Environmental and Ecological Planning Advisory Committee Report

The 2nd Meeting of the Environmental and Ecological Planning Advisory Committee
March 18, 2021
Advisory Committee Virtual Meeting - during the COVID-19 Emergency

Attendance

PRESENT: S. Levin (Chair), L. Banks, A. Bilson Darko, A. Boyer, S. Esan, P. Ferguson, L. Grieves, S. Hall, S. Heuchan, B. Krichker, K. Moser, B. Samuels, S. Sivakumar, R. Trudeau, M. Wallace and I. Whiteside and H. Lysynski (Committee Clerk)

ABSENT: E. Arellano, I. Arturo, A. Cleaver, J. Khan and I. Mohamed.

ALSO PRESENT: G. Barrett, C. Creighton, M. Fabro, J. MacKay, L.McDougall, M. McKillop, K. Oudekerk, B. Page, C. Saunders and E. Williamson

The meeting was called to order at 5:02 PM

1. Call to Order

1.1 Disclosures of Pecuniary Interest

That it BE NOTED that M. Wallace disclosed a pecuniary interest in clauses 4.2 and 5.1, having to do with the properties located at 1934 Commissioners Road East and 3095 and 3105 Bostwick Road, by indicating that the proponents of the above-noted applications are members of the London Development Institute, his employer.

2. Scheduled Items

2.1 Wastewater Treatment Operations Master Plan; Biosolids Management Master Plan; Greenway WWTP Flood Protection; Adelaide WWTP Flood Protection

That, the following actions be taken with respect to the Wastewater Treatment Operations Master Plan; Biosolids Management Master Plan; Greenway WWTP Flood Protection; Adelaide WWTP Flood Protection:

a) the presentation appended to the agenda by Marcy McKillop, Environmental Services Engineer, BE RECEIVED for information;

b) the Notice of Study Commencement and Public Information Centre for the Wastewater Treatment Operations Master Plan, BE RECEIVED for information; and,

c) the Notice of Study Commencement for the Biosolids Management Master Plan, BE RECEIVED for information.

3. Consent

3.1 1st Report of the Environmental and Ecological Planning Advisory Committee

That it BE NOTED that the 1st Report of the Environmental and Ecological Planning Advisory Committee, from its meeting held on February 18, 2020, was received.

3.2 Notice of Public Meeting - 3080 Bostwick Road

That it BE NOTED that the Notice of Planning Application, dated March 11, 2021, from L. Mottram, Senior Planner, with respect to a Draft Plan of Subdivision and Zoning By-law Amendment related to the property located at 3080 Bostwick Road, was received

3.3 Notice of Revised Application and Public Meeting - 1153-1155 Dundas Street

That it BE NOTED that the Notice of Planning Application, dated March 11, 2021, from L. Davies Snyder, Urban Regeneration Planner II, with respect to an Official Plan and Zoning By-law Amendment related to the properties located at 1153-1155 Dundas Street, was received

4. Sub-Committees and Working Groups

4.1 14 Gideon Drive and 2012 Oxford Street West

That the 14 Gideon Drive and 2012 Oxford Street West Working Group comments, appended to the Environmental and Ecological Planning Advisory Committee Agenda, BE FORWARDED to the Civic Administration for consideration.

4.2 Victoria on the River, Phase 6 - 1934 Commissioners Road East

That the Victoria on the River, Phase 6 (1934 Commissioners Road East) Working Group comments, appended to the Environmental and Ecological Planning Advisory Committee Agenda, BE FORWARDED to the Civic Administration for consideration.

4.3 435-451 Ridout Street

That the 435-451 Ridout Street Working Group comments, appended to the Environmental and Ecological Planning Advisory Committee Agenda, BE FORWARDED to the Civic Administration for consideration.

4.4 A Wetland Conservation Strategy for London: A Discussion Paper on Best Practices

That it BE NOTED that the Environmental and Ecological Planning Advisory Committee held a general discussion on the Wetland Conservation Strategy Discussion Paper and Lessons Learned.

4.5 Kelly Stanton ESA Ecological Restoration Plan

That, the following actions be taken with respect to the Kelly Stanton Environmentally Significant Area Ecological Restoration Plan Working Group comments:
a) the Civic Administration BE ADVISED that the Environmental and Ecological Planning Advisory Committee (EEPAC) commends both the City of London and the report authors for their liaising with and

involvement of local naturalists in the initial field work and community groups as part of follow-up plans; and,

b) the Working Group comments, appended to the Environmental and Ecological Planning Advisory Committee Agenda, BE FORWARDED to the Civic Administration for consideration.

5. Items for Discussion

5.1 Notice of Application - 3095 and 3105 Bostwick Road

That a Working Group BE ESTABLISHED consisting of R. Trudeau (lead), L. Banks and S. Levin, with respect to the properties located at 3095 and 3105 Bostwick Road; it being noted that the Environmental and Ecological Planning Advisory Committee reviewed and received a Notice of Draft Plan of Subdivision Official Plan and Zoning By-law Amendment dated March 10, 2021 from M. Corby, Senior Planner and the associated Environmental Impact Study.

5.2 2021 Work Plan

That it BE NOTED that the Environmental and Ecological Planning Advisory Committee 2021 Work Plan, as at March 18, 2021, was received.

5.3 Medway Valley CMP Phase 2 Mapping

That the Civic Administration BE ADVISED that the Environmental and Ecological Planning Advisory Committee is supportive of the attached, revised, Medway Valley Conservation Master Plan Phase 2 mapping.

5.4 Nature is Reeling Article

That it BE NOTED that a TVOntario article entitled "Nature is Reeling" was received for information.

6. Adjournment

The meeting adjourned at 7:18 PM.

Wastewater Treatment Operations

Environmental and Ecological Planning Advisory Committee

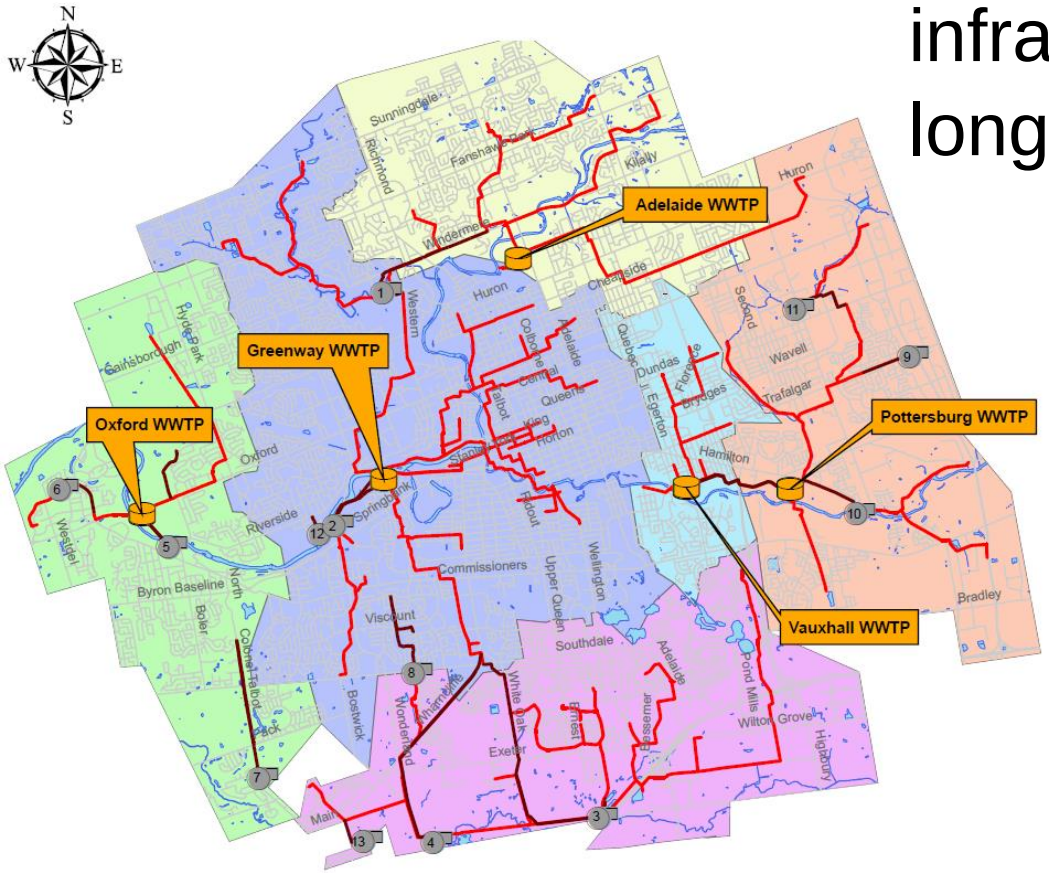
March 18, 2021

Projects

- Wastewater Treatment Operations Master Plan
- Biosolids Management Master Plan
- Greenway Wastewater Treatment Plant Climate Change Resiliency Class Environmental Assessment
- Adelaide Wastewater Treatment Plant Climate Change Resiliency Class Environmental Assessment
- Victoria Street Pumping Station Class Environmental Assessment

Wastewater Treatment Operations Master Plan

- review and evaluate upgrade of existing wastewater facilities and the construction of new infrastructure to develop a long-term plan



getinvolved.london.ca/wastewater-master-plan

Biosolids Management Master Plan

Biosolids are a by-product of the wastewater treatment process

- identify and evaluate current and future methods of managing, treating and disposal/use of biosolids to develop a long-term plan

london.ca/projects/biosolids-management-master-plan

Greenway WWTP Climate Change Resiliency Class EA

- Federal funding secured through the Disaster Mitigation and Adaption Fund
- Class EA to identify preferred flood protection measures for the Greenway WWTP to:
  - improve asset resilience
  - enhance treatment capabilities and safety of plant staff during extreme weather

Adelaide WWTP Climate Change Resiliency Class EA

- Federal funding secured through the Disaster Mitigation and Adaption Fund
- Class EA to identify preferred flood protection measures for the Adelaide WWTP to:
  - improve asset resilience
  - enhance treatment capabilities and safety of plant staff during extreme weather

Victoria Street Pumping Station Class EA

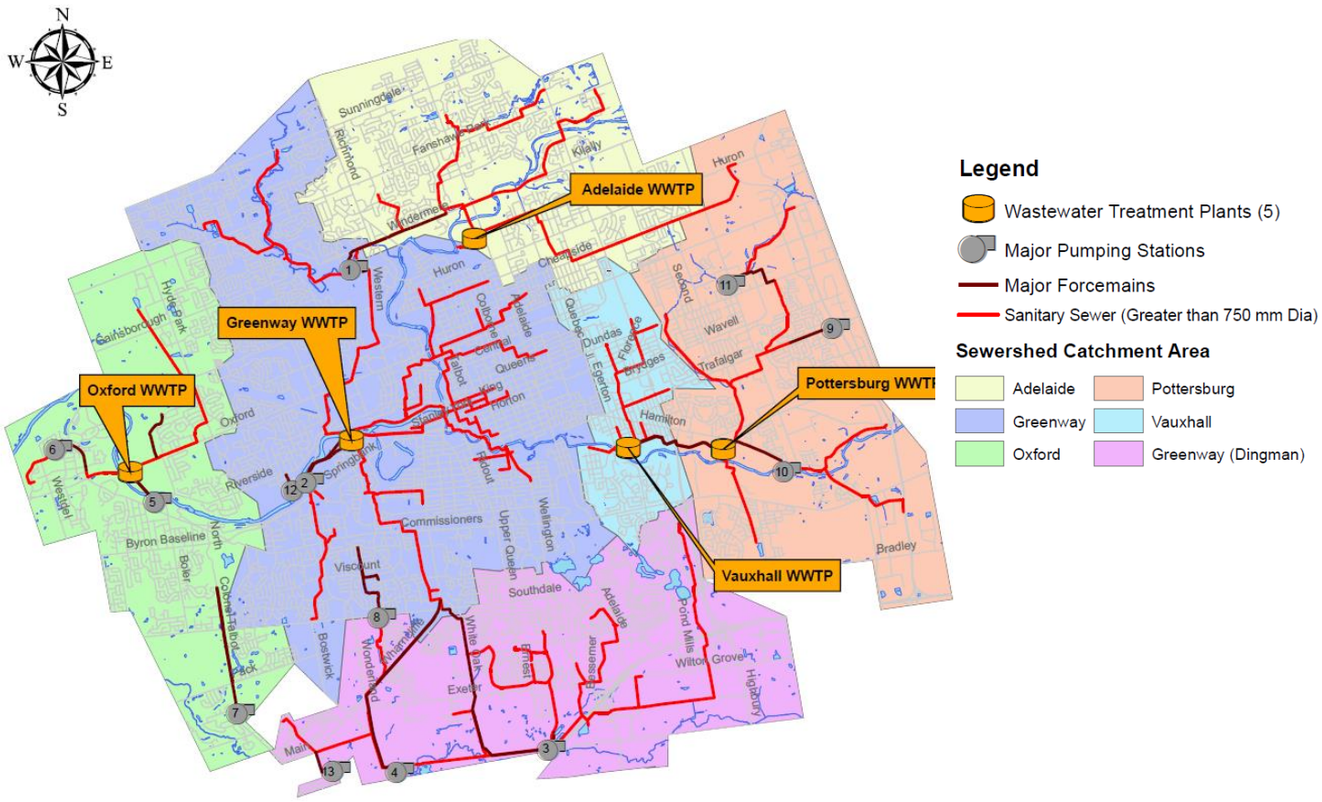
- Class EA for the existing Victoria Street pumping station that has reached end of life
- Preliminary preferred alternative is the replacement of the existing station with a new station located at the west end of Victoria Street (near the entrance to Gibbon's Park)

Next Steps and Q&A

Notice of Study Commencement and Public Information Centre No. 1: Wastewater Treatment Operations Master Plan

Date: March 15, 2021

The City of London operates five wastewater treatment plants and 36 pumping stations to collect and treat London's wastewater. This study will look at the need for new and upgraded facilities as part of our commitment to protecting the environment and ensuring that our facilities can continue to serve London as it grows.



Study area:
This Master Plan needs to consider the entire city. We are seeking input from everyone who wants their voice heard.

Background
The proper collection and treatment of wastewater has a direct impact of the health of residents, our environment, and the ability of the City to grow and prosper. Operating a wastewater treatment system often requires the upgrade of existing facilities and the construction of new infrastructure. By developing an informed long-term plan, the City will ensure that the improvements we make today will effectively contribute to our long-term goals.

Public Information Centre – event details
A virtual Public Information Centre will be held on Thursday, April 22 at 5:00 p.m. to present some of the key opportunities, challenges, and constraints of this Wastewater Treatment Operations Master Plan. The link to register for the online event will be available at the project's Get Involved page, along with a recorded presentation video following the event.

Wastewater Treatment Operations Master Plan project page:

For the most up-to-date information, including project updates, please visit the Wastewater Treatment Operations Master Plan project page.

Your input is important

The City wants to hear from you. This Master Plan would not be complete if it does not consider the needs of all of the City's residents and neighbours. If you would like to ask a question, make a comment or add your name to the contact list, please visit the project's Get Involved page or contact the City Project Manager:

Name: Marcy McKillop, P.Eng.
Organization: City of London, Environmental & Engineering Services
Phone: (519) 661-2489 ext. 4976
Email: mmckillo@london.ca

Please also watch the study webpage for future public information centres, which are an excellent opportunity to discuss wastewater treatment operations, and how they can contribute to healthy living and a cleaner environment.

This document is available in accessible formats, including electronic formats, large-print formats, and/or audio formats. Please contact the City Project Manager to submit your request.

Municipal Class Environmental Assessment Process:

This study is being undertaken in accordance with the Municipal Class Environmental Assessment process (MEA, 2000 as amended in 2007, 2011, and 2015). For details on this process, please refer to the Municipal Class Environment Assessment website or contact the City Project Manager listed above.

Thank you in advance for your participation and contribution to the planning process that will impact your life in the City of London in a meaningful way. We look forward to working with you towards building a more sustainable and environmentally responsible city.

Sincerely,

Marcy McKillop, P.Eng.
Environmental Services Engineer, Wastewater Treatment Operations Division

Copied: Kelly Scherr, Managing Director and City Engineer; Scott Mathers, Director Water and Wastewater; all City Councillors

Please note that comments received will be maintained for reference throughout the project and will become part of the public record*. Under the Municipal Freedom of Information and Protection of Privacy Act and the Environmental Assessment Act, any personal information such as name, address, and telephone number included in a submission will become part of the public record unless the comments specifically requests that such personal details not be included in the public record.*

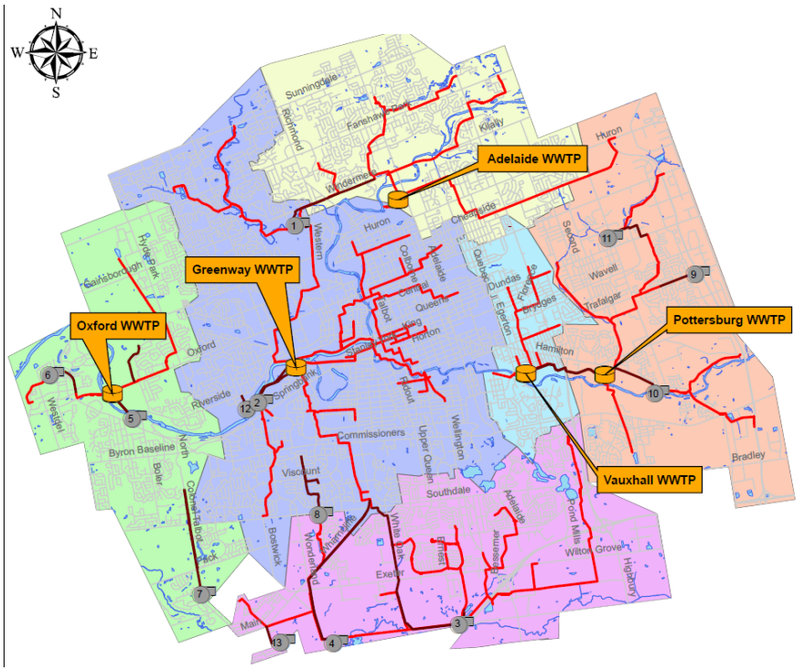
Notice of Study Commencement: Biosolids Management Master Plan

Date: February 9, 2020

The City of London (the City) is updating its Biosolids Management Master Plan (the Master Plan) to ensure the City's biosolids are managed in a way that is sustainable, protects our environment, and has the capacity to handle the City's growing population.

Study Area:

There are wastewater treatment facilities in every area of London, so this Master Plan will consider the entire city. How we manage the biosolids generated as part of the wastewater treatment process impacts all City residents and has the potential to affect our environment. Your feedback is an important part of the master planning process.



What are the Goals of this Study:

The Master Plan will look at how the City is currently managing and treating biosolids at our Wastewater Treatment Plants and guides how we will continue to meet the demands of our growing community over the next 30 years. The key focus is to develop a plan that ensures we respond to future population growth in a sustainable manner that protects the environment, while minimizing the financial and other potential nuisance impacts on the City's residents.

Proposed Project Timeline:

The next steps related to this Master Plan are:

- Establish existing conditions and future needs and publish on webpage: March 2021
- Obtain public feedback and ideas during public engagement virtual meeting #1: April 2021
- Develop alternatives and present evaluation methodology: July 2021
- Obtain public feedback and ideas during public engagement virtual meeting #2: August 2021
- Present evaluation results and preliminary recommendations during public engagement virtual meeting #3: December 2021
- Prepare and post final Master Plan document for public review and comment: March 2022
- Finalize Master Plan document and place on City website: May 2022

Study Webpage:

For the most up-to-date information related to the Biosolids Management Master Plan, please refer to the study webpage: https://london.ca/projects/biosolids-management-master-plan

Here you will find updates regarding the status of this study, the dates of upcoming public engagement opportunities, background information, reports, figures and other material for your consideration. The study webpage also has a feedback form where you can submit your comments, questions or concerns at any time.

Get Involved:

The City wants to hear from you. This Master Plan would not be complete if it does not consider the needs of all of the City's residents and neighbours. If you would like to ask a question, make a comment or add your name to the contact list to receive updates, please contact the City of London Project Manager, or the City's Consultant, either through the study webpage or through your preferred means of communication:

City of London Project Manager:

Name: Kyle Murray, P.Eng.
Organization: City of London, Environmental & Engineering Services
Phone: (519) 661-2489 (x 2661)
Email: kjmurray@london.ca

City's Consultant:

Mr. Mike Newbigging, P. Eng.
Jacobs Engineering Group
519-514-1642
mike.newbigging@jacobs.com

Please also watch the study webpage for future public engagement opportunities and study updates.

Municipal Class EA Process:

This study is being undertaken in accordance with the Municipal Class Environmental Assessment process (MEA, 2000 as amended in 2007, 2011, and 2015). For details on this process, please refer to https://www.municipalclassea.ca/index.html or contact the City Project Manager listed above.

Thank you in advance for your participation and contribution to this important planning process that will impact the City of London for many years to come. We look forward to working with you to build a more sustainable and environmentally responsible city.

Sincerely,

Kyle Murray, P.Eng

Environmental Services Engineer, Wastewater Treatment Operations Division

Copied: Kelly Scherr, Managing Director and City Engineer; all City Councillors

***Please note that comments received will be maintained for reference throughout the project and will become part of the public record**. Under the Municipal Freedom of Information and Protection of Privacy Act and the Environmental Assessment Act, any personal information such as name, address, and telephone number included in a submission will become part of the public record unless the comments specifically requests that such personal details not be included in the public record.*

Environmental and Ecological Planning Advisory Committee Report

The 1st Meeting of the Environmental and Ecological Planning Advisory Committee
February 18, 2021
Advisory Committee Virtual Meeting - during the COVID-19 Emergency

Attendance

PRESENT: S. Levin (Chair), I. Arturo, L. Banks, A. Bilson Darko, S. Esan, P. Ferguson, L. Grieves, S. Hall, S. Heuchan, B. Krichker, I. Mohamed, K. Moser, B. Samuels, S. Sivakumar, R. Trudeau, M. Wallace and I. Whiteside and H. Lysynski (Committee Clerk)

ABSENT: E. Arellano, A. Cleaver and J. Khan

ALSO PRESENT: G. Barrett, C. Creighton, P. Lupton, C. Maton, B. Page, C. Saunders and M. Tomazincic

The meeting was called to order at 5:00 PM

1. Call to Order

1.1 Disclosures of Pecuniary Interest

That it BE NOTED that M. Wallace disclosed a pecuniary interest in clauses 5.8, 5.9, 5.10 and 5.12, having to do with the properties located at 1938 and 1964 Commissioners Road East; 6019 Hamlyn Street; 101 Meadowlily Road South and 14 Gideon Drive and 2012 Oxford Street West, by indicating that the proponents of the above-noted applications are members of the London Development Institute, his employer.

1.2 Election of Chair and Vice-Chair for the remainder of the current term

That the following actions be taken with respect to the election of Chair and Vice-Chair, until the end of the current term:

a) notwithstanding section 4.12 of the "General Policy for Advisory Committees", it BE NOTED that S. Levin was elected Chair; and,

b) notwithstanding section 4.12 of the "General Policy for Advisory Committees"; it BE NOTED that S. Hall was elected Vice-Chair.

2. Scheduled Items

2.1 905 Sarnia Road Wetland Compensation Monitoring

That, it BE NOTED that the Environmental and Ecological Planning Advisory Committee received the following information with respect to the wetland compensation monitoring relating to the property located at 905 Sarnia Road:

a) the Annual Post-Construction Monitoring Report (2020); and,

b) the presentation by S. Spisani, Stantec, as appended to the Added Agenda.

3. Consent

3.1 2nd Report of the Environmental and Ecological Planning Committee

That it BE NOTED that the 2nd Report of the Environmental and Ecological Planning Advisory Committee, from its meeting held on February 20, 2020, was received.

4. Sub-Committees and Working Groups

4.1 414 - 418 Old Wonderland Road - EEPAC Comments

That the Old Wonderland Road Working Group comments, as appended to the Agenda, relating to the properties located at 414-418 Old Wonderland Road BE FORWARDED to the Civic Administration for consideration.

5. Items for Discussion

5.1 Respectful Workplace Policy

That it BE NOTED that the Respectful Workplace Policy document, as appended to the agenda, was received.

5.2 EEPAC Terms of Reference

That it BE NOTED that the Environmental and Ecological Planning Advisory Committee (EEPAC) held a general discussion with respect to the EEPAC Terms of Reference document, as appended to the Agenda.

5.3 Advisory Committee Review

That it BE NOTED that the Environmental and Ecological Planning Advisory Committee held a general discussion with respect to the ongoing Advisory Committee Review; it being noted that a verbal update from C. Saunders, City Clerk, was received.

5.4 Service Area Work Plan for 2021

That it BE NOTED that the verbal presentation with respect to the Service Area Work Plan for 2021 from G. Barrett, Director, City Planning and City Planner, was received.

5.5 EEPAC 2020 Work Plan

That, the following actions be taken with respect to the Environmental and Ecological Planning Advisory Committee (EEPAC) 2021 Work Plan:

a) the 2021 Work Plan BE INCLUDED on the March EEPAC Agenda for further consideration; it being noted that the EEPAC held a general discussion with respect to its 2021 Work Plan; and,

b) the EEPAC 2020 Work Plan BE RECEIVED.

5.6 Environmental Impact Study for Long Term Water Storage Environmental Assessment

That it BE NOTED that the Long-Term Water Storage Environmental Impact Study was received; it being further noted that the Environmental and Ecological Planning Advisory Committee will review the Long-Term Storage EIS at the detailed design stage along with the compensation, restoration and enhancement plan.

5.7 3080 Bostwick Road

That, it BE NOTED that the Environmental and Ecological Planning Advisory Committee received the following information with respect to the property located at 3080 Bostwick Road:

a) the Storm Drainage and Stormwater Management Plan - Addendum; and,

b) Environmental Impact Study 2020 Addendum.

5.8 1938 and 1964 Commissioners Road East

That a Working Group BE ESTABLISHED consisting of S. Hall, S. Levin and I. Whiteside, with respect to the properties located at 1938 and 1964 Commissioners Road East; it being noted that the Environmental and Ecological Planning Advisory Committee (EEPAC) reviewed and received the following documents relating to these matters: Victoria on the River Phase 6 Environmental Impact Study; the Geotechnical Investigation - Slope Assessment and the Hydrogeological Assessment and Water Balance relating to the properties located at 1938 and 1964 Commissioners Road East; it being further noted that the ~~attached~~ "Response to UTRCA, City and EEPAC Comments", dated October 9, 2019 and updated December 15, 2020 from Sifton Properties Limited, was received.

5.9 6019 Hamlyn Street

That it BE NOTED that the Environmental and Ecological Planning Advisory Committee received the following information with respect to the property located at 6019 Hamlyn Street:

a) the Municipal Council resolution from its meeting held on December 18, 2018;

b) the Notice of Draft Plan of Subdivision and Zoning By-law Amendment dated February 10, 2021;

c) the July 29, 2020 Environmental Impact Study Addendum;

d) the final proposal report; and,

e) the revised Draft Plan and Zoning By-law Amendment.

5.10 101 Meadowlily Road South

That it BE NOTED that the Environmental and Ecological Planning Advisory Committee received the following information with respect to the property located at 101 Meadowlily Road South:

a) the Environmental Impact Study; and,

b) the communication from D. Riley, Natural Resource Solutions Inc., dated July 24, 2020, relating to the response to comments received from the City of London.

5.11 1697 Highbury Avenue North

That, it BE NOTED that the Environmental. and Ecological Planning Advisory Committee received the following information related to the property located at 1697 Highbury Avenue North:

a) the Scoped Environmental Impact Study dated January 18, 2021; and,

b) the preliminary screening for species at risk dated March 19, 2020.

5.12 14 Gideon Drive and 2012 Oxford Street West

That a Working Group BE ESTABLISHED consisting of S. Esan, S. Heuchan and S. Levin, with respect to the properties located at 14 Gideon Drive and 2012 Oxford Street West; it being noted that the Environmental and Ecological Planning Advisory Committee reviewed and received the following documents relating to these matters: a Notice of Draft Plan of Subdivision Official Plan and Zoning By-law Amendment dated February 10, 2021 and the Environmental Impact Study prepared by MTE Consultants, dated September 29, 2020.

5.13 (ADDED) 435-451 Ridout North

That a Working Group BE ESTABLISHED consisting of S. Hall and I. Arturo, with respect to the properties located at 435-451 Ridout Street North; it being noted that the Environmental and Ecological Planning Advisory Committee reviewed and received the following documents relating to these matters: a Notice of Official Plan and Zoning By-law Amendments dated December 18, 2019 and the ~~attached~~ Final Preliminary Environmental Impact Study.

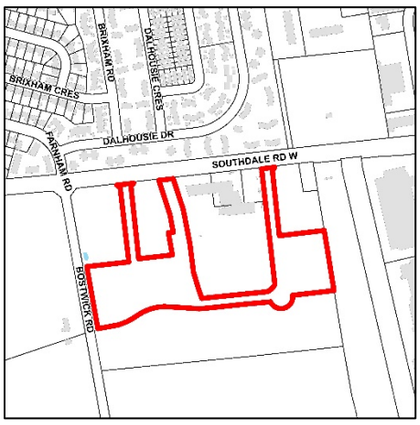
6. Adjournment

The meeting adjourned at 7:12 PM.

PUBLIC MEETING NOTICE

Draft Plan of Subdivision and Zoning By-law Amendment

3080 Bostwick Road



File: 39T-18502/Z-8931
Applicant: MHBC Planning (Scott Allen) (Owner: 731675 Ontario Limited c/o York Developments Inc.

What is Proposed?

Draft Plan of Subdivision and Zoning amendment to allow for the creation of a high density residential subdivision consisting of:

- apartment buildings
- stacked townhouses
- park and open space
- public road access via new local street connections to Southdale Road West and Bostwick Road.

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YOU ARE INVITED!

Further to a previous Notice of Public Meeting you received on September 20, 2018, you are invited to a public meeting of the Planning and Environment Committee to be held:

Meeting Date and Time: Monday, March 29, 2021, no earlier than 6:00 p.m.

Meeting Location: City Hall, 300 Dufferin Avenue, 3rd Floor (See Insert)

For more information contact:

Larry Mottram
lmottram@london.ca
519-661-CITY (2489) ext. 4866
Development Services, City of London
300 Dufferin Avenue, 6th Floor,
London ON PO Box 5035 N6A 4L9
File: 39T-18502/Z-8931
london.ca/planapps

To speak to your Ward Councillor:

Councillor Anna Hopkins (Ward 9)
ahopkins@london.ca
519-661-CITY (2489) ext. 4009

Councillor Paul Van Meerbergen (Ward 10)
pvanmeerbergen@london.ca
519-661-CITY (2489) ext. 4010

If you are a landlord, please post a copy of this notice where your tenants can see it. We want to make sure they have a chance to take part.

Date of Notice: March 11, 2021

Application Details

Requested Draft Plan of Subdivision

Draft Plan of Subdivision (please refer to attached map)
Consideration of a high density residential draft plan of subdivision consisting of:

- Two (2) high density residential blocks (consisting of apartment buildings, townhouses and stacked townhouses) with an estimated 566 units (Block 2 & 6)
- One (1) park block (Block 4)
- One (1) open space block (Block 11)
- One (1) 4.0 m walkway block (Block 16)
- One (1) 0.3 m reserve and several road widening blocks
- All served by three new local streets (Street A, Street B and Street C)

Requested Zoning By-law Amendment

Changes to the currently permitted land uses and development regulations are summarized below. The Zoning By-law is available at london.ca.

Requested Zoning (Please refer to attached map)

Possible Amendment to Zoning By-law Z.-1 to change the zoning from an Urban Reserve (UR4) Zone and an Environmental Review (ER) Zone to the following zones:

- Residential R9 Bonus (R9-7*B-(#)) (Block 2) – to permit apartment buildings, lodging house class 2, senior citizens apartment buildings, handicapped persons apartment buildings, and continuum-of-care facilities. A bonus zone is requested to permit townhouses and stacked townhouses with a maximum height of 15m and a minimum front yard setback of 6m; an apartment building with a maximum height of 70m, a density of 205 units per hectare, a reduced front yard setback of 5.5m, a reduced exterior side yard setback of 1.0m, and a reduced rear yard setback of 22m, in return for such facilities, services and matters identified in section 19.4 of the 1989 Official Plan, and policies 1638-1655 of The London Plan such as underground parking and enhanced urban design.

- Residential R9 Bonus (R9-7*B-(##)) (Block 6) – to permit apartment buildings, lodging house class 2, senior citizens apartment buildings, handicapped persons apartment buildings, and continuum-of-care facilities. A bonus zone is requested to permit an apartment building with a maximum height of 70m, a density of 299 units per hectare, a minimum front yard setback of 5.0m, a reduced interior side yard setback of 7.0m, and a reduced rear yard setback of 7.5m, in return for such facilities, services and matters identifies in section 19.4 of the 1989 Official Plan, and policies 1638-1655 of The London Plan such as underground parking and enhanced urban design.

- Open Space (OS2) (Block 4) – to permit conservation lands, conservation works, cultivation of land for agricultural/horticultural purposes, golf courses, private parks, public parks, recreational golf courses, recreational buildings associated with conservation lands and public parks, campground, and managed forest; commercial recreational establishments, community centres, institutions, private outdoor recreation clubs, public swimming pools, recreational buildings, riding stables, sports fields, golf driving range, miniature golf course, go kart track, batting cages, tennis court and playground.

- Open Space (OS4) (Blocks 11 & 16) – to permit conservation lands, conservation works, golf courses, private parks, public parks, recreational golf courses cultivation or use of land for agricultural/horticultural purposes, and sports fields without structures.

- Urban Reserve Special Provision UR4(_) (Remnant lands south of Street C) – to permit existing dwellings, agricultural uses, conservation lands, managed woodlots, wayside pit, passive recreation uses, kennels, private outdoor recreation clubs, and riding stables with a special provision for a reduced lot size of 2.0 ha.

The City is also considering the following amendments:

- Special Provisions in zoning to implement the urban design requirements and considerations of the Southwest Area Secondary Plan;
- Adding holding provisions for the following: urban design, municipal servicing, and phasing

An Environmental Impact Study (EIS) has been prepared to assist in the evaluation of this application. An Environmental Impact Study - Final Report Addendum prepared by Stantec Consulting Ltd., dated December 3, 2020, was submitted with the application for draft plan of

subdivision. The EIS report is available for public review by contacting the City's Planner listed on the first page of this Notice.

Planning Policies

Any change to the Zoning By-law must conform to the policies of the Official Plan and The London Plan, London's long-range planning documents. Both plans recognize the role of secondary plans to provide more detailed policy guidance for a specific area that goes beyond the general policies. These lands are currently designated as "High Density Residential" which permits multiple attached housing forms at higher densities and building forms as the main uses. The lands are within the Southwest Area Secondary Plan, within the Bostwick Residential Neighbourhood, which includes special polices and direction for high density residential development.

The site is presently within an Urban Reserve (UR4) Zone, which permits existing dwellings, agricultural uses except for mushroom farms, commercial greenhouses, livestock facilities and manure storage facilities, conservation lands, managed woodlot, wayside pit, passive recreation use, kennels, private outdoor recreation clubs, and riding stables, and an Environmental Review (ER) Zone, which permits conservation lands, conservation works, passive recreational uses, managed woodlot, and agricultural uses.

How Can You Participate in the Planning Process?

You have received this Notice because someone has applied for a Draft Plan of Subdivision and to change the zoning of land located within 120 metres of a property you own, or your landlord has posted the public meeting notice in your building. The City reviews and makes decisions on such planning applications in accordance with the requirements of the Planning Act. If you previously provided written or verbal comments about this application, we have considered your comments as part of our review of the application and in the preparation of the planning report and recommendation to the Planning and Environment Committee. The additional ways you can participate in the City's planning review and decision making process are summarized below.

See More Information

You can review additional information and material about this application by:

- Contacting the City's Planner listed on the first page of this Notice; or
- Viewing the application-specific page at london.ca/planapps
- Opportunities to view any file materials in-person by appointment can be arranged through the file Planner.

Attend This Public Participation Meeting

The Planning and Environment Committee will consider the requested Draft Plan of Subdivision and zoning changes at this meeting, which is required by the Planning Act. You will be invited to provide your comments at this public participation meeting. A neighbourhood or community association may exist in your area. If it reflects your views on this application, you may wish to select a representative of the association to speak on your behalf at the public participation meeting. Neighbourhood Associations are listed on the Neighbourgood website. The Planning and Environment Committee will make a recommendation to Council, which will make its decision at a future Council meeting. The Council Decision will inform the decision of the Director, Development Services, who is the Approval Authority for Draft Plans of Subdivision.

Please refer to the enclosed Public Participation Meeting Process insert.

What Are Your Legal Rights?

Notification of Council and Approval Authority's Decision

If you wish to be notified of the Approval Authority's decision in respect of the proposed draft plan of subdivision, you must make a written request to the Director, Development Services, City of London, 300 Dufferin Ave., P.O. Box 5035, London ON N6A 4L9, or at developmentservices@london.ca. You will also be notified if you provide written comments, or make a written request to the City of London for conditions of draft approval to be included in the Decision.

If you wish to be notified of the decision of the City of London on the proposed zoning by-law amendment, you must make a written request to the City Clerk, 300 Dufferin Ave., P.O. Box 5035, London, ON, N6A 4L9, or at docservices@london.ca. You will also be notified if you

speak to the Planning and Environment Committee at the public meeting about this application and leave your name and address with the Secretary of the Committee.

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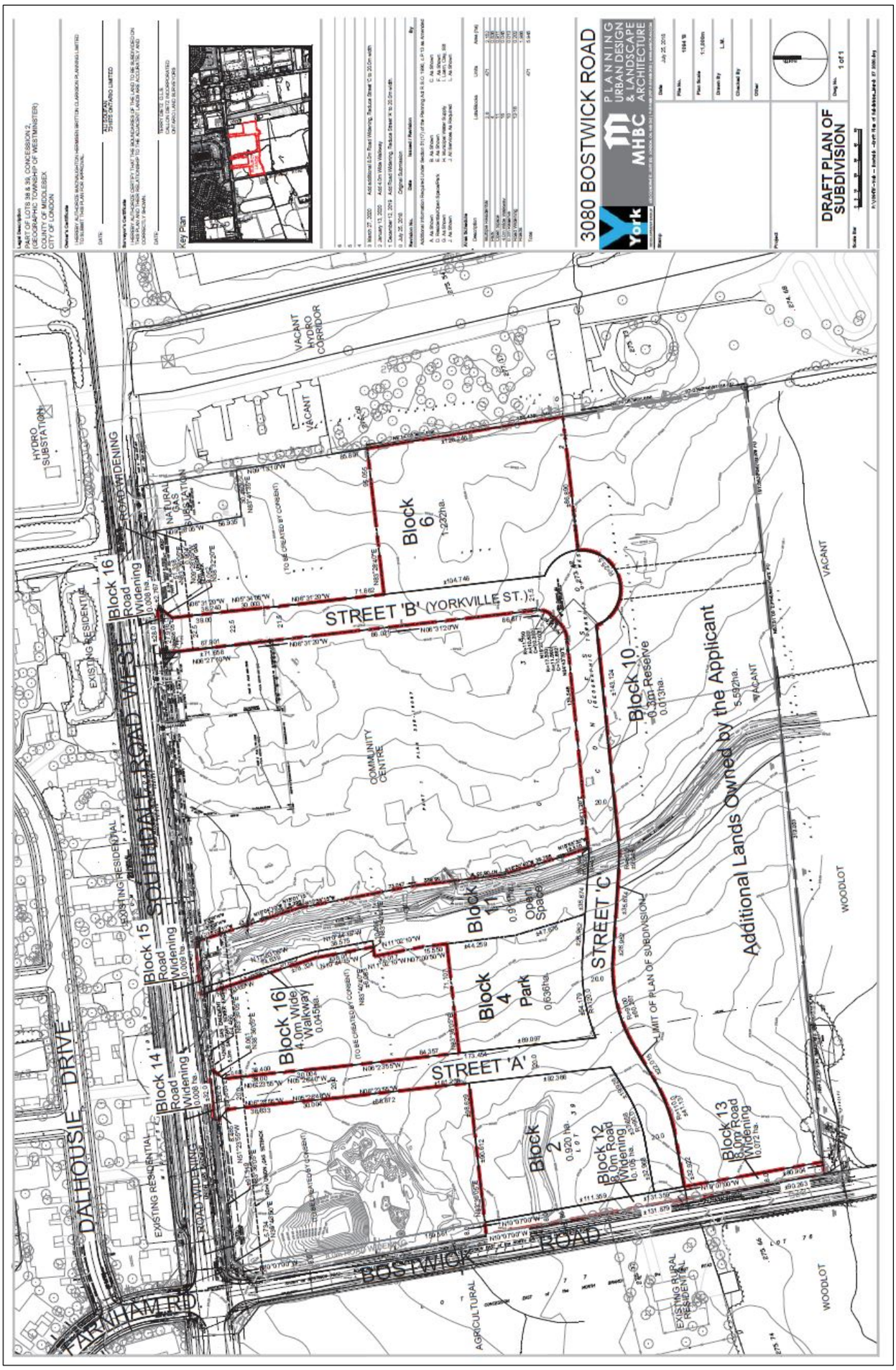
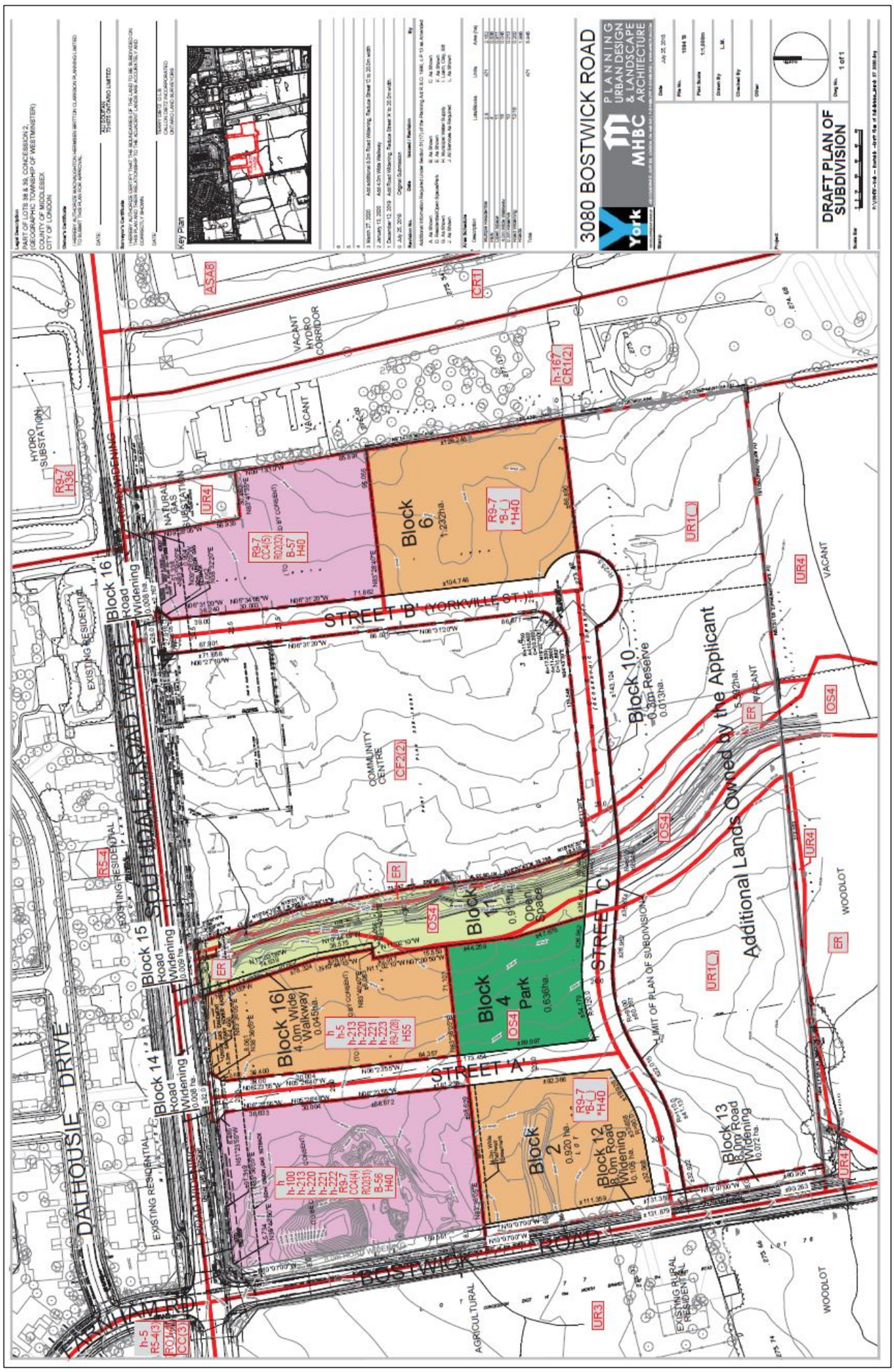
Requested Draft Plan of Subdivision



The above image represents the applicant's proposal as submitted and may change.

Requested Zoning



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Public Participation Meeting Process

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Council Chambers

- Committee members and staff will be present in the Chambers (physically, or by remote attendance).
- There will be no public access to the Council floor.

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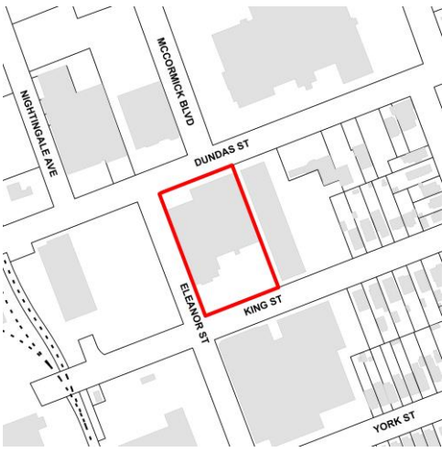
NOTICE OF REVISED APPLICATION & NOTICE OF PUBLIC MEETING

Official Plan and Zoning By-law Amendments

1153-1155 Dundas Street



File: O-9207 & Z-9198
Applicant: City of London & Zelinka Priamo Ltd.
What is Proposed?

Official Plan and Zoning amendments to allow:

- a mix of office, retail, artisan workshops, restaurant, craft brewery,
- a reduction of parking to permit fifty-five (55) on-site parking spaces, and
- outdoor patios up to a total of 225 m^2 to be exempt from parking requirements.

YOU ARE INVITED!

Further to the Notice of Application you received on May 20, 2020, you are invited to a public meeting of the Planning and Environment Committee to be held:

Meeting Date and Time: Monday, March 29, 2021, no earlier than 5:00 p.m.

Meeting Location: City Hall, 300 Dufferin Avenue, 3rd Floor

Please refer to the enclosed Public Participation Meeting Process insert.

For more information contact:

Laurel Davies Snyder
lsnyder@london.ca
519-661-CITY (2489) ext. 4651
City Planning, City of London,
206 Dundas St., London ON N6A 1G7
File: O-9207 & Z-9198
london.ca/planapps

To speak to your Ward Councillor:

Councillor Jesse Helmer
jhelmer@london.ca
519-661-CITY (2489) ext. 4004

If you are a landlord, please post a copy of this notice where your tenants can see it. We want to make sure they have a chance to take part.

Date of Notice: March 11, 2021

Application Details

Requested Amendment to the 1989 Official Plan

The City has initiated an Official Plan Amendment (OPA) to bring the 1989 Official Plan designation for these lands into conformity with the policies of The London Plan, the new Official Plan for the City of London. The requested amendment is to change the designation from Light Industrial (LI) to Main Street Commercial Corridor (MSCC) to permit a mix of uses including office, retail, artisan workshops, restaurant, and craft brewery.

Requested Zoning By-law Amendment

To change the zoning from a Light Industrial (LI2) Zone to a Business District Commercial Special Provision BDC(_) Zone to permit a mix of office, retail, artisan workshops, restaurant, craft brewery, and a site-specific regulation for a reduction of parking to permit fifty-five (55) on-site parking spaces and for outdoor patios up to a total of 225 m2 to be exempt from parking requirements. Changes to the currently permitted land uses and development regulations are summarized below.

The Official Plans and the Zoning By-law are available at london.ca.

Current Zoning

Zone: Light Industrial 2 (LI2)
Permitted Uses: Bakeries; Business service establishments; Laboratories; Manufacturing and assembly industries; Offices support; Paper and allied products industries excluding pulp and paper and asphalt roofing industries; Pharmaceutical and medical product industries; Printing, reproduction and data processing industries; Research and development establishments; Warehouse establishments; Wholesale establishments; Custom workshop; Brewing on premises establishments; Service Trade; Existing Self-storage Establishments; Artisan Workshop; Craft Brewery; Dry cleaning and laundry plants; Food, tobacco and beverage processing industries excluding meat packaging; Leather and fur processing excluding tanning; Repair and rental establishments; Service and repair establishments; Service trades; Textile processing industries.
Special Provision(s): None
Residential Density: Not applicable.
Height: Maximum of 15 metres if abutting a residential zone; 50 metres if abutting a non-residential zone.
Bonus Zone: Not applicable.

Requested Zoning

Zone: Business District Commercial Special Provision (BDC(_)) Zone
Permitted Uses: Animal hospitals; Apartment buildings, with any or all of the other permitted uses on the first floor; Bake shops; Clinics; Commercial recreation establishments; Commercial parking structures and/or lots; Converted dwellings; Day care centres; Dry cleaning and laundry depots; Duplicating shops; Emergency care establishments; Existing dwellings; Financial institutions; Grocery stores; Laboratories; Laundromats; Libraries; Medical/dental offices; Offices; Personal service establishments; Private clubs; Restaurants; Retail stores; Service and repair establishments; Studios; Video rental establishments; Lodging house class 2; Cinemas; Brewing on Premises Establishment; Food Store; Animal Clinic; Convenience Store; Post Office; Convenience Service establishments; Dwelling units restricted to the rear portion of the ground floor or on the second floor or above with any or all of the other permitted uses in the front portion of the ground floor; Bed and breakfast establishments; Antique store; Police stations; Artisan workshop; Craft Brewery.
Special Provision(s): Reduction in parking requirements; exemption of outdoor patios of a maximum size from parking requirements.
Residential Density: This proposal does not contemplate residential uses; however residential uses are permitted in the BDC base zone. In BDC Zone variations, the height and density of each apartment building over the standard zone height and/or containing units outside existing structures, will be established through a zoning by-law amendment application, and be indicated on Schedule A of the Zoning By-law.
Height: No change to existing building height requested.
Bonus Zone: Not applicable.

A Heritage Impact Study (HIA), a Parking Justification Study, and a Planning Justification Report have been prepared to assist in the evaluation of this application.

Planning Policies

The subject lands are in the Rapid Transit Corridor Place Type in The London Plan, permitting a range of residential, retail, service, office, cultural, recreational, and institutional uses which are identified in the BDC Zone.

How Can You Participate in the Planning Process?

You have received this Notice because someone has applied to change the Official Plan designation and the zoning of land located within 120 metres of a property you own, or your landlord has posted the public meeting notice in your building. The City reviews and makes decisions on such planning applications in accordance with the requirements of the Planning Act. If you previously provided written or verbal comments about this application, we have considered your comments as part of our review of the application and in the preparation of the planning report and recommendation to the Planning and Environment Committee. The additional ways you can participate in the City's planning review and decision-making process are summarized below.

See More Information

You can review additional information and material about this application by:

- Contacting the City's Planner listed on the first page of this Notice; or
- Viewing the application-specific page at london.ca/planapps
- Opportunities to view any file materials in-person by appointment can be arranged through the file Planner.

Attend This Public Participation Meeting

The Planning and Environment Committee will consider the requested Official Plan and zoning changes at this meeting, which is required by the Planning Act. You will be invited to provide your comments at this public participation meeting. A neighbourhood or community association may exist in your area. If it reflects your views on this application, you may wish to select a representative of the association to speak on your behalf at the public participation meeting. Neighbourhood Associations are listed on the Neighbourgood website. The Planning and Environment Committee will make a recommendation to Council, which will make its decision at a future Council meeting.

Please refer to the enclosed Public Participation Meeting Process insert.

What Are Your Legal Rights?

Notification of Council Decision

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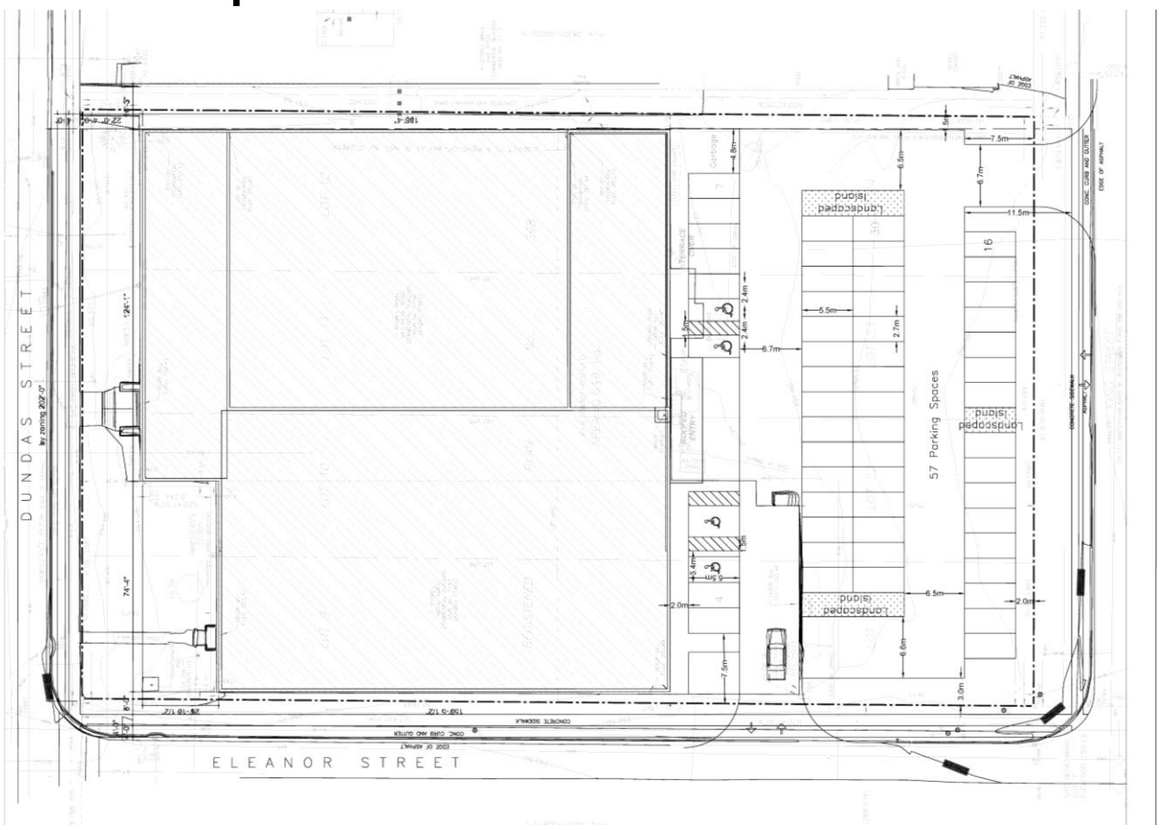
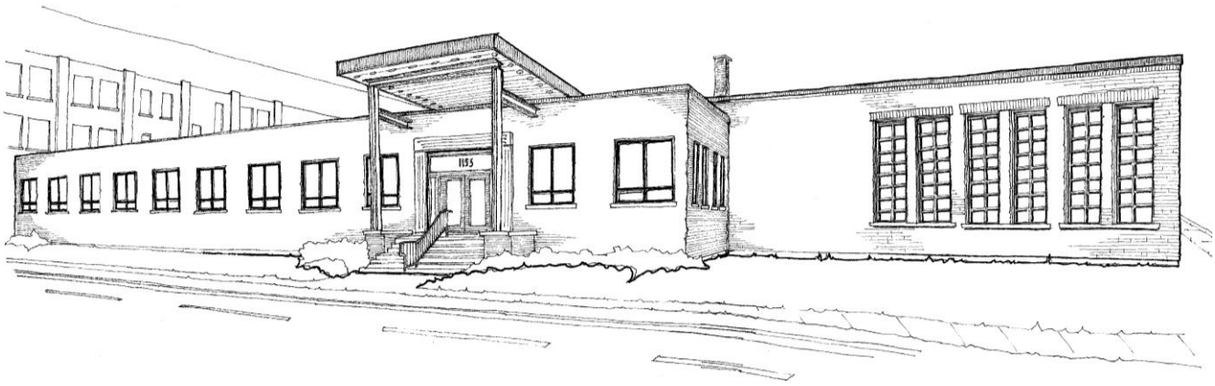
Site Concept



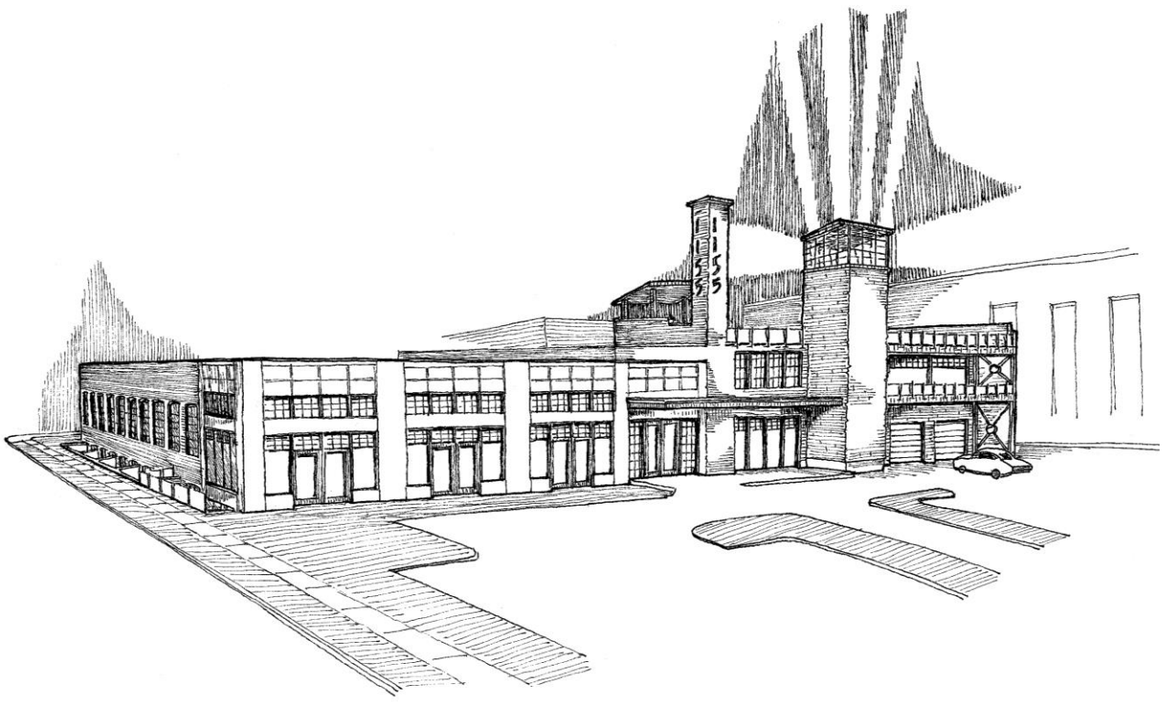
Site Plan Concept for 1153-1155 Dundas Street, October 2020

The above image represents the applicant's proposal as submitted and may change.

Building Renderings



Conceptual illustration of the front of the building at 1153-1155 Dundas Street (looking south on Dundas Street



Conceptual illustration of the rear of the building at 1153-1155 Dundas Street (looking north on King Street)

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14 Gideon Drive and 2012 Oxford Street West - Review of EIS prepared by MTE
Reviewers: S. Esan, S. Heuchan, S. Levin

Fauna

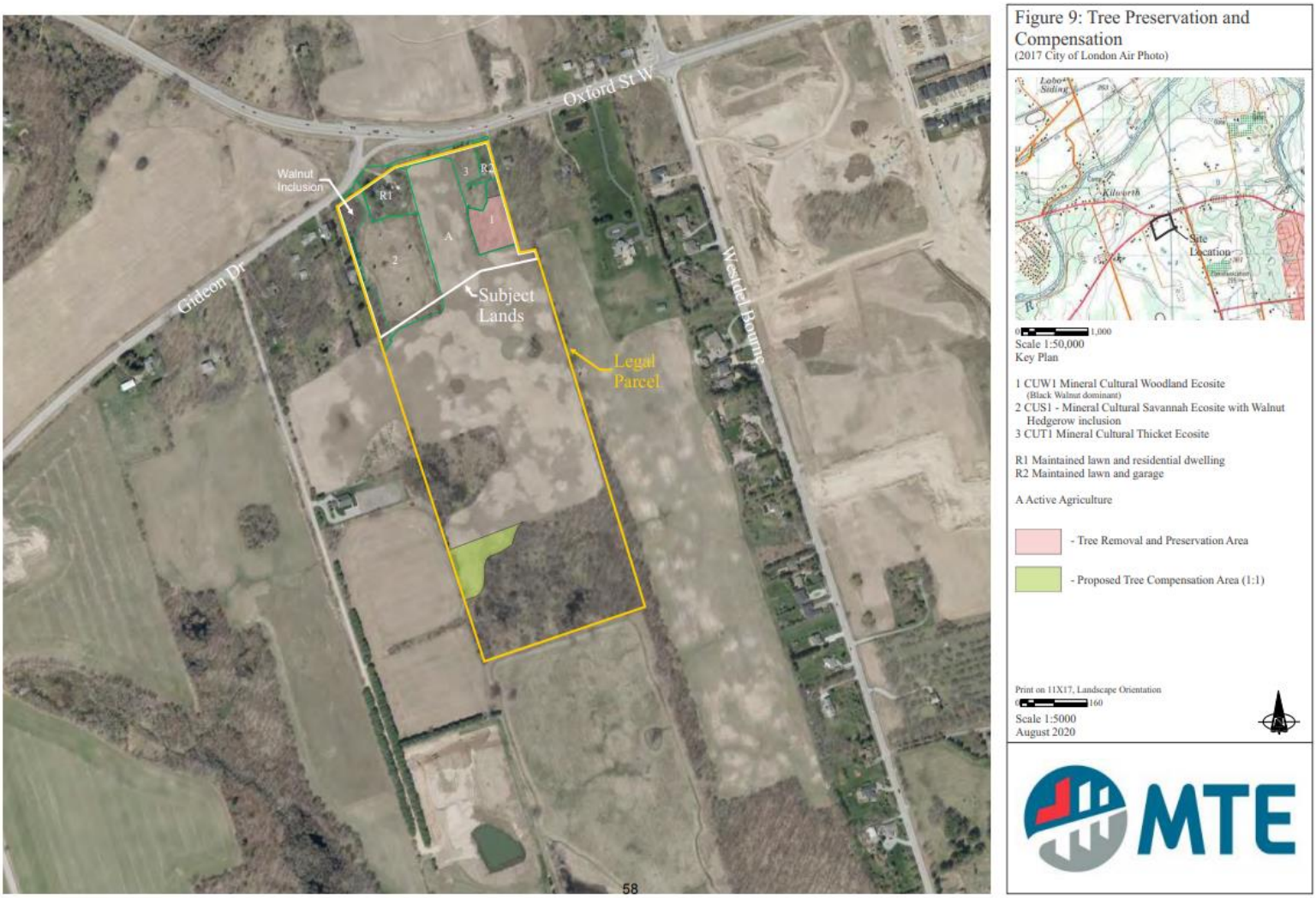
Eastern Wood-pewee – Mineral cultural woodland – Species of concern

Woodland habitant being compensated ?

Walnut inclusion area is being lost to the proposed road. These trees being removed but not included as part of the compensation. (see Figures 8 and 9)

Proposed tree replacement: EEPAC commends the landowner for proposing to compensate for the loss of tree cover.

RECOMMENDATION #1: The compensation area shown in Figure 9 be increased to include the loss of the black walnut inclusion. Ideally, it would then allow a connection to the wet area to the north. See Figure 9 following:



RECOMMENDATION #2: The replanting plan be to the satisfaction of the City and a condition of development or of draft plan. This is consistent with the consultant's recommendation if the compensation plan is accepted. EEPAC recommends that the species planted must be native.

This should improve habitat for woodland birds like the Eastern Wood-Peewee

RECOMMENDATION #3: The woodland and compensation area be designated and zoned Open Space as part of this application.

OTHER

EEPAC notes that between the 2017 City air photo included in this EIS and the 2020 air photo, vegetation was removed from the subject lands. The City should ensure this was done through permitted work.

EEPAC agrees with the consultant's recommendation on page 15 that:

A woodland area management plan should be created and implemented to ensure the continued good health of trees that will be retained in the woodland to the south. This plan would include guidance and recommendations for woody debris management and the management of invasive species to improve the health of the woodland feature in the long-term.

RECOMMENDATION #4: A woodland area management plan to the satisfaction of the City be a condition of development or draft plan or site plan approval. The plan should be monitored for the standard three years from new plantings and a "hold back" be required to ensure success of the plan.

RECOMMENDATION #5: It appears from the air photos that there is a barn on the subject lands. A check for Bard Swallow nests must be undertaken before the structure is removed. If nests are found, it is recommended that a kiosk using materials from the old barn be used as compensation. Cole Engineering has a history of successful kiosk construction.

https://www.thespec.com/news/hamilton-region/2017/07/07/inside-ontario-s-fight-to-save-declining-barn-swallows-one-bird-house-at-a-time.html

Victoria on the River, Phase 6, (1934 Commissioners Road East), revised EIS dated December, 2020, received by EEPAC at its February 2021 meeting. Reviewed by S. Hall, S. Levin, and I. Whiteside
Also reviewed were the updated Hydrological Assessment and Water Balance by EXP dated December 3, 2020, and the unrevised Geotechnical Investigation - Slope Assessment from 2017 by EXP

Noted that this woodland patch 09028, has a dense canopy of 90 to 100% (page 12) which is unusual on the landscape. The SWT ELC is also found on less than 10% of London's landscape.

WATER BALANCE

EEPAC has received the revised water balance showing that the site has achieved the goal of at least 80% post-development infiltrations as compared to pre-development infiltration. We note that the change in assumptions from the 2018 water balance assessment have resulted in a material change to the evaluation of pre-development conditions on the effectiveness of the LID measures (e.g. pre-development infiltration is estimated to be 14,684 m^3/yr, an 11% reduction from the 2018 assumption of 16,504 m^3/yr, while the proposed LID mitigation measures are anticipated to result in post-development infiltration of 13,384 m^3/yr versus 11,392 m^3/yr in the 2018 calculations, a 17% improvement); however, even considering the (higher) 2018 pre-development infiltration, the revised estimate of the post-development infiltration achieves the 80% target. It would be helpful to receive a description of the assumption changes that resulted in the changes to the water balance assumption.

While the post-development infiltration target of 80% appears to have been met, EEPAC continues to have concerns that the stormwater management strategy is predicated on the long-term successful implementation of LID measures whose long term efficacy has not been demonstrated, and as such, run-off towards the ravine system may increase with time and infiltration decrease. Furthermore, the LID measures appear to be located on private property, and the eventual home owners may lack expertise to property maintain the LID measures. Lastly, we note that the 2018 Water Balance report recommended percolation tests at proposed LID measure to demonstrate the feasibility of the LID designs; however, the 2020 report did not include this recommendation – it would be helpful to have confirmation that these percolation tests were conducted to confirm the viability of the LID measures.

Here is a summary of our calculations (for reference).

	Pre		Post		% Pre-Development		Post with Mitigation		% Pre-Development with Mitigation	
	2018	**2020**	**2018**	**2020**	**2018**	**2020**	**2018**	**2020**	**2018**	**2020**
to TRIBUTARY 3										
Estimated Runoff	11,567	19,967	7,945	20,288	69%	102%	7,963	15,003	69%	75%
Estimated Infiltration	16,508	14,684	8,471	8,794	51%	60%	11,392	13,384	**69%**	**91%**
to SWMF 2										
Estimated Runoff	1,150	1,178	7,711	3,510	671%	298%	4,971	2,632	432%	223%
Estimated Infiltration	1,725	1,767	2,814	1,538	163%	87%	3,114	2,320	181%	131%
to SWMF 1										
Estimated Runoff	0	0	3,061	2,600	n/a	n/a	2,289	1,950	n/a	n/a
Estimated Infiltration	0	0	1,064	0	n/a	n/a	1,178	0	n/a	n/a

Our specific recommendations with respect to the stormwater management plan is similar to our previous one:

> **RECOMMENDATION 1: The proposed LID systems should be placed on public property, as the eventual homeowner may lack the desire or skill in maintain the LID measures and run-off may consequently increase over time as the efficacy of the LID measures wane.**

Infiltration galleries and other LID should NOT be placed on private property. We are unclear why "The City of London has insisted that LID features be outside of the municipal road allowance and on private property, a monitoring and maintenance document will be provided to the homeowners/condo corporation where these features are located similar to other underground infrastructure. " There have been no studies as far as EEPAC is aware of the ability of private land owners in London to maintain such infrastructure much less, a condo corporation. Until such a study is undertaken in London, or until there is a way for the city to force a private land owner to do and report on maintenance, no LID should be on private property. The City should review the SWM feature at 161 Windemere Road to see if it has functioned properly without damage to the cliffs below the site.

RECOMMENDATION 2: A fund be set aside for any remediation or compensation required as per Recommendation 18 due to any impacts to the wetland areas in the ravine caused by changes to the water balance. It should be noted that EEPAC did not receive the Dev Eng functional servicing report dated September, 2019, to assist in addressing comments.

BARN SWALLOW

RECOMMENDATION 3: EEPAC recommends that the proponent and/or the City consult Cole Engineering on the replacement of the unsuccessful kiosk. One thought is to use the remaining beams and other materials from the barn that was removed that appear to still remain on the proponent's lands on the west side of the ravine (personal visit by S. Levin on March 7, 2021)

https://www.coleengineering.ca/blog/Blog32/Saving_Ontario_s_Barn_Swallow_Population

https://www.thespec.com/news/hamilton-region/2017/07/07/inside-ontario-s-fight-to-save-declining-barn-swallows-one-bird-house-at-a-time.html

NET IMPACTS TABLE

The Net Impacts table adds a number of impacts to the previous version as noted in the Dec 2020 comments in the table of comments provided to EEPAC (thank you for including it for our review). All of the new additions are no to low impact. The only positive net impact is the naturalization of the buffer. Therefore, EEPAC disagrees with the consultant's conclusion that there is a positive impact. It is no net impact at best, more likely a low negative (which was the 2019 comment of Development Services in the table of responses).

RECOMMENDATION 4: The statement "Based on the identified potential impacts and mitigation measures listed above, it is anticipated that the net environmental impacts will be positive. " on page 44 should be changed to "… it is anticipated that the net environment impacts will be neutral." The net impacts table and the EIS itself does not prove that "Ecological restoration within identified compensation areas will more than offset vegetation and habitat loss." (p. 44)

EEPAC is encouraged by the suggested plantings in the hydro corridor. However it is unclear to us who is responsible for approaching Hydro One and whether or not approval will be granted. If it is not granted, there is a low net loss rather than a neutral impact at best.

The Net Impacts Table mentions potential bioswales. They are not mentioned in the hydro-g report and it is unlikely they would be used as the site is not large enough.

PEDESTRIAN BRIDGE AND TRAIL (see air photos from City web site and Figure 6 from EIS at end of this report)

The EIS report and the Geotechnical Assessment and Slope Stability study were prepared to assess the development's impact on the site, not the footbridge, and so neither study is sufficient for the bridge (see note from page 17 of the Slope Assessment at end of this report). As the city clearly states in their comments, the bridge is "conceptual" at this stage so additional studies will clearly have to be done to support any concrete plans/proposals. EEPAC agrees with the comment from AECOM that an EIS will "likely" be required to specifically address the proposed bridge at the time the works are being planned (page 28 of the Comments). What is clear from the Geotechnical report is that it recommends that "future development generally not occur within the Erosion Hazard Limit identified at the site" (General Comments for Site Work on page 15). If we consider cross-sections E-E' and G-G', and that the foundations for the footbridge need to occur outside of the Erosion Hazard Limit, the foundations will need to be at least 26m + 24m from the edge of the creek (plus the creek width, say 2m). That is, the foundations for the footbridge need to be 50m+ apart (probably closer to 55m?) at minimum to ensure the foundations are constructed outside the Erosion Hazard Limit. Not being 100% sure on the design of the footbridge, but it will be a long one for somewhat marginal benefit, (saves ~400m to walk around the ravine? That's ~3-4 minutes of walking time at a normal rate.) It is also not clear what the limiting set-backs are here – is it the

Erosion Hazard Limit or the Buffer? If it's the Buffer, then obviously the bridge will have to be longer.

The proposed pedestrian pathway will need to meet AODA standards. Hopefully this can be done without pavement as having to mow on both sides will reduce the amount of area re-naturalized which is the only net positive in the net impacts table. Like the UTRCA, EEPAC does not support the trail in the buffer and appreciate that it has been moved to mostly avoid conflict with the buffer.

RECOMMENDATION 5: If the path on the east side is built, EEPAC recommends defined access point(s) to the pedestrian trail from the subdivision to the east so that multiple informal access points are not created. Multiple access points will damage and eventually destroy the restoration plantings planned for the buffer on the east side of the ravine. Such access points would be appropriate places for informational signage about the feature.

EEPAC is puzzled why the pathway is needed on the east side of the feature as there is a sidewalk on Constance Avenue which is outside the buffer! The path would end at the new street that will connect Constance to the new development. The path does not continue on the west side of the ravine due to the infiltration galleries at the back of the multi family development. Pedestrians would continue to walk on the sidewalk of the new street, to the next new street (Darlington Pl) to get to the park. We note in the table of responses Dec 2020, city staff said"… *If the City / Parks Planning would prefer to have the trail overlap with the sidewalk in certain sections, we have no issue with that."* It is noted that a final decision is going to occur later at "detailed design."

If the pedestrian bridge project goes ahead despite our recommendation not to build it (it is not very far around the ravine to the other side), another EIS is required for the affected areas because this EIS clearly states (p. 35) it did not deal with its potential impacts on the Significant Woodland or the watercourse. The other reason for EEPACs recommendation that no bridge be constructed is because there is no managed trail system for the adjacent Meadowlily ESA. Without any plan in place, unmanaged trails will develop as the population increases. It should not be made easier to access the ESA until such time as a managed trail system with appropriate signage and wayfinding is implemented.

A managed trail from these developments to the Meadowlily ESA must be developed by Parks Planning. Without a managed trail system (now that the CMP is done) many informal trails can be created by new residents who are unaware of the significance of the area. This is particularly true of the section on the other side of Hamilton Road along the hydro corridor.

RECOMMENDATION 6: Signage in addition to the homeowner brochure should be placed along the trail. This should be a condition of draft plan approval if the bridge is not built. Otherwise, the city must install signage about the significance of the woodland feature.

RECOMMENDATION 7: Vegetation removal (and trees will be lost if the bridge is constructed) MUST take place outside of bird breeding seasons. We believe the consult should say that rather than say it is recommended. It is a requirement of the Migratory Birds Convention Act.

RECOMMENDATION 8: An EIS be required before the bridge can proceed. If no net loss can be demonstrated, compensation must be provided by the City.

RECOMMENDATIONS IN THE EIS THAT EEPAC SUPPORTS (page 48+)

EEPAC agrees with designating Patch No. 09028 as Open Space on the OP, Green Space on the London Plan and zoned as OS(4) and included as a Significant Woodland the relevant maps using the boundaries shown on Figure 7 of the EIS. The boundary of the Significant Woodland and the buffers must also be indicated on Site Plan and construction contract drawings.

RECOMMENDATION 9: EEPAC would add to this recommendation that:

- **The boundary shown in the maps of the London Plan include the buffer**
- **the Site Plan and construction contracts also include Figure 7 which show the buffer and restoration areas**

EEPAC supports recommendations 2 and 3 on page 50, 5 on page 52,

EEPAC hopes recommendation 6 comes to pass. We, like the UTRCA, do not support LID measures on private property due to the lower chance of ongoing maintenance. We are doubtful any compensation will be forthcoming if the wetland features change post development as it will be impossible to prove causation.

EEPAC agrees with Recommendations 7 and 8 and further recommends

RECOMMENDATION 10: The Bird Friendly lighting guidelines be used. **EEPAC also recommends that all windows on adjacent lots facing the Significant Woodland be treated in such a way to reduce bird collisions.**
https://abcbirds.org/glass-collisions/stop-birds-hitting-windows/

Recommendation 9 of the EIS should be amended to say that permanent fencing **with no gates** must be required for any lots adjacent to the Natural Heritage Features.

We agree with Recommendations 10 to 15 with the addition that **should vegetation removal occur within candidate SWH habitat of Wood Thrush and Eastern Wood Peewee, additional surveys shall** (not may) **be required.**

Further to recommendation 10, It is required under the ***Migratory Birds Convention Act*** that any vegetation removal be conducted outside of the bird nesting season (April 1st to September 31st).

EEPAC agrees with an Invasive Plant Management Plan (#14) but the EIS is unclear if this is a condition of development or part of the draft plan conditions. EEPAC is indifferent to which but wants it included where it will be most effective and where performance can be monitored by the City.

We agree with Recommendation 16 and are encouraged by Recommendation 17 but wonder who will talk to Hydro One about this idea? If it is not agreed to, what next?

SUMMARY OF DRAFT PLAN and/or DEVELOPMENT AGREEMENT CONDITIONS RECOMMENDED BY EEPAC

Detailed Environmental Management Plan as noted by both Development Services and AECOM

The recommended Environmental Monitoring Plan should be a condition of both the development agreement and in the draft plan conditions.

Any trail lighting and all building lighting must follow the bird friendly guidelines.

All installed windows facing the woodland must be treated to reduce bird collisions. https://abcbirds.org/glass-collisions/stop-birds-hitting-windows/

Invasive Plant Management Plan (rec #14)

Environmental Monitoring Plan and Program (recommendation 18 - p. 55). This is where the detail mentioned by AECOM in its response to Development Services will be required.

- EEPAC agrees that vegetation monitoring must be done for three years following construction. What is unclear is when the clock starts – when is construction finished – upon assumption? When site preparation is complete? This must be clarified so that it can be included clearly in the appropriate document
- Recommendation #19 speaks to the Barn Swallow kiosk. EEPAC is unclear if this refers to the enhanced kiosk or the existing unsuccessful one. We agree with a three year period but it must be clarified that this is three breeding seasons. We are unclear as to what happens if the enhanced kiosk is also unsuccessful.

Recommendation #20 – page 55-6. Although EEPAC agrees, we believe signage that remains in place is more useful than a Homeowner Manual that will be set aside and likely not get to subsequent owners. EEPAC would also recommend that the Living with Natural Areas, Your Dog and Nature, and Is your Cat Safe Outdoors be sent to all residents within the subdivision upon assumption.

OTHER

Extract from page 17 of the 2017 Slope Assessment regarding the pedestrian bridge

"It should be noted that the recommended bearing capacities have been calculated by EXP from the test hole information for the preliminary design stage only. The investigation and comments are necessarily on-going as new information of underground conditions becomes available (for example, if more specific information becomes available with respect to conditions between test holes, when foundation construction is underway). The interpretation between the test holes and the recommendations of this report must therefore be checked through field inspections provided by EXP to validate the information for use during the construction stage."

The update should have used currently available air photos that are on the city web site. It would have made things easier to review as the current air photos show the recent construction activity on both sides of the feature.

Figures should be updated to show that there is no clarity as to where the watercourse enters the Thames because it was not studied as part of the EIS and that access was not given by some property owners. It is unfortunate no further investigations were done.

p. 30 (bottom half) is not clear that the second SWH is Terrestrial Crayfish. This page was updated to reflect it but the wording was not done well.

The location of the anuran call count station is not shown on any map either in the original EIS or in the revision. EEPAC also questions the date in Table 8 as it does not match the Environment Canada weather data at London Airport for the days and times listed. Also AECOM indicates in the table of comments that all three surveys were done in 2017. The EIS says the April survey was done in 2018 which is consistent with the weather data from Environment Canada for the day in question.

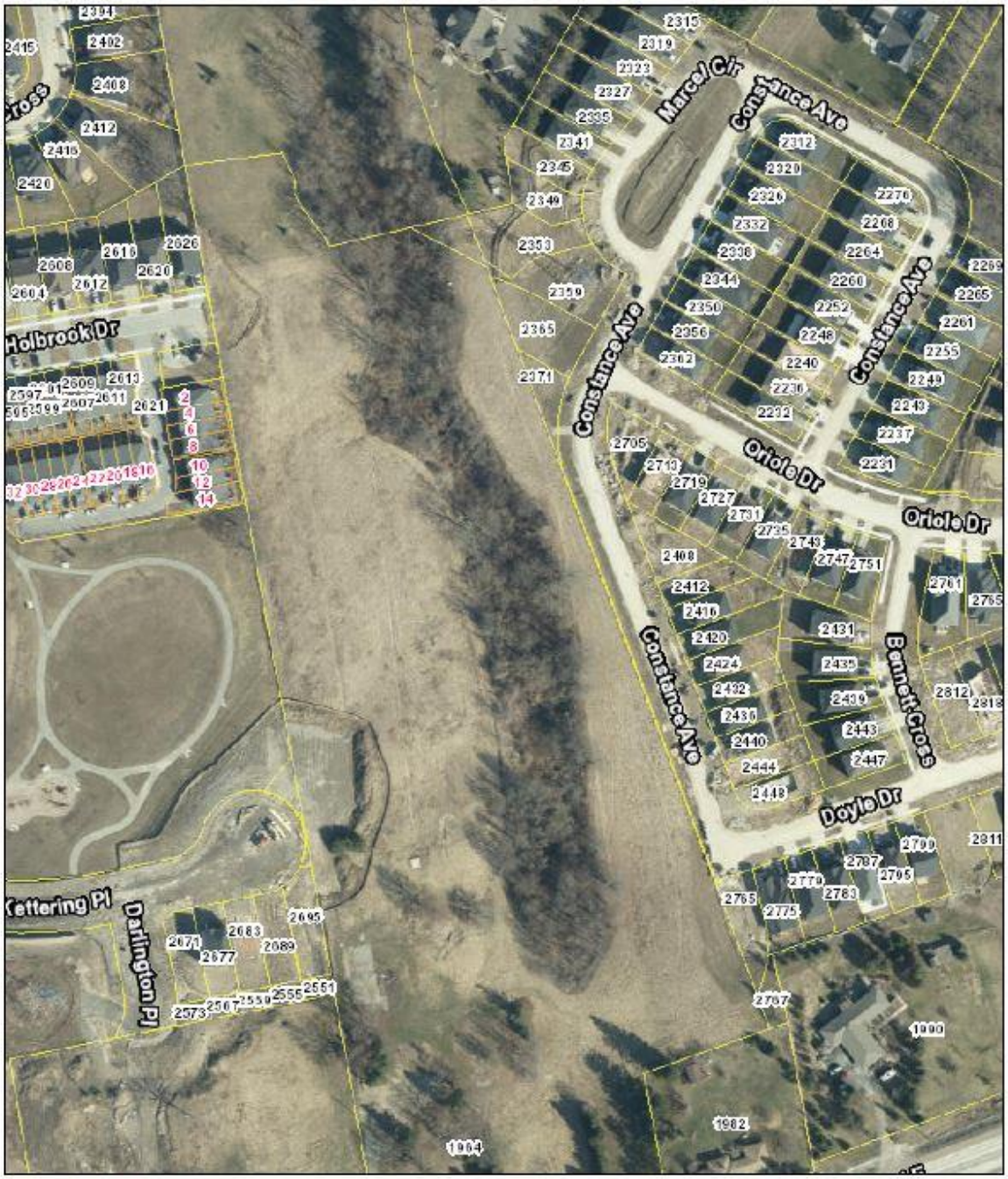
We appreciate these recommendations on page 38 but wonder how they can be mandated or even encouraged.

- Limit use of commercial fertilizers in areas bordering a habitat feature
- Limit use of salts or other additives for the control of snow and ice

RECOMMENDATION 11: A meeting between the Condo Board and city reps and/or EEPAC, be arranged soon after the Condo Board is convened, to explain why it is important to follow the recommendation re fertilizers and salt, rather than leaving it up to some clause buried in the condo board documents.

The calculation of the buffer seems to be unique. It would have been helpful to see what the buffer width would have been using current techniques and recommendations as per the work done by Beacon.

Aerial Photos Selector



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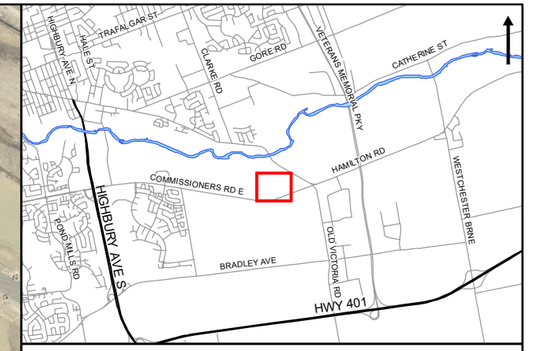

Legend

- Subject Lands
- Property parcel

Proposed Development

- Easement
- Roads
- Pathway
- Lots
- Development Limits
- Erosion Hazard Limit
- Top of Slope
- Top of Stable Slope

ELC Community

- FOD7-4 - Fresh - Moist Black Walnut Lowland Deciduous Forest Type
- FOD9-5 – Fresh – Moist Bitternut Hickory Deciduous Forest Type
- OAO - Open
- SWT2 – Mineral Thicket Swamp Ecosite

N

0 10 20 40 60 80 100
Meters

Victoria on the River Phase 6
Environmental Impact Study

Proposed Development Plan

December 2020	1:1,900	Datum: NAD 83 Zone 17 Source: City of London, LIO
P#: 60572621	V#:	

AECOM

Figure 6

Map location: L:\Legacy\CAKCN1FP001\Data\Projects\60572621 Grenier EIS\900-CAD_GIS\920-929 (GIS-Graphics)\Design\01_Reports\EIS\Grenier EIS - Proposed Development Plan - 20191010.mxd
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435-451 Ridout Street, London Ontario

Final Preliminary Environmental Impact Study

Prepared for: Farhi Holdings Corporation, 484 Richmond Street, Suite 200 London, ON N6A 3E6

Prepared by: Natural Resources Solutions Inc.

Project No. 2161 – July 2019

Reviewed for EEPAC by: Ian Arturo, Susan Hall & Brendon Samuels, 08 Mar. 2021

General Comments: A proposed multi-use development is planned on a, roughly rectangular in shape, approximately 1.4ha plot of land, bordered by Harris Park to the north, Ridout Street North to the east, Queens Avenue to the south, and a small access road to the west, which borders the North Thames River. The property contains parking lots, existing heritage buildings with established businesses, manicured lawn, and small cultural natural areas. A large portion of the subject property is identified as being within the floodplain and regulated area by the Upper Thames River Conservation Authority (UTRCA).

"The primary objective of the Environmental Management and Monitoring Plan is to restore the function and structure of features which are removed and to enhance any areas on-site. It is proposed that this brownfield site be remediated, as well as the non-natural fill materials be excavated from the bank. There is opportunity to stabilize the bank and re-naturalize it with native species through new landscaping." (p. 37).

Recommendation 1: Support the Landscape plan described on p. 24 and the outlined process to identify species to plant and invasive species to remove. All applicable City, Provincial, and Federal regulations must be followed this is a Brownfield site. Ontario Records of Site Condition regulations for Brownfields are here: https://www.ontario.ca/laws/regulation/040153.

"Stormwater management will need to consider the Thames River and the floodplain, as well as the One River Environmental Assessment (if finalized at the time)." (p. 24).

Specific Comment 1: The subject property is within floodplain lands considered for the "Back to the River" conceptual plan: https://backtotheriver.ca/sites/default/files/DIL1501_Back-to-the-River_Final-Book_DIGITAL%20%281%29.pdf and is also part of the Thames Valley Corridor. "The majority of the study area falls within the significant valleyland corridor" (p. 20). A 100 m buffer is suggested on p. 7, citing the Thames Valley Corridor Plan from 2011.

Recommendation 2: Even if the One River Environmental Assessment has not been finalized at the time of writing, concepts in the One River Environmental Assessment and the Back to the River plan must be accommodated.

"Specific to the subject property, and just beyond, included Redbud and Canada Yew (Taxus canadensis), both species believed to be associated with landscaping of the subject property and the adjacent Eldon House." (p. 13).

"Canada Redbud, which is considered Extirpated from Ontario (SX), was noted growing within the Cultural Woodland Inclusion. This species has escaped from the gardens at Eldon House, so this observation is also not considered significant. " (p. 14).

Specific Comment 2: These statements offer varying degrees of certainty. Is the presence of Redbud and Canada Yew naturalized from nearby landscaping the opinion of NRSI? Cite source if not.

Recommendation 3: "The Tree Inventory Data" table in Map 3 doesn't indicate which species are invasive. Indicate which species are invasive/non-invasive, perhaps as an asterisk in the native/ non-native column.

Recommendation 4: More discussion should take place regarding management of invasive vascular plants. There should be a clear differentiation between non-native species which are not considered invasive (such as London Plane-Tree (*Platanus X acerifolia*)) and those that are (such as Norway Maple (*Acer platanoides*)).

Three onsite surveys were completed (Sept., Oct. and Nov.). The timing was acknowledged as possibly accounting for a very low species diversity (total of 4 bird species observed within the subject property) of birds, no sightings of herpetofauna (p.16) nor Lepidoptera or Odonata species (p.18).

Eastern Wood-pewee (SCC): In 2013 UTRCA indicated that habitat for Eastern Wood-pewee should be protected regardless of whether the species was observed or not. Habitat for Eastern Wood-pewee was identified in Harris Park as candidate SWH (Eastern Wood-pewee), which extends onto the subject property as part of the northern cultural woodland (p.21).

Specific Comment 3: The same holds true for the common nighthawk which is considered special concern provincially and the flat top roof on the heritage buildings.

Recommendation 5: Disturbance to wildlife should consider bird impacts from the completed building. Building design should use the City of London's Bird Friendly Skies guidelines: http://www.london.ca/business/Planning-Development/Pages/Bird-Friendly-Skies.aspx.

"It is expected that once detailed designs, grading plans, and servicing information is known, that an addendum will be required to this EIS in order to update the impact analysis and identify further mitigation measures." (p. 1).

Recommendation 6: EEPAC should be invited to give feedback at this point and to review the monitoring plan.

Regarding the site concept (Map 5 – Development Plan):

Recommendation 7: All glass on the exterior of the building up to the 4th floor should either: a) comply with the Canadian Standards Association (CSA) 2019 Bird Friendly Building Design Standard using materials that will reduce the risk of bird-window collisions, or b) meet requirements to be laid out in London's Bird-Friendly Design Guidelines (to be finalized by Development Services in Q1 2021). Priority areas should be facades that face surrounding vegetation. In general, adding lines or dots or some form of pattern on the exterior surface of the glass should suffice.

Recommendation 8: Light pollution could be minimized, particularly on upper floors, by installing light timers and ensuring outdoor light fixtures are cut off (downward-directed).

A Wetland Conservation Strategy for London:

A Discussion Paper on Best Practices

Recommendations for the City of London and
Our Development Partners

Prepared for the City of London by the
Ecological and Environmental Planning Advisory Committee (EEPAC)

1 Introduction

Wetlands are among the most ecologically diverse and productive ecosystems in the world, rich in biodiversity, providing habitat for many species and rendering many ecological services. While wetlands cover only 1.5 percent of the Earth's surface, they account for 40 percent of the world's ecosystem services, including water purification, sediment trapping, nutrient cycling, temperature regulation, and reducing flood and erosion risks. Although wetlands are among the most important ecosystems on the planet, they are one of the most threatened due to human activities—urbanization, economic development, and climate change (Pattison-Williams et al., 2017). Wetland loss and degradation around the world has occurred at an alarming rate; over 64 percent of the world's wetlands have disappeared in a little over a century (Pattison-Williams et al., 2017).

Russia and Canada are home to the largest wetland areas. Canada's wetlands are diverse, consisting of marshes, bogs, fens, swamps and open water. However, approximately twenty million hectares of the nation's wetlands have been drained for agricultural purposes since European settlement, totalling approximately a 70 percent loss from historical highs (Pattison-Williams et al., 2017). Currently, wetlands in Ontario cover 350,000 square kilometres, comprising 25 percent of all the wetlands in Canada and six percent of the world's wetlands (A Wetland Conservation Strategy, p.2). These seemingly large numbers disguise the fact that much of Ontario's wetlands have been lost, and the losses have been severe in the densely populated areas—precisely the areas that most require robust wetland policy and protection. In the 19th century, 25 percent of southern Ontario's terrestrial area (two million hectares) consisted of wetlands. By 2002, 72 percent of the wetlands in southern Ontario (1.4 million hectares) had been lost primarily due to agriculture and expanding urban and suburban development (Ducks Unlimited, p. 1). From 1982 until 2002, southern Ontario lost another 3.5 percent of its pre-settlement wetlands, equalling 70,854 hectares, at an average of 35 km2 per year, an area the size of St. Thomas (Ducks Unlimited, 2010, p.1).

Until recently, our understanding of wetlands — and the services and functions they provide — was limited. Historically, wetlands were not considered important. They are not currently valued by the market system and financial incentives to protect them are lacking, wetlands have been, and are continuously, drained and/or filled in for roads, agricultural use, housing developments, new shopping complexes, or to serve as waste sites. As London expands in population and area, the City's wetlands are likewise facing consistent pressure as private and public construction projects are proposed. This document is prepared to facilitate the City and all stakeholders who are involved in development projects to ensure that development projects and other works do not negatively impact the City's wetlands through loss in area and function.

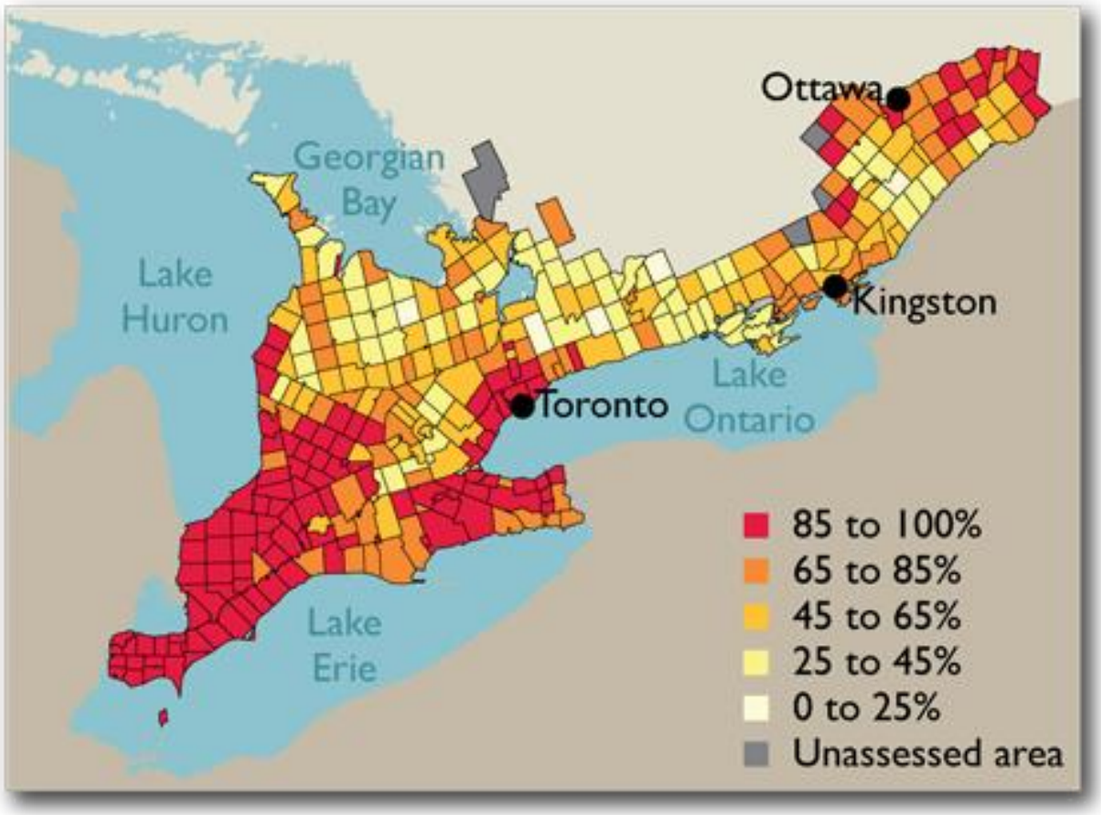

Figure 1. Wetland losses in southern Ontario (1880-2002). In southwestern Ontario, the loss of wetlands has been the most dramatic, with over 85 percent of the areas originally covered in wetlands converted to other uses.

2 Definitions

2.1 Types of Wetlands

- **Bog** — A wetland with acidic soils that may or may not have trees, with waterlogged soils — fed solely by precipitation — that tends to accumulate peat and is associated with low productivity. Bogs are often very old, perhaps thousands of years. They often have a low diversity of species. Rare in southern Ontario.
- **Fen** — A wetland dominated by grasses, sedges and rushes that may or may not have trees, with waterlogged soils that tend to accumulate peat. Fens are fed by groundwater and surface water runoff, and are associated with low productivity. Rare in southern Ontario.
- **Marsh** — A wetland without trees, associated with flowing water, and tends to be highly productive. Dominated by non-woody plants such as cattails, rushes, pond lilies and submerged plants.
- **Swamp** — A wetland with trees, associated with flowing water, and tends to be highly productive.
- **Wetland** — An ecosystem which is seasonally or permanently covered in standing water or saturated with water for a least part of the year, or where the water table is close to or at the surface, such that vegetation has adapted for growth in saturated conditions.

2.2 Ecology and Development Terms

- **Additionality** — The degree to which an offsetting project generates new and additional contributions to biodiversity conservation/wetland conservation.
- **Biodiversity Offsetting** — Compensating (or attempting to compensate) for losses of biodiversity at an impact site either by creating ecologically equivalent gains or credits at an in-site or off-site location. The purpose of biodiversity offsetting is to incur no-net loss of biodiversity.
- **Critical Function Zone** – A term that describes non-wetland areas within which biophysical functions or attributes directly related to the wetland occurs.
- **Invasive Species** — A non-native species that outcompetes native species and becomes a nuisance or threat to ecosystems.

- **LID** (Low Impact Development) -- Land planning and engineering design approach which considers conservation and on-site nature protection to manage stormwater runoff as part of green infrastructure.
- **Mitigation Banking** — A system whereby a developer purchases offset credits from a wetland bank -- an area that has been previously restored, created, enhanced or preserved and set aside by a third party, which has received certification for compensation. The banker is responsible for the success of the compensation project.
- **Mitigation Hierarchy** — A tool used in biodiversity offsetting to minimize the harm that occurs due to a project. Preference is given first to avoiding negative impacts, then to minimizing impacts at a project site, followed by restoration/rehabilitation and finally, offsetting biodiversity losses that cannot be avoided.
- **Precautionary Principle/Approach** – An approach utilized in decision making regarding the environment when risks are suspected but not known with certainty.
- **Rehabilitation/Creation/Re-creation** — Re-establishing once-existing wetlands
- **Restoration** — Improving areas degraded through deleterious actions such as in-filling, changes in drainage patterns, sedimentation, vegetation removal, and pollution.
- **Urban Heat Island Effect** — When an urban or metropolitan area is significantly warmer than rural areas due to human activities and the built environment.
- **Wetland Offsetting** — Compensation for the negative impacts of development through the restoration or creation of new wetlands to achieve no-net-loss or a net environmental gain.

3 Wetlands: Structure, Biology and Function

Wetlands can range in size from very small (a few square metres) to hundreds of square kilometres. Wetlands may be isolated, occur along the edges of lakes and rivers, or exist in conjunction with other natural areas such as woodlands, shrublands and native grasslands. In some cases, closely spaced wetlands related in a functional way can also form a wetland complex. In southern Ontario the average wetland is 25 hectares and the majority are swamps, dominated by trees and shrubs.

Wetland types are recognizable by their indicator and keystone species.

Table 1: Common keystone and indicator plant species in Southwestern Ontario's Wetlands

Species	Habitat Types	Habitat requirements
Broadleaf cattail Typha latifoiia	Marshes Bogs Fens	Common resident of the marsh environment. Usually one of the first species to colonize new habitats. Requires full sunlight. Seeds germinate in acidic, neutral or basic pH, but only in shallow water. Seeds will also germinate in low oxygen conditions. Cattails can occur in sand, silt, loam and clay substrates.
Small-fruited bulrush *Scirpus microcarpus*	Marshes Fens	A common resident of the marsh environment Tolerates both full-sunlight and shade Requires silty/mucky soil with a high water-holding capacity Grows best in neutral pH, but can also grow in acidic conditions
Soft maples *Acer saccharinum,* *Acer rubrum*	Swamps	Commonly found along the edges of swamps Tolerant to waterlogged soils and flooding Tolerate sun or shade and in all soil types They can thrive in acidic, neutral and basic pH conditions
Black spruce *Picea mariana*	Bogs Swamps	This species is indicative of a bog environment Also found in coniferous swamps Tolerant of highly acidic soils and is most abundant in peat bogs A pioneer species in bogs and can invade the *Sphagnum* spp. mat Grows well in a variety of soils, moisture levels and light conditions

3.1 Wetlands: Vital for species richness and abundance

While the economic benefits of wetlands tend to focus on flood control and water purification, wetlands provide other irreplaceable ecological services. One of the economically unappreciated features of wetlands is their contribution to biodiversity conservation and maintenance of the web of life. Since

marshes and swamps are usually shallow enough to allow sunlight to penetrate and to allow for seasonal warming, they support high levels of photosynthetic activity, making them highly productive areas, full of diverse and abundant species. In Ontario, wetlands are biodiversity hotspots, supporting a variety of plants, birds, insects, amphibians and fish, and are particularly valuable to migratory water and shore bird species for breeding and nesting. Wetlands are also a home to a number of Ontario's species at risk (SAR). Two 'SAR' species that occur in London's wetlands are the Eastern Ribbonsnake (Thamnophis sauritus) and the Eastern Prairie Fringed -Orchid (Platanthera leucophaea). Their biggest threats are loss of habitat including loss of wetland and riparian habitat (Environment Canada 2015).

Wetlands provide opportunities for recreational activities, such as hiking, boating, hunting, fishing, trapping and birdwatching. Almost everyone likes being on or near the water, and the presence of such a variety of fascinating lifeforms makes our wetlands enjoyable treasures.

3.2 Wetland: Nature's water quality regulators

Wetlands are vital for human health and safety, through their ability to control flood waters, protect against natural disasters, and mitigate and adapt to climate change. The natural water purification system within wetlands removes silt and sediments, preventing them from entering rivers. The wetland-retained sediments gather nutrients and help form fertile agricultural land. Chemical reactions in wetlands can detoxify some substances in the water, thereby protecting us from pollution. As more of the City's land is transformed with impervious covers of asphalt, concrete, and rooftops, rainwater run-off becomes increasingly severe. As such, London's remaining wetlands become progressively important for flood management and water purification. In a city like London, that is surrounded by agricultural land, preserving and expanding our wetlands would help remove organic material, particularly phosphorus and nitrogen (resulting from fertilizer runoffs) from entering our streams, rivers and lakes. These wetland functions are not just 'nice' – they provide essential ecosystem services and have real economic benefits for society as a whole.

Wetlands also alleviate drought by holding water when conditions are dry. Water accumulated in wetlands seeps into the ground, helping to replenish underground aquifers. Wetlands work to mitigate climate change by absorbing greenhouse gases, acting as carbon sinks that stabilize climate conditions. In London, the City's wetlands lessen the urban heat island effect, which will become increasingly important as temperatures rise.

4. Wetland Conservation

Currently, land conversion is the biggest threat to wetlands in southern Ontario. Urban pressures are driving up the price of land, making land markets highly competitive, which ultimately leads to significant rates of wetland conversion (Lantz et al., 2013). Ecosystem services provided by wetlands — considered free, common goods—are routinely omitted in the market prices of projects. Consequently, wetland loss or disturbance is rarely given adequate consideration in land-use planning decisions. London, as a growing and dynamic city, is faced with the persistent challenge of balancing expanding city infrastructure and conserving its ecosystems, especially wetlands.

4.1 Legislative Background

The following section provides only a brief snapshot of relevant international, national and municipal regulations that govern wetlands and their conservation. Appendix 3 provides a more in depth, though not exhaustive, list of pertinent laws. Most nations have recognized the need to preserve wetlands. Internationally, their protection is governed by the Ramsar Convention, a treaty for the conservation and sustainable use of wetlands, signed in 1971, ratified in 1975 and adopted by Canada in 1982. A subsequent Working Group on Criteria and Wise Use of Wetlands clarified the terms "sustainable utilization" as found in Article 3 of the Ramsar Convention as "human use of a wetland so that it may yield the greatest continuous benefit to present generations whilst maintaining its potential to meet the needs and aspirations of future generations" (Birnie and Boyle, 2002, p. 618). This Working Group also confirmed that activities involving wetlands should be governed by the *precautionary principle* and argued that when complete knowledge is lacking regarding the outcomes of an activity, that activity should be prohibited (Birnie and Boyle, 2002).

Provincial Legislation. Ontario, influenced by international conventions and agreements, is moving forward with a strategy to stop wetland loss and to restore wetlands where the largest losses have occurred. Guided by "A Wetland Conservation Strategy for Ontario 2017-2030", the province is striving

for a social and political climate where “Ontario’s wetlands and their functions are valued, conserved and restored to sustain biodiversity and to provide ecosystem services for present and future generations” (A Wetland Conservation Strategy for Ontario, 2017, p. iii). The strategy comprises two targets: the net loss of wetland area and function will stop by 2025, and a net gain in wetland area and function will occur by 2030. The Strategy also puts forth the principle that wetlands should be conserved according to three hierarchical priorities —protect (retain area and functions of wetlands), mitigate (minimize further damage), and restore (improve and re-establish wetland area and function). Most significantly, the above- mentioned document calls for a *precautionary approach* regarding wetlands and development projects, in keeping with the Ramsar Convention.

The 2014 *Provincial Policy Statement (PPS)* is central to provincial wetlands conservation. It asserts that our natural heritage is a resource: “The Province must ensure that its resources are managed in a sustainable way to conserve biodiversity, protect essential ecological processes and public health and safety, provide for the production of food and fibre, minimize environmental and social impacts, and meet its long-term needs” (PPS, p.4). The purpose of the provisions within the PPS is to protect “natural features and areas… for the long-term” (PPS, p.22). The PPS clearly states that “[t]he diversity and connectivity of natural features in an area, and the long-term *ecological function* and biodiversity of *natural heritage systems,* should be **maintained**, **restored** or, where possible, **improved**, recognizing linkages between and among *natural heritage features and areas, surface water features,* and *groundwater features*” (PPS 2.1.2, bold added). The policies contained within the PPS are minimum standards only; planning authorities and decision-makers are free to take more stringent measures regarding conservation.

Given the interconnectedness of wetlands with other areas of environmental protection, such as biodiversity conservation and climate change, wetlands and their preservation appear in several other provincial documents, two of particular note being “Biodiversity: It’s in our Nature” (2011) and “Climate Ready: Ontario’s Adaptation Strategy and Action Plan, 2011-2014”. Significant statements within these documents pertain to the importance of wetlands for climate change mitigation and adaptation, as well as for their role in ensuring the survival of Ontario’s endangered and threatened species. For the purposes of this document, it is necessary to note that all departments concerned with various areas of conservation recognize the importance of preserving our wetlands.

Municipal Policies: The London Plan. Land use planning has the greatest influence on the conservation of wetlands. Official plans, local decisions on land use, and community-based land use plans have far reaching impacts on the green spaces of our City, and how the City moves forward with approval for development projects that conflict with conservation values. *The London Plan* has clear provisions for the “identification, protection, conservation, enhancement, and management of our Natural Heritage System” (1293.1). Of particular importance for London as it considers **the retention of its wetlands, no matter how small** (bold added), is *The London Plan* paragraph 1301 which employs the same wording as article 2.1.2 of the *Provincial Policy Statement* noted above. *The London Plan* likewise specifies that no development or alteration shall occur in provincially significant wetlands (PSW) as evaluated and confirmed by the Ministry of Natural Resources and Forests (MNRF), designating them instead as Green Space (*The London Plan,* 1332, 1333, 1390[1]). This provision is in accordance with the *Provincial Policy Statement*.

Notes:
[1] These paragraphs do not specify that the wetland must be “provincially significant” nor do they qualify ‘wetland’ with a size.

[2] Clause 1334 does suggest an opening for relocation and/or offsetting disturbed wetlands, but without specifications on how these projects should be undertaken or monitored. These guidelines will attempt to fill this gap.

4.2 Restoration: Re-establishment and Rehabilitation

Restoration of wetlands can take two forms: “re-establishment” -- returning the natural or historic function of a former wetland with the goal of increasing wetland area -- and “rehabilitation” -- repairing the natural or historic functions of a wetland, such that there is an increase in functions but no increase in the remaining wetland area (McKenney and Kiesecker, 2010).

Restoration ecology is a relatively young discipline. Consequently, insufficient evidence is currently available to demonstrate definitive success in either rehabilitation or re-establishment. Analysis of the hydrologic structure of restored or created wetlands usually only proceeds for one to fifteen years after

the project is undertaken, therefore the long-term effects are unknown (Moreno-Mateos et al., 2012). Still, restoration ecologists are increasingly recognizing that, given ecosystems' complexity, restoring or re-creating one to some specified state, especially within a short time frame, is not feasible (Hobbs et al., 2011 in Maron et al., 2012). Restoration and creation of plant assemblages, particularly woody vegetation, is a lengthy process, and the actual composition of the plants may differ. Opportunistic invasive or non-native species may quickly colonize a disturbed area, outcompeting native species, thereby altering the plant assemblage as it compares to reference sites. Indeed, wetlands are particularly vulnerable to invasive species due to their interconnection with waterways, their proximity to roads (paths along which invasive species may travel), and climate change, which puts stress on wetlands as a result of changing weather patterns (increased rainfall and/or drought). Wetlands are continually adjusting to disturbances occurring within them and within the surrounding landscape.

An average of thirty years is necessary for restored or created wetland sites to converge with the reference states of wetlands. However, the soil composition, chemical properties and ecosystem functions (i.e. nutrient cycling) may take significantly longer to recover (Maron et al., 2012). Even after a century, wetlands on average only operate at 75 percent functionality compared to reference sites (Moreno-Mateos et al., 2012). Restoration can prove even more difficult due to challenging situations occurring outside of the site, such as continued urbanization or new development projects that exert negative influences on the restoration site (Maron et al., 2012). Stranko et al. (2012) looked at the effectiveness of stream restoration in urban areas and found that these restoration activities failed to improve any of eight biodiversity indices. The authors determined that the impacts of urbanization on stream ecology are irreversible and consequently it is unlikely that any biodiversity gains can come from stream restoration projects in urban areas (Maron et al., 2012). The same is likely true of wetlands -- and particularly small wetlands -- in urban settings. The more complex the hydrology or the ecological system, the more difficult it is to restore a wetland completely; in many cases it may be impossible.

4.3 Relocation or Creation as a Means to Conserve Wetlands

Wetland creation — construction of a wetland where one did not previously exist — is much more complicated than restoration, with less potential for success. it is not recommended as a solution to allowing an existing wetland to be destroyed.

Wetland relocation (a compensation plan) is considered when the wetland feature is not categorized as provincially significant -- or significant wildlife habitat is not confirmed -- yet the wetland feature provides productive amphibian breeding habitat and habitat for terrestrial crayfish. **Under *The London Plan*, all wetlands, regardless of size, are to be protected under the natural heritage system policies. In each case where a wetland is slated to be relocated or altered, the City must consider the merits of destroying the functionality of that wetland and replacing it with a wetland which may only operate at 75 percent functionality (in the best-case scenario), or which may shift to an alternate wetland type**. In such cases, the City must ascertain whether the existing or replacement function is more important, whether the proposed wetland will increase wetland diversity, and whether the potential for increased biodiversity is worth any loss to habitat of endangered species resulting from the project (Kentula, 2002).

If the wetland functions can be replicated, a similar habitat is created elsewhere on the subject lands or along a nearby stream corridor. Target wildlife are gathered and trapped from the wetland habitat lost due to the development project and transported to the compensation wetland. Before relocating or creating a new wetland, the impacted wetland should be examined within a larger landscape and social context to determine which roles it plays within the ecosystem/social structure. For instance, is the current wetland a stop on a migratory route? Does it contribute to the watershed levels? It is necessary to look beyond municipal boundaries, which are artificial limits when applied to ecosystems.

4.4 Precaution and Preservation Over Relocation

During the decision making process, preservation of wetlands should receive top priority since restoration, relocation and recreation projects seldom meet targets. To date, research has demonstrated that restoration and relocation projects are slow to produce results. Indeed, restoration ecologists have been unable to re-create full functional replacement; it may not even be possible to fully re-create all the functions of a wetland. As Poulton and Bell noted, "[nowhere is there a resounding success story, where offsetting has been demonstrated to achieve its full potential" (Poulton and Bell, 2017, p. i). In a study by Suding (2011), reviewing global successes and failures of restoration projects, it was found that only one-third to one-half of projects were successful where restoration was used to fix a degraded system, and that when a habitat was re-created, the success rate was even lower (Maron et

al., 2012). Re-vegetated areas on highly degraded sites rarely resemble the target ecosystem (Maron et al., 2012). In a meta-analysis of restored wetland systems around the world by Moreno-Mateos et al. (2012), it was discovered that even after a century, the biological structure (i.e. plant assemblages) and biogeochemical functioning (storage of carbon in wetland soils) was on average 26 percent and 23 percent lower, respectively, than reference sites. These findings support that case that wetland offsetting should be used as a last resort in the mitigation sequence.

International, national and provincial legislation and policies stress the importance of employing the *precautionary approach* in regard to environmental problems. This principle should be applied more rigorously during the decision making process for development projects that involve wetlands due to our limited knowledge of their functions and processes. Currently, too much faith is placed on the ability of restoration, relocation and recreation of wetlands to recover lost biodiversity. The technical success of offsets is seriously limited due to time lags and problems with the measurability of the value being offset (Maron et al., 2012).

5. Conclusion: Ensuring the future of London's wetlands

"Natural ecosystems provide the foundation of a functioning human society" (Pattison-Williams et al., 2017, p. 400).

Wetlands are an important natural heritage feature of our city. They provide habitat, shelter and food sources for local species, a variety for ecosystem services such as flood control and water filtration, and opportunities for recreation and nature enjoyment for the community. People must have access to a good natural and cultural environment, rich in biological diversity, as a basis for health, quality of life and well-being. As London continues to grow in population and area, every effort should be made to preserve natural areas within the city limits, and where future development projects affect a wetland, the precautionary approach should be upheld. Better scientific understanding of biotic and abiotic factors that hamper the success of relocation projects is necessary before London embraces offsetting and relocation as a means to compensate for losses stemming from development and urban expansion. The risk always exists that the offset never achieves an equivalent conservation value; ecologists have expressed concern that biodiversity offsetting exchanges "certain losses for uncertain gains" (Maron et al., 2012). The possibility of relocating a wetland for a development project should not be used as an excuse to undertake that project, when avoidance of disturbance is equally an option. Economic concerns should not be given greater weight than environmental concerns where wetlands are affected.

The principle of protecting "natural features and areas … for the long-term" found in the *Provincial Policy Statement* must be remembered during the analysis of development proposals. When considering the merits of a project proposal, City staff, the City Council and developers are advised to take a broad look at the effects of the works beyond the narrow development site to the broader functioning of ecosystems within the city. The PPS and the *London Plan* clearly state that "the diversity and connectivity of natural features in an area, and the long-term *ecological function* and biodiversity of *natural heritage systems,* should be **maintained**, **restored** or, where possible, **improved**, recognizing linkages between and among *natural heritage features and areas, surface water features,* and *groundwater features*" (PPS 2.1.2; London Plan, 1301, bold added). The City is encouraged to return to this provision each time a project considers removing, altering or otherwise damaging a wetland. Preservation of our wetlands, no matter their size, should be paramount.

Part 2: Wetland Offsetting in London: Conservation Through Relocation

1. Introduction to Offsetting

Wetland offsetting involves mitigating negative impacts upon one wetland by intentionally restoring or creating a new wetland at a different location. This type of policy is typically set within a mitigation hierarchy and involves the hierarchical progression of alternatives, including avoidance of impacts, minimization or mitigation of avoidable impacts and offsetting of impacts that cannot be avoided. Recently offsetting has become a popular approach to balance development projects with the need to protect biodiversity. It is meant to ensure no net loss, and, ideally, a net gain of biodiversity. However, it must be made clear that offsetting will not replace other legislation that provides protection for certain wetlands (i.e. provincially significant wetlands) where disturbance is prohibited.

Accepted methods of compensation include wetland restoration, creation, enhancement and preservation. *The London Plan* (1402) touches on offsetting or "compensatory mitigation"**,** stating that it may be provided through "additional rehabilitation and/or remediation beyond the area directly affected by the proposed works" and/or "off-site works to restore, replace or enhance the ecological functions affected by the proposed works". London has already taken action on offsetting, including a wetland relocation project, a feasibility study concerning the addition of wetland features to the riparian zone of a stream corridor, and an investigation of the availability of land that might be used to offset the loss of Eastern Meadowlark habitat. Should the City of London elect to employ offsetting more frequently to fulfill its targets of enhancing wetland area, key issues must be addressed: the appropriate policy mechanisms for implementation; the roles and responsibilities for implementation; long-term monitoring of wetland offsetting and restoration projects; and the establishment of clear monitoring to ensure that the wetlands' functions have been properly restored (Ontario Ministry of Natural Resources and Forestry, 2017). In addition, the impacted biodiversity values must be clearly defined and measured; time lags and uncertainties must be explicitly accounted for in loss/gain calculations; and any time lags should not pose an interim threat to biodiversityvalues.

2. Primary Screening When a Project Will Potentially Affect a Wetland: Determining the best course of action

In Ontario, wetlands are ranked to determine whether they should receive special protection as "provincially significant" in accordance with the Ontario Wetland Evaluation System (OWES) . This system is found at: **https://www.ontario.ca/page/wetlands-evaluation**. Provincially Significant Wetlands (PSWs) are those areas identified by the province as being the most valuable. PSWs are identified using objective criteria based on the best available scientific methods. The OWES ranking system is a standardized method of assessing wetland functions and societal values, which enables the province to rank wetlands relative to one another. A wetland that has been evaluated using the criteria outlined in the OWES is known as an "evaluated wetland" and will have a "wetland evaluation file". As wetlands may change over time an OWES file for a given wetland is considered an "open file".

Wetlands that have not been previously evaluated are often affected by development projects. It is therefore vital to perform a comprehensive evaluation prior to taking the decision to disturb and/or relocate the wetland. Assessment of the wetlands will consist of quantitative and qualitative observation. **Quantitative observations** should include amphibian call surveys (three spring visits); crayfish burrow count using the quadrat method; baited minnow trapping; riparian and aquatic vegetation inventory; and the measuring of spring, summer and fall water levels. **Qualitative observations** may include a benthic macroinvertebrate survey (bioindicators), water pH analysis, specific conductivity (dissolved solids), turbidity (suspended solids), water colour (algae), and an examination of the presence and levels of chlorides and nitrites. Other qualitative observations should consist of a search for the presence of turtles and any incidental wildlife; a determination of whether backyard encroachment exists; and an analysis of the health of neighbouring woodlots and other vegetation (invasive species) near and beyond the wetland. Presence of an invasive species in a wetland should not be justification for the removal or relocation of the wetland. Options to remove the invasive species and restore the wetland should be equally considered.

The following qualities of a wetland will assist in determining whether isolated wetlands should be preserved. It should be kept in mind when examining this list that concluding whether or not a wetland should be protected is largely subjective. Each wetland is unique, with particular functions and traits that account for its regional importance. Therefore, it is not possible to state that if a wetland possesses a certain number of the following qualities, it should be preserved; each point needs to be evaluated for its own merit.

Qualities of a Wetland

- has a groundwater connection to a larger complex (i.e. PSW)
- is supported by groundwater discharge (re: specific wetland plants presence)
- is part of a floodplain
- a watercourse connects the wetland to other aquatic features
- serves as storm water storage
- is habitat for breeding amphibians
- sits close to a woodland and Western Chorus frogs were heard calling.
- was recently (within the last 20 years) a fish habitat.
- was recently (within the last 20 years) a turtle nesting habitat or habitat for seasonal Concentration Areas (i.e. migrating birds).
- Terrestrial crayfish chimneys were observed surrounding the wetland.
- SAR species (threatened or endangered) were found.
- serves a corridor function linking neighbouring natural heritage features together.

3. Next Steps: How Best to Ensure Success with a Wetland Offset

If the decision is taken to relocate a wetland as a means to compensate for damage, disturbance or removal of a wetland in its entirety to satisfy a development project, the stakeholders must consider key aspects prior to the work. Ducks Unlimited outlined five considerations in their publication “Wetlands on My Lands” (2011): site selection; soil testing; size and shape; wetland depth; and wetland and upland enhancements. While this publication is meant to address wetlands on private properties, the principles are relevant for city projects that involve wetland areas. This list has been expanded to cover other key aspects associated with potentially successful wetland transfer. Some policy statements require offsets to be in place before a project takes place. Though this provision may be advisable with the pace of development in London, it may not be practicable.

Offsets are never one-size-fits all; local contexts can provide a variety of challenges, and relocation or re-creation cannot produce an exactly equivalent wetland. The City and proponents are advised then to determine how to best create “equivalency” to address the losses of biodiversity and functionality. In particular, prior to any relocation or offset project, the City should ascertain where the offset should be located, when and for how long it should be operational, how risk of failure will be managed, and what will be the next course of action should an offset fail to reach its goals (McKenney and Kiesecker, 2010). After gathering sufficient data, wetland performance model should be developed prior to commencing re-creation or relocation projects (Charbonneau and Bradford 2016).

1. Site Selection - Site selection usually is determined based on the availability of land or on policies that require the restored or created wetland to be in close proximity of a wetland loss (usually due to migration considerations). Location is exceedingly important in terms of influencing the structure and function of the wetland and guaranteeing its longevity. Planners must consider both present and future land uses. Ducks Unlimited suggests that the site for the new wetland be determined during spring runoff to better understand water flows, and to calculate a more accurate estimate of the catchment area. A topographic survey is recommended to provide more accurate data about surface flow. Should the survey determine that the site has less than 0.6 m drop, then excavating a basin is required. The new wetland should be located near a significant woodland or other natural features (i.e. stream) such that it is not isolated and can be an integral part of the natural landscape. Studies show that larger wetlands recover faster than smaller ones, and that smaller restored or created wetlands often become more isolated. Moreover, their lack of connectivity to larger systems greatly hinders the ability of local biota to restore the wetland to pre-impact functioning (Moreno-Mateos et al., 2012). This finding is significant for London where development projects will likely only involve smaller wetlands within a highly fragmented landscape.

Site selection is tied to hydrologic analysis. The hydrologic conditions are probably the most crucial factor for determining what type of wetland can be established and what kind of wetland processes can be maintained (Kentula, 2002). These include inflows and outflows of groundwater and surface water, the resulting water levels and the timing and duration of soil saturation and flooding (Kentula, 2002).

The water quality of the wetland is critical, yet often overlooked. If there are chemical inputs from the surrounding area, these can overwhelm a wetland. This factor is particularly important if the wetland is close to a road spread with de-icing salts. Chemicals can alter the productivity and composition of the plant community of the wetland, possibly favouring nuisance species, and they may harm animal species that cannot survive and breed in chemically altered waters.

2. Test the Soil - Wetlands are characterized by impermeable soils. Fine-textured soils -- not sandy or gravelly -- are suitable. Should the soil for the new site not prove suitable, clay soils can be brought in to line the basin so that the wetland can hold water. Although a created wetland may be structurally similar to a natural wetland, its hydrology may differ greatly if the permeability of the substrates is different (Kentula, 2002). Often the soils in created wetland contain less organic matter, which may affect plant growth. Using soils from a "donor" wetland or the impacted wetland to help create the new wetland may be able to increase the soil organic matter and provide the nutrients necessary for plant species, microbes and invertebrates (Kentula, 2002). Microbes in the wetland play a crucial role in biogeochemical reactions which cause nutrient cycling and sustain other higher plants and animals. Comprehensive understanding of microbial composition and population will facilitate better understanding about a wetland condition (Bodelier and Dedysh, 2013).

3. Size and Shape - To address the problem that restoration or re-creation projects rarely, if ever, produce an equally biodiverse and functional wetland, multipliers are employed to determine the scope of an offset project. Since wetlands are particularly valuable, the offset multiplier for wetlands is usually higher compared to other areas. *The London Plan* specifies that "mitigation shall mean the replacement of the natural heritage feature removed or disturbed on a one-for-one land area basis" (*The London Plan,* 1401). *The London Plan* goes on to say "compensatory mitigation shall mean additional measures required to address impacts on the functions of the Natural Heritage System affected by the proposed works. The extent of the compensation required shall be identified in the environmental impact study, and shall be relative to both the degree of the proposed disturbance, and the component(s) of the Natural Heritage System removed and/or disturbed" (*The London Plan,* 1401). 1402 (3) likewise states that "[replacement ratios greater than the one-for-one land area [are] required to mitigate the impacts of the proposed works" (*The London Plan*, 1402). Given the extent of wetland loss in London and the high ecological value they provide the suggested multiplier ratio would be 3:1 for the loss or disturbance to a low to medium value wetland; and 4:1 for a high value wetland, particularly one that provided habitat for SAR species.

Regarding shape, Ducks Unlimited suggests that the new wetland be irregularly shaped such that it closely resembles a natural wetland (as opposed to a storm pond), providing coves to shelter species.

4. Wetland Depth – The floor of the new wetland should be excavated such that it has varying depths to encourage the growth of various types of vegetation. New vegetation will grow in water depths of 1 metre or less. To achieve the ideal ratio of vegetation and open water, Ducks Unlimited advises that approximately 25 percent of the created wetland area be 1 m or more in depth. Excavating some deeper areas will allow some areas to remain free of vegetation and provide habitat for native fish.

5. Wetland and Upland Enhancements - The newly established wetland should be surrounded by a pollinator habitat and other habitat enhancements (ex. nesting boxes, snakes). Strategically placing branches or logs in and around the wetland would likewise provide basking areas for frogs, turtles and ducklings.

6. Substrate augmentation and handling - In an interview with Jill Crosthwaite, a biologist with the Nature Conservancy of Canada, she emphasized the importance of transferring muck (the organic salvaged marsh surface or SMS) from the impacted wetland to the new wetland. The SMS contains a seed bank of marsh vegetation that could prove immensely beneficial to establishing a healthy and ecologically diverse wetland. Following the transfer of SMS from the original wetland to a new location, Crosthwaite has witnessed the re-emergence of an endangered species in the created wetland that was absent from the impacted one.

Hunt (1996) likewise analyzed the effects of on-site and off-site SMS transfer and found that SMS provides suitable chemical substrate for wetland seed germination and survival, as well as moist physical substrate. However, the plant composition of the created wetland may never fully resemble that of the original, natural wetland due to large difference in soil water chemistry. Based on the results of that study, two 'common sense' practices should be considered. First, the excavated soil from the new wetland should not be spread over the perimeter soil area. This soil should be removed from the site as

it may alter the chemistry of the transferred wetland soil. Second, the excavation equipment employed during the project should be small and lightweight and should avoid as much of the perimeter area as possible; a narrow alleyway to the excavation area will help prevent significant soil compaction.

Finally, a study by Wolf et al. (date), found that nutrient nitrogen and phosphorus levels varied depending on whether the natural or created wetland was dependant on a stream as its primary water source, or whether precipitation or groundwater fulfilled this function. Greater connectivity to stream surface water may result in larger inputs of allochthonous nutrients (sediments or rocks originating at a distance from their present position) that could stimulate internal nitrogen and phosphorus cycling. The findings suggested that wetland creation and restoration projects should be designed to allow connectivity with stream water if the goal is to optimize the function of water quality improvement in a watershed.

7. Planter material selection and handling - Plants for the re-created wetland should be native, fast colonizing and drought resistant to account for fluctuations in weather and climate. Created wetlands will do better if the plants chosen closely to resemble those of similar, local wetlands. Where possible, plants should be transferred from the original wetland to the new location. A variety of submergent and emergent plants should be planted, including a variety of shrubs and trees in the buffer areas to provide habitat for species as well as to ensure that water quality in the wetland is maintained. In the early years, the wetland must be closely monitored to ensure that invasive species are not permitted to colonize the area, particularly *Phragmites*.

8. Critical Function Zone and Buffer Zone - The term **Critical Function Zone** (CFZ) describes non-wetland areas within which biophysical functions and attributes directly related to the wetland occur. This could, for example, be adjacent upland grassland nesting habitat for waterfowl (that use the wetland to raise their broods). The CFZ could also encompass upland nesting habita**t** for turtles that otherwise occupy the wetland, foraging areas for frogs and dragonflies, or nesting habitat for birds that straddle the wetland-upland ecozone (e.g. Yellow Warbler). A groundwater recharge area that is important for the function of a wetland but located in the adjacent lands could also be considered part of the CFZ. Effectively, the CFZ is a functional extension of the wetland into the upland; **it is not a buffer for the wetlan**d (Environment Canada, 2013). The CFZ is an important factor to consider in an offsetting project.

Buffers -- undisturbed vegetation adjacent to a wetland -- are essential to ensure a healthy wetland (Ducks Unlimited Canada (B)). Buffers provide habitat, food, corridors and breeding areas for species while also reducing the harmful effects of nearby development or activities, and maintaining water quality by trapping and absorbing sediments, nutrients and pollutants. According to Ducks Unlimited Canada, buffers should be a minimum of 20 metres, however, the larger the buffer the better the results. A buffer of 20-50 metres will decrease sedimentation and improve water quality, while a buffer that extends beyond 50 metres is best for wildlife and water quality (Ducks Unlimited Canada (B)). The minimum buffer width will depend on the size of the wetland, the purpose of the buffer, the land use of the surround area, the soil type (less permeable soil will require larger buffers) and slope (Ducks Unlimited Canada (B)). For instance, a smaller, deeper, excavated wetland with minimal wildlife or hydrological value could require a buffer of only ten metres, while a wetland where the slope of the land is greater than 5 percent would require a buffer greater than 20 metres (Ducks Unlimited Canada, (B)). All these factors should be considered together when determining the buffer size. The buffer should consist of diverse, multi-layered vegetation, incorporating trees and shrubs. In all instances of created wetlands and their associated buffers, the vegetated buffer areas must be managed and maintained over the long-term to ensure that they are providing the maximum benefit to the wetland (Ducks Unlimited Canada (B)).

9. Species transfer - Ideally species transfer should not occur until a year has passed since the creation of the new wetland to allow the environment to settle and to ensure that the water quality and nutrients can safely support wildlife, much like when one is preparing a new tank to house fish. Monitoring of the site should confirm ideal conditions before any species transfers take place. If monitoring indicates that certain populations are in decline, additional individuals can be transferred into the compensation wetland (e.g. import tadpoles or broadcast more native seeds). Species transfer should not occur during a single day or even week, but should be carried out over an extended period of time - and slowly - to ensure minimal negative impact and to increase the possibility of capturing more individuals from the original wetland site. Timing of the transfer is likewise crucial. The breeding time of certain species (i.e. the Western Chorus frog) as well as the schedules of burrowing animals (i.e. crayfish) must be accounted for throughout the process.

Options for manual transfer for species include baited minnow trapping, dip netting, seine netting and hand picking. Once the individuals are captured, they are transferred to the new wetland in buckets. If insufficient resources are available to do manual transfers of species, other options are possible. For instance, if the new wetland site is sufficiently close to the old one, a trench could be dug from one site to the other to allow species to transfer naturally. Alternatively, the new wetland location could be situated near a stream or other water source to allow species to populate the created wetland on their own.

10. Long-term management and monitoring - Ontario is still in the process of determining an acceptable duration for wetland offsets and whether monitoring should remain only until negative impacts have been resolved, or should continue in perpetuity. Given the ongoing losses of wetlands across southern Ontario, it is strongly advisable that wetland restoration, relocation and creation projects for the purposes of offsetting should continue in perpetuity. This recommendation is critical given the lack of proof that such altered and/or created wetlands recover full functionality, and given the long lags associated with wetlands' maturation. Moreover, it is imperative that once a wetland has been moved for one project, that "relocated" or offset wetland should not then itself become subject of another development project and be relocated again.

Before the monitoring process even begins, developers and the City must clearly define what a "successful" relocation or restoration would entail for each *individual* project and outline a clear set of objectives. For instance, even if a site has revegetated, it could be functionally inadequate, and/or the plant composition may differ from the initial targets. Next, the City must establish which methods it plans to employ (or request that developers employ) to determine the success of wildlife transfer and establishment. Options include quadrat studies (for species like crayfish) and the capture-mark-recapture method (Pradel, 1996).

Currently, three, five, ten-year monitoring reports are typically required, with qualitative and quantitative observations of water level, riparian and aquatic vegetation, overflow, breeding birds, amphibians, terrestrial crayfish chimneys and incidental wildlife associated with the constructed feature. However, given the significant time lags associated with wetland re-creation and/or restoration projects this time scale is inadequate. Careful and regular monitoring over a long period of time is vital to catch any problems that may arise (wetland shrinkage, incursion by invasive species). Adaptive management of the created wetland will be crucial to ensure a greater probability of success since this genre of projects is relatively new and the science behind the workings of a healthy, functioning, high value wetland is complicated.

Finally, before a developer or the City embarks on a project, every effort should be made to ensure that sufficient funds are budgeted to carry out long-term monitoring of wetland relocation projects or projects which adversely impact a wetland. In the case of London's first wetland relocation project at 905 Sarnia Road (see Appendix 2), resources for monitoring allowed for only two years of study past the project date. This time span is inadequate to determine whether the project resulted in no-net-loss of wetland cover and/or biodiversity. Going forward, approval of wetland relocation projects should be contingent on a commitment from proponents to carry out robust monitoring programs over a minimum of three, but preferably ten years.

4. Conclusion

The field of restoration ecology is relatively new and consequently, the scientific evidence supporting the merits of wetland relocation is lacking, largely due to insufficient data collection and monitoring following relocation, re-creation or restoration projects. As a wetland offsetting policy evolves in London, the City is encouraged to look to the lessons learned from other jurisdictions, which have highlighted four key considerations (Poulton, 2017):

First, the need for reliable tracking, reporting and record keeping is paramount. Baseline data on wetland functions lost to development must be recorded, and the City must require long-term monitoring to ensure that wetland functions are restored.

Second, the City is advised to adopt a watershed-based approach. Rather than looking at each individual development application and the resulting decision to offset in a piecemeal approach, decisions should be based on an assessment of the wetland needs in the watershed and the potential for the compensatory wetland to persist over time. The individual offset site should be designed to maximize the likelihood that they will make an ongoing ecological contribution to the watershed.

Third, and perhaps more importantly, the City should make every effort to adhere to the mitigation sequence. Priority should be given to avoidance and minimization of adverse impacts. By skipping directly to the compensation step, opportunities to preserve natural heritage will be lost.

Fourth, the City must ensure compliance through inspection, monitoring and enforcement before and after project construction. The monitoring reports arising from London's first wetland relocation project involving species transfer (see Appendix 2) demonstrate the need for improvement in monitoring of wetlands post disturbance or post relocation. Evaluation of the status of the wetlands and the species inhabiting the area should be thorough, with concrete numbers of species to the best of the evaluators ability, and, due to the complexity of wetland systems, should include qualitative analysis of the area to determine its overall health and future viability. Going forward, the City is advised to clearly lay out the monitoring requirements on projects affecting wetlands, and set a precedent of enforcing those regulations to better guarantee no-net-loss of London's wetland cover.

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Appendix 1. Discussion Paper Recommendations

a. The precautionary principle should influence all projects involving wetlands.

b. When wetlands are involved in an infrastructure project, the priority should always be to avoid impacts to the maximum extent possible.

c. Any wetland conservation strategy should integrate climate change adaptation and mitigation into its policies and outlook.

d. Compensatory mitigation should not be used to make a potentially avoidable project seem more acceptable.

e. Economic priorities should not outweigh ecological considerations in regards to new development projects.

f. Restoration and re-creation of wetlands should be designed to both technically and legally last in perpetuity.

g. A wetland which has been restored or relocated in compensation for another project should not subject to removal or further threats because of its “unnatural” status. It cannot be used as an excuse for future disturbance.

h. All restored and relocated and disturbed wetlands must be monitored for more than 10 years.

i. Adaptive management must be incorporated into all wetland restoration and relocation projects, including removal of invasive species and other necessary actions to achieve desired outcome.

j. Buffer zones are very important especially in urban areas. There should be undeveloped, vegetated land around wetlands and/or a fence or barrier. The composition and width of the buffer depends on the land use that is occurring adjacent to the created wetland, and also the requirements of the animals that will use the wetland and the buffer area. (i.e. Critical Function Zone)

k. The guidelines should apply to ephemeral water bodies (i.e. those present in spring and early summer). Such bodies are present in many areas of London and play a significant role in the maintenance of life systems in green areas.

Appendix 2. London's First Monitored Wetland Relocation

The City of London has already endeavoured to relocate and establish a viable wetland as the result of a construction project. As the first attempt at a project of this magnitude, this case study provides, and will continue to provide, valuable knowledge regarding the feasibility of successfully re-creating a wetland, and appropriateness of employing an offsetting policy to balance development with conservation. This relocation project is located at 905 Sarnia Road in the Hyde Park Community, where a subdivision now sits on an 8.2 hectare parcel of land. The subject land is bordered by the CP railway to the south, a significant woodlot to the northwest and a newly developed suburb to the north and northeast.

Before construction took place, two small wetland features (measuring 0.15ha and 0.13ha), neither of which were considered Significant Wildlife Habitat, were located within the northeast corner of the property. Due to evidence of amphibian breeding and the presence of terrestrial crayfish, the City requested that the developer compensate for the loss of the south pond. The wetland compensation plan included: the creation of similar habitat elsewhere on the subject lands; the creation of a pond and riparian area within and adjacent to the woodland buffer located at the western property limit; the transfer of target wildlife (breeding amphibians and terrestrial crayfish) to the new pond; and the implementation of a two-year annual post-construction monitoring and adaptive management plan. A site was chosen near a significant woodland for the creation of a new wetland.

Target Species. The reason behind these extraordinary steps taken to relocate this particular wetland lay in the abundant target species found on the Sarnia Road site, specifically Calico Crayfish (*Orconetes immunis*). The high number of crayfish was unexpected. Western Chorus Frog (*Pseudacris triseriata*) was the other significant target species, though only a few frogs were heard in the north pond of the wetland.

Calico Crayfish: Calico crayfish are found in stagnant ponds and ditches and slow-moving streams, where the bottom is mud with a heavy growth of rooted aquatic vascular plants. Because this species can burrow one metre deep in the ground when necessary, it utilizes temporary pond habitat and spends the winter in the burrows. This species is largely herbivorous, feeding on the abundant vegetation of a pond, or, at night, on terrestrial plants close to shore. They are active both by day and night, but the adults are more strictly nocturnal. The species can travel across dry land at night, especially in the presence of rain or a heavy dew, and in this way they can move from pond to pond. Copulation takes place from mid-July to early October, with mostly yearling individuals participating. Eggs are laid in late October, and are carried on the underside of their abdomen through the winter. Juveniles spend the summer growing, may become sexually active in September, though most individuals delay breeding until late the following summer. The normal lifespan is two years (Crocker, 1968).

Western Chorus Frog: Western Chorus Frogs weigh as much as a paperclip and measure no longer than three centimetres. They feed on small insects and other invertebrates. During breeding, western chorus frogs use shallow, fishless ponds and large puddles that dry up in the summer. Reproduction happens just after ice-out in early spring. Eggs hatch and tadpoles grow into adults in as little as two months depending on the water temperature. After breeding, the adults move overland (they require 25 days to travel 200 metres) to protected areas (woodlands) where they remain active the rest of the summer and spend the winter in undisturbed soft soil. Special proteins protect their cells from damage due to freezing. Most individuals live no longer than one year, though some have a lifespan of two to three years. Meadows and forests located right next to breeding ponds provide great habitat where frogs can spend the summer and overwinter undisturbed (Bird Studies Canada pamphlet).

Relocation Process. During the wetland relocation, a number of steps were taken over several months to transfer wildlife from the existing wetland to the new site. In November 2015 construction began for the new compensation pond. On May 18, 2016 the new habitat features were graded and root wads were added to the new feature banks. Native seeds were dispersed in the deep pool, shallow pool, riparian areas and dry upland areas surrounding the feature.

From July 7 to 13, 2016, dewatering of the old pond occurred and wildlife transfer began with seven days of baited minnow trapping. On July 13, dip netting, seine netting and handpicking techniques were employed to capture wildlife at the original site. These species were placed in tall buckets and transported to the compensation pond. Benthic populations were likewise transferred to the compensation wetland. At the same time, selective transfer of riparian vegetation from the existing to the compensation pond occurred. Riparian topsoil was not transferred due to the possible presence of invasive seed banks. Downed woody debris was collected from around the existing wetland and placed strategically around the compensation area to provide basking opportunities for wildlife transfers. Finally, additional muck was transferred to the compensation pond.

Results of the Relocation Process. During the transfer process, trapping, netting and hand-picking resulted in the capture of approximately 63,874 wildlife individuals. The capture species included: Calico crayfish (18166), Green Frog (4869), Northern Leopard Frog (1450), Brook Stickleback (11522), Eastern Newt (21), Midland Painted Turtle (10), Snapping Turtle (3), and other invertebrates (28803). It was determined that eighty percent of the total wildlife population was successful relocated.

Post-Transfer Survey. On October 7, 2016 an assessment of the new wetland was conducted. When the wetland was surveyed in July, water was restricted to the deeper (western) portion of the pond. By October, water levels had increased noticeably and the shallow (eastern) portion of the wetland was also inundated. No outflow to the surrounding woodland was observed. The banks of the compensation wetland had re-vegetated naturally, including grasses, forbs and shrubs, to or just above the high-water mark. Vegetation coverage was estimated at 70%, and appeared sufficient to mitigate shoreline erosion.

Comparison of Data Collected at 905 Sarnia Road

As part of the transfer process, the relocated wetland has been monitored over a period of two years -- 2017 and 2018. The table below compares the findings over the monitoring period, offering a brief look at the viability of the created wetland. At the surface, the numbers suggest that in regard to the target species, particularly the crayfish, which were the most affected by the project through active displacement, the transfer has seen some positive results. However, it is unclear how Stantec or the City would determine whether the transfer has achieved its stated goals, and whether the project resulted in no-net-loss of wetland habitat. Several gaps are present in the monitoring reports that raise some questions.

The monitoring reports lack specificity in some areas and as such, drawing conclusions on the success of species to colonize the areas is not possible. For instance, the 2017 Monitoring Report stated that “multiple” crayfish chimneys were observed. Without a clear number, future analysts cannot determine whether the “approximately” 25 chimneys observed in 2018 is more or less than in 2017. It would be advisable that going forward with future wetland transfer projects, monitoring reports should contain more concrete data from which comparisons can be drawn. Without that data, it is impossible to determine whether or not the project has achieved No-Net-Loss of wetlands and/or biodiversity.

Another observation is that a bird survey was not carried out in 2018. This omission seems to suggest that the consulting firm was almost exclusively interested in the status of the translocated species and not in the overall ecosystem health and viability of the new wetland. Even if the presence of birds is not directly related to the manual transfer of target species, it is a means by which to determine the overall species richness of the area and its potential to thrive in the future and to act as an integral component of the natural heritage system. In the future, the requirements for monitoring should stipulate more qualitative assessments of the area that go beyond simple target species counts. Wetlands are intricate and complicated systems and therefore the indices for determining their health, particularly in the case of created wetlands, must be more nuanced. When transferring a wetland, it is not simply about relocating species, it is about establishing a viable wetland.

Furthermore, it is crucial to analyze potential threats to the wetland, particularly in regard to human activity. When wetlands are isolated (i.e. surrounded by development), human activity can have significant, often negative, impacts. Since, the early years of the newly created wetland are critical to its long-term success, threats should be both noted and remediated. For example, studies should assess the state of the buffer surrounding the wetland to determine whether its size is sufficient for protecting the area as well as to determine whether the buffer itself is thriving. The buffer at 905 Sarnia road shows evidence of having been mowed and a fire pit is located within the buffer. These issues were absent from the 2018 report. Light and noise pollution could equally affect the viability of the wetland to provide adequate habitat for target species. Light pollution is also of significant concern at the new

wetland location. This issue should be noted and efforts should be taken to alert residents to the negative effects excessive light can play in animal health and behaviour.

Funds and resources for monitoring the success of the relocated wetland are no longer available; consequently, future study into the outcomes of the wetland transfer project cannot continue. The shortfall in funding is unfortunate given the complexity of creating a new wetland and given that this project is the City's first venture into this area of restoration ecology. As the flagship relocation project in London, 905 Sarnia has the potential to serve as a learning tool to determine best practices and where improvements could be made in the future to best guarantee a successful wetland transfer. A two-year study is simply inadequate to ascertain whether a project has achieved no-net-loss of wetland area. Analyzing the plant data alone demonstrates a net-loss of biodiversity two years following the relocation project. Therefore, every effort should be made to budget more funds for monitoring future relocated wetlands. If public funds are not available, the City may wish to consider private sources of funding or funding through other organizations, such as Conservation Authorities, or environmental non-governmental organizations.

Results of the Stantec Two - Year Monitoring Program

Wetland Components Surveyed	EIS 2014 (Original Wetlands)	Monitoring Report 2017 (Relocated wetland)	Monitoring Report 2018 (Relocated Wetland)	Monitoring Report 2020 (Relocated Wetland)
Amphibian survey	North pond: April (1-1) Chorus Frogs (3) Spring Peepers May no calls June no calls South pond April (3) Spring Peepers May (1-5) Gray Treefrogs June (1-2) Green frogs (1-3) Gray Treefrogs Leopard frog observed	April (3) Spring Peepers May (1-2) Spring Peepers June (1-1) Green Frogs (1-3) Gray Treefrogs (calling in pond) (3) Gray Treefrogs (calling in adjacent woods) Green Frog Tadpoles observed	April (3) Spring Peepers (from woods) (1-1) Spring Peeper (from pond) May (2-5) Gray Treefrogs (calling in pond) (3) Gray Treefrogs (calling in pond & wood) Observed adult Leopard and Green Frogs Observed Green Frog tadpoles	April 8 (1-2) leopard calling in pond May 15 No frogs heard in pond or woods June 29 No frogs calling in pond or woods Several Leopard frogs observed at pond edge on May 4 Green Frog (adult +tadpoles) observed
Terrestrial Crayfish Chimneys	Stantec observed crayfish around north pond. Not counted City Staff observed around south pond. Not counted	Multiple chimneys observed	Approximately 25 chimneys observed	Surveyed for crayfish chimneys on May 4, 20 and Sept 10 One or possibly two chimneys observed on May 20 near pond edge
Vascular Plants	67 species observed in wetland and surrounding cultural thicket 54 were native	45 species observed 27 were native	57 species observed 35 were native	76 species observed 47 were native
Turtles	None observed	2 midland turtles observed	1 midland turtle and 1 snapping turtle observed	1 midland May 20 and June 26 1 snapping May 4 and 20
Fish	North pond – not suitable for fish South pond – marginal fish habitat	Brook Stickleback observed	Brook Stickleback observed	Brook stickleback and goldfish observed from the pond edge No targeted fish sampling occurred
Birds	12 species including Barn Swallows observed	32 species including Barn Swallow and Eastern Wood-Pewee observed	Bird Survey not completed. Barn Swallow Kiosk not being used.	26 species observed No marsh birds observed Eastern Wood-pewee

				observed singing in the woodland
Snakes	None observed	None observed	None observed	None observed
Incidental Wildlife	Northern Racoon , Groundhog and Eastern Cottontail observed	Raccoon tracks, White-tailed deer tracks, Great Blue Heron, Canada Goose, Eastern Cottontail scat, Garter snake, Cooper's Hawk, Northern Flicker, White-breasted Nuthatch, Blue Jay, Turkey Vulture, Wild Turkey	Raccoon tracks, White-tailed deer tracks, Cooper's Hawk, White-breasted Nuthatch, Blue Jay, Turkey Vulture, Wild Turkey, Northern Flicker, Eastern Wood-Pewee, Great Horned Owl (breeding)	Raccoon, White-tailed deer, foraging Rough-Winged Swallow, Canada Goose(egg), brook stickleback and goldfish
Odonata	Not Reported	7 species	Not Reported	9 species, with 8 having S5 rank
Butterflies	Not Reported	7 species	Not Reported	8 species, 5 ranked S5, 1 at S2N
Water Level	Not Applicable	April – very high (to the point of overflowing) October – levels decreased, but remained high in the deeper portion	May - very high, pond full July - Wetted Edge consisted of two-thirds of pond circumference.	May – very high, pond full June 26 – Wetted edge

Analysis of 905 Sarnia Road Wetland Relocation Project.

Following the completion of the wetland transfer project, a Working Group of the Environmental and Ecological Planning Advisory Committee (EEPAC) of the City of London has created four recommendations for future projects of this nature to minimize biodiversity loss and damage to the surrounding ecosystem.

Recommendation #1: The Wetland Compensation Plan should state an achievable set of goals that serve as an indicator of a successful relocation. Each relocation project must contain concrete objectives. The simple act of recreating a wetland is not sufficient; with compensatory mitigation, tangible improvements to ecological features and functions must be realized and documented. A 'net loss' of the targeted habitat is to be avoided.

Recommendation #2: Measurable performance standards (baseline data) should be established, along with a detailed method for tracking, reporting and recordkeeping. A sampling of species must be conducted before any relocation is permitted. The totals collected (by species) must be recorded. A report should be prepared which includes minimum requirements for the repopulation of the various species with emphasis on 'target' or indicator species as agreed to by a City Ecologist. The requirements should include species at risk, terrestrial crayfish, birds (if relocation is adjacent to a Significant Woodland), amphibians and herps.

Recommendation #3: Wildlife salvage and transfer to the compensation pond should only occur once the pond becomes a functioning supportive habitat. A twelve-month delay between pond construction and wildlife transfer would enhance wildlife survival. City staff must determine the suitable time frame between the construction of the compensation pond and the transfer of wildlife. This aspect of wetland relocation is significant since sufficient organic matter must accumulate in the pond bottom and emergent and submergent plants must have adequate time to become established to ensure a viable habitat for introduced fauna.

Recommendation #4: The proponent will conduct an assessment, followed by monitoring enforcement, remedial measures and reporting for a minimum of five years. Careful and regular monitoring over an extended period of time is vital to uncover problems that may arise, and to ensure greater probability for success.

Wetland Components Surveyed	EIS 2014 (Original Wetlands)	Monitoring Report 2017 (Relocated wetland)	Monitoring Report 2018 (Relocated Wetland)	Monitoring Report 2020 (Relocated Wetland)
Amphibian survey	North pond: April (1-1) Chorus Frogs (3) Spring Peepers May no calls June no calls South pond April (3) Spring Peepers May (1-5) Gray Treefrogs June (1-2) Green frogs (1-3) Gray Treefrogs Leopard frog observed	April (3) Spring Peepers May (1-2) Spring Peepers June (1-1) Green Frogs (1-3) Gray Treefrogs (calling in pond) (3) Gray Treefrogs (calling in adjacent woods) Green Frog Tadpoles observed	April (3) Spring Peepers (from woods) (1-1) Spring Peeper (from pond) May (2-5) Gray Treefrogs (calling in pond) (3) Gray Treefrogs (calling in pond & wood) Observed adult Leopard and Green Frogs Observed Green Frog tadpoles	April 8 (1-2) leopard calling in pond May 15 No frogs heard in pond or woods June 29 No frogs calling in pond or woods Several Leopard frogs observed at pond edge on May 4 Green Frog (adult +tadpoles) observed Stantec agreed calls would undercount individuals
Terrestrial Crayfish Chimneys	Stantec observed crayfish around north pond. Not counted City Staff observed around south pond. Not counted	Multiple chimneys observed	Approximately 25 chimneys observed	Surveyed for crayfish chimneys on May 4, 20 and Sept 10 One or possibly two chimneys observed on May 20 near pond edge. Stantec suggested might be because hard to find with vegetation establishment
Vascular Plants	67 species observed in wetland and surrounding cultural thicket 54 were native	45 species observed 27 were native	57 species observed 35 were native	76 species observed 47 were native
Turtles	None observed	2 midland turtles observed	1 midland turtle and 1 snapping turtle observed	1 midland May 20 and June 26 1 snapping May 4 and 20
Fish	North pond – not suitable for fish South pond – marginal fish habitat	Brook Stickleback observed	Brook Stickleback observed	Brook stickleback and goldfish observed from the pond edge No targeted fish sampling occurred. Stantec and others suggested Goldfish are eating amphibian eggs and stirring up the sediments.
Birds	12 species including Barn Swallows observed	32 species including Barn Swallow and Eastern Wood-Pewee observed	Bird Survey not completed. Barn Swallow Kiosk not being used.	26 species observed No marsh birds observed Eastern Wood-pewee observed singing in the woodland
Snakes	None observed	None observed	None observed	None observed
Incidental Wildlife	Northern Racoon , Groundhog and Eastern Cottontail observed	Raccoon tracks, White-tailed deer tracks, Great Blue Heron, Canada Goose, Eastern Cottontail scat, Garter snake, Cooper's Hawk, Northern Flicker, White-breasted Nuthatch, Blue Jay, Turkey Vulture, Wild Turkey	Raccoon tracks, White-tailed deer tracks, Cooper's Hawk, White-breasted Nuthatch, Blue Jay, Turkey Vulture, Wild Turkey, Northern Flicker, Eastern Wood-Pewee, Great Horned Owl (breeding)	Raccoon, White-tailed deer, foraging Rough-Winged Swallow, Canada Goose(egg), brook stickleback and goldfish.
Odonata	Not Reported	7 species	Not Reported	9 species, with 8 having S5 rank
Butterflies	Not Reported	7 species	Not Reported	8 species, 5 ranked S5, 1 at S2N

Water Level	Not Applicable	April – very high (to the point of overflowing) October – levels decreased, but remained high in the deeper portion	May - very high, pond full July - Wetted Edge consisted of two-thirds of pond circumference.	May – very high, pond full June 26 – Wetted edge

Appendix 3. Legal Requirements to Protect Wetlands

1. Ramsar (1971)

Article 3(1). The Contracting Parties shall formulate and implement their planning so as to promote the conservation of the wetlands included in the List, and as far as possible the wise use of wetlands in their territory.

2. Convention on Biological Diversity (1992)

Article 6(b). Each Contracting Party shall, in accordance with its particular conditions and capabilities integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies.
Article 8(d). Each Contracting Party shall, as far as possible and as appropriate promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings.
Article 8(e). Each Contracting Party shall, as far as possible and as appropriate promote environmentally sound and sustainable development in areas adjacent to protected areas with a view to furthering protection of these areas.
Article 8(f). Each Contracting Party shall, as far as possible and as appropriate, rehabilitate and restore degraded ecosystems and promote the recovery of threatened species, inter alia, through the development and implementation of plans or other management strategies.
Article 8(h). Each Contracting Party shall, as far as possible and as appropriate, prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species.

3. Provincial Policy Statement (2014)

2.1.2. The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features.

2.1.4 Development and site alteration shall not be permitted in: a) significant wetlands in Ecoregions 5E, 6E and 7E.

2.1.6. Development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.

2.1.7. Development and site alteration shall not be permitted in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements.

2.2.2. Development and site alteration shall be restricted in or near sensitive surface water features and sensitive ground water features such that these features and their related hydrologic functions will be protected, improved or restored. Mitigative measures and/or alternative development approaches may be required in order to protect, improve or restore sensitive surface water features, sensitive ground water features, and their hydrologic functions.

4. The London Plan (2016)

1308. We will plan for our city to ensure that London's Natural Heritage System is protected, conserved, enhanced, and managed for present and for future generations by [...] (3) protecting, maintaining, and improving surface and groundwater quality and quantity by protecting wetlands, groundwater recharge areas and headwater streams.

1332. Development and site alteration shall not be permitted in provincially significant wetlands as identified on Map 5 or determined through environmental studies consistent with the Provincial Policy Statement and in conformity with this Plan. Wetlands evaluated using the Ontario Wetland Evaluation System are classified on the basis of scores determined through the evaluation. Wetlands meeting the

criteria set forth by the Ministry of Natural Resources and Forestry shall be confirmed by the Ministry of Natural Resources and Forestry, and shall be mapped as provincially significant wetlands on Map 5 and included in the Green Space Place Type on Map 1. Wetlands can be identified using Ecological Land Classification. Where a wetland is identified through Ecological Land Classification, the significance of the wetland must be evaluated using the Ontario Wetland Evaluation System.

1333. For wetlands that are evaluated using the Ontario Wetland Evaluation System and confirmed by the Ministry of Natural Resources and Forestry to not be provincially significant, the City of London shall identify the wetland on Map 5 as wetland and include it in the Green Space Place Type on Map 1.

1334. Development or site alteration shall not be permitted within a wetland. There shall be no net loss of the wetland features or functions. In some instances, and in consultation with the conservation authority having jurisdiction, the City may consider the replacement of wetlands where the features and functions of the wetland may be provided elsewhere and would enhance or restore the Natural Heritage System.

1335. Development and site alteration shall not be permitted within and/or adjacent to an unevaluated wetland identified on Map 5 and/ or if an Ecological Land Classification determines that a vegetation community is a wetland that has not been evaluated. City Council shall require that the unevaluated wetlands be evaluated by qualified persons in accordance with the Ontario Wetlands Evaluation System. The evaluation must be approved by the Ministry of Natural Resources and Forestry. Map 1 - Place Types and Map 5 - Natural Heritage shall be amended as required to reflect the results of the evaluation.

1390. Development and site alteration shall not be permitted within a provincially significant wetland.

1391. Development and site alteration shall not be permitted in significant woodlands, significant valley lands, significant wildlife habitat, wetlands, and significant areas of natural and scientific interest unless it has been demonstrated that there will be no negative impacts on the natural heritage features or their ecological functions.

1392. Development and site alteration shall not be permitted in fish habitat and in habitat of endangered species and threatened species, except in accordance with federal and provincial requirements.

1401. For the purposes of this Plan, mitigation shall mean the replacement of the natural heritage feature removed or disturbed on a one-for-one land area basis. Compensatory mitigation shall mean additional measures required to address impacts on the functions of the Natural Heritage System affected by the proposed works. The extent of the compensation required shall be identified in the environmental impact study, and shall be relative to both the degree of the proposed disturbance, and the component(s) of the Natural Heritage System removed and/or disturbed.

1402. Compensatory mitigation may be provided in forms such as, but not limited to: 1. Additional rehabilitation and/or remediation beyond the area directly affected by the proposed works. 2. Off-site works to restore, replace or enhance the ecological functions affected by the proposed works. 3. Replacement ratios greater than the one-for-one land area required to mitigate the impacts of the proposed works.

1405. The City shall develop a program for the long-term acquisition of natural heritage areas. Acquisition may occur as properties become available primarily through the following methods: purchase; dedication; and donation or bequest.

Review of draft *Kelly Stanton ESA Ecological Restoration Plan* December 11, 2020 for the Corporation of the City of London. Presented at EEPAC on Feb. 16 2021.

Reviewed by Susan Hall, Katrina Moser, Randy Trudeau

Kelly Stanton E.S.A. is located in the Hyde Park area of northwest London and is divided into two blocks: the north block is located in a triangle bounded by the Canadian Pacific (C.P.) to the north, the Canadian National (C.N.) railway to the south and the London Hyde Park Rotary Trail to the east; the south block is located south of the C.N. railway and north of Staffordshire Road. The publicly owned portions of Kelly Stanton E.S.A. currently include 18.5 hectares (ha) inside the Urban Growth Boundary. The southern portion of Kelly Stanton E.S.A. is part of a larger, regionally significant life science Area of Natural and Scientific Interest (A.N.S.I.) called The Kains Road River Valley (P.2).

Kelly Stanton's tall grass prairie communities are the signature feature of the E.S.A. Mead's Sedge which is growing in at least one tall grass prairie community in Kelly Stanton is an indicator species listed in Appendix N of the S.W.H. Technical Guide (MNR, 2000), which makes this community provincially significant. A total of 256 plant species have been identified in Kelly Stanton E.S.A. This includes two provincially rare species and 15 regionally rare plant species (P.16).

84 bird species were observed during the breeding season. At least four bird S.A.R. and four bird species of conservation concern use Kelly Stanton E.S.A. as habitat for breeding and other life processes. In addition, 43 bird species documented in the E.S.A. are considered to be of Conservation Priority in Middlesex County by Bird Studies Canada (Couturier, 1999) (P.23).

Some portions of the E.S.A., particularly in the south block, exhibit depressed ecosystem function as a result of a legacy of human disturbance and land use change dating back to at least the mid-nineteenth century. In the north block, cessation of hay farming since approximately 2001 has allowed tallgrass prairie vegetation to spread into former hay fields. Furthermore, natural succession has resulted in shrubby vegetation encroaching into tall grass prairie communities, which threatens the survival of rare plant and wildlife species which require open country habitat. Some vegetation

communities in both the north and south blocks are dominated by invasive plant species (P.4).

Key management objectives have been identified as follows: tall grass prairie maintenance, tall grass prairie restoration and invasive species management (P.7).

EEPAC <u>supports</u> these objectives.

EEPAC is in agreement with the restoration targets and monitoring objectives including use of the Early Detection and Rapid Response (E.D.R.R.) for Invasive Species protocol, Vegetation Monitoring to determine management effectiveness, particularly in the tall grass prairie communities and indicator species monitoring.

Though trail development wasn't part of the report, there are informal trails in the area.

EEPAC recommends: Development of a managed trail system using the *Guidelines for Management Zones & Trails in Environmentally Significant Area* (City of London, May 2016)

EEPAC commends both the City of London and the report authors for their liaising with and involvement of local naturalists in the initial field work and community groups as part of follow-up plans.

<u>Questions</u>

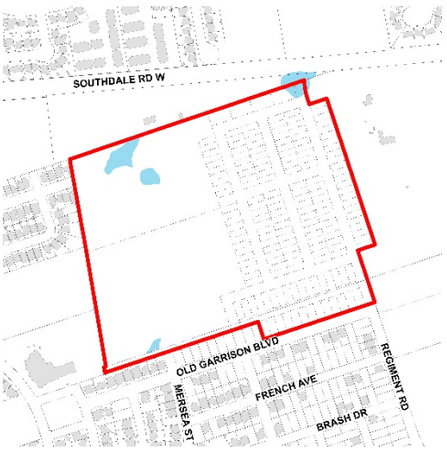
1. Will there be a fish community study at some time in the near future? (Most recent 1995)

2. Will there be restoration work on the creeks?
   a. Removal of the degraded culverts in the north block of Stanton creek.
   b. Culverts under the railways checked for severe obstructions.

NOTICE OF PLANNING APPLICATION

Draft Plan of Subdivision, Official Plan and Zoning By-law Amendments

3095 and 3105 Bostwick Road



File: 39T-21502 & Z-9322
Applicant: Southside Construction Management Ltd.

What is Proposed?

Draft Plan of Subdivision and Zoning amendments to allow:

- for 169 single detached dwellings;
- four (4) medium density blocks for street townhouses;
- one (1) park block;
- two (2) Urban Reserve blocks for future review and residential development;
- one (1) future road block;
- all served by the extension of Frontier Avenue, Regiment Road, Raleigh Boulevard and three (3) new local streets

LEARN MORE & PROVIDE INPUT

Please provide any comments by **April 9, 2021**
Mike Corby
mcorby@london.ca
519-661-CITY (2489) ext. 4657
Development Services, City of London, 300 Dufferin Avenue, 6th Floor,
London ON PO BOX 5035 N6A 4L9
File: 39T-21502/Z-9322
london.ca/planapps

You may also discuss any concerns you have with your Ward Councillor:
Anna Hopkins
ahopkins@london.ca
519-661-CITY (2489) ext. 4009

If you are a landlord, please post a copy of this notice where your tenants can see it. We want to make sure they have a chance to take part.

Date of Notice: March 10, 2021

Application Details

Requested Draft Plan of Subdivision

Consideration of a Draft Plan of Subdivision consisting of 169 single detached dwellings, four (4) medium density blocks for street townhouses, one (1) park block, two (2) Urban Reserve blocks for future review and residential development, and one (1) future road block all serviced by the extension of Frontier Avenue, Regiment Road and Raleigh Boulevard and three (3) new local streets.

Requested Zoning By-law Amendment

To change the zoning from a Urban Reserve (UR3) Zone to a Residential R2 Special Provision (R2-3(_)) Zone and Residential R4 (R4-4) Zone. Changes to the currently permitted land uses and development regulations are summarized below.

The complete Zoning By-law is available at london.ca.

Requested Zoning (Please refer to attached map)

Zone(s):

- **Residential R2 Special Provision (R2-3(_)) Zone (Lots 1-169)** - to permit single detached dwellings, semi-detached dwellings and duplex dwellings with a minimum lot area of 370m2 for single detached dwellings. Special provisions to permit a minimum lot frontage of 11 metres, minimum front yard setback for main dwelling of 3.0 metres, minimum front yard depth for garages of 5.5 metres, minimum interior side yard depth of 1.2 metres except where there is no attached garage, then 3.0 metre is required on one side and a lot coverage of 45% except that any unenclosed porch shall not be included in the calculation of lot coverage; and
- **Residential R4 (R4-4) Zone** - to permit street townhouse dwellings with a minimum lot frontage of 5.5m and minimum lot area of 180m^2.

The City may also consider special provisions in zoning to implement the urban design requirements and considerations of the Southwest Area Secondary Plan and adding holding provisions for the following: urban design, water looping, municipal services, and phasing.

An Environmental Impact Study has been prepared to assist in the evaluation of this application.

Planning Policies

Any change to the Zoning By-law must conform to the policies of the Official Plan, London's long-range planning document. These lands are currently designated as Low Density Residential, Multi-Family, Medium Density Residential and Open Space in the 1989 Official Plan, which permits a range of residential uses from single detached dwellings up to low-rise apartment buildings, while the Open Space designation is applied to lands which are to be maintained as park space or in a natural state subject to further review.

The subject lands are in the Neighbourhood Place Type in The London Plan, permitting a range of low density residential uses which includes single detached, semi-detached, duplex, converted dwellings, townhouses, secondary suites, home occupations, and group homes.

How Can You Participate in the Planning Process?

You have received this Notice because someone has applied for a Draft Plan of Subdivision and to change the Official Plan designation and the zoning of land located within 120 metres of a property you own, or your landlord has posted the notice of application in your building. The City reviews and makes decisions on such planning applications in accordance with the requirements of the Planning Act. The ways you can participate in the City's planning review and decision making process are summarized below.

See More Information

You can review additional information and material about this application by:

- Contacting the City's Planner listed on the first page of this Notice; or
- Viewing the application-specific page at london.ca/planapps
- Opportunities to view any file materials in-person by appointment can be arranged through the file Planner.

Reply to this Notice of Application

We are inviting your comments on the requested changes at this time so that we can consider them as we review the application and prepare a report that will include Development Services

staff's recommendation to the City's Planning and Environment Committee. Planning considerations usually include such matters as land use, development intensity, and form of development.

Attend a Future Public Participation Meeting

The Planning and Environment Committee will consider the requested Draft Plan of Subdivision and zoning changes on a date that has not yet been scheduled. The City will send you another notice inviting you to attend this meeting, which is required by the Planning Act. *Y*ou will also be invited to provide your comments at this public participation meeting. A neighbourhood or community association may exist in your area. If it reflects your views on this application, you may wish to select a representative of the association to speak on your behalf at the public participation meeting. Neighbourhood Associations are listed on the Neighbourgood website. The Planning and Environment Committee will make a recommendation to Council, which will make its decision at a future Council meeting. The Council Decision will inform the decision of the Director, Development Services, who is the Approval Authority for Draft Plans of Subdivision.

What Are Your Legal Rights?

Notification of Council and Approval Authority's Decision

If you wish to be notified of the Approval Authority's decision in respect of the proposed draft plan of subdivision, you must make a written request to the Director, Development Services, City of London, 300 Dufferin Ave., P.O. Box 5035, London ON N6A 4L9, or at developmentservices@london.ca. You will also be notified if you provide written comments, or make a written request to the City of London for conditions of draft approval to be included in the Decision.

If you wish to be notified of the decision of the City of London on the proposed official plan and/or zoning by-law amendment, you must make a written request to the City Clerk, 300 Dufferin Ave., P.O. Box 5035, London, ON, N6A 4L9, or at docservices@london.ca. You will also be notified if you speak to the Planning and Environment Committee at the public meeting about this application and leave your name and address with the Secretary of the Committee.

Right to Appeal to the Local Planning Appeal Tribunal

If a person or public body does not make oral submissions at a public meeting, if one is held, or make written submissions to the City of London in respect of the proposed plan of subdivision before the approval authority gives or refuses to give approval to the draft plan of subdivision, the person or public body is not entitled to appeal the decision of the Director, Development Services to the Local Planning Appeal Tribunal.

If a person or public body does not make oral submissions at a public meeting, if one is held, or make written submissions to the City of London in respect of the proposed plan of subdivision before the approval authority gives or refuses to give approval to the draft plan of subdivision, the person or public body may not be added as a party to the hearing of an appeal before the Local Planning Appeal Tribunal unless, in the opinion of the Tribunal, there are reasonable grounds to do so.

If a person or public body would otherwise have an ability to appeal the decision of the Council of the Corporation of the City of London to the Local Planning Appeal Tribunal but the person or public body does not make oral submissions at a public meeting or make written submissions to the City of London before the proposed official plan amendment is adopted, the person or public body is not entitled to appeal the decision.

If a person or public body does not make oral submissions at a public meeting or make written submissions to the City of London before the proposed official plan amendment is adopted, the person or public body may not be added as a party to the hearing of an appeal before the Local Planning Appeal Tribunal unless, in the opinion of the Tribunal, there are reasonable grounds to add the person or public body as a party.

If a person or public body would otherwise have an ability to appeal the decision of the Council of the Corporation of the City of London to the Local Planning Appeal Tribunal but the person or public body does not make oral submissions at a public meeting or make written submissions to the City of London before the by-law is passed, the person or public body is not entitled to appeal the decision.

If a person or public body does not make oral submissions at a public meeting or make written submissions to the City of London before the by-law is passed, the person or public body may

not be added as a party to the hearing of an appeal before the Local Planning Appeal Tribunal unless, in the opinion of the Tribunal, there are reasonable grounds to do so.

For more information go to https://olt.gov.on.ca/contact/local-planning-appeal-tribunal/.

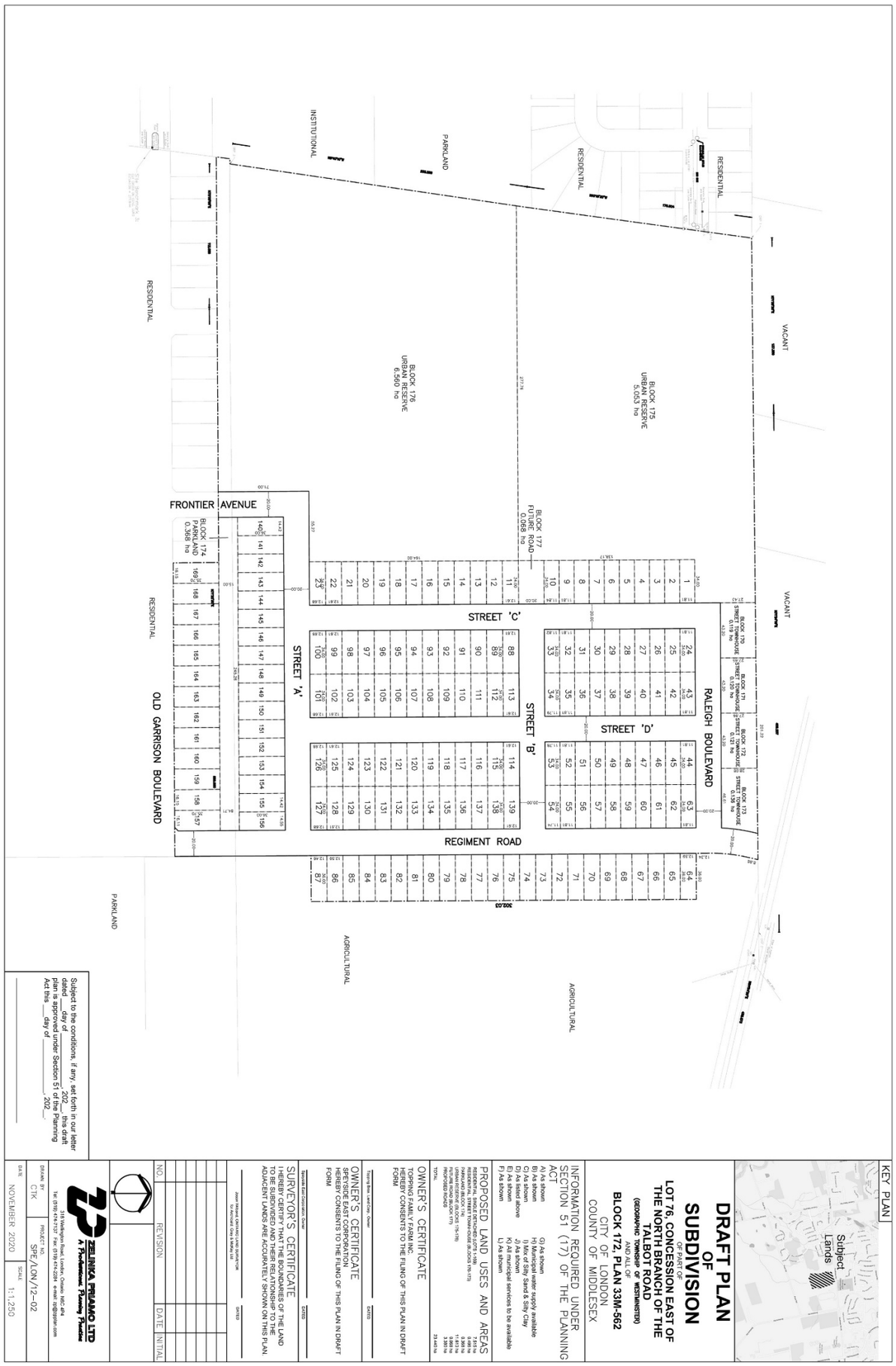
Notice of Collection of Personal Information

Personal information collected and recorded at the Public Participation Meeting, or through written submissions on this subject, is collected under the authority of the Municipal Act, 2001, as amended, and the Planning Act, 1990 R.S.O. 1990, c.P.13 and will be used by Members of Council and City of London staff in their consideration of this matter. The written submissions, including names and contact information and the associated reports arising from the public participation process, will be made available to the public, including publishing on the City's website. Video recordings of the Public Participation Meeting may also be posted to the City of London's website. Questions about this collection should be referred to Cathy Saunders, City Clerk, 519-661-CITY(2489) ext. 4937.

Accessibility

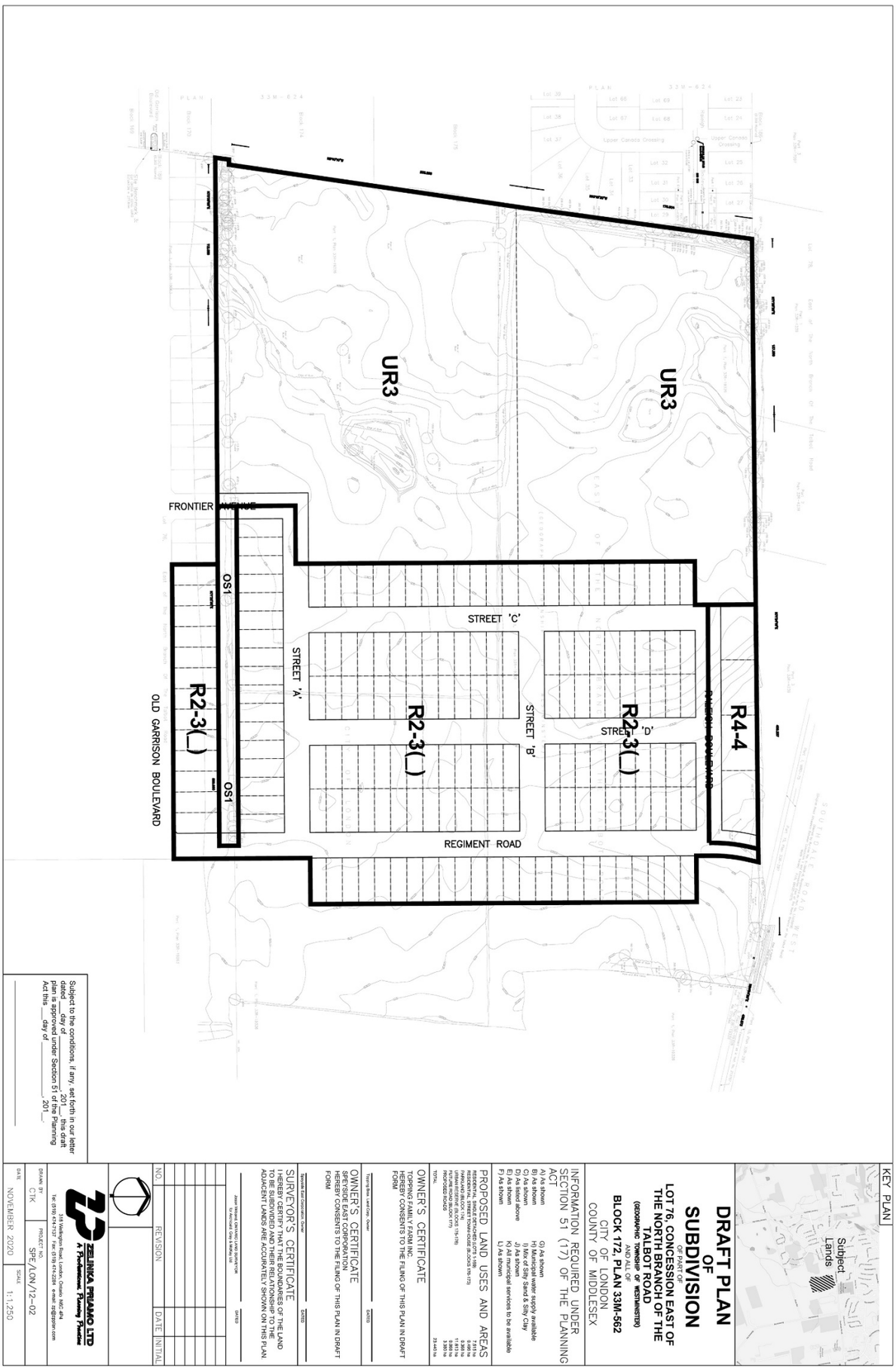
Alternative accessible formats or communication supports are available upon request. Please contact developmentservices@london.ca for more information.

Requested Draft Plan of Subdivision



The above image represents the applicant's proposal as submitted and may change.

Requested Zoning



The above image represents the applicant's proposal as submitted and may change.

MTE Consultants
123 St. George St., London, ON N6A 3A1

February 9, 2021

MTE File No.: 46666-100

Mike Frijia
75 Blackfriars Street
London, ON N6H 1K8

Dear Mike:

Re: Environmental Impact Study: 3095 Bostwick Road, London, ON

Introduction

MTE has been retained to complete biological surveys and subsequently an Environmental Impact Study (EIS) to support the proposed re-zoning of a property in southwest London to bring the parcel into conformity with the Official Plan. The site is located at 3095 Bostwick Road, Part Lot 76, Concession east of the north branch of Talbot Rd, Block 172, City of London [Figure 1]. The entire property in question is herein referred as the Legal Parcel. An EIS scoping meeting was held on April 6, 2020 with respect to the Legal Parcel.

However, for this submission, an 11.8 ha phase of development is currently being proposed for approval, referred to in this report as the Subject Lands. This phase has avoided the natural heritage issues identified for consideration in the EIS Scoping Meeting for the Legal Parcel.

This EIS provides a summary of potential natural heritage considerations and recommended future studies (if necessary) that are needed to adequately evaluate potential direct and indirect impacts of site alteration to support the zoning amendment of the Subject Lands to permit future development

Area of Proposed Work

General Background

The topography of the Legal Parcel is relatively flat, sloping downwards gently towards the southeast. The site is covered by a low-permeable silty clay till overlaying a sandy silt and sand aquifer, typically covered by a layer of topsoil. The site is not classified as a Highly Vulnerable Aquifer, nor is it located within a Significant Groundwater Recharge Area (EXP, 2021).

Historically, the site has been used for agriculture; serving as pastureland for livestock from at least 1954 until 2019. During that time, a dug pond was created in the southwest of the Legal Parcel, outside of the Subject Lands (Inclusion a), as a water source for the livestock. The pond was later filled in 2017, and in 2019, the land was transitioned from pasture to row crop production [Appendix B].

The Legal Parcel was subject to a comprehensive study as part of the North Talbot Community Planning process and received Official Plan Amendments to permit development as part of that process. The Internal primary and secondary collector roads were established including connection to Southdale Road to the north. Stub road connections to approved and developed phases to the west and south have already been provided.

Land Use

City of London Official Plan, 2016 Consolidation

The Subject Lands are designated as Multi-Family, Medium Density Residential and Low Density Residential by the City of London Official Plan (Schedule A, Map 7, 2016 Consolidation) [Figure 3]. Adjacent Lands within 120m are similarly designated; Low Density Residential is the predominant land use designation, with areas of Multi-family, Medium Density Residential (City of London Official Plan, 2016 Consolidation). No natural heritage features are identified within the Subject Lands by the City of London (Schedule B1, Map 7, 2016 Consolidation) [Figure 2].

City of London Zoning By-Law, 2011 Consolidation

The Legal Parcel, including the Subject Lands, are currently zoned as Urban Reserve (UR3) by the City of London. This zoning provision applies to largely undeveloped lands within the City boundaries and is intended to prevent premature subdivision and development in order to provide for future comprehensive development on those lands. Zoning of Adjacent Lands is primarily Residential, with areas of Open Space to the north (Southwest Optimist Park), west (Talbot Park and Vandelinder Parkette) and south. The elementary school to the southwest is zoned Neighbourhood Facility.

Upper Thames River Conservation Authority (UTRCA) Regulation Limit

Portions of the Subject Lands are within the regulation area of the Upper Thames River Conservation Authority (URTCA). In the south of the Subject Lands, a URTCA-regulated area is associated with an intermittent ephemeral waterway that occasionally flows through the agricultural fields in Subject Lands.

In the northwest corner, a regulation area associated with units of the North Talbot Wetlands PSW is within the Subject Lands. The small (~0.3ha and ~0.1ha) wetland features that comprise the units of PSW are isolated from other natural areas by agricultural land and >90m away from the proposed development area.

Although it isn't mapped by the UTRCA, the pond at the northeast corner of the Subject Lands (Inclusion d) is also regulated by the Conservation Authority based on the text of Ontario Regulation 157/06. This feature will be impacted by the Southdale Road widening by the City and is the location of the previously approved subdivision connection to Southdale Road from the North Talbot Community.

A Regulation of Development, Interference with Wetlands, and Alterations to Shorelines and Watercourses permit may be required.

Natural Heritage Features and Function

Biological investigations and vegetation community assessments, completed by MTE between 2017 and 2020, have been used to assess the Subject Lands and Adjacent Lands for natural heritage significance with respect to the proposed residential development.

Vegetation Communities

An Ecological Land Classification (ELC) survey was completed on July 18th, 2018, and reviewed in 2020 by Will Huys, certified to complete ELC in Ontario. The survey was conducted within the area of the Legal Parcel, including the Subject Lands.

Subject Lands

The Subject Lands are primarily composed of active agriculture, currently under a row crop rotation. One vegetation community and four small (<0.5ha) vegetation inclusions were mapped within the Legal Parcel, one of which is partially located within the Subject Lands. Inclusion d, a small (~0.25ha) Submerged Shallow Marsh inclusion (SAS1), is situated at the northeast corner of the Subject Lands and extends into the parcel adjacent to the north. White Willow, along with Creeping Bent and Common Beggar-ticks dominate the pond's edge.

A fencerow is present along the southern edge of the agricultural field within the Legal Parcel and Subject Lands. This area is vegetated by deciduous species typical of agricultural fencerows, such as European Buckthorn and Hawthorne species, with occasional dead Ash and Bitternut Hickory.

Adjacent Lands

The vegetation immediately adjacent to the Subject Lands within the Legal Parcel is primarily row crops. Wetland features, discussed above, are present >90m west of the proposed development, as well as a vegetation patch of trees and a Meadow Marsh inclusion (~0.2ha) >54m to the west. Lands adjacent to the Legal Parcel are primarily residential, with subdivision present to the west and south. Southwest Optimist Park is to the north, across Southdale Road, and an agricultural property is to the east.

Development Proposal

The proponent has proposed the severance of the Legal Parcel and subsequent re-zoning of the Subject Lands area as Medium and Low density residential [Figure 7].

Potential Impacts and Mitigation Recommendations

The Subject Lands do not contain habitat for Protected Species or significant natural heritage features, other than the pond inclusion on the northeast boundary. The northeast pond will be removed as a result of the Southdale Road widening and the approved Southdale Road connection and will not be considered in this EIS. Based on the completed site investigations and relevant policies, natural heritage features identified within the Subject Lands and adjacent to the Subject Lands within 120m that need to be considered with respect to the development are:

- Habitat of Endangered or Threatened Species
- Candidate Significant Wildlife Habitat
- Provincially Significant Wetland
- UTRCA Regulation Area

Habitat of Endangered or Threatened Species

Prior to 2019, portions of the Subject Lands were used as pasture for livestock and supported nesting of Bobolink [THR] and Eastern Meadowlark [THR]. In 2019, the land was converted into row crop production, an activity that is exempt under Section 4.1 of O. Reg. 242/08 of the ESA (2007), such that the Subject Lands no longer support nesting of protected grassland birds.

Based on the review of the Natural Heritage Information Centre (NHIC) database, there is no suitable habitat for any other identified species protected under the Endangered Species Act (2007) within the Subject Lands. As such, it is our opinion that the proposed lot severance and future development within the Subject Lands will avoid impacts to species protected under the *ESA* (2007).

Significant Wildlife Habitat

Candidate Significant Wildlife Habitat is identified based on vegetation communities and specific criteria outlined in the Significant Wildlife Habitat Criteria Schedules (MNRF, 2015). If threshold criteria are met, candidate SWH becomes confirmed.

Candidate SWH was identified within the Subject Lands associated with the SAS1 pond inclusion located on the north boundary and extending into Adjacent Lands. However, the SAS1 was reviewed and will be removed as a result of the Southdale Road widening EA and approved Southdale Road connection. This habitat has not been considered for this EIS.

Other ELC Communities within the Legal Parcel which could potentially contain Candidate SWH are located greater than 50m from the proposed development and will be reviewed at a later phase of development.

Direct impacts to other features within 120m of the Adjacent Lands will be avoided as the severance of the Legal Parcel and proposed development of the Subject Lands will not encroach onto the Adjacent Lands. Mitigation measures for potential indirect impacts will be implemented as a condition for future development.

Provincially Significant Wetland

Inclusion b, a Mineral Shallow Marsh inclusion (MAS2), and Inclusion c, a Maple Mineral Deciduous Swamp Ecosite (SWD3) are units of the North Talbot PSW and are respectively located ~93m and ~113m away from the Subject Lands [Figure 6, Figure 8]. The wetland units are isolated from the proposed development by cropland, which is actively cropped up to the boundary of the wetland features. Based on the account of the previous landowner, the wetland units formed as a result of grade changes on adjacent lands and not through natural processes [Appendix B].

Because the Subject Lands are entirely outside of the catchment boundary of the wetland features, and drainage patterns and topography indicate that there is no flow from the Subject Lands to the PSW (Hydrogeological Assessment, EXP, 2021), direct impacts to the PSW will be avoided. A Wetland Risk Assessment conducted by EXP found that low magnitude of potential hydrogeological change due to the proposed development.

UTRCA Regulation Area

Within the Subject Lands, three UTRCA regulation areas are present; the SAS1 pond inclusion adjacent to Southdale Road, an ephemeral flow path in the southern region, and an area in the

northwest corner associated with units of the North Talbot PSW within the Legal Parcel, discussed above [Figure 5].

The SAS1 pond inclusion, as previously discussed, will be removed as part of the Southdale Road widening and construction of the approved Southdale Road access.

The regulation area in the southeast portion of the Subject Lands delineates an erosion hazard associated with an ephemeral flow path and not a significant natural heritage features.

Recommendation 1:

Prior to dewatering the pond at the approved Southdale Road access location, fish and wildlife will be salvaged and relocated as guided by the Southdale Road EA. The logical and most accessible release location is the Southwest Optimist Stormwater Management Pond, immediately across Southdale Road. Alternatively, the salvaged wildlife could be moved to the PSW to the southwest within the North Talbot Community. Non-native species will be destroyed.

Recommendation 2:

Prior to construction works, sediment and erosion control fencing will be installed around the limits of the development. Barrier fencing will keep construction equipment and stockpiles within the phased development area and prevent erosion and sedimentation.

Recommendation 3:

Vehicle Barriers will be installed at stub roads that direct westward to prevent vehicle access to retained wetland features. Barriers may include chain and bollard access points to allow for farm equipment movement into the west field.

Recommendation 4:

A tree preservation report should be prepared to protect any retainable trees in the fencerows within the Subject Lands.

Recommendation 5:

The flood and erosion hazard area in the southeast UTRCA Regulation Area will be managed through Stormwater Management considerations. An interim Stormwater Management plan will be developed to guide the construction phase and protect the wetland features within Adjacent Lands.

Recommendation 6:

The requirements to protect the regulated features from this phase of development will be discussed with the UTRCA. Based on the surrounding land use, hydrology, and distance between the proposed development and the regulated area (>90m), a Section 28 permit may not be required. Requirements for Section 28 approval established by the UTRCA during discussions, if any, will be fulfilled.

Summary

Southside Group (the Proponent) is proposing a Medium and Low-density residential development on the at 3095 Bostwick Road. The site plan has been modified since the EIS Scoping Meeting took place, and the proposed development avoids impacts to all natural heritage features discussed for consideration in the EIS Scoping Meeting. Site-specific mitigation and avoidance recommendations have been provided to address any potential impacts to identified natural heritage features within the Adjacent Lands. These recommendations have been provided above.

Conclusion

We have evaluated the proposed development and the natural heritage significance of the Subject Lands and the Adjacent Lands. No natural heritage features are present within the Subject Lands, and potential impacts to natural heritage features on the Adjacent Lands have been avoided or will be mitigated through the above recommendations. Provided that the recommendation measures are followed during all stages of the development process, no significant impacts to natural heritage features are expected. MTE seeks comments from the City of London and the Upper Thames River Conservation Authority concerning the contents of this report. Formal comments can be submitted on behalf of the client to MTE. Should any additional materials be required, or if any clarifications, questions, or issues arise during the review of this report, please do not hesitate to contact us.

Yours Truly,

MTE Consultants Inc.

Lindsay McKay, B.Sc., M.E.S.
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Windsor Field Office: 519-966-1645
lmckay@mte85.com

Reviewed By: Dave Hayman, MSc
Manager, Biological Sciences
519-204-6510 ext. 2241
dhayman@mte85.com

LMM:dh

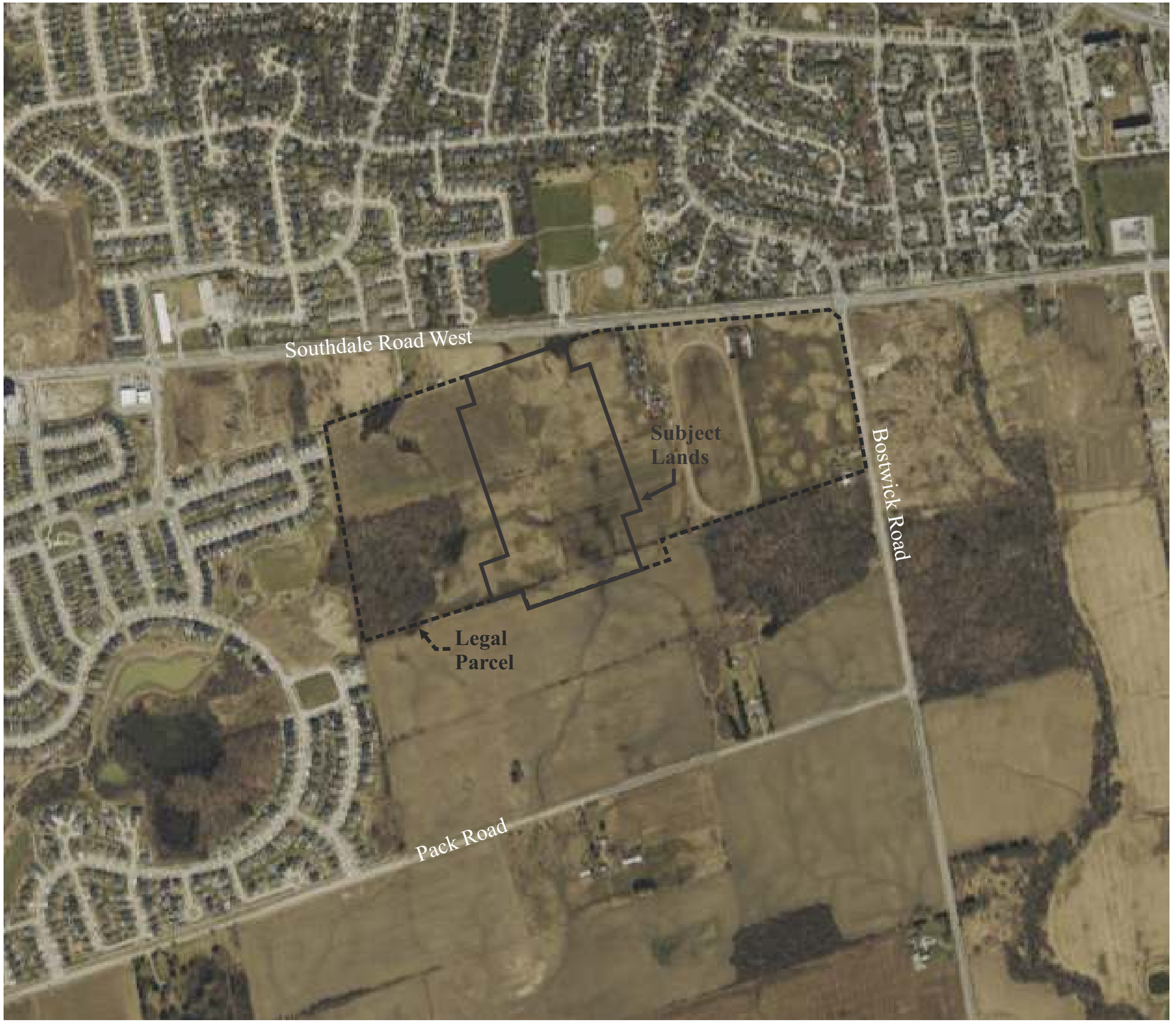

Figure 1: Site Location

(OMAFRA Ag Mapping, 2020)

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Key Plan

Legend

Legal Parcel

Subject Lands

* Locations are approximate and should be verified by survey where necessary.

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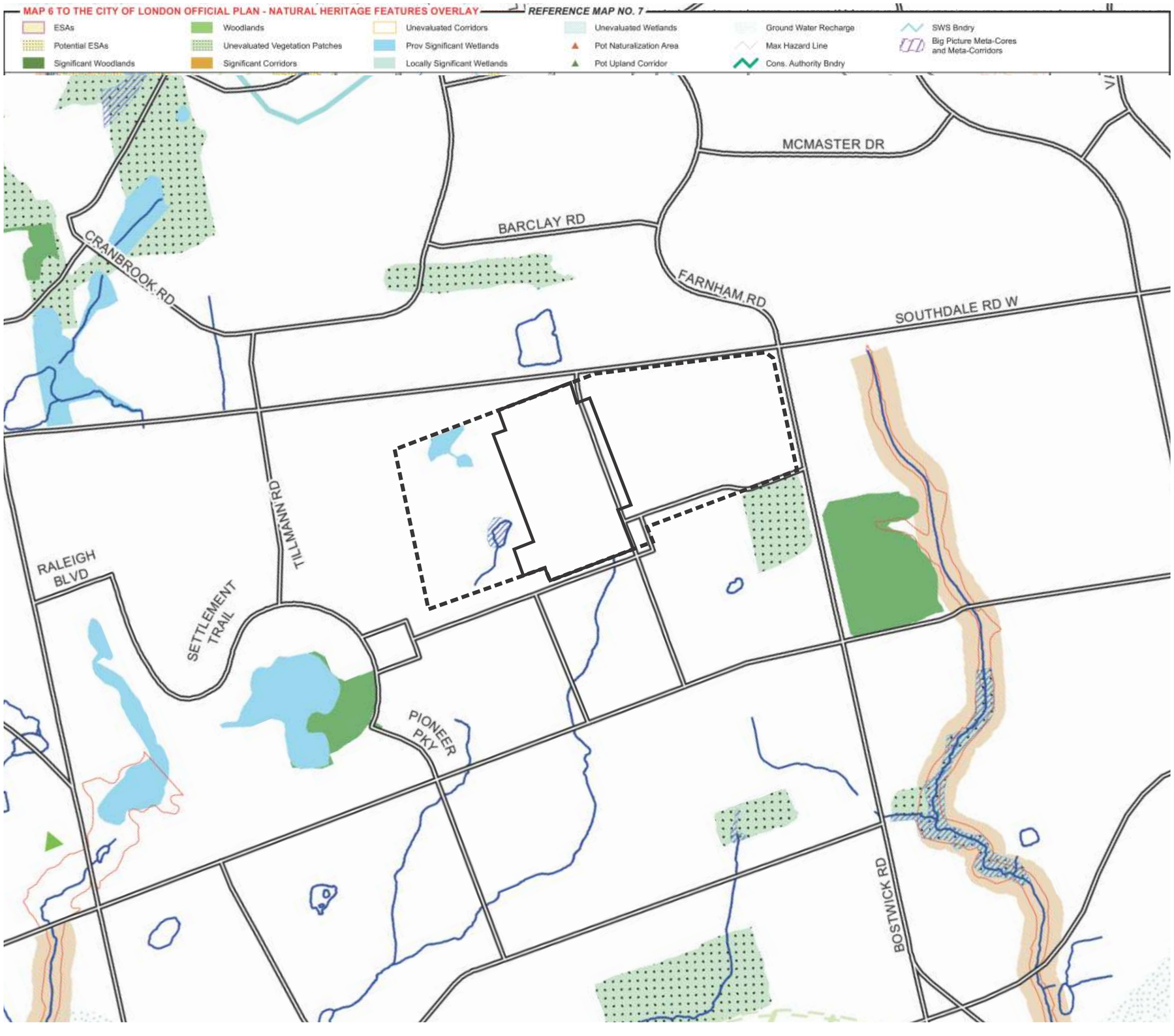
February 2021

MTE

Figure 2: Natural Heritage Features

(City of London Official Plan, Schedule B1 Map 7, 2016)



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Key Plan

Legend

Legal Parcel

Subject Lands

* Locations are approximate and should be verified by survey where necessary.

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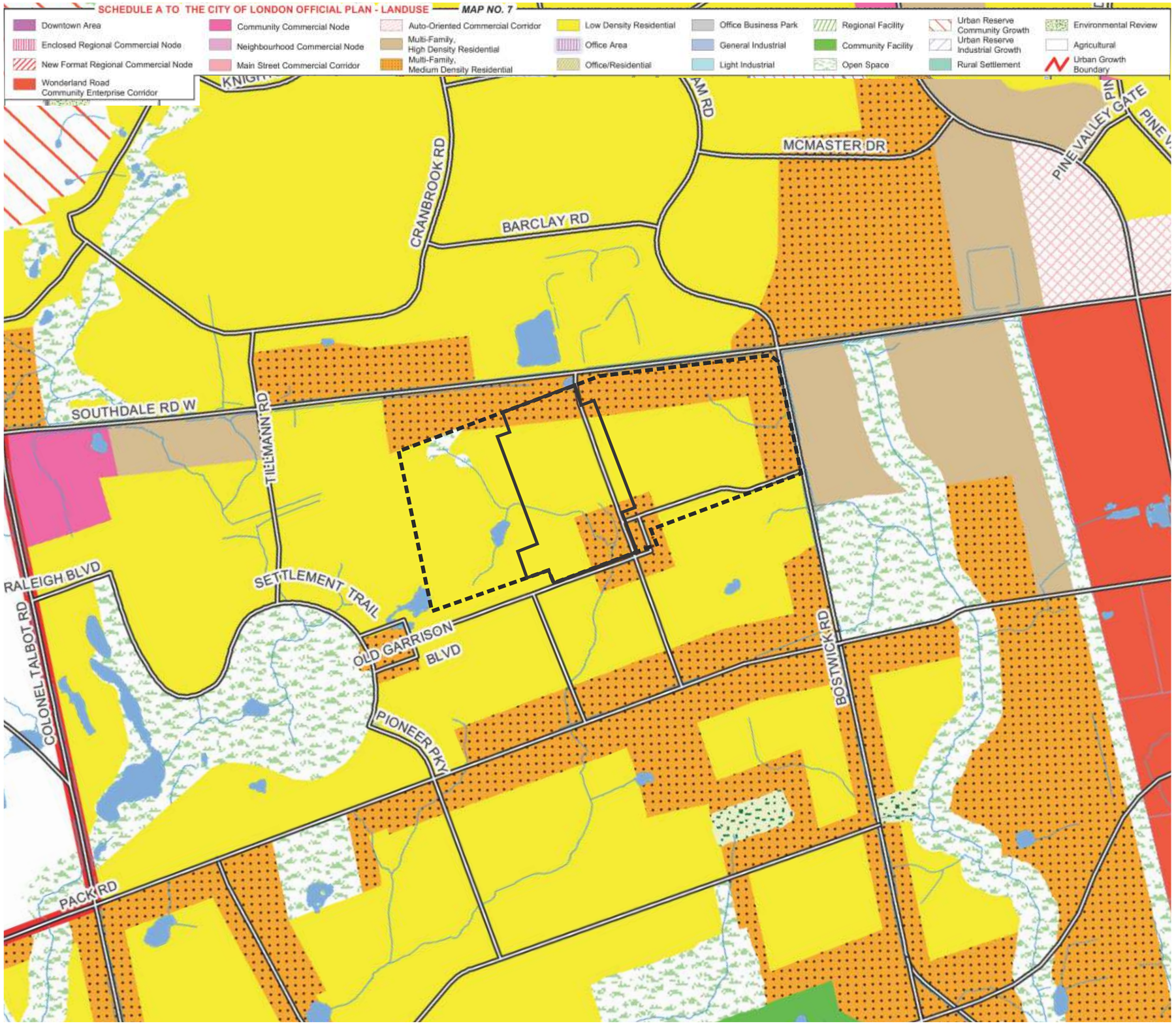
February 2021

MTE

Figure 3: Land Use Designations

(City of London Official Plan, Schedule A Map 7, 2016)



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Key Plan

Legend

Legal Parcel

Subject Lands

* Locations are approximate and should be verified by survey where necessary.

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February 2021

MTE

Figure 4: Zoning

(City of London Zoning, 2021)

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Key Plan

Legend

- Legal Parcel
- Subject Lands
- Zones

* Locations are approximate and should be verified by survey where necessary.

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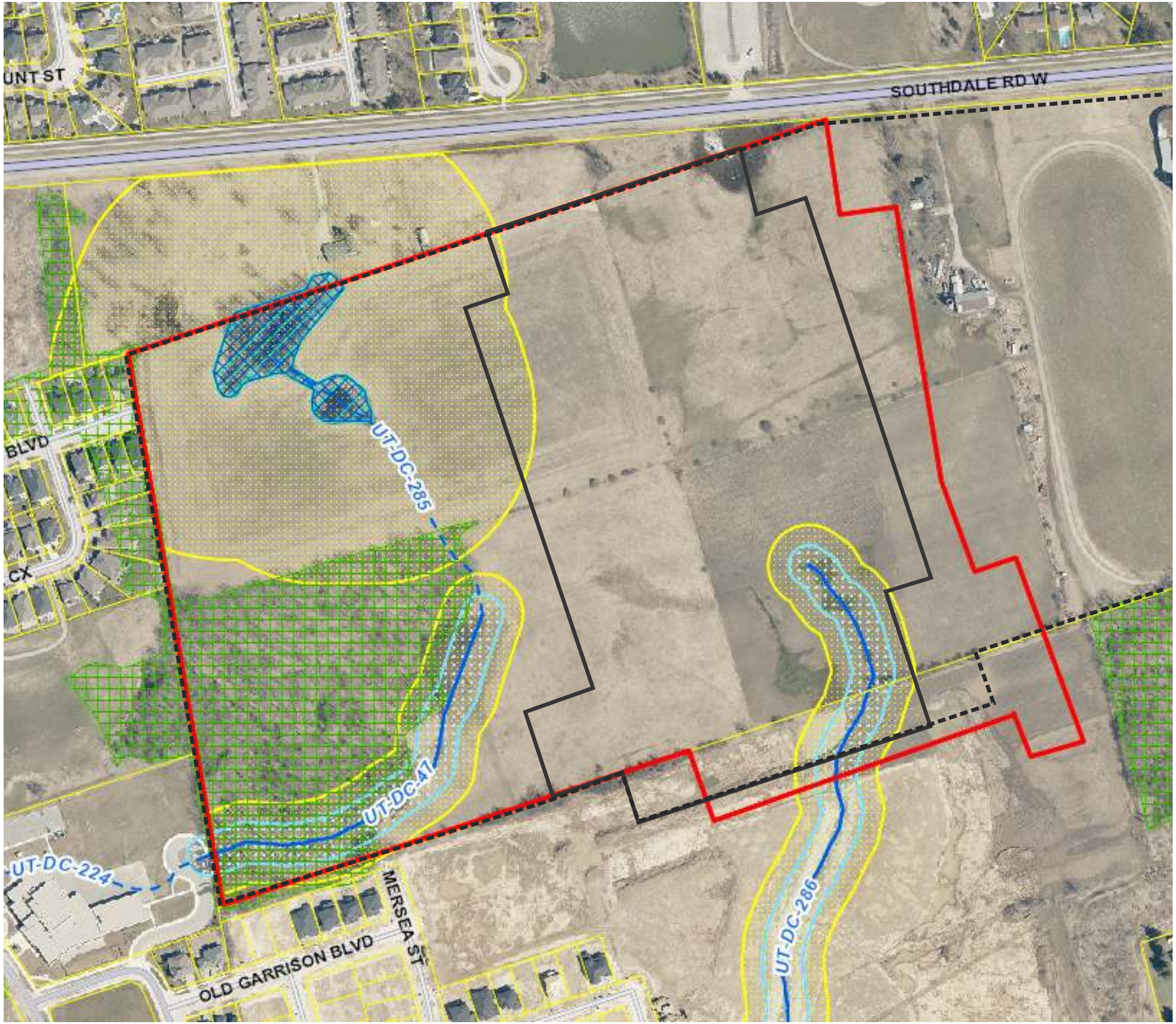
February 2021

Figure 5: UTRCA Regulation Area
(UTRCA 2020)



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Key Plan

Legend

- Legal Parcel
- Subject Lands
- Wetland Hazard
- Flooding Hazard
- Erosion Hazard
- Regulation Limit 2018

Wetlands (MNRF)

- Evaluated-Provincial
- Evaluated-Other
- Not Evaluated

* Locations are approximate and should be verified by survey where necessary.
Print on 11X17, Landscape Orientation
0 58
Scale 1:2900
February 2021

MTE

Figure 6: Vegetation Communities

(OMAFRA Ag Mapping, 2020)

0 1,000

Scale 1:50,000

Key Plan

Legend

Legal Parcel

Subject Lands

1 - FOD7 Fresh-Moist Deciduous Lowland Ecosite (4.0ha)

a - MAM Meadow Marsh (filled pond) (0.2ha)

b - MAS2 Mineral Shallow Marsh Ecosite (0.1ha)

c - SWD3 Maple Mineral Deciduous Swamp Ecosite (0.3ha)

d - SAS1 Submerged Shallow Aquatic Type (0.25ha)

A - Agricultural

* Locations are approximate and should be verified by survey where necessary.

Print on 11X17, Landscape Orientation

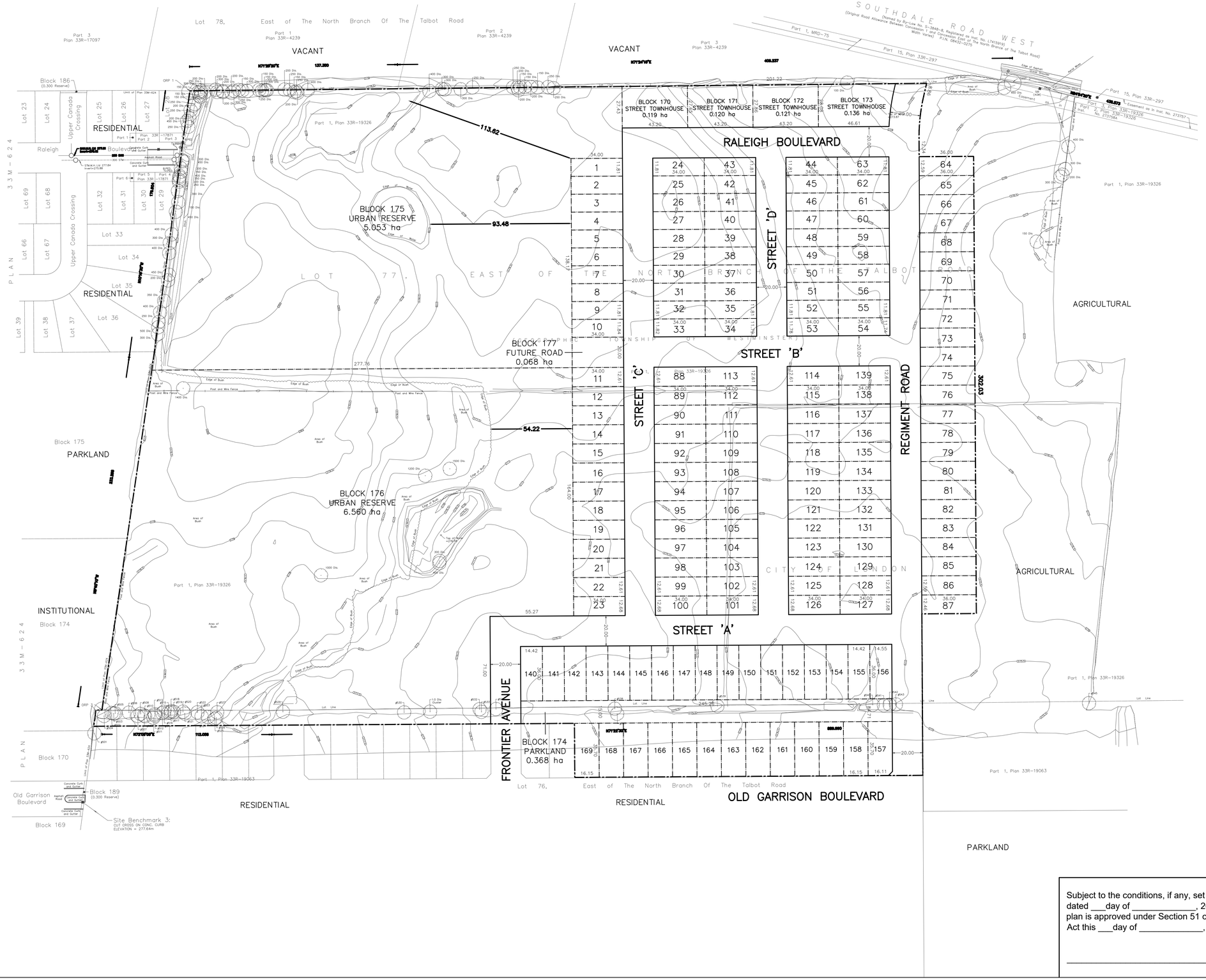
0 100

Scale 1:5000

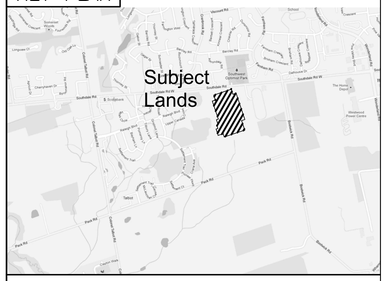
February 2021

MTE

Figure 7: Development Plan



KEY PLAN



DRAFT PLAN OF SUBDIVISION

OF PART OF

LOT 76, CONCESSION EAST OF THE NORTH BRANCH OF THE TALBOT ROAD

(GEOGRAPHIC TOWNSHIP OF WESTMINISTER)

AND ALL OF

BLOCK 172, PLAN 33M-562

CITY OF LONDON

COUNTY OF MIDDLESEX

INFORMATION REQUIRED UNDER SECTION 51 (17) OF THE PLANNING ACT

A) As shown	G) As shown
B) As shown	H) Municipal water supply available
C) As shown	I) Mix of Silty Sand & Silty Clay
D) As listed above	J) As shown
E) As shown	K) All municipal services to be available
F) As shown	L) As shown

PROPOSED LAND USES AND AREAS

RESIDENTIAL, SINGLE DETACHED (LOTS 1-169)	7.515 ha
RESIDENTIAL, STREET TOWNHOUSE (BLOCKS 170-173)	0.496 ha
PARKLAND (BLOCK 174)	0.368 ha
URBAN RESERVE (BLOCKS 175-176)	11.613 ha
FUTURE ROAD (BLOCK 177)	0.068 ha
PROPOSED ROADS	3.380 ha
TOTAL	23.440 ha

OWNER'S CERTIFICATE

TOPPING FAMILY FARM INC.
HEREBY CONSENTS TO THE FILING OF THIS PLAN IN DRAFT FORM

Topping Family Farm Inc., Owner — DATED

OWNER'S CERTIFICATE

SPEYSIDE EAST CORPORATION
HEREBY CONSENTS TO THE FILING OF THIS PLAN IN DRAFT FORM

Speyside East Corporation, Owner — DATED

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LAND TO BE SUBDIVIDED AND THEIR RELATIONSHIP TO THE ADJACENT LANDS ARE ACCURATELY SHOWN ON THIS PLAN.

Bruce S. Baker, ONTARIO LAND SURVEYOR
for Archibald, Gray & McKay Ltd. — DATED

NO.	REVISION	DATE	INITIAL

Subject to the conditions, if any, set forth in our letter dated ___day of _____, 201__, this draft plan is approved under Section 51 of the Planning Act this ___day of _____, 201__.

_____

ZELINKA PRIAMO LTD
A Professional Planning Practice
318 Wellington Road, London, Ontario N6C 4P4
Tel: (519) 474-7137 Fax: (519) 474-2284 e-mail: zp@zpplan.com

DRAWN BY	PROJECT NO.
CTK	SPE/LON/12-02
DATE	SCALE
NOVEMBER 2020	1:1,250

Figure 8: Development Overlay

(OMAFRA Ag Mapping, 2020)

0 1,000

Scale 1:50,000

Key Plan

Legend

Legal Parcel

Subject Lands

1 - FOD7 Fresh-Moist Deciduous Lowland Ecosite (4.0ha)

a - MAM Meadow Marsh (filled pond) (0.2ha)

b - MAS2 Mineral Shallow Marsh Ecosite (0.1ha)

c - SWD3 Maple Mineral Deciduous Swamp Ecosite (0.3ha)

d - SAS1 Submerged Shallow Aquatic Type (0.25ha)

A - Agricultural

* Locations are approximate and should be verified by survey where necessary.

Print on 11X17, Landscape Orientation

0 150

Scale 1:7500

February 2021

MTE

Appendix A

Significant Wildlife Habitat

ELCs: None within 50m of the Proposed Development (SAS1 not assessed)

Seasonal Concentration of Animals

Wildlife Habitat	ELC Codes Triggers	Additional Habitat Criteria	Candidate SWH
Waterfowl Stopover and Staging Areas (Terrestrial)	Fields with Seasonal Flooding	-ELC Ecosites not present; crop fields with seasonal flooding are present, but not within the Long Point, Rondeau, Lake St. Clair, Grand Bend, or Point Pelee regions.	No
Waterfowl Stopover and Staging Areas (Aquatic)	-	- The SAS1 within the Subject Lands will be removed as a result of the Southdale Road widening and approved Southdale Road connection and is not considered for SWH for this EIS.	No
Shorebird Migratory Stopover Area	-	- ELC triggers not present.	No
Raptor Wintering Area	-	- ELC triggers not present.	No
Bat Hibernacula	-	- ELC triggers not present.	No
Bat Maternity Colonies	-	- ELC triggers not present.	No
Turtle Wintering Areas	-	- ELC triggers not present.	No
Reptile Hibernaculum	all other than really wet	-No features indicative of hibernation sites (bedrock fissures, rock piles, burrows) present within the Subject Lands.	No
Colonially-Nesting Bird Breeding Habitat (Bank / Cliff)	-	- ELC triggers not present.	No
Colonially-Nesting Bird Breeding Habitat (Trees/Shrubs)	-	- ELC triggers not present.	No
Colonially-Nesting Bird Breeding Habitat (Ground)	-	- ELC triggers not present.	No
Migratory Butterfly Stopover Areas	Combination of ELC communities including field and forest	- ELC triggers not present.	No
Land Bird Migratory Stopover Areas	-	- ELC triggers not present.	No
Deer Winter Congregation Areas	-	- ELC triggers not present.	No

Rare Vegetation Communities

Wildlife Habitat	ELC Codes Triggers	Additional Habitat Criteria	Candidate SWH
Cliffs and Talus Slopes	-	-ELC Triggers not present	No
Sand Barren	-	-ELC Triggers not present	No
Alvar	-	-ELC Triggers not present	No
Old Growth Forest	-	-ELC Triggers not present	No
Savannah	-	-ELC Triggers not present	No
Tallgrass Prairie	-	-ELC Triggers not present	No
Other Rare Vegetation	-	-ELC Triggers not present	No

Specialized Habitats of Wildlife considered SWH

Wildlife Habitat	ELC Codes Triggers	Additional Habitat Criteria	Candidate SWH
Waterfowl Nesting Area	-includes adjacency to PSWs	-PSW units are within 120m of the Subject Lands, however the units do not meet the criteria for SWH (greater than 0.5ha in size, or 3+ small wetland units). - Breeding bird studies did not identify the presence of 3 or more nesting pairs for listed species excluding Mallards.	No
Bald Eagle and Osprey Nesting, Foraging, Perching	-	-ELC Triggers not present	No
Woodland Raptor Nesting Habitat	-	-ELC Triggers not present	No
Turtle Nesting Areas	Exposed mineral soil within 100m of wetlands	- Exposed mineral soil is present within the Southdale Road right-of-way, however this does not meet the criteria for SWH.	No
Springs and Seeps	-	- ELC triggers not present.	No
Amphibian Breeding Habitat (Woodland)	-	-ELC Triggers not present	No
Amphibian Breeding Habitat (Wetlands)	-	-ELC Triggers not present	No
Woodland Area-Sensitive Bird Breeding Habitat	-	-ELC Triggers not present	No

Habitats of Species of Conservation Concern considered SWH

Wildlife Habitat	ELC Codes Triggers	Additional Habitat Criteria	Candidate SWH
Marsh Breeding Bird Habitat	-	- ELC Triggers not present.	No
Open Country Bird Breeding Habitat	-	- Natural and cultural fields >30ha are not present.	No
Shrub/Early Successional Bird Breeding Habitat	-	- No large fields succeeding to shrub and thicket habitats > 10ha in size.	No
Terrestrial Crayfish	-	- ELC Triggers not present.	No
Special Concern and Rare Wildlife Species (NHIC and MNRF pre-consultation)	None	- No Special Concern or Provincially Rare plant species observed within the Subject Lands.	No

Animal Movement Corridors

Wildlife Habitat	ELC Codes Triggers*	Additional Habitat Criteria	Candidate SWH
Amphibian Movement Corridors	-	- Movement corridors are determined when there is confirmed amphibian breeding habitat	No

SWH exceptions

Wildlife Habitat	Ecosites	Habitat Criteria and Information	Candidate SWH
Bat Migratory Stopover Area	None	- The site is not near Long Point.	No

Appendix B

Farm History

Mr. Dave Hayman,

My name is Gary Topping, I am the son of Ronald William Topping, formerly of 3095 Bostwick Road in London, Ontario. At the request of Southside Construction Management Limited, our partner in developing our properties at 3095 & 3105 Bostwick Road, I am providing a timeline of the events that have taken place on the North farm 3095 Bostwick Road.

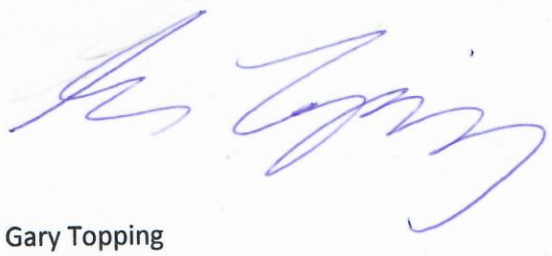
In 1954 my father Ron and his brother Glen purchased the property now known as 3095 Bostwick drive. Sometime between 1954 and 1962 they dug a pond near the wooded area in the southwest corner of the property for the cattle they had at the time. The farm was pastured by cattle until 1973. At that time, my father was heavily involved in horse racing and so horses were pastured on the farm using that dug pond for water.

Over the years of 1985 to 1987, the property along our Northern boundary, known as 735 Southdale Road West, raised the grades of their property 5 to 7 feet in some areas. The water that had flowed North naturally was now trapped South of the common property line without being able to drain properly. This elevation changed has now turned into a regulated wetland preventing any farming or future uses on that part of the property.

In late 2017, my father's health was worsening and we were reducing the number of horses we had and transitioning to farming crops on the property. As such, our family filled in the pond we dug to yield crops on that land.

On April 23, 2019 my father passed away, the horses were gone and we prepared the land for crops. Archaeological mitigation work was required prior to making a Draft Plan application on this farm. We completed the ploughing and disking to prepare the land for crops in the summer of 2019 and completed the archaeological mitigation on the field at that time. We had held off on moving these lands towards development due to my father's health, but the plan was to farm the land at that time and it will continue to be farmed until the property is developed.

Sincerely,



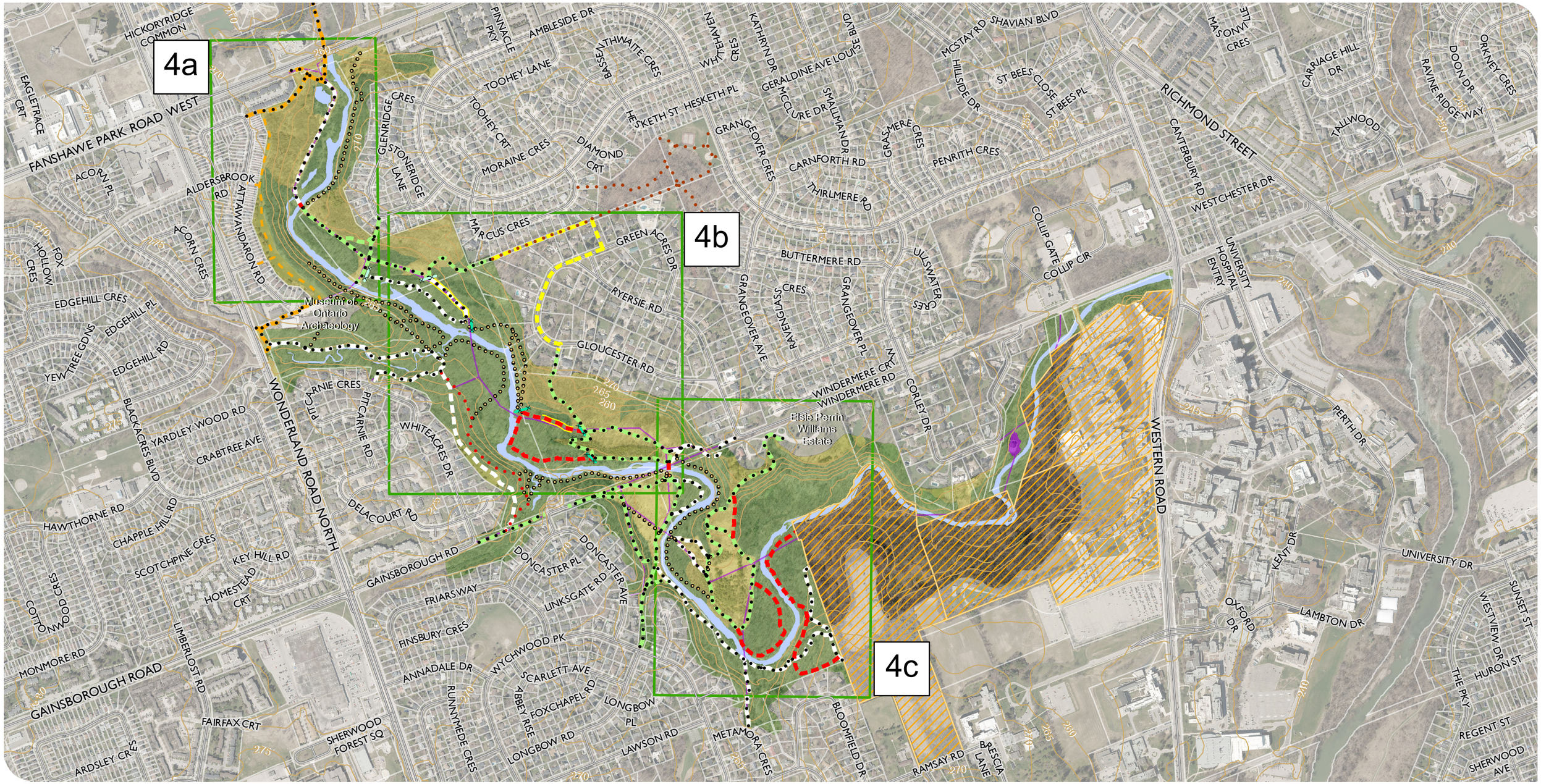
Gary Topping

Advisory Committee Work Plan – 2021

March 2021

Activity	Background	Responsibility	Timeline	Strategic Plan Alignment
Environmental Management Guidelines	This document was created in 2007. Work has started on an updated version.	EEPAC working group will work with staff and the consultant and in cooperation with other stakeholders	staff have a goal to present the new version to PEC in 2020	Building a Sustainable City
Protecting Environmentally Significant Areas	Communicating why it is important that dogs are controlled in and around Environmentally Significant Areas (cats kept indoors, dogson leash) with the assistance of Corporate Communications; and AWAC an improved Dog in Nature Brochure has been prepared. Is your Cat Safe Outdoors brochure in print	EEPAC	Continue to distribute brochure at vets and pet stores when safe to do so	Building a Sustainable City
Collaboration with other Advisory Committees	Ongoing work with the Accessibility Advisory Committee to improvethe process for accessible trails in ESAs	Chair and vice chair and Committee as a whole	As this involves staff, a timeline will be developed	Building a Sustainable CityStrengthening our Community Leading in Public Service
Review of Environmental Impact Studies and Environmental Assessments submissions as part of Planning application and the *Environmental Assessment Act*	EEPAC is circulated and asked to review consultant submissions and provide input to City staff. In cases of significant disagreement, EEPAC advises PEC	Working Groups as required	As required, usually provide turnout in onemeeting cycle	Building a Sustainable City

Activity	Background	Responsibility	Timeline	Strategic Plan Alignment
Conservation Master Plans (CMP) for Environmentally Significant Areas (ESAs)	Review Phase 1 Natural Heritage Inventory, participate in Phase 2	Working Groups and Committee	Depends on timing from staff. Currently, Chair and Vice Chair working with staff and representatives from the Accessibility Advisory Cte on the Medway Valley Heritage Forest ESA CMP	Building a Sustainable City
Trail Advisory Group	EEPAC has a representative on this staff directed group. It reviews trail locations and potential new trails for compatibility with the Significant Wildlife Habitat, if any, in the area. Recent examples including Westminster Ponds/Pond Mills ESA, Medway Valley Heritage Forest ESA boardwalk at Longbow and entrance at Metamora, and Lower Dingman ESA.	Representative or alternative	As determined by staff	Building a Sustainable CityStrengthening our Community
Wetland Relocation, Monitoring and Creation and Relocation of Wildlife	A Working Group has been established to do a “lessons learned” from a wetland relocation at 905 Sarnia Road. There are no existing guidelines for this and how it should be included indevelopment agreements.	Working group	Have asked for it to be included in the updatedEMG	Building a Sustainable City
Continue working with Staffand other stakeholders to implement London’s Bird Friendly Skies	The City of London's Advisory Committee on the Environment (ACE), Environment and Ecological Protection Advisory Committee (EEPAC), and Animal Welfare Advisory Committee (AWAC), encourage efforts tocreate bird friendly communities through 1) reduced light pollution and increased dark skies, and 2) compliance with bird-friendly development criteria including use of bird-friendly window glass materials in new site plans.	EEPAC/Staff	Ongoing	Building a Sustainable City



CITY OF LONDON
CONSERVATION MASTER PLAN
MEDWAY VALLEY HERITAGE FOREST ESA (SOUTH)

FIGURE 4
ENVIRONMENTAL MANAGEMENT STRATEGY:
PROPOSED SUSTAINABLE TRAIL
CONCEPT PLAN

DILLON CONSULTING

Trail Closed Barricade
Seasonal Barrier / Access Gate

Existing Trails
- City Trail Outside of ESA
- Closed Trail[1]
- Informal Trail[1]
- Managed Trail
- Temporarily Closed Trail[2]

Managed Trails
- Future Connection Outside the ESA
- Level One Trail
- Level Two Trail
- Level Three Trail
- Improved Trail Surface

- Contour (5 metre Elevation)
- Property Boundaries
- Utlity Overlay (4 m)
- Western/Huron Properties
- Watercourse (also Nature Reserve)

Management Zone
- Nature Reserve
- Natural Environment

THE PROPOSED CONCEPT PLAN COMPLIES WITH THE COUNCIL APPROVED GUIDELINES FOR MANAGEMENT ZONES AND TRAILS IN ESAS (2016) AND AODA LEGISLATION

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF (2017) & CITY OF LONDON (2016)

MAP CREATED BY: JWH
MAP CHECKED BY: JLP
MAP PROJECTION: NAD 1983 UTM Zone 17N

1:10,000

0 125 250 500 m

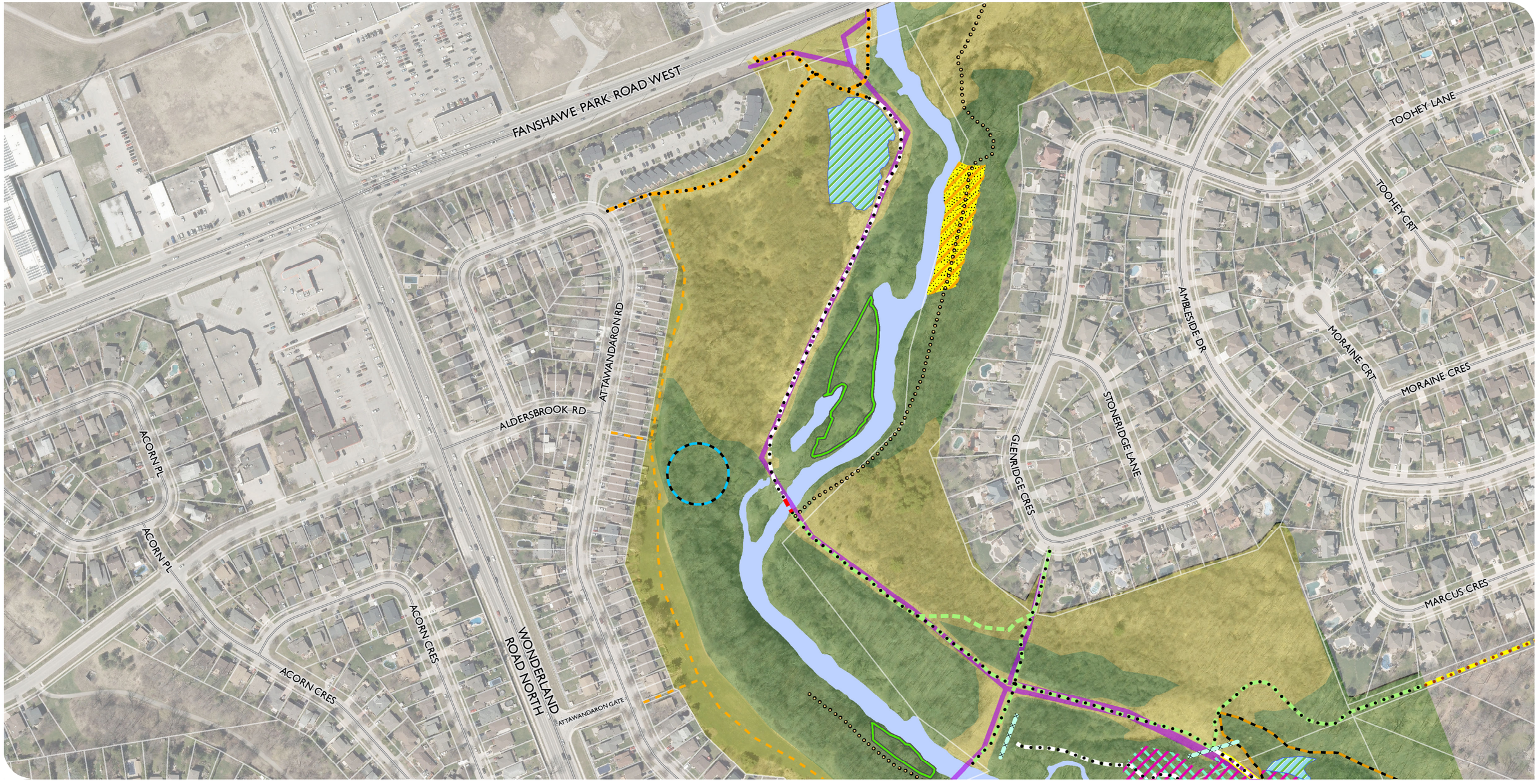
N W E S

[1]INFORMAL AND CLOSED EXISTING TRAILS DOCUMENTED DURING PHASE I ARE TO BE CLOSED AND RESTORED (SEE RO16 ON FIGURE 2).
[2]TEMPORARILY CLOSED TRAIL TO BE REOPENED/ REALIGNED. SECTIONS NOT REALIGNED WILL BE CLOSED AND RESTORED

PROJECT: 17-5428 STATUS: DRAFT DATE: 2021-03-08

FILE LOCATION: I:\GIS\137560 - Medway MVHF ESA\Mapping\Phase II\2021\F4_ProposedConceptPlan_Jan.2018.mxd

THE PROPOSED CONCEPT PLAN COMPLIES WITH THE COUNCIL APPROVED GUIDELINES FOR MANAGEMENT ZONES AND TRAILS IN ESAS (2016) AND AODA LEGISLATION



CITY OF LONDON
CONSERVATION MASTER PLAN
MEDWAY VALLEY HERITAGE FOREST ESA (SOUTH)

FIGURE 4a
ENVIRONMENTAL MANAGEMENT STRATEGY:
PROPOSED SUSTAINABLE
TRAIL CONCEPT PLAN

Seasonal Barrier / Access Gate
Contour (5 metre Elevation)

Existing Trails
- City Trail Outside of ESA
- Closed Trail[1]
- Informal Trail[1]
- Managed Trail

Managed Trails
- Future Connection Outside the ESA
- Level One Trail
- Level Two Trail
- Level Three Trail
- Improved Trail Surface

- Butternut
- False Rue Anemone

- Amphibian Breeding Habitat
- Habitat for Rare Species (American Gromwell)
- Habitat for Rare Species (Cream Violet)
- Habitat for Rare Species (Shrubby St. John's Wort)
- Habitat for Special Concern Species (Green Dragon)
- Seeps and Springs Area

Management Zone
- Nature Reserve
- Natural Environment
- Utlity Overlay (4 m)
- Watercourse *(also Nature Reserve)*

DILLON CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF (2017) & CITY OF LONDON (2016)

MAP CREATED BY: JWH
MAP CHECKED BY: JLP
MAP PROJECTION: NAD 1983 UTM Zone 17N

1:3,000

0 37.5 75 150 m

[1]INFORMAL AND CLOSED EXISTING TRAILS DOCUMENTED DURING PHASE I ARE TO BE CLOSED AND RESTORED (SEE RO16 ON FIGURE 2).
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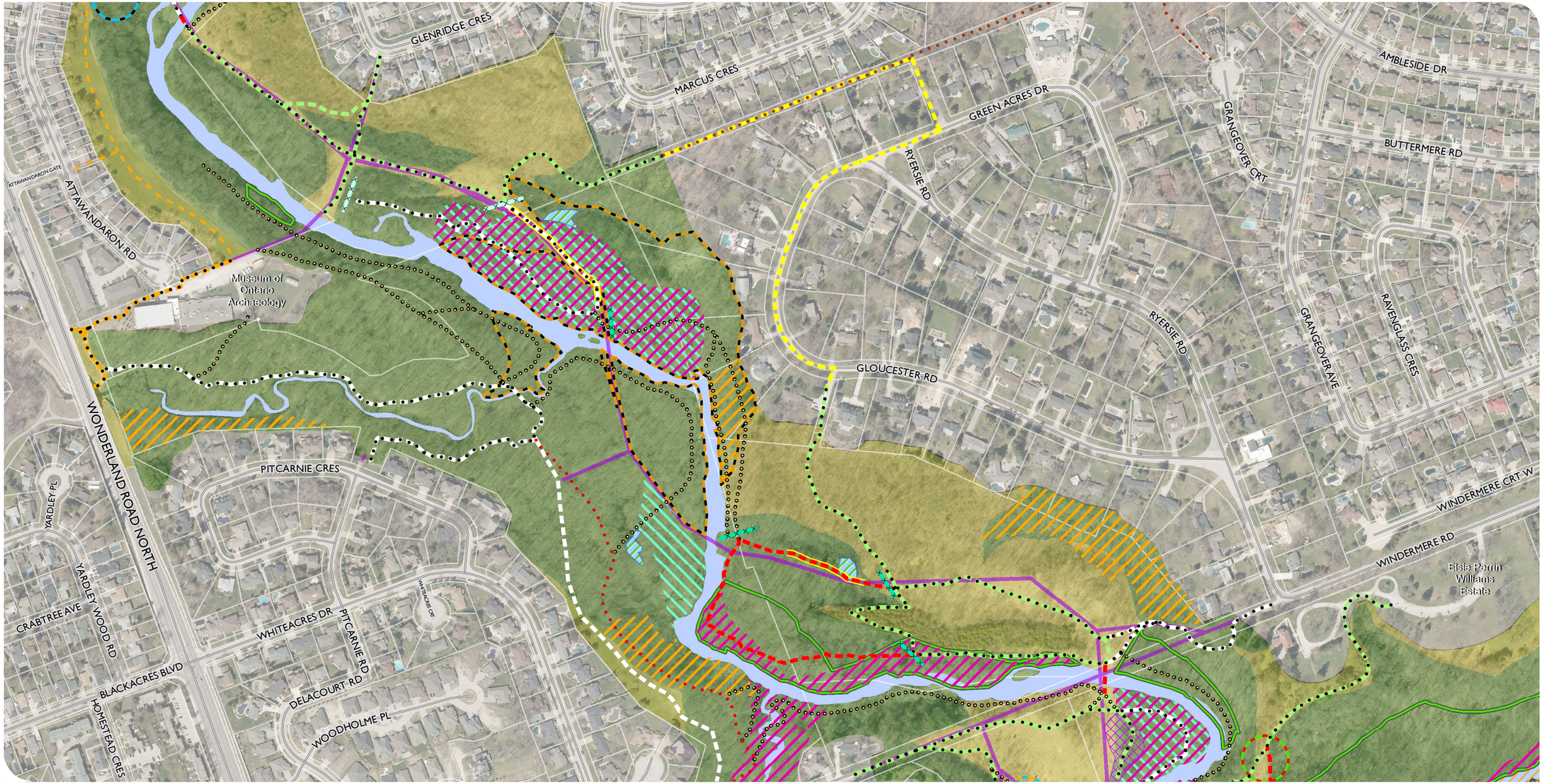
PROJECT: 17-5428 STATUS: DRAFT DATE: 2021-03-08

N W E S

FILE LOCATION: I:\GIS\137560 - Medway MVHF ESA\Mapping\Phase II\2021\F4_ProposedConceptPlan_series_Mar2021.mxd

THE PROPOSED CONCEPT PLAN COMPLIES WITH THE COUNCIL APPROVED GUIDELINES FOR MANAGEMENT ZONES AND TRAILS IN ESAS (2016) AND AODA LEGISLATION



CITY OF LONDON
CONSERVATION MASTER PLAN
MEDWAY VALLEY HERITAGE FOREST ESA (SOUTH)

FIGURE 4b
ENVIRONMENTAL MANAGEMENT STRATEGY:
PROPOSED SUSTAINABLE
TRAIL CONCEPT PLAN

- Western/Huron Properties
- Trail Closed Barricade
- Seasonal Barrier / Access Gate
- Contour (5 metre Elevation)

Existing Trails
- City Trail Outside of ESA
- Closed Trail[1]
- Informal Trail[1]
- Managed Trail
- Temporarily Closed Trail[2]

Managed Trails
- Future Connection Outside the ESA
- Level One Trail
- Level Two Trail
- Level Three Trail
- Improved Trail Surface

- Butternut
- Cucumber Magnolia
- False Rue Anemone
- Kentucky Coffee-tree

- Amphibian Breeding Habitat
- Habitat for Rare Species (American Gromwell)
- Habitat for Rare Species (Cream Violet)
- Habitat for Rare Species (Slender Satin Grass)
- Habitat for Special Concern Species (Green Dragon)
- Seeps and Springs Area

Management Zone
- Nature Reserve
- Natural Environment
- Utlity Overlay (4 m)
- Watercourse *(also Nature Reserve)*

DILLON CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF (2017) & CITY OF LONDON (2016)

MAP CREATED BY: JWH
MAP CHECKED BY: JLP
MAP PROJECTION: NAD 1983 UTM Zone 17N

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0 50 100 200 m

[1]INFORMAL AND CLOSED EXISTING TRAILS DOCUMENTED DURING PHASE I ARE TO BE CLOSED AND RESTORED (SEE RO16 ON FIGURE 2).
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FILE LOCATION: I:\GIS\137560 - Medway MVHF ESA\Mapping\Phase II\2021\F4_ProposedConceptPlan_series_Mar2021.mxd

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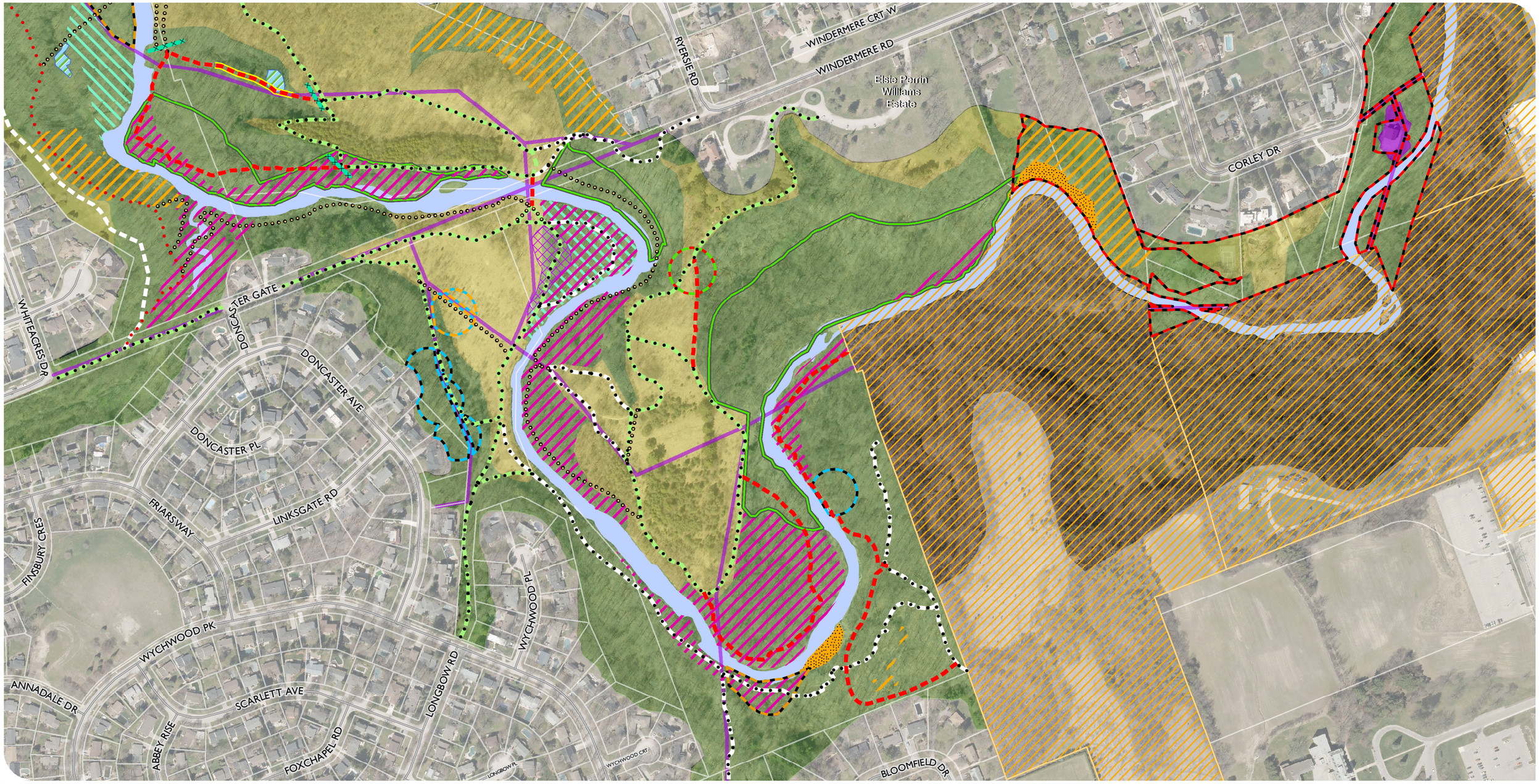

CITY OF LONDON
CONSERVATION MASTER PLAN
MEDWAY VALLEY HERITAGE FOREST ESA (SOUTH)

FIGURE 4c
ENVIRONMENTAL MANAGEMENT STRATEGY:
PROPOSED SUSTAINABLE
TRAIL CONCEPT PLAN

- Western/Huron Properties
- Trail Closed Barricade
- Contour (5 metre Elevation)

Existing Trails
- Closed Trail[1]
- Informal Trail[1]
- Managed Trail
- Temporarily Closed Trail[2]

Managed Trails
- Level One Trail
- Level Two Trail
- Improved Trail Surface

- Butternut
- Cucumber Magnolia
- False Rue Anemone
- Kentucky Coffee-tree
- Queensnake

- Amphibian Breeding Habitat
- Colonially-Nesting Bird Breeding Habitat (Bank and Cliff)
- Habitat for Rare Species (American Gromwell)
- Habitat for Rare Species (Cream Violet)
- Habitat for Rare Species (Slender Satin Grass)
- Habitat for Special Concern Species (Green Dragon)
- Seeps and Springs Area

Management Zone
- Nature Reserve
- Natural Environment
- Utlity Overlay (4 m)
- Watercourse *(also Nature Reserve)*

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0 50 100 200 m

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