City to fund this project using funding the Surface Flooding and Erosion Program.

As a result, the voluntary pilot project funded by the City is recommended as a cost effective attempt to improve the surface drainage issues caused by sump pump discharge to surface, with the environmental benefit of promoting infiltration to the native soils. If successful, this pilot project could be extended citywide in areas where there is no fronting storm sewer and included within the City's design standards. If problems persist after the pilot, the Local Improvement process remains available to extend the storm sewer and connect the individual properties.

CONCLUSIONS

A City funded voluntary pilot project is recommended to develop an engineered solution to manage sump pump discharge water onsite through the implementation of LIDs. The section of Mockingbird Crescent without a fronting storm sewer would make a good candidate for such a pilot project, based on the significant volume of sump pump discharge experienced throughout the year and the number of complaints received by the City.

Further, Civic Administration can evaluate a capital budget business case for a solution to manage sump pump discharge citywide, where a suitable municipal storm outlet is not available, as part of the multi-year budget process.

Acknowledgements:

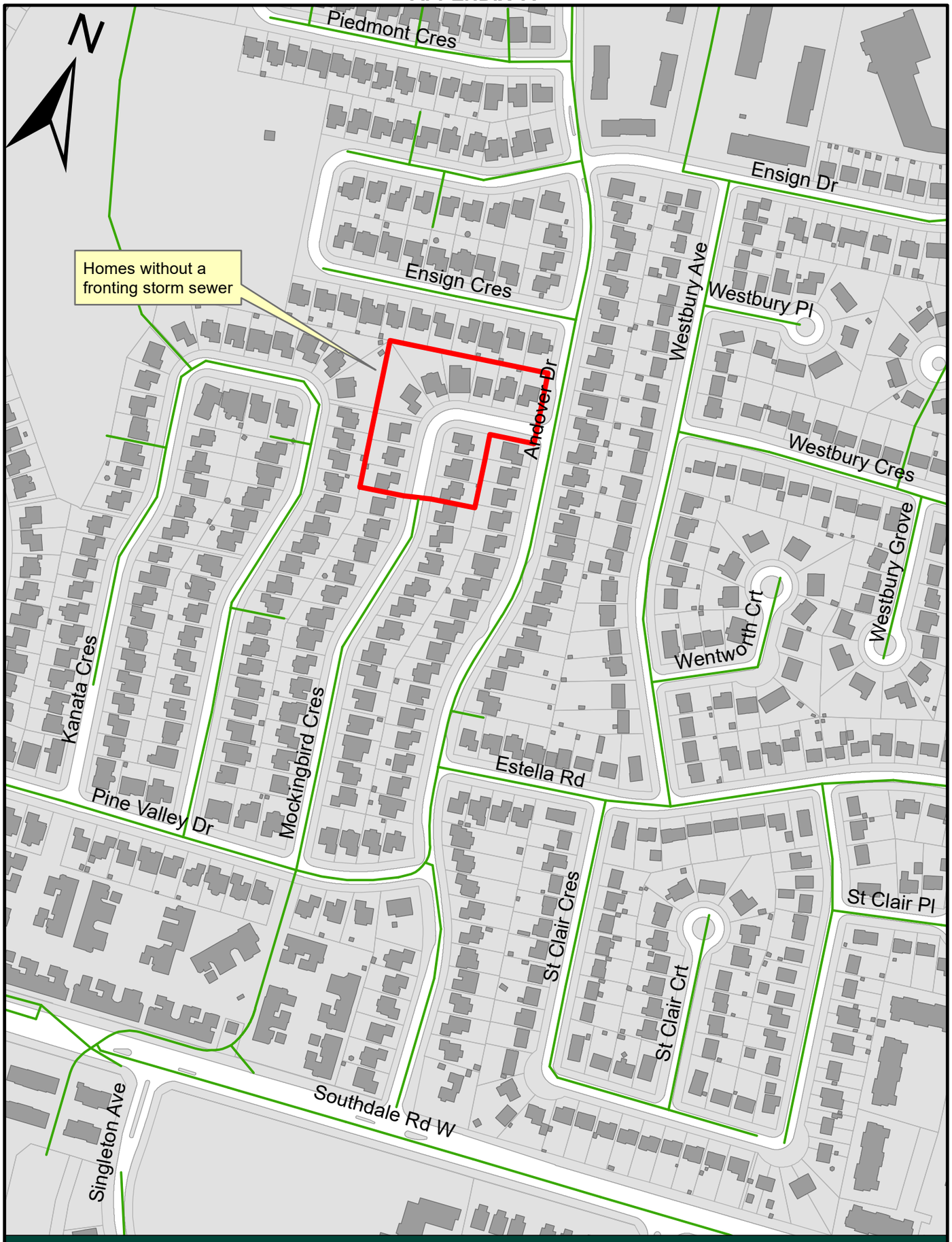
Marcy McKillop, P.Eng. of Wastewater and Drainage Engineering

SUBMITTED BY:	**SUBMITTED BY:**
TOM COPELAND, P. ENG. **DIVISION MANAGER** **WASTEWATER AND DRAINAGE ENGINEERING**	**SHAWNA CHAMBERS, P.ENG.** **DIVISION MANAGER** **STORMWATER ENGINEERING**
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**

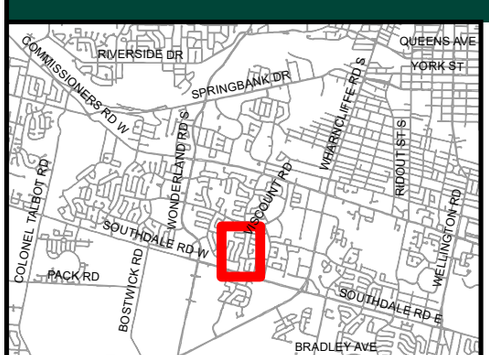
August 31, 2018

Appendix A – Location Map

APPENDIX 'A'



LOCATION MAP



Legend

Storm Sewer

Proposed Site Location

Map Produced by the Wastewater & Drainage Engineering Division

July 30 2018 YC

London CANADA

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

TO:	**CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON SEPTEMBER 25, 2018**
FROM:	**KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR - ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER**
SUBJECT	**MUNICIPAL WASTE & RESOURCE MATERIALS COLLECTION BY-LAW AMENDMENT**

RECOMMENDATION

That, on the recommendation of the Managing Director, Environmental & Engineering Services & City Engineer, the draft amending by-law attached as Appendix A **BE INTRODUCED** at the Municipal Council meeting to be held on October 2, 2018 to amend the Municipal Waste & Resource Collection By-law (WM-12) to move the Container Exemption Period that follows the three day Thanksgiving weekend in October to the week after the four day Easter weekend.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

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

- Adjust 3 Container Exemption Collection Period and Changes to Collection Zones (July 17, 2018 meeting of the Civic Works Committee Item # 2.8)

STRATEGIC PLAN 2015-2019

Municipal Council has recognized the importance of solid waste management including waste diversion, climate change and other related environmental issues in its 2015-2019 - Strategic Plan for the City of London (2015 – 2019 Strategic Plan). With respect to this CWC Report 2 of the 4 Areas of Focus address increasing waste diversion as it relates to garbage container limits.

Building a Sustainable City

- Strong and healthy environment

Leading in Public Service

- Collaborative, engaged leadership
- Excellent service delivery

BACKGROUND

PURPOSE:

The purpose of this report is to provide Civic Works Committee (CWC) and Council with amendments to the Municipal Waste & Resource Collection By-law (WM-12), to move the Container Exemption Period that follows the three day Thanksgiving weekend in October to the week after the four day Easter weekend.

CONTEXT:

At the July 24, 2018 meeting of Municipal Council, Civic Administration were directed to report back with a proposed by-law to amend the Municipal Waste & Resource Collection By-law (WM-12) in accordance with the Council resolution regarding the

actions to be taken with respect to the Container Exemption Period that follows the three day Thanksgiving weekend in October.

a) *the 3 Container Exemption Period that follows the three day Thanksgiving weekend in October BE MOVED to the week after the four day Easter weekend; and,*

b) *the Civic Administration BE DIRECTED to report back with a proposed by-law to amend the Municipal Waste & Resource Materials Collection By-law (WM-12) to enact the above noted change. (2018-E07) (2.8/11/CWC)*

This report facilitates the actions directed to be undertaken by the Civic Administration in accordance with the Municipal Council resolution.

DISCUSSION

Municipal Council requested the Civic Administration review and recommend the best dates in the Spring for the unlimited container (3 Container Exemption Period) pick up. The review considered three potential changes, of which staff recommended, an Committee and Council agreed/recommended and resolved respectively to move the current 3 Container Exemption Period that follows the Thanksgiving three day weekend to the week after the four day Easter weekend. The by-law attached as Appendix A facilitates this change.

ACKNOWLEDGEMENTS

This report was prepared with assistance from Legal Services.

PREPARED BY:	**PREPARED BY:**
ANNE BOYD, B.A., B.E.Sc. **MANAGER, WASTE DIVERSION**	**MICHAEL LOSEE, B.SC.** **DIVISION MANAGER, SOLID WASTE MANAGEMENT**
PREPARED AND SUBMITTED BY:	**RECOMMENDED BY:**
JAY STANFORD, M.A., M.P.A. **DIRECTOR, ENVIRONMENT, FLEET & SOLID WASTE**	**KELLY SCHERR, P.ENG., MBA, FEC** **MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER**

Appendix A A By-law to amend the Municipal Waste & Resources Collection By-law WM-12

Appendix A

Bill No.
2018

By-law No.

A by-law to amend the By-law No. WM-12 being "A by-law to provide for the Collection of Municipal Waste and Resource Materials in the City of London".

WHEREAS section 5(3) of the *Municipal Act, 2001* S.O. 2001, c.25, as amended, provides that a municipal power shall be exercised by by-law;

AND WHEREAS section 9 of the *Municipal Act, 2001* S.O. 2001, c.25, as amended, 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 subsection 10 of the *Municipal Act, 2001* S.O. 2001, c.25, as amended, provides that a municipality may provide any service or thing that the municipality considers necessary or desirable for the public, and may pass by-laws respecting the economic, social and environmental well-being of the municipality, and the health, safety and well-being of persons;

AND WHEREAS the Municipal Council wishes to amend By-law No. WM-12, being "A by-law to provide for the Collection of Municipal Waste and Resource Materials in the City of London" in order to move the Container Limit Exemption that follows Thanksgiving to follow Easter Monday;

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

1. By-law WM-12 is hereby amended by deleting section 4.1.2 (1) and by replacing it with the following new section 4.1.2 (1);

"(1) during the first scheduled collection following Easter Monday, April 29, Labour Day and December 25 each year; or".

2. By-law WM-12 is hereby amended by deleting section 5.1.2 (1) and by replacing it with the following new section 5.1.2 (1);

"(1) during the first scheduled collection following Easter Monday, April 29, Labour Day and December 25 each year; or".

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

Passed in Open Council on October 2, 2018.

Matt Brown
Mayor

Catharine Saunders
City Clerk

First Reading – October 2, 2018
Second Reading – October 2, 2018
Third Reading – October 2, 2018

TO:	**CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON SEPTEMBER 25, 2018**
FROM:	**KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER**
SUBJECT:	**PROPOSED TERMS OF REFERENCE - ENVIRONMENTAL ASSESSMENT OF THE PROPOSED W12A LANDFILL EXPANSION**

RECOMMENDATION

That, on the recommendation of the Managing Director, Environmental & Engineering Services and City Engineer, with the support of the Waste Management Working Group, the following actions be taken with respect to the Proposed Terms of Reference for the Environmental Assessment of the Proposed W12A Landfill Expansion:

a) the Proposed Terms of Reference **BE APPROVED**; and,

b) staff **BE AUTHORIZED** to submit the Proposed Terms of Reference to the Ministry of Environment, Conservation and Parks (MECP) for approval by the Minister of the Environment, Conservation and Parks.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

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

- Draft Proposed Terms of Reference – Environmental Assessment of the Proposed W12A Landfill Expansion (April 17, 2018 meeting of the Civic Works Committee (CWC), Item #3.3)
- Appointment of Consulting Engineer for Various Technical Studies as part of the Environmental Assessment Process for the Proposed Expansion of the W12A Landfill Site (July 17, 2017 meeting of the CWC, Item #6)
- Update and Next Steps – Resource Recovery Strategy and Residual Waste Disposal Strategy as part of the Environmental Assessment Process (February 7, 2017 meeting of the CWC, Item #10)

Relevant reports that can be found at www.london.ca under City Hall (Meetings – Advisory and other Committees) include:

- Proposed Draft Terms of Reference (August 15, 2018 meeting of the Waste Management Working Group (WMWG), Item #2.1)
- Draft Proposed Draft Terms of Reference (July 13, 2018 meeting of the Waste Management Working Group (WMWG), Item #3.2)
- Preliminary Proposed Draft Terms of Reference (March 8, 2018 meeting of the WMWG, Item #2.1)
- Terms of Reference Outline and Next Steps (January 18, 2018 meeting of the WMWG, Item #9)
- General Framework for the Community Engagement Program for the Resource Recovery and Residual Waste Disposal Strategies as part of the Environmental Assessment Process (January 19, 2017 meeting of the WMWG, Item #7)

COUNCIL'S 2015-2019 STRATEGIC PLAN

Municipal Council has recognized the importance of solid waste management in its 2015-2019 - Strategic Plan for the City of London (2015 – 2019 Strategic Plan) as follows:

Building a Sustainable City
- Strong and healthy environment
- Robust infrastructure

Growing our Economy
- Local, regional, and global innovation
- Strategic, collaborative partnerships

Leading in Public Service
- Proactive financial management
- Innovative & supportive organizational practices
- Collaborative, engaged leadership
- Excellent service delivery

BACKGROUND

PURPOSE

This report seeks approval to submit the Proposed Terms of Reference (ToR) for the Environmental Assessment of the Proposed W12A Landfill Expansion to MECP for approval by the Minister of the Environment, Conservation and Parks.

The Proposed ToR is provided under separate cover. The Executive Summary from the Proposed ToR is presented in Appendix A.

CONTEXT

An Environmental Assessment (EA) under the EA Act is a planning study that assesses environmental effects and advantages and disadvantages of a proposed project. The environment is considered in broad terms to include the natural, social, cultural and economic aspects of the environment.

The first phase of the Individual EA process, used for large-scale projects like landfill sites, is the development and approval of a ToR by the Minister of Environment, Conservation and Parks. The ToR becomes the framework or workplan for the preparation and review of the individual EA. The ToR allows the proponent to produce an EA that is more direct and easier to be reviewed by interested persons.

The second phase of the Individual EA process is the completion and approval of an EA. The proponent completes the EA in accordance with the approved ToR.

DISCUSSION

Overall ToR Development Process
The development process for the ToR is summarized in Table 1. It is noted that the ToR has a different title depending how far along it is in the approval process.

Table 1 – Overall ToR Development and Tentative Schedule

Development Step		Schedule
Initial Community Engagement	Seek feedback from the Government Review Team (GRT), public, Indigenous communities and other stakeholders.	Started March 2017 Completed January 2018
Preliminary Draft Proposed ToR	An early draft of the Draft Proposed ToR. The Ministry of the Environment, Conservation and Parks (MECP) does a preliminary screening of the *continued on next page* Preliminary Draft Proposed ToR to ensure all documentation requirements have been met. Preliminary Draft Proposed ToR is revised to address comments.	Completed March 2018

Table 1 – Overall ToR Development and Tentative Schedule

Development Step		Schedule
Draft Proposed ToR	The Draft Proposed ToR is submitted to the GRT, public, Indigenous communities and other stakeholders for review and comment. Draft Proposed ToR is revised to address comments.	April to July 2018
Proposed ToR	**Public participation meeting and Council approval of Proposed ToR. Formal submission of Proposed ToR to the MECP for approval. The MECP will hold additional stakeholder engagement and may ask for revisions to the Proposed ToR to address concerns prior to MECP staff submitting the Proposed ToR to the Minister of the Environment, Conservation and Parks for approval.**	**Late Summer to Fall 2018 (In Progress)**
(Final) ToR	ToR as approved by the Minister. EA must be carried out according to the ToR.	Spring 2019 (tentative)

Proposed ToR

The development process from Draft Proposed ToR to Proposed ToR is summarized in Table 2 and began with the release of the Draft Proposed ToR to the GRT (18 Ministries and agencies), Indigenous communities (8 communities), public and other stakeholders (5 groups) for review and comment.

Table 2 - Development Proposed Terms of Reference

Date	Event	Comments
April 26, 2018	Draft Proposed ToR released to GRT, Indigenous communities, general public and other stakeholders.	Start of 45 day review period
June 7	Meeting with Technical Support Section of the Southwest Region of MECP	Discussion on air quality comments and City's initial and/or revised responses
June 8	Original end date for 45 day review period	
June 20	Additional comments received	Some GRT members requested additional time
July 20	Teleconference with Environmental Assessment and Permissions Branch of MECP	Discussion on EA comments and City's initial and/or revised responses
July 26	Teleconference with Environmental Assessment and Permissions Branch, Corridor Management Section, West Region of MTO	Discussion on transportation comments and City's initial and/or revised responses

During this part of the process, the City received 86 comments from five members of the GRT (Environmental Assessment and Permissions Branch of the MECP; Technical Support Section of the Southwest Region of the MECP; Programs and Services Branch of the Ministry of Tourism, Culture and Sport; Corridor Management Section (MTCS), West Region of the Ministry of Transportation Ontario (MTO) and the Kettle Creek Conservation Authority) and the general public. It was expected that most organizations would not have comments given the previous opportunities to provide feedback.

A breakdown of the comments received is provided in Table 3. Discussions were held with some of the GRT members responding to seek clarification on their comments.

Table 3 – Breakdown of Comments on Draft Proposed Terms of Reference

Stakeholder		Comments	
		#	Subject
GRT	Environmental Assessment and Permissions Branch of the MECP	40	EA Process/ General
	Technical Support Section of the Southwest Region of the MECP	10	Air Quality
	Programs and Services Branch of the MTCS	6	Archaeology & Built Heritage
	Corridor Management Section, West Region of the MTO	5	Transportation
	Kettle Creek Conservation Authority	7	Surface Water
General Public	One individual provided written comments	12	General
	Six individuals provided comments on the project website	6	General
Total		86	

A summary of how the comments received were handled is presented in Table 4.

Table 4 – Categories of Comments and how They were Addressed in the Proposed ToR

Category of Comment and Type of Change (if Required)		#	Comment
Comment not requiring a change.		34	–
Minor rewording of existing information or reordering of existing information.		12	
Additional details or clarification provided	Information about the W12A Landfill,	6	–
	how the W12A Landfill Area Study was used to determine that expansion of the W12A Landfill was the preferred alternative for the disposal of waste,	4	
	how the EA process will be completed,	4	
	how technical studies will be completed, and	19	
	background details on service area expansion.	2	
Changes to how Technical Studies will be completed	Air modelling is typically done using standard emission rates, the City will consider developing site-specific emission rates if warranted following a review of historical odour complaints, recorded weather and operational procedures.	1	Minor Change
Changes to EA Process	The number of alternatives methods (different landfill expansion alternatives) developed in the EA is limited to 3 or 4. The specific number of alternative methods has been removed at this time as this will be finalized in the EA.	1	Minor Change

Table 4 – Categories of Comments and how They were Addressed in the Proposed ToR

Category of Comment and Type of Change (if Required)		#	Comment
Change to "undertaking"	No change to the 9.8 million tonnes of capacity required for waste from the City of London but a reduction in estimated waste from proposed expanded service area from 1.3 million tonnes to 0.6 million tonnes (about 28,000 tonnes per year).	1	Minor Change. Tonnage handled over 25 years drops by about 6%. This has the potential to impact tipping fee revenues and increase the net cost of landfill operations. The amount is difficult to estimate but could range between $250,000 and $500,000 per year. Overall capacity (volume) drops from 14.7 million m^3 to 13.6 million m^3. This will reduce the height of the landfill expansion by 1.5 to 3 metres.
Changes to "List of Commitments"	The Proposed ToR contains a List of Commitments which is a public statement of key actions the City will undertake to facilitate the EA process. The MECP requested that two of the many EA requirements (actions, tasks and studies) contained in the Proposed ToR be included in the List of Commitments to highlight their importance. The revised List of Commitments is provided in Table 5.	2	Minor Change.
Total		86	

Table 5 – Revised List of Commitments

ID	Commitment
1	The City has committed to a target of 60% residential waste diversion by 2022.
2	When requested, the City of London will meet with individuals or groups at their convenience to assist them with understanding the project information and providing input, for example, if they are unable to participate in planned public consultation events or require more information.
3	NEW - Post-closure commitments will be described in the EA Report.
4	NEW - The City will share workplans with Indigenous Communities and post workplans on the project website.

Additional Stakeholder Comments

The changes made to the Draft Proposed ToR to create the Proposed ToR were discussed with the W12A Landfill Public Liaison Committee at their August 16, 2018 meeting and with the Waste Management Community Liaison Committee at their August 20 meeting. Both groups expressed a desire not to have waste from outside London be disposed of at the W12A Landfill unless the originating communities had appropriate waste diversion programs in place and diversion levels similar to or higher than London.

It is noted that City Council will have the authority to determine which, if any, municipalities within the proposed service area are allowed to use the W12A Landfill in the future. Consideration will be given to the most appropriate ways for managing waste at the W12A Landfill, including placing restrictions on waste from the expanded service area, as part of the technical assessments to be undertaken during the environmental assessment. Restrictions on waste from the expanded service area could be included in the environmental assessment approval or by a by-law enacted by Council.

As of September 10, 2018, no comments were received as a result of the advertisement for the September 25, 2018 Public Participation Meeting for the Proposed Terms of Reference.

Summary
The Draft Proposed ToR was revised to address the 86 comments received. The resulting Proposed ToR contains a number of changes but no changes to the key elements of the undertaking which are:

- Expansion of the W12A Landfill to provide capacity for a further 25 years;
- 60% residential waste diversion by the end of 2022;
- Expansion of the service area to include neighbouring municipalities (Elgin, Huron, Lambton, Middlesex and Perth Counties); and,
- Reduction in the maximum allowable annual tonnage that can be accepted at the landfill from 650,000 tonnes to 500,000 tonnes (It is noted that the annual rate of fill limit includes a 20% contingency allowance for annual variation due to changing economic conditions, populations projections, natural disasters, etc.).

ACKNOWLEDGEMENTS

This report was prepared with assistance from Mike Losee, Division Manager, Solid Waste Management and Jane Kittmer, Solid Waste Planning Coordinator.

PREPARED BY:	
WESLEY ABBOTT, P. ENG. **PROJECT MANAGER** **SOLID WASTE MANAGEMENT**	
PREPARED AND SUBMITTED BY:	**RECOMMENDED BY:**
JAY STANFORD, M.A., M.P.A. **DIRECTOR, ENVIRONMENT, FLEET & SOLID WASTE**	**KELLY SCHERR, P.ENG., MBA, FEC** **MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER**

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Appendix A: Executive Summary – Proposed Terms of Reference

Volume 1 - Proposed Terms of Reference (under separate cover)

Volume 2 – Supporting Documents (on-line at *getinvolved.london.ca/WhyWasteDisposal*)

Volume 3 – Record of Consultation (on-line at *getinvolved.london.ca/WhyWasteDisposal*)

Appendix A

Executive Summary – Proposed Terms of Reference

Executive Summary

Phase 1: Preparation of a Terms of Reference:

An Individual Environmental Assessment (EA) for expansion of the W12A Landfill site is being undertaken by the City of London and requires approval under the provincial *Environmental Assessment Act*. The first phase in the EA process is preparation of a Terms of Reference (ToR). Work on the ToR started in March, 2017. The ToR becomes the framework for carrying out the EA.

This is an Executive Summary of the content of the proposed ToR, which has been prepared by the City and will be circulated to government review agencies, Indigenous communities, a number of City committees and the public for comment. The comments received will be considered by the City of London in making revisions and preparing the proposed ToR, which will then be submitted to the Minister of Environment, Conservation and Parks (Minister) for a decision. Once approved by the Minister, the ToR provides the framework or work plan that must be subsequently completed to prepare the EA, and the basis for review and approval.

The City of London has implemented many waste diversion programs over the years and has achieved 45% diversion of its residential waste stream (Figure 1). This diversion rate is comparable to other medium to large size municipalities in Ontario with the exception of communities with Green Bin programs. The City has commenced the development of its long-term Resource Recovery Strategy. The first component of the strategy is to complete a 60% Diversion Action Plan to determine how best to increase residential waste diversion to 60% by 2022.

Figure 1 - Residential Waste Diversion

In parallel, and recognizing that despite measures to maximize diversion there will still be waste requiring disposal, expansion of the W12A Landfill site is the approach the City is taking for the long term Residual Waste Disposal Strategy for materials that cannot be diverted.

The W12A Landfill Site

Figure 2 - W12A Landfill Location

The W12A landfill site is located in the south portion of the City of London, within the western part of the block of land bounded by Manning Drive, Scotland Drive, White Oak Road and Wellington Road South (Figure 2). The site is currently licensed by the Province of Ontario to dispose of waste within a 107 hectare disposal area, which is located within a 142 hectare property. There is an approved site capacity of 12,500,000 cubic metres for waste (about 10,000,000 tonnes), cover soil and final cover. The site is allowed to accept solid non-hazardous waste from a specified area, consisting of the City of London, the Municipality of Thames Centre, the Lake Huron and Elgin Area water treatment plants and Try Recycling Facilities located adjacent to the City's northern boundary. The site can also accept Municipal Hazardous or Special Waste from the City of London, the County of Elgin and the County of Middlesex for transfer off-site for recycling or disposal. The areas described above are referred to as the site's current service area.

The landfill property is located within the Waste Management Resource Recovery Area, which is a large area of City-owned land identified within the City's Official Plan for future waste management facilities. A City-owned Material Recycling Facility (MRF) is located within these lands just east of the landfill site.

The W12A Landfill Site has been in operation since 1977. The majority of the wastes that it receives are from London residences and some businesses. The remainder of the businesses within the city export their waste for disposal to facilities outside the City. As of January 2018, the remaining approved airspace is approximately 2.5 million m^3, which is equivalent to approximately 1.85 million tonnes of disposal capacity. At current disposal rates, the W12A Landfill is expected to reach its approved capacity at the beginning of 2025.

The landfill is divided into two phases (Figure 3). Phase 1 occupies the eastern portion of the disposal area and was filled to capacity in the first 25 years of operation. Phase 2 occupies the remaining western portion and has been constructed with a number of engineering design and operational upgrades (i.e., modern landfill design), and is the active area being used for

the residual waste materials generated and requiring disposal. There are engineered collection systems for the leachate (the contaminated liquid produced by precipitation contacting the waste) produced at the site.

Figure 3 - W12A Landfill

For Phase 1 there is a leachate collection system around the perimeter of the disposal area, while for Phase 2 there is a full underdrain collection system below the entire base area. The collected leachate is sent off-site through a piping system for treatment at the Greenway Wastewater Treatment Plant. There is an active landfill gas collection system installed within the completed areas that have received final cover. The collected gas is flared. This gas management system reduces greenhouse gas and odour emissions from the landfill site. There is also a stormwater management system to control the quality and quantity of runoff discharged from the site.

The landfill property and surrounding area is underlain by an extensive deposit of low permeability clayey glacial till soil that provides a natural barrier to control migration of leachate into the groundwater. There are two permeable aquifer zones within the till deposit that are used for water supply from private wells by residences, agricultural and other business purposes in this rural area of the City.

Based on the results from ongoing groundwater and residential well monitoring programs, there is no evidence of leachate effects on the aquifer zones and the W12A Landfill is operating in accordance with the province's requirements in terms of effects on groundwater quality at the property boundary. The W12A Landfill is not having an effect on off-site water well quality.

The ongoing surface water quality monitoring program indicates that the surface water discharged via the stormwater management system meets provincial requirements. The landfill gas monitoring program indicates that landfill gas is not migrating off-site through the subsurface.

Rationale for Expanding the W12A Landfill Site

Since 1969, the City has undertaken a number of waste management planning studies to be able to provide secure, long-term waste management infrastructure for the city. The continued operation of the W12A Landfill site has been a component of the City's long-term plan to provide waste management services since 1977. In 1991 a provincially-appointed arbitrator addressed the City's request to annex additional lands in the Township of Westminster. The arbitrator reported that the W12A Landfill was the most desirable location for a landfill site and that the adjacent lands were likely suitable for an additional landfill site. In the City's 'Vision 96' strategic planning process, it was concluded that the W12A Landfill was a key component of the City's long-term waste management infrastructure.

From 1995 to 1999 the City of London and County of Middlesex were involved in a cooperative long term waste management planning exercise referred to as the London/Middlesex Waste Management plan. This project was 50% funded by the Province. Outcomes of the planning exercise included the approval of the City's long term strategy known as the Waste Management Continuous Improvement System and expansion of the City's Household Special Waste depot to serve the County of Middlesex.

The City commenced the W12A Landfill Area Plan study process in 2005 to study the evolution of the W12A Landfill facility within an overall integrated waste management centre with a planning horizon of 40 years. The study compared seven alternatives that included closing the W12A Landfill and either establishing a new landfill within London or exporting the waste for disposal outside its boundaries, and expanding the W12A Landfill. Technical background studies were completed for the area studied, which was bounded by White Oak Road, Wellington Road South, Scotland Drive and Manning Drive (Figure 2). The alternatives were evaluated and compared qualitatively based on the categories of natural environment, social/cultural, technical/economic and regulatory/administrative. Both numeric and qualitative rating and ranking were applied to the evaluation. This study, which included public consultation events, concluded in 2008 and identified the preferred approach as an integrated resource recovery centre including expansion of the W12A Landfill. This was

followed by establishment and designation of the Waste Management Resource Recovery Area in the City's Official Plan, and additional public consultation to develop a Community Enhancement and Mitigative Measures Program to involve the community in the site operations and to benefit the community in the area of the landfill site. Expansion of the W12A Landfill site remains the preferred approach for the City's Residual Waste Disposal Strategy.

Previous waste management studies concluded that expansion of the W12A Landfill is the most appropriate disposal option. Consequently, the City is proposing not to look at other disposal alternatives as part of the EA.

It is proposed that additional assessment of long-term waste disposal alternatives (known as 'Alternatives To' the undertaking) will not be part of the EA.

Description of the Project

Based on previous community engagement activities and ongoing input received, Guiding Principles were developed by the City and approved by City Council to direct the development of the Residual Waste Disposal Strategy. Among these guiding principles, the most support was received for making waste reduction the highest priority, being socially responsible and ensuring that the solution is financially sustainable. In addition, there was support for London managing its waste within its own boundaries.

The W12A Landfill site expansion project will be defined by:

- A 25 year planning period beyond 2025, i.e., until 2050.
- The service area will be expanded to neighbouring municipalities to create a regional service area: The City of London and the Counties of Huron, Perth, Elgin and Lambton and Middlesex will be included in the regional service area. The City of London Council will have the authority to decide which, if any, of these other municipalities will be allowed to use the W12A Landfill for disposal of their wastes, and under what conditions.
- Reduction in the maximum allowable annual tonnage that can be accepted at the landfill from 650,000 tonnes to 500,000 tonnes.
- Achieving 60% residential waste diversion by 2022.

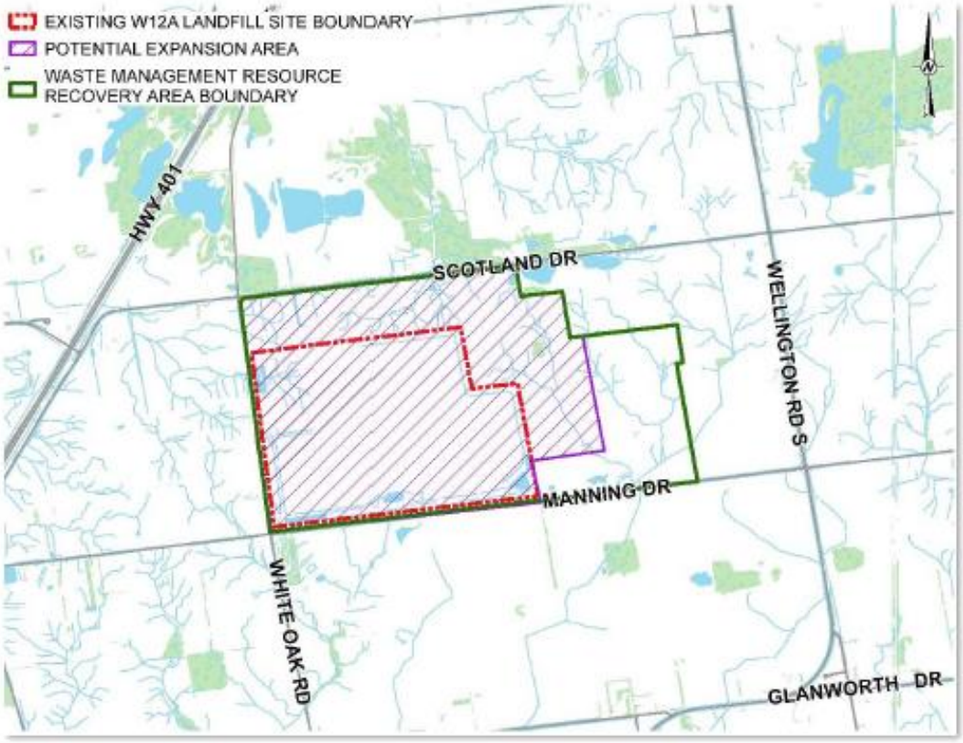
At current disposal rates, the site is expected to reach its approved capacity at the beginning of 2025.
An additional 13,600,000 cubic metres of airspace at the W12A Landfill site, which will about double the current approved capacity, will be required to satisfy disposal requirements for residual waste for the next 25 year period.

To satisfy these disposal requirements, expansion of the W12A Landfill should allow for an additional landfill capacity of 13,600,000 cubic metres.

The different ways in which this additional airspace can be achieved on the W12A Landfill site are known as 'Alternative Methods'. The alternative methods of expanding the W12A Landfill site will be developed and described during the EA and will consist of a vertical expansion above the existing waste disposal area and/or a horizontal expansion to the north and/or to the east within a portion of the Waste Management Resource Recovery Area (Figure 4).

The area proposed for horizontal expansion extends beyond the current landfill site about 300 metres northward to Scotland Drive, and eastward about 420 metres. These expansion alternatives will consist of variations in and combinations of landfill height, landfill area and configuration. Different landfill expansion alternatives will be developed at a conceptual level to cover the range of possible alternatives whose characteristics are different enough for comparison purposes, their potential effects on the environment will be assessed, and the alternatives then compared to identify the overall preferred expansion alternative.

Figure 4 – Potential Expansion Area



Phase 2: Environmental Assessment

The EA work will be undertaken in a series of nine steps:

Step 1 – Characterize the existing environmental conditions

Step 2 – Identify the 'Alternative Methods' of landfill expansion (and incorporate conceptual design mitigation measures)

Step 3 – Qualitative evaluation of 'Alternative Methods'

Step 4 – Compare the 'Alternative Methods' for landfill expansion and identify the preferred alternative

Step 5 – Determine the net effects of the preferred alternative

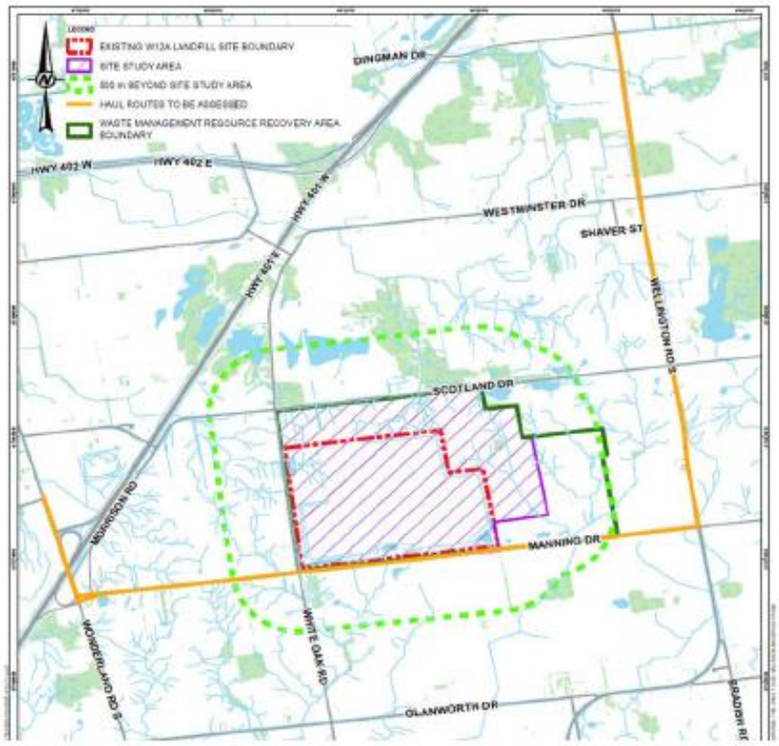
Step 6 – Describe the preferred 'Alternative Method' for landfill expansion;

Step 7 – Consideration of climate change

Step 8 – Cumulative Impact Assessment

Step 9 – Preparation of the EA Study Report

Figure 5 – Proposed Study Areas



Consultation (community engagement) with the public, Indigenous communities, Government review team members, City of London Advisory Committees, and other stakeholders will be ongoing throughout the EA process.

The EA study area is the area within which activities associated with the proposed project will occur and where potential environmental effects will be studied. Three preliminary generic study areas (Figure 5) for the assessment, which may be refined and will be confirmed during the EA, have been identified as follows:

Site Study Area – The existing W12A Landfill Site, located at 3502 Manning Drive and adjacent lands where landfill expansion may occur.

Site-vicinity Study Area – The lands in the area immediately adjacent to the Site Study Area that have the potential to be directly affected by the landfill expansion and activities with the Site Study Area. The extent of the Site-vicinity Study Area will be determined for each of the environmental components. For most environmental components, a Site-vicinity Study Area of 500 metres from the Site Study Area is appropriate.

Wider Study Area – An area that takes on the broader community generally beyond the immediate site vicinity and for specific environmental components may include the entire Municipality.

The components and sub-components of the environment that will be evaluated during the EA such that the potential effects of the proposed landfill expansion alternatives are determined and compared using a set of comparative evaluation criteria, are:

Environmental Components:	Atmosphere (air and noise)
	Geology and Hydrogeology (groundwater quality)
	Surface Water (quality and quantity)
	Biology (aquatic and terrestrial)
Socio-Economic Components:	Land Use
	Agriculture
	Archaeology and Cultural Heritage
	Socio-economic
	Visual Impacts
Technical Components:	Design & Operations
	Transportation

The ToR provides technical work plans for each of these components and sub-components that will be undertaken during the EA study.

Consultation (Community Engagement)

The ToR describes the Community Engagement Program prepared and undertaken by the City for the development of this ToR, as well as the program proposed for the subsequent EA process.

Engagement and consultation with the public and other stakeholders is a key component of the EA process. It enables stakeholders to participate in the planning process and enhance the quality of the project. The key instruments in the Community Engagement Program that were used to engage the public and the other stakeholders and elicit feedback during the ToR preparation are summarized in Table 1. Input received from this program was considered by the City in preparing the proposed ToR.

A list of potentially affected Indigenous communities was developed in consultation with the Ministry of Environment, Conservation and Parks (MEPC) during the development of this ToR. A program to engage and consult with the eight identified Indigenous communities was carried out considering their specific needs and specific issues. The Indigenous communities were consulted on how they would like to be involved in the EA process. City staff were available to meet with interested Indigenous communities and discuss the proposed project at any time during the development of the ToR.

Table 1 - Key Community Engagement Activities Between March 2017 and January 2018

Community Engagement Activity	Comments
Open Houses	• Two sets of open houses (one in May, one in November 2017) • Each set had an afternoon and evening sessions at two locations plus a follow-up virtual open house on the project website
W12A Landfill Public Liaison Committee	• Existing committee • Provided updates at six meetings
City of London Advisory Committees	• Advisory Committee on the Environment, Agricultural Advisory Committee and Environmental and Ecological Planning Advisory Committee • Attended and presented at two meetings for each advisory committee
Community Liaison Committee	• New committee with members representing various stakeholder groups • Four meetings
Community Events	• Booth at 10 community events (e.g., Sunfest, Lifestyle Home Show, etc.)

Community Engagement Activity	Comments
Project Website	• Getinvolved.London.ca/WhyWasteDisposal • Over 1,300 unique visitors
Letter/email correspondence	• Contacted 275 nearby property owners and residents, 28 landfill customers, 15 stakeholder groups and over 30 government agencies on three occasions (Notice of Commencement and both sets of open houses)
Newspaper and social media advertisements	• Numerous ads at various point in the process

To assist in the comparative evaluation of the expansion alternatives during the EA, the public was asked at open house #2 to rank the environmental components that they considered more important, important and less important. Based on the input received, groundwater quality, aquatic ecosystems and terrestrial ecosystems were the environmental components identified as most important, while cultural heritage landscapes, cultural heritage resources and archaeology were ranked less important.

Following approval of this ToR and during preparation of the EA, a consultation program will be continued to engage the public, businesses, the Government review team, Indigenous communities, as well the various groups and committees during the EA process. Input will be obtained through a number of engagement activities, which will be generally similar to the activities completed during preparation of the ToR.

The Draft EA will be circulated for a seven week public comment period prior to finalization and submission to the MECP for approval. In addition, consultation specific to individual Indigenous communities will also be carried out.

Other Regulatory Approvals

In addition to EA approval, the W12A Landfill expansion will also require approvals under the *Environmental Protection Act*, the *Ontario Water Resources Act* and the *Planning Act*, and perhaps from the Upper Thames and Kettle Creek Conservation Authorities in terms of a permit to undertake specific works associated with the expansion. These approvals processes are expected be undertaken after EA approval is in place.

Overview of the EA Schedule

The following schedule is anticipated:

Circulation of Draft ToR for public and agency review	April/June 2018
Submission of Proposed ToR for Minister's Approval	October 2018
Approval of ToR	Early 2019
EA Studies and EA Submission for Minister`s Approval	2019 and 2020
Approval of EA	Mid-2021
Other Approvals	2021-2022

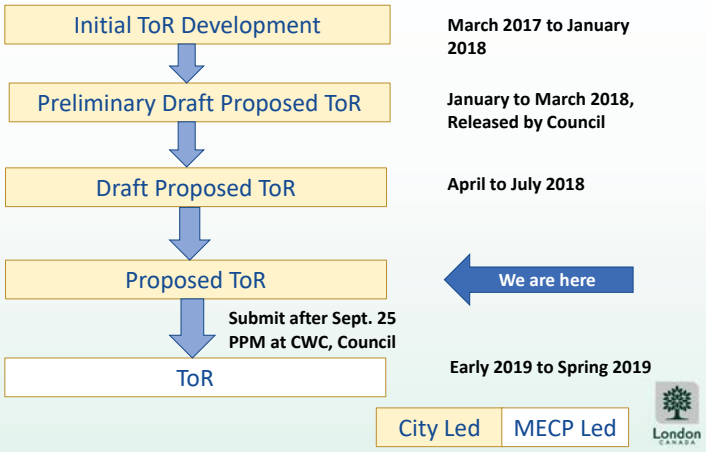
It is anticipated that all approvals will be in place to allow final design of the preferred landfill expansion and any required construction prior to the W12A Landfill reaching its currently approved capacity, which is predicted at the beginning of 2025.

Proposed Terms of Reference Expansion of the W12A Landfill

Civic Works Committee

September 25, 2018

1. ToR Process (Develop)



2:ToR Overview (Disposal Method)

Expansion of the W12A Landfill is the most appropriate disposal option based on previous waste plan studies (2008)


The Corporation of the City of London

W12A LANDFILL AREA PLAN

REPORT

OCTOBER 2008

2: ToR Overview (Diversion)

2: ToR Overview (Planning Period)

Plan for additional 25 years
(2025 – 2050)

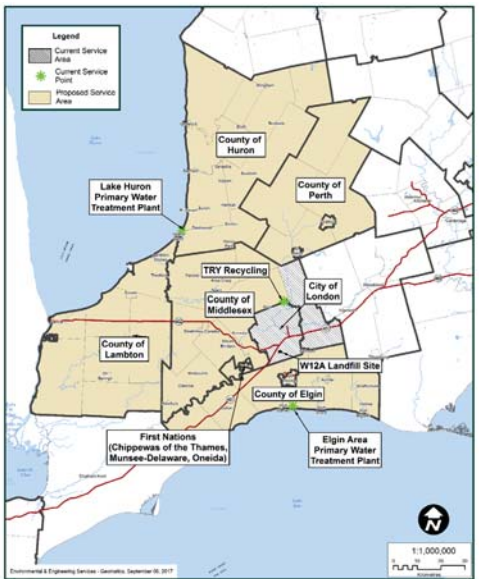
- Maximum supported by MECP staff
- The London Plan in effect until 2035
- Waste disposal security for at least 6 terms of Municipal Council
- Consistent with *Waste-Free Ontario Act*

2: ToR Overview (Limit on Annual Tonnage)

- Current limit = 650,000 tonne/year
- **Proposed limit = 500,000 tonne/year**

Consideration	Average (Tonnes)	Peak (Tonnes)
Existing Service Area	370,000	380,000
Expanded Service Area	24,000	40,000
Contingency	-	80,000
Total	**-**	**500,000**

2: ToR Overview (Regional Service Area)



3. Summary of Comments GRT

Stakeholder		Comments #	Comments Subject
GRT	MECP (Environment, Conservation & Parks)	40	EA Process/ General
		10	Air Quality
	MTCS (Tourism, Culture & Sport)	6	Archaeology & Built Heritage
	MTO (Transportation)	5	Transportation
	KCCA	7	Surface Water
Public	Written comments (1 person)	12	General
	Project website (6 persons)	6	General
Total		86	

3. Summary of Comments - GRT

No change/wording/clarification (81)

Minor changes to propose EA (5)

- Air quality study - emission rates
- Alternatives methods (expansion alternatives) to be finalized in EA
- 2 additions to “list of commitments”
- Reduction in estimate residual waste coming from expanded service area

3. Summary of Comments - Stakeholders

WMCLC and W12A Landfill PLC

- Do not want W12A Landfill become “dumping ground” for other municipalities
- Better control of nuisance impacts

What can be done?

- Restrictions can be put in place via EA approval or by Council By-law
- Address during EPA design and investment

Waste Management Community Liasion Community & W12A PLC

Comments on the Draft Proposed Terms of Reference for the Environmental Assessment of the Proposed W12A Landfill Expansion

Comments

The Waste Management Community Liaison Community supports the landfill expansion, but does note that the community surrounding the landfill would prefer not to see an expansion.

Our feedback...

The concern is one of other municipalities being allowed to bring waste to our landfill. If Council is the ultimate decision maker on whether another municipality is allowed to use our landfill, we request:

- That there be in place some kind of Policy and/or By-Law that other municipalities must adhere to London's diversion criteria and that Council cannot override this criteria for any such dumping purpose ie - financial.

TO:	**CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON SEPTEMBER 25, 2018**
FROM:	**KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER**
SUBJECT:	**PUBLIC PARTICIPATION MEETING 60% WASTE DIVERSION ACTION PLAN – ADDITIONAL INFORMATION**

RECOMMENDATION

That on the recommendation of the Managing Director, Environmental & Engineering Services and City Engineer, the following actions be taken:

a) This Report and additional public input **BE RECEIVED** for information;

b) The 60% Waste Diversion Action Plan (Action Plan) containing programs and initiatives to be phased in between 2019 and 2022 to achieve 60% waste diversion **BE APPROVED**;

c) Civic Administration **BE DIRECTED** to refine cost estimates, develop implementation plans, determine operational requirements and draft an implementation schedule for the Action Plan taking into consideration available financial and staffing resources; and

d) Civic Administration **BE DIRECTED** to examine financing options for the Action Plan and submit final cost estimates and the draft Implementation Plan to Civic Works Committee and Council in early 2019, it being noted that any additional funding required would be considered alongside other funding requests as part of the 2020-2023 Multi-year budget process.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

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

- 60% Waste Diversion Action Plan (July 17, 2018 meeting of the Civic Works Committee (CWC), Item #3.1)
- Update and Next Steps – Resource Recovery Strategy and Residual Waste Disposal Strategy as part of the Environmental Assessment Process (February 7, 2017 meeting of the CWC, Item #10)

Relevant reports that can be found at www.london.ca under City Hall (Meetings – Advisory and other Committees) include:

- Decision Report #8 – 60% Waste Diversion Action Plan (July 13, 2018 meeting of the Waste Management Working Group (WMWG), Item #2.1)
- Background Report #3 - Development of 60% Waste Diversion Action Plan (March 8, 2018 meeting of the WMWG, Item #3.3)
- Update Report #8 - Programs, Projects and Provincial Activities that will Inform and/or Influence Strategies (January 18, 2018 meeting of the WMWG, Item #8)
- Update Report #5 - Programs, Projects and Provincial Activities that will Inform and/or Influence Strategies (September 28, 2017 meeting of the WMWG, Item #7)
- Update Report #2 - Programs, Projects and Provincial Activities that will Inform and/or Influence Strategies (June 14, 2017 meeting of the WMWG, Item #8)
- Update Report #1 - Resource Recovery Update (January 19, 2017 meeting of the WMWG, Item #7)

COUNCIL'S 2015-2019 STRATEGIC PLAN

Municipal Council has recognized the importance of solid waste management in its 2015-2019 - Strategic Plan for the City of London (2015 – 2019 Strategic Plan) as follows:

Building a Sustainable City
- Strong and healthy environment
- Robust infrastructure

Growing our Economy
- Local, regional, and global innovation
- Strategic, collaborative partnerships

Leading in Public Service
- Proactive financial management
- Innovative & supportive organizational practices
- Collaborative, engaged leadership
- Excellent service delivery

BACKGROUND

PURPOSE

This report seeks approval of the 60% Waste Diversion Action Plan ("Action Plan") and approval to proceed with the development of an implementation plan(s) and examine financing options and to report back in early 2019.

The Action Plan was previously provided as part of the July 17, 2018 Agenda.

CONTEXT

In London, more than one tonne of waste is produced annually per person. This includes waste generated at home as well as waste generated by the industrial, commercial and institutional (IC&I) sectors. About a third of this waste is diverted through numerous waste reduction, reuse, recycling and composting programs. The overall waste diversion rate for London is between 30% and 35%. The residential (household) diversion rate is 45%.

To plan for the future, the City is developing a long term Resource Recovery Strategy. The Resource Recovery Strategy involves the development of a plan to maximize waste reduction, reuse, recycling and resource recovery in an economically viable and environmentally responsible manner. The Resource Recovery Strategy includes a commitment by City council to increase the residential waste diversion rate to 60% by the end of 2022. This commitment was made at the October 30, 2017 City Council meeting by passing the following resolution:

> *"The W12A Landfill expansion be sized assuming the residential waste diversion rate is 60% by 2022 noting this does not prevent increasing London's residential waste diversion rate above 60% between 2022 and 2050."*

The overall Resource Recovery Strategy will look at the longer term steps the City could take to move beyond 60% waste diversion.

At its July meeting, Council received the Action Plan as well as a CWC report summarizing the Action Plan and its benefits and costs. The highlights of the Action Plan are found in Appendix A including the 21 actions that will be necessary to achieve 60% diversion. The following actions were approved by Council with respect to the Action Plan:

- Approved for release for review and comment by the general public and stakeholders; and,
- Directed staff to hold a Public Participation Meeting on the Action Plan at its September meeting.

DISCUSSION

Community Engagement – March 2017 to June 2018
The Action Plan proposes a set of 21 actions to achieve 60% waste diversion. These actions are listed in Appendix A and were developed with wide-ranging community engagement between March 2017 and June 2018. The community engagement program is summarized in Table 1 with comprehensive details contained in the Action Plan. Quite often this process ran in parallel with the community engagement process for the development of the Terms of Reference for the proposed W12A Landfill expansion.

Table 1 – Community Engagement Activities
During Development of 60% Waste Diversion Action Plan

Activity	Description
Project Website (*Getinvolved. London.ca*)	• Project website provided up-to-date information on the Resource Recovery Strategy and the 60% Waste Diversion Action Plan and provided feedback opportunities. • Two virtual Open Houses were held on the website. • Total visits exceeded 3,300 with over 2,400 unique visitors.
Booths at Community Events to Provide Information and Receive Feedback	• Gathering on the Green – June 3, 2017 • Public Screening of the Big Leak (Wolf Performance Hall) – June 5, 2017 • Canada 150 London Sesquifest (Budweiser Gardens) on June 29 – July 1, 2017 • TD Sunfest (Victoria Park) on July 6 – July 9, 2017 • Home County Folk Festival (Victoria Park) on July 15 and July 16, 2017 • Inspiration Fest (Wortley Village) on July 23, 2017 • Gathering on the Green 2 (Wortley Village) on August 20, 2017 Neighbourhood Service Days (Northwest London Resource Centre, Glen Cairn Community Centre, Family Centre Argyle, Westmount Family Centre and Crouch Neighbourhood Resource Centre) on August 28 – August 31 and September 5, 2017
Community Groups	• Presentation to the Lambeth Rotary Club on August 8, 2017
Open Houses	• Two open houses provided up-to-date information on the Resource Recovery Strategy and provided feedback opportunities.
Lifestyle Home Show at Western Fair (January 26 to January 28, 2018)	• Feedback was sought from residents regarding potential waste diversion options and how much they would be willing to pay for each option. • Over 500 residents provided feedback.
Indigenous Communities	• Information provided to nine local Indigenous Communities on a regular basis. • Two meetings with the Chippewas of the Thames First Nation.
Community Liaison Committee (CLC)	• Met with the CLC five times to discuss the Resource Recovery Strategy and 60% Waste Diversion Action Plan.
W12A Public Liaison Committee (PLC)	• PLC Committee is updated on the Resource Recovery Strategy and 60% Waste Diversion Action Plan at every bi-monthly meeting
Other Advisory Committees	• Presentations and regular updates provided to the Waste Management Community Liaison Committee, Advisory

Table 1 – Community Engagement Activities During Development of 60% Waste Diversion Action Plan

Activity	Description
	Committee of the Environment, Agricultural Advisory Committee and the Environmental and Ecological Planning Advisory Committee.
IPSOS Survey	• Survey undertaken by Ipsos Public Affairs between May 31 and June 4, 2018. Surveyed 301 residents.
Other	• Advertise on social media (e.g., Facebook) • Advertise in the print and on-line media • Media coverage in the London Free Press, on CTV and radio (CKBK 1290, CBC London, AM 980)

Community Engagement – July to September 2018

The community engagement activities since the release (July 24, 2018) of the 60% Waste Diversion Action Plan are summarized in Table 2.

Table 2 – Community Engagement for Draft 60% Waste Diversion Action Plan

Community Engagement Activity		Outcome
Provide feedback opportunities on WhyWaste Resource Recovery Strategy website	• Advertised feedback opportunities in print and on-line media (e.g., London Free Press, The Londoner and Latino) • Advertised feedback opportunities on social media (e.g., Facebook) • Advertised feedback opportunities on radio and CTV • Notified persons on project contact list (about 250) of feedback opportunities	• 92 persons completed an on-line feedback form and comments were provided by 62 residents at the time of preparing this report (as of September 10, 2018) • Feedback is generally supportive of Action Plan • Summary of all feedback will be provided at the Public Participation meeting
Circulation and Presentations to Community Stakeholder Groups	• Circulate and ask for feedback from Waste Management Community Liaison Committee (WMCLC), W12A Landfill Public Liaison Committee, Urban League and Advisory Committee on the Environment (ACE) • Presentation to WMCLC on August 20, 2018 • Presentation to ACE on September 5, 2018	• Expect some of the stakeholder groups to attend the PPM and provide comments
Circulate to Waste Management/ Recycling Companies	• Circulate and ask for feedback from local companies including Emterra, Green Valley Recycling, Miller Waste, Orgaworld, StormFisher, Try Recycling, Waste Connections and Waste Management	• No comments received at the time of preparing this report.
Attendance at Community Event	• Attend Gathering on the Green II, Sunday, August 19, 2018	• 51 written comments plus numerous conversations with the public • Overwhelming support for Green Bin • Support for downtown and business recycling

Summary of Recent Community Engagement (July to September 2018)
Contained in Appendix B are the results of WhyWaste website on-line feedback form at the time of preparing this report. Highlights include:

- General support for the overall plan at 76% (67% Strongly Support and 9% Support);
- New recycling and composting initiatives were considered Somewhat Important to Very Important by 65% to 90% of respondents depending on the initiative;
- Green Bin was considered Very Important by 70% of respondents with 24% indicating Not Important;
- Implement a mixed waste processing pilot (to recover organics and other materials) on a portion of the waste from multi-residential homes was considered Very Important by 70% of respondents with 14% indicating Not Important;
- 75% of respondents considered reducing container limits to be Somewhat Important to Very Important; and
- Mixed support for user pay (fees) and clear bags for garbage.

Conclusion
Based on the input received to develop the Action Plan, the IPSOS Public Affairs survey and the most recent feedback received by the community between July and September, City staff are not recommending any changes at this time.

Next Steps
It is recommended that staff proceed with developing an overall implementation plan (containing many different plans) for the Action Plan including examining financing options. Further details are provided below.

<u>Implementation Plan</u>
The implementation plan would:

1) Determine Operational Requirements
    - Consider Blue Box Program changes that would facilitate future transition to Individual Producer Responsibility (industry responsibility)
    - Confirm collection requirements and end markets for new recycling and expanded recycling programs (for bulky items and other non-Blue Box materials).
    - Recommend Green Bin operational parameters (see Table 3)
    - Explore availability of mixed waste processing capacity for multi-residential pilot program
    - Determine operational parameters and potential partners for food waste avoidance, community composting and home composting programs
    - Develop more detailed information on potential waste reduction and reuse initiatives and polices

Table 3 - Green Bin Operational Decisions

Operational Decisions	Options
What is collected?	• Commonly collected organics (food waste and tissues/paper toweling) • Yard waste (none or top up cart) • Other organics (pet waste and sanitary products)
How it is collected?	• Co-collected with garbage • Separate collection vehicles (e.g., one person side loaders)
Who processes material?	• Private facility • Pre-process at Waste Management Resource Recovery Area and ship to anaerobic digester • Build City facility operated by the private sector
Bin size	• Small (35 to 45 litre) • Medium (50 to 60 litre) • Large (greater than 60 litre); will require semi-automatic or automatic collection

continued on next page

Table 3 - Green Bin Operational Decisions

Operational Decisions	Options
Liners/bags	• Paper (paper bags, paper towels, newspaper) • Compostable plastics • Plastics (typically only allowed if collecting pet waste and/or sanitary products)

2) Refine Cost Estimates
   - Develop more detailed cost estimates based on the proposed operational requirements from step 1 above
   - Refine annual costs by year between 2020 and 2022, noting that no additional budget is required for 2019. Any future additional funding required would be considered alongside other funding requests as part of the 2020-2023 Multi Year Budget process.

3) Prepare Implementation Schedule
   - List key tasks for the proposed 21 actions
   - Develop a schedule to have the new programs and initiatives implemented by the end of 2022 taking into consideration available financial and staffing resources

Financing Options

Different financing options would be examined including identifying any potential optimization savings, tax levy financing, implementing partial or full user fees, funding from other sources (e.g., increased landfill tipping fees, savings from transition of the Blue Box program to industry, etc.) and/or the potential for development charges funding.

ACKNOWLEDGEMENTS

This report was prepared with assistance from Anne Boyd, Manager, Waste Diversion Programs; Jane Kittmer, Solid Waste Planning Coordinator; and Jessica Favalaro, Water Demand Technologist.

PREPARED BY:	**PREPARED BY:**
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PREPARED AND SUBMITTED BY:	**RECOMMENDED BY:**
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Appendix A - Highlights - 60% Residential Waste Diversion
Appendix B - Results of Community Feedback on the 60% Waste Diversion Action Plan

Appendix A
Highlights - 60% Residential Waste Diversion

The 60% Highlights

This has been prepared as a quick 'snap shot'. By nature of its size, it focuses on "the facts". The full report contains a 7 page Executive Summary and explains more. The full report contains an additional 80 pages and is supported by over 150 pages in appended details.

Background

To plan for the future, the City is developing a long term Resource Recovery Strategy. The Resource Recovery Strategy includes a commitment by City Council to increase the household waste diversion rate from 45% to 60% by the end of 2022. This report, 60% Waste Diversion Action Plan, details the actions required to meet this commitment.

How much waste?

Curbside homes make up about 70% of London's households and generate about 61,000 tonnes of the residential garbage each year that is collected and landfilled. About 30% of London's households live in multi-residential (apartment/ condominium) buildings and generate approximately 23,000 tonnes of garbage per year.

What is garbage made up of?

A large percentage of what's in the garbage could be composted/digested or recycled. For example, about 60% is primarily organic matter and is compostable/digestible. The organics are made up of food scraps (36% of all waste), non-recyclable paper like paper towel & paper napkins, yard waste, pet waste and sanitary products (e.g., diapers).

Why Waste? Composition – *Did You Know!!*

Top 5 (Groupings)	Estimated tonnes	% of Waste	Kg/hhld/ year
1. Avoidable food waste	19,300	24%	107
2. Unavoidable food waste	10,100	12%	56
3. Pet waste	8,500	10%	47
4. Items for Blue Box/Cart	8,300	10%	46
5. Construction/Reno/Demo	4,700	6%	26
Total	50,900	62%	282

How do we reach 60% waste diversion?

To achieve 60% waste diversion, 21 actions will be phased in between 2019 and 2022.

Blue Box (Blue Cart) Programs
1. Increase capture of recyclables from 63% to 75% (less placed in the garbage)
New (or Expanded) Recycling Programs and Initiatives
2. Bulky Plastics 3. Carpets 4. Ceramics 5. Clothing and Textiles 6. Small Metal (Small Appliances/Electrical Tools/Scrap Metal) 7. Furniture 8. Mattresses
Curbside Organics Management Program
9. Implement a curbside Green Bin program 10. Implement bi-weekly garbage collection

Table continues

Multi-Residential Organics Management Program
11. Implement a mixed waste processing pilot (to recover organics and other materials) on a portion of the waste from multi-residential homes
Other New Organics Management Programs
12. Develop and implement a food waste avoidance strategy 13. Reduce the cost of composters at the EnviroDepots and undertake additional sale events at select community locations 14. Provide financial support to community groups or environmental organizations that want to set up a community composting program
Waste Reduction and Reuse Initiatives and Policies
15. Create a Waste Reduction and Reuse Coordinator position within the Solid Waste Management Division 16. Provide financial support for community waste reduction and reuse initiatives 17. Reduce the container limit to two or three containers per collection when the Green Bin program with bi-weekly garbage collection is operational 18. Further explore the use of clear bags for garbage collection if London does not move to a roll-out cart based garbage collection system 19. Further explore a full user pay garbage system if London moves to a roll-out cart based garbage collection system 20. Further examine other incentive and disincentive initiatives (best practices) from other municipalities (e.g., mandatory recycling by-law, reward systems, user fees, etc.) 21. Provide additional feedback approaches to residents (including how waste reduction and waste diversion are calculated when providing waste management progress reports)

What are the benefits and costs of 60% waste diversion?

By taking the steps outlined in this Action Plan, a number of environmental, social and financial benefits will be achieved:

- increased waste diversion (33% more);
- creation of jobs (between 125 and 170 direct and indirect; within and outside London);
- reduced greenhouse gas emissions (equivalent of removing 4,200 to 6,800 cars);
- reduced landfill impacts;
- better use of material and resources;
- residents will feel satisfaction/pride living in an environmentally progressive community; and
- short-term landfill cost savings.

London has approved landfill capacity until 2025 and has started a landfill expansion project (Environmental Assessment). It is expected that approval of any expansion by the Ministry of Environment, Conservation and Parks (MOECP) would be unlikely unless the City has programs in place to achieve 60% waste diversion. The increase in waste disposal costs will be significant if the City must export its waste to a private landfill elsewhere in Ontario (estimated at $5 to $7 million per year).

Summary of Diversion, Estimated Operating Costs, Schedule, Potential Funding and Capital Costs

Program Category	Diversion Rate		Annual Estimated Operating Cost			Schedule
	Range	Likely	Range	Likely	$/Hhld[a]	
Blue Box Recycling Improvements	1% - 3%	2%	$0	$0	$0	2022 - 2025[b])
New Recycling Programs and Initiatives	0.4% - 0.8%	0.6%	$350,000 - $550,000	$450,000	$2.00 - $3.00	2019[c] - 2021
Curbside Organics Program (Green Bin)	8% - 12%	10%	$3,900,000 - $5,500,000	$5,000,000	$21.75 - $30.50	2020 - 2022
Multi-Res Organics Pilot Program	0.5% - 0.7%	0.6%	$400,000 - $700,000	$500,000	$2.25 – 4.00	2020
Other Organics Programs	0.3%- 0.6%	0.4%	$250,000 - $350,000	$300,000	$1.50 – $2.00	2019[c] - 2021
Reduction & Reuse Initiatives & Policies	1% - 4%	1.4%	$150,000 - $350,000	$250,000	$0.50 - $2.00	2019[c] - 2021
Total[d]	**11% - 21%**	**15%**	**$5,050,000 - $7,450,000**	**$6,500,000 ($36.00)**	**$28.00 - $41.50**	**2019[c] - 2022**

Notes:

a) Based on 180,000 households.

b) The provincial Waste-Free Ontario Strategy calls for full extended producer responsibility (EPR) and/or individual responsibility (IPR) program by 2023 (producers to take full financial and operational responsibility for all Ontario municipal Blue Box programs).

c) 2019 Multi-year budget has $140,000 assigned to new waste diversion initiatives.

d) Totals may not add due to rounding.

Potential Funding Sources

Source	Potential amount	Possible Date	Who Controls	Level of Risk
Full EPR for Blue Box	$1.5 M to $1.8 M	2022 to 2025	Province	Low
Full EPR for Other Programs	$50,000 to $150,000	2023/ 2025	Province	High
W12A Landfill Levy	$250,000 to $1 M	2020/ 2022	City	Low
Total	**$1,800,000 - $2,950,000 ($2,000,000 likely)**			

Estimated Capital Costs

Program Category	Items	Estimated Cost
New Recycling Programs and Initiatives	• EnviroDepot Improvements	$500,000 to $2,700,000
Curbside Organics Management Program	• Green Bin Carts • Kitchen Catchers • Collection Vehicles	$12,000,000
Other Organic Management Programs	• Community composting	$100,000
Waste Reduction, Reuse Initiatives and Policies	• Reuse facilities	$200,000
Total	**$12.5 - $15 million**	

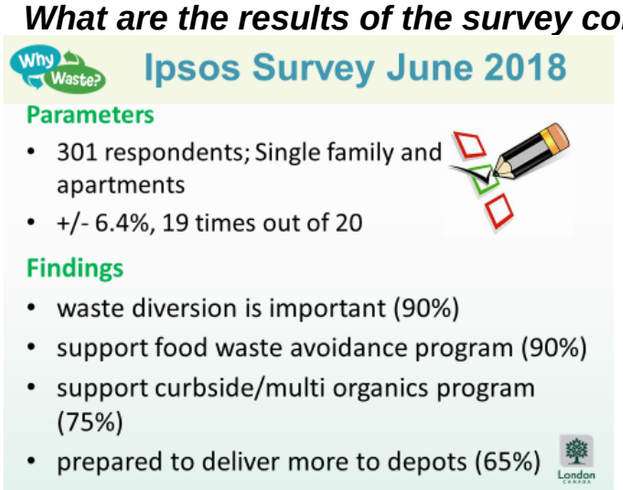
Summary of Estimated Costs and Potential Revenue (Funding)

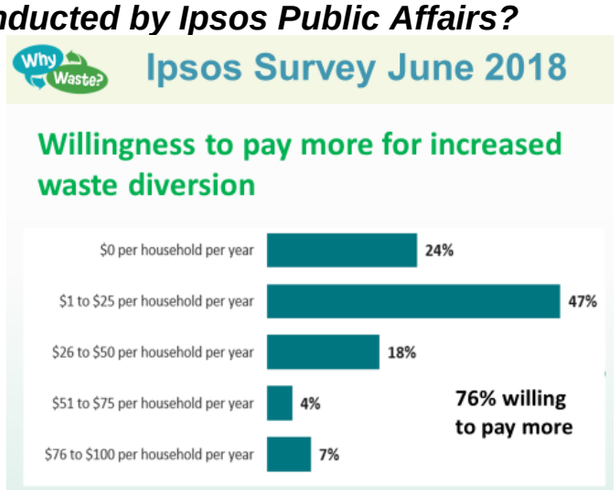
	Low	High	Likely (Anticipated)
Cost	$5,050,000	$7,450,000	$6,500,000
Cost/household	**$28.00**	**$41.50**	**$36.00**
Revenue	$1,800,000	$2,950,000	$2,000,000
Revenue/household	**$10.00**	**$16.50**	**$11.00**
Total Estimated Cost			$4,500,000
Total cost/household			**$25.00**

How has the community been engaged?

Community engagement started in April 2017. The approaches used to engage the public and other stakeholders included open houses, booths at community events, interactions with City of London Advisory Committees, the Why Waste Resource Recovery Strategy website including interactive tools, creation of the Waste Management Community Liaison Committee and newspaper and social media advertisements.

What are the results of the survey conducted by Ipsos Public Affairs?





What are the next steps?

Waste Management Working Group meeting, July 13, 2018
Civic Works Committee meeting, July 17, 2018
City Council meeting, July 24, 2018

Additional Community Engagement

Depending on the decision of Council, the community engagement proposed for the 60% Waste Diversion Action Plan will take place from July 25, 2018 to September 10, 2018, and end with a public participation meeting at Civic Works Committee on September 25, 2018.

Appendix B
Results of Community Feedback on the 60% Waste Diversion Action Plan

Table B-1 – Level of Support for Overall Plan

	Responses (%[a] and #)				
	Strongly Support	**Support**	**Do Not Support**	**Strongly Do Not Support**	**Un-decided**
General					
Considering the requirements, benefits, and costs, do you support or not support the overall 60% Waste Diversion Action Plan.	**67%**	9%	10%	11%	3%
	62	8	9	10	3

Notes: a) May not add to 100 percent due to rounding.

Table B-2 – How Important are the 21 Actions to Achieve 60% Residential Waste Diversion

How Important is this action to you?	Responses (%[a] and #)				
	Very	**Some what**	**Not Very**	**Not at all**	**Don't Know**
Blue Box (Blue Cart) Programs					
1. Increase capture of recyclables from 63% to 75% (less placed in garbage)	**85%**	13%	0%	2%	0%
	67	10	0	2	0
New (or Expanded) Recycling Programs and Initiatives					
2. Bulky Plastics a) Continue with existing pilot project b) Consider implementation of an expanded program once long-term, stable markets have developed	**51%**	34%	11%	4%	0%
	40	27	9	3	0
3. Carpets a) Wait to see if the Province develops a provincial program for carpets under the Waste-Free Ontario Act as there are limited markets for recycling carpets in the province b) If no provincial program exists by 2021, implement a pilot project	**35%**	32%	23%	10%	0%
	28	25	18	8	0
4. Ceramics a) Provide a drop-off location for ceramics at no cost at the City's EnviroDepots b) Ban collection of toilets at the curb	**35%**	33%	15%	15%	1%
	28	26	12	12	1

Table B-2 – How Important are the 21 Actions to Achieve 60% Residential Waste Diversion

How Important is this action to you?	Responses (%[a] and #)				
	Very	**Some what**	**Not Very**	**Not at all**	**Don't Know**
5. Clothing and Textiles a) Develop a textile awareness strategy to promote existing reuse opportunities for all Londoners b) Pilot depot collection at select multi-residential buildings	**46%**	32%	9%	14%	0%
	36	25	7	11	0
6. Small Metal (Small Appliances/Electrical Tools/Scrap Metal) a) Implement semi-annual curbside collection of small metal items b) Pilot depot collection at select multi-residential buildings	**48%**	38%	6%	6%	1%
	38	30	5	5	1
7. Furniture a) Begin semi-annual collection of wooden furniture b) Provide a drop-off location at W12A EnviroDepot for wooden furniture c) Ban wooden furniture from curbside garbage collection	**43%**	39%	11%	5%	1%
	34	31	9	4	1
8. Mattresses a) Wait to see if the Province develops a provincial program for mattresses under the Waste-Free Ontario Act as there are limited markets for recycling mattresses in the province b) If no provincial program exists by 2021, implement a pilot project	**48%**	32%	9%	10%	1%
	38	25	7	8	1
Curbside Organics Management Program					
9. Implement a curbside (residential) Green Bin program	**70%**	3%	4%	24%	0%
	53	2	3	18	0
10. Implement bi-weekly (same day) garbage collection	**46%**	21%	16%	17%	0
	35	16	12	13	0
Multi-Residential Organics Management Program					
11. Implement a mixed waste processing pilot (to recover organics and other materials) on a portion of the waste from multi-residential homes	**43%**	28%	9%	14%	5%
	33	21	7	11	4
Other Organics Management Programs					
12. Develop and implement a food waste avoidance strategy	**50%**	30%	3%	17%	0%
	38	23	2	13	0

Table B-2 – How Important are the 21 Actions to Achieve 60% Residential Waste Diversion

How Important is this action to you?	Responses (%[a] and #)				
	Very	**Some what**	**Not Very**	**Not at all**	**Don't Know**
13. Reduce the cost of composters at the EnviroDepots and undertake additional sale events at select community locations	**37%**	30%	18%	13%	1%
	28	23	14	10	1
14. Provide financial support to community groups or environmental organizations that want to set up a community composting program	33%	**38%**	13%	16%	0%
	25	**29**	10	12	0
Waste Reduction and Reuse Initiatives and Policies					
15. Create a Waste Reduction and Reuse Coordinator position within the Solid Waste Management Division	33%	**36%**	12%	18%	1%
	25	**27**	9	14	1
16. Provide financial support for community waste reduction and reuse initiatives	32%	**39%**	13%	16%	0%
	24	**30**	10	12	0
17. Reduce the container limit to two or three containers per collection when the Green Bin program with bi-weekly garbage collection is operational	**57%**	18%	4%	21%	0%
	43	14	3	16	0
18. Further explore the use of clear bags for garbage collection if London does not move to a roll-out cart based garbage collection system	21%	25%	**26%**	25%	3
	16	19	**20**	19	2
19. Further explore a full user pay garbage system if London moves to a roll-out cart based garbage collection system	26%	21%	17%	**32%**	4
	20	16	13	**24**	3
20. Further examine other incentive and disincentive initiatives (best practices) from other municipalities (e.g., mandatory recycling by-law, reward systems, user fees, etc.)	**34%**	30%	12%	21%	3%
	26	23	9	16	2
21. Provide additional feedback approaches to residents (including how waste reduction and waste diversion are calculated when providing waste management progress reports)	**36%**	41%	5%	14%	4%
	27	31	4	11	3

Notes: a) May not add to 100 percent due to rounding.

Civic Works Committee

September 25, 2018

60% Action Plan Summary

# of Actions	Cost Range *(per Hhld)*	Diversion Range *(Total Diversion)*
21	$5 M to $7.45 M *($28 - $41)*	11% to 21% (56% to 66%)

Program Category	# of Actions	Likely Cost *(per Hhld)*	Likely Diversion
Blue Box/Cart Recycling	1	$0	2%
New Recycling Initiatives	7	$450,000 *($2.50)*	0.6%
Curbside Organics Program	2	$5,000,000 *($27.75)*	10%

60% Action Plan Summary

Program Category	# of Actions	Likely Cost *(per Hhld)*	Likely Diversion
Multi-Res Organics Pilot	1	$500,000 *($2.75)*	0.6%
Other Organic Programs	3	$300,000 *($1.75)*	0.4%
Waste Reduction, Reuse, Policy Initiatives	7	$250,000 *($1.50)*	1.4%
Total	**21**	**$6,500,000 *($36.00)***	**15%**

Estimated Capital Costs

Program Category	Items	Estimated Cost
New Recycling Programs and Initiatives	• EnviroDepot Improvements	$500,000 to $2,700,000
Curbside Organics Management Program	• Green Bin Carts • Kitchen Catchers • Collection Vehicles	$12,000,000
Other Organic Management Programs	• Community composting	$100,000
Waste Reduction, Reuse Initiatives and Policies	• Reuse facilities	$200,000
Total	**$12.5 - $15 million**	

Potential Funding Sources

Source	Potential Amount
Full EPR for Blue Box	$1.5 M to $1.8 M
Full EPR for Other Programs	$50,000 to $150,000
W12A Landfill Levy	$250,000 to $1 M
Total	**$1.8 - $3 million ($2 million likely)**

Benefits - examples

Environmental

- reduced GHG gas emissions (equivalent of removing 4,200 to 6,800 cars)

Social

- creation of jobs (between 125 and 170, direct & indirect)

Financial

- Short term landfill savings; avoid long term waste export costs ($5 to $7 million/year)

Ipsos Survey June 2018

Parameters

- 301 respondents; Single family and apartments
- +/- 6.4%, 19 times out of 20

Findings

- waste diversion is somewhat or very important (93%) with 53% stating very important
- support food waste avoidance program (88%)
- support curbside/multi organics program (75%)
- prepared to deliver more to depots (65%)

Recent Engagement

Next Steps	Comments	Timeline
CWC and Council "Approved for Engagement"	• CWC Meeting – July 17 • Council - July 24	July 2018
Seek Community Feedback on 60% Action Plan	• Interactive WhyWaste website • Circulate to Stakeholder Groups • Attend Gathering on the Green II • Presentations to WMCLC and ACE • Public Participation Meeting (Sept. 25)	July to September, 2018

On-line Feedback - Demographics

What is your age?	
18-34	27%
35-54	44%
55+	28%

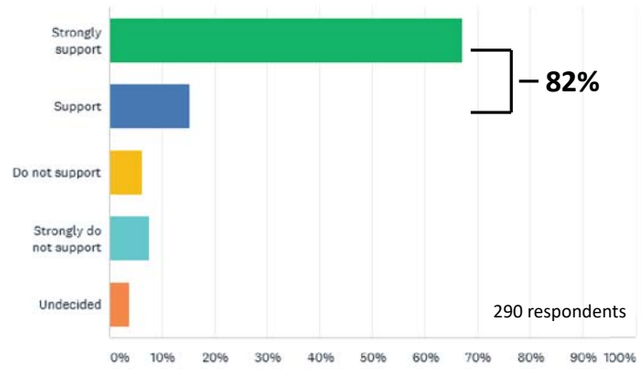
Do you own or rent?	
Rent	15%
Own	83%

In which type of residential property do you live?	
House (SFD, multi)	88%
Apt./Condo	11%
Other	1%

Would you say your total hhld income before taxes is?	
Less than $25,000	4%
$25,000 to <$50,000	9%
$50,000 to <$75,000	17%
$75,000 to <$100,000	18%
$100,000 to <$150,000	20%
$150,000 or more	14%
Prefer not to respond	18%

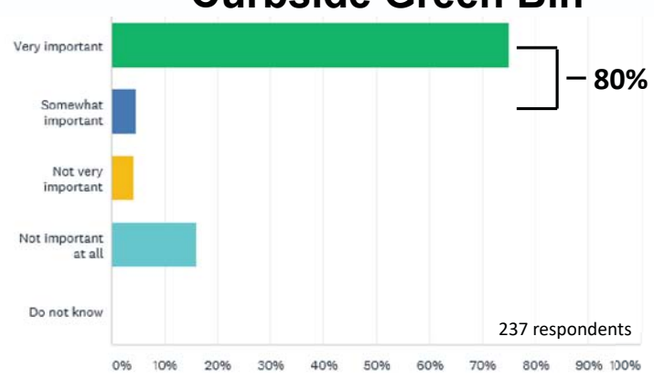
About 300 on-line respondents

Considering the requirements, benefits, and costs, do you support or not support the **overall 60% Waste Diversion Action Plan**



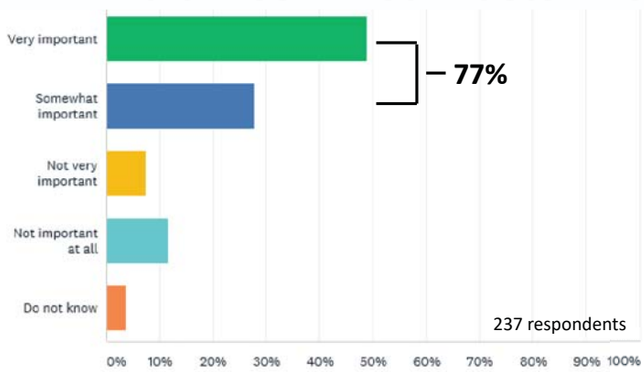
How important is this action to you?

Curbside Green Bin

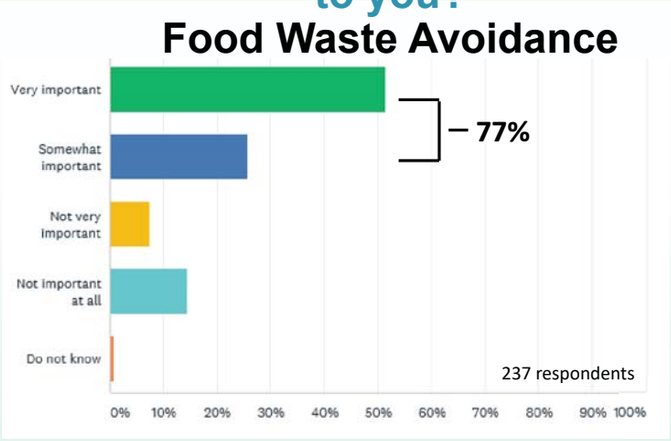


How important is this action to you?

Multi-Res Mixed Waste Pilot



How important is this action to you?



Report Recommendations

a) Details **BE RECEIVED** for information;

b) The 60% Action Plan, to be phased in between 2019 and 2022, **BE APPROVED**;

c) **BE DIRECTED** to refine cost estimates, develop implementation plans, determine operational requirements; and

d) **BE DIRECTED** to examine financing options and submit final cost estimates/Implementation Plan in early 2019, followed by the 2020-2023 Multi-year budget process.

Waste Management Community Liaison Committee

Comments on the 60% Waste Diversion Action Plan

Our thoughts

We really like it.

A lot.

Especially the part about the organics diversion.

That part is great.

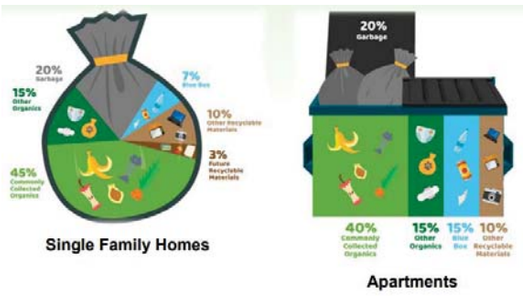
We also like all the other plans for diverting other waste like ceramics and eventually textiles.

Our time is now

London and Windsor are the only municipalities of their size that don't have an organics diversion program.

Let's fix that.

Why London needs to divert more



Why this is an easy yes.

Even with a Green Bin program and other new recycling programs, London's cost per household will still be **vastly cheaper** than the majority of Canadian municipalities.

Table 19 – 2016 Municipal Waste Management Costs[a]

Municipality	Cost per Tonne		Cost per Household		
	Collection & Disposal	Diversion	Collection & Disposal	Diversion	Total
Calgary	216	346	150	89	239
Durham	324	205	127	106	232
Halton	248	201	97	106	203
Hamilton	344	151	150	69	218
Montreal	230	249	129	82	211
Niagara	195	138	90	102	192
Regina[b]	150	331	150	59	209
Sudbury (Greater)	349	181	168	92	260
Toronto	240	442	90	158	248
Waterloo	226	195	142	94	236
Windsor[b]	204	123	118	45	163
Winnipeg[b]	107	260	83	82	165
Average	236	235	124	90	215
London (existing programs)[b]	121	123	89	50	139
London (60% - likely cost)[c]	156	161	87	87*	174*
London (60% - high cost)[d]	156	171	87	92*	179*

The numbers are good.

Summary of Estimated Costs and Potential Revenue (Funding)

	Low	High	Likely (Anticipated)
Cost	$5,050,000	$7,450,000	$6,500,000
Cost/household	$28.00	$41.50	$36.00
Revenue	$1,800,000	$2,950,000	$2,000,000
Revenue/household	$10.00	$16.50	$11.00
Total Estimated Cost			$4,500,000
Total cost/household			$25.00

And the people don't mind spending a bit more either

London needs to invest in our waste infrastructure.

The time is now.

TO:	**CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON SEPTEMBER 25, 2018**
FROM:	**KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER**
SUBJECT:	**60% WASTE DIVERSION ACTION PLAN – UPDATED COMMUNITY FEEDBACK**

RECOMMENDATION

That on the recommendation of the Managing Director, Environmental & Engineering Services and City Engineer, this report and additional public input received between September 10 and September 21, 2018 **BE RECEIVED** for information.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

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

- Public Participation Meeting – 60% Waste Diversion Action Plan – Additional Information (September 25, 2018 meeting of the Civic Works Committee (CWC), Item #3.2)
- 60% Waste Diversion Action Plan (July 17, 2018 meeting of the CWC, Item #3.1)
- Update and Next Steps – Resource Recovery Strategy and Residual Waste Disposal Strategy as part of the Environmental Assessment Process (February 7, 2017 meeting of the CWC, Item #10)

Relevant reports that can be found at www.london.ca under City Hall (Meetings – Advisory and other Committees) include:

- Decision Report #8 – 60% Waste Diversion Action Plan (July 13, 2018 meeting of the Waste Management Working Group (WMWG), Item #2.1)
- Background Report #3 - Development of 60% Waste Diversion Action Plan (March 8, 2018 meeting of the WMWG, Item #3.3)

COUNCIL'S 2015-2019 STRATEGIC PLAN

Municipal Council has recognized the importance of solid waste management in its 2015-2019 - Strategic Plan for the City of London (2015 – 2019 Strategic Plan) as follows:

Building a Sustainable City
- Strong and healthy environment
- Robust infrastructure

Growing our Economy
- Local, regional, and global innovation
- Strategic, collaborative partnerships

Leading in Public Service
- Proactive financial management
- Innovative & supportive organizational practices
- Collaborative, engaged leadership
- Excellent service delivery

BACKGROUND

PURPOSE

This report provides updated community feedback received by City staff regarding the 60% Waste Diversion Action Plan. The new information was received between September 10 and September 21, 2018 and has been incorporated into the results and feedback.

CONTEXT

The table below highlights the three CWC reports produced for the 60% Waste Diversion Action Plan including the most recent provided as an “added report” for the September 25, 2018 public participation meeting on these matters.

Date	CWC Agenda Item	Activity	Comment
July 17, 2018	3.1	60% Waste Diversion Action Plan submitted to CWC	The report was approved for community engagement between July 24 and September 27, 2018
September 25, 2018	3.2	City staff prepared a report for CWC highlighting community engagement input	This report contains information provided by the community up to September 10, 2018
September 25, 2018	To be determined	City staff prepared an “added” report highlighting additional community engagement input	This report includes information provided by the community up to September 21, 2018

DISCUSSION

The community engagement activities between July 24 and September 10, 2018 are contained in CWC report entitled Public Participation Meeting – 60% Waste Diversion Action Plan – Additional Information.

The number of people that have provided feedback since September 10, 2018 has increased as follows and noted on Table 1:

- 290 people have now completed an on-line feedback form, up from 92 people
- 160 people have now provided comments, up from 62 people

Table 1 – Updated - Community Engagement for Draft 60% Waste Diversion Action Plan

Community Engagement Activity		Outcome
Provide feedback opportunities on WhyWaste Resource Recovery Strategy website	• Advertised feedback opportunities in print and on-line media (e.g., London Free Press, The Londoner and Latino) • Advertised feedback opportunities on social media (e.g., Facebook) • Advertised feedback opportunities on radio and CTV • Notified persons on project contact list (about 250) of feedback opportunities	• 290 people completed an on-line feedback form and comments were provided by 160 residents at the time of preparing this report (as of September 21, 2018) • Feedback is generally supportive of Action Plan

Summary of Recent Community Engagement (July to September 2018)

The results of WhyWaste website on-line feedback form as of September 21, 2018 are identified in Appendix A. Demographics are also provided in Appendix A. All Londoners over the age of 18 were invited to respond if they were aware of the request for feedback.

It is important to note that this is on-line feedback across a series of questions. The data is not random therefore statistical validity cannot be calculated. It is not possible to generalize the results with statistical precision.

In the July CWC staff report, the results of a waste diversion survey undertaken by Ipsos Public Affairs were provided. In total, 301 London residents participated in the Ipsos survey between May 31 and June 4, 2018. The precision of Ipsos online surveys is calculated via a credibility interval. In this case, the sample is considered accurate within +/- 6.4 percentage points, 19 times out of 20, had all London residents been surveyed.

Below are the updated percentages to include all information received on the on-line feedback form. It is worth noting that there is very little change in the percentages since September 10, 2018.

- General support for the overall plan at 82% (67% Strongly Support and 15% Support);
- New recycling and composting initiatives were considered Somewhat Important to Very Important by 65% to 90% of respondents depending on the initiative;
- Green Bin was considered Very Important by 75% of respondents with 16% indicating Not Important at all;
- Implement a mixed waste processing pilot (to recover organics and other materials) on a portion of the waste from multi-residential homes was considered Very Important by 49% of respondents with 12% indicating Not Important at All;
- 76% of respondents considered reducing container limits to be Somewhat Important to Very Important; and
- Mixed support for user pay (fees) and clear bags for garbage.

PREPARED BY:	**PREPARED BY:**
WESLEY ABBOTT, P. ENG. **PROJECT MANAGER** **SOLID WASTE MANAGEMENT**	**MICHAEL LOSEE, B.SC.** **DIVISION MANAGER** **SOLID WASTE MANAGEMENT**
PREPARED AND SUBMITTED BY:	**RECOMMENDED BY:**
JAY STANFORD, M.A., M.P.A. **DIRECTOR, ENVIRONMENT, FLEET & SOLID WASTE**	**KELLY SCHERR, P.ENG., MBA, FEC** **MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER**

Appendix A
Updated - Results of Community Feedback on the 60% Waste Diversion Action Plan

Table A-1 Updated - Level of Support for Overall Plan

	Responses (%[a] and #)				
	Strongly Support	**Support**	**Do Not Support**	**Strongly Do Not Support**	**Un-decided**
General					
Considering the requirements, benefits, and costs, do you support or not support the overall 60% Waste Diversion Action Plan.	**67%**	15%	6%	8%	4%
	195	44	18	22	11

Notes: a) May not add to 100 percent due to rounding.

Table A-2 Updated - How Important are the 21 Actions to Achieve 60% Residential Waste Diversion

How Important is this action to you?	Responses (%[a] and #)				
	Very	**Some what**	**Not Very**	**Not at all**	**Don't Know**
Blue Box (Blue Cart) Programs					
1. Increase capture of recyclables from 63% to 75% (less placed in garbage)	**88%**	10%	0%	2%	0%
	215	24	0	4	0
New (or Expanded) Recycling Programs and Initiatives					
2. Bulky Plastics a) Continue with existing pilot project b) Consider implementation of an expanded program once long-term, stable markets have developed	**59%**	31%	6%	3%	1%
	144	75	15	7	2
3. Carpets a) Wait to see if the Province develops a provincial program for carpets under the Waste-Free Ontario Act as there are limited markets for recycling carpets in the province b) If no provincial program exists by 2021, implement a pilot project	**33%**	34%	21%	9%	2%
	81	83	52	23	4
4. Ceramics a) Provide a drop-off location for ceramics at no cost at the City's EnviroDepots b) Ban collection of toilets at the curb	**37%**	32%	18%	10%	2%
	91	79	44	25	4

Table A-2 Updated - How Important are the 21 Actions to Achieve 60% Residential Waste Diversion

How Important is this action to you?	Responses (%[a] and #)				
	Very	**Some what**	**Not Very**	**Not at all**	**Don't Know**
5. Clothing and Textiles a) Develop a textile awareness strategy to promote existing reuse opportunities for all Londoners b) Pilot depot collection at select multi-residential buildings	**44%**	32%	12%	11%	0%
	108	78	30	27	0
6. Small Metal (Small Appliances/Electrical Tools/Scrap Metal) a) Implement semi-annual curbside collection of small metal items b) Pilot depot collection at select multi-residential buildings	**50%**	34%	8%	8%	0%
	121	83	19	19	1
7. Furniture a) Begin semi-annual collection of wooden furniture b) Provide a drop-off location at W12A EnviroDepot for wooden furniture c) Ban wooden furniture from curbside garbage collection	**45%**	34%	10%	9%	1%
	110	83	24	23	3
8. Mattresses a) Wait to see if the Province develops a provincial program for mattresses under the Waste-Free Ontario Act as there are limited markets for recycling mattresses in the province b) If no provincial program exists by 2021, implement a pilot project	**41%**	32%	15%	11%	1%
	99	78	36	27	3
Curbside Organics Management Program					
9. Implement a curbside (residential) Green Bin program	**75%**	5%	4%	16%	0%
	176	11	10	38	0
10. Implement bi-weekly (same day) garbage collection	**44%**	20%	14%	20%	2%
	104	46	33	47	5
Multi-Residential Organics Management Program					
11. Implement a mixed waste processing pilot (to recover organics and other materials) on a portion of the waste from multi-residential homes	**49%**	28%	8%	12%	4%
	115	65	18	28	9
Other Organics Management Programs					
12. Develop and implement a food waste avoidance strategy	**51%**	26%	7%	14%	1%
	121	61	17	34	2

Table A-2 Updated - How Important are the 21 Actions to Achieve 60% Residential Waste Diversion

How Important is this action to you?	Responses (%[a] and #)				
	Very	**Some what**	**Not Very**	**Not at all**	**Don't Know**
13. Reduce the cost of composters at the EnviroDepots and undertake additional sale events at select community locations	**37%**	32%	17%	11%	2%
	89	75	40	27	4
14. Provide financial support to community groups or environmental organizations that want to set up a community composting program	**38%**	33%	13%	14%	1%
	90	77	32	33	3
Waste Reduction and Reuse Initiatives and Policies					
15. Create a Waste Reduction and Reuse Coordinator position within the Solid Waste Management Division	**35%**	33%	12%	17%	3%
	83	77	28	41	6
16. Provide financial support for community waste reduction and reuse initiatives	**36%**	36%	14%	12%	2%
	85	84	33	29	4
17. Reduce the container limit to two or three containers per collection when the Green Bin program with bi-weekly garbage collection is operational	**51%**	25%	6%	16%	2%
	120	58	15	37	5
18. Further explore the use of clear bags for garbage collection if London does not move to a roll-out cart based garbage collection system	25%	**27%**	20%	26%	3
	57	**64**	47	62	2
19. Further explore a full user pay garbage system if London moves to a roll-out cart based garbage collection system	21%	20%	21%	**33%**	5
	50	48	49	**77**	11
20. Further examine other incentive and disincentive initiatives (best practices) from other municipalities (e.g., mandatory recycling by-law, reward systems, user fees, etc.)	**37%**	30%	13%	18%	2%
	88	71	30	42	4
21. Provide additional feedback approaches to residents (including how waste reduction and waste diversion are calculated when providing waste management progress reports)	39%	**40%**	11%	9%	2%
	92	**93**	25	21	4

Notes: a) May not add to 100 percent due to rounding.

On-line Feedback Demographics

The total percentage for each question is less than 100%. “Prefer not to answer” has not been listed.

Q2 What is your age?

- 18 – 34 27%
- 35 – 54 44%
- 55+ 28%

Q3 Do you rent or own?

- Rent 15%
- Own 83%

Q4 How long have you lived in the City of London?

- Less than 1 year 4%
- 1 to less than 5 years 12%
- 5 to less than 10 years 12%
- 10 to less than 20 years 20%
- 20 years or more 52%

Q5 In which type of residential property do you live?

- House (single family dwelling) 83%
- House (multiple unit dwelling) 5%
- Apartment 5%
- Condo 6%
- Other 1%

Q6 Would you say that your total household income before taxes is...?

- Less than $25,000 4%
- $25,000 to less than $50,000 9%
- $50,000 to less than $75,000 17%
- $75,000 to less than $100,000 18%
- $100,000 to less than $150,000 20%
- $150,000 or more 14%

Q7 What is the highest level of education you have completed?

- Less than high school graduation 1%
- Completed high school 3%
- Some/completed trade/technical school 2%
- Some/completed college 21%
- Some/completed university 26%
- Graduate/professional studies 44%

MN-8894
F.Gerrits

TO:	**CHAIR AND MEMBERS CIVIC WORKS COMMITTEE**
FROM:	**GEORGE KOTSIFAS, P. ENG. MANAGING DIRECTOR, DEVELOPMENT AND COMPLIANCE SERVICES AND CHIEF BUILDING OFFICIAL**
SUBJECT	**APPLICATION BY: THE CORPORATION OF THE CITY OF LONDON STREET RENAMING PORTION OF PLEASANTVIEW DRIVE PUBLIC PARTICIPATION MEETING ON SEPTEMBER 25, 2018 NOT BEFORE 4:45PM**

RECOMMENDATION

That, on the recommendation of the of the Director, Development Services, the following actions be taken with respect to the application by The Corporation of the City of London with respect to the proposed renaming of Pleasantview Drive:

a) the portion of Pleasantview Drive from South Wenige Drive to Rollingacres Drive within Registered Plan 33M-451, **BE RENAMED** to Rollingacres Drive;

b) the portion of Pleasantview Drive south of Waterwheel Road, within Registered Plan 33M-484, **BE RENAMED** to Pleasantview Court;

c) on approval of the street name changes, the City Clerk **BE REQUESTED** to introduce the attached by-laws at the next available Municipal Council meeting; and

d) the Applicant **BE REQUIRED** to reimburse the City of London for all costs associated with the street renaming, which includes but is not limited to the costs of street signs and installation, advertisement costs and compensation to each affected property owner, the amount of $200.00 for incurred costs associated with the municipal address change as a result of the street name change.

PREVIOUS REPORTS

On November 6, 2017, a Report was considered by the Planning and Environment Committee (Z-8805), seeking a rezoning to:

a) facilitate the severance of 12 proposed single detached dwelling lots off of Waterwheel Road from 1140 & 1154 Sunningdale Road East;
b) facilitate the redevelopment of the existing convenience commercial uses at 1140 Sunningdale Road East;
c) retain the existing dwelling at 1154 Sunningdale Road East; and,
d) recognize the conveyance of land from 1154 Sunningdale Road East to 1140 Sunningdale Road East

In 2017, two consent applications were submitted to the City of London for 1140 and 1154 Sunningdale Road East:

- B.034-17 (1140 Sunningdale Road East) requesting to sever six (6) lots, each from 1140 Sunningdale Road East for the purpose of future residential uses and to retain 3,750 m^2 for the purpose of future commercial uses.

- B.035-17 (1154 Sunningdale Road East) requesting to sever six (6) lots, each from 1154 Sunningdale Road East and to sever approximately 770 m^2 which will be conveyed to 1140 Sunningdale Road East for the purpose of future residential uses and future commercial uses respectively, retaining the balance for the existing residential use.

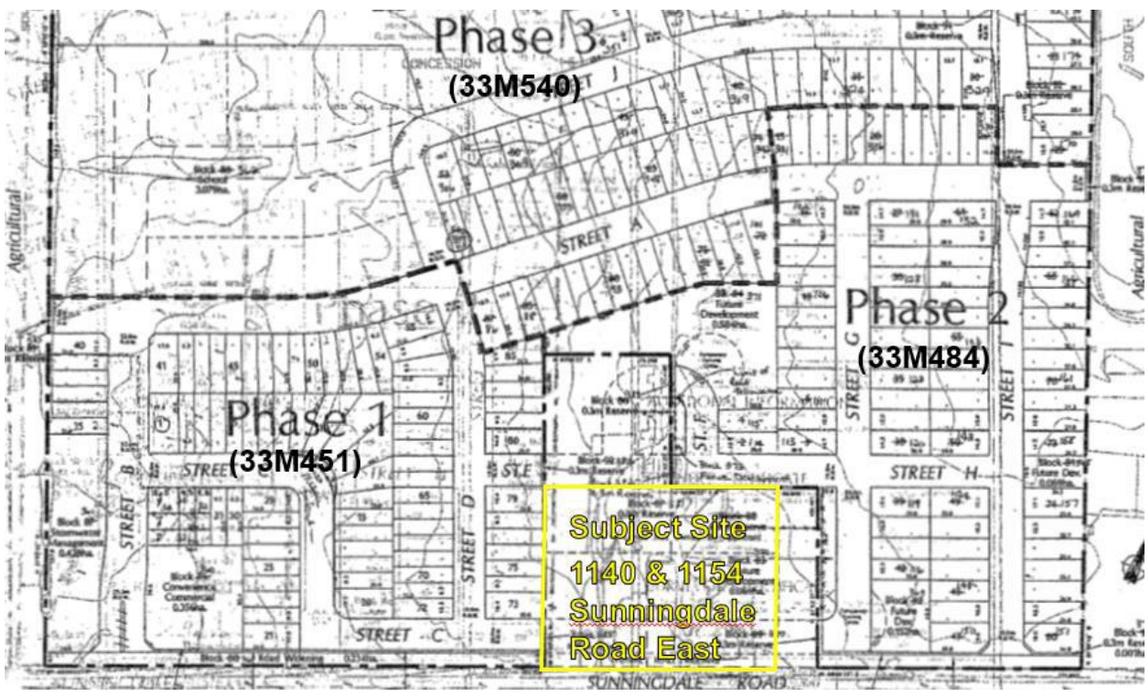
On February 21, 2018, the Consent Authority approved both applications. The Notice of Decision for each Consent application imposed a condition onto the applicant to rename all or a portion of Pleasantview Drive. The condition read as follows:

That prior to issuance of certificate of consent, the Owner shall make the necessary arrangements with the City and assume the costs to Rename all or a portion Pleasantview Drive and/or change the Municipal Addresses of properties on all or portion of Pleasantview Drive. The owner shall pay all expenses, inclusive of application fee, advertising costs, sign replacements, by-law fee and a fee of $200 per household for their inconvenience and to help offset some of their costs to change their address.

On August 13, 2018, a Report was received by the Civic Works Committee, seeking direction for public input into a possible Street Renaming for a portion of Pleasantview Drive (From South Wenige Drive to Rollingacres Drive) to Rollingacres Drive and Pleasantview Drive (South of Waterwheel Road) to Pleasantview Court.

BACKGROUND

Pleasantview Drive was established through the approval and registration of two separate subdivisions known as the Forest Hills Subdivisions in the early 2000's. The westerly portion of Pleasantview Drive from South Wenige Drive to Rolling Acres Drive (phase 1) was created through the registration of Plan 33M-451 in 2002. The easterly portion of Pleasantview Drive from between North Wenige Drive and Sunningdale Road East (phase 2) was created through the registration of Plan 33M-484 in 2004. The subject lands at 1140 and 1154 Sunningdale Road East were not included within of either subdivision. Notwithstanding, the intension at that time was that the two end of Pleasantview Drive would be connected to complete a window street north of and parallel to Sunningdale Road East as these lands were redeveloped.



As part of Municipal Councils consideration for the rezoning application (Z-8805) for 1140 and 1154 Sunningdale Road East, the connection of the two ends of Pleasantview Drive was reviewed. City Staff were of the opinion that the connection of Pleasantview Drive was still desirable to serve local traffic and to complete the intended window street as partially established through the earlier subdivision process. Staff were seeking direction to impose conditions through the Consent applications (B.034/17 & B.035/17) for the subject lands to secure the unopened, unassumed portions of Pleasantview Drive as a road allowance dedication.

On November 14, 2017, Municipal Council approved the rezoning application (Z-8805) at 1140 and 1154 Sunningdale Road East and included the following resolution relating to a future road allowance dedication connecting the two ends of Pleasantview Drive:

b) the Consent Authority BE ADVISED that the Municipal Council does not support the requirement for a road allowance dedication at this time;

On February 21, 2018, the Consent Authority approved both Consent applications. A road allowance dedication to secure the connection of Pleasantview Drive was not included in either decision by the Consent Authority, as advised by Municipal Council. A Street renaming of all or portions of Pleasantview Drive was however warranted and agreed to by the applicant and their agent. The Notice of Decision for each Consent application imposed a condition onto the applicant to rename all or a portion of Pleasantview Drive. The condition read as follows:

> That prior to issuance of certificate of consent, the Owner shall make the necessary arrangements with the City and assume the costs to Rename all or a portion Pleasantview Drive and/or change the Municipal Addresses of properties on all or portion of Pleasantview Drive. The owner shall pay all expenses, inclusive of application fee, advertising costs, sign replacements, by-law fee and a fee of $200 per household for their inconvenience and to help offset some of their costs to change their address.

An application was received to rename all or a portion Pleasantview Drive and/or change the Municipal Addresses of properties on all or portion of Pleasantview Drive. As included above, Municipal Council directed staff seek public input into a possible street renaming of all or a portion of Pleasantview Drive.

PUBLIC AND AGENCY CONSULTATION

Notices of the proposed street renaming application and the Public Participation Meeting were sent to the residences who will be directly affected by the change. A notice of public hearing was advertised in the Londoner on September 13th, 2018 and September 20th, 2018.

Response received from the public are documented in Appendix A, attached hereto.

There was no comments received from internal or external departments and/or agencies.

Beyond the received comments, a neighbourhood petition has also been received, which consists of 56 signatures opposing the renaming. The petition is reflective of 56 signatures, from residents on the affect street sections subject to renaming. This represents signatures from 33 houses of the total 47 properties, 70% of the total properties directly affected by the change.

Comments Received after September 14, 2018

Any comments received after the deadline date for this report (September 14, 2018) will be attached to the added communications and will be addressed at Committee if any issues are raised.

RECOMMENDED STREET RENAMING

Staff are recommending the following street renaming, which was included in the August 14, 2018 staff report to the Civic Works Committee and included in Notice mailed to affected property owners and included in the Londoner newspaper notice:

a) the portion of Pleasantview Drive from South Wenige Drive to Rollingacres Drive within Registered Plan 33M-451, BE RENAMED to Rollingacres Drive;

b) the portion of Pleasantview Drive south of Waterwheel Road, within Registered Plan 33M-484, BE RENAMED to Pleasantview Court

Figure 1 below, illustrates the section of Pleasantview Drive which is to be renamed to Rollingacres Drive.

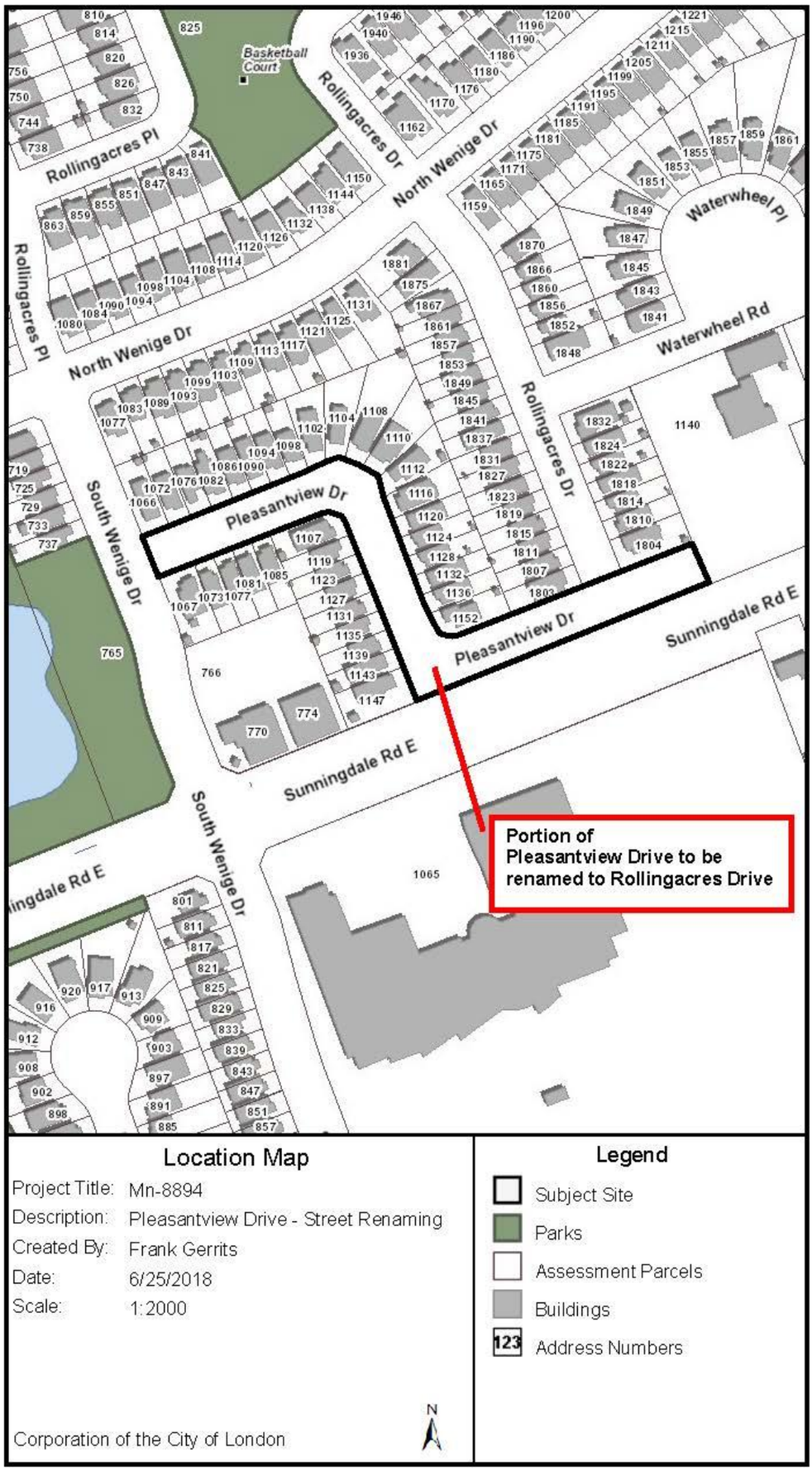
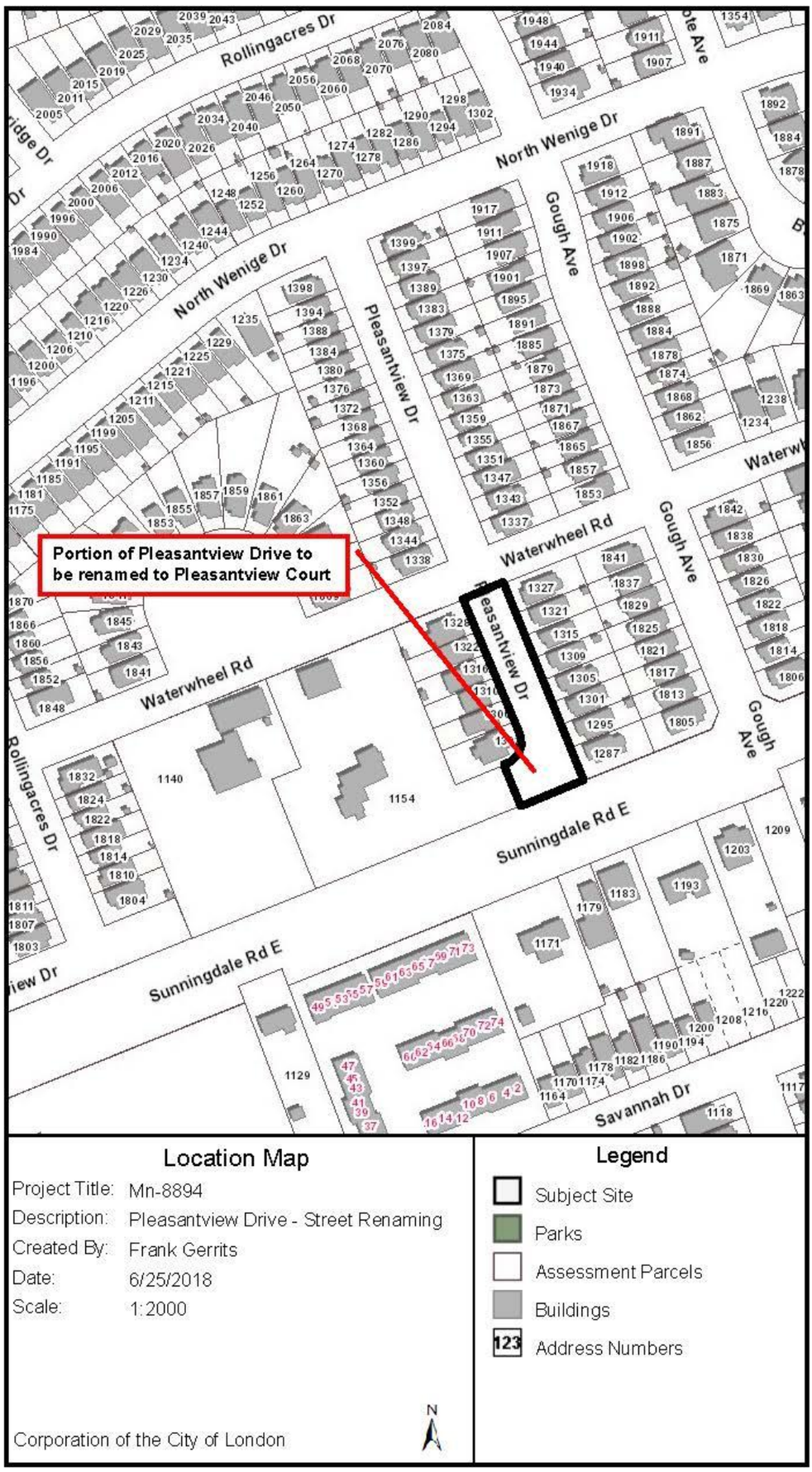


Figure 2 below, illustrates the section of Pleasantview Drive which is to be renamed to Pleasantview Court.



ALTERNATIVE STREET RENAMING OPTIONS FOR CONSIDERATION

As an alternative to the recommended street re-naming outlined above, the Civic Works Committee and/or Council may consider the following alternatives as a solution for the applicant to comply with the condition imposed through the Consent Application process:

ALTERNATIVE OPTION 1:

Remove the recommended renaming of that portion of Pleasantview Drive, lying south of Waterwheel Road (Pleasantview Court), conceding that it shall remain the status quo. It should be noted that this option is not consistent with the Street Naming Guidelines and definition of a "Drive", which is determined to be a thoroughfare which serves light to high volumes of traffic and is commonly used interchangeably between local, collector and arterial roads.

ALTERNATIVE OPTION 2:

In combination with option 1 above, Rename that portion of Pleasantview Drive, from South Wenige Drive to Rollingacres to Pleasantview Drive West.

ALTERNATIVE OPTION 3:

No change; maintain Pleasantview Drive as is. The existing conditions relating to the two unconnected portions of Pleasantview Drive have existing for over twelve (12) years and are known to residents in the area.

CONCLUSION

With the approval of the recommended Street Renaming, or an alternative Street Renaming as directed by Council, Civic Administration will proceed to rename Pleasantview Drive. The Applicant shall be required to pay for the cost of advertisement, signage replacement on a full cost recovery basis, as well as compensation to the affected property owners, if warranted.

PREPARED BY:	**REVIEWED BY:**
FRANK GERRITS **DEVELOPMENT DOCUMENTATION COORDINATOR**	**LOU POMPILII** **MANAGER, DEVELOPMENT PLANNING (SUBDIVISIONS)**
RECOMMENDED BY:	**SUBMITTED BY:**
PAUL YEOMAN, RPP, PLE **DIRECTOR, DEVELOPMENT SERVICES**	**GEORGE KOTSIFAS, P. ENG.** **MANAGING DIRECTOR, DEVELOPMENT & COMPLIANCE SERVICES AND CHIEF BUILDING OFFICIAL**

FG/LP/MF/PY/GK/fg
Attach.
September 14, 2018

APPENDIX A

Public Comments

The following responses were received through from affected property owner via email correspondence:

I just returned from vacation and received the proposal for changing the name of our street. I am strongly concerned about this change and the repercussions that will ensue.
Hello, I am a resident on Pleasantview Drive and would appreciate some more information on the proposed street name change. If you could inform me on the reason behind the changes. As you can imagine the tedious task of changing all of our personal information over to a new street name and also numerous houses on this street including ours has an engraved street name plaque. I am sure there will be a cost to some of these changes. My family has been living on Pleasantview Drive for 15 years now and this was one of the first if not the first streets in this neighbouhood. I think that should come into play if any street is deemed to change its name. Any information would be appreciated. Picture attached of plaque. 
I have been a resident at Pleasantview Dr here in London for 9 years now. I was very upset to get your recent notice re: the street renaming of Pleasantview Dr. Since the day I moved in here, I could never figure out why there were 2 streets going by the same name, and no way could these 2 streets ever connect. This sounds like a major planning goof by the civic works department to me. However, I live on the original section of Pleasantview Drive. I truly believe we should be able to keep our name, as our section existed before the next phase of Forest Hill subdivision. It makes NO sense to rename us "Rollingacres Drive, as this street is already a long, windy and fragmented street. Many of my neighbours are original residents on Pleasantview Drive. We love the name of our street and I often have people comment on what a lovely street name I live on! It would be EXTREMELY inconvenient to have to make this address change for all these London residents! We should not have to pay the price of an engineering mistake on the City of London's part! Unfortunately, I am unable to make the meeting on Tues Sept 25, as I tutor students after school every day. I hope my objections and concerns are noted. I did attend a public meeting last Fall at the Stoney Creek library re: the redevelopment of the Springhill Flowers. There was a gentleman who explained about the redevelopment of that property into a strip mall. No mention was ever made re: a street renaming then! City Councillor Maureen Cassidy attended that meeting as well. We have not heard any more about this redevelopment until you recent letter.
This note is to convey opposition to the proposed renaming of Pleasantview Drive to Rollingacres Drive. The renaming of Pleasantview Drive is a condition imposed on Springhill Flowers by the Consent Authority, the cost of which is to be borne by Springhill Flowers. **This change is opposed for the following reasons:**

- Address changes cause inconvenience, hassles, stress and confusion. In this case, the majority of residents have voiced opposition, signed petitions, emailed or written to the city. Those voices should be heard.

- Some residents have long established home-based businesses; address changes cause extra work and expenses, as well as the potential for confusion/business losses.

- At least **11** (eleven) residents have keystones with the street name and number in stone/concrete. $200 will not cover the costs of those changes. The potential for confusion with delivery /emergency services is clear.

- Several streets in London and communities across the province are broken or separated – name changes after years of establishment could cause greater confusion. This is not a major thoroughfare; the road is of minor significance to the city and current technology is such that emergency services and delivery services are not hampered. Leave the street as it is.

- The street locations and house numbers are already incorporated in many existing mapping softwares; changes could take considerable time causing further unnecessary inconvenience.

- The portion of Pleasantview Drive proposed for name change has more residents than the portion of Pleasantview Drive not slated for change. In addition, the section proposed for change is also one of the first streets in the subdivision with the longest established residents. If change is necessary, why impact a greater number of residents who have been established longer?

This imposed condition appears to be as a result of Planning Department's initial approval of a plan allowing two separate roads to be given the same name with the idea of connecting them by expropriating from a century home/business without prior consultation. While the city has the right to expropriate, it was clearly not necessary for the subdivision and potentially unfair in principal.

Springhill petitioned City Council in opposition to the expropriation and City Council supported Springhill. The city did not require a street name change until Springhill made application to enhance their business. Now it is a condition imposed on Springhill Flowers by the Consent Authority. While no city likely intends to create broken streets, many streets are. The imposed condition of a street name change is not consistently applied in London or across the province which brings it necessity into question, especially given the background in this instance.

I oppose and resent the inconvenience and potential expense of the street name change which I see largely as the result of questionable decisions/actions made in the initial stages of this subdivision. Now it seems that residents of Pleasantview Drive are caught up in competing/opposing interests between Springhill Flowers and the Planning Committee.

I am respectfully asking the Civic Works Committee to review the necessity and circumstances for the imposed condition and to quash the name change which the majority of residents on Pleasantview Drive vehemently oppose.

Your consideration of this request is greatly appreciated.

Karl Paetow - 1128 Pleasantview Drive

I'm a resident of Pleasantview Drive in London and I'm writing to express my concerns with the proposal (File MN 8894) to rename Pleasantview Drive to Rollingacres Drive.

To be straightforward in my position, this proposal is a waste of both the residents' and City's time & money that could be put to better use on more important matters. (I also feel that this appears to be a case of the City seeking to unfairly impose its will on a small enterprise.)

In the letter sent to residents on Aug 29, 2018, the City of London stated:

"These street name changes are required by Springhill Flowers, in order to satisfy a condition imposed by the Consent Authority for applications B. 034/17 and B. 035./17. Condition 19 of the Decision(s) of Consent Application(s) states that 'That prior to issuance of certificate of

consent, the Owner shall make the necessary arrangements with the City and assume the costs to rename all or a portion Pleasantview Drive and/or change the Municipal Addresses of properties on all or portion of Pleasantview Drive.'"

This is "required" by Springhill Flowers? Really? I doubt the owners of Springhill Flowers are, of their own free will, seeking to rename Pleasantview Drive, just because. Instead, this indicates the City has imposed its will on both Springhill Flowers and on the residents of Pleasantview Drive by pointing to a "decision" made by the City of London. How was this "decision" arrived at? When? By whom? Through what process? Who was consulted?

I fail to see any valid reason for the City of London to rename Pleasantview Drive, despite the "decision" described above. Simply put, *there is no valid reason*.

The City of London, however long ago, took the risk to name two separate streets within the same residential area *Pleasantview Drive*, with the obvious intention to later join them together under the presumption that the property currently owned by Springhill Flowers (and/or other owners) would at some point be freed up. However, for whatever reason, that plan has not worked out. That's on the City of London, not on the owners of Springhill Flowers nor the residents of Pleasantview Drive. Thus, neither Springhill Flowers nor the residents/homeowners of Pleasantview Drive should be made to endure (or pay for) the consequences of that decision made by the City of London at the time, or its current plan to rename the street. It's done and gone. It's in the past.

What are the consequences of the proposed plan to rename Pleasantview Drive? The plan will:

- Create needless make-work and aggravation for everyone involved
- Waste City effort, time and municipal tax dollars that could be put to use on more important matters
- Disrupt the peace of the residents & homeowners (as we've become accustomed to living on Pleasantview Drive, and wish to remain so)
- Force residents to update their address details with countless companies (employers, utilities, financial institutions, retailers, government agencies, school boards, medical practices, etc.)
- Force residents with address placards on their homes to update these (some of which are engraved in stone) at considerable cost to the homeowners
- Likely force all the residents of Pleasantview Drive to have to consult with lawyers, banks and others to update legal paperwork (deeds, mortgage papers, etc.) at additional cost, inconvenience and aggravation to the residents & homeowners

I completely understand that there is a project underway to reorganize the property currently owned by Springhill Flowers which will have a number of implications for the property involved. However, in no way is there a need arising out of all this to rename Pleasantview Drive (or any other street) to something else.

The owners of Springhill Flowers have a business to run. The residents and homeowners of Pleasantview Drive have better things to do than run around changing their addresses in countless places, at our own cost. The City of London has more important things to do than waste both the City's time and everyone else's, as well as taxpayer dollars. (The City should also seek to encourage small area businesses, not discourage or disrupt them.)

I therefore urge the City of London to do the right thing and drop the matter entirely, including the "requirement" (i.e. condition) imposed upon Springhill Flowers by the City through the "Consent Authority," thereby leaving the name of Pleasantview Drive (and all other streets in the residential area north of Sunningdale Road) permanently unchanged.

Thank you for your prompt consideration of this matter.

It has come to my attention that our neighbouring flower shop, Springhill Flowers, has submitted a proposal to change our street name to Rollingacres Drive.

I would like to voice my concern, disgust and complete disapproval to this proposal. Additionally, after reading the meeting minutes from August 28th, it appears that Springhill has offered each resident a sum of $200 for incurred costs related to the name change, which is insulting, to say the least.

This isn't at all about the money that they want to pay us. We were the first street in the subdivision, and are PROUD of our name, and our independence from being rolled into the other streets, built after us. There is already a Rollingacres Drive which runs behind us and all the way up near the back end of our subdivision, as well as a Rollingacres Place. Not only does the proposed name change seem entirely shortsighted as far as the nuisance that it will cause all of the residents involved in changing all of our ID, mail, subscriptions, insurances, ownerships, etc. (for each of us in each home, PLUS our children), but it makes the addition of connecting us to the street name proposed ridiculously long and confusing as part of the subdivision is concerned.

That aside, the costs and time that each of us affected by this proposal would incur because of this name change is astronomical. Also, many of my neighbours have their street number & our street name permanently bricked into their homes, at the time of construction. I have a custom fixture that was made for our home above our garage with our house number and street name. The cost of that alone was WELL over $200, and the neighbours with brick plates just can't simply be removed as they are a part of the actual house bricking. There are many neighbours who run businesses from home, and have business cards, custom letterhead etc. with the address printed on them. Who is to cover the cost of replacing that material? And each owner would have to have the information permanently changed on the deeds of each house, done by a lawyer, and the cost of that most certainly hasn't been considered into this proposal. Not to mention the hours that each of us would have to spend calling dozens of agencies, businesses etc., changing our information, and having to have our ID replaced to reflect new information, for each of us and all of our children. Even our pets would need their tags updated, it literally reaches that far. To offer us money to agree to this, and an insulting amount for the lack of work that Springhill would incur and the mass of work that we would all incur is absurd. We don't want money, we want our identity as the **residents of Pleasantview Drive** left alone. We take pride in our street name. We take pride that we were the first street with houses built, on PLEASANTVIEW DRIVE, and we don't want to be rolled into another street. We like our street name, we like when we tell people our address and they ask 'is it a Pleasant view?' -- it's all part of our persona and identity here.

Additionally, Google maps can take up to 2 years to update, and we would essentially fall off the map for a period of time. And what consideration is made for the periodic mail that we get that we forget about in the rush to update our information, and then lose mail from? Who covers the cost at the Canada Post front line to have mail forwarded to our address for a period of 1 or 2 years to be successful in this change? Springhill wants to put us out and remove our identity as the residents of Pleasantivew Drive, but wants to simply pay us off and have this pass through quietly? We're not interested in sitting back quietly on this issue. Conversations are heated, and talk is thick on our street - nobody that is actually affected by this wants to see this pass. Springhill Flowers has their own agenda and their own interest in mind, with complete and utter disregard to those of us that this ACTUALLY affects.

The bottom line is that I 100% do NOT agree with this proposal. I disapprove entirely of the idea, and am insulted by the idea that a business that is not even ON our street would make such a proposal in the first place, and without an reasoning whatsoever to those affected by said proposal as to why this is actually being discussed. Not one of us on this street has a clue why Springhill has proposed this, and the information we have received has been vague at best.

Please ensure that my disapproval is acknowledged when this issue is discussed further. As the residents living at 1104 Pleasantview Drive, we **DO NOT SUPPORT** this proposal, and wish to retain our street name, individuality as the original street in our subdivision, and identity as **PLEASANTVIEW DRIVE**.

In reference to the above subject and letter dated August 29, 2018 sent to residents who live on Pleasantview drive, please note that time between date i received the letter (received August 31,2018) and date for civic committee meeting to consider the application (September 25,2018) is very short specially many residents are still away on summer holiday and they will not be able to express their opinions.
Speaking on behalf of myself as an owner of a house effected by the proposed change i strongly object the idea of changing name for the portion of the street i live on. i do not see how beneficial it is to change the street name to the considered development for the Springhill flowers property and accordingly what is the relation between our street name and the proposed development for the plot subject to development. Also, it is not logic to keep the

name of part of Pleasatview drive (North of the intersection between Pleasantview Drive and Waterwheel road) as Pleasantview Drive and to change the name of the portion of Pleasantview Drive (South of the intersection between Pleasantview Drive and Waterwheel Road) to Pleasantview Place.These two portions of Pleasantview Drive North & South of waterwheel Road are on straight line and they should have the same name.
In addition to the above, changing street name will require residents to change their personnel information with different public and private entities (drive license, passport, banks & credit cards, credit bureaus ...etc) and this action is costly time wise and financial wise in addition to the fact that many residents have been living for long time on this street and having the same street name mean too much to them.

Please be advise that I refuse to rename street base on applicant request on file # MN8894 and applications B. 034/17, B035/17. I don't know why you he wants change the street name if the street name itself is an extent from Pleasant drive. Also, why he wants to give the inhabitant problem base on applicant interest. Also, they are a lot of people still on vacation and you didn't give enough time to reply to you. At the same time everyone lives in this area loved their street name (Pleasant drive). I hope that London city deny his request. Hoping to hear from you soon.

I am writing this letter to you in opposition to the proposed renaming of Pleasantview Drive to Rolling Acres Drive. Our understanding in the neighbourhood is that the renaming of Pleasantview Drive is a condition set forth in a petition set forth by Springhill Flowers, in which the owner will be responsible for a fee of $200/household(approved in city meeting Aug.28/18) for said changes as imposed by a condition of the Consent Authority.

I have spent the last 4 days speaking with many of the neighbours in both sections of Pleasantview Drive that would be affected by this change. I can confidently say that NO ONE is happy with this idea and we as a community completely oppose the change in name to our lovely street.

I have gathered signatures from many of the owners/renters of the homes on Pleasantview Drive. I have gathered 54 signatures in one day. Some people were not available to sign. I have included a copy of the signatures in this email.

Some of my neighbours did not receive the letter sent on August 29th, 2018 regarding the name change.

We as a group oppose this action for the following reasons:
FINANCIAL IMPACT

- 11 residents on our side of Pleasantview Drive have keystones with the street name/number in stone/concrete
- 4 residents on the east side of Pleasantview Drive have keystones with street name/number in stone/concrete
- Some residents have businesses that would have to replace business cards, letterhead, advertising etc
- Expense of changing name on ownership/deed of home with lawyer

TIME IMPACT

- Change in address will force the residents to take the time to consider all the changes and then be forced take the time to make changes by having to travel, call or email different organizations/places in order to make these changes – a complete hassle and inconvenience
- I have personally spent 6 hours already of my time organizing the petition
- Many of us have to take time off of work to attend the meeting at City Hall on September 25th.

EMOTIONAL IMPACT

- I can tell you, that after interacting with many of the residents, that we are all passionate about our street. Some people have actually picked to live on this street because of the name!

- Many of us are original owners, having built our houses on one of the first streets in this entire community. We don't feel that it is appropriate to change a street name that has been long standing, developed and established.

PAST PRECEDENTS

- There are many streets in London that have separations, oddities etc. A name change at this point for PLEASANTVIEW DRIVE, after 15.5 years of an established street will be detrimental to everything from emergency services to visitors, mail, package deliveries etc., will cause great confusion for everyone!

We are respectfully asking the Civic Works Committee to consider the opposition of the residents, to the renaming of PLEASANTVIEW DRIVE. We have a wonderful neighbourhood and we have come together in one voice to show our care for our community, please don't change our name. We do have a very pleasant view!!! If any change needs to happen – could we not just be called Pleasantview Drive West and Pleasantview Drive East?

Thank you very much for your time and consideration.

We do not support the application to rename Pleasantview Drive. File#MN8894

Patricia McClure – 167 Elworthy Avenue
Kristina Hryclik – 6632 Beattie Street
Jamie Nelson – 113 Cedarwood Crescent
TL Medeiros
Maddy Schwartz
Karen Luyben
Alicia VanderSpek

As well as 9 other similar submissions

I do not support the application to rename Pleasantview Drive.

Kim Patterson
Kara Bain - 9762 Melrose Drive, Komoka

As well as 1 other similar submission

Brenda Vouvalidis – 24 Torrington Crescent

I do not support the application to rename of Pleasantview Drive. File#MN8894.

Doing so will incur unnecessary costs and inconvenience for the Pleasantview residents, and there is no merit to making a change.

Thank you for your consideration

We do not support the application to rename of Pleasantview Drive. File#MN8894
This is a waste of our taxpayers money and is being communicated that the city of London is putting this stipulation, in order for the owner of spring hill flowers to expand. Thank you!

I do not support the application for the renaming of the London, ON street, Pleasantview Drive. File # MN8894.

Furthermore, why would this even be considered? It has been called this for 15 years & this is a grave inconvenience to the constituents who live there. Don't fix what "ain't" broke.

I would like to voice my concern at the proposed name change of my street. Ultimately, I am against the name change from Pleasantview to Rolling Acres Drive for several reasons:

1). Changing all our legal and banking documents is both time consuming and costly.

2). Changing any letterhead, business cards, and advertising for home businesses is time consuming and costly.

3). We have lived on Pleasantview Drive for 13 years: This is the address all our family overseas and across the country has. People in London know this street name. Changing it will be confusing and frustrating for everyone from delivery people to contractors and service providers. It's known in town already. There seems no need to change it.

4).The cost to the city and tax payers to change signs and Post Office information is a cost that is not needed. None of the neighbours I have talked to want the change. It seems like the money should be used elsewhere in the neighbourhood.

5). I have kids who have memorized this address. They know if they're lost or in trouble that Pleasantview is the address they give. They know that if they call 911 or the fire dept or any Emergency first responders that their address is Pleasantview Drive.

I know these reasons mean nothing to people who are making the decisions: it must seem like a "So what, who cares—it's just a name change "situation. However, to the people who live here it is more than just a name change. Everything in our lives is attached to this address: the thought of changing everything from mortgages and Wills to licences, pass ports to every single more mundane aspect of our lives that is attached to Pleasantview is overwhelming, costly, and un-needed.

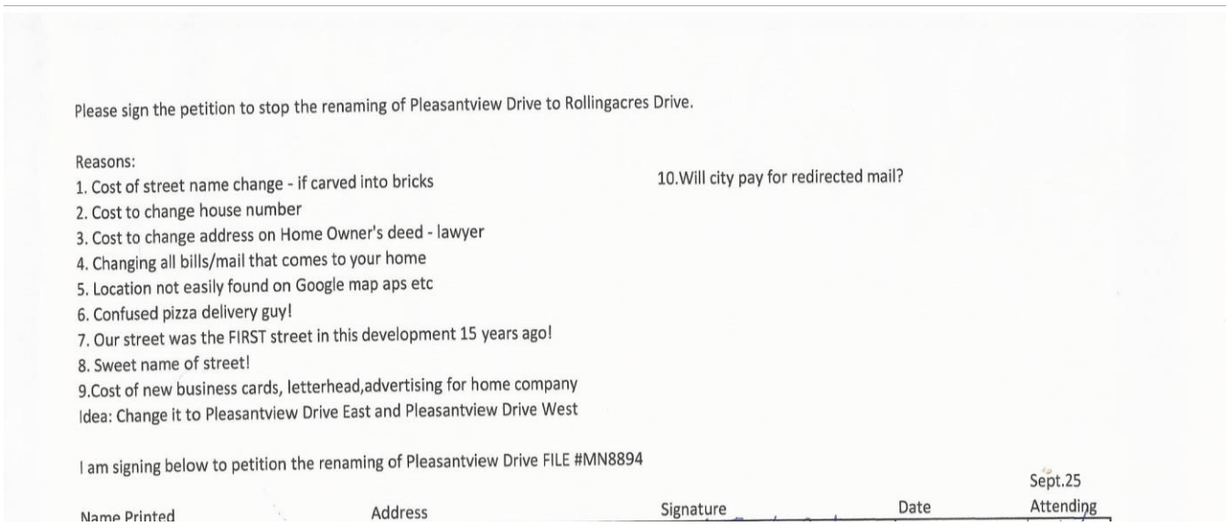
Please reconsider your proposal of a name change and leave us as Pleasantview Drive.

Thank you for your time and your consideration of my concerns with an address change.

MN-8894
F.Gerrits

APPENDIX A

Neighbourhood Petition to stop the renaming



Please sign the petition to stop the renaming of Pleasantview Drive to Rollingacres Drive.

Reasons:
1. Cost of street name change - if carved into bricks
2. Cost to change house number
3. Cost to change address on Home Owner's deed - lawyer
4. Changing all bills/mail that comes to your home
5. Location not easily found on Google map aps etc
6. Confused pizza delivery guy!
7. Our street was the FIRST street in this development 15 years ago!
8. Sweet name of street!
9. Cost of new business cards, letterhead,advertising for home company
Idea: Change it to Pleasantview Drive East and Pleasantview Drive West
10. Will city pay for redirected mail?

I am signing below to petition the renaming of Pleasantview Drive FILE #MN8894

Name Printed	Address	Signature	Date	Sept.25 Attending

A petition with 62 Signatures.

MN-8894
F.Gerrits

SCHEDULE "A"

Bill No. _____

2018

By-law No. S -_____

A by-law to rename the portion of Pleasantview Drive, from South Wenige Drive to Rollingacres Drive, within Registered Plan 33M-451, to Rollingacres Drive.

WHEREAS the Municipal Council of The Corporation of the City of London deems it expedient to rename the portion of Pleasantview Drive lying east of South Wenige Drive within Registered Plan 33M-451 to Rollingacres Drive, in the City of London, to Rollingacres Drive;

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

1. That portion of Pleasantview Drive lying east of South Wenige Drive to Rollingacres Drive within Registered Plan 33M-451 shall hereinafter be called and known as Rollingacres Drive, and the name of the said street is hereby changed accordingly:

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

PASSED in Open Council on October 2, 2018

Matt Brown
Mayor

Catharine Saunders
City Clerk

First Reading – October 2, 2018
Second Reading – October 2, 2018
Third Reading – October 2, 2018

MN-8894
F.Gerrits

SCHEDULE "A"

Bill No. _____

2018

By-law No. S -_____

A by-law to rename the portion of Pleasantview Drive, south of Waterwheel Road, within Registered Plan 33M-448, to Pleasantview Court.

WHEREAS the Municipal Council of The Corporation of the City of London deems it expedient to rename the portion of Pleasantview Drive lying south of Waterwheel Road, within Registered Plan 33M-484, in the City of London, to Pleasantview Court;

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

1. That portion of Pleasantview Drive lying south of Waterwheel Road, within Registered Plan 33M-484, shall hereinafter be called and known as Pleasantview Court, and the name of the said street is hereby changed accordingly:

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

PASSED in Open Council on October 2, 2018

Matt Brown
Mayor

Catharine Saunders
City Clerk

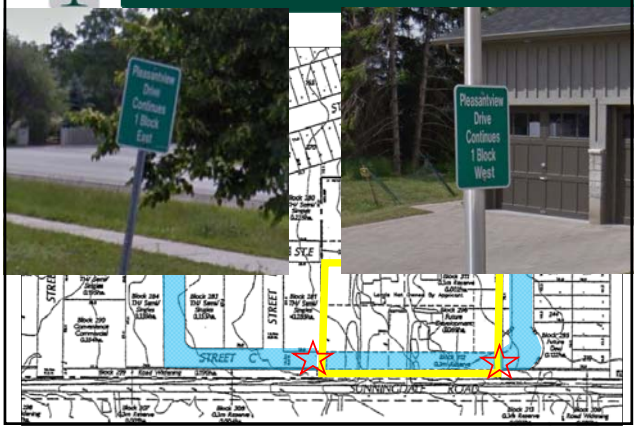
First Reading – October 2, 2018
Second Reading – October 2, 2018
Third Reading – October 2, 2018

MN: 8894 Pleasantview Drive

Civic Works Committee
September 25, 2018

Pleasantview Drive

Forest Hill Subdivision



Planning History

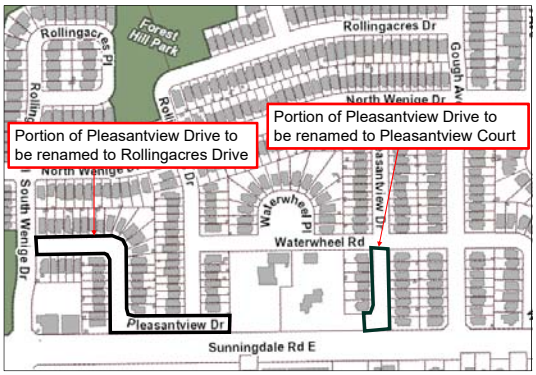
2017: Z-8805, B.034/17 & B.035/17

- ZBA to facilitate the severance applications
- Enable the future connection and dedication of Plesantview Dr through special provisions
- Council direction was not to pursue the future connection of the street
- With no intention to connect the two halves of Pleasantview Dr the intent is instead to rename the two legs through a condition of consent

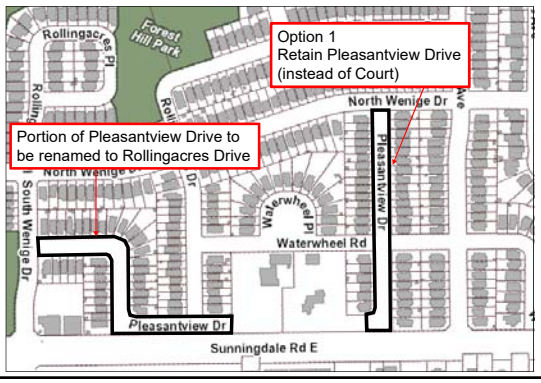
Street Renaming

- Recognizes that the intent is no longer to connect Pleasantview Drive
- Corrects the existing temporary solution
- Provides distinction between the two streets
- Improves way-finding (couriers, deliveries etc)
- Ensures police, fire, and ambulance responders are able to easily find and respond to a call without confusion

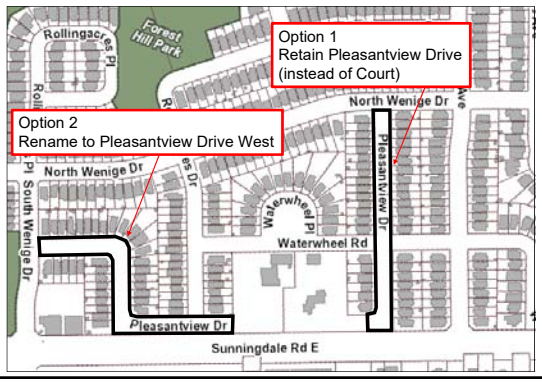
Staff Recommendation



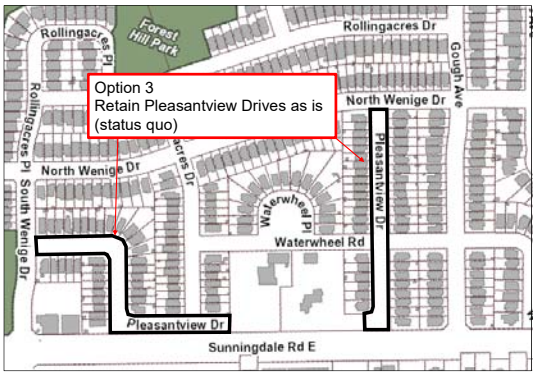
Alternative Option (1)



Alternative Option (2)



Alternative Option (3)

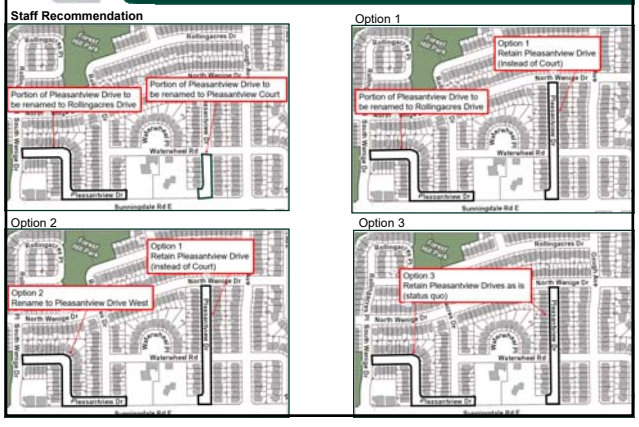


Community Consultation

Community Concerns

- Numerous residents have addresses engraved in masonry plaques
- Inconvenient and expensive to undertake street renaming
- Changing the street name will create confusion
- Home occupations/home businesses will be disrupted
- Other broken streets are operational across the City
- There are more affected on the proposed Rollingacres Drive than the east leg of Pleasantview Drive
- Do not see merit/benefit in the renaming
- Enjoy the current name of street
- Petition against renaming signed by 56 residents

Summary



Cycling Advisory Committee

Report

8th Meeting of the Cycling Advisory Committee
August 15, 2018
Committee Room #3

Attendance

PRESENT: D. Mitchell (Chair), R. Henderson, J. Jordan, W. Pol, A. Stratton, D. Szoller, M. Zunti and P. Shack (Secretary)

ABSENT: D. Doroshenko and R. Sirois

ALSO PRESENT: A. Giesen, S. Harding, D. MacRae, L. Maitland, R. Patterson and S. Wilson

The meeting was called to order at 4:05 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 Bike Lanes on King Street

That the Civic Administration BE ADVISED of the following comments with respect to Bike Lanes on King Street:

a) the following design alternatives are considered to be priorities;

i) Bike Lane designated on the roadway with pavement markings;

ii) Buffer which is an area separation between vehicles and cyclists;

iii) Parking Space Buffer which is a parking area between travel lane and bike lane;

b) a bi-directional bike lane route could be considered as a pilot project;

it being noted that the attached presentation from A. Giesen, Senior Transportation Technologist and P. Kavcic, Transportation Design Engineer, with respect to Bike Lanes on King Street, was received.

3. Consent

3.1 7th Report of the Cycling Advisory Committee

That it BE NOTED that the 7th Report of the Cycling Advisory Committee, from its meeting held on June 20, 2018, was received.

3.2 Municipal Council Resolution 7th Report of the Cycling Advisory Committee

That it BE NOTED that the Municipal Council Resolution from its meeting held on July 25, 2018, with respect to the 7th Report of the Cycling Advisory Committee, was received.

3.3 Notice of Public Information Centre- Riverview Evergreen Dyke Municipal Class Environmental Assessment

That it BE NOTED that the Notice of Public Information Centre from P. Adams, AECOM Canada and A. Spargo, AECOM Canada, with respect to the Riverview Evergreen Dyke Municipal Class Environmental Assessment, was received.

3.4 Highbury Avenue/Hamilton Road Intersection Improvements- Environmental Assessment Study- Notice of Completion

That Civic Administration BE REQUESTED to designate Highbury Avenue South of Hamilton Road as a no bicycle lane with proper signage;

that it being noted that the Notice of Completion, from B. Hutson, Dillon Consulting Limited and M. Elmadhoon, City of London, with respect to the Highbury Avenue/Hamilton Road Intersection Improvements Environmental Assessment Study, was received.

4. Sub-Committees and Working Groups

That it BE NOTED that a verbal update from D. Mitchell, with respect to the sub-committees activities, was received.

5. Items for Discussion

5.1 (ADDED) Bicycle Theft

That it BE NOTED that the Cycling Advisory Committee held a general discussion with respect to the increase of bicycle theft.

6. Deferred Matters/Additional Business

6.1 (ADDED) Adelaide Street North Municipal Class Environmental Assessment Study- Notice of Study Commencement

That it BE NOTED that the Notice of Study Commencement, from H. Henry, Parsons Incorporated and M. Davenport, City of London, with respect to Adelaide Street North Municipal Class Environmental Assessment Study, was received.

7. Adjournment

The meeting adjourned at 6:20 PM.

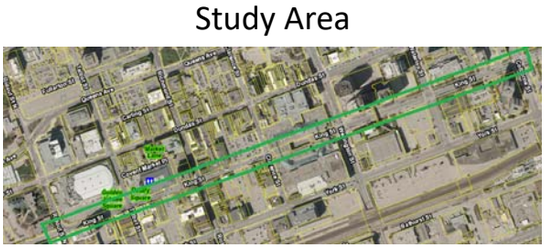
King Street Cycle Lane Improvements

Cycling Advisory Committee – August 15, 2018

Council Resolution

- That, the following actions be taken with respect to the cycle tracks located on King Street between Ridout Street and Colborne Street and the new north-south cycle track:
- a) the Managing Director, Environmental and Engineering Services and City Engineer BE DIRECTED to report back to the Civic Works Committee by no later than September 2018 with recommended options and associated costs, that Municipal Council may consider for implementation, that would result in enhanced safety for cyclists using the bike lane on King Street between Ridout Street and Colborne Street, and the new north-south cycle track with possible options that may include, but not be limited to, reduced parking on the south side of King Street, the installation of barriers, such as planters, to create a protected bike lane and appropriate signage; it being noted that there are physical constraints in this area, with frequent public transit stops located along this route;
- b) the Managing Director, Environmental and Engineering Services and City Engineer BE DIRECTED to consult with the London Transit Commission, the Downtown Business Improvement Association and the City of London Cycling Advisory Committee to seek input with respect to possible interim options to address the concerns raised by members of the public;
- c) the Managing Director, Environmental and Engineering Services and City Engineer BE DIRECTED to enhance communication efforts to improve drivers awareness of cyclists using King Street the need to ensure the safety of all road users; and,
- d) the London Police Service BE REQUESTED to increase their enforcement in this area location, with a focus on driver behaviours that may adversely impact the safety of cyclists;
- it being noted that the Civic Works Committee received the following communications with respect to this matter:

Study Area



King Street from Ridout Street to Colborne Street

Consultant

- WSP retained to help review areas of high conflict such as:
  - Intersections
  - Parking garages/Driveways
  - Transit Stops
  - Develop and recommend designs to help facilitate cyclist turning movements

Stakeholder Consultation

- Cycling Advisory Committee
- London Transit Commission
- London Police Services
- Downtown Business Improvement Association (BIA)
- London Cycle Link

5

Evaluation Criteria

- Conflict Mitigation
- Constructability
- Parking and loading zones
- Transit operations
- Traffic operations
- Cost
- Equitable

6

Design Alternatives

7

Design Alternatives – continued.

8

Design Alternatives – continued.

9

Design Alternatives – continued.

10

Design Alternatives – continued.

11

Design Alternatives – continued.

12

Design Alternatives – continued.

13

Implementation

- Staff is planning to prepare Committee Works Committee report for September 25, 2018 meeting and Council on October 2, 2018
- Council's resolution will determine how the King Street Cycle Lane Improvements will proceed
- Goal is to install pavement markings fall 2018 and install separation improvements in summer 2019

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Communications Plan

Objective:

- Raise awareness of cyclists on King Street

Strategies:

- Encourage new habits through educating all road users
- Keep cyclists top of mind through humanizing cycling
- Be non-divisive in our communications approach to balance the responsibility among all road users

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Communications Plan

Key tactics:

- "We're on this road together"
- Big signage
- Giveaways
- Roadside activation
- Business & media relations
- Social media
- Videos
- Parked vehicle promotion

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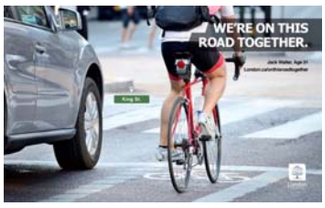
Volunteers



17

Questions?

18

300 Dufferin Avenue
P.O. Box 5035
London, ON
N6A 4L9

Friday September 7, 2018

Chair and Members of the Civic Works Committee
Re: Traffic Signalization at Priority Intersections

During recent discussions concerning the installation of new traffic signals, two (2) Ward 9 and three (3) Ward 5 intersections appeared on the list of high priority intersections. As part of the provincial warrant system used by city staff to prioritize traffic signal locations, traffic volume and delay are measured, among other things. An intersection must meet 80% of each of these two (2) measures or 100% of either one in order to meet the warrant.

At least three (3) of these five (5) intersections are expected to qualify for traffic signals in the short term as they are on the cusp of meeting the provincial warrant.

Intersection	Traffic Volume	Delay
Pack Road & Colonel Talbot Road	82%	69%
Blackwater Road & Adelaide Street	77%	84%
Sunningdale Road & South Wenige Drive	74%	77%

The other Ward 9 and Ward 5 intersections on the list are Oxford Street & Riverbend Road (which hasn't been studied yet) and Stackhouse Avenue & Fanshawe Park Road (which was studied in early 2017). Given that explosive development continues to occur in both areas, especially with the recent completion of the Fanshawe Park Road widening, new traffic studies of these intersections are necessary.

Finally, in light of council discussions regarding the provincial warrant system, it would be useful to examine whether the method used by the City of London to determine prioritization for traffic signals adequately captures local conditions and growth projections in determining the need for signalization at intersections like Stackhouse Avenue and Fanshawe Park Road, among others.

We request, therefore, that the following recommendation be supported:
"The Civic Administration BE DIRECTED to:

a) Conduct detailed design work on the following intersections of Pack Road & Colonel Talbot Road; Blackwater Road & Adelaide Street; and Sunningdale Road & South Wenige Drive – thus, when they meet the warrant, traffic signals can be installed without further delay;

b) Conduct an updated traffic study at Oxford Street & Riverbend Road and Stackhouse Avenue & Fanshawe Park Road; and

c) Review the current warrant system and best practices in other municipalities and report back with possible changes to the way we prioritize intersections for traffic signalization where appropriate."

Respectfully Submitted,

Anna Hopkins
Councillor, Ward 9

Maureen Cassidy
Councillor, Ward 5

The Corporation of the City of London
Office 519.661.5095
Fax 519.661.5933
www.london.ca

Dear Chair and Members of the Civic Works Committee,

As the city has decided not to remove discarded needles from some places where people leave them, addressing this increasing problem may require removing some of the places themselves.

Much untoward behaviour takes place in unused sections of the unassumed laneways that exist behind the yards of homes on adjacent streets. These problems will end immediately if residents are allowed to extend their fences and enclose the areas so that they become inaccessible. Unfortunately, there is a good deal of red tape associated with the process so my suggestion to the committee is:

That staff report back on ways to expedite the process of allowing residents to take possession of unassumed laneways or unused portions thereof.

Yours truly,

Michael van Holst
Councillor Ward 1

Office: 519-661-2500 ext. 4001
Fax: 519-661-5933
Email: mvanholst@london.ca

City of London
300 Dufferin Ave, Suite 314
London ON N6A 4L9

From: Michelle Koch
Sent: Monday, September 17, 2018 8:25 AM
To: van Holst, Michael <mvanholst@london.ca>; PEC <pec@london.ca>
Subject: Unattended alley ways

Good Morning,
My name is MIchelle Koch Denomme and I have resided at 24 Redan Street since 1996. This is a charming little street that has had its ups and downs. There is an unattended fire lane that runs north to south behind my house. This unattended lane has been the source of problems from the day I moved in.

Approximately 9 years a fellow neighbour and myself began a petition to have this alley way closed. We were successful in getting cit permission to do so but because of a bylaw it fell through. Apparently it was all or nothing with all the neighbours on each side of the alley having to agree to the closure plus being willing to move fences and assume property. Some of the neighbours closer the Nelson street exit decided the lane was not a problem. Due to a city bylaw we were unable to move forward with the sale of the land.

I am here to let you know it most certainly is a problem. It is unmaintained by the city and has become overgrown with weeds and trees. This makes it a perfect haven for drug use, prostitution and squatting. The situation has been exacerbated by the rampant use of drugs in the past few years. There are many children that live in this neighbourhood. It is frustrating to have my child constantly coming to me saying "Mommy, there's someone in the alley behind our house again"

The area behind my house is strewn with garbage. It is littered with used condoms, dime bags and discarded needles. This is a hazard to every one. Not only does this occur but also prostitution occurs and other activity.

For example, in the last month alone I have witnessed not only drug use, but men receiving fellatio from women, intercourse, and most recently a gentleman lying on the ground with his pants around his ankles masturbating. These occurrences happen in broad daylight! There are also many other activities that occur at night.

Directly behind my house I have removed dirty mattresses, furniture, and sleeping bags. This is not an environment I want my child to see or grow up in.

I implore you to change the bylaw and allow for closure of this alley way. This is the only way this behaviour will stop. It is apparent the CIty of London has forgotten about this end of town and chooses to focus on other areas. I have been in contact with my city councilor to help get forward movement on this motion. If not the entire alley closed I would at least like to have the area closed close to Hamilton Road. I am more than willing to assume the property and move my fence so the alley is no longer passable.

This is city owned property that is not being maintained by the city. It is extremely frustrating to see and hear this behaviour ever day. I want my child and the other children of this neighbour to be able to play in the own backyards without fear of needles, discarded condoms and other items. One hundred years ago this was meant to be a fire lane. In today's society there is no way a fire truck would ever be able to get to through the alley to serve the purpose it was originally intended for.

Thank You
Michelle Koch Denomme
24 Redan Street,
London, ONtario
N5Z1Y8
519 494 4967

Have Faith and Trust that things will work out in the End

Dear Chair and Members of the Civic Works Committee,

The city is having both real and perceived success in reducing speeding by using PEEP boards and speed markers.
They have the effect of interrupting poor habitual driving behaviour in specific locations.
Unfortunately, these positive effects are limited by the small number of items in stock.
We have only 3 sets of (2) PEEP boards which display a drivers speed (at cost approximately $6,000 per set).
I understand that all the speed markers are being deployed near construction sites and none are available to slow traffic in areas where speeding is an ongoing concern.
As residents are requesting both of these measures to a greater degree, I would like the city to purchase and deploy more of them. To this end, I request that you support the following motion:

That staff be directed to immediately purchase and deploy additional PEEP boards and speed markers.

Yours truly,

Michael van Holst
Councillor Ward 1

Office: 519-661-2500 ext. 4001
Fax: 519-661-5933
Email: mvanholst@london.ca

City of London
300 Dufferin Ave, Suite 314
London ON N6A 4L9

DEFERRED MATTERS

CIVIC WORKS COMMITTEE
(as of September 17, 2018)

Item No.	File No.	Subject	Request Date	Requested/ Expected Reply Date	Person Responsible	Status
1.	44	**Potential Savings in Consulting Costs** Civic Administration to review and report back on areas that the City of London could realize consulting cost decreases for capital projects through the addition of new staff, rather than contracting out those consulting services, so that the City of London would realize net savings.	June 2/15	Sept 25/18	K. Scherr	**IN PROGRESS**
2.	75.	**Options for Increased Recycling in the Downtown Core** 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	1st Quarter 2019	K. Scherr J. Stanford	
3.	76.	**Rapid Transit Corridor Traffic Flow** 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	4th Quarter 2018	K. Scherr E. Soldo	

4.	78.	**Garbage and Recycling Collection and Next Steps** 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	Sept 25, 2018	K. Scherr J. Stanford	Sept 25, 2018
5.	79.	**Update and Next Steps - Resource Recovery Strategy and Residual Waste Disposal Strategy as Part of the Environmental Assessment Process** That, on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, with the support of the Waste Management Working Group, the following actions be taken with respect to the development of London's Long-Term Solid Waste Resource Recovery Strategy and Residual Waste Disposal Strategy as part of the Environmental Assessment (EA) process (Phase One - Prepare Terms of Reference and Phase Two – Undertake EA): e) the Civic Administration BE DIRECTED to report back to the Civic Works Committee with an Interim Update Report and the Final Draft Terms of Reference, which would incorporate a public participation meeting to conclude Phase One activities.	Oct 24/17	Sept 25, 2018	K. Scherr J. Stanford	Sept 25, 2018

7.	91.	**Warranted Sidewalk Program** That the following actions be taken with respect to the Warranted Sidewalk Program: a) the Managing Director, Environmental and Engineering Services and City Engineer BE REQUESTED to develop an improved community engagement strategy with respect to Warranted Sidewalk Program; and, b) the Managing Director, Environmental and Engineering Services and City Engineer, BE REQUESTED to report back to the Civic Works Committee with respect to the potential future provision of additional sidewalk installation options on the east side of Regal Drive in the Hillcrest Public School area; it being noted that currently planned work would not be impeded by the potential additional work; it being further noted that the Civic Works Committee received a delegation and communication dated September 22, 2017 from L. and F. Conley and the attached presentation from the Division Manager, Transportation Planning and Design, with respect to this matter.	Sept 26/17	4th Quarter 2018	D. MacRae	
8.	93.	**Public Notification Policy for Construction Projects** 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 2018	U. DeCandido	

9.	94.	**Report on Private Works Impacting the Transportation Network** 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 any other improvements identified through the review iv) resources required to implement these improvements; and	Dec 4/17	3rd Quarter 2018	G. Kotsifas	George to provide new date
10.	96.	**Hydro One Grant for Tree Planting** That the following actions be taken with respect to the Hydro One grant for tree planting a) the Managing Director, Environmental and Engineering Services and City Engineer BE DIRECTED to investigate and report back on possible options to address the noise impacts being experienced by homes abutting Highbury Avenue resulting from the recent removal of trees by Hydro One, including the costs for implementing such options; it being noted that the Civic Administration would, as part of the investigation, review the City's policy on local improvements, as it related to noise attenuation barriers, as well as past projects;	Nov. 28/17	4th Quarter 2018	D. MacRae	

11.	98.	**Private Drain Connection (PDC) Projects** That the Director of Water and Wastewater BE REQUESTED to review the Wastewater and Stormwater By-law WM-28 as it relates to fees and charges for Private Drain Connections (PDC) work undertaken as part of a City of London construction projects and report back with respect to a potential blended fee for mixed use properties that is reflective of a balanced charge between the current residential and commercial fees; it being noted that a communication dated January 16, 2018, from Councillor T. Park was received related to this matter.	Feb. 6, 2018	2nd Quarter 2018	S. Mathers	September 25, 2018
12.	99.	**Pedestrian Sidewalk – Pack Road and Colonel Talbot Road** That the communication from J. Burns related to a request for a pedestrian crosswalk at the intersection of Pack Road and Colonel Talbot Road BE REFERRED to the Division Manager, Transportation Planning and Design for review and consultation with Mr. Burns as well as a report back to the appropriate standing committee related to this matter.	Feb. 6, 2018	4th Quarter 2018	D. MacRae S. Maguire	
15	104	**Toilets are Not Garbage Cans** That the Civic Administration BE REQUESTED to undertake the following with respect to the "Toilets Are Not Garbage Cans" public awareness sticker initiative, coordinated by B. Orr, Sewer Outreach and Control Inspector	June 19, 2018	4th Quarter 2018	S. Mathers	
16	105	**Environmental Assessment** 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	4th Quarter 2018	S. Mathers P. Yeoman	