THIS MEETING WILL BE WEBCAST ON THE CITY'S PUBLIC YOUTUBE SITE (CITYWATERLOO) AND MAY BE TELECAST ON PUBLIC TELEVISION

THE CITY OF Waterloo

COUNCIL MEETING AGENDA

Monday, November 25, 2024
Closed Meeting: 2:00 PM
Public Meeting: 3:00 PM

Mayor McCabe in the Chair

1. DISCLOSURE OF PECUNIARY INTEREST AND THE GENERAL NATURE THEREOF

2. CLOSED MEETING

Recommendation:

That Council hold a closed meeting for the purposes of considering the following subject matter:

a) the security of the property of the municipality or local board (Large Street Gatherings).

COUNCIL MEETING WILL RECESS AND RECONVENE AT 3:00 PM

3. TERRITORIAL ACKNOWLEDGEMENT

4. MOMENT OF REFLECTION

5. DISCLOSURE OF PECUNIARY INTEREST AND THE GENERAL NATURE THEREOF

6. APPROVAL OF MINUTES

That the previous meeting minutes be approved.

a) **October 28, 2024 – Council Meeting** **Page 7**

Recommendation:

That the minutes of the Council meeting held on October 28, 2024 be approved as printed.

7. CONSENT MOTION

That consent motion items (a) through (c) be approved.

a) **Title:** **Stormwater Management System and Wastewater Collection System – Owner Representative Designation** **Page 13**

Report No.: IPPW2024-041
Prepared By: Janet Hoffer

Recommendation:

1. That Council approve IPPW 2024-041.

2. That Council designates Leigh McDermott, Director of City Utilities as the Owner Representative for the City's stormwater management system and wastewater collection system.

3. That Council designate Jessica Kellerman, Manager of Stormwater and Construction and Bill Stortz, Manager of Wastewater Operations and Maintenance as the alternate Owner Representative for the stormwater management system and wastewater collection system, respectively.

b) **Title:** **Drinking Water Distribution – Owner Representative** **Page 15**

Report No.: IPPW2024-060
Prepared By: Jaclyn Varga

Recommendation:

1. That Council approve IPPW2024-060.

2. That Council designates Leigh McDermott, Director of City Utilities as the Owner Representative for the City's drinking water distribution system.

3. That Council designate Scott Donelle, Manager of Water Operations and Maintenance, as the alternate Owner Representative for the City's drinking water distribution system.

c) **Title:** **90 Westmount Road North – Lease Renewal with the Region of Waterloo (EMS)** **Page 17**
Report No.: COM2024-045
Prepared By: Liz Badley

Recommendation:

1. That Council approve report COM2024-045.

2. That Council approve the Lease Renewal with The Region of Waterloo at 90 Westmount Road North, Waterloo, according to the Terms and Conditions as outlined in this report.

3. That the Mayor and Clerk be authorized to sign the Lease Agreement and any other necessary documents, subject to the satisfaction of the City Solicitor.

8. ITEMS REMOVED FROM THE CONSENT MOTION

9. STAFF REPORTS

a) **Title:** **Digital Services Update** **Page 19**
Report No.: CORP2024-045
Prepared By: Brandon Currie

Presentation: Brandon Currie

Recommendation:

1. That Council receive report CORP2024-045 as information.

b) **Title:** **Road Safety Countermeasures and Traffic Calming Implementation Plan** **Page 24**
Report No.: IPPW2024-004
Prepared By: Ainsley Rego and Jenny Renaud

Introduction: Bob Henderson

Recommendation:

1. That Council receives report IPPW2024-004 as information.

2. That Traffic and Parking By-law #08-077 be updated with the amendments contained herein.

c) **Title:** **Erbsville North MESP and District Plan Terms of Reference** **Page 45**
Report No.: IPPW2024-059
Prepared By: Tristin Deveau

Introduction: Tristin Deveau

Recommendation:

1. That report IPPW2024-059 be approved.

2. That Terms of Reference – Erbsville North MESP and District Plan attached as Appendix A to report IPPW2024-059 be approved, authorizing the preparation of a Master Environmental Servicing Plan and a District Plan for the Erbsville North Area for Council's consideration and approval.

d) **Title:** **Land Donation – 0 Wilmot Line, Waterloo** **Page 104**
Report No.: CAO2024-030
Prepared By: Robin Milne, Tim Anderson, Paul Hettinga

Recommendation:

1. That report CAO2024-030 be approved;

2. That the land donation of the 3.69 acres of "Environmentally Sensitive" Woodlot Lands be accepted as per an Agreement of Purchase of Sale acceptable to the City Solicitor.

3. That the Mayor and Clerk be authorized to sign the Agreement of Purchase and Sale.

e) **Title:** **Funding Release for the Non-Routine Building Capital Renewal Project and the Uptown Rink Renewal Project** **Page 110**
Report No.: COM2024-044
Prepared By: Heather Liddycoat

Recommendation:

1. That Council approve report COM2024-044.

2. That Council approve the release of the 2024 capital funding for the Building Capital Renewal project in the amount of $531,000, funded from the Capital Infrastructure Reinvestment Reserve Fund as per the approved 2024-2026 Capital Budget ref. #229.

3. That Council approve the release of the 2025 funding for the Building Capital Renewal project in the amount of $913,000 on January 1, 2025, funded from the Capital Infrastructure Reinvestment Reserve Fund as per the approved 2024-2026 Capital Budget ref. #229.

4. That Council approve the release of the 2026 funding for the Building Capital Renewal project in the amount of $700,000 on January 1, 2026, funded from the Capital Infrastructure Reinvestment Reserve Fund as per the approved 2024-2026 Capital Budget ref. #229.

5. That Council approve the release of the 2024 funding for the Uptown Rink Renewal project, in the amount of $265,000, funded from the Capital Infrastructure Reinvestment Reserve Fund as per the approved 2024-2026 Capital Budget ref. #338.

f) Title: **City of Waterloo Brownfield Tax Increment Grant (TIG) Program Renewal** **Page 116**

Report No.: CAO2024-018
Prepared By: Kristin Sainsbury and Julie Koppeser

Recommendation:

1. That CAO2024-018 be approved.

2. That Council amend Section 4.4 of Schedule “A” to By-law 2013-123 to remove the expiry date in respect of the City-Wide Brownfield’s Community Improvement Plan (Tax Increment Grant) Program, in order to permit the Plan to continue until such time as Council directs through a future by-law to dissolve the Community Improvement Project Area designated by By-Law 2013-107.

3. That the Mayor and Clerk be authorized to execute any enabling bylaw.

4. That staff be directed to notify the Region of Waterloo.

10. CONSIDERATION OF NOTICE OF MOTION GIVEN AT PREVIOUS MEETING

None

11. NOTICE OF MOTION

None

12. COMMUNICATIONS AND CORRESPONDENCE

None

13. UNFINISHED BUSINESS

None

14. QUESTIONS

15. NEW BUSINESS

16. ENACTMENT OF BY-LAWS

Recommendation:

That the By-laws listed below be read a first, second and third time and finally passed, numbered sequentially commencing with By-law Number 2024-089 and that the Mayor and Clerk be authorized to sign them accordingly.

a) By-law to Amend No.08-077, a By-law to Regulate Traffic and Parking on Highways under the Jurisdiction of the City of Waterloo (IPPW2024-004, Council November 25, 2024)

b) By-law to Amend By-law 2013-123 to Extend the Timeframe for the City-Wide Brownfield Community Improvement Plan (CAO2024-018, Council November 25, 2024)

c) By-law to confirm all actions and proceedings of Council, November 25, 2024

17. ADJOURNMENT

A meeting of the Council of The Corporation of the City of Waterloo was held on October 28, 2024 at 2:01 p.m. in the Council Chambers, 100 Regina Street South, Waterloo, Ontario and streamed live via YouTube.

THE CITY OF Waterloo

COUNCIL MEETING MINUTES - DRAFT

Monday, October 28, 2024
Public Meeting: 2:01 PM

PRESENT: Mayor Dorothy McCabe, Councillor Sandra Hanmer, Councillor Royce Bodaly, Councillor Hans Roach, Councillor Jen Vasic, Councillor Julie Wright

ABSENT: Councillor Diane Freeman, Councillor Mary Lou Roe

Mayor McCabe in the Chair

1. TERRITORIAL ACKNOWLEDGEMENT

Mayor McCabe opened the meeting with the following Territorial Acknowledgement:

We would like to begin by acknowledging that the land on which we gather (land on which we are broadcasting from) today is the land traditionally cared for by the Haudenosaunee, Anishinaabe and Chonnontan People. We also acknowledge the enduring presence and deep traditional knowledge and philosophies of the Indigenous People with whom we share this land today.

Mayor McCabe also offered further reflections on Truth and Reconciliation.

2. MOMENT OF REFLECTION

Mayor McCabe provided Council with a moment of reflection.

At the beginning of this Council meeting, we pause to think about the needs of our community. May we show wisdom and compassion in all our decisions.

3. DISCLOSURE OF PECUNIARY INTEREST AND THE GENERAL NATURE THEREOF

No disclosure of pecuniary interest was declared by any member of Council at this point in the meeting.

4. STAFF REPORTS

a) Title: Drinking Water Quality Management System Update – Management Review and Operational Plan
Report No.: IPPW2024-040
Prepared By: Lori McKenzie

Lori McKenzie, Leigh McDermott and Cari Van Niekerk responded to questions of Council.

Moved by Councillor Hanmer, Seconded by Councillor Roach:

1. That Council receive IPPW2024-040 for information.

Carried Unanimously

5. PUBLIC MEETINGS

Informal Public Meeting

a) Title: Official Plan Amendment No.60 & Zoning By-law Amendment Z-24-18 2244668 Ontario Inc., 1 Dunbar Road North
Prepared by: Aminu Bello
Ward No.: Ward No. 7 – Uptown

Aminu Bello gave a presentation outlining the planned development, including the current and proposed planning framework. He then responded to questions of Council.

Trevor Hawkins, Partner, MHBC Planning and Maxime Frappier, President, ACDF Architecture gave a presentation further detailed the proposed development, including the context of the surrounding area and the building's design. They then responded to questions of Council. Marie-Christine Pinard, 360 Pacifica also responded to questions of Council.

Anna Marie Cipriani, Resident of Waterloo spoke about the gratitude they feel toward the application and the different concerns they have for the development. They then responded to questions of Council.

Fred Serez, Resident of Waterloo spoke about the need for developers to communicate with the community.

Thom Bartleman, Resident of Waterloo spoke about the shadow study and the issues with it.

Pauline Campbell, Resident of Waterloo spoke about her concerns with the lack of care for the residents who currently live in the area, and the high number of vacancies in the area.

As no one else was present to speak to the application, the Chair concluded the Informal Public Meeting and indicated that staff will review the issues and report back to Council at a later date.

Councillor Bodaly left the meeting. (Time: 3:48 p.m.)

Councillor Bodaly joined the meeting. (Time: 3:50 p.m.)

6. NOTICE OF MOTION

Combatting Hate in Local Communities – Councillor Wright

Moved by Councillor Wright, Seconded by Councillor Hanmer:

WHEREAS the Supreme Court of Canada has defined “hatred” in the landmark *R. v. Keegstra* case, as referring to an “extreme emotion that, if exercised against members of an identifiable group, implies that those individuals are to be despised, scorned, denied respect, and made subject to ill treatment on the basis of group affiliation”; and

WHEREAS the Ontario Human Rights Code affirms the right to safety from discrimination because of race, ancestry, place of origin, colour, ethnic origin, citizenship, creed, sex, sexual orientation, gender, identity, gender expression, age, marital status, family status or disability; and,

WHEREAS a recent Statistics Canada report shows that the combined census metropolitan area of Kitchener-Cambridge-Waterloo is experiencing the highest rate of police-reported hate crimes in Canada; and

WHEREAS Police-reported hate crimes have increased dramatically over the past few years and continue to disproportionately target people based on their race, ethnicity, sexual orientation, religion, gender identity, and disabilities; and

WHEREAS 35% of the local population is racialized; and

WHEREAS the Coalition of Muslim Women K-W’s online reporting tool ReportHate.ca acts as a portal to support the reporting of hate and provide resources to local residents experiencing hate incidents; and

WHEREAS the 2019 General Social Survey on Victimization identified that police-reported hate crime increases because of the general awareness among the community and the relationship between the community and police services can impact whether a hate crime comes to the attention of the police; and

WHEREAS municipal cooperation across the Region of Waterloo is vital to the community-wide efforts to combat hate and racism; and

WHEREAS work has been long underway across the broader community by many organizations and grassroots initiatives to encourage a sense of belonging and support local residents experiencing hate incidents and racism; and

WHEREAS Canada's Action Plan on Combatting Hate has committed $273.6 million over six years, and $29.3 million ongoing, in part to fund grassroot organizations for capacity building; fund awareness, public education, and media campaigns that showcase positive and authentic narratives of affected communities; and enhance federal, provincial, territorial and municipal cooperation to tackle hate; and

WHEREAS The Ontario government is investing more than $1.7 million to help stop hate-motivated crimes across the province through a two year renewal of the Safer and Vital Communities (SVC) Grant program; and

WHEREAS the Region of Waterloo, in partnership with numerous community organizations and the Waterloo Regional Police Service is leading the development of the Community Safety and Wellbeing Plan; and

WHEREAS the City of Waterloo's Neighbourhoods Team has published a Responding to Hate Motivated Incidents guide in consultation with community partners including Community Justice Initiatives, Coalition of Muslim Women K-W and Waterloo Regional Police Services; and

WHEREAS the City of Waterloo is finalizing the "Get READI Plan" which focuses on improving Indigenous relations and fostering Reconciliation; enhancing the built environment; cultivating a culture of belonging; increasing diversity of staff and leadership; focusing on equitable distribution of resources; and building trust through systems of accountability;

NOW THEREFORE, BE IT RESOLVED THAT the City of Waterloo reaffirms its condemnation of racism and hate-motivated incidents;

AND commits to prioritizing a preventative and community-led approach to combating racism and hate, internally and in collaboration with external partners;

AND commits to support the work underway by all staff led by its READI and Neighbourhoods teams;

AND commits to collaborate with local organizations to amplify and enhance the work they are undertaking to combat hate and promote belonging;

AND that this Council calls on the residents of the Region of Waterloo to join us in the work to oppose racism and hate and in fostering a sense of belonging for all community members;

AND FURTHER THAT a copy of this motion be sent to local and area MPs, MPPs and Heads of Council, AMO and the Presidents of Conestoga College, the University of Waterloo and Wilfrid Laurier University.

Carried Unanimously

7. NEW BUSINESS

Councillor Vasic highlighted two neighbourhood events: the Hocus Pocus Halloween event in Roselea Park with the Lincoln Heights Neighbourhood Group and another event on Cardinal Crescent. She offered thanks to the Neighbourhoods team for helping to support communities.

Councillor Vasic also mentioned the Button Factory Arts Centre is looking for a treasurer for the board, which is a 10-hour a month commitment.

Councillor Wright mentioned that Treats on the Streets, a Halloween event put on by the BIA, was on Saturday, October 26th. It was a positive and enlivening event, and great to see all the costumes.

Councillor Wright also mentioned that the Kitchener-Waterloo Art Gallery hosted their gala, with the Paris Prowler caper event, on the evening of Saturday, October 26th. It was highly entertaining and she participated as a team with Councillor Vasic and staff.

Councillor Bodaly wanted to highlight some Ward 2 neighbourhood events: the Laurelwood Neighbourhood Association hosted a Halloween event at Laurel Heights Secondary School on Friday, October 25th, and Vista Hills hosted their Diwali event at RIM Park on Saturday, October 26th, with nearly 300 people.

Councillor Bodaly also mentioned that the Southern Ontario Cricket Association (SOCA) also held their gala on Saturday, October 26th and it was great to celebrate one of the faster growing sports in the community.

Councillor Hanmer mentioned the Westvale Community Association, sponsored by the Westvale Optimists Club, also held their Halloween event on Saturday, October 26th, with a lot of kids dressed up and taking part.

Mayor McCabe mentioned that the Mary Allen neighbourhood is doing accessible trick-or-treating.

8. ENACTMENT OF BY-LAWS

Moved by Councillor Bodaly, Seconded by Councillor Wright:

That the By-laws listed below be read a first, second and third time and finally passed, numbered sequentially commencing with By-law Number 2024-078 and that the Mayor and Clerk be authorized to sign them accordingly.

a) By-law 2024-078 By-law to confirm all actions and proceedings of Council, October 28, 2024

Carried Unanimously

9. ADJOURNMENT

Moved by Councillor Vasic, Seconded by Councillor Bodaly:

That the meeting adjourn. (Time: 4:04 p.m.)

Carried Unanimously

READ AND APPROVED, November 25, 2024

_____
Mayor

_____
City Clerk

STAFF REPORT
City Utilities

Title:	Stormwater Management System and Wastewater Collection System – Owner Representative Designation
Report Number:	IPPW 2024-041
Author:	Janet Hoffer
Council Date:	November 25, 2024
File:	NA
Attachments:	N/A
Ward No.:	Citywide

Recommendations:

1. That Council approve IPPW 2024-041.

2. That Council designates Leigh McDermott, Director of City Utilities as the Owner Representative for the City's stormwater management system and wastewater collection system.
3. That Council designate Jessica Kellerman, Manager of Stormwater and Construction and Bill Stortz, Manager of Wastewater Operations and Maintenance as the alternate Owner Representative for the stormwater management system and wastewater collection system, respectively.

A. Executive Summary

In accordance with the City of Waterloo's **Environmental Compliance Approval for the Municipal Stormwater Management System (ECA 112-S701)**, and the **Environmental Compliance Approval for Municipal Wastewater Collection System (ECA 112-W601)**, the Owner (Council) of the respective systems must designate an Owner Representative. The Owner Representative has the responsibility of ensuring alterations to the system are conducted in accordance with regulatory requirements, prevent adverse effects to the environment, and provide oversight by competent personnel with relevant education and experience within the respective systems.
It is an internal recommendation that the individual designated as the Owner Representative possess a professional or technical license, such as a Licensed Professional Engineer (P.Eng.), or hold applicable operator certifications under Ontario Regulation 128/04. Additionally, the representative should have significant technical expertise and experience relevant to the system.

For the stormwater management system, it is recommended that Leigh McDermott, Director of City Utilities, be designated as the Owner Representative, with Jessica Kellerman, Manager of Stormwater Operations and Construction, serving as the alternate.

For the wastewater collection system, it is recommended that Leigh McDermott, Director of City Utilities, be designated as the Owner Representative, with Bill Stortz, Manager of Wastewater Operations and Maintenance, serving as the alternate.

B. Financial Implications

None

C. Technology Implications

None

D. Link to Strategic Plan

(Strategic Priorities: Reconciliation, Equity, Accessibility, Diversity and Inclusion; Environmental Sustainability and Climate Action; Complete Community; Infrastructure and Transportation Systems; Innovation and Future-Ready)

(Guiding Principles: Equity and Inclusion; Sustainability; Integrity; Workplace Wellbeing; Community-centred; Operational Excellence)

- Environmental Sustainability: Protecting the natural environment and minimizing environmental impacts with reliable infrastructure.
- Infrastructure and Transportation: Maintain reliable infrastructure to be environmentally sustainable and cost effective.
- Complete Community: Incorporate green infrastructure such as bioswales, rain gardens and permeable pavements to manage stormwater and improve urban aesthetics.
- Operational Excellence: Apply best practices to safeguard the environment and promote sustainable operations. Ensure that components are running optimally and are well maintained to prevent failures and inefficiencies.

E. Previous Reports on this Topic

None

STAFF REPORT
City Utilities

Title:	Drinking Water Distribution – Owner Representative
Report Number:	IPPW2024-060
Author:	Jaclyn Varga
Council Date:	November 25, 2025
File:	N/A
Attachments:	N/A
Ward No.:	Citywide

Recommendations:

1. That Council approve IPPW2024-060.
2. That Council designates Leigh McDermott, Director of City Utilities as the Owner Representative for the City's drinking water distribution system.
3. That Council designate Scott Donelle, Manager of Water Operations and Maintenance, as the alternate Owner Representative for the City's drinking water distribution system.

A. Executive Summary

In accordance with the City of Waterloo's Municipal Drinking Water License 112-101 and Drinking Water Works Permit 112-201, issued by the Ontario Ministry of Environment, Conservation and Parks (MECP) the Owner (Council) of the drinking water distribution system must designate an Owner Representative. The Owner Representative has the statutory responsibility to ensure that alterations to the distribution system are conducted in accordance with regulatory requirements; to prevent adverse effects to the environment; and, to establish oversight by competent personnel with relevant education and experience required by the MECP.

It is an internal recommendation that the individual designated as the Owner Representative possess a professional or technical license, such as a Licensed Professional Engineer (P.Eng.), or hold applicable operator certifications under Ontario Regulation 128/04 of the Safe Drinking Water Act, 2002. Additionally, the representative should have significant technical expertise and experience relevant to the distribution system. Historically, the City has achieved this designation via the Drinking Water Quality Management System (DWQMS) Operational Plan Council endorsement process, where it was tied to a divisional title/position. Industry best practice is to now have Council specifically designate the qualified person who will act as the Owner's Representative.

It is recommended that Leigh McDermott, Director of City Utilities, be designated as the Owner Representative, with Scott Donelle, Manager of Water Operations and Maintenance, serving as an alternate. The City's Director of Utilities and Manager of Water Operations and Maintenance have the necessary education, experience and qualifications to satisfy MECP requirements.

B. Financial Implications

None.

C. Technology Implications

None.

D. Link to Strategic Plan

(Strategic Priorities: Reconciliation, Equity, Accessibility, Diversity and Inclusion; Environmental Sustainability and Climate Action; Complete Community; Infrastructure and Transportation Systems; Innovation and Future-Ready)

(Guiding Principles: Equity and Inclusion; Sustainability; Integrity; Workplace Wellbeing; Community-centred; Operational Excellence)

- Environmental Sustainability: Protecting the natural environment and minimizing environmental impacts with reliable infrastructure.
- Infrastructure and Transportation: Maintain reliable infrastructure to continually provide safe drinking water to all users within the City.
- Operational Excellence: Apply best practices to maintain infrastructure to prevent failures, inefficiencies and ensure high quality, safe drinking water is consistently delivered consistently.

E. Previous Reports on this Topic

Owner Representative designation last occurred through endorsement of the Operational Plan via IPPW2023-022; the last Council report specific to designation was IPPW2013-024.

STAFF REPORT
Facility Design & Management Services

Title:	90 Westmount Road North - Lease Renewal with the Region of Waterloo (EMS)
Report Number:	COM2024-045
Author:	Liz Badley, Real Estate, Leasing & Service Contract Specialist
Council Date:	November 25, 2024
File:	N/A
Attachments:	None
Ward No.:	6

Recommendations:

1. That Council approve report COM2024-045.

2. That Council approve the Lease Renewal with The Region of Waterloo at 90 Westmount Road North, Waterloo, according to the Terms and Conditions as outlined in this report.

3. That the Mayor and Clerk be authorized to sign the Lease Agreement and any other necessary documents, subject to the satisfaction of the City Solicitor.

A. Executive Summary

The City of Waterloo (Landlord) and the Region of Waterloo (Tenant) seek to renew the existing lease agreement at 90 Westmount Road North, Waterloo, under the following terms and conditions. The original lease commenced on August 15th, 2003, and expired on December 31st, 2013, at which time a month-to-month agreement was established.

Property:	90 Westmount Road North, Waterloo
Use:	Emergency Medical Services, Ambulance Dispatch
Total Lease Term:	December 1st, 2024 – November 30th, 2029,
Terms & Conditions:	To remain intact, as per the original lease agreement and subsequent lease renewal agreement(s)

B. Financial Implications

Loss of rental revenue should tenancy not be approved.

C. Technology Implications

None

D. Link to Strategic Plan

(Strategic Priorities: Reconciliation, Equity, Accessibility, Diversity, and Inclusion; Environmental Sustainability and Climate Action; Complete Community; Infrastructure and Transportation Systems; Innovation and Future-Ready)

(Guiding Principles: Equity and Inclusion; Sustainability; Integrity; Workplace Wellbeing; Community-centred; Operational Excellence)

Operational Excellence: We provide fiscally responsible, exceptional service that meets the needs of residents, partners and equity-deserving groups, employees, and volunteers of the city.

E. Previous Reports on this Topic

None

STAFF REPORT
Corporate Communications

Title:	Digital Services Update
Report Number:	CORP2024-045
Author:	Brandon Currie
Council Date:	November 25, 2024
File:	
Attachments:	
Ward No.:	All

Recommendations:

1. That Council receive report CORP2024-045 as information.

A. Executive Summary

As part of the ongoing implementation of the Digital Service Strategy, digital program staff are required to report back to Council and the Extended Corporate Management Team (ECMT) on an annual basis.

As envisioned in the strategy, the process to become a service-centered, digital organization is a journey that will proceed in three (3) phases: exploring digital, designing digital, and being digital.

This report updates and expands on CORP2023-034, to show progress as the digital program moves from the initial 'exploring digital' phase into the more capital-intensive 'designing digital' phase.

B. Financial Implications

Capital funding for implementation of the Digital Service Strategy was approved as part of the 2024-2026 budget totaling $1.3M over 2024-2026 (Ref# 401 – Project 220014).

Digital program and finance staff provide regular budget updates to the Digital and Technology Steering Committee on the digital initiatives as outlined in this report, which are funded by a combination of various capital projects and divisional operating funding as applicable.

Currently, there are four staff contracts funded from the Digital Implementation Project 220014: a Website Design Lead, a Web Developer and two Digital Services Specialists. Through the 2024-2026 approved budget one of the Digital Services Specialist positions (S6) and the Web Developer (S7) become full-time positions in the 2026 operating budget.

C. Technology Implications

Digital service architecture such as website CMS and a corporate CRM represent significant upgrades and additions to the City technology stack. Digital staff work with IMTS staff to ensure that new pieces of technology are integrated into the City's existing systems as effectively as possible.

D. Link to Strategic Plan

(Strategic Priorities: Reconciliation, Equity, Accessibility, Diversity and Inclusion; Environmental Sustainability and Climate Action; Complete Community; Infrastructure and Transportation Systems; Innovation and Future-Ready)

(Guiding Principles: Equity and Inclusion; Sustainability; Integrity; Workplace Wellbeing; Community-centred; Operational Excellence)

Implementation of the digital strategy is tied to the Innovation and Future-Ready priority of the 2023-26 Strategic Plan, and was featured as a 'strategic story' that helps to communicate the plan to residents. Providing digital options for customer service that are user-friendly and as accessible as possible supports the accessibility and inclusion work of the Reconciliation, Equity, Accessibility, Diversity and Inclusion priority.

It is also connected to Operational Excellence as the digital staff help to build services that work better for the public and increase efficiency for City staff.

E. Previous Reports on this Topic

CORP2023-034

Digital Services Update
CORP2024-045

As the initial ‘exploring digital’ phase of the Digital Service Strategy comes to a close, Digital and Web Services staff are providing an update to ECMT and Council on progress to date and the work that lies ahead.

As described in the strategy, the journey to becoming a service-centered, digital organization is a long one with effort required across the organization.

Aside from the core Digital and Web Services team within Corporate Communications, several City divisions have made significant contributions in the ‘exploring digital’ phase. These include IMTS, Finance, Procurement, Legislative Services, READI, Service Centre Administration and staff from various business units.

This has led to progress in four (4) key areas during the ‘exploring digital’ phase:

1) Building digital infrastructure

Over the past year digital staff have laid the groundwork for major infrastructure projects and continued to build on its accessibility and user testing practices. This includes:

- Purchase of new website content management system (implementation ongoing through fall 2025)
- Preparation of RFP to purchase customer relationship management (CRM) and identity management system
- Purchase and implementation of Equidox digital remediation software
- Purchase and assembly of user testing kit

2) New digital services (launched or in progress)

Digital staff have worked on several new service offerings over the past year. These range from smaller, targeted services (such as ‘Book a ride for seniors’) to large City-wide platforms (such as ‘Get an online parking permit’). New offerings include:

- Apply for an affordable housing grant
- Apply for snow clearing assistance
- Book a park shelter (soft launched in 2024, full launch Q2 2025)

- Book a ride for seniors
- Dispute a ticket online (coming in 2025)
- Get an online parking permit (coming in Q2 2025)
- Find engineering specifications online
- Submit a development application online

(Note that this is not a complete list of online services that the City offers – only those that digital staff have worked on since 2023)

3) Digital governance and processes

A key part of the digital strategy is to standardize how the organization manages its digital service portfolio. To that end, staff have worked on a variety of initiatives around governance and process, including:

- Launch of 'Digital home' on Waterloo.ca
- Formation of Digital and Technology Steering Committee
- Creation of standardized digital intake and workflow
- AI workshop and creation of AI Acceptable Use policy (coming in Q1 2025)
- Development of digital service usage metrics for strategic plan reporting
- Ongoing staff outreach and education

4) Implementing digital tools/systems

Digital staff have advised on a number of projects that have been initiated by a business unit. In these cases, we provide advice and guidance on implementation so that the final product meets corporate digital standards. These projects include:

- Applicant tracking system (HR)
- Learning management system (HR)
- Ongoing AMANDA portal improvements (Municipal Enforcement Services)
- Building permit portal (Building Standards - forthcoming)
- Water usage portal (City Utilities - forthcoming)
- Public engagement system (Corporate Communications – forthcoming)

Next steps

As strategy implementation moves into the 'designing digital' phase, digital and business unit staff will continue to work closely together with oversight from the Digital and Technology Steering Committee.

The development of comprehensive digital service usage metrics is underway and will be included in future reporting on Digital Strategy and Strategic Plan progress.

As noted above, digital staff are looking forward to a number of initiatives coming online in 2025, including:

- Waterloo.ca relaunch
- Internal CRM implementation + scoping for public-facing ‘City Account’
- Approved digital components list
- New/refreshed portals (building permits, business licenses, parking)
- New public engagement and park bookings platforms

STAFF REPORT
Transportation Services

Title:	Road Safety Countermeasures and Traffic Calming Implementation Plan
Report Number:	IPPW2024-004
Author:	Ainsley Rego and Jenny Renaud
Council Date:	November 25, 2024
File:	N/A
Attachments:	None
Ward No.:	All Wards

Recommendations:

1. That Council receives report IPPW2024-004 as information.
2. That Traffic and Parking By-law #08-077 be updated with the amendments contained herein.

A. Executive Summary

In February 2024, Council approved staff report IPPW2024-001 Traffic Calming Policy and Road Safety Countermeasures which updated and enhanced the City's road safety program to be more proactive, using data-driven and evidence-based data to determine priority locations for road safety improvements. This first annual report summarizes the findings from both the collision and operating speed analyses. It builds on the overall work that is underway as part of the City's 2021 Transportation Master Plan and commitment to vision zero principles.

The collision screening is over a five-year period that includes 2017, 2018, 2019, 2022 and 2023. The years 2020 and 2021 were omitted in this screening due to the anomalies in traffic patterns during the COVID-19 pandemic.

Within the five-year City-wide screening, 2837 collisions occurred on City of Waterloo roads, including 66 collisions involving pedestrians (one fatal collision in 2019) and 53 collisions involving cyclists.

The following top ten overall locations (intersections and mid-blocks) were identified as priority candidates for road safety measures through the collision screening:

1. Columbia Street West at Phillip Street
2. Albert Street at Columbia Street West
3. Albert Street at Hickory Street
4. Columbia Street West at Hagey Boulevard
5. Columbia Street West at Hazel Street
6. Phillip Street between University Avenue West and Columbia Street West
7. Allen Street at Park Street
8. Lexington Road at Davenport Road
9. Albert Street between University Avenue West and Hickory Street
10. Regina Street at Noecker Street.

The following top ten locations were identified as priority candidates for pedestrian safety measures through the pedestrian collision screening:

1. Regina Street at Lodge Street
2. Columbia Street at Hazel Street
3. Columbia Street at Phillip Street
4. Columbia Street at Hagey Boulevard
5. Phillip Street between University Avenue West and Columbia Street West
6. Parkside Drive at Cedarbrae Avenue
7. Albert Street at Central Street
8. Lexington Road at Davenport Road
9. University Avenue East at Lexington Road
10. Bearinger Road at Parkside Drive

The following top ten locations were identified as priority candidates for cycling safety measures through the cyclist collision screening:

1. Phillip Street between University Avenue West and Columbia Street
2. Allen Street West at Park Street
3. Albert Street at Hazel Street
4. Bathurst Drive at McMurray Road
5. Columbia Street at Hazel Street
6. Albert Street between Columbia Street West and Cardill Crescent
7. Columbia Street West at Phillip Street
8. Laurelwood Drive at Old Oak Place
9. Keats Way at Amos Avenue
10. Columbia Street West at Beechlawn Drive

In addition to analyzing collision data, staff worked with CIMA+ Consulting to acquire operating speed data for the majority of the city's road network. The data was collected over three months between September and November 2023, then reviewed to identify streets with operating speeds exceeding the posted limits by 15 km/h or more. This 15 km/h threshold was established for the initial screening process in 2024 to prioritize the most critical locations in the City.

The following three locations were identified as requiring traffic calming measures to reduce higher than expected operating speeds:

1. Bluevale Street North between Harvard Road and Mayfield Avenue
2. Lourdes Street between Westmount Road to Alexandra Avenue
3. Keats Way between Beechwood Drive to Woodbend Crescent

Implementation of collision countermeasures and traffic calming measures has begun and will continue through 2025.

B. Financial Implications

Costs associated with the implementation will use approved capital budgets #110120 Annual Transportation Studies, #120083 Traffic Calming Implementation, #202052 TMP Implementation Sign Replacement, #202054 Intersection Collision Review & Implementation, and any others in the Transportation Capital Budget that relate to road safety. There is currently funding available in each of the projects to proceed, and additional funding approved as part of the 2024-2026 Capital Budget, as approval by Council on February 12, 2024.

C. Technology Implications

There are no technology implications to this report.

D. Link to Strategic Plan

Strategic Priorities:
Complete Community – vibrant public spaces, complete neighbourhoods, by implementing road safety improvements.
Infrastructure and Transportation Systems – Investing in infrastructure that will improve safety throughout the City.
Innovation and Future-Ready – partner with the University of Waterloo on developing effective countermeasures that the level of effectiveness has been broken down on a local level.

Guiding Principles:
Integrity – strive for well-considered comprehensive, responsive and thoughtful decision making by prioritizing locations based on safety data and effectiveness of countermeasures.
Community-centred – proposing safety improvements to support strong and livable neighbourhoods.
Operational Excellence – fiscal responsibility by seeking the most cost-effective collision countermeasures.

E. Previous Reports on this Topic

IPPW2024-001 Traffic Calming Policy and Road Safety Countermeasures

Road Safety Countermeasures and Traffic Calming Implementation Plan
IPPW2024-004

1. Background

In February 2024, Council approved Staff report IPPW2024-001 Traffic Calming Policy and Road Safety Countermeasures which updated and enhanced the City's road safety program. The new process is proactive, data-driven and evidence-based, utilizing collision, volume and operating speed data. This initiative was identified as Recommendation 37 in the 2021 Transportation Master Plan and supports the City's Vision Zero principles. The intent of Vision Zero is that no one should suffer serious or fatal injuries in road traffic crashes.

In addition to analyzing collision data, City staff worked with CIMA+ Consulting to acquire speed data for three months between September and November 2023. This is the same process that the Ministry of Transportation Ontario uses for its biennial Travel Time Study. CIMA+ was able to acquire speed data for 4162 City of Waterloo mid-block segments that include:

- 24-hour traffic data for the Fall of 2023 (September to November);
- Days of the week: weekdays, from Tuesday to Thursday; and,
- Time of day periods: AM peak (6 to 9 am), mid-day (12 to 2 pm), and PM peak (3:30 to 6:30 pm).

Utilizing this data, staff screened the locations against compliance to the posted speed limit. The top locations were then analyzed to determine best measures to reduce the operating speeds.

2. Collision Screening

The collision screening for 2024 includes a five-year period using 2017, 2018, 2019, 2022 and 2023. The years 2020 and 2021 were omitted in this screening due to the anomalies in traffic patterns during the COVID-19 pandemic.

The goal of this screening is to identify locations where collisions are occurring and implement countermeasures to improve road safety, reduce societal costs related to collisions and target collisions involving vulnerable road users.

Using collision reports from Waterloo Regional Police Service (WRPS), staff have screened all reported collisions on City streets to understand areas of concern. The screening focused on: all collisions City-wide, pedestrian collisions and cyclist collisions.

A total of 2837 collisions occurred on roads under the jurisdiction of the City of Waterloo. Throughout the five-year screening a total of 66 pedestrian collisions occurred, including one fatal collision in 2019 and 53 cyclist collisions.

Charts 1 through 3 below outline the seven-year trends for overall, pedestrian and cyclist collisions occurring on City roads, including COVID-19 years.

Chart 1: City of Waterloo Overall Collision Trends

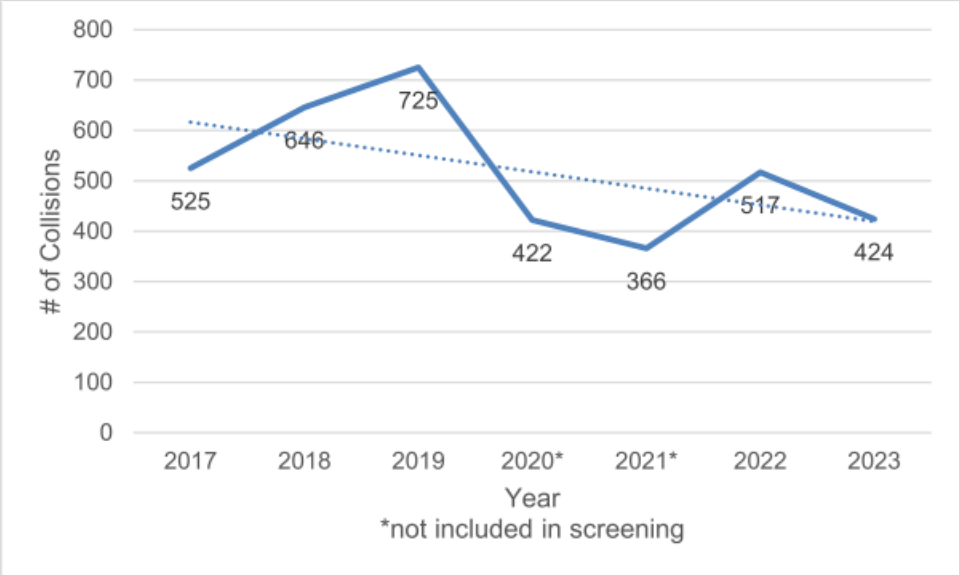


Chart 2: City of Waterloo Pedestrian Collision Trends

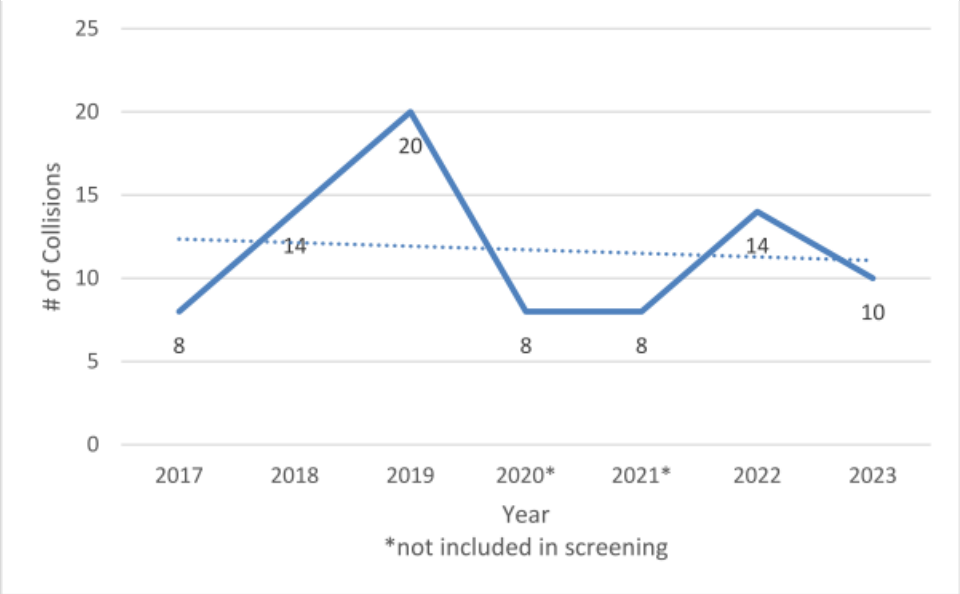
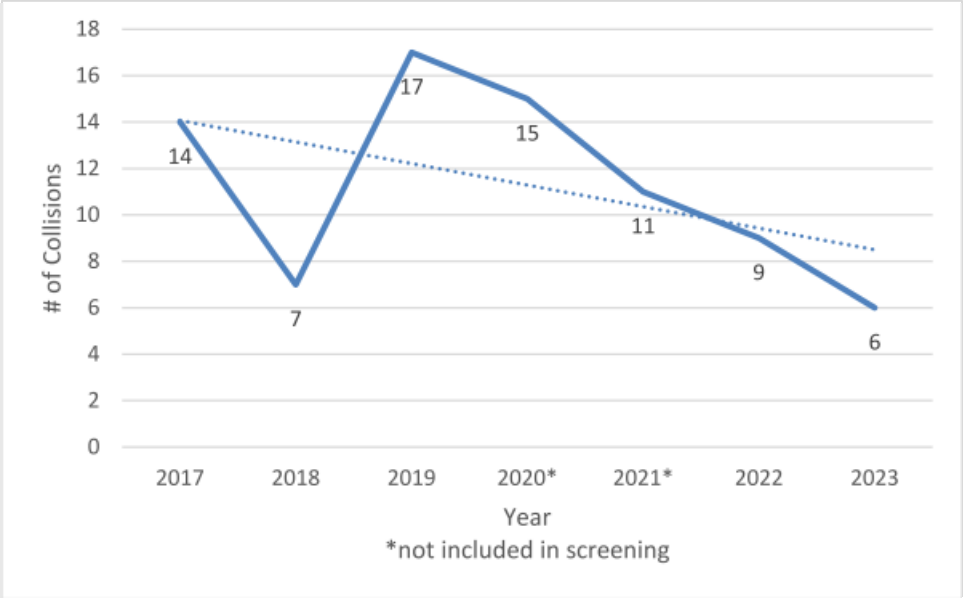


Chart 3: City of Waterloo Cyclist Collision Trends



2.1 Top 10 Collision Locations

The City's network screening process involves several steps to develop a meaningful list of intersections or road segments that require road safety enhancements. As the City changes over time, staff must continually collect and update data on traffic volume and infrastructure for its network of intersections and road segments.

This data is used in collision models to predict motor vehicle, pedestrian and cyclist collisions at various locations throughout the City of Waterloo. Locations with more collisions or more severe incidents than predicted by the models are prioritized for road safety measures, as these areas are likely to benefit the most and see a reduction in collisions.

Table 1 below identifies the top ten collision locations on all City of Waterloo roads, including intersections and mid-block locations. Table 2 identifies the top ten pedestrian-related collision locations and Table 3 identifies the top ten cyclist-related collision locations. It is important to note that some locations are repeated on each table because they may be experiencing more than one type of collision by transportation mode type.

City of Waterloo streets that intersect with Region of Waterloo streets are not captured in this assessment as these locations fall under the responsibility of the Region of Waterloo and are captured in their respective road safety program. (Example: University Avenue and Lincoln Road).

Table 1: Top 10 Overall Collision Locations

Location	Location Type	Rank
Columbia Street West at Phillip Street	4-Legged Signalized	1
Albert Street at Columbia Street West	4-Legged Signalized	2
Albert Street at Hickory Street	Two-way Stop Control	3
Columbia Street at Hagey Boulevard	4-Legged Signalized	4
Columbia Street West at Hazel Street	4-Legged Signalized	5
Phillip Street between University Avenue West and Columbia Street West	Multi-Lane Road	6
Allen Street West at Park Street	All-way Stop Control (2023)	7
Lexington Road at Davenport Road	4-Legged Signalized	8
Albert Street between University Avenue West and Hickory Street	2-lane Road	9
Regina Street at Noecker Street	Two-Way Stop Control	10

Table 2: Top 10 Pedestrian Collision Locations

Location	Location Type	Rank
Regina Street at Lodge Street	Two-Way Stop Control	1
Columbia Street at Hazel Street	4 – Legged Signalized	2
Columbia Street at Phillip Street	4-Legged Signalized	3
Columbia Street at Hagey Boulevard	4-Legged Signalized	4
Phillip Street between University Avenue West and Columbia Street West	Two-Lane Road	5
Parkside Drive at Cedarbrae Avenue	4- Leg All-way Stop Control	6
Albert Street at Central Street	Two-Way Stop Control	7
Lexington Road at Davenport Road	3-Legged Signalized	8
University Avenue East at Lexington Road	3-Legged Signalized	9
Bearinger Road at Parkside Drive	4-Legged Signalized	10

Table 3: Top 10 Cyclist Collision Locations

Location	Location Type	Rank
Phillip Street between University Avenue West and Columbia Street	2-Lane Road	1
Allen Street West at Park Street	All-way Stop Control	2
Albert Street at Hazel Street	4-Legged Signalized	3
Bathurst Drive at McMurray Road	4 Legged Signalized	4
Columbia Street at Hazel Street	4-Legged Signalized	5
Albert Street between Columbia Street West and Cardill Crescent	2-lane Road with On-street cycling lanes	6
Columbia Street West at Phillip Street	4-leg Signalized	7
Laurelwood Drive at Old Oak Place	Two-Way Stop Control	8
Keats Way at Amos Avenue	Two-Way Stop Control	9

Columbia Street West at Beechlawn Drive	Two-Way Stop Control	10

3. Collision Analysis and Recommended Road Safety Countermeasures

To determine effective road safety countermeasures, staff first review all collisions at a given location and identify the most frequent or over-represented collision types. Once identified, staff attempt to determine the causal factors contributing to these collisions. Common factors may include but are not limited to, poor lighting, time of day, inclement weather, road geometry, speed, and driver condition, among others. Staff also review other traffic data, such as turning movement counts and speed data, and conduct on-site observations to further identify any additional potential contributing factors.

Once the causal factors for each location have been identified, tools like the Crash Modification Factors (CMF) Clearinghouse help determine which countermeasures have proven most effective for each scenario. The CMF Clearinghouse is a national online database of CMFs, complete with supporting documentation that assists transportation engineers in selecting the most suitable countermeasure for their safety needs. In addition to using the CMF Clearinghouse, staff also draw on their in-house expertise, best practices from nearby municipalities, and research from post-secondary institutions to develop effective road safety countermeasures.

Tables 4, 5 and 6 below summarize the collision types, recommended countermeasures to be implemented and former countermeasures that have been implemented to improve road safety for each location.

Table 4: Collision Countermeasures - Overall

Top 10 Overall Collisions				
#	**Location**	**Collision Type(s)**	**Recommended Countermeasure(s)**	**Countermeasure(s) Already Installed**
1	Columbia Street at Phillip Street	• Turning Movement • Rear-end	• Request Region consider fully-protected eastbound/westbound left-turn signal phasing (would require City to install median islands at intersection) • Request Region to review signal coordination to reduce congestion	

Top 10 Overall Collisions				
#	**Location**	**Collision Type(s)**	**Recommended Countermeasure(s)**	**Countermeasure(s) Already Installed**
2	Albert Street at Columbia Street West	• Turning movement • Angle	• Ladder crosswalk recommended on all approaches, existing only for those crossing Albert Street • Request Region consider an increase to the all-red signal phase interval and red-light camera in the westbound direction	
3	Albert Street at Hickory Street	• Angle	• Identified as a future pedestrian crossover location (PXO) in IPPW2023-043 • All-way stop warranted now and recommended instead	
4	Columbia Street at Hagey Boulevard	• Rear-End • Sideswipe		2022 • GRT stop relocated to far side
5	Columbia Street at Hazel Street	• Rear-End	• Request Region to consider updating signal coordination through Columbia Street corridor	
6	Phillip Street between University Avenue West and Columbia Street West	• Turning movement (private driveway onto the street)	• Speed Management – recommend 40 km/h speed limit in this section	
7	Allen Street West at Park Street	• Angle		2023 • All-way Stop
8	Lexington Road at Davenport Road	• Turning Movement • Rear-End	• Request Region consider a red-light camera in the eastbound direction	

Top 10 Overall Collisions				
#	**Location**	**Collision Type(s)**	**Recommended Countermeasure(s)**	**Countermeasure(s) Already Installed**
9	Albert Street between University Avenue West and Hickory Street	• Turning Movement • Rear end	• Long term: review curb side management opportunities (parking, loading, stopping) and implement road cross section as per the Northdale Study • Review street and pedestrian lighting	
10	Regina Street at Noecker Street	• Angle	• Identified as a future PXO location in IPPW2023-043 • Intersection improvements (curb extension, lane alignment) • All-way stop now recommended	

Table 5: Collision Countermeasures – Pedestrian

Top 10 Pedestrian Collisions				
#	**Location**	**Collision Type(s)**	**Recommended Countermeasure(s)**	**Countermeasure(s) Already Installed**
1	Regina Street at Lodge Street	• Pedestrian – dark conditions	• Intersection improvements (curb extension, lane alignment) to enhance sight lines • Restrict parking near intersection along Lodge Street • Review street and pedestrian lighting	

Top 10 Pedestrian Collisions				
#	**Location**	**Collision Type(s)**	**Recommended Countermeasure(s)**	**Countermeasure(s) Already Installed**
2	Columbia Street at Hazel Street	• Pedestrian – distracted drivers while turning	• Region to consider Leading Pedestrian Interval (LPI) • Region to consider No right-turn on red (Columbia St traveling westbound) • Ladder crosswalk	
3	Columbia Street at Phillip Street	• Pedestrian - distracted drivers while turning • Dark conditions	• Region to consider Leading Pedestrian Interval (LPI) • Review need for additional illumination	2019 • Ladder Crosswalk
4	Columbia Street at Hagey Boulevard	• Pedestrian – dark conditions	• Ladder crosswalk • Region to consider Leading Pedestrian Interval (LPI) • Review need for additional illumination	
5	Phillip Street between University Avenue West and Columbia Street West	• Pedestrian crossing without right-of-way	• Speed Management – recommend 40 km/h speed limit in this section • Review street and pedestrian lighting • Review need for additional pedestrian refuge islands • Review need for Level 2 Pedestrian Crossovers	2011-2014 • Pedestrian islands

Top 10 Pedestrian Collisions				
#	**Location**	**Collision Type(s)**	**Recommended Countermeasure(s)**	**Countermeasure(s) Already Installed**
6	Parkside Drive at Cedarbrae Avenue	• Pedestrian - distracted driver while turning	• Ladder crosswalk • Identify this location to operations staff during winter maintenance • Consider reduction to intersection cross-section	
7	Albert Street at Central Street	• Pedestrian crossing without right-of-way	• Upgrade to Level 2, Type B PXO (overhead signs)	2022 • Pedestrian crossover
8	Lexington Road at Davenport Road	• Pedestrian - distracted driver while turning	• Region to consider Leading Pedestrian Interval (LPI) • Review need for additional illumination	2022 • Offset Crosswalk • Ladder crosswalk
9	University Avenue East at Lexington Road	• Pedestrian crossing without right-of-way	• Install Traffic Signal Ahead (Wb-2) Sign • Re-paint pavement markings • Region to consider Leading Pedestrian Interval (LPI) • Review need for additional illumination	
10	Bearinger Road at Parkside Drive	• Pedestrian – driver and pedestrian claim right-of-way	• Request Region consider Leading Pedestrian Interval	2022 • Ladder crosswalk

Table 6: Collision Countermeasures - Cyclist

Top 10 Cyclist Collisions				
#	**Location**	**Collision Type**	**Recommended Countermeasure(s)**	**Countermeasure(s) Already Installed**
1	Phillip Street between University Avenue West and Columbia Street West	• Cyclist wrong side of road • Cyclist lost control • Distracted driver while turning	• Additional “Watch for turning vehicle” warning signs • Consider high visibility pavement markings at high volume entrances • Speed Management – recommend 40 km/h speed limit in this section • Review street and pedestrian lighting	
2	Allen Street West at Park Street	• Distracted driver through intersection	• Remark cycling lane symbols along Park Street	
3	Albert Street at Hazel Street/Bearinger Road	• Distracted driver while turning (2)	• Region to consider Leading Bicycle Interval (LBI)	2022 – 2023 • Bicycle crossride • No right turn on red restrictions • Ladder crosswalks
4	Bathurst Drive at McMurray Road	• Cyclist failed to yield	• Implement revised lane marking scheme along McMurray Drive	
5	Columbia Street at Hazel Street	• Distracted driver while turning (2)	• Region to consider No right-turn on red (Columbia St traveling westbound) • Region to consider Leading Bicycle Interval (LBI)	2019 • Green bicycle pavement markings in conflict zone • 2-stage bike box
6	Albert Street between Columbia Street West	• Distracted driver while turning (private drive)		2022 -2023 • Vehicle lane reductions • Separated cycling lanes

Top 10 Cyclist Collisions				
#	**Location**	**Collision Type**	**Recommended Countermeasure(s)**	**Countermeasure(s) Already Installed**
	and Cardill Crescent			
7	Columbia Street at Phillip Street	• Distracted driver while turning	• Region to consider Leading Bicycle Interval (LBI)	• Bicycle crossride • Bike boxes
8	Laurelwood Drive at Old Oak Place	• Distracted driver while turning	• Cutback vegetation to improve sight lines	
9	Keats Way at Amos Avenue	• Driver failed to give right-of-way	• All-way Stop recommended	
10	Columbia Street West at Beechlawn Drive	• Driver failed to give right-of-way	• Roundabout recommended • Collaboration with University of Waterloo required for intersection changes	

4. Speed Data Analysis

As part of our improved data-driven and evidence-based road safety practices, staff worked with CIMA+ Consulting to collect speed data over a three-month period from September to November 2023. This advanced dataset enables the City to be much more informed about driver operating speeds throughout its entire network of streets as opposed to select locations. Having a much more comprehensive dataset of speeds throughout the entire City ensures that staff can utilize an equitable approach that prioritizes speed reduction efforts in areas with the greatest needs, regardless of their location. The collected data includes 4,162 mid-block road segments in the City of Waterloo and consists of the following:

- 24-hour traffic data for the Fall of 2023 (September to November);
- Days of the week: weekdays, from Tuesday to Thursday; and,
- Peak periods: AM peak (6 to 9 am), mid-day (12 to 2 pm), and PM peak (3:30 to 6:30 pm).

The Ontario Ministry of Transportation (MTO) uses a similar approach to speed data use for their biennial Travel Time Study. Conducted every two years, the MTO study collects survey data at peak periods on provincial highways in the GTA; however, the City of Waterloo is specifically using the data to identify streets where operating speeds are significantly higher than the posted speed limits. There may also be opportunities in the future to expand our use of this speed data for time travel studies, trend analyses or targeted education campaigns.

Recognizing that Waterloo's road network is quite dynamic, City staff opted to screen the network by speed limit in order to remove bias in the analysis or in other words not just focus on higher order roads that typically operate with higher speeds. This screening process is likely to evolve over time. For each speed limit category, the peak periods (AM, midday, and PM) were reviewed to identify streets with operating speeds exceeding the posted limit by 15 km/h or more. This 15 km/h threshold was established as a benchmark for the initial screening process in 2024 to prioritize the most critical locations in the city.

Tables 7, 8 and 9 below summarize roadways with observed operating speeds exceeding 15 km/h over the speed limit. The locations are summarized in alphabetical order.

Table 7: Top Speed Locations – 50 Km/h Roads

Street Name	From	To	Posted Speed (km/h)	Average Speed (km/h)	85th Speed (km/h)*
Bridge Street West	McMurray Road	University Avenue East	50	56	66
Conservation Drive	Roy Schmidt Road	Rideau River Street	50	64	68
Conservation Drive	Rideau River Street	Lake Louise Boulevard	50	65	68
Conservation Drive	Lake Louise Boulevard	Waterton Drive	50	63	66
Conservation Drive	Waterton Drive	Coldstream Drive	50	64	67
Lexington Road	Dearborn Boulevard	Davenport Road	50	59	65
University Avenue East	University Avenue East	Country Squire Lane	50	61	68
University Avenue East	Country Squire Lane	Millennium Boulevard	50	62	69
University Avenue East	New Hampshire Street	Woolwich Street	50	66	69
University Avenue East	Woolwich Street	New Bedford Drive	50	66	69
University Avenue East	New Bedford Drive	Woolwich Place	50	58	66
University Avenue East	Woolwich Place	Lexington Road	50	62	67
University Avenue East	Auburn Drive	Wismer Street	50	62	66

Street Name	From	To	Posted Speed (km/h)	Average Speed (km/h)	85th Speed (km/h)*
University Avenue East	Wismer Street	University Downs Crescent	50	65	70
University Avenue East	University Downs Crescent	University Downs Crescent	50	62	68
University Avenue East	University Downs Crescent	Pastern Trail	50	58	66

*85th percentile speed is the speed at which 85% of drivers are travelling at or below.

The streets noted above are classified as Arterial or Major Collector Roads, making traditional traffic calming measures (like speed humps) inadvisable and ineffective. Instead, these corridors have been and will be included in future capital projects and scoped appropriately to encourage speed reduction through functional design elements which are more likely to effectively reduce driver speeds.

Conservation Drive is tentatively scheduled for a full reconstruction starting in 2026 and has already been scoped by Transportation staff to include traffic calming design elements such as narrowed driving lanes, pedestrian refuge islands and roundabouts. As other locations listed above move up into the capital program, Transportation staff will promote similar functional design elements that encourage lower operating speeds.

Notwithstanding the above-noted timing constraints and limitations, staff will add all above-noted locations to the City's radar speed board program and Waterloo Regional Police Services Special Targeted Enforcement Program (STEP) until these roadways can be redesigned accordingly.

Table 8: Top Speed Locations – 40 Km/h Roads

Street Name	From	To	Posted Speed (km/h)	Average Speed (km/h)	85th Speed (km/h)*
Bluevale Street North	Mayfield Avenue	Harvard Road	40	53	56

Bluevale Street North – Ward 4

Bluevale Street North between Harvard Place and Mayfield Avenue is a 2-lane minor collector road with a posted speed limit of 40 km/h. Speed data indicates that the average speed during peak periods is 53 km/h. The 85th percentile speed is 56 km/h. Bluevale Street North is identified as a medium priority project in the Transportation Master Plan

(TMP) and is part of the Primary Active Transportation Route that proposes cycling facilities.

This section of Bluevale Street North is outside the 10-year capital budget for any road reconstruction. However, since it is identified as a priority within the TMP, staff will review the feasibility of speed humps and on-street bike lanes in advance of capital reconstruction. Staff will also consider the southern part of Bluevale Street North between Mayfield Avenue and Bridgeport Road as this section of road includes a school zone. A Municipal Speed Camera is planned for this school zone and is anticipated to be operational by the end of 2024.

Similar to the timing constraints noted above for 50 km/h roads, staff will also add Bluevale Street North to the City's radar speed board program and Waterloo Regional Police Services Special Targeted Enforcement Program (STEP) until these roadways can be redesigned accordingly.

Table 9: Top Speed Locations – 30 Km/h Roads

Street Name	From	To	Posted Speed (km/h)	Average Speed (km/h)	85th Speed (km/h)*
Keats Way	Sandford Fleming Drive	Sandford Fleming Drive	30	44	47
Keats Way	Sandford Fleming Drive	Beckwith Court	30	43	43
Lourdes Street	Ashton Crescent	Kingsley Crescent	30	49	50
Lourdes Street	Kingsley Crescent	Melbourne Crescent	30	46	46
Hazel Street	Columbia Street West	Hickory Street West	30	44	45
Westmount Road South	Douglas Street	Alexandra Avenue	30	37	45
Noecker Street	Brighton Street	Elgin Crescent	30	43	45

Keats Way – Ward 1

Keats Way between Beechwood Drive and Woodbend Crescent is a 2-lane major collector road. This section from Leighland Drive to the east Sandford Fleming is a school zone with a posted speed limit of 30 km/h. Outside of the school zone, Keats Way has a posted speed limit of 50km/h. Speed data within the school zone indicates that the

average speed during peak periods ranges between 43 and 44 km/h. The 85th percentile speeds range between 43 and 47 km/h. Speed data outside the school zone indicates that the average speed during peak periods ranges between 44 and 50 km/h. The 85th percentile speeds range between 45 and 51 km/h.

Keats Way is scheduled for pavement resurfacing only within the next 5 years, as the underground services are in good condition. In the interim, staff are preparing a plan for seasonal knockdown signs to be installed, permanent installation of radar speed boards at targeted areas, and a PXO at the pedestrian refuge island, west of Sanford Fleming Drive. This location is also planned to be supplemented with a Municipal Speed Camera within the school zone, pending a feasibility study. Once the resurfacing is scheduled, staff will assess the feasibility of updating pavement markings to improve the traffic calming plan and explore any additional options at that time.

Lourdes Street – Ward 7

Lourdes Street between Westmount Road to Alexandra Avenue is a 2-lane road local road with sidewalks on both sides of the street. In 2023, the posted speed limit was reduced to 30 km/h as per the speed management plan. Speed data indicates that the average speed during peak periods ranges between 46 and 49 km/h. The 85th percentile speeds range between 46 and 50 km/h.

This section of Lourdes Street is outside the 10-year capital budget for any road reconstruction. Therefore, staff will evaluate the feasibility of speed humps within the corridor and corner extensions/ bulb outs at intersections.

The remaining 30 km/h streets – Hazel Street, Westmount Road South and Noecker Street – will be added to the City's radar board program and the Waterloo Regional Police Services STEP until staff can review and address with future funding and resources.

5. Transport Canada: Enhanced Road Safety Transfer Payment Program Grant

The City of Waterloo was notified on October 29, 2024, of our success in receiving the Transport Canada Enhanced Road Safety Transfer Payment Program (ERSTPP) Grant. The application was made in collaboration with, CIMA+, AirSage, True North Safety (TNS) and three other Canadian municipalities: City of Mississauga, Region of York and City of Lethbridge, AB.

The ERSTPP offers up to 75% funding for road safety initiatives such as education, training, development and improvement of current technology, outreach activities, communication, cooperation, and collaboration among road safety stakeholders.

The scope of our proposal included collaborating with the consultants, vendors and municipalities to acquire data generated by connected vehicles and develop a program that would allow the City of Waterloo to better understand driver behaviour and identify potential locations to be considered for road safety improvements and speed reduction

initiatives. The connected data includes, but is not limited to trip origin-destination, near-miss collisions, and harsh breaking. The results of this project will be used to further enhance the City's network screening and road safety program.

Transport Canada would fund 75% or $262,500 of the total $350,000 estimated project cost. The City of Waterloo would cost share the estimated remaining $87,500 with the other municipalities on the joint application. Each municipality is also required to purchase the connected vehicle data as a separate item, that the consultant will receive. This data is estimated to be up to $40,000 for each municipality. Funding has been committed for this project and will be from #202052 TMP Implementation Sign Replacement.

6. Funding

The following approved projects will continue to serve budgetary needs going forward. Table 10 below identifies the available capital projects and associated funding approved by Council in the 2024-2026 Capital Budget on February 12, 2024:

Table 10: Available Projects – current and 2024-2026 budget approved

Project #	Description	Available	Ref#	2025	2026
110120	IPPW-TS-Annual Trans Studies	43,000	*663*	180,000	192,000
120083	IPPW-TS-CW Traffic Calm Impl	352,000	*695*	279,000	297,000
202052	IPPW-TS-TMP Impl Sign Replacmt	615,000	*694*	169,000	60,000
202054	IPPW-TS-Intersection Collision	303,000	*675*	113,000	120,000
	Total available	1,313,000		741,000	669,000

7. Timing and Next Steps

Staff have begun implementing some countermeasures listed above, such as, Leading Pedestrian Intervals (LPI) at a few intersections, receiving designs for road improvements and installing signs. Some of the improvements such as all-way stops and speed limit changes must wait until the by-law updates are approved. Staff have shared this report with Regional staff and will work with them on further implementation where both parties have agreed on the countermeasures. The remaining road safety improvements are anticipated to be designed and or implemented in 2025. Staff will enable appropriate public notification to take place as necessary.

As noted in the February 2024 Council Report, this will become an annual process whereby staff will be conducting screening reports in the first quarter of each year and reporting to Council in the fourth quarter, summarizing the Road Safety Plan. The screening will include a review of measures that have been implemented in the previous year(s) to determine their effectiveness and if trends are changing.

Staff anticipate that the City's Road Safety Countermeasures and Traffic Calming Implementation Program will evolve over time as new developments occur in the road

safety industry. The City has developed a comprehensive but manageable road safety plan based on current staff and City resources.

8. By-Law Updates

ADD
SCHEDULE “9”, PART VIII, SECTION 9, PEDESTRIAN CROSSOVERS

HIGHWAY	LOCATION
Keats Way	57 m west of Sandford Fleming Drive

REMOVE
SCHEDULE “10”, PART IX, SECTION 9, THROUGH HIGHWAYS

HIGHWAY	FROM	TO	EXCEPT AT ITS INTERSECTION WITH
Albert Street	North side of Erb Street East	South side of Weber Street North	
Keats Way	West side of University Avenue	East side of Lucerne Avenue	Brandenburg Boulevard
Hickory Street	West side of King Street North	East side of Lester Street	Hazel Street

ADD
SCHEDULE “10”, PART IX, SECTION 9, THROUGH HIGHWAYS

HIGHWAY	FROM	TO	EXCEPT AT ITS INTERSECTION WITH
Albert Str	North side of Er Street East	South side of Weber Street North	Hickory Street
Keats Way	West side of University Avenue	East side of Lucerne Avenue	Brandenburg Boulevard, Amos Avenue
Hickory Steet	West side of King Street North	East side of Lester Street	Hazel Street, Albert Street

ADD
SCHEDULE “11”, PART X, SECTION 9, STOP SIGNS

On Highway	AT ITS INTERSECTION WITH	FACING TRAFFIC
Albert Street	Hickory Street	Northbound
Albert Street	Hickory Street	Southbound
Hickory Street	Albert Street	Westbound
Hickory Street	Albert Street	Eastbound
Keats Way	Amos Avenue	Eastbound
Keats Way	Amos Avenue	Westbound
Amos Avenue	Keats Way	Northbound
Amos Avenue	Keats Way	Southbound

ADD
SCHEDULE “17”, PART XIV, SECTION 9, RATES OF SPEED (KM/HR) - HIGHWAYS

Highway	From	To	Maximum Rate of Speed
Phillip Street	University Avenue	Columbia Street	40 km/h

STAFF REPORT
Planning

Title:	Erbsville North MESP and District Plan Terms of Reference
Report Number:	IPPW2024-059
Author:	Tristin Deveau
Council Date:	November 25, 2024
Attachments:	Appendix A: Terms of Reference – Erbsville North District Master Environmental Servicing Plan and District Plan
Ward No.:	Ward 2 - Northwest

Recommendations:

1. That report IPPW2024-059 be approved.

2. That Terms of Reference – Erbsville North MESP and District Plan attached as Appendix A to report IPPW2024-059 be approved, authorizing the preparation of a Master Environmental Servicing Plan and a District Plan for the Erbsville North Area for Council's consideration and approval.

A. Executive Summary

Staff are recommending that Council approve the Terms of Reference (ToR) attached as Appendix A to report IPPW2024-059 to authorize the preparation of a Master Environmental Serving Plan (MESP) and a District Plan for the Erbsville North Area. The Terms of Reference were prepared by a consultant team comprised of MHBC Planning, Natural Resource Solutions Inc., Paradigm Transportation Solutions Ltd., and MTE Consultants, and reviewed by City, Regional and GRCA staff. This project was initiated on behalf of landowners within the Study Area.

The Terms of Reference identifies the Study Area, the scope of the various studies involved in the creation of the MESP and District Plan, the public engagement process to be followed, and the involvement of City Staff as part of a Technical Review Committee, along with representatives from the Region of Waterloo and the Grand River Conservation Authority (GRCA).

The final proposed District Plan will be brought to Council by staff as a city-initiated Official Plan Amendment at a future date.

B. Financial Implications

There are no financial implications to the City with respect to this Terms of Reference. The studies proposed by the Terms of Reference are to be carried out by the consultant, at the expense of certain landowners in the Study Area.

C. Technology Implications

Staff are not aware of any technology implications to the City with respect to this Terms of Reference.

D. Link to Strategic Plan

(Strategic Priorities: Reconciliation, Equity, Accessibility, Diversity and Inclusion; Environmental Sustainability and Climate Action; Complete Community; Infrastructure and Transportation Systems; Innovation and Future-Ready)

(Guiding Principles: Equity and Inclusion; Sustainability; Integrity; Workplace Wellbeing; Community-centred; Operational Excellence)

The studies enabled by this Terms of Reference generally align with the Environmental Sustainability and Climate Action, Complete Community, and Infrastructure and Transportation strategic priorities of Council.

E. Previous Reports on this Topic

N/A

Erbsville North MESP and District Plan Terms of Reference
IPPW2024-059

1.0 INTRODUCTION

1.1 Purpose of this report

This report summarizes the Terms of Reference (ToR) for the proposed Erbsville North Master Environmental Servicing Plan (MESP) and District Plan, attached as Appendix 'A'. The Terms of Reference were prepared by MHBC Planning, Natural Resource Solutions Inc., Paradigm Transportation Solutions Ltd., and MTE Consultants, and reviewed by City, Regional and GRCA staff. This project was initiated on behalf of landowners within the Study Area.

The Terms of Reference identifies the Study Area (see below), the scope of the various studies included as part of the MESP and District Plan, and the process that will be followed to create the study including public engagement. Staff are recommending that Council approve the proposed Erbsville North Master Environmental Servicing Plan and District Plan Terms of Reference attached hereto as Appendix 'A'.

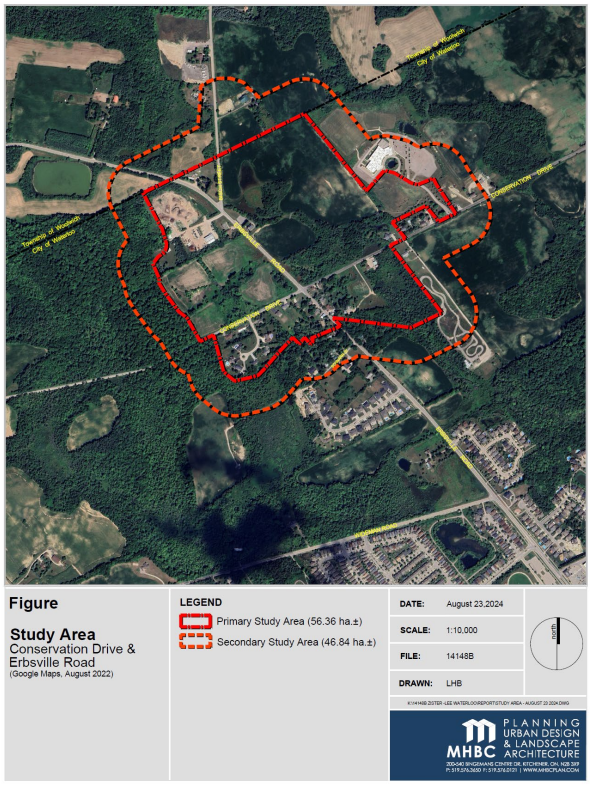


Figure 1 Study Area from Terms of Reference

1.2 Context

The MESP and District Plan study outlined by the Terms of Reference combines multiple studies into an integrated process to allow for a coordinated environmental, servicing, transportation, and planning evaluation, which is necessary to guide future development in the Erbsville North District.

The MESP is guided by the requirements of the Municipal Class Environmental Assessment (MECA) and the Province's draft Subwatershed Planning Guide. The MESP is a Master Plan that includes the following studies:

- Scoped Subwatershed Study
- Stormwater, Water, and Wastewater Servicing Plan
- Transportation Plan
- Cultural Heritage Evaluation

The District Plan, guided by the Planning Act, will: *be used to indicate, in greater detail, the manner in which the objectives, policies, and land use designations of the Official Plan are to be implemented* (City of Waterloo Official Plan Policy 12.2.1 (1)) in the Study Area.

The general Erbsville District boundary is identified in Schedule C of the Official Plan, while the proposed Erbsville North District will be further delineated as the northern portion of this larger area. The Primary Study Area (PSA) is situated around the intersection of Erbsville Road and Conservation Drive and extends to the border of the City of Waterloo and the Township of Woolwich. See Figure 2 on the next page for more details.

A larger Secondary Study Area (SSA) is also identified within the Terms of Reference, which is a 120 metre buffer from the PSA. While the focus of the master planning and final district plan will be within the PSA, the extended area of the SSA is required to allow the studies to be informed by the larger area context.

The SSA is a mix of undeveloped lands, developed lands, and environmentally sensitive lands.

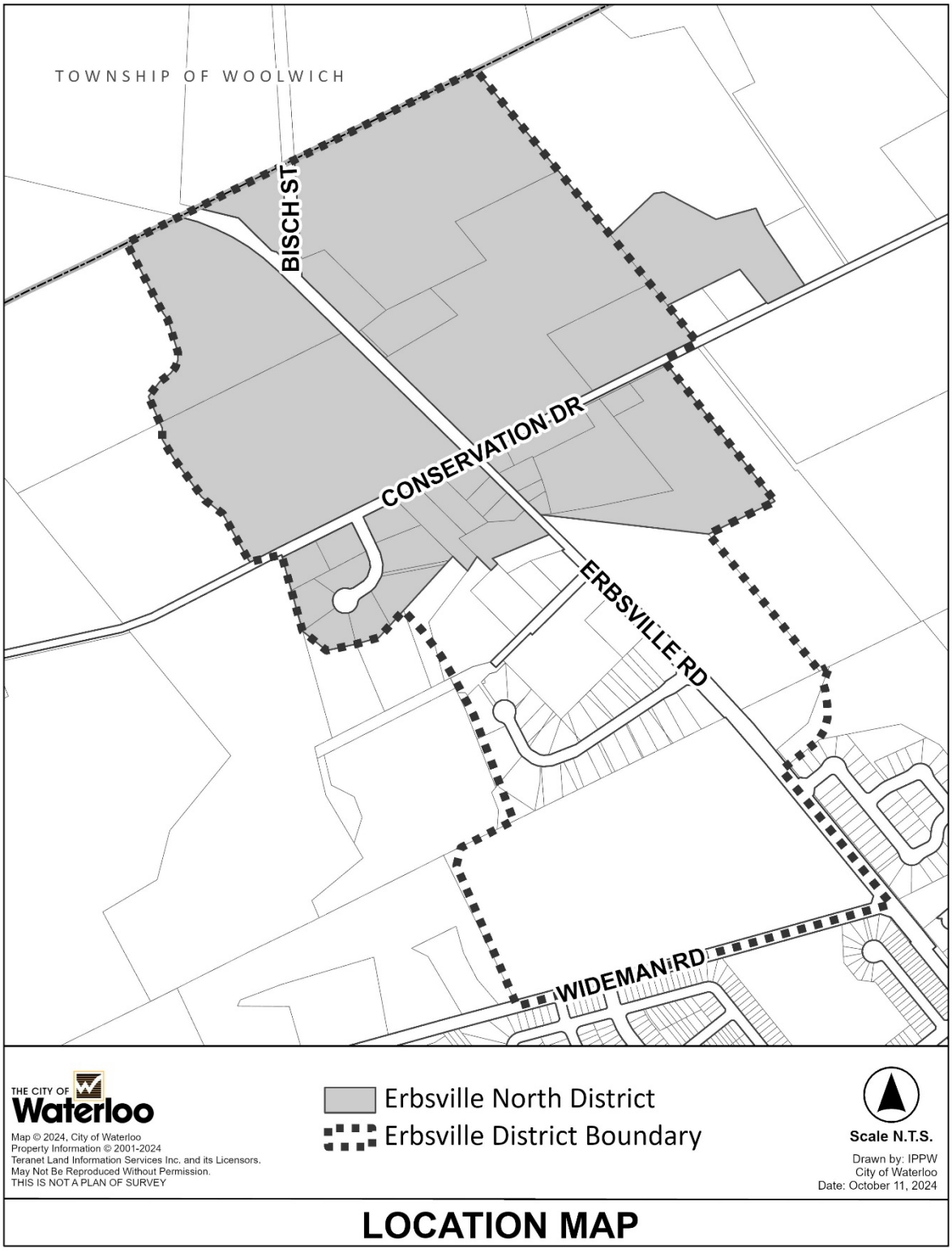


Figure 2: Primary Study Area for the Erbsville North District

2.0 STUDY COMPONENTS AND PUBLIC CONSULATION

While the studies outlined in the Terms of Reference will be carried out by the consultant team, City Staff will have input throughout the process as part of a Technical Review Committee (TRC), along with representatives from the Region of Waterloo and the Grand River Conservation Authority. The TRC will be a key review body throughout the process, and will work to ensure the MESP and District Plan are appropriately prepared prior to Council consideration.

The Terms of Reference breaks the study down into three phases.

Phase One – Study Initiation and Background Review.
The MESP and District Plan study will be initiated subject to Council's approval of the proposed Terms of Reference via IPPW2024-059. If Council approves the Terms of Reference, a notice of study commencement will be advertised in the local paper and an Engage Waterloo page will be established for the project. Property owners within 120 metres of the SSA will be notified and invited to a public open house. This phase will also involve review of background information and existing conditions.

Phase Two – Determine Preferred Land Use & Infrastructure Approach and Complete Draft MESP and District Plan.
The second phase will involve the completion of the various studies that make up the MESP and inform the District Plan. These include a scoped subwatershed study; stormwater, water, and wastewater servicing plan; transportation plan; and cultural heritage evaluation. This phase will identify land use and infrastructure alternatives and establish the evaluation and assessment criteria to be followed by the project team. Consultation will include an open house to present the alternatives, an Informal Public Meeting at City Council, and a final public open house to present the recommended MESP and District Plan.

Phase Three – Finalize MESP and District Plan & Council Consideration
The last phase will be finalizing the MESP and District Plan for Council's consideration. The District Plan will form the basis of an Official Plan Amendment for the Study Area.

The estimated timeline for the completion of the study is fall 2026.

3.0 CONCLUSION AND NEXT STEPS

Should Council approve the recommendations of this report, the MESP and District Plan will commence in accordance with the outline and project scope as detailed in the attached Terms of Reference (Appendix 'A'). As outlined in the Terms of Reference, there are numerous opportunities for public engagement and consultation. In addition, the study will be completed in coordination with the TRC, which includes representatives from the City of Waterloo, the Region of Waterloo, and the Grand River Conservation Authority. The TRC will be a key review body throughout the process. The final District Plan will be brought to Council for consideration through a City initiated Official Plan Amendment at a future date.

APPENDIX ‘A’

TERMS OF REFERENCE

TERMS OF REFERENCE

ERBSVILLE NORTH DISTRICT

MASTER ENVIRONMENTAL SERVICING PLAN AND DISTRICT PLAN

(September 2024)

INTRODUCTION

The following Terms of Reference ("TOR") have been prepared by MHBC Planning ("MHBC"), Natural Resource Solutions Inc. ("NRSI"), Paradigm Transpiration Solutions Limited ("Paradigm") and MTE Consultants ("MTE"), to direct the preparation of a Master Environmental Servicing Plan ("MESP") and District Plan for the Erbsville North District. Collectively, the MESP and the District Plan are referred to as the Study. The Study has been initiated by specific area landowners, with lands that are undeveloped but designated for future development in the City's Official Plan (the "Area Landowners"). The Study Area also includes land where there is existing development. These TOR establish the process and requirements for the MESP and District Plan and, in doing so, outline a coordinated and integrated approach for the completion of studies and an overall process that is guided by the requirements of the Municipal Class Environmental Assessment (MCEA) the Planning Act and the Province's draft Subwatershed Planning Guide. A coordinated and integrated approach provides for the opportunity to reduce duplication by simultaneously complying with the MCEA and Planning Act processes using shared notification, consultation and technical reports.

The MESP, under the MCEA, will be a Master Plan. Master Plans are long range plans that integrate infrastructure requirements for existing and future land use with environmental assessment planning principles. These plans examine an infrastructure system or group of related projects in order to outline a framework for subsequent projects and future development. The MESP will address Phase 1 and 2 of the MCEA process. Completion of all Schedule B and C Class EAs may be required as a next step for individual development projects within the MESP area, should such work be necessary.

The District Plan will address the mix, arrangement, and density of land uses, recommend a street pattern, recommend the size and location of neighbourhood parks, determinate the location of other supporting uses and identify the location of major services. The District Plan will provide a land use framework for the area and will provide the basis for the consideration of future *Planning Act* applications. Any amendment to the Official Plan to implement the District Plan will be completed in coordination with this process.

The MESP and District Plan are to be completed in coordination with the Region, City and Grand River Conservation Authority ("GRCA") in the context of a Technical Review Committee ("TRC"). The Study will adhere to all applicable City of Waterloo manuals,

guidelines, standards and documents and will follow the requirements of most current version of City and external agency documents that are in effect and available at the time of the completion of the Study. Public consultation, agency input and approval of the Study has been included in the process, in accordance with the MCEA and Planning Act. The TRC will have a Terms of Reference that will be confirmed at the first TRC meeting. A Study Process Flowchart is included as **Appendix B.**

These TOR are supplemented by a Technical Work Plan. The Technical Work Plan outlines natural environmental methodologies and monitoring locations. The Technical Work Plan is comprised of Appendices E, F and G.

STUDY AREA

The Erbsville North District consists of lands located around the intersection of Erbsville Road and Conservation Drive in the City of Waterloo and designated for future residential development. The Study Area is illustrated on **Appendix A** and described below:

Primary Study Area ("PSA") includes lands within the City urban boundary and designated by the City of Waterloo Official Plan as *Low Density Residential and Open Space*. This area is the primary focus area of the Study and may be referred to as the Study Area throughout the TOR and Technical Work Plan. This area will be characterized using both secondary source information and detailed, multi-season field surveys. This area is located within Laurel Creek Watershed Study Subwatershed 309, but also includes portions of Subwatersheds 301 and 304. The District Plan will focus on the PSA for land use and policies.

Secondary Study Area ("SSA") includes lands within 120 metres of the PSA and within and around the northern portion of Subwatershed 309, thereby extending into the Township of Woolwich. This area will be characterized primarily through a review of secondary source information (e.g. published studies, topographic mapping, aerial photography, agency databases etc.), supplemented by reconnaissance level fieldwork in some areas, pending access. The intent is to generally characterize the biophysical environment with respect to natural vegetation cover, aquatic habitat etc. and provide a context for evaluation of urban lands relative to the broader subwatershed. Given that these lands may not be inventoried and mapped to the same level as the PSA lands, it may be necessary to resolve outstanding information gaps on a case by case basis as part of a site-specific environmental impact study, including for infrastructure upgrades, if required.

KEY PRINCIPLES OF THE INTEGRATED APPROACH

The overall purpose of the Study is to undertake the necessary environmental, stormwater, water and wastewater servicing, transportation and planning studies, evaluate land use alternatives and establish the community planning policy framework to

guide development in the Erbsville North District. The specific purpose of each component is as follows:

The purpose of the Study is:

a. District Plan
    i. Establish a land use plan and implementing policies for the Erbsville North District to be implemented through an Official Plan Amendment. The land use plan will implement policy direction of the City and Regional Official Plan as it relates to the planning and development in greenfield areas.
    ii. Provide specific direction to more detailed reports to be prepared in support of future planning and development applications
    iii. Prepare Urban Design Guidelines
    iv. Prepare Parks Concept Plan

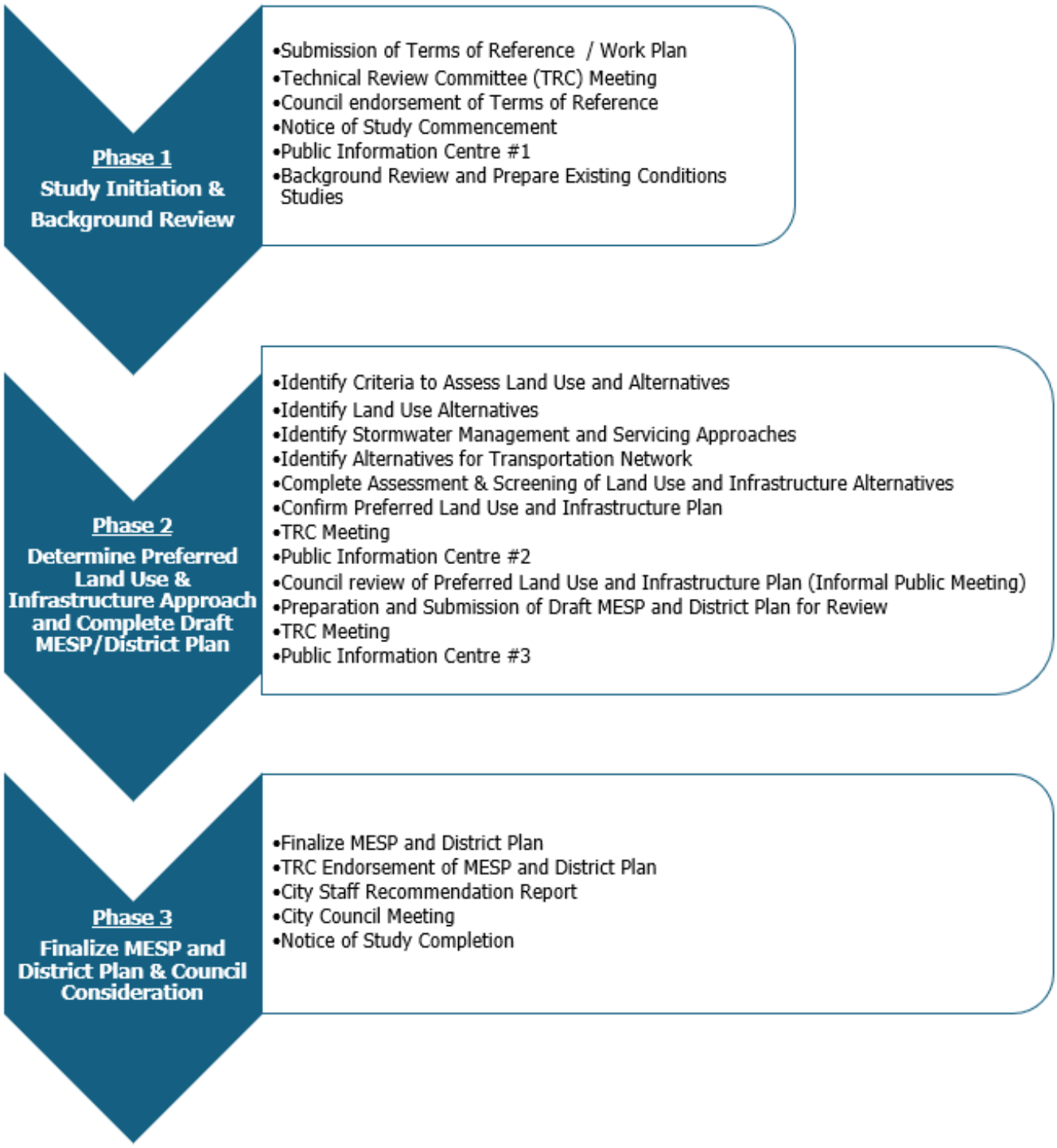
b. Master Environmental Servicing Plan
    i. Scoped Subwatershed Study
        i. Identify and categorize natural features and function
        ii. Review and consider relevant information from other Subwatershed Studies
        iii. Determine natural areas to be maintained, restored and/or enhanced
        iv. Delineate potential development areas and protection areas
        v. Define the limits of natural heritage features
        vi. Recommend buffers and mitigation measures necessary to maintain or improve ecological sustainability of the area
    ii. Stormwater Water and Wastewater Servicing Plan
        i. Identify stormwater management facility locations and quantity/quality control recommendations;
        ii. Hydrogeological and Groundwater Impact Assessment
        iii. Identify water and wastewater servicing strategy
        iv. Establish preliminary phasing plan for development based on recommendations associated with required infrastructure
    iii. Transportation Plan
        i. Establish a Transportation Network through the Study Area and connected with the surrounding road network
        ii. Identify Active Transportation facilities recommended for implementation
        iii. Identify recommended public transit connections within the Study Area
    iv. Cultural Heritage Evaluation
        i. Archaeological Assessment

ii. Assessment of built heritage resources within PSA and SSA, if any

This Study will address issues related to natural heritage including terrestrial and aquatic features, natural hazards, servicing and stormwater management, municipal water supply sources, transportation and cultural heritage. The MESP will incorporate the recommendations and requirements of the Laurel Creek Watershed Study, Waterloo North Scoped Subwatershed Study, Subwatershed Management Plan #309/313 (Laurel Creek Subwatershed Plan) and will be prepared in accordance with the City of Waterloo Official Plan. The Study will also conform to the Region of Waterloo Official Plan ("ROP") policies address GRCA policy documents and complementary implementation plans, the Grand River Source Protection Plan, as well as any relevant findings and recommendations of the Erbsville South Environmental Study (2018).

OVERVIEW OF PROCESS

The following provides a general overview of the process:



The following provides a summary of the phases of the Study, the deliverables and the key points of public consultation:

PHASE 1	PHASE 2	PHASE 3
Study Initiation & Background Review	*Determine Preferred Land Use & Infrastructure Approach / Complete Draft MESP & Draft District Plan*	*Finalization of MESP & District Plan*

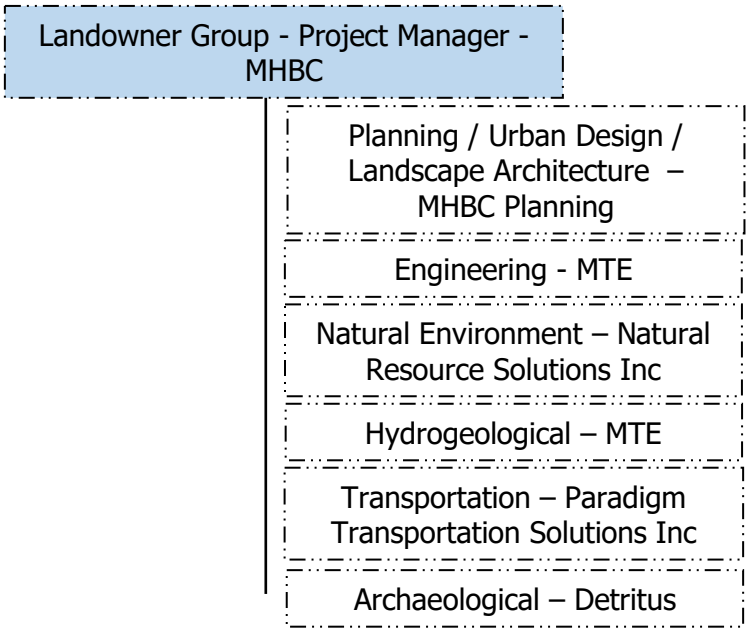
Key Deliverables
• Terms of Reference
• Technical Work Plan
• Background Review and Existing Conditions Study, including environmental and infrastructure considerations.
	Key Deliverables
	• Establish Evaluation Criteria and Complete Assessment and Screening of Land Use and Infrastructure Alternatives
	• Draft MESP and District Plan, including:
	  ○ Subwatershed Study
	  ○ Stormwater, Water and Wastewater Servicing Plan
	  ○ Transportation Plan
	  ○ Cultural Heritage Evaluation
	  ○ Urban Design Guidelines
		Key Deliverables
		• Final MESP
		• Final District Plan

Public Consultation • Council Endorsement of TOR • Notice of Study Commencement • PIC 1: Project Initiation, Consultation on Background Review / Existing Conditions and Findings, Public Input	**Public Consultation** • PIC2: Consultation on Alternatives and Preferred Alternatives • Informal Public Meeting • PIC3: Consultation on final MESP and District Plan	**Public Consultation:** • Council consideration of MESP and District Plan • Notice of Study Completion

The Study Process is to be completed in coordination with the City of Waterloo, GRCA, Region of Waterloo and other external interested and affected parties, including the public. Public consultation is required and identified throughout the process. A Study Process Flow Chart is included as **Appendix B.**

PROJECT TEAM

The TOR will be implemented and managed by the Project Manager for the Landowner Group. The Project Manager will be supported by a Project Team. The Project Team will undertake the work set out in the TOR and Technical Work Plan and will be made up of qualified experts.



The Project Team has prepared this TOR for review and acceptance to establish and confirm the scope of work associated with the various studies, including identified field work associated with the TOR. Additional qualified professional consultants will be retained on an as-needed basis if specific needs/studies are identified.

The Project Manager will liaise directly with the identified Project Leader for the City throughout the process. The Project Manager will manage the key deliverables and milestones.

The TRC will be established to support an efficient review process and include key representatives from Planning, Engineering and Natural Heritage from the Project Team, City, Region and GRCA. Note, the City and/or the Region may request a peer review of any study, to be paid for by the Landowner Group, subject to coordination with the Project Manager of the Landowner Group.

This Terms of Reference represents the process for the Study supported by the City, Region and GRCA and endorsed by City Council and will apply, to the extent possible, should legislative or regulatory changes to the MCFA process occur.

PHASE I: BACKGROUND REVIEW AND EXISTING CONDITIONS

1. Study Context

The purpose of this part of the Study is to define the project objectives and to provide an initial description of the existing conditions (physical, social and regulatory) for the Study Area and surrounding lands. This information provides a context for the subsequent sections of the Study and background for the anticipated targets and guidelines required for areas that may be suitable for development.

The background document review will include a review of: the Region of Waterloo Official Plan, City of Waterloo Official Plan, Grand River Source Protection Plan policies for the Region of Waterloo, Laurel Creek Watershed Study, subsequent Subwatershed Studies and other environmental reports. Specific subwatershed studies to be reviewed include:

a. Scoped Subwatershed Report – Doug Owen Construction Ltd. (PEIL, 1999).
b. Beechwood West Neighbourhood Four – Trillium Estates Ltd., Subwatershed Plan and Storm Water Management (Paragon, 1992).
c. Final Subwatershed Management Plan – Subwatershed Plans #313 and #309 (PEIL, 1996).
d. Beaver Creek Road and Conservation Dr. Upgrades and Extension of Municipal Services Class Environmental Assessment (Stantec, 2015)
e. City of Waterloo Stormwater Master Plan (December 2019)
f. City of Waterloo Transportation Master Plan (August 2021)
g. Erbsville South Environmental Study. (IBI Group, 2018).

This section will also highlight key issues to be assessed based on the information collected through preliminary discussions with key interested and affected parties.

Tasks include:

a. Review existing/available background information and documents;
b. Review/summarize existing policies that are applicable to the Study Area;
c. Prepare base plans (topographic mapping) and aerial photographs of the Study Area, available from the City, Region and GRCA, for use throughout the Study.

2. Existing Conditions Studies

The purpose of this part of the Study is to present a detailed summary of the various physical characteristics of the Study Area. To obtain this data, a review of previous reports and documentation, as well as undertaking additional field work to update or obtain necessary information not included within previous studies is proposed.

The topics to be evaluated and tasks to be undertaken include:

a. **Natural Environment**

The natural environment of the PSA and SSA will be characterized through secondary source material and field surveys. The SSA will primarily be informed through a review of background information and reconnaissance level field investigations such as roadside or property line surveys. Should the analysis of the SSA identify matters requiring additional study, those matters will be reviewed with the TRC to determine the appropriate action to be undertaken, if any, including the nature and extent of any further studies. A more detailed field study program will be undertaken for the PSA and where land access is available. Reconnaissance level surveys and aerial photography will be used to help describe the natural features on land parcels where access is not permitted. A description and mapping of the parcels where access is not permitted, if any, will be included in the Study. The Study Area and Natural Features are shown on **Appendix C**.

The following describes the proposed Natural Environment component of the Study:

Background Review

- Review existing biological information for the PSA and SSA from a variety of sources including: wildlife atlases, Environmentally Sensitive Policy Area (ESPA) biological inventories, the Grand River Conservation Authority (GRCA) online interactive mapping tool, and Ministry of Natural Resources and Forestry (MNRF) and Ministry of Environment, Conservation and Parks (MECP) files including past correspondence with MNRF staff.
- Review previously completed studies for the PSA and SSA and surrounding lands such as the North Waterloo Scoped Subwatershed Study (Ecoplans et al. 2013) (NWSSS), Class EA for Beaver Creek Road and Conservation Drive Upgrades, (Stantec 2016) including the EIS that was completed in 2023 as part of the EA, Erbsville South Block Plan (WSP 2019) and the supporting Environmental Study Report (Dougan & Associates et al. 2018), and the Laurel Creek Subwatershed Plan (#309 and #313) (Planning Initiatives Ltd. 1996).
- Analyse results from previously completed Subwatershed Studies, technical studies and ongoing monitoring.
- Review 2023 aerial photography for the PSA and SSA.
- Review relevant policies and regulations, including Region of Waterloo Official Plan (2015, as amended, including Regional Official Plan Amendment 6 and associated designation mapping), City of Waterloo Official Plan (2024), Township of Woolwich Official Plan (2000), City of Waterloo Development Monitoring Protocol (1999) and GRCA Regulations.
- Review GRCA EIS Guidelines (2005) and Waterloo Region Greenlands Network Implementation Guidelines (2016).
- This information will be used to inform the baseline monitoring program.

Species at Risk / Species of Conservation Concern Assessment

- A habitat assessment of Species at Risk ("SAR") and Species of Conservation Concern ("SCC") to determine species with potential to be present in the PSA and

SSA, based on known species records and habitat suitability, has been completed using 2018-2020 field survey results, aerial photography and background information. The SAR/SCC Assessment is appended to this TOR as **Appendix D**.

Wetland and Woodland Boundary Review

- Wetland and woodland boundaries in the SSA will be based on existing base mapping and aerial photograph interpretation as well as roadside surveys to verify and confirm presence where possible and if necessary
- Wetland boundaries and woodland driplines within the PSA were flagged in the field according to appropriate methods (MNRF 2022, RMOW 2016).
- Wetland boundaries and woodland driplines were reviewed and verified in the field by agency staff including GRCA, City of Waterloo and Region of Waterloo on September 11, 2023
- Due to drainage and fill placement activities, two areas of wetland will be reviewed more closely to refine their boundaries and to understand constraints and enhancement opportunities. These two areas include the intersection of Erbsville Road and Conservation Drive, and a small wetland/stormwater management facility on the Creekside Church property.
    - Topographic survey of fill piles, characterization of vegetation and soils and investigation of hydrology in the area of the intersection of Erbsville and Conservation Drive will be used to refine the extent of wetland in this area.
    - It is understood that the drainage outlet from the wetland on the Creekside Church property has been maintained and is now functioning as intended. This area is to be investigated in the field during the growing season to determine changes since the previous boundary assessment completed in 2015 by NRSI and will be reviewed and confirmed by GRCA staff.
- The confirmed boundaries of wetlands and woodlands will be used to identify the limits of Core Environmental Features (CEF) and Supporting Natural Features.
- Unevaluated wetlands within the PSA will be evaluated in accordance with the Ontario Wetland Evaluation System ("OWES").
- Any wetlands within the PSA smaller than 0.5 hectares will be assessed in accordance with GRCA policies 8.4.4 or 8.4.5.
- A survey of the limits of natural heritage features will be prepared.

Biological Monitoring in the PSA

NRSI has undertaken biological studies in the PSA since 2018. The biological monitoring program outlined in this TOR has been designed to fulfil the pre-submission monitoring and related requirements as necessary to inform the MESP and the submission of future development applications. The ongoing monitoring program includes detailed multi-season field surveys of the PSA, following accepted protocols and guidelines. The detailed methods are provided in **Appendix E** (Natural Environment Methodologies). A minimum of two years of biological monitoring of each component listed below will be completed

to provide baseline data for this MESP as well as any future EIS in support of future development applications. Biological Monitoring Locations are shown on **Appendix E.**

As a brief summary the field program includes the following components:

- Vegetation surveys (ELC and vascular flora inventories)
- Anuran call surveys
- Breeding bird surveys
- Snake cover board and visual encounter surveys
- Targeted visual surveys for turtles including overwintering and nesting habitats
- Habitat suitability assessments, presence/absence surveys, and hydroperiod monitoring at potential breeding wetlands for Jefferson Salamander
- American Badger survey
- Winter wildlife surveys
- Survey of wildlife movement or corridor use
- Targeted road mortality surveys for herpetofauna and other wildlife. These surveys will include Erbsville Road, Conservation Drive and Bisch Road. The survey locations are identified in **Appendix F**
- Terrestrial feature qualitative pre-construction monitoring
- Photo monitoring at fixed locations along edges of natural features where buffers will be implemented in future development
- Aquatic habitat characterization of Laurel Creek and Laurel Creek Tributary during the summer at locations where access is available
- Brook trout spawning analysis of Laurel Creek and Laurel Creek tributary, including spawning/redd surveys
- Spot measurements of flow, temperature, dissolved oxygen and turbidity monitoring in Laurel Creek and the Laurel Creek Tributary, during site visits
- Fish community sampling
- Documentation of seeps and springs along the creek corridor and within wetland areas
- Culvert assessment of the Laurel Creek culvert at Erbsville Road for fish and wildlife movement.
- Benthic macro-invertebrate (benthic) sampling in Laurel Creek and Laurel Creek Tributary
- Insect surveys for Lepidoptera, Odonata, and provincially-significant bumblebees
- Incidental observations of all wildlife, including direct observations, as well as signs such as dens, tracks, scat, etc.

Biological Monitoring in the SSA

Characterization of the SSA will be largely dependent on background information, but will be supplemented with roadside or property line reconnaissance level field surveys. Habitats within the SSA will be viewed from the road or nearest accessible property line to verify presence and extent. Any areas of discrepancy will be updated and reported.

Vegetation communities will be mapped at a high level and aquatic habitat (if any) will be investigated. This information will be used to provide context to the more urban PSA.

Analysis
Natural environment features and functions within the PSA and SSA will be mapped and described including their ecological significance and sensitivities. This will include an assessment of ecological corridors/linkages within the PSA and the broader landscape including the culvert crossing at Erbsville Road and the tributary crossing. Significant habitats, provincially significant wetlands, significant woodlands, corridors/linkages and any other CEFs or Supporting Natural Features will be defined. Significant species and their habitat will be reported including any regulated habitat requirements under the *Endangered Species Act* (2007). Background data and field data will be used to assess for Significant Wildlife Habitat (SWH) according to provincial guidance (MNRF 2015a). Connections between the PSA and SSA (if any) will be discussed. Together the identified natural features will form the basis of the Natural Heritage System ("NHS") in the PSA and SSA (described further in f).

Wetland Water Balance Risk Evaluation
The Risk Evaluation will consider information about future development, assess proposed changes to the hydrology of each wetland, and natural heritage information to assign a level of risk for:

- The potential magnitude of hydrological change, and
- The sensitivity of each wetland to hydrological change.

The level of risk for these two factors are then evaluated together to assign an overall risk to each wetland from future development and determine monitoring needs. A sensitivity analysis of the wetlands will be completed based on the abiotic and biotic characteristics of the wetland that are directly related to hydrology and/or ecology. The following criteria are used to assess the sensitivity of a wetland to hydrological change:

- The wetland vegetation community
- Fauna species present in the wetland
- Flora species, present in the wetland
- Significant wildlife habitat for hydrologically sensitive species
- Hydrological classification of the wetland

Data will be compiled for these five criteria and used to evaluate the sensitivity of wetlands, including the magnitude of hydrological change, as determined by the consulting team in the Impact Assessment Phase of the Study.

b. **Geology / Hydrogeology**

The objectives of the scoped Hydrogeology Study are to support the ongoing ecological monitoring being completed by NRSI and assess potential impacts to the receiving watercourse. More specifically, the objectives are to complete a hydrogeologic characterization of the PSA including:

- Geologic setting: overburden and bedrock
- Regional geology and hydrogeology

- Horizontal and vertical groundwater flow: direction, gradients, and hydraulic conductivity
- Municipal water supply
- Private wells
- Groundwater quality
- Groundwater/surface water interaction
- Baseflow contribution to tributary
- Composite seasonally high, low and average groundwater level conditions
- Assessment of infiltration under current conditions

The following components are proposed in order to achieve the objectives of this Hydrogeology Study:

Background Review

- Review previous reports written for the Study Area and reports from nearby developments
- Review Grand River Source Protection Plan policies for the Region of Waterloo and Region of Waterloo Source Protection Plan and associated mapping
- Review mapping from the MNRF, OGS, Ministry of Environment Conservation and Parks (MECP), GRCA, ROW, and City

Field Program

- Clearance of utilities in advance of drilling
- Drilling boreholes, equipped with monitoring wells to a minimum of one metre below estimated groundwater depths, complete with installation of mini-piezometers in wetlands and in the Laurel Creek tributary south of Conservation Drive, as shown in **Appendix G**. If shallow aquitard layers and perched water conditions are encountered, some of these drilling locations may be completed with two monitoring wells – one above and one below the aquitard layer. Monitoring and data collection to occur for a minimum of two years, as input to the preparation of the Study.
- Installation of water level data loggers to monitor ground water levels for a minimum of two years as input to the preparation of the Study. Manual water levels should also be recorded on at least a seasonal basis at all monitoring locations.
- Installation of one deep monitoring well into the municipal aquifer (AFD1 – Pre-Catfish sand and gravel, at a depth to be determined in consultation with the Region.
- Development and single well response testing of all new monitoring wells
- One round of groundwater sampling in the new wells and mini-piezometers to obtain background general water chemistry. One round of surface water sampling in standing water (if present) adjacent to each mini-piezometer
- Elevation survey of the newly constructed monitoring wells and mini-piezometers referenced to a geodetic datum

- Installation of loggers to monitor groundwater level measurements on a continuous basis in the newly constructed wells and mini-piezometers
- Generate borehole logs
- Collection of stabilized water levels from all newly constructed monitoring wells and mini-piezometers
- Laboratory analysis of soil samples for grain size within the screened interval in each of the monitoring wells
- Assessment of vertical hydraulic gradients in proximity to surface water features, which may require installation of nested monitoring wells, mini-piezometers, staff gauges, etc.

Analysis and Reporting

- Assess the topography, physiography and geology of the subsurface soils
- Construct two local scale cross sections of the Study Area
- Assess the groundwater levels, flow direction and chemistry
- Assess potential impacts to existing and future municipal water supplies
- Consider climate change, including stormwater management planning and techniques such as the use of appropriate Low Impact Development ("LID") and green infrastructure to increase resiliency
- Summarize findings in a report to be signed by a Professional Geoscientist or Engineer licensed to practice in Ontario

c. **Hydrology**

- Assess vertical hydraulic gradients and groundwater baseflow conditions
- Update watershed and catchment mapping based on current topographic information, constraint levels and potential future land use. It is estimated that there will likely be six to eight subcatchments within the primary Study Area
- Determine and update watershed modeling parameters using GAWSER or other appropriate models that satisfy the Study's objectives, as required. Both the Laurel Creek Subswatershed Study and the North Waterloo Scoped Subwatershed Study relied on GAWSER modelling. The GAWSER model is recommended for consistency with previous modelling in the area
- Prepare updated existing conditions event-based hydrologic model with the 2-year through Regional Storm events. A continuous simulation model will also be prepared
- Install and maintain continuous flow gauge to allow for model calibration and verification (a minimum two year data collection will be sufficient for this purpose). The data collection period will include periods of high and low flows as well as the spring freshet. A sensitivity analysis will be completed as part of model calibration, with the scope to be determined in discussion with the GRCA.
- Calibrate and validate hydrologic model results using the gauged data and updated hydrologic model.

- Consider climate change, including stormwater management planning and techniques such as the use of appropriate LID and green infrastructure to increase resiliency
- Identify and summarize potential problem areas (if any) through modelling for flooding and erosion
- Review of potential best management practices with respect to previously established watershed and subwatershed targets and current regulations and standards

d. **Floodplain Hydraulics and Mapping**

Several areas of floodplain exist within the study area. The wetlands and floodplains are regulated by the GRCA. The following is proposed to confirm the extent of floodplains throughout the Study Area:

- Obtain available mapping and digital contours mapping at 0.5m contour interval from Land Information Ontario. This mapping is produced from ground controlled aerial photography which is generally accurate and reliable for this purpose. Further verification will be completed to geodetic topographic datum. QA/QC will include cross referencing contour data with planned control shots during field survey work.
- Complete topographic survey of existing cross-sections of the watercourse including crossings. Surveys along and north of Conservation Drive, and other relevant areas, may be required to determine if backwater and sill effects occur.
- Map regulatory floodplain through the PSA
- Floodplain modelling will follow data, analysis, modelling and mapping requirements set out in the Technical Guide for River and Stream System: Flood Hazard Limit (MNR, 2002) and Technical Guidelines for Flood Hazard Mapping (Environmental Water Resources Group, March 2017).

e. **Fluvial Geomorphology**

A Fluvial Geomorphology and Erosion Assessment are to be undertaken. This assessment will confirm the required erosion criteria for the tributary, assist in the design of appropriate stormwater management controls and establish the erosion thresholds downstream of the proposed stormwater management facility.

f. **Natural Heritage System**

The Natural Heritage System ("NHS") will be compiled using the biological data and identification of significant and sensitive natural features and their functions, as described above, combined with information from the study team on hydrology, hydrogeology, floodplain and topography. In preparing the NHS, the following will be completed:

- Confirm and/or refine the Greenlands Network identified by the Region in the Regional Official Plan and the Natural System identified by the City in the City's Official Plan.

- Establish general environmental buffers and setbacks, based on the surveyed limits of natural features, fluvial geomorphology, groundwater and hydrology, etc., to be refined at subsequent stages of planning (e.g. EIS studies), as necessary
- Identify objectives and guidelines for Natural Heritage System maintenance and enhancement such as through buffer management and stewardship activities

α. Identify opportunities for enhancement and/or restoration, including species-specific habitat needs, control of invasive species, aquatic habitat/riparian corridor improvements, enhancing of existing linkages, where appropriate, to mitigate impacts of future development and infrastructure.

g. **Water, Stormwater and Wastewater Servicing**

β. Review and summarize existing water distribution system, including water supply pressure and fire protection demand within study area

χ. Review and summarize existing storm and sanitary wastewater servicing within study area

h. **Transportation Background Review**

δ. Collect and analyze traffic, transit, cycling and pedestrian data for the area.

ε. Consult with GRT regarding the GRT Business Plan (as amended) for any future transit service planned in the Study Area.

ϕ. Consult with Region staff regarding the recently completed Active Transportation Master Plan

γ. 10-year Capital Works Projects: Obtain and review, from the City of Waterloo and the Region of Waterloo, the committed road works projects for the area

η. Collect and Analyse Operation and Collision data: Collect the most recent 5 years of collision data for the study area and plot this information in graphical format and prepare a summary analysis of the data. This will include investigations of any causal links in the data

ι. Review and summarize existing transportation conditions within the Study Area

φ. Provide input to identification of the reasonable range of alternatives for the Northgate North Collector Road system to be assessed in concluding with respect to a preferred alignment. To achieve the projected traffic, transit, pedestrian and cycling demands in the study area, we have identified the need to:
   - Develop buildout forecasts for the area:
   - Review and assess these various reports for consistency with regard to land use and traffic generation and distribution. Including:
     - The City of Waterloo has recently completed a Class EA for Conservation Drive and has prepared traffic forecasts in the area. The breadth and degree to which these would be applicable for use in this study will be reviewed.
     - Review of the Beaver Creek Area Transportation Network Study, which was completed in concert with the Conservation Drive Class EA.

- RMOW Transportation Master Plan in terms of mode share, trip substitution and trip distribution will be undertaken.
- Develop PM Peak hour forecasts for the area for the desired future planning horizon. The 10-year committed roadway projects will be incorporated into the traffic forecasts as appropriate.

i. **Archaeological Assessment**

The Archaeological Assessment will be conducted for the Study Area, excluding lands containing identified natural heritage features. The assessment will be undertaken in accordance with provincial requirements for archaeological investigations (Standards and Guidelines for Archaeological Consultants, Ministry of Tourism and Culture, 2011).

j. **Summary of Management Objectives and Targets**

- Obtain and review conditions from monitoring programs
- Recommend management objectives/targets for natural heritage system, water quality, water quantity, water balance (surface and groundwater), erosion, thermal and chlorides.

PHASE II – IDENTIFICATION AND EVALUATION OF ALTERNATIVES

Identification of alternatives and assessment to determine the preferred alternative will be provided in this part of the Study. Impacts of the preferred land use, infrastructure and trails will be discussed in terms of groundwater recharge and quality, surface water quality and quantity, and the integrity of the surrounding Natural Heritage System, including mitigation recommendations. The analysis completed through Phase I will establish the environmental and infrastructure considerations for the identification of alternatives.

A framework for assessing alternatives, including evaluation criteria will be determined in order to determine the preferred alternative. The evaluation criteria will be approved by the TRC. The assessment of alternatives will form part of the Study.

Tasks include:

1. Establish criteria to assess alternatives, including economic, environmental and social considerations;
2. Determine approach to assess the alternatives;
3. Identify alternatives for land use and infrastructure;
4. Complete analysis of alternatives based on evaluation criteria and select the preferred alternative;
5. Determine the preferred alternative and assess relative to environmental and infrastructure considerations for recommendation on the preferred alternative, including:
    a. Review stormwater management practices and identify which are applicable within the Study Area
    b. Evaluate the effectiveness of alternate stormwater management strategies

c. Recommend stormwater management strategy and related criteria including consideration of LID principles and practices to mitigate proposed condition impacts for the Study Area relating to:
    - Water quality control (TSS, DO, phosphorous)
    - Surface water balance and groundwater balance
    - Erosion assessment (channel and from development areas)
    - Thermal mitigation
    - Chloride assessment
    - Drainage constraints such as external drainage areas, outlet/discharge locations and changes in drainage conditions
    - Existing and future municipal water supply wells
d. Update floodplain model for future development conditions
e. Assess potential hydrogeological issues
f. Determine magnitude of hydrological change under post-development conditions as input to the Wetland Water Balance Risk Evaluation. The magnitude of potential hydrological impact, resulting from future development, will be evaluated based on the following criteria:
    - The degree of change in the size of the wetland catchment
    - Water taking from, or discharge to, surface water bodies or aquifers directly connected to the wetland, as it relates to proposed dewatering activities
    - The impact on locally significant recharge areas
    - Impact on the form, function and habitat of the wetlands
g. Review potential direct and indirect impacts to natural environment features/natural heritage system according to:
    - Potential impact
    - Proposed mitigation measures
    - Residual effects
    - Adaptations to the stormwater management strategy as may be required
h. Identify natural heritage feature enhancement and restoration opportunities to mitigate specific impacts of development and infrastructure
i. Transportation Needs Assessment:
    - Confirm Future Land Use information: The study area has largely been planned in previous area studies which are continuing to develop. In addition, there are large parcels of agricultural land which are contemplated for conversion to residential development. We anticipate that the through the MESP work we will be able confirm the land use assumptions within the study area.
    - Provide recommendations to support active transit within the community, including recommendation for active transit infrastructure;
    - Confirm transit needs within the Study Area and recommend potential extension of transit routes;
j. Level-of-Service Analyses:

- Undertake intersection capacity analyses using a micro-simulation model of the area network. This will have the advantage of not only using the Region accepted procedures, but will be able to better illustrate the interaction of the intersections within the corridor. This tool will incorporate all RMOW-specific input requirements. This will also include the conduct of roundabout screening tools required by the Region of Waterloo and the assessment of feasibility of modern roundabouts.
- Develop road lane requirements: Based on the operational analyses conducted above, the need for an expanded cross-section of any study area roads will be confirmed. In addition, the number and location of required turning lanes and lane widths will be identified. Note that all of the above will give consideration to the committed and planned capital projects for the area and their respective influences.

k. Assess air quality impacts

PHASE III: FINALIZATION OF MESP AND DISTRICT PLAN

This part of the Study will establish the MESP and District Plan, based on the preferred alternative and will include:

1. Master Environmental Servicing Plan

The Master Servicing Strategy will include:

- Existing Conditions Characterization Report
- Develop a preferred Servicing Plan for water supply, sanitary wastewater servicing, storm servicing and stormwater management and road layout for the PSA and District Plan in support of Notice of Study Completion.
- Preferred stormwater management locations, criteria and practices to service PSA.
- Recommend a stormwater management monitoring strategy including locations for monitoring activities for pre-, during and post-development
- Develop a groundwater monitoring strategy, including locations for monitoring activities for pre-, during- and post-development.

Specific reports and studies will include:

- **Functional Servicing Report**
  - Establish the development build-out time-frames and associated population and employment levels for each, to be used as a basis for evaluating the future infrastructure requirements. The factors that influence the build-out timeframes (e.g. population projections, capacity, other) will be documented through the Study.
  - Establish the development phasing/triggers for the various external infrastructure improvements.

- Undertake an initial review for water distribution system, including water supply pressure and fire protection demand, in anticipation of future growth.
- Undertake an initial review for storm and sanitary wastewater servicing within the PSA including an assessment of major external infrastructure (eg., trunk sewers, etc.) premised on existing information and studies, and required servicing of the PSA.
- Identify constraints and opportunities with respect to available servicing options.
- Identify preferred watermain, sanitary and storm system.
- Contact the utility providers (gas, electrical, and communications) to establish what existing facilities are available in the area, and what improvements are required to adequately service the development plan.
- Prepare conceptual plans demonstrating the serviceability of the subject lands, including their relationship to road grades, grading, respecting established buffers for wetlands/woodlots and environmental features, including:
- Cut/fill analysis of the site to determine the quantity of material to be imported or exported from the site, and identification of the locations where significant filling or cutting.
- Consideration of groundwater depths.
- Preliminary grading, in consultation with the environmental recommendations, to establish road grades at accesses, boundary grades and buffer considerations.
- Identification of "major" overland flow routes directed to downstream stormwater management facilities.
- General road network arrangement for accommodation of transportation, servicing and development needs.
- Establish projected time of need for infrastructure improvements in consideration of the development horizons.

b. Stormwater Management Plan

- Identify potential stormwater management facilities locations
- Identify stormwater management measures required throughout the PSA. These measures are required to maintain or enhance the quality, quantity, distribution of surplus stormwater including infiltration measures (at source and end-of-pipe), and minimize stormwater runoff volumes and contaminate loads (mitigate impacts from erosion, temperature and chlorides)
- Identify erosion control measures during and after construction in order to protect water quality and maintain landscape stability
- Identify preferred stormwater management criteria and practices to mitigate proposed condition impacts for the PSA and consider potential downstream effects.

- Identify an adaptive management approach to stormwater management within the PSA, subject to findings from the ongoing monitoring process and based on the preferred concept.
- Confirm stormwater management approach throughout the PSA with the Region, City and GRCA
- Consider use of LID practices wherever feasible and where appropriate, from a source water protection perspective
- Compare post development erosion threshold exceedances to pre-development conditions and evaluate threshold performance

c. Floodplain Hydraulics and Mapping

- Include detailed measurements and photo inventory of existing crossings
- Topographic information will be supplemented with field surveys, including along and north of Conservation Drive, and other relevant areas, to determine if there are any backwater and spill effects
- Review existing cross section data (from current model) and update with new cross-section locations for tributary
- Determine watershed modeling parameters for the tributary for input into the HEC-RAS model. Prepare updated existing conditions and post development conditions HEC-RAS model, in coordination with the GRCA. Any modifications to this HEC-RAS model will be documented within the existing and proposed condition scenarios, and be submitted digitally with a georeferenced shapefile of the regulatory floodplain for GRCA review

6. **Transportation Network Assessment Report**
    - The Transportation Network Assessment will culminate in a report which will incorporate all of the above findings. This report will meet the requirements of Integrated Approach to the Class EA process from a transportation planning perspective and should therefore be readily recognized by Region of Waterloo and City of Waterloo staff. In addition, the report will identify and recognize any overlap with the Beaver Creek Meadows District Plan, the Conservation Drive EA and its findings as appropriate.

d. Monitoring and Implementation Plan

- Prepare a Monitoring and Implementation Plan for the PSA, as part of the Master Servicing Plan and/or District Plan that follows established municipal standards/requirements in consideration of monitoring underway in the Laurel Creek Watershed
- The Monitoring Plan is to include biological, groundwater and surface water components and consider the results of ongoing City monitoring programs
- The Monitoring Plan will confirm monitoring parameters, performance standard and measures, including the duration or monitoring activities, timing of monitoring events and protocols

- Provide guidelines for the implementation of recommendations (requirements) through the development process and make provision for adjustments to the monitoring plan, if necessary, as information collected. The Monitoring Plan will include provision for review, feedback and adjustment based on monitoring data and changing environmental conditions. Establish preliminary phasing plan for development based on recommendations associated with required infrastructure

e. Scoped Subwatershed Study

- Identification of future studies such as site specific EISs which may be required for future development applications
- Recommend biological monitoring strategy including locations for monitoring activities for pre-, during and post-development

2. District Plan

The District Plan will provide the detailed land use vision and policy framework for the Study Area. The District Plan will form the basis of an Official Plan Amendment. The goal of the District Plan will be to effectively and sensitively accommodate planned growth through the development of Designated Greenfield Areas while respecting and protecting the surrounding environmental features.

The contents of the District Plan will include the following:

- The physical context, opportunities and constraints for the Study Area
- The overall context for the Study Area, including relevant policies
- The vision and objectives for the development of the Study Area
- Land use designations, including consideration of a diverse mix of land uses, and implementing policies for the various designations within the District Plan
- An overall design framework for the street network, development blocks and open spaces, gateways and views and vistas that responds to the physical context, opportunities and constraints
- Park needs assessment which includes recommendations for park location and design criteria, in accordance with the City's parkland requirements and targets;
- Transportation plan which includes a network of streets, including transit supportive streets, GRT stops and facilities/infrastructure, and active transportation facilities and policies to implement the transportation plan
- Servicing and stormwater management strategy for the District Plan area which includes consideration of existing and planned capacity and phasing of development
- Natural heritage system identifying features within the Study Area, recommended buffers and policies related to the preservation and enhancement of the natural heritage system
- Policies related to implementation of the District Plan for future site-specific applications.

a. Urban Design Guidelines

To facilitate a high standard of urban design, the Urban Design Guidelines will establish detailed design direction for the Study Area. The Guidelines will implement the urban design policy framework established in the District Plan. The Urban Design Guidelines will include:

- Relevant existing urban design policy and guideline direction from the City's Official Plan and Urban Design Manual
- Design criteria and concept plans and, where applicable, cross sections for the public realm including roads, streetscape, parks, trails, community spaces, gateways, view points, stormwater management facilities and the natural heritage system;
- Design guidelines for the private realm as direction for future development applications;
- Sustainable design principles to promote ecological resilience and biodiversity;
- Recommendations for community safety principles, in accordance with CPTED principles;
- Recommendations for landscaping as direction for future landscape plans, including the provision for large canopy trees and recommended land area and soil volumes for planting. Landscaping direction will confirm to the City's Comprehensive Engineering and Landscape Manual;

CONSULTATION PLAN

The MESP and District Plan processes require public consultation to ensure that public and interested and affected parties issues are incorporated into the Study. The goal of the Consultation Plan is to provide the public and interested and affected parties with information and opportunity to review and provide comment on the MESP and District Plan. The public will have the opportunity to review information and provide comments to the Study at various stages of the process.

The feedback gathered through public consultation will be summarized into key themes for inclusion in report(s) to City Council. The public consultation program will be led by Project Team, with the Project Manager as the key point of contact, in collaboration with the City, and where appropriate, the GRCA and the Region.

The following is proposed to be included in the Consultation Plan:

- Notice of public open houses will be mailed to landowners in the PSA and SSA plus 120 metres. Notice of Study Initiation and of future public engagement activities will be posted in The Record or in the Waterloo Chronicle and the Observer. Notices that are issued may need to fulfill the requirements for public consultation for any resulting amendments to the Grand River Conservation Authority's regulated area mapping of Ontario Regulation 41/24 made under the *Conservation Authorities Act*. The timing and content of all public notices will be determined on consultation with City staff and the GRCA, as necessary.

- The EngageWaterloo online platform is intended to be used to provide information to the public. This platform will be launched following Council approval of these TOR. Information posted on this platform will include the Council-approved TOR and supporting information (background, timeline, and next steps), public notices and all open house or engagement activity presentations. All documents produced for public review or information will be AODA compliant.
- A summary of this project will be provided to the City's Indigenous Initiative Advocate prior to the TOR being presented to Council, to share with local Indigenous communities. Through the sharing of this summary, it is anticipated that the Local Indigenous Advocate will assist to facilitate the participation of the local Indigenous communities in the Study.
- External agencies will be sent a notice of the submission of the initiation of the study through standard mail service or email. These agencies may include the following, but the list will be confirmed with City staff prior to providing notice:
    a. Grand River Conservation Authority;
    b. Region of Waterloo;
    c. Ministry of the Environment, Conservation and Parks;
    d. Township of Woolwich;
    e. Waterloo Region School Board; and,
    f. Waterloo Catholic District School Board.

The intent is to have public consultation take place through the following:

- Public Information Centres (in person and/or virtual) - the timing, format and venue for the Public Open Houses will be determined in consultation with City staff.
- EngageWaterloo

Information will be recorded for all meetings. All comments will be consolidated into the final document. Information gathered through the consultation process will be considered in the development of the MESP and District Plan.

Any individuals who would like to receive project updates will be given the option to sign up to an email list to receive updates related to the project and webpage updates. The project webpage will be updated regularly as project updates occur and consultation events are scheduled.

Details and approach to public consultation will be confirmed by the TRC at the initial TRC meeting. All reports, data and findings will be publicly accessible to interested and affected parties.

IMPLEMENTATION OF THE DISTRICT PLAN AND MESP

The District Plan will initially be implemented through a City-initiated Official Plan Amendment. Subsequent Planning Act applications, including but not limited to Zoning By-law Amendments and Draft Plans of Subdivision will further implement the direction of the MESP and District Plan. For example:

- Zoning By-law Amendment(s) – this will establish the details of the land uses, including the permitted uses and regulations and will provide the direction necessary for detailed implementation of the land uses.
- Draft Plan of Subdivision(s) – this will establish the lots/blocks for development, public roads and other blocks that may be conveyed to a public agency (i.e., SWM, open space, parks).

Given the recent changes made to the Conservation Authorities Act and GRCA's mandate being focussed on natural hazards, the City may retain a peer review for natural heritage matters.

APPENDICES

Appendix A – Study Area Map

Appendix B – Study Process Flow Chart

Appendix C – Natural Features Mapping

Appendix D – SAR/SCC Assessment

Appendix E – Natural Environment Methodologies

Appendix F – Biological Monitoring Locations

Appendix G – Groundwater and Surface Monitoring Locations

APPENDIX A

STUDY AREA

Figure

Study Area

Conservation Drive & Erbsville Road

(Google Maps, August 2022)

LEGEND

Primary Study Area (56.36 ha.±)

Secondary Study Area (46.84 ha.±)

DATE:	August 23,2024
SCALE:	1:10,000
FILE:	14148B
DRAWN:	LHB

north

K:\14148B ZISTER -LEE WATERLOO\REPORT\STUDY AREA - AUGUST 23 2024.DWG

MHBC PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE
200-540 BINGEMANS CENTRE DR, KITCHENER, ON, N2B 3X9
P: 519.576.3650 F: 519.576.0121 | WWW.MHBCPLAN.COM

APPENDIX B

STUDY PROCESS FLOW CHART

ERBSVILLE NORTH MESP & DISTRICT PLAN - STUDY PROCESS FLOWCHART

TASK	2023		2024						2025						2026				
	Sep/Oct	Nov/Dec	Jan/Feb	Mar/Apr	May/Jun	Jul/Aug	Sep/Oct	Nov/Dec	Jan/Feb	Mar/Apr	May/Jun	July/Aug	Sept/Oct	Nov/Dec	Jan/Feb	Mar/Apr	May/Jun	July/Aug	Sep/Oct
TERMS OF REFERENCE PREPARATION AND APPROVAL																			
MESP & SECONDARY PLAN INITIATED																			
NOTICE OF STUDY COMMENCEMENT																			
BACKGROUND REVIEW & EXISTING CONDITIONS																			
COMPLETION OF EXISTING CONDITION STUDIES																			
UNDERTAKE EXISTING CONDITION STUDIES / FIELD INVESTIGATIONS																			
NATURAL ENVIRONMENT (work initiated & partially completed)																			
HYDROGEOLOGY (work initiated & partially completed)																			
HYDROLOGY (work initiated & partially completed)																			
NATURAL SYSTEM LINKAGES & FUNCTIONS (work initiated & partially completed)																			
IDENTIFY MANAGEMENT OBJECTIVES AND TARGETS																			
TRAFFIC ANALYSIS																			
ARCHAOLOGICAL ASSESSMENT (work initiated & partially completed)																			
COMPLETE BACKGROUND & EXISTING CONDITIONS REPORT																			
IMPACT ASSESSMENT & SCREENING OF MANAGEMENT PRACTICES																			
IDENTIFY STORMWATER MANAGEMENT AND SERVICING APPROACH																			
PREPARE PRELIMINARY LAND USE PLAN AND DRAFT MESP																			
IDENTIFY LAND USE OPTIONS AND SERVICING																			
DETERMINE PREFERRED LAND USE PLAN AND SERVICING																			
SUBMIT DRAFT MESP & DISTRICT PLAN																			
AGENCY CIRCULATION OF DRAFT MESP & SECONDARY PLAN																			
UPDATE MESP AND DISTRICT PLAN																			
AGENCY CIRCULATION OF DRAFT MESP & SECONDARY PLAN																			
FINALIZE AND SUBMIT MESP & SECONDARY PLAN																			
RECOMMENDATION REPORT BY CITY STAFF																			
MESP & SECONDARY PLAN CONSIDERED BY COUNCIL																			
NOTICE OF STUDY COMPLETION																			
TECHNICAL ADVISORY COMMITTEE (TAC) MEETINGS																			
PUBLIC CONSULTATION																			

APPENDIX C

NATURAL FEATURES MAPPING

Appendix C

Erbsville North District MESP and District Plan

Study Area and Natural Features

Legend

- Primary Study Area
- Secondary Study Area
- Urban Area Boundary (City of Waterloo 2016)
- Parcel
- ESL (Laurel Creek Headwaters, Region of Waterloo)
- ESPA #17 Schaefer's Woods (Region of Waterloo)
- ESPA #75 Optimist Swamp and Forest (Region of Waterloo)
- ESPA #80 Laurel Creek Forest (Region of Waterloo)
- Municipal Boundary
- Subwatershed Boundaries (Laurel Creek Subwatershed Study 1996)
- Watercourse
- Provincially Significant Wetland (PSW)
- Unevaluated Wetland
- GRCA Wetland (2023)

Natural Resource Solutions Inc.
Aquatic, Terrestrial and Wetland Biologists

Project: 1589 Date: August 23, 2024	NAD83 - UTM Zone 17 Size: 11x17" 1:5,000

0 50 100 150 200 250 300 Metres

Path: X:\1589_ConservationDrConstraints\NRSI_1589_AppC_StudyArea_NaturalFeatures_5K_2024_08_23_DNH.mxd

APPENDIX D

SAR/SCC ASSESSMENT

SAR/SCC Habitat Assessment - Erbsville North Scoped Subwatershed Study

Scientific Name	Common Name	SRANK[1]	COSSARO[2]	COSEWIC[3]	SARA Schedule[4]	Background Source*	Habitat Preference[5,6,7,8]	Suitable Habitat within Primary and Secondary Study Areas
Vascular Plants & Mosses								
Arisaema dracontium	Green Dragon	S3	SC	SC	Schedule 3	MNRF 2018	Wet bottomlands along rivers and creeks.	Yes
Sceptridium oneidense	Blunt-lobed Grapefern	S3?	--	--	--	MNRF pers. comm. 2015; RMOW ESPA #17 Factsheet	Understories of swampy to dry sandy hardwood or mixed forests, occasionally in conifer swamps.	Yes
Carex albicans var. albicans	White-tinged Sedge	S3	--	--	--	MNRF 2016	Sandy hardwood forests.	Yes
Castanea dentata	American Chestnut	S1S2	END	E	Schedule 1	MNRF 2018	Moist to well drained forests on sand, occasionally heavy soils.	Yes
Fissidens exilis	Pygmy Pocket Moss	S2	DD	NAR	-	MNRF 2018	Moist, barren soil, typicaly clay, often asscoiated with forests.	No
Juglans cinerea	Butternut	S2?	END	E	Schedule 1	MNRF 2018	Stream banks and swamps, as well as upland beech-maple, oak-hickory, and mixed hardwood stands.	Yes
Lithospermum latifolium	Broad-leaved Puccoon	S2S3	--	--	--	MNRF 2016	Shaded river banks and forested floodplains; borders of forests.	Yes
Panax quinquefolius	American Ginseng	S2	END	E	Schedule 1	MNRF 2018	Deep leaf litter in rich, moist deciduous woods, especially on rocky, shaded cool slopes in sweet soil.	Yes
Phlox subulata	Moss Phlox	S1?	--	--	--	MNRF 2016	Open, sandy woods, and sandy roadsides and lakeshores.	No
Polystichum braunii	Braun's Holly Fern	S3	--	--	--	MNRF 2016	Moist deciduous or mixed conifer-hardwood forests on slopes and in ravines, and especially frequent in rocky woods.	Yes
Monarda didyma	Scarlet Beebalm	S3	--	--	--	MNRF 2016	Moist woods, swampy thickets and roadsides.	Yes
Vicia caroliniana	Carolina Vetch	S2?	--	--	--	MNRF 2016	Oak and oak-hickory forests, borders of forests, dry open ground and clearings; less often in moist places, banks of streams and lakes.	No
Birds								
Ammodramus henslowii	Henslow's Sparrow	SHB	END	E	Schedule 1	MNRF 2018	Large, fallow, grassy area with ground mat of dead vegetation, dense herbaceous vegetation, ground litter and some song perches; neglected weedy fields; wet meadows; cultivated uplands; a moderate amount of moisture needed; requires a minimum tract of grassland of 40ha, but usually in areas >100ha.	No
Antrostomus vociferus	Eastern Whip-poor-will	S4B	THR	T	Schedule 1	MNRF 2018	Dry, open, deciduous woodlands of small to medium trees; oak or beech with lots of clearings and shaded leaflitter; wooded edges, forest clearings with little herbaceous growth; pine plantations; associated with >100ha forests; may require 500 to 1000ha to maintain population.	No
Asio flammeus	Short-eared Owl	S2N, S4B	SC	SC	Schedule 1	MNRF 2018	Grasslands, open areas or meadows that are grassy or bushy; marshes, bogs or tundra; both diurnal and nocturnal habits; ground nester; destruction of wetlands by drainage for agriculture is an important factor in the decline of this species; home range 25 -125ha; requires 75-100ha of contiguous open habitat.	No
Cardellina canadensis	Canada Warbler	S4B	SC	T	Schedule 1	MNRF 2018	An interior forest species; dense, mixed coniferous, deciduous forests with closed canopy, wet bottomlands of cedar or alder; shrubby undergrowth in cool moist mature woodlands; riparian habitat; usually requires at least 30ha.	Yes. A portion of suitable breeding habitat for this species extends to within the Primary Study Area.
Chaetura pelagica	Chimney Swift	S4B, S4N	THR	T	Schedule 1	MNRF 2018	Commonly found in urban areas near buildings; nests in hollow trees, crevices of rock cliffs, chimneys; highly gregarious; feeds over open water.	No. Suitable nesting habitat not present.

Scientific Name	Common Name	SRANK[1]	COSSARO[2]	COSEWIC[3]	SARA Schedule[4]	Background Source*	Habitat Preference[5,6,7,8]	Suitable Habitat within Primary and Secondary Study Areas
Chlidonias niger	Black Tern	S3B	SC	NAR	--	MNRF 2018; MNRF 2016	Wetlands, coastal or inland marshes; large cattail marshes, marshy edges of rivers, lakes or ponds, wet open fens, wet meadows; returns to same area to nest each year in loose colonies; must have shallow (0.5 to 1m deep) water and areas of open water near nests; requires marshes >20 ha in size; feeds over adjacent grasslands for insects; also feeds on fish, crayfish and frogs.	No
Chordeiles minor	Common Nighthawk	S4B	SC	SC	Schedule 1	MNRF 2018	Open ground; clearings in dense forests; ploughed fields; gravel beaches or barren areas with rocky soils; open woodlands; flat gravel roofs.	No. Ploughed fields exist, however the fields are cropped annually and are unsuitable for nesting.
Colinus virginianus	Northern Bobwhite	S1	END	E	Schedule 1	MNRF 2018	Grassland, prairie or hay fields with woody cover in form of thickets, tangles of vines, shrubs; fence rows or woodland edges; cropland growing corn, soybeans or small grains and clover or grass; well-drained sandy or loamy soil; pond edges.	No
Contopus virens	Eastern Wood-Pewee	S4B	SC	SC	Schedule 1	MNRF 2018	Open, deciduous, mixed or coniferous forest; predominated by oak with little understory; forest clearings, edges; farm woodlots, parks.	Yes
Dolichonyx oryzivorus	Bobolink	S4B	THR	T	Schedule 1	MNRF 2018	Large, open expansive grasslands with dense ground cover; hayfields, meadows or fallow fields; marshes; requires tracts of grassland >50 ha.	No
Empidonax virescens	Acadian Flycatcher	S2S3B	END	E	Schedule 1	MNRF 2018	Mature, shady, deciduous forests; heavily wooded ravines; creek bottoms or river swamps; availability of good quality habitat is limiting factor; needs at least 30ha of forest.	Yes. A portion of suitable breeding habitat for this species extends to within the Primary Study Area.
Falco peregrinus	Peregrine Falcon	S3B	SC	NAR	Schedule 1	MNRF 2018	Rock cliffs, crags, especially situated near water; tall buildings in urban centres.	No
Haliaeetus leucocephalus	Bald Eagle	S2N, S4B	SC	NAR	--	MNRF 2018; known local nesting record	Require large continuous area of deciduous or mixed woods around large lakes, rivers; require area of 255 ha for nesting, shelter, feeding, roosting; prefer open woods with 30 to 50% canopy cover; nest in tall trees 50 to 200 m from shore; require tall, dead, partially dead trees within 400 m of nest for perching.	Yes. A portion of suitable breeding habitat for this species extends to within the Primary Study Area.
Hirundo rustica	Barn Swallow	S5B	THR	T	Schedule 1	MNRF 2018	Farmlands or rural areas; cliffs, caves, rock niches; buildings or other man-made structures for nesting; open country near body of water.	Yes. Man-made structures are present.
Hylocichla mustelina	Wood Thrush	S4B	SC	T	Schedule 1	MNRF 2018	Carolinian and Great Lakes-St. Lawrence forest zones; undisturbed moist mature deciduous or mixed forest with deciduous sapling growth; near pond or swamp; hardwood forest edges; must have some trees higher than 12m.	Yes
Icteria virens	Yellow-breasted Chat	S1B	END	E	Schedule 1	MNRF 2018	Generally prefer dense thickets around wood edges, riparian areas, and in overgrown clearings.	Yes
Ixobrychus exilis	Least Bittern	S4B	THR	T	Schedule 1	MNRF 2018	Deep marshes, swamps, bogs; marshy borders of lakes, ponds, streams, ditches; dense emergent vegetation of cattail, bulrush, sedge; nests in cattails; intolerant of loss of habitat and human disturbance.	No

Scientific Name	Common Name	SRANK[1]	COSSARO[2]	COSEWIC[3]	SARA Schedule[4]	Background Source*	Habitat Preference[5,6,7,8]	Suitable Habitat within Primary and Secondary Study Areas
Melanerpes erythrocephalus	Red-headed Woodpecker	S4B	SC	E	Schedule 1	MNRF 2018; RMOW ESPA #17 Factsheet	Generally prefer open oak and beech forests, grasslands, forest edges, orchards, pastures, riparian forests, roadsides, urban parks, golf courses, cemeteries, as well as along beaver ponds and brooks.	No
Parkesia motacilla	Louisiana Waterthrush	S3B	THR	T	Schedule 1	MNRF 2018	Generally inhabits mature forests along steeply sloped ravines adjacent to running water. It prefers clear, cold streams and densely wooded swamps.	No
Riparia riparia	Bank Swallow	S4B	THR	T	Schedule 1	MNRF 2018	Sand, clay or gravel river banks or steep riverbank cliffs; lakeshore bluffs of easily crumbled sand or gravel; gravel pits, road-cuts, grassland or cultivated fields that are close to water; nesting sites are limiting factor for species presence.	No. Suitable nesting habitat not present.
Setophaga cerulea	Cerulean Warbler	S3B	THR	E	Schedule 1	MNRF 2018	Mature deciduous woodland of Great Lakes- St. Lawrence and Carolinian forests, sometimes coniferous; swamps or bottomlands with large trees; area sensitive species needing extensive areas of forest (>100 ha).	Yes. A portion of suitable breeding habitat for this species extends to within the Primary Study Area.
Setophaga discolor	Prairie Warbler	S3B	NAR	NAR	--	RMOW ESPA #19 Factsheet	Scrub-land; mixed pine-oak barrens; old pastures; hillsides with scattered red cedars; avoids thick woods and benefits from cutting and burning of forests.	No
Sturnella magna	Eastern Meadowlark	S4B	THR	T	Schedule 1	MNRF 2018	Open, grassy meadows, farmland, pastures, hayfields or grasslands with elevated singing perches; cultivated land and weedy areas with trees; old orchards with adjacent, open grassy areas >10 ha in size.	No
Tyto alba	Barn Owl	S1	END	E	Schedule 1	MNRF 2018	Open areas such as fields, agricultural lands with scattered woodlots, buildings and/or orchards; grasslands, sedge meadows, marshes; snow-cover limits ability to catch prey; species has intolerance to severe cold; nests in hollow trees and live trees >46 cm dbh; also nests in barns, abandoned buildings.	No. Suitable habitat features not present.
Vermivora chrysoptera	Golden-winged Warbler	S4B	SC	T	Schedule 1	MNRF 2018; RMOW ESPA #19 Factsheet	Early successional habitat; shrubby, grassy abandoned fields with small deciduous trees bordered by low woodland and wooded swamps; alder bogs; deciduous, damp woods; shrubbery clearings in deciduous woods with saplings and grasses; brier-woodland edges; requires >10ha of habitat.	No
Herpetofauna								
Ambystoma jeffersonianum	Jefferson Salamander	S2	END	E	Schedule 1	MNRF 2018; MNRF 2016	Inhabit deciduous and mixed deciduous forests with suitable breeding areas which generally consist of ephemeral (temporary) bodies of water that are fed by spring runoff, groundwater, or springs.	Yes
Chelydra serpentina serpentina	Snapping Turtle	S4	SC	SC	Schedule 1	MNRF 2018; MNRF 2016	Permanent or semi-permanent fresh water; marshes, swamps or bogs; rivers and streams with soft muddybanks or bottoms. The species often uses soft soil or clean dry sand on south-facing slopes for nest sites and may nest at some distance from water.	Yes
Emydoidea blandingii	Blanding's Turtle (*Great Lakes/St Lawrence population*)	S3	THR	E	Schedule 1	MNRF 2018	Shallow water marshes, bogs, ponds or swamps, or coves in larger lakes with soft muddy bottoms and aquatic vegetation; basks on logs, stumps, or banks; surrounding natural habitat is important in summer as they frequently move from aquatic habitat to terrestrial habitats; hibernates in bogs; not readily observed.	Yes
Graptemys geographica	Northern Map Turtle	S3	SC	SC	Schedule 1	MNRF 2018; Erbsville South Environmental Study (2018)	Large bodies of water with soft bottoms, and aquatic vegetation; basks on logs or rocks or on beaches and grassy edges, will bask in groups; uses soft soil or clean dry sand for nest sites; may nest at some distance from water.	No

Scientific Name	Common Name	SRANK[1]	COSSARO[2]	COSEWIC[3]	SARA Schedule[4]	Background Source*	Habitat Preference[5,6,7,8]	Suitable Habitat within Primary and Secondary Study Areas
Pseudacris triseriata pop. 2	Western Chorus Frog *(Great Lakes/St. Lawrence - Canadian Shield Population)*	S4	NAR	T	Schedule 1	MNRF pers. comm. 2015	Roadside ditches or temporary ponds in fields; swamps or wet meadows; woodland or open country with cover and moisture; small ponds and temporary pools.	Yes
Regina septemvittata	Queensnake	S2	END	E	Schedule 1	MNRF 2018	Margins of streams with slow currents and gravel bottoms; shorelines with rocks and debris; old quarries; canals; aquatic habitat with overhanging trees, particularly willows.	No
Thamnophis sauritus septentrionalis	Eastern Ribbonsnake	S4	SC	SC	Schedule 1	MNRF 2018; MNRF 2016	Sunny grassy areas with low dense vegetation near bodies of shallow permanent quiet water; wet meadows, grassy marshes or sphagnum bogs; borders of ponds, lakes or streams; hibernates in groups.	Yes
Mammals								
Taxidea taxus jacksoni	American Badger	S1	END	E	Schedule 1	MNRF 2018	Generally prefer open habitats, whether natural (grasslands) or man-made (agricultural fields, road right-of-ways, golf courses).	Yes. Open agricultural and other cultural habitats are present.
Myotis leibii	Eastern Small-footed Bat	S2S3	END	--	--	MNRF 2018	Roosts in caves, mine shafts, crevices or buildings that are in or near woodland; hibernates in cold dry caves or mines; maternity colonies in caves or buildings; hunts in forests.	No. Suitable roosting and maternity colony habitat not present.
Myotis lucifugus	Little Brown Myotis	S3	END	E	Schedule 1	MNRF 2018	Uses caves, quarries, tunnels, hollow trees or buildings for roosting; winters in humid caves; maternity sites in dark warm areas such as attics and barns; feeds primarily in wetlands, forest edges.	Yes
Myotis septentrionalis	Northern Myotis	S3	END	E	Schedule 1	MNRF 2018	Summer males roost alone and females form maternity colonies of up to 60 adults; roosts in houses, manmade structures but prefers hollow trees or under loose bark; hunts within forests, below canopy.	Yes
Fish and Mussels								
Ichthyomyzon fossor	Northern Brook Lamprey	S3	SC	SC	Schedule 1	MNRF 2018	Clean, clear riffles and runs of small rivers with gravel and sand substrates; ammocoetes occupy quiet water with sand, silt and detritus substrates.	No
Lampsilis fasciola	Wavy-rayed Lampmussel	S1	THR	SC	Schedule 1	MNRF 2018	Clear rivers and streams of a variety of sizes, where the water flow is steady and the substrate is stable. It is typically found in gravel or sand substrates, often stabilized with cobble or boulders, in and around riffle areas up to 1m in depth. It is most abundant in small to medium-sized streams.	No
Moxostoma duquesnei	Black Redhorse	S2	THR	T	Schedule 1	MNRF 2018	Pools and runs of creeks and small to medium rivers with sand, gravel and rocky substrates where siltation is minimal.	No
Notropis photogenis	Silver Shiner	S2S3	THR	T	Schedule 1	MNRF 2018	Cool to warm, clear waters of streams, over bottoms of cobble and boulders.	No
Insects								
Bombus affinis	Rusty-patched Bumble Bee	S1	END	E	--	MNRF 2018	Generally inhabits a range of diverse habitats including mixed farmland, sand dunes, marshes, urban and wooded areas. It usually nests underground in abandoned rodent burrows. Currently, the only known population occurs in a managed oak savanna remnant in Lambton County.	No

Scientific Name	Common Name	SRANK[1]	COSSARO[2]	COSEWIC[3]	SARA Schedule[4]	Background Source*	Habitat Preference[5,6,7,8]	Suitable Habitat within Primary and Secondary Study Areas
Danaus plexippus	Monarch	S2N, S4B	SC	E	Schedule 1	MNRF 2018	Open areas with milkweed species (*Asclepias* spp.).	Yes
Pieris virginiensis	West Virginia White	S3	SC	--	--	MNRF 2018	Generally prefer moist, rich, deciduous woodlands. The larvae feed only on the leaves of toothworts (*Cardamine* spp.).	Yes

[1]MNRF 2020b, [2]MECP 2019, [3,4]Government of Canada 2019, [5]OMNR 2000, [6]Layberry et al. 1998, [7]Reznicek et al. 2011, [8]Eakins 2020

*Note: MNRF 2016 reference refers to an earlier query of the NHIC database; MNRF 2018 reference refers to a list of SAR/SCC provided by MNRF in 2018 for Waterloo Region

LEGEND
SRANK
S1 Critically Imperiled
S2 Imeriled
S3 Vulnerable
S4 Apparently Secure
SNA Unranked
S#? Rank Uncertain
SH Possibly Extirpated (Historical)
DD Data Deficient
B Applicable to Breeding Pop.
N Applicable to Non-breeding Pop.
COSSARO / COSEWIC
NAR/NAR Not at Risk
SC/SC Special Concern
THR/T Threatened
END/E Endangered
SARA Schedule
Schedule 1 Officially Protected under SARA
Schedule 3 May be reassessed for consideration for inclusion to Schedule 1

APPENDIX E

NATURAL ENVIRONMENT METHODOLOGIES

Natural Environment Methodologies for the PSA (SSA where noted)

Vegetation Surveys

- ELC surveys to 'Ecosite' or 'Vegetation Type' in the PSA, and to 'Community Series' in the SSA, or where access is not available, according to Lee et al. (1998).
- Multi-season (spring, summer fall) comprehensive vegetation inventories. Completed in 2018, will be updated each year.
- Vegetation surveys for enhancement and management needs including documentation of regionally significant vegetation species and refinement of ELC community boundaries as necessary. This task has been completed twice annually in the PSA from 2018-2022.

Wetland boundary and woodland dripline flagging

- Flagged on-site according to the Waterloo Region's Greenlands Network Implementation Guidelines (2016) and the Ontario Wetland Evaluation System for Southern Ontario (MNRF 2022). Reviewed on-site with agency staff and confirmed boundaries surveyed by MTE to provide accurate boundaries of the CEF and Supporting Natural Features and will be shown on all plans and maps. A portion of wetland within PSA (south portion of Northgate property) was flagged and reviewed with GRCA in 2015 and will be updated. All wetland and woodland dripline boundaries will be delineated within the PSA. Boundaries of natural features (if any) within the SSA will be reviewed and mapped in the SSA through roadside or property line surveys, background mapping and aerial photograph review.

Anuran Call Surveys

- Three amphibian call surveys at the PSA on-site wetlands will be completed with one survey during each of April, May and June, during appropriate weather conditions according to the Marsh Monitoring Program (BSC 2009) methodology. This task has been completed annually from 2018-2021.

Breeding Bird Surveys

- Consistent with the Ontario Breeding Bird Atlas protocol (OBBA 2001), within the defined Wildlife Survey Units in the PSA, random (wandering) transects. Surveys will be conducted twice during peak breeding bird season (late May to early July) according to the standardized methodology. This task has been completed annually from 2018-2021.
- Roadside point counts and walking transects will be carried out at locations within the PSA where land access is not available.

Snake Cover Board and Visual Encounter Surveys

- Snake cover boards were placed within and adjacent to natural features of the PSA in early spring 2018. Boards will be checked during all field visits to observe and document snake species which may be present according to MNRF protocol (MNRF

2016a). Any observations of suitable hibernacula features will be recorded according to MNRF criteria (2015a). This task has been completed annually from 2018-2022.

- Eastern Ribbonsnake (*Thamnophis sauritus septentrionalis*) is the only significant snake species identified with suitable habitats in the PSA. Snake cover boards are not an appropriate survey method for this species according to MNRF guidance (MNRF 2016a). Visual encounter surveys will be conducted according to MNRF protocol (MNRF 2016a) on all field visits during appropriate weather conditions in the spring to detect potential presence of this species. This task has been completed annually from 2018-2022.
- All potential hibernacula habitats will be documented according to MNRF criteria (2015a).

Turtle Surveys

- Overwintering Areas: Wetland features within the PSA deemed suitable for turtle overwintering will be surveyed for turtle emergence/basking with an emphasis on Blanding's Turtle (*Emydoidea blandingii*) as a known overwintering site for this species occurs to the south of the PSA. Surveys will be conducted according to standardized MNRF protocol (MNRF 2015b) for the species. This task has been completed annually from 2018-2021.
- Nesting Areas: Turtle nest and nesting surveys with an emphasis on Blanding's Turtle to detect nesting individuals and/or predated nests. Surveys will be conducted according to Guelph District MNRF guidance for Blanding's Turtle (MNRF 2016b). Turtle nest and nesting surveys were completed in 2021 and 2022.
- Any sightings of other turtle species will be photographed and mapped, as well as any evidence of hibernation, nesting, or basking areas according to MNRF criteria (2015a).

Salamander Surveys

- Based on initial assessments in 2018-2019, suitable Jefferson Salamander (*Ambystoma jeffersonianum*) breeding habitat exists within the PSA.
- Salamander presence/absence surveys will be performed in accordance with the Jefferson Salamander Recovery Team's (2013) recommended protocol which is considered suitable for detecting Jefferson Salamander and co-occurring unisexual salamanders. Minnow traps will be deployed in potential breeding wetlands just before the first warm, rainy spring night when amphibians are known to migrate to their breeding ponds (usually late March/early April). As per the protocol, a minimum of three un-baited minnow traps will be strategically placed in each potential breeding pond. The traps will be deployed in the evening and checked in the morning for a minimum of five days. All species caught in the traps will be recorded on a detailed form. The MNRF recommended a minimum of three consecutive years of minnow-trapping for salamanders be completed to determine absence of Jefferson Salamander. If presence of Jefferson Complex salamanders

is confirmed during the sampling period, then no additional surveys are required. This task has been undertaken in 2020 through 2023 to obtain 3 consecutive years of sampling in all potential breeding ponds.

- Water level gauges to monitor wetland surface water levels have been installed in the identified potential Jefferson Salamander breeding wetlands within the PSA. Water level gauges will be monitored bi-monthly in June, July, August, and will also be monitored once in early September. During hydroperiod monitoring site visits, conditions of each wetland will also be documented by photographing each wetland from a designated photo-monitoring location. NRSI will complete this task in collaboration with MTE. This task has been undertaken in 2020 through 2022 to obtain 3 consecutive years of sampling in all potential breeding ponds.

Mammal Surveys

- American Badger (*Taxidea taxus jacksoni*) survey will be completed to look for dens or evidence of species use throughout the hedgerows and field edges of the Northgate property and immediately adjacent lands only. Surveys will be completed according to methods employed during the North Waterloo Scoped Subwatershed Study (NWSSS) (Ecoplans et al. 2013). Completed in 2018 and 2023.
- Winter wildlife surveys will be completed according to the Region of Waterloo Greenlands Network Implementation Guidelines (2016) and will include 2 surveys during appropriate weather conditions between January-February. Surveys include mammal tracking, winter raptor use, and presence of resident birds. This task was completed annually in 2020 through 2023.

Road Mortality Surveys

- To supplement wildlife surveys, road mortality surveys will be conducted on the full length of the road segments within the PSA; including Bisch Street, Erbsville Road, and Conservation Drive. The primary objective of the surveys is to document herpetofauna traveling across roads, however all wildlife mortality will be documented. To capture the highest movement periods of target herpetofauna, surveys will be conducted in the spring during favorable conditions for amphibian movement (i.e. evenings during rainy/humid nights). Any observations of road mortality during all other visits to the study area in spring/summer/fall in the mornings or late afternoon/evenings will be recorded. The methods described are consistent with the NWSSS (Ecoplans et al. 2013). Road mortality surveys have been completed in 2021 and 2022.

Culvert Assessment

- An assessment of fish and wildlife movement has been carried out at the Laurel Creek culvert in 2021. Fish passage was assessed based on the culvert dimensions, flow, substrate, presence of barriers, etc. Wildlife movement was also assessed at the culvert based on its dimensions and openness, presence of habitat on both sides and within, evidence of use, presence of barriers, and

other factors such as those provided in guidance documents by MTO, Conservation Halton, and Credit Valley Conservation.

Terrestrial Feature Monitoring

- Monitor and document the general condition of natural features within the PSA according to the City of Waterloo's Development Monitoring Protocol (1999) document for pre-construction (Section 2.2.3). Conducted twice annually (spring and fall) by walking through portions of the PSA and documenting the following. This task has been completed annually from 2018-2022.
    - General health of vegetation and trees
    - Evidence of soil movement
    - Evidence of human disturbance or encroachment
    - General fish and wildlife observations
    - Overall conditions

Aquatic Surveys

- Aquatic habitat characterization of Laurel Creek and its tributary flowing south from the Northgate property under Conservation Drive. Habitat characterization to be completed once during the summer season. This task was completed in 2018 and 2022.
- Fish sampling once annually during the summer season at 2 stations in the PSA. The sampling will consist of backpack electrofishing using the multiple pass method and will be carried out using the Ontario Stream Assessment Protocol (OSA) (Stanfield 2017). This task has been completed in 2019, 2020 and 2021.
- Benthic invertebrate sampling twice annually (spring and fall) at 2 stations in the PSA, located at the same locations as the fish community sampling. The sampling and assessment will involve the kick-and-sweep method and will be carried out using the Ontario Benthic Biomonitoring Network Protocol (OBBN) (Jones et al. 2007) and according to the same methods used in the NWSSS (Ecoplans et al. 2013). Benthic sample identification and analysis will be completed by certified NRSI taxonomists at NRSI's in-house laboratory. This task has been completed annually from 2018-2022.
- Brook Trout spawning survey will be carried out in the fall to document Brook Trout spawning activities in Laurel Creek and the Laurel Creek Tributary. The survey will be completed within the portion of the Laurel Creek in the Primary Study Area, which extends from Erbsville Kartway to the crossing of Schnarr Street, as well as the Laurel Creek Tributary from Erbsville Kartway to Conservation Drive, as access permits. Three visits will occur from mid-October through mid-November, with each visit spaced approximately two weeks apart. An aquatic biologist will visually survey Laurel Creek and the Laurel Creek Tributary in an upstream direction and will document Brook Trout spawning activities, including the presence of redds (including redd quality), and spawning behaviour exhibited by Brook Trout that may include observations of fish on redds, redd excavation, and swimming pairs. Spawning observations will be recorded along with a UTM

coordinate. Additional notes will also be taken, which will include substrate compositions, general habitat and flow characteristics, and any observations of groundwater indicators (ex. watercress, iron staining, seeps/springs). This task has been completed in 2021 and 2023.

- In addition to the continuous stream flow monitoring, 2 manual measurements during low flow periods will be taken to confirm a connection with the groundwater table and to help identify groundwater discharge areas along the creek corridor. Seeps and springs along the creek corridor and within wetland areas will also be noted during aquatic habitat surveys.
- Spot measurements of water temperature, dissolved oxygen and turbidity will be taken in Laurel Creek and the Laurel Creek Tributary four times per year for high flow and four times per year for low flow to ensure that both high flow and low flow conditions are captured.

Insect Surveys

- Three targeted surveys for Lepidoptera, Odonata, and provincially significant bumblebees (*Bombus* spp.) during June-August during appropriate weather conditions according to the Waterloo Region's Greenlands Network Implementation Guidelines (2016) and standardized survey methods for SAR/SCC bumblebees (Colla and Taylor-Pindar 2011). Insect surveys have been completed in 2021 and 2022

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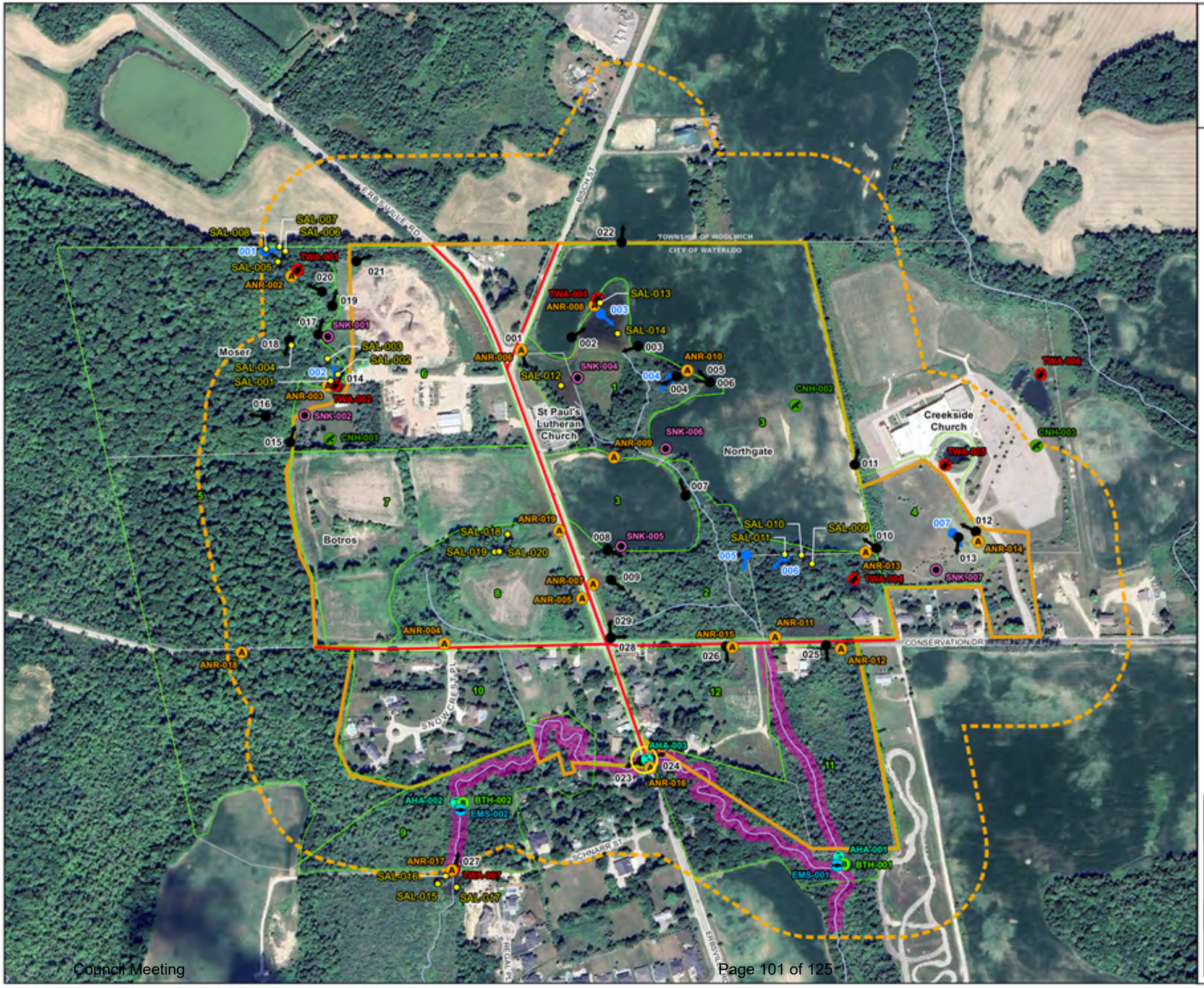
APPENDIX F

BIOLOGICAL MONITORING LOCATIONS

Appendix F

Erbsville North District MESP and District Plan

Biological Monitoring Locations



Legend

- Primary Study Area
- Secondary Study Area
- Parcel
- Wildlife Survey Unit (Approx.)
- Wildlife Road Mortality
- Photo Monitoring Station
- Hydroperiod Photo Monitoring Station
- Watercourse
- Brook Trout Spawning Survey
- Fish and Wildlife Passage Assessment
- Salamander Trapping Station (SAL)
- Common Nighthawk Station (CNH)
- Aquatic Habitat Assessment Station (AHA)
- Anuran Call Station (ANR)
- Benthic Sampling Station (BTH)
- Electrofishing Monitoring Station (EMS)
- Turtle Wintering Area Station (TWA)
- Snake Cover Board Station (SNK)

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

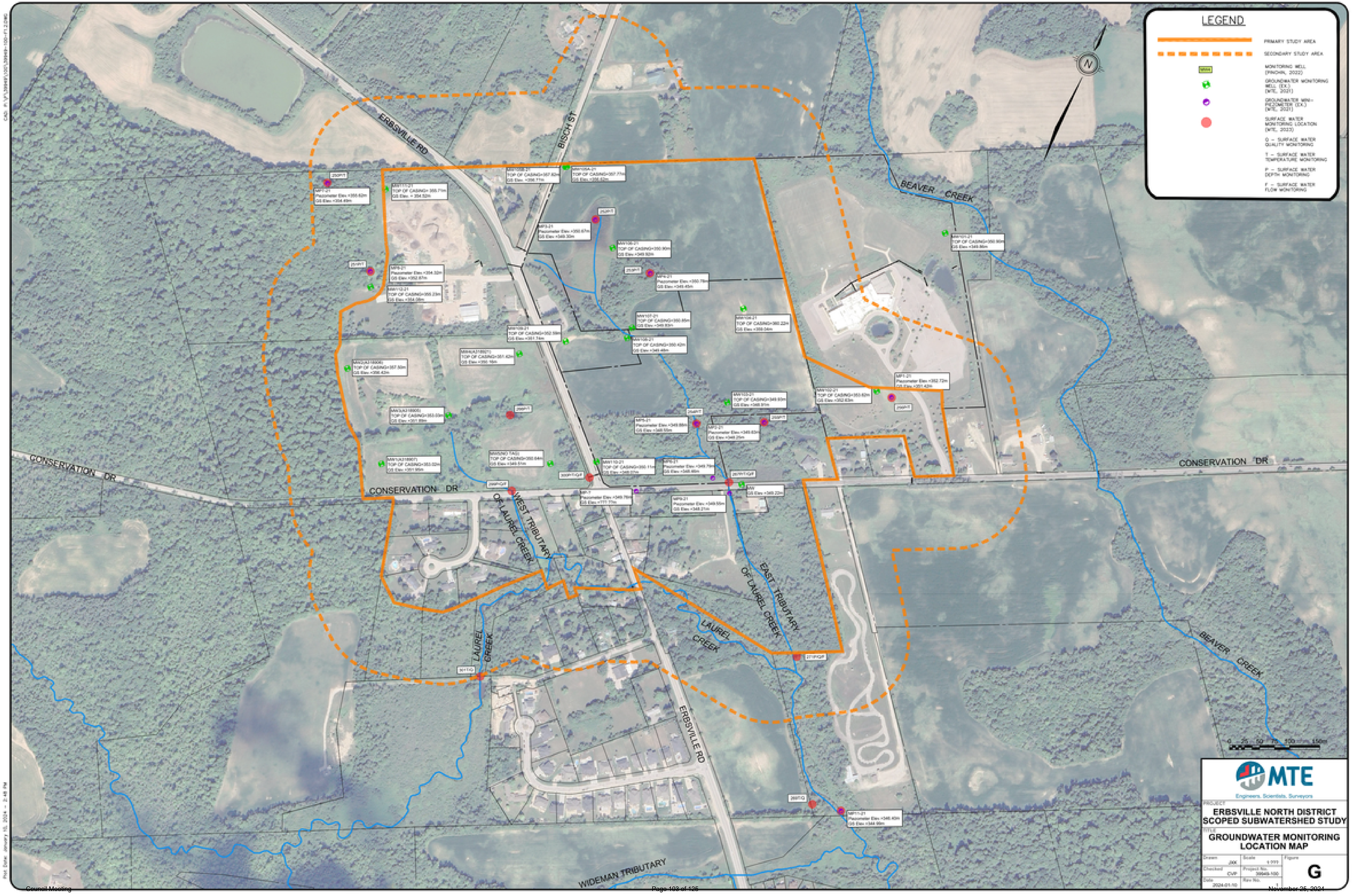
Project: 1589 Date: August 23, 2024	NAD83 - UTM Zone 17 Size: 11x17" 1:5,000

0 50 100 150 200 250 300 Metres

Path: X:\1589_ConservationOrConstraints\NRSI_1589_AppF_BiologicalMonitoringLocations_5K_2024_08_23_DNH.mxd

APPENDIX G

GROUNDWATER MONITORING LOCATIONS


LEGEND
PRIMARY STUDY AREA
SECONDARY STUDY AREA
MONITORING WELL (PINCHIN, 2022)
GROUNDWATER MONITORING WELL (EX.) (MTE, 2021)
GROUNDWATER MINI-PIEZOMETER (EX.) (MTE, 2021)
SURFACE WATER MONITORING LOCATION (MTE, 2022)
Q – SURFACE WATER QUALITY MONITORING
T – SURFACE WATER TEMPERATURE MONITORING
P – SURFACE WATER DEPTH MONITORING
F – SURFACE WATER FLOW MONITORING
ERBSVILLE RD
BISCH ST
BEAVER CREEK
CONSERVATION DR
WEST TRIBUTARY OF LAUREL CREEK
EAST TRIBUTARY OF LAUREL CREEK
LAUREL CREEK
WIDEMAN TRIBUTARY
0 25 50 75 100 m 150m
MTE
Engineers, Scientists, Surveyors
PROJECT
ERBSVILLE NORTH DISTRICT SCOPED SUBWATERSHED STUDY
TITLE
GROUNDWATER MONITORING LOCATION MAP
Drawn: BR
Checked: CVP
Date: 2024-01-10
Scale: 1:???
Project No.: 3994B-100
Rev No.: 1
Figure: G

STAFF REPORT
Chief Administrative Officer

Title:	Land Donation – 0 Wilmot Line, Waterloo
Report Number:	CAO2024-030
Author:	Robin Milne, Tim Anderson, Paul Hettinga
Council Date:	November 25, 2024
File:	N/A
Attachments:	Location Map
Ward No.:	Ward 2 - Northwest

Recommendations:

1. That report CAO2024-030 be approved;

2. That the land donation of the 3.69 acres of “Environmentally Sensitive” Woodlot Lands be accepted as per an Agreement of Purchase of Sale acceptable to the City Solicitor.

3. That the Mayor and Clerk be authorized to sign the Agreement of Purchase and Sale.

A. Executive Summary

A 3.69 acre parcel of land located at 0 Wilmot Line, legally described as Part Lot 44 German Company Tract, City of Waterloo, Regional Municipality of Waterloo, Ontario, Tax Roll 040 001 15900 0000 is being donated to the City of Waterloo at the request of the family. The 3.69 acres have been designated “Environmentally Sensitive Landscape” Woodlot Lands zoned “Environmentally Sensitive Landscape Two (ESL2)”. As part of the donation process, the owners would receive a charitable tax receipt. The City would also enter into an agreement stipulating the lands remain in a natural state. Such an agreement would reinforce the policy direction of the Official Plan. From an operational perspective, the implications of acquiring the property would be minimal and primarily related to expansion of the city’s existing Forested Hill Environmentally Sensitive Policy Area (ESPA) with potential for future recreational trail use. To facilitate the donation, an Agreement of Purchase and Sale has been prepared.

B. Financial Implications

In recognition of the land donation, the donators would receive a charitable tax receipt for the appraised value of the property. Operating impacts primarily related to woodlot and trail maintenance can be addressed within current budgets.

C. Link to Strategic Plan

(Strategic Priority 2 Environmental Sustainability and Climate Action)

The acquisition of this parcel of land supports the Environmental Sustainability and Climate Action Piller related to the objective of to invest in public open spaces and naturalization efforts to preserve and enhance the natural ecosystems in the City.

D. Previous Reports on this Topic

- None

Land Donation - Wilmot Line
CAO2024-030

Overview

The 3-person family that owns 0 Wilmot Line have reached out to the City of Waterloo and would like to donate to the property located East of Wilmot Line legally described as: Part Lot 44 German Company Tract, City of Waterloo, Regional Municipality of Waterloo, Ontario, Tax Roll 040 001 15900 0000.

The parcel is 3.69 acres in size and are designated “Environmentally Sensitive Landscape” Woodlot Lands zoned “Environmentally Sensitive Landscape Two (ESL2)”. The City of Waterloo Zoning By-law for designated “Environmentally Sensitive Landscape Two (ESL2)” lands include the following potential uses:

- Beekeeping, subject to compliance with the Ontario Bees Act
- Conservation lands, meaning natural resources areas including woodlots, wetlands, grasslands, water courses and related environmental buffers
- Parklands trails and pathways

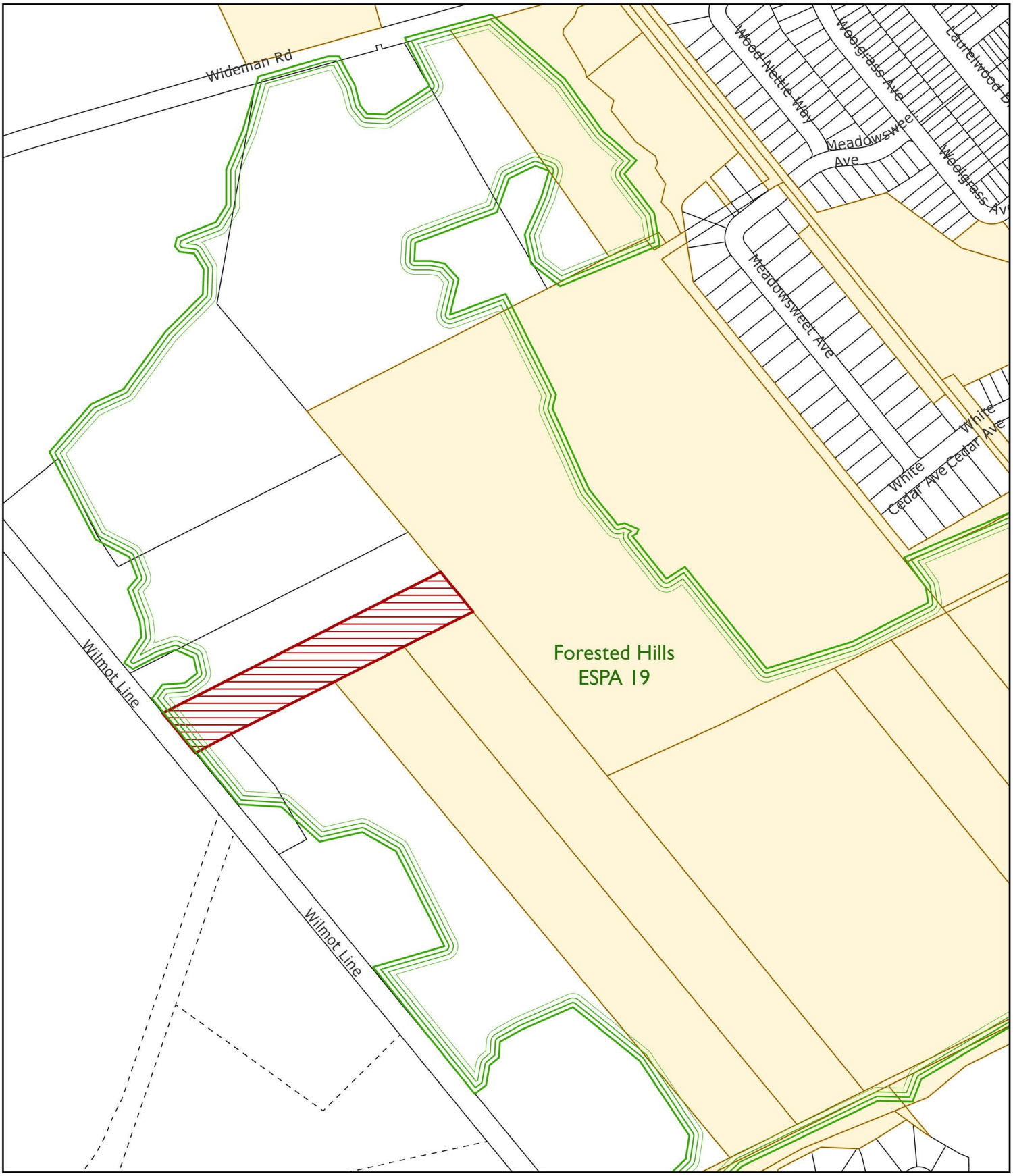
The subject property is located adjacent to City owned lands that are the largest woodland area of the City of Waterloo and is comprised of mostly hardwood forest. This area of the City is also functionally linked as part of the larger Waterloo Moraine which serves as a groundwater recharge area for the municipal water system.

Field Observations from November 1, 2024:

- 100% forest canopy on the property
- There is no fencing, survey markings or formal demarcation of the property and no encroachment from neighbouring properties.
- There is no formal or informal roadway, laneway, trails, or driveway on the property
- There is no evidence of imported fill on site

- There is no evidence of large excavations
- There are no structures on the property
- Heavily saturated soils, reasonable to believe the property plays a significant role in groundwater recharge
- Evidence of white tail deer movement
- No significant elevation gains from North to South or East to West
- Monastery Creek runs North/South through the middle of the property
- GRCA mapping shows the property as follows
    - Regulated watercourse

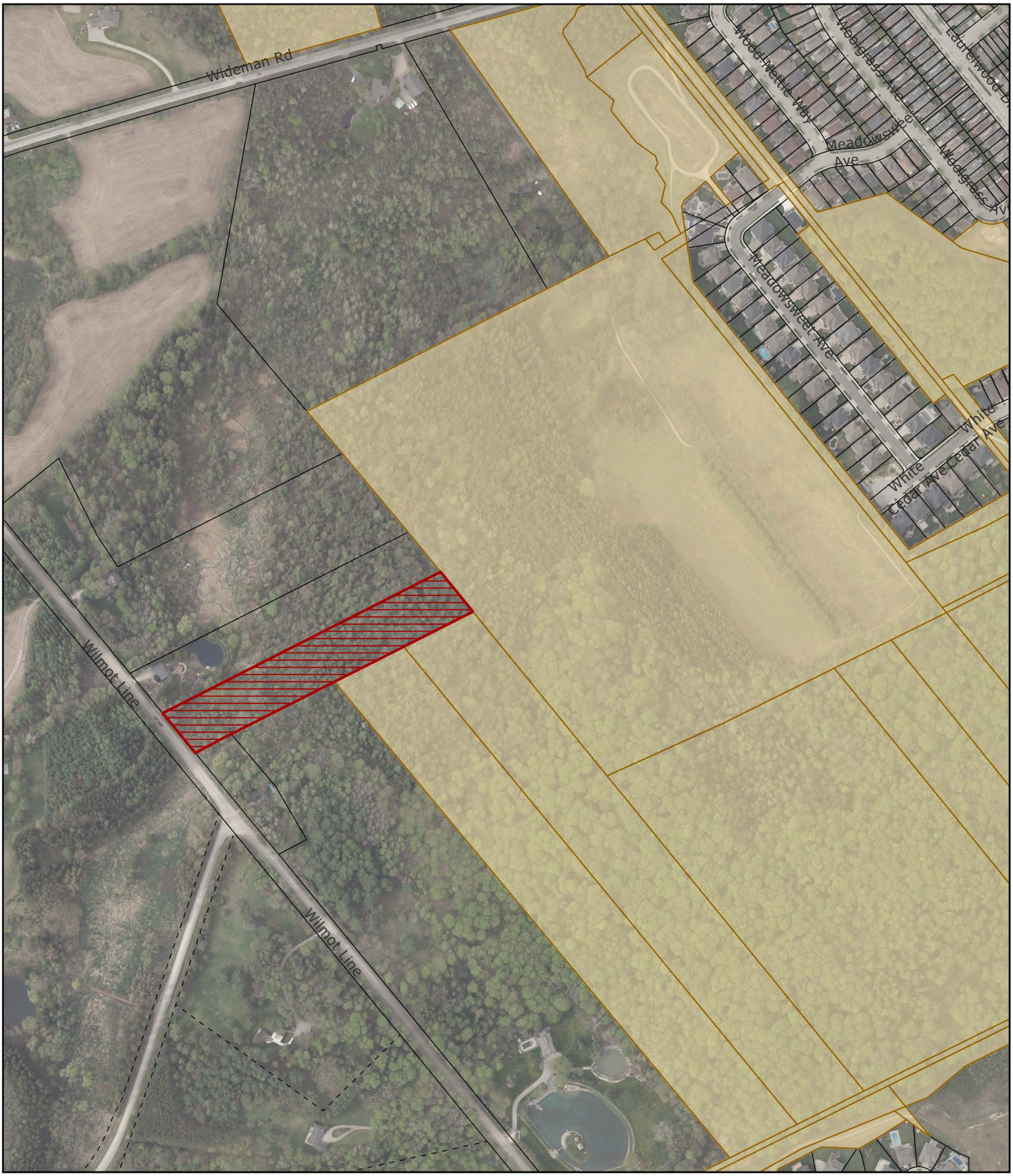
In summary the property would make an excellent addition to the City's "Environmental Reserves" category of parkland as defined in the Parkland Strategy. The property has no suitable land for active or passive parkland development.



Report CAO2024-030
Location Map

Part Lot 44, German Company Tract
PIN 22684-0043
Roll 3016-040-001-159-00-0000

Subject Property
City-Owned Land
Forested Hills ESPA 19



Report CAO2024-030
Location Map

Part Lot 44, German Company Tract
PIN 22684-0043
Roll 3016-040-001-159-00-0000

Subject Property
City-Owned Land

STAFF REPORT
Facility Design & Management Services

Title:	Funding Release for the Non-Routine Building Capital Renewal Project and the Uptown Rink Renewal Project
Report Number:	COM2024-044
Author:	Heather Liddycoat, Manager, Capital Program and Project Management
Council Date:	November 25, 2024
File:	202025/240034
Attachments:	NA
Ward No.:	City Wide

Recommendations:

1. That Council approve report COM2024-044.

2. That Council approve the release of the 2024 capital funding for the Building Capital Renewal project in the amount of $531,000, funded from the Capital Infrastructure Reinvestment Reserve Fund as per the approved 2024-2026 Capital Budget ref. #229.

3. That Council approve the release of the 2025 funding for the Building Capital Renewal project in the amount of $913,000 on January 1, 2025, funded from the Capital Infrastructure Reinvestment Reserve Fund as per the approved 2024-2026 Capital Budget ref. #229.

4. That Council approve the release of the 2026 funding for the Building Capital Renewal project in the amount of $700,000 on January 1, 2026, funded from the Capital Infrastructure Reinvestment Reserve Fund as per the approved 2024-2026 Capital Budget ref. #229.

5. That Council approve the release of the 2024 funding for the Uptown Rink Renewal project, in the amount of $265,000, funded from the Capital Infrastructure Reinvestment Reserve Fund as per the approved 2024-2026 Capital Budget ref. #338.

A. Executive Summary

This report seeks Council approval to release funding for two non-routine capital projects for 2024; ref. #229 Building Capital Renewal Program and ref#338 Uptown Rink Renewal.

The requested capital funding is critical for advancing ongoing Building Capital Renewal Projects, as detailed in the approved 2024 Capital Budget (ref. #229). This funding will support the renewal, replacement, repair, and upgrading of essential building systems, including architectural, electrical, mechanical, and structural assets. It will facilitate planned projects identified through building condition assessments and equipment end-of-life evaluations, as well as address any unplanned projects that may arise, ensuring that service levels across various facilities are maintained.

Additionally, funding is requested to support the Uptown Rink Renewal (ref. #338). In the short term, this funding is necessary for ongoing condition assessments and maintenance/repairs required to ensure the continued operation of the Waterloo Public Square Uptown Rink.

B. Financial Implications

This report is seeking the release of the 2024 approved capital funding in the amount of $531,000, funded from the Capital Infrastructure Reinvestment Reserve Fund as per ref. #229 for ongoing Building Capital Renewal Projects. Future disbursements of $931,000 as of Jan. 1, 2025, and $700,000 as of Jan. 1, 2026, are also included in the recommendations as per Council approval of the 2024-2026 capital budget.

Additionally, the report also seeks to release the 2024 approved capital funding in the amount of $265,000, funded from the Capital Infrastructure Reinvestment Reserve Fund as per ref. #338 for the Uptown Rink Renewal.

C. Technology Implications

N/A

D. Link to Strategic Plan

(Strategic Priorities: Reconciliation, Equity, Accessibility, Diversity and Inclusion; Environmental Sustainability and Climate Action; Complete Community; Infrastructure and Transportation Systems; Innovation and Future-Ready)

(Guiding Principles: Equity and Inclusion; Sustainability; Integrity; Workplace Wellbeing; Community-centred; Operational Excellence)

<u>Infrastructure and Transportation Systems</u>

- These projects will update existing assets to meet the present and future needs of the local community and ensure continued levels of service.

E. Previous Reports on this Topic

N/A

Funding Release for the Non-Routine Building Capital Renewal Project and the Uptown Rink Renewal Project
COM2024-044

Background

Like many municipalities, the City of Waterloo manages a diverse portfolio of built assets that vary in age and condition. Maintaining these assets at an acceptable level of service for the community presents a continuous challenge that necessitates ongoing funding. To support this effort, the Building Capital Renewal Program (ref. #229) was established as part of the 2024-2026 capital budget and 2027-2033 capital forecast.

The Facility Design and Management Services (FDMS) Team has identified several key projects to implement over the coming years, utilizing this funding to address the backlog of essential work and ensure the effective maintenance of our assets.

Project Details

Building Capital Renewal Program (ref. #229)

The funding in ref. #229 - Building Capital Renewal Program, will be used to support the renewal, replacement, repair, and upgrading of essential building systems at City facilities, including architectural, electrical, mechanical, and structural assets. It will facilitate planned projects identified through building condition assessments and equipment end-of-life evaluations, as well as address any unplanned projects that may arise, ensuring that service levels across various facilities are maintained. Some examples of projects that will be supported by this funding are provided below; however, it is important to note that this is not an exhaustive list of projects.

Bechtel Park Manulife Soccer and Sports Complex HVAC Renewal

The Bechtel Park Manulife Soccer and Sports Complex requires an HVAC renewal project that involves renewal of the mechanical Heating, Ventilation, and Air Conditioning (HVAC) systems and the domestic hot water heater at end of life with low carbon electric-powered units. Additionally, this project will retrofit existing interior office lighting with energy-efficient LED fixtures and upgrade the lighting and The project also includes new building controls. These improvements will enhance the facility’s energy efficiency and overall performance.

MSCC HVAC, Domestic Hot Water, Refrigeration, and Controls Renewal

The Moses Springer Community Center (MSCC) requires a renewal project for its mechanical Heating, Ventilation, and Air Conditioning (HVAC) systems, Domestic Hot Water (DHW) heating, refrigeration heat recovery infrastructure, and controls. As part of this project, we will retrofit all non-LED lighting fixtures with LED fixtures. Natural gas fired heating systems will be replaced with low carbon electric powered systems. This initiative aligns with the City's greenhouse gas reduction goals and aims to restore the HVAC asset performance profile to excellent.

The City has applied for funding through the Green and Inclusive Community Buildings Grant Third Intake to support this work. Should the grant application be unsuccessful, the required mechanical asset renewals will be funded through the Building Capital Renewal Program (ref. #229).

Fire Station 4 Electrification and LED Retrofit

Fire Station 4 is set to undergo an electrification and LED retrofit project, which includes replacing existing furnaces with Air Source Heat Pumps and converting gas-fired water heaters to electric units. Additionally, all existing interior lighting will be retrofitted to energy-efficient LED fixtures. These enhancements are vital for ensuring that our facilities continue to meet the community's needs efficiently and sustainably.

Uptown Rink Renewal (ref. #338)

The Uptown Rink, established in 2008, is a beloved winter destination for many Waterloo residents. The rink is nearing its end of life. As part of the 2024-2026 budget, an Uptown Rink Renewal project (ref. #338) has been created to address this ongoing need. In the short term, this funding will be utilized for ongoing condition assessments and necessary maintenance work to maintain the rink infrastructure, to allow for the continued operation of the Waterloo Public Square Uptown Ice Rink. In future budget cycles, staff will be seeking funding for the planning, design and construction of the replacement rink infrastructure.

The 2024 budget will enable FDMS staff to conduct a condition assessment of the rink. This assessment will help identify any existing issues, potential future failure points, and strategies for remediation. With a clearer understanding of the condition of this asset, FDMS will be better equipped to plan for future projects. Additionally, releasing this funding will allow staff to promptly address any necessary repairs or emergency work that may arise.

Financial Overview

Tables 1 & 2 show the funding release request for Building Capital Renewal Program and the Uptown Rink Renewal.

Table 1: Funding Approvals to Date and Estimated Costs for the Building Capital Renewal Program, ref#229, project #202025

Description	Report Number	Approval Date	Funding Source	Amount
FUNDING:				
Funding 2024	COM2024-044	Nov. 25, 2024	CIRRF	-$ 531,000
Funding 2025	COM2024-044	Jan. 1, 2025	CIRRF	-$ 913,000
Funding 2026	COM2024-044	Jan. 1, 2026	CIRRF	-$ 700,000
Total Funding				**-$ 2,144,000**
EXPENDITURES:				
Ongoing large capital repairs				$ 2,144,000
Total Projected Expenditures:				**$ 2,144,000**
Total				$ -

Table 2: Funding Approvals to Date and Estimated Costs for the Uptown Rink Renewal, ref#338, project #240034

Description	Report Number	Approval Date	Funding Source	Amount
FUNDING:				
Funding 2024	COM2024-044	Nov. 25, 2024	CIRRF	-$ 265,000
Total Funding				**-$ 265,000**
EXPENDITURES:				
Planned expenditures				$ 265,000
Total Projected Expenditures				**$ 265,000**
Total				$ -

STAFF REPORT
Economic Development

Title:	City of Waterloo Brownfield Tax Increment Grant (TIG) Program Renewal
Report Number:	CAO2024-018
Author:	Kristin Sainsbury and Julie Koppeser
Council Date:	November 25, 2024
File:	N/A
Attachments:	[Attachments]
Ward No.:	City Wide

Recommendations:

1. That CAO2024-018 be approved.
2. That Council amend Section 4.4 of Schedule “A” to By-law 2013-123 to remove the expiry date in respect of the City-Wide Brownfield’s Community Improvement Plan (Tax Increment Grant) Program, in order to permit the Plan to continue until such time as Council directs through a future by-law to dissolve the Community Improvement Project Area designated by By-Law 2013-107.
3. That the Mayor and Clerk be authorized to execute any enabling bylaw.
4. That staff be directed to notify the Region of Waterloo.

A. Executive Summary

A primary objective of The City of Waterloo (“The City”) and Region of Waterloo (“The Region”) brownfields program is to remediate and redevelop contaminated lands with a higher and more intensive land use based on defined eligibility criteria. If eligible, the remediation costs are financed through a Joint Tax Increment Grant (“TIG”) program between the City and Region.

The program shares the cost between the Region of Waterloo and the City of Waterloo approximately 65% and 35% respectively, based on the City-Regional tax split ratio, over a 1-10 year period. It is intended to help offset the redevelopment investment required via a rebate in annual property taxes, to offset the additional costs required to clean up a brownfield site. The intent is to incent development for housing on lands that require additional investment, compared to traditional greenfield sites. The ultimate

benefits to the community are a clean site, additional housing and increased future tax revenues after the TIG is fully repaid.

Over the duration of the program, there have been a total of four projects that have been approved. One fully completed (181 King Street South) with the others still pending as several of the developments have estimated completion dates of 2024 and beyond. Overall, these developments represent a1,292 increase in housing units.

In total, these approved TIGs represent up to $3,526,619 in City contributions. With current City property taxes of $57,025, these will drive a projected increase in annual City property tax revenue to $990,356. The TIG program has been receiving an increased number of inquiries in the past year in support of upcoming development projects. The program may be more desirable in the current economic climate that is seeing an increase in purpose-built rentals and tighter proformas, than previous markets, and it has demonstrated that is has value to the sites that have a higher level and cost to clean up.

Given the City's desire to stimulate housing development, the benefit relative to the cost to the City of an incremental increase in annual taxes of $933,330, and the recent increase in inquiries, staff feel a continuation of this program would be beneficial.

Inquiries	Currently Approved	Approved Maximum City Contributions	Allocated to Date
9	4	$3,526,619	$105,164

The City of Waterloo is the only City participating in the joint Brownfield TIG program with the Region that currently has a sunset clause. Cambridge and Kitchener as well as the Region have not established a definitive program end date, but it is at the discretion of either Regional or City Council to cancel the program at any time. Given the manageable level of historical uptake and the fact that Council will need to approve each application, it is being recommended that this program be extended without a defined end date in keeping with the other participating cities, and ensuring the disclaimer regarding cancellation by Council is noted.

B. Financial Implications

Extending the City Brownfield TIG Program will require the City to continue to provide a municipal property tax rebate (1-10 year payment schedule) for any eligible brownfield remediation cost incurred, funded from the net difference between the existing tax assessment and future tax re-assessment. Once the TIG is fully paid, the increased assessment resulting from the redevelopment would benefit the overall property tax levy in perpetuity.

During the repayment period, the Brownfield TIG program would impact Assessment Growth and the annual TIG amounts would need to be factored in before the Assessment

Growth is allocated in alignment with policy FC-013 Use of Budgeted Assessment Growth Revenue (60% to the operating budget, 30% to the Capital Infrastructure Reinvestment Reserve Fund (CIRRF) and 10% to the Capital Reserve Fund (CRF)).

C. Technology Implications

There are no technology implications associated with this report.

D. Link to Strategic Plan

(Strategic Priorities: Reconciliation, Equity, Accessibility, Diversity and Inclusion; Environmental Sustainability and Climate Action; Complete Community; Infrastructure and Transportation Systems; Innovation and Future-Ready)

(Guiding Principles: Equity and Inclusion; Sustainability; Integrity; Workplace Wellbeing; Community-centred; Operational Excellence)

- The Brownfield Tax Increment Grant (TIG) Program Renewal is linked to the Sustainability and Climate Action strategic priority through incentivizing the clean-up and redevelopment of contaminated sites, in alignment with the guiding principle of sustainability through planning for the long term, prioritizing sustainability and taking meaningful action to address environmental, social and economic goals.

- The program renewal is also linked to the Community-centred guiding principle through supporting liveable neighbourhoods and is in alignment with the strategic priority of Complete Community to achieve a high quality of life for all residents and overall community vibrancy through strategic density, diverse housing options other amenities.

E. Previous Reports on this Topic

- CAO2024-009 Brownfields Financial Incentive Program – TIG for 119 Roger Street
- CAO2019-024 Brownfields Financial Incentive Program – TIG Program for 119 Roger Street
- IPPW2022-029 - Z-21-11 99-107 Roger Street Reids Heritage Homes.pdf
- IPPW2021-019 Z-20-04 93-119 Roger Street Reids Heritage Homes.pdf
- CAO2019-016 City Brownfield Program Extension
- IPPW2018-005 Zone Change Application (Z-17-06) for 119 Roger Street
- IPPW2013-063 City-Wide Brownfields Community Improvement Plan

City of Waterloo Tax Increment Grant (TIG) Program Extension

1.0 Background

On December 2, 2013, City Council adopted By-law 2013-123 that introduced a new City-Wide Brownfields Community Improvement Plan Program that enabled the Tax Increment Grant (TIG) incentive. This program is combined with a Regional TIG incentive and the City program had an original sunset clause of December 2018. This sunset clause was extended to December 30, 2019 through the 181 King Street Brownfield TIG Application (Report CAO2018-014). Then on June 17, 2019, Council approved an extension to the City Brownfields Community Improvement Plan for five (5) years to December 2024 (By-law 2019-049). The City Brownfield TIG program will expire at the end of December and staff are seeking to extend the program on an ongoing basis until such time that Council directs through a future by-law. The City of Waterloo is the only local city to have a sunset clause applied to its City Brownfield TIG Program. Both Cambridge and Kitchener do not specify a program end date however, it is noted that the program may be discontinued at the discretion of either Regional or City Council at any time.

In developing a definition for the City of Waterloo and Region of Waterloo Joint TIG Program, a performance-based definition was adopted to assist in determining site eligibility. Since only brownfield sites that have been remediated and redeveloped would be eligible for a TIG, the term “remediated brownfield” is defined as follows:

> A property which contained environmental contamination either in the ground or buildings due to the operational activities of a previous land use, where the extent of the contamination rendered the property vacant, under-utilized, unsafe, unproductive or abandoned, and for which a Record of Site Condition has been filed.

Brownfield sites pose financial challenges to a developer. In some instances, the cost of remediation may deter private sector redevelopment of these brownfield opportunities. In advance of approvals, developers are required to front costly environmental studies and the element of risk makes lenders reluctant to advance capital or causes them to impose higher interest rates on loans. Brownfield redevelopment can also be hampered by higher legal and insurance costs to protect against future liability associated with brownfields. As a result of these challenges, clean-up costs can exceed the value of

clean land, thus making a number of brownfield sites unattractive from a market perspective and perhaps delaying the redevelopment and potential for new housing units.

2.0 Benefits of a Brownfield TIG

Brownfields are often centrally located (such as Uptown or locations such as former gas stations, dry cleaners or properties with former industrial use), and if redeveloped, can revitalize older properties by accommodating housing and/or employment. Redeveloping brownfields reduces the risk to groundwater contamination and public health, while generating employment opportunities as well as additional tax revenue for both the City and Region.

The Brownfield TIG leverages regional funding of approximately 65% matching to incentivize brownfield redevelopment within the City of Waterloo, using the Regional and City incremental portion of taxes (the amount that municipal property taxes increase after a property is redeveloped and reassessed by MPAC) to fund eligible remediation costs for contaminated sites.

Other benefits include additional housing, increased tax assessment in perpetuity after TIG repayment, spin off effects such as employment and permit revenues, and public health benefits. From the applications received it appears that this program is most relevant to those sites with higher levels of contamination and/or clean up costs. It is also anticipated that the program could benefit purpose-built rental projects than other building-types.

The initial TIG program was developed through public consultation and review of other municipalities as well as a Discussion Paper that included an assessment of potential brownfield properties.

3.0 Community Improvement Plans (CIP)

A TIG is a program that falls under Section 106(3) of the Municipal Act that allows for Municipalities with provisions in their official plans to designate a by-law for the purpose of establishing a community improvement project area (CIP).

Specific provisions in Section 28 of the Act provide that for the purpose of carrying out a CIP, municipalities may acquire, hold and sell land; and construct, repair, rehabilitate and dispose of buildings thereon. They may also provide grants or loans to registered owners, assessed owners and tenants of lands and buildings within the community improvement project area, and any person to whom such an owner or tenant has assigned the right to receive a grant or loan, to pay for the whole or for any part of the

cost of rehabilitating such lands and buildings in conformity with the community improvement plan.

The creation of the Brownfield CIP utilizing a Tax Increment Grant (TIG) was in alignment with provincial, regional and municipal policies to direct growth to built up areas, to meet intensification targets and promote transit-supportive densities—as many of the city's brownfield sites are located in the Uptown.

4.0 Current TIG Program Summary

The City of Waterloo / Region of Waterloo Joint Tax Increment Grant (TIG) Program provides financial assistance to private sector developers to offset the costs of remediating brownfield sites. A TIG is a grant equal to the full amount, or a portion of the amount, that municipal property taxes (City and Regional) increase after a property is reassessed.

Calculation of the tax increment will occur only after the property has been reassessed by the Municipal Property Assessment Corporation (MPAC). The TIG will commence in the first year following remediation, redevelopment of the property, and reassessment from MPAC. The tax increment does not include assessment increases/decreases in municipal taxes due to a general tax rate increase/decrease, or a change for any other reason and the TIG does not exempt property owners from regional or municipal taxes owing prior to, during, and after the remediation and redevelopment is completed. The total amount of the TIG shall not exceed the value of total eligible costs net of any other government financial assistance received by the owner/applicant for remediation.

Applicants who are approved for a TIG enter into a legal agreement with the City of Waterloo and the Region of Waterloo. The legal agreement establishes the terms and conditions of payment, obligations of the municipalities and property owner(s), and the defaults and remedies.

For sites of exceptional size or complexity, or for those that involve very lengthy remediation, the terms of the TIG may, at the discretion of City and/or Regional Council, be set on a case-by-case basis and may be phased.

5.0 Program Eligibility Requirements

To be eligible for the Brownfield TIG Program, all of the following criteria must be met:

1. The property must meet the definition of a "remediated brownfield";
2. The property must be located within the designated Community Improvement Project Area;

3. The applicant must be the registered owner of the site or the approved assignee of the owner and must demonstrate clear title and responsibility for the land at the time the TIG is approved by City Council;

4. The applicant/owner cannot be responsible for causing the on-site contamination that requires remediation;

5. The remediation and redevelopment undertaken must result in a minimum increased property reassessment value of $100,000;

6. The Phase I and Phase II Environmental Site Assessments must be completed by a “Qualified Person” as defined by Ontario Regulations 153/04 before a TIG application can be submitted;

7. Redevelopment plans must meet all approved policy and must comply, to the extent required by Council and its delegate(s), with applicable design guidelines.

8. The property must not be in tax arrears; and

9. Applications for the TIG Program must be made prior to the issuance of a building permit(s) for redevelopment.

6.0 Program Eligible Costs

Eligible brownfield remediation costs may include:

1. Phase I Environmental Site Assessments;

2. Phase II Environmental Site Assessments (excluding any portion already funded by the Region of Waterloo under its Phase II ESA Grant Program);

3. Indirect Remediation Costs to a maximum of 10% of eligible brownfield remediation costs. Such indirect costs can include planning fees, legal costs, financing costs associated with remediation, insurance premiums, assessment estimates, and the preparation of Record of Site Condition;

4. Environmental remediation work identified in a remediation work plan, excluding work completed prior to 12 months of filing of an application. Remediation work would include, but is not limited to:

a) Remedial work plans;

b) Risk assessments;

c) Environmental Rehabilitation;

d) Disposal of contaminated soil;

e) Placing of clean fill and grading; and

f) Building demolition related to remediation.

The applicant must provide estimates, prepared by qualified professionals, of the cost of rehabilitating the property to permit the filing of a Record of Site Condition, the cost of complying with any certificate of property use issued under the Environmental Protection Act, and the cost of any proposed building conversion or rehabilitation proposal, all of which must be prepared by a qualified professional. The City and the Region reserves the right to independently audit the actual costs at the expense of the property owner.

Note that TIGs are not intended to cover redevelopment costs.

7.0 Recent Activity

Since 2013, the City has experienced significant intensification activity. During the past year the City has received growing interest in the Brownfields program. City staff recommend extending the City Brownfield TIG Program without a set end date, but subject to the discretion of either Regional or City Council to cancel the program at any time.

It should be noted that each brownfield application will still require Council approval and the opportunity for Council to approve each application based on its merits. The process is largely managed at the Regional level with City Economic Development staff sitting in and commenting on applications, City Finance staff provide City financial calculations, and City staff prepare reports to Council and administration of the TIG post approval. The program to date has not been determined to have a significant impact on current staff resources.

Brownfield applications that have received an approved “BFIP Eligibility Letter” from the Region of Waterloo prior to July 31, 2019 are considered to be under the “grandfather” provision with the previous program rules and could still be eligible for the now phased-out Regional Development Charge (RDC) program. The current TIG funded program approved by the Region and City represents an approximate 65% (Region of Waterloo share) and 35% (City of Waterloo share) based on current property taxes splits.

The program across the region has had a total of 95 applications submitted with 24 TIG Applications approved totalling $50,445,350 of regional tax deferrals. Regionally the impact from the program has resulted in 7,079 new residential units, 2.4 million square feet of non-residential floor space and over $1.4 billion in increased property

assessment values. The overall average return on investment regionally is estimated to be 16% with an average time to reimburse remediation costs as approximately 6 years.

8.0 Approved City of Waterloo Brownfield Applications:

The City of Waterloo has had a total of 4 (93, 97, 99, 103, 107, 109, 111, and 119 Roger Street one application, with 3 phases) applications submitted with an estimated cost to the City of $1.38 million. This program has resulted in 1,292 new residential units with increased total assessed value of $284 million, and over $990,000 in future annual property taxes.

Address	Approval Date	Estimated City TIG Cost	Estimated Assessed Value (after completion)	Estimated Future Property Taxes
215 Lexington Rd.	Aug 24, 2020	$12,434	$46,947,000	$153,369
70 King St. N.	Oct 21, 2019	$ 404,829-$2,167,832	$103,857,000	$376,980
93, 97, 99, 103, 107, 109, 111, and 119 Roger Street - Initial Registration Phase	March 18, 2024	$728,954	$29,382,000	$95,987
93, 97, 99, 103, 107, 109, 111, and 119 Roger Street - Phase One	March 18, 2024	$392,820	$14,290,000	$46,683
93, 97, 99, 103, 107, 109, 111, and 119 Roger Street - Phase Two	March 18, 2024	$119,415	$25,980,000	$84,873

181 King Street (fully complete)	May 14, 2018	$105,164	$63,786,000	$232,464
TOTAL		**$3,526,619**	**$284,242,000**	**$990,356**

10.0 Conclusion

Staff recommend the extension of the Brownfield CIP (TIG) without a defined program end-date but subject to future discretion of Council to cancel the program at any time. The TIG requires manageable staff time to administer and does not require use of current tax funds, rather being funded from future tax assessment growth from an improved property. While the uptake on the program to date is low, the number of inquiries recently points to a growing interest in the program. This program appears to benefit the more expensive and difficult sites to remediate so offers incremental value to the city by providing added benefits of new housing units coupled with clean sites that remove the potential ground water and public health threats.