APPENDIX A

Engagement Plan and Outcome Summaries

Bartley Smith Greenway Trail Gap Feasibility Study – McNaughton Road to Keele Street

COMMUNICATION & ENGAGEMENT STRATEGY

DRAFT – JULY 2021

TABLE OF CONTENTS

1 STRATEGY OVERVIEW

The City of Vaughan has retained WSP to complete a feasibility study and 30% design to fill critical gaps in the Bartley Smith Greenway (BSG) Trail (the "Project"). The Project is located along a 3 km segment in the Upper West Don River Corridor between McNaughton Avenue and Keele Street. The BSG is part of the 100 km city-wide Vaughan Super Trail, a signature recommendation of the City's 2020 Pedestrian and Cycling Master Plan, recently endorsed by City Council. Filling the gaps to provide a continuous north-south pedestrian and cycling trail will provide recreation and active transportation opportunities for residents as well as other community benefits. It also supports several other strategic plans of the City such as the Official Plan, Green Directions Vaughan, Vaughan Active Together Master Plan, and the TRCA Trail Strategy.

Stakeholder and community engagement is a critical component of this Project and will help mitigate risk and inform the work prepared by the technical team in collaboration with City staff.

1.1 STAKEHOLDER & INDIGENOUS MANAGEMENT PLAN

The Stakeholder Management and Communication Strategy (the "Strategy") has been developed to identify a comprehensive, accessible, creative and meaningful approach to consultation, engagement and communication over the course of the project. Given the complexity of the Project, a coordinated engagement approach, tied to key milestones, is vital to support the various deliverables and ensure a cohesive message to the community and stakeholders. The Strategy is comprised of three main components:

1. **Stakeholder Management Plan** – provides an overview of the key audiences that will be engaged, their communication and engagement preferences, and commitment to the planning process;
2. **Engagement Strategy** – provides an overview of the proposed consultation and engagement techniques and tactics which will be used to gather input over the course of the Project; and,
3. **Communication Plan** – Provides an overview of the internal and external communication protocols that will be used to implement the Stakeholder Management and Communication Strategy.

The Strategy that has been developed for this Project is meant to be a living, flexible document. What is presented / recommended in this Strategy may change depending on how the technical work program progresses, the evolving impacts of COVID-19, as well as other engagement opportunities or challenges that emerge. The contents are not meant to be prescriptive but a point of reference during the Project which will help to shape the outreach, promotion, communication and engagement undertaken with various stakeholder groups and audiences. As this Project evolves, there may be opportunities or requirements to confirm or align elements of this Strategy with other projects to ensure a coordinated approach.

1.2 STAKEHOLDER & INDIGENOUS ENGAGEMENT APPROACH

Our consultation and engagement approach reflects our depth of experience in the field of facilitation and engagement. The program has been uniquely developed and tailored to reflect

the needs of The City of Vaughan, its residents and its key stakeholders. In order to develop consensus and buy-in, our team is outlining an approach that aligns with the international best practices as defined by the International Association of Public Participation (IAP2). The IAP2 process recognizes that engagement should be planned and delivered with the goal of achieving project specific objectives. Engagement should also be tailored to the consultation and communication preferences of those who will be involved in the development of the Project deliverables.

The level of public participation selected is dependent upon the context of the decision and the desired level of involvement of each stakeholder. It is not intended that every level be applied to every project. Not all stakeholders have the same level of involvement, commitment, interest and decision-making ability and thus should be engaged at different points in the process in different ways. The IAP2 process identifies a spectrum of five levels of involvement **(Figure 1)** and encourages decision makers to define the objectives, stakeholders and level of involvement early in the engagement planning process. It is important to note that the level of engagement and involvement is not stagnant. As the Project progresses, the level of involvement will shift based on the audience that is being engaged and the objectives of the engagement milestone. Throughout the Strategy, the IAP2 "level" will be identified for both the audience group as well as the engagement tactics.

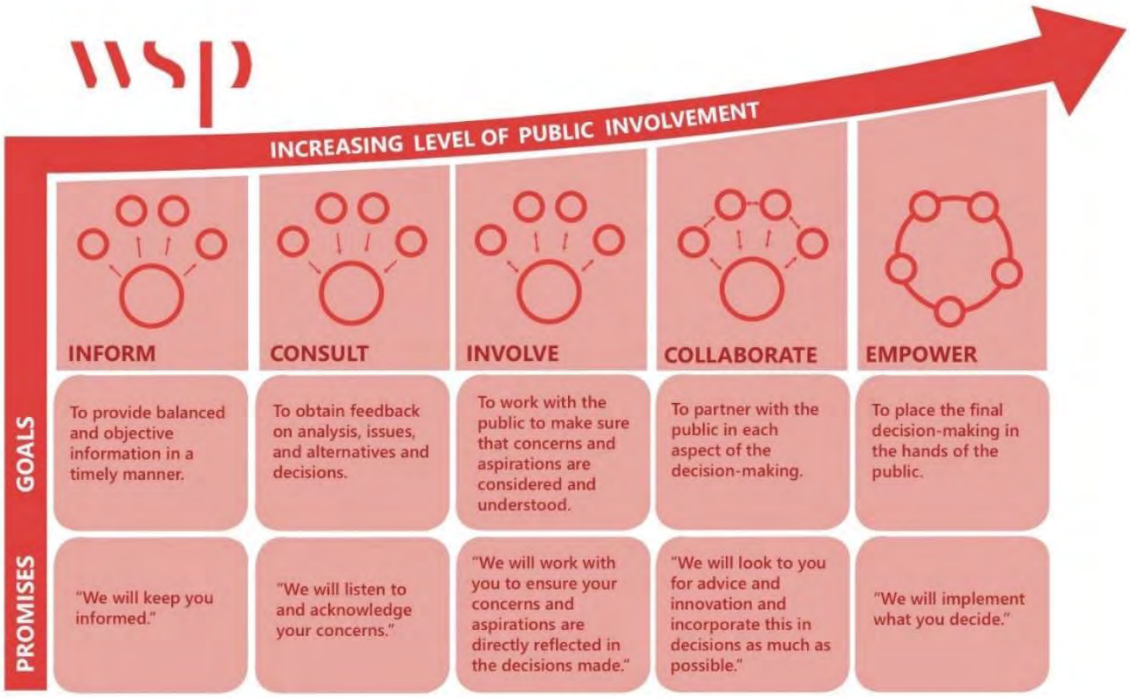


Figure 1 - IAP2 Spectrum of Public Participation

1.3 STAKEHOLDER & INDIGENOUS ENGAGEMENT OBJECTIVES

A meaningful and effective engagement and communication program that aligns with the principles and processes of the IAP2 approach is based on two core elements – the objectives for the engagement milestones and effectively reaching the various audiences. Over the course of the work plan each stage of engagement – as described in Section 3.0, will have its own unique objectives. At a higher level, the overall project and its components will adhere to and aim to achieve the following objectives and monitor and evaluate success to determine their fulfillment.

- **Foster collaboration** among City departments and external agencies;
- **Build trust** between the City, its partners, stakeholders and the public;
- **Gain informed, meaningful input** by providing stakeholders with the information and tools they need;
- **Build awareness** of the need to provide opportunities for active transportation and recreation by filling gaps in the trail;
- Demonstrate that the City is **committed to new approaches & technologies**, while providing a range of engagement options to meet the needs of the community; and,
- Engage in a manner that is **proactive, invested, and true** to the objectives.

This Strategy is meant to be a flexible and adaptable blueprint related to engagement, consultation and communication for City staff, its partners, and the consultant team to reference as we progress through the Project.

2 STAKEHOLDER MANAGEMENT PLAN

Stakeholder management is based on a comprehensive understanding of interested or potentially interested parties. Once that list has been created, it is important establish a plan to appropriately reach and engage each of those groups. A stakeholder management cycle identifies the steps and stages that are used to initiate communication and engagement, track participation and input received and respond to and monitor inquiries and changes. A typical management cycle is made up of four steps.

- **Step 1: Identify Stakeholders |** Identification of the key target audiences that will be informed and provide input over the course of the study.
- **Step 2: Analysis of Stakeholders |** Consider the different stakeholder groups and identify their current level of contribution and their anticipated commitment.
- **Step 3: Plan & Execute Activities |** Identify appropriate consultation and engagement activities for each audience and undertake those activities (documented in Section 3.0).
- **Step 4: Monitor & Document |** Document input received and outcomes of consultation events and follow-up with inquiries, requests or issues as they arise.

For the purposes of an IAP2-driven engagement program, the Stakeholder Management Plan serves as the mechanism by which the IAP2 process is developed and applied. The steps are meant to be completed in sequence; however, depending on issues and opportunities that arise, the project team may select to return to earlier stages in the process.

For example, should an additional stakeholder be identified once the Strategy has been initiated, an additional assessment of potential issues and opportunities, as well as an analysis of their contribution and commitment would be undertaken. The outcomes of steps one through three are completed within this document. The proposed approach for step four will need to be undertaken as the Project progresses based on available information. It is important to note that the information contained within the Stakeholder Management Plan is very subjective in nature and is not meant to be shared beyond the core Project Team. There is a critical assessment of the stakeholder groups, which serves as the foundation for identifying engagement and communication preferences and practices and should not be shared with those groups. These preferences and practices should be confirmed or adapted (as needed) through pre-consultation and engagement over the course of the Project.

The assessment that is undertaken for these stakeholder groups helps to define the level of involvement as per the IAP2 approach which is presented in **Table 1** below. It is also important to note that the level of involvement of each group is not stagnant and will shift depending on the point in the Project and the objectives of engagement.

2.1 STEP 1: IDENTIFYING STAKEHOLDERS

Based on initial discussions with City staff, nine stakeholder groups have been identified. The table below **(Table 1)** provides an overview of each of the groups, a brief description including background / context regarding the group, and an overview of recommended individuals and / or organizations that would be contacted to participate in the project. The information contained within the table is meant to be a starting point from which the consulting team works with City staff to confirm the preferred contacts. Not all members of the groups identified will be required to participate in every engagement opportunity. The specific contacts will be confirmed with the City prior to notification.

Table 1 - Project stakeholder groups and membership

GROUP & IAP2 LEVEL	DESCRIPTION	MEMBERSHIP
Internal Staff Members Up to Collaborate	Internal Staff will include individuals who will be impacted, day to day, by the outcomes of the Project and who are responsible for implementation and next steps. The Project Team will coordinate a series of meetings with City staff at key Project milestones to ensure a coordinated approach.	– Environmental Services; – Operations; – Forestry; – Landscape Architecture; – Heritage; and – Additional staff as required.
The Wider "Public" in the Form of City Residents Up to Involve	People who have a vested interest in municipal initiatives and who would be the desired audience for users. They come from a wide range of socio-demographic and political backgrounds which means that their consultation preferences are varied.	– Residents of the City of Vaughan. This group may also include members of the public in the adjacent municipalities.
Local Community Members Up to Involve	Local community members include those within the direct 1km catchment area of the trail. These individuals who will be directly impacted by the implementation of the trail from both an access and construction perspective.	– Residents of the City of Vaughan and nearby landowners.
Technical Agencies Up to Collaborate	Organisational representatives that have jurisdictional control over elements of the process. The project team will work to schedule meetings with agency staff at key project milestones.	– York Region; – Toronto and Region Conservation Authority (TRCA); – Archeology; and – Other technical agencies as required.

GROUP & IAP2 LEVEL	DESCRIPTION	MEMBERSHIP
Local Stakeholders and Interest Groups Up to Involve	Local stakeholders and interest groups include clubs, service providers, BIAs, etc. who have a vested interest in the outcomes of the project but do not have any jurisdictional control over the outcomes or next steps.	– South Maple Ratepayer Group; – St. David's Church; – Schools (i.e., Ecole Elementaire Catholique Le Petit-Prince, Joseph A. Gibson Public School, Blessed Trinity Catholic Elementary School, Maple Creek Public School, Maple High School, and Father John Kelly Catholic Elementary School); – Private developers (7 and 10 Bevan Road land owners); – The Sports Village; and – Everest Academy.
Equity Seeking Groups & Committees Up to Involve	Those who typically are not involved in day to day planning and design as well as committee members who represent marginalized or harder to reach communities.	– Accessibility Advisory Committee – Immigrant, Newcomer and Refugee Services
Indigenous Communities Varied depending on the preferences of the communities.	Indigenous Communities have a range of preferences for engagement. They may have interests primarily related to archaeological or natural environment matters, and where appropriate, may wish to be informed of and / or engaged in discussions about the impacts of future growth and development.	– Mississauga's of the Credit First Nation.
City Project Team Up to Empower	The City Project Team is made up of those specifically tasked with completing the Project. They understand the internal politics, technical issues, opportunities, budget expectations and strategic directions of the City. This team will work in collaboration with the consulting team to ensure project objectives are met,	– Sandra Neal; and – Michael Habib.

GROUP & IAP2 LEVEL	DESCRIPTION	MEMBERSHIP
	key deliverables are reviewed and that the Project continues within its intended timeline, budget, and scope.	
City Council Up to Empower	Members of Council will be the final point of approval and will ultimately be responsible for the adoption of the Project. They have a detailed understanding of the local and broader regional politics and a high level of understanding of internal process, roles and responsibilities, priorities and budget impacts of the recommendations. They may be driven by the interests of their constituents and may not always have a cohesive or consistent perspective on community needs and priorities.	– All members of City Council (currently sitting) are considered part of this group.

2.2 STEP 2: STAKEHOLDER ANALYSIS

The stakeholder analysis component of the Strategy has been developed to better understand the potential issues, opportunities, level of commitment and contribution that each of the stakeholder groups will foreseeably provide over the course of the Project. This is an exercise of stakeholder mapping to monitor and manage involvement.

The information contained within this section and specifically within the Stakeholder Management Plan are a representation of the current state of these stakeholders based on the understanding by the consultant team and does not necessarily represent a fulsome database of issues or opportunities.

2.2.1 ASSESSMENT OF CONTRIBUTION & COMMITTMENT

The contribution of each stakeholder group varies in priority based on Project deliverables. **Table 2** summarizes the levels of contribution and corresponding stakeholders.

Table 2 - Level of anticipated involvement for the various stakeholder groups

Level of Anticipated Contribution	Stakeholder Groups
Critical The stakeholder group is important to the success of the project.	— City Project Team — Technical Agencies — City Council
Desirable The stakeholder group is not likely to directly influence the success of the project, but there may be impacts on project design and delivery. The stakeholder group is a strong advocate and potential partner.	— Internal Staff Members — Local Stakeholders and Interest Groups — Equity Seeking Groups & Committees — Indigenous Communities
Less Critical Participation from this stakeholder group is not necessarily considered critical, or similar contributions could be easily obtained from other stakeholder groups.	— Local Community Members — The Wider “Public” in the Form of City Residents

The level of commitment for each stakeholder group varies depending on their knowledge of the Project, the applicability of final deliverables to their day-to-day work, and the relevance of Project subject matter to their responsibilities. Stakeholders with a large commitment to the Project may provide valuable insight in consultation events and feedback to draft material. Conversely, stakeholders who are opposed to the Project and do not see value in its deliverables may act as a hinderance to Project development. It should be noted that levels of commitment do not directly corollate to levels of contribution.

Table 3 - Level of anticipated commitment for the various stakeholder groups

Level of Anticipated Commitment	Stakeholder Groups
Committed ("Make It Happen") The stakeholder group has committed to contributing to the project and is available to do so. Commitment has been articulated through previous discussions with City staff or through past planning projects.	— City Project Team
Supportive ("Help It Happen") The stakeholder group has a high understanding of the Project and sees the value in its completion. The stakeholder group is willing to provide input but has not formally committed to do so.	— Technical Agencies — City Council — Local Stakeholders and Interest Groups — Equity Seeking Groups & Committees
Neutral ("Let It Happen") The stakeholder group may or may not know of the initiative and though they agree on recommendations, they may not be actively involved in the final outcomes of the Project.	— Local Community Members — The Wider "Public" in the Form of City Residents — Indigenous Communities
Disagree ("Stop It from Happening") The stakeholder may or may not know of the initiative and does not see the value in the Project that is being undertaken or the stakeholder may be opposed to the Project.	— Local Community Members — The Wider "Public" in the Form of City Residents

It is important to note that the level of contribution and commitment of stakeholders will likely vary over the course of the Project. In fact, there may be varying levels of contribution and commitment within a stakeholder group which can impact group dynamics, decision making abilities and clarity around roles. The stakeholders' position regarding commitment and contribution to this assignment will continually be monitored to identify those that have significant fluctuations or changes in position.

This will be undertaken through the review of comments / interaction at the various engagement sessions. If there are fluctuations which pose a potential risk to the Project – for example should an internal stakeholder with a high level of commitment and contribution shift to a low level of commitment, efforts will be made by WSP in collaboration with the City to identify how best to manage the stakeholders' involvement going forward.

With the stakeholder assessment complete, and there being an understanding established of the expected level of involvement for each stakeholder group, it is appropriate to proceed with the identification of engagement strategies, tools and tactics to align with key Project milestones and components. The following section outlines the proposed engagement strategy for the Project.

3 CONSULTATION PLAN

The following section outlines the Consultation Plan for the Project, which ties in the Stakeholder Management Plan to identify the high-level objectives and outcomes for each component of the Project and, specifically, each round of engagement.

The specific elements of the Consultation Plan have been informed by the requirements and expectations of the City (as detailed in the Request for Proposals), alignment with critical decision-making points, technical task expectations, and required inputs.

3.1 OVERVIEW OF ENGAGEMENT MILESTONES

Table 4 provides an overview of the engagement milestones that will achieved through this Project, organized by Part of the project. Engagement milestones have been aligned with the technical tasks and phases.

Table 4 - Overview of engagement milestones

Engagement Activity / Deliverable	Engagement Objectives	Engagement Tactics	Task Ref.
Part 1 – Research and Preferred Trail Route Analysis Evaluate the feasibility of developing a continuous 3 km pedestrian and cycling trail system and preferred route alignment through the research, inventory, analysis and review of existing conditions, opportunities and constraints.			

Develop Stakeholder Management and Communication Strategy	– To provide an overview of:
	  – The key audiences that will be engaged, their engagement preferences, and level of commitment;
	  – Proposed consultation and engagement techniques and tactics which will be used to gather input; and
	  – Internal and external communication protocols and roles and responsibilities.
		Provide to City Project Team	1.1.2

Staff and Key Stakeholders Workshop #1: Study, Goals, and Vision	– To provide an overview of the Project, existing conditions, and engagement opportunities; – To define a collective vision and goals for the Project; and – To establish priorities and gather input on potential constraints and opportunities.	Virtual Workshop with Key Staff and Stakeholders	1.1.3

Engagement Activity / Deliverable	Engagement Objectives	Engagement Tactics	Task Ref.
Prepare and Submit Vision and Goals Discussion Paper, including Public Consultation Summary #1	— To summarize staff and stakeholder input from Staff and Key Stakeholders Workshop #1.	Provide to City Project Team and post on Project Webpage	1.1.4
Staff and Key Stakeholders Workshop #2: Needs Assessment	— To review and assess alternative trail alignment plans for the subject areas; and — To gain input on additional key questions about the trail.	Virtual Workshop with Key Staff and Stakeholders	1.3.4
Prepare and Submit a high-level Opportunities & Constraints Analysis Discussion Paper, including Public Consultation Summary	— To summarize staff and stakeholder input from Workshop #2.	Provide to City Project Team and post on Project Webpage	1.3.6
Prepare and Execute Project Webpage Launch, Surveys and Polls	— To provide Project information, updates, and summaries; — To provide a record of engagement; and — To gain preliminary input from the public.	Develop using the City's Existing Bang the Table Platform	1.5.1
Prepare a Summary of Engagement Results	— To summarize public input from online surveys and polls.	Provide to City Project Team and post on Project Webpage	1.5.2
Staff and Key Stakeholders Workshop #3: Selecting a Preferred Trail Alignment	— To assess and confirm a preferred route alignment; and — To gain input on additional key questions about the trail.	Virtual Workshop with Key Staff and Stakeholders	1.6.3
Virtual Public Open House #1 (meeting with Staff, meeting preparation, meeting attendance)	— To introduce the Project, confirm opportunities and constraints, and identify user needs and priorities; and — To gain input on their experience using the trail, vision for the trail, and key design aspects that may require consideration.	Virtual Meeting with the Public using Zoom or Teams	1.8.1

Engagement Activity / Deliverable	Engagement Objectives	Engagement Tactics	Task Ref.
Part 2 – 30% Design Development Prepare a 30% design of the preferred trail alignment including detailed feasibility assessment incorporating consultation feedback; site assessment including geotechnical testing, Stage 1 archaeology; 30% drawings with layout, grading, planting restoration, cross sections, design standards, signage, wayfinding, and pavement markings; and a final implementation plan with project phasing and updated lifecycle costing.			
Updated Community Engagement Strategy to be drafted as part of the feasibility study including one meeting with Staff	— To assess the effectiveness of Part 1 engagement program and identify need for adaptation; and — To confirm public engagement events for Part 2.	Provide to City Project Team and Meet with City Project Team	2.1.1
Engagement Summary Document	— To summarize all engagement to date and provide accountability and transparency to project stakeholders and members of the public.	Provide to City Project Team and post on Project Webpage	2.1.4
Complete Archaeological Study and Indigenous Consultation - Stage 1 report	— To ensure that all works carried out meet the needs and desires of the Indigenous Communities in the area, and to engage in a culturally relevant fashion with these communities	To be confirmed based on conversations with community leadership	2.3.4
Prepare for and Execute a Virtual Open House	— To introduce the final document and multi-use phase construction timeframe based on the 30% design; and — To provide an opportunity for the public to ask questions.	Virtual Meeting with the Public using Zoom or Teams	2.7.1
Submit Final Documents to City including 'What We Heard' Report' (Part 1 & Part 2)	— To summarize stakeholder and public engagement based on consultation summaries prepared during Part 1 and 2.	Provide to City Project Team and post on Project Webpage	2.8.1

3.2 DETAILED ENGAGEMENT TACTICS & TOOLS

The previous section identified, at a high level, the major engagement and communication milestones that will inform the Project process. What is not included or detailed above are the specific engagement tools and tactics that could be used to facilitate conversation, solicit input, communicate key messages and establish buy-in to the various Project components. The

content of Section 3.2 provides more details on the suggested engagement tools and facilitation tactics to be considered / used for the engagement milestones noted above.

The approach to engagement that has been identified in this Strategy is primarily virtual in order to respond to the ongoing concerns based on the COVID-19 pandemic. This Strategy assumes that all consultation will take place primarily in a virtual setting, with analog options (e.g., hard copy surveys, mail-in comments) offered where feasible to provide opportunities for all residents of Vaughan to be engaged in the process. Meetings and engagement events will be held on a virtual meeting platform (i.e., Zoom, Microsoft Teams), with options for residents to phone in if desired.

WSP is well versed and experienced in virtual engagement practices and protocols and is committed to working with the City to identify tools that align with community preferences, level of technological comfort as well as existing tools in use by the City and its partners. We will continue to monitor and evaluate the restrictions and requirements as identified by the provincial government and public health to determine if and when there is an opportunity to have controlled in-person outreach and will discuss with the City prior to planning or designing these activities.

In addition to the core/primary meeting platforms and the Project Webpage, there is an opportunity to use other digital engagement tools based on the objectives and desired outcomes of the session. WSP has corporate subscriptions to these platforms. These tools will be selected closer to each session once the material / objectives are refined. These tools include:

Core / Primary Meeting Platforms

- **Zoom:** An online meeting platform. There is an opportunity to setup breakout rooms when large numbers of participants join. Closed captioning and translation services are available as well.
- **Microsoft Teams:** An online meeting platform. Some features include the ‘raise hand’ function, breakout rooms, and closed captioning.

Project Webpage

- **Project Specific Webpage on the City’s Existing Bang the Table Platform:** The project webpage can include essential project information, project updates, link to surveys, make downloads available, and register participants for an email list. The project webpage is an important component of the communications strategy for this project as well, as it provides a central repository for documents as the project progresses.

Select Additional Interactive Engagement Tools

- **Menti:** An interactive presentation tool that allows attendees to engage in real-time, using tools such as voting / ranking of options, leaving comments, and completing live questionnaires.
- **Miro:** An online collaborative whiteboard platform to supporting brainstorming, process mapping, and engaging workshops.
- **Mural:** A digital workspace for virtual collaboration. The workspace allows attendees to leave comments, create diagrams, and interact with materials on the screen.

3.3 INDIGENOUS COMMUNITY ENGAGEMENT

The Crown has a Duty to Consult with Indigenous Peoples on issues that may affect treaty rights, aboriginal rights and land claims. Although the Duty to Consult is ultimately the responsibility of the Province, procedural aspects of this duty have been delegated to municipalities in infrastructure and land use planning matters where the use of land or natural resources could be impacted. The Provincial Policy Statement (2020) recognizes, "the importance of consulting with Aboriginal communities on planning matters that may affect their section 35 Aboriginal or treaty rights."

As the first step in this outreach, WSP prepared a template letter issued by the City to those communities with a potential interest in the Project. The letter will provided a brief overview of the Project, the timeline and consultation milestones, and seek to confirm each community's preferred means of engagement. This was issued following the project kick-off meeting and accompanied by a map of the study area.

All Indigenous Communities were compiled into the Contact List by City staff as part of the official record of consultation, which documents when and how outreach was conducted.

Any return contact received was logged, and City staff will followed-up with the various Communities to ensure they received the project information and are aware of the opportunity to express comments and concerns about the project.

PPSP Staff provide the Mississaugas of the Credit First Nation (MCFN) with regular updates on City projects that typically trigger archaeological assessments and enviornmental studies. The Bartley Smith Feasibility Study was included in the list of projects for their review. The presentation slides are dated May 2022 and August 2022. As needed, City staff and WSP can facilitate teleconference or video teleconference meetings with Indigenous Communities wishing to do so or adapt our various engagement activities to meet the preferences of the various communities. We note that any additional meetings are outside of our base scope of work for this project.

The First Nation communities should be contacted through their Chief and Band Council (or in accordance with their preferred contact).

It is generally recommended that the City's Project Manager meets with the respective Indigenous Communities to determine their interest in the Project and their preferred method to engage in the Project.

4 COMMUNICATION PLAN

Communication is a core component of the Project. Ensuring that the information provided is clear, consistent and engaging can be a challenge. This Communication Plan has been developed to guide consultation and engagement. The Communication Plan is intended to be undertaken concurrently with the Consultation Plan developed in Section 3 and is meant to generate interest, drive traffic to engagement activities, and manage Project risk.

4.1 COMMUNICATION PROTOCOLS

Communications protocols make reference to how communication will be undertaken over the course of the project. Communication will occur in two ways – internally – between City staff, members of the consulting team and key decision makers to appropriately manage and monitor the project and externally – between the consultant team, City staff and other stakeholder groups to inform the project process. A recommended approach and roles and responsibilities have been identified for internal and external communication below.

4.1.1 INTERNAL

Ongoing communication and coordination is needed to ensure that the Project is efficiently and effectively undertaken. Should communication challenges, technical issues or opportunities for additional consultation / engagement arise over the course of the Project, there should be a clear process to determine the most appropriate course of action. Actions can be identified by articulating the roles and responsibilities for critical staff including the City's project manager, WSP's project manager, and other staff members including:

- **Day to Day Coordination |** WSP has identified Amanda Gebhardt as the primary day-to-day contact for all correspondence between the City and WSP. Connor Blaikie will act as the alternative point of contact. This would include all matters related to project management, billing, project schedule, and other matters. Shawn Smith, WSP's Deputy Manager, should be copied on all correspondence.
- **Deliverable Submission & Review |** WSP's Project Manager will email deliverables to the City for review by the City's Project Team. The City's Project Manager will consolidate comments received and send them to WSP.
- **Contact Management |** City staff will maintain a Contact List throughout the Project and update the list with contact information received at engagement events. City staff will help populate this Contact List, including identifying key stakeholders, local organizations and agencies, members of Council, etc., while WSP will provide insight and inputs, as needed, throughout the Project.
- **Comment Management |** WSP will be the primary lead for any comment documentation. As input is received it will be compiled into a comment-response matrix and shared with the necessary Project Team members. All comments received by the City should be provided to WSP. City staff will provide an acknowledgement of all comments received to the original sender, and WSP can provide input if a more detailed response is required.

These roles and the overall process will be applied to any stakeholder issues that are raised through individual inquiries or online sources, comments or questions from staff and/or Council,

internal issues raised, comments received through consultation and engagement events and comments received via publications and promotional events.

4.1.2 EXTERNAL

The City and WSP should work together to develop a transparent communications process. It is recommended that WSP lead the development of communications materials; however, it would be prudent for the City's project manager to act as a point person for circulating and receiving information from internal and external stakeholders (e.g., meeting agendas, meeting materials). The City's existing dialogue and experience with these audiences makes them ideal for this role. It should be noted, however, that the planning, preparation, and facilitation of consultation will be led by WSP. The City will forward the meeting invitation and draft materials to stakeholders (based on the Contact List) and forward feedback or questions to WSP as needed.

In addition to regular invitations, it will be necessary to require invitees to register in advance of virtual consultation events. In our experience with these events in recent months, it has become important to include registration as part of the invitation to keep track of attendance, ensure events are properly staffed, and allow for different consultation tools to be leveraged (e.g., smaller breakout rooms), if needed. We recognize that this may act as a barrier to entry to certain residents and stakeholders and will include alternative means to participate on invitations and notices.

The communications tactics listed in **Table 5** will be led by the City, with content input provided by WSP, unless otherwise noted. The specifics of the Public Communications tactics are outlined in Section 4.2. At a minimum the following external communications tactics will be used to connect with stakeholders and the public ahead of each round of engagement:

Table 5 - Summary of external communication tactics

Engagement Activity	WSP Actions	City Staff Actions	Follow-up Actions (Lead: WSP)
Part 1			
Staff and Key Stakeholders Workshop #1: Study, Goals, and Vision	**Email notification:** — Invitation and registration 2 weeks prior – provided to City Staff for circulation. — Circulation of draft materials 3 days prior.	— Project Website Updates. — Circulate invitation and materials as provided by WSP	— Meeting minutes to City within one week (WSP).
Staff and Key Stakeholders Workshop #2: Needs Assessment	**Email notification:** — Invitation and registration 2 weeks prior - provided to City Staff for circulation. — Circulation of draft materials 3 days prior.	— Project Website Updates. — Circulate invitation and materials as provided by WSP	— Meeting minutes to City within one week (WSP).
Prepare and Execute Project Webpage Launch, Surveys and Polls	— Develop draft content, including website copy, surveys and polls — Provide documents to be posted on the project website, including engagement summaries, mapping and other materials as necessary	— Finalize and post materials — Project Website Updates as required. — Social Media Posts to promote the project webpage.	— N/A.

Engagement Activity	WSP Actions	City Staff Actions	Follow-up Actions (Lead: WSP)
Staff and Key Stakeholders Workshop #3: Selecting a Preferred Trail Alignment	**Email notification:** — Invitation and registration 2 weeks prior. — Circulation of draft materials 3 days prior.	— Circulate invitation and materials as provided by WSP — Project Website Updates.	— Meeting minutes to City within one week (WSP).
Virtual Public Open House #1 (meeting with Staff, meeting	— Develop Open House materials — Create event invitation and informational posts for project website and social media	— Circulate Public Notice (Notice to be created by WSP and provided to City Project Team). — Project Website Updates. — Social Media Posts.	— Meeting minutes to City within one week (WSP).
Part 2			
Prepare for and Execute a Virtual Open House	— Prepare Public Notice and provide to City Project Team.	— Circulate Public Notice. — Project Website Updates. — Social Media Posts.	— Meeting minutes to City within one week (WSP)

4.2 COMMUNICATION TACTICS

There are many potential communication tactics that can be adopted, both on an ongoing or milestone-specific basis, to widely promote, inform, and educate the target audiences. The following sections provide an overview of the tactics that will be used throughout this Project (ongoing tactics) and those leveraged ahead of each round of engagement (milestone-specific tactics).

Due to the reliance on digital engagement tools in Section 3 in light of COVID-19, this section also presents some additional opportunities for communication to provide the greatest number of opportunities for residents to engage in the Project.

4.2.1 ONGOING COMMUNICATION TACTICS

Project Webpage – Bang the Table

The Project webpage will be the central source for all Project related information including background information, relevant resources, key considerations and facts, project timeline and milestones, project objectives and contact information. All online engagement events and opportunities will be linked through the Project webpage. WSP will provide the appropriate City contact with content including key messaging and project updates. This will be the central source for all Project-related information and will be updated over the course of the Project with additional tools and resources as needed.

Social Media

The intent of any City-led social media campaign will be to provide recurring posts on the relevant platforms to promote the online engagement tool, opportunities for engagement, as well as general information about the Project (education and awareness). Social media messages will be kept short with a thought-provoking image. It will not be used as an engagement tool; however, questions may be posed through these platforms to encourage discussion or Project interest. The precise timing should be confirmed in line with the City's social media protocols; however, the intent should be to post social media messages on a recurring basis and at greater intervals closer to the consultation milestones.

Information Sandwich Boards

The Project Team can develop Information Sandwich Boards, A-Frame posters or standard posters that can be located on or near trail access points to reach key trail users and audiences. The Boards can provide Project information and highlight where to find additional information about how to stay involved. The Consulting Project Team will work with the City Project Team to develop boards that meet the City's communication and branding requirements. It is suggested that the boards feature a QR Code to help direct residents to the relevant project website to find more information.

4.2.2 MILESTONE SPECIFIC TACTICS

Project Contact List

The Project Contact List, managed by City staff, will catalogue the names and contact information for potential invitees and stakeholders, and serve as a record of those who attended consultation events. The Project Contact List will allow for targeted e-mails ahead of consultation

events. The Project Contact List will grow as members of the public register for email updates via the Project webpage.

Local Media

Traditional media plays a strong role in the City – many community members rely on, and trust, these sources. There is potential to create more positive opportunities through strong relationships with the media to provide general promotional messages to the public through their respective avenues. If the City has access to community pages in the local paper, that would be a useful tool to communicate Project updates and promote live consultation events.

Public Notices

WSP assumes that public engagement events will be advertised by the City and will include local print and/or online news outlets. WSP will prepare non-statutory notices for public open houses in accordance with the City's standard template.

WSP will prepare notices 1-2 weeks before the publication cut-off date for City review and publication. Notice of the public open houses should be published and transmitted electronically two (2) weeks in advance, with detailed instructions on how to register and participate virtually, as required.

Notifications & Newsletters

Using its existing channels of communication, the City may wish to include information in local publications or outreach to key groups regarding specific outreach activities that are being undertaken using the source audience Contact List. This could include an insert in property tax bills or similar municipal notices, or other City mail/email circulations, such as newsletters.

These would be developed by City staff with input from WSP, as required.

Meeting Invitations

Direct email invitations will be prepared and circulated to City Staff by WSP, with City Staff then forwarding those invitations to the relevant stakeholders. Should an attendee's preferred means of communication be via telephone, or if there is a need to follow-up on an email invitation, City staff may wish to reach out to stakeholders and attendees directly with phone calls.

City Communications

The tactics identified above are only some of the options that are typically utilized. These options include posters and digital screens at municipal venues (e.g., community centres, arenas or libraries), the City's digital public events calendar and website banner images on the City's Project webpage. WSP understands that the City's communications staff may have other avenues and opportunities to explore for wider communication and outreach. WSP is committed to working with staff to provide appropriate materials and messaging as needed to support those communication tools.

4.3 ROLES & RESPONSIBILITIES

The Project Team includes core team members who will lead and coordinate the engagement components of the Project. Project Team Members have been chosen to attend specific consultation events based on their disciplines and the topics of discussion at each event.

WSP will coordinate and plan all consultation events and will engage the appropriate team members in preparation of each consultation event.

The roles and responsibilities of the WSP and City's Project Team for consultation events are as follows:

- **Michael Habib and Sandra Neal, City Project Managers:** lead the coordination of City resources (e.g., manage Project Contact List, communication with stakeholders, communication with Council), review consultation materials and Project deliverables.
- **City Project Team:** review consultation materials (where appropriate) and provide key input on the development of Project deliverables.
- **Amanda Gebhardt (WSP):** oversee project coordination and management and provide quality assurance on all deliverables.
- **Shawn Smith (WSP):** lead the intersection design and support the planning and design of the trail. As the Deputy Project Manager, Shawn will also support Amanda as needed.
- **Dave McLaughlin (WSP):** provide support and input in an advisory role as well as additional quality assurance. Dave will act as an alternate should the need arise.
- **Justin Jones (WSP):** lead the coordination, facilitation, and oversight of consultation events and deliverables.
- **Andria Sallese (WSP):** provide planning expertise and engagement support.
- **WSP Technical Leads and Sub-consultants:** provide technical inputs into consultation materials and participate in consultation events as needed, related to area of technical expertise.

Over the course of implementing this comprehensive Strategy, it is vital to understand roles and responsibilities for consultation between WSP and the City. **Table 6** outlines the roles and responsibilities to supporting the implementation of the Strategy.

Table 6 - Summary of roles and responsibilities

Tasks	Roles & Responsibilities
Internal and External Communications	— The Project Managers from the City will be the primary contacts for this Project. — Any communications with the public and stakeholders should be forwarded to WSP. — WSP will be responsible for circulating consultation material to City Staff in advance of engagement events, including agendas and pre-consultation material. The City will be responsible for forwarding those materials to stakeholder, as well as for correspondence with the public with regards to public open houses. — The City will maintain the Project Contact List. Email will be the primary method of contact. — The City will provide acknowledgement of all comments received and will coordinate input with WSP where a more detailed response is required. — WSP will log all comments received. — Documents will be shared between the City and WSP via email, or by file sharing service if files are too large.

Tasks	Roles & Responsibilities
Development of Materials	— WSP will be responsible for preparing all consultation materials, presentations, interactive activities, surveys, and any online communications content. The City may wish to supplement this with additional materials (e.g., tax mailout inserts) which would be prepared by the City with inputs from WSP, as required. — WSP will prepare a notice for the public open houses in a standard template provided by the City. City staff will issue and publish any notices. — WSP Technical Leads and Sub-consultants will provide inputs into consultation events and participate as needed. — WSP will share draft consultation materials with the City for review and comment. — WSP will revise materials for final circulation. — WSP will provide the City with updates at key milestones throughout the study process for the project webpage. — The City will upload materials to the Project Webpage and maintain the webpage with Project updates. If possible, WSP Staff — The City will circulate materials to invitees as needed. — The City will provide staff reports to Council. WSP will prepare a presentation if required.
Coordination and Facilitation of Events	— WSP and the City will work together to determine the preferred date and time for all consultation events. — WSP will set up the virtual requirements for events (e.g., setting up virtual platform such as Zoom, and setup a registration page, if required). — The City will manage registration for events, including the distribution of invitations, based on the Project Contact List and webpage updates. — WSP will facilitate and lead meetings and workshops.
Event Attendance	— WSP will be responsible for attending all consultation events. — City staff will attend and participate in consultation events. — Invitees are expected to actively participate in events.
Documentation of Outcomes	— WSP will prepare meeting minutes for meetings. — WSP will integrate consultation summaries within other deliverables (e.g., memos, reports etc.) for other forms of consultation events.

MEMO

TO: Sandra Neal and Michael Habib

FROM: Amanda Gebhardt

SUBJECT: **Bartley Smith Greenway Trail Gap Feasibility Study: Online Public Survey Results Summary Memo**

DATE: **December 21, 2021**

Introduction to Bartley Smith Greenway Trail Gap Feasibility Study

The City of Vaughan retained WSP Canada Inc. to provide professional services in landscape architecture, design services, master planning, trail and active transportation planning to complete a feasibility study and 30% design to fill critical gaps in the Bartley Smith Greenway (BSG) Trail along a 3 km segment in the Upper West Don River Corridor between McNaughton Avenue to Keele Street. The Bartley Smith Greenway is part of the 100 km city-wide Vaughan Super Trail, a signature recommendation of the City's 2020 Pedestrian and Bicycle Master Plan, approved in principle by City Council. Filling the gaps to provide a continuous north-south pedestrian and cycling trail will provide recreation and active transportation opportunities for residents and is identified as a Term of Council Priority under the Transportation and Mobility goal. It also supports several other strategic plans of the City such as the Vaughan Official Plan (2010), Green Directions Vaughan, Active Together Master Plan, and the TRCA Trail Strategy.

The BSG Trail Project is broken into two main components:

Part 1: Research and Preferred Trail Route Analysis (Current Phase)

Evaluate the feasibility of developing a continuous 3km pedestrian and cycling trail system and preferred route alignment through the research, inventory, analysis and review of existing conditions, opportunities and constraints. An impact assessment along with master plan and mapping will be provided, considering a robust public and stakeholder consultation plan including indigenous consultation. Life cycle cost analysis including capital, operations and maintenance costs will inform an implementation plan.

Part 2: 30% Design Development

Prepare a 30% design of the preferred trail alignment including detailed feasibility assessment incorporating consultation feedback; site assessment including geotechnical testing, Stage 1 archaeology; 30% drawings with layout, grading, planting restoration, cross sections, design standards, signage, wayfinding, and pavement markings; and a final implementation plan with project phasing and updated lifecycle costing.

Introduction to Online Public Survey

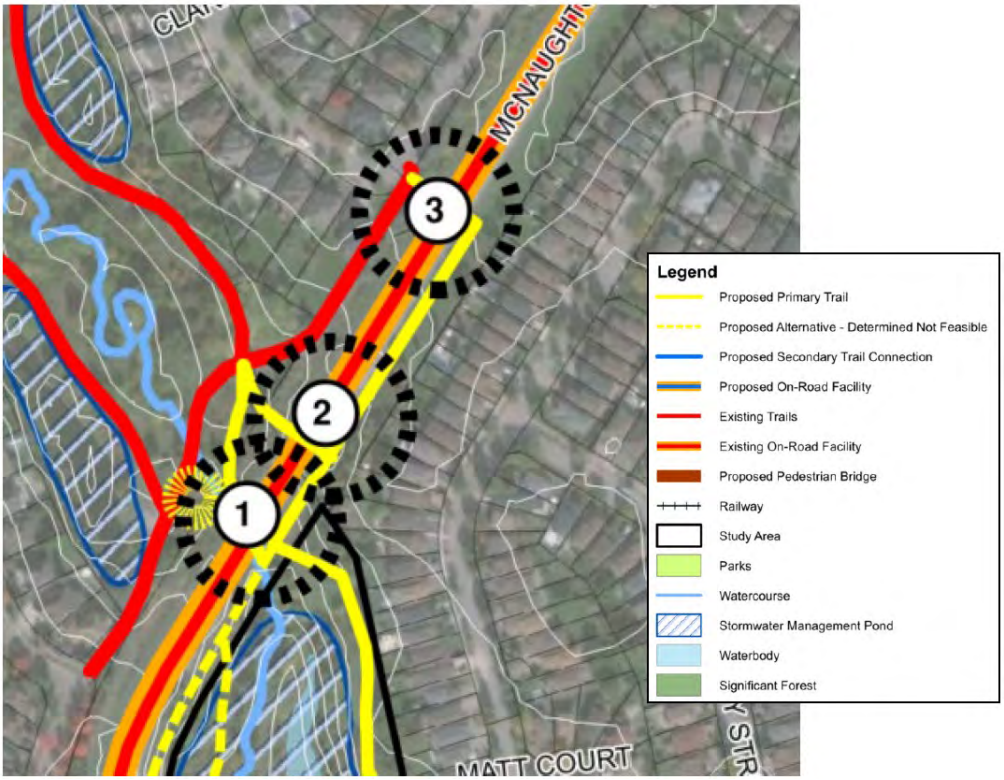
The purpose of the Bartley Smith Greenway Trail Feasibility Study Online Public Survey was to engage the public and gather information, identify and evaluate options to close the three-kilometre gap in the existing Bartley Smith Greenway trail, and select a preferred route to advance to detailed design and construction. The survey was available online on the City's project website (https://haveyoursay.vaughan.ca/bartleysmithtrail) from October 4th, 2021, to October 19th, 2021. In total, there were 216 participants, with 229 responses.

Overview of Survey Question Responses

The following section provides a high-level overview of the survey questions and responses. **Appendix A** includes a more detailed overview of each question. A more detailed summary of the survey responses is included in **Appendix B**.

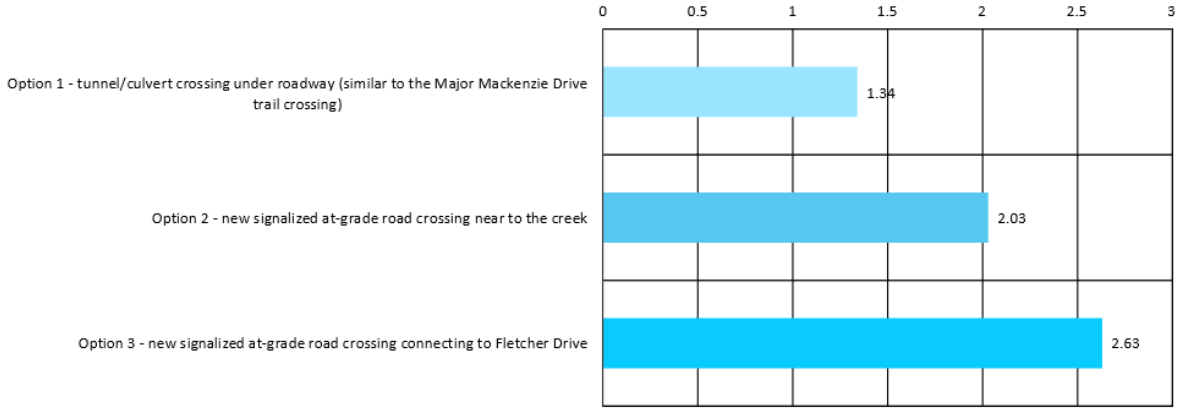
1. **McNaughton Road Crossing Location –** Participants were asked to indicate how they would prefer to cross McNaughton Road by ranking three options from their most preferred to their least preferred. The options included:

    - Option 1 - tunnel/culvert crossing under roadway (similar to the Major Mackenzie Drive trail crossing)
    - Option 2 - new signalized at-grade road crossing near the creek
    - Option 3 - new signalized at-grade road crossing connecting to Fletcher Drive



Most community members ranked **Option 1, a tunnel/culvert crossing under the roadway,** as their preferred choice for crossing McNaughton Road (1.34 average ranking as shown in **Figure 1**). Participants were also able to provide additional comments to explain their preferred choice. The following section summarizes some of the key themes that emerged through the comments received.

Figure 1: McNaughton Road Crossing Location – Average Ranking



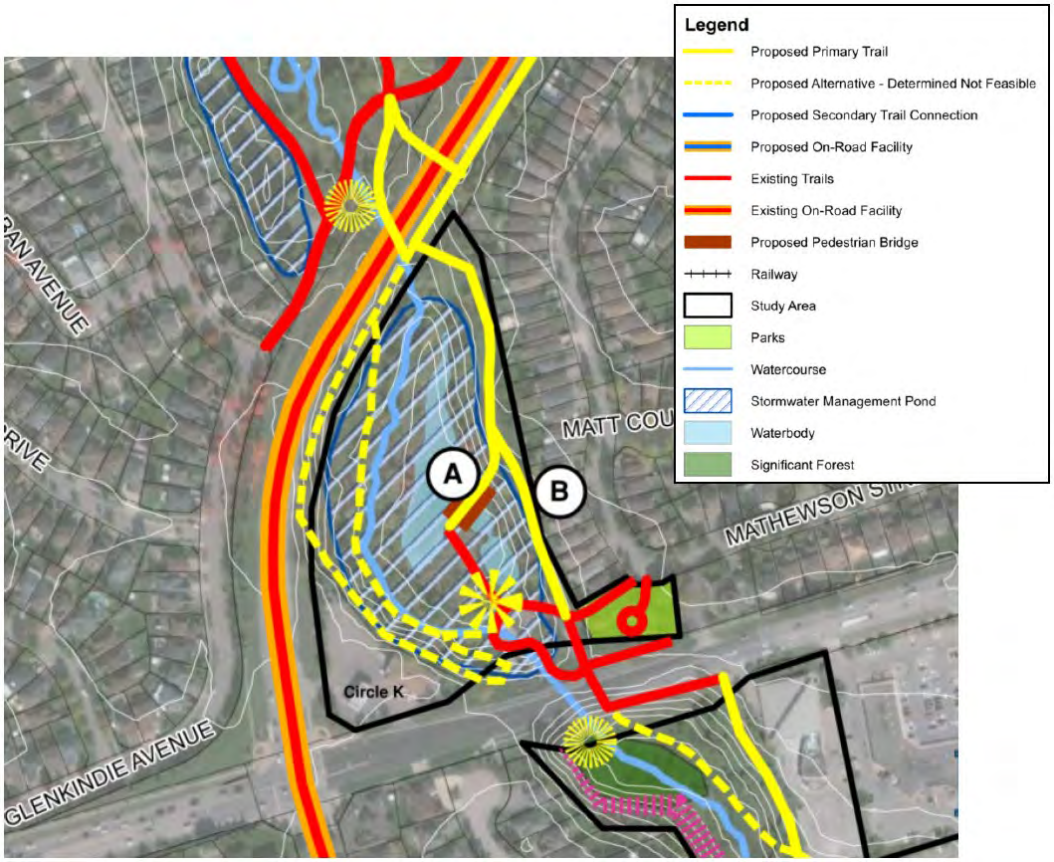
WHAT WE HEARD: The preferred answer amongst community members was Option 1 as it would enhance safety and comfort for trail users of all ages and abilities by avoiding interactions with car traffic along McNaughton Road. Participants also noted that the tunnel/culvert crossing would provide a more continuous, uninterrupted route for pedestrians and cyclists by eliminating the need to stop to cross the road. Similarly, the tunnel/culvert crossing would help to avoid additional traffic disruptions and provide a more enjoyable experience for those using the trail. Concerns were raised over vandalism, debris, and safety in relation to Option 1, emphasizing the need to provide more visibility and maintenance if this was going to be the preferred method. Worries about the associated costs and traffic disruptions with constructing a tunnel/culvert crossing were raised, adding that an at-grade crossing would likely produce less environmental impacts than a tunnel/culvert crossing.

"The main reason to choose Option 1 is because a tunnel would allow for a smooth, uninterrupted bike ride"

To conclude, there was an overwhelming response in favour of Option 1, with little pushback against the idea of a tunnel, but more towards ensuring a successful design and implementation strategy for a tunnel/culvert.

2. **Route Options between Major Mackenzie Drive and McNaughton Road** – Participants were asked to indicate which of the two proposed route options they prefer. The options included:

    - Route Option A (with bridge connection) – this route travels through the creek valley on the east side between the stormwater pond and rear of Mathewson Street residential lots until it crosses the pond and connects with an existing pond service path.
    - Route Option B (connection extending behind Mathewson St. homes) - travels through the creek valley on the east side between the stormwater pond and rear of Mathewson Street residential lots until reaching the existing Killian-Lamar Parkette trails.



As shown in **Figure 2**, most participants (69%) indicated that they would prefer **Option A**. Participants were also able to provide additional comments to explain their preferred choice. The following section summarizes some of the key themes that emerged through the comments received.

Figure 2: Route Options between Major Mackenzie Drive and McNaughton Road – Preferred Option

to comment reasoning behind their choice or said they were not in total disagreeance for either option or would be willing to explore it further.

In conclusion, route Option A was the popular choice as it provides the most direct and economical route for users, with the added factor of aesthetic appeal.

3. **Trail Location between Major Mackenzie Drive and Rutherford Road** – Participants were asked whether they agree with locating the trail on the east side of the creek.

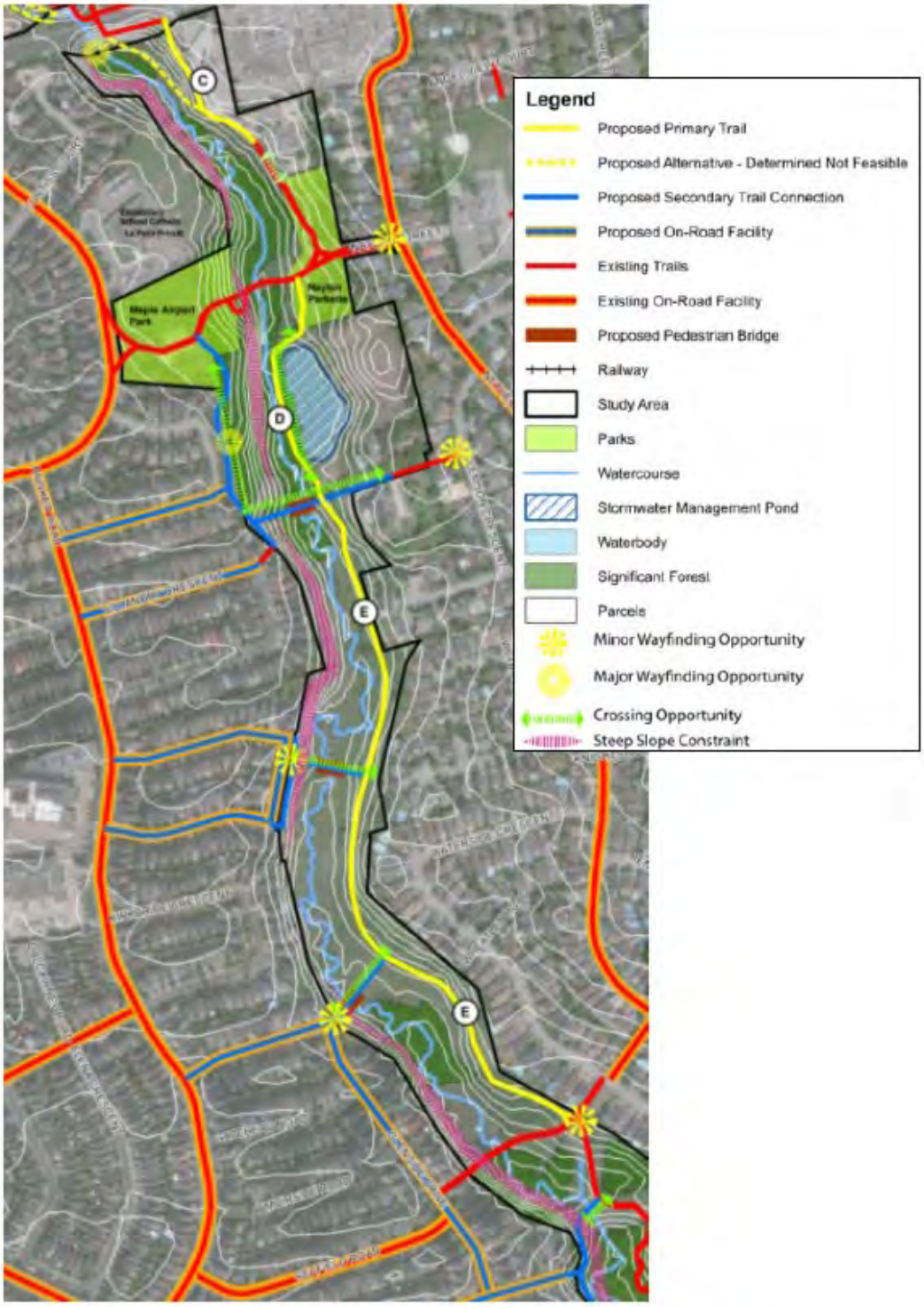

C
D
E
E
Legend
Proposed Primary Trail
Proposed Alternative - Determined Not Feasible
Proposed Secondary Trail Connection
Proposed On-Road Facility
Existing Trails
Existing On-Road Facility
Proposed Pedestrian Bridge
Railway
Study Area
Parks
Watercourse
Stormwater Management Pond
Waterbody
Significant Forest
Parcels
Minor Wayfinding Opportunity
Major Wayfinding Opportunity
Crossing Opportunity
Steep Slope Constraint

Figure 3: Trail Location between Major Mackenzie Drive and Rutherford Road – Agreement with Proposed Location

Over 90% of community members indicated that they **agreed with locating the trail on the east side of the creek as shown in Figure 3**. Participants were also able to provide additional comments to explain their preferred choice. The following section summarizes some of the key themes that emerged through the comments received.

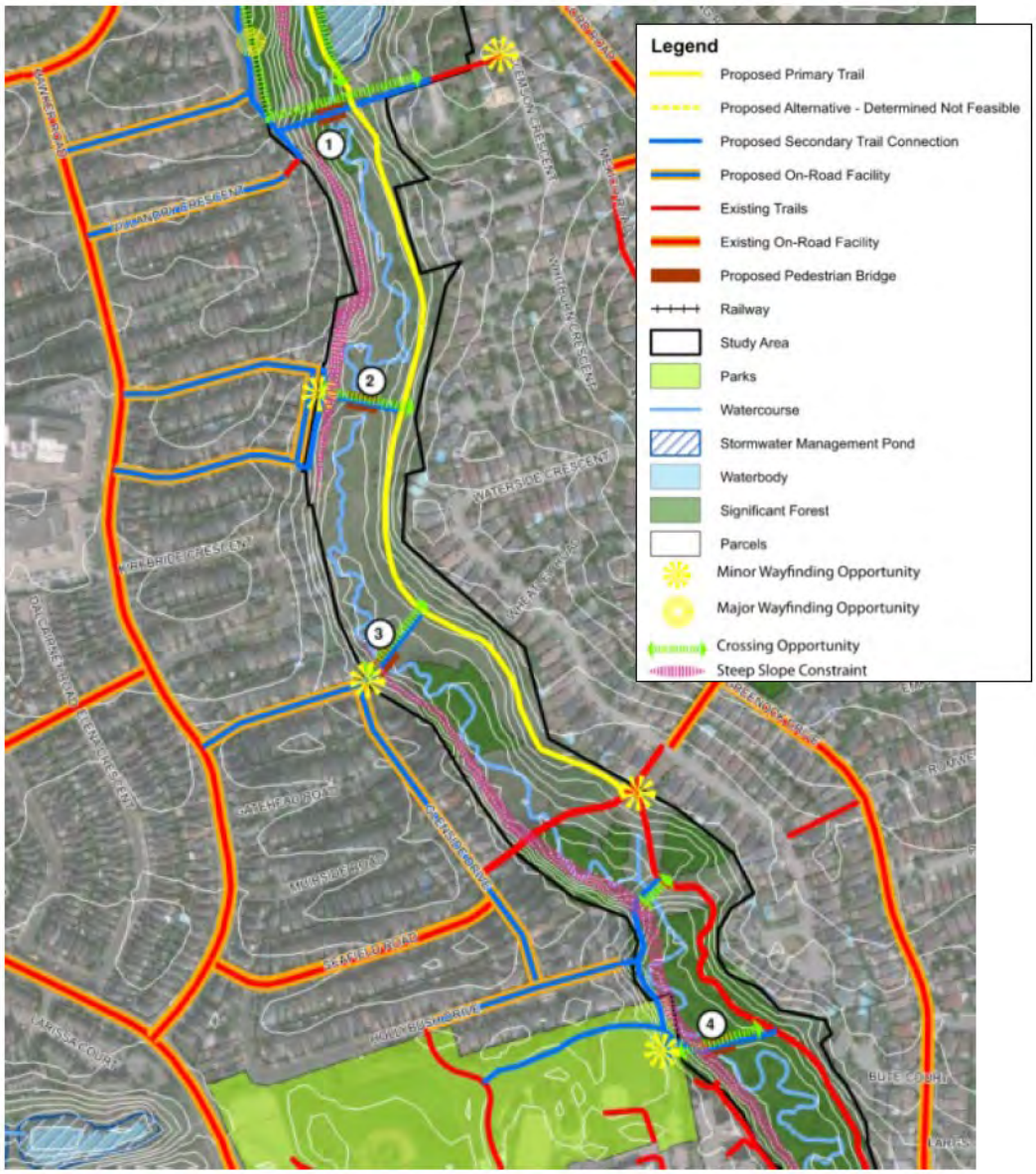
WHAT WE HEARD: Most participants agreed with locating the trail on the east side of the creek as it provides a more accessible, suitable terrain for a trail and connects well to the rest of the existing trail. Community members emphasized that locating the trail on the east side would also help to reduce environmental impacts and maintain as many trees as possible, which is seen as a high priority for the community. Another key theme that emerged through the comments was that a trail along the east side would provide a more scenic route and allow trail users to enjoy nature more. The few to disagree with an East side trail noted that some areas along the creek would be located too close to residential backyards, resulting in impacts to privacy and property values. Others also noted that the Project Team should consider costs, maintenance and construction impacts before finalizing the preferred option.

"Preserving existing trees as much as possible should be a priority"

To conclude, an overwhelming amount of community members believe an east side trail addition should be implemented, in order to preserve the ecology and natural landscape of the area.

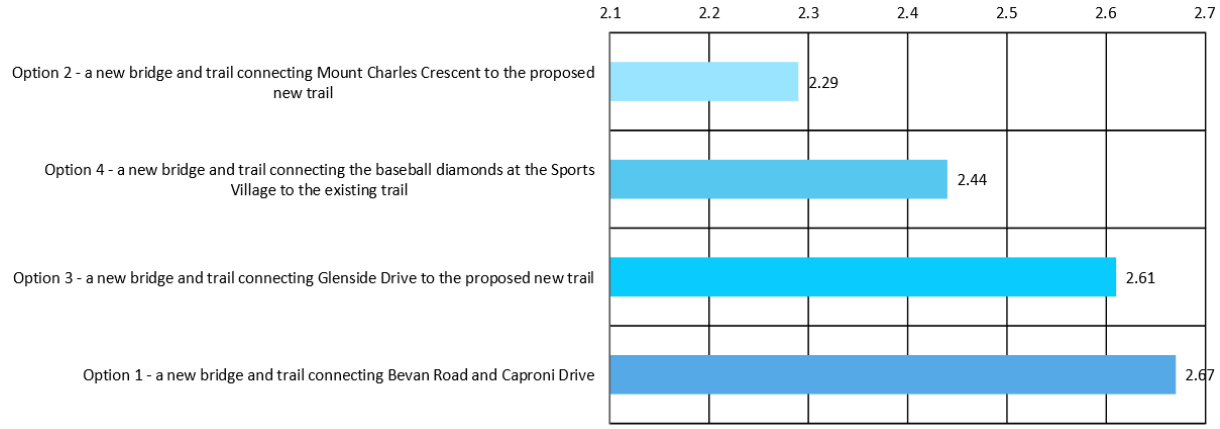
4. **Pedestrian Crossing Options between Major Mackenzie Drive and Rutherford Road**: Participants were asked to rank the four crossing options from most preferred to least preferred. The options included:

    - New bridge and trail connecting Bevan Road and Caproni Drive
    - New bridge and trail connecting the baseball diamonds at the Sports Village to the existing trail
    - New bridge and trail connecting Mount Charles Crescent to the proposed new trail
    - New bridge and trail connecting Glenside Drive to the proposed new trail



Most community members ranked **Option 2, a new bridge and trail connecting Mount Charles Crescent to the proposed new trail,** as their preferred crossing option between Major Mackenzie Drive and Rutherford Road (2.29 average ranking as shown in **Figure 4**). A number of participants also indicated their preference for **Option 4, a new bridge and trail connecting the baseball diamonds at the Sports Village to the existing trail** (2.44 average ranking). Participants were also able to provide additional comments to explain their preferred choice. The following section summarizes some of the key themes that emerged through the comments received.

Figure 4: Pedestrian Crossing Options between Major Mackenzie Drive and Rutherford Road – Average Ranking



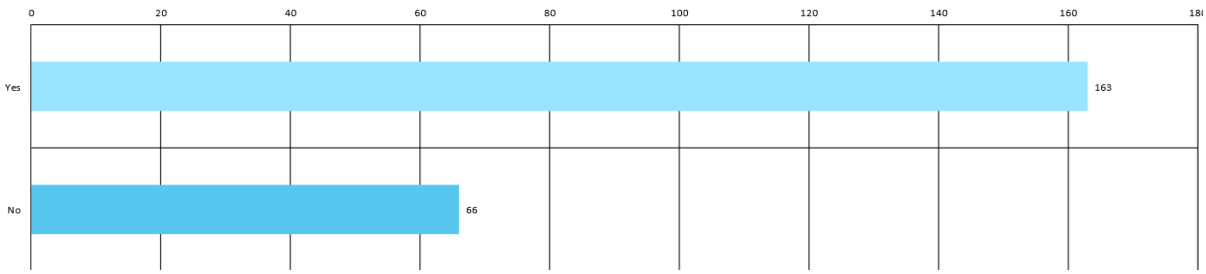
WHAT WE HEARD: An overall preference for Option 2 was expressed by comments pertaining to ease of trail access, connectivity between trail systems and neighbourhoods, and longer stretches of trail to use. This option would also allow users to have access to and from Sports Village, limit the disruption to homeowners, and promote longer stretches of trails in the area. Many surveyors noted that Glenside already has access to the trail and it would be redundant to add additional entry when other areas could benefit from having easy access routes. On the other hand, some comments demonstrated opposition to Option 2 and preferred Option 4 which would create a connected trail 'loop'. Other comments highlighted that there may not be enough foot traffic to make Options 2 and 3 valuable. Additionally, some participants noted that Options 1 and 4 would improve public access and accessibility to the trail in comparison to Option 2.

In conclusion, Option 2 was favourable due to the connectivity and ease of access it would provide the community with.

5. **Trail Alignment between Rutherford Road and Keele Street** – Participants were asked to indicate whether they agree with the proposed trail alignment between Rutherford Road and Keele Street.

Over 70% of participants indicated that they **agreed with the proposed trail alignment between Rutherford Road and Keele Street** as shown in **Figure 5**. Participants were also able to provide additional comments to explain their preferred choice. The following section summarizes some of the key themes that emerged through the comments received.

Figure 5: Trail Alignment between Rutherford Road and Keele Street – Agreement with Proposed Alignment



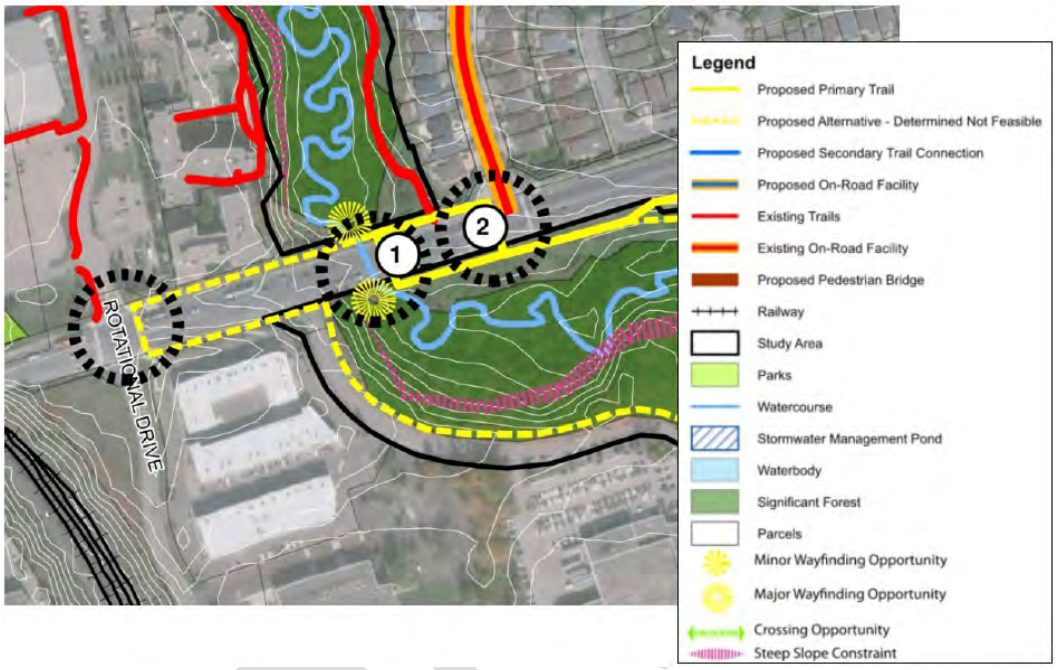
WHAT WE HEARD: Many participants noted that the proposed trail alignment would help prioritize safety, as well as reduce environmental impacts. Protecting the natural features and enjoying a relatively untouched and forested environment is part of the appeal to those who answered 'yes'. Many participants also agreed with this alignment as it provides reduced on-road routes and connections that take away from the overall feel of the trail. The proposed alignment would also improve crossing capability where there is confusion or user difficulty crossing the road. However, many participants noted a lack of options for this trail alignment. Many

participants noted that they would prefer this alignment to travel through the natural area instead of the following the proposed route, though they understand the decision based on preserving natural heritage. The Tesma Way option was also favourable amongst participants if concluded to be a feasible option.

In conclusion, the proposed trail alignment between Rutherford Road and Keele Street is favourable amongst community members, due to the increased safety it would provide.

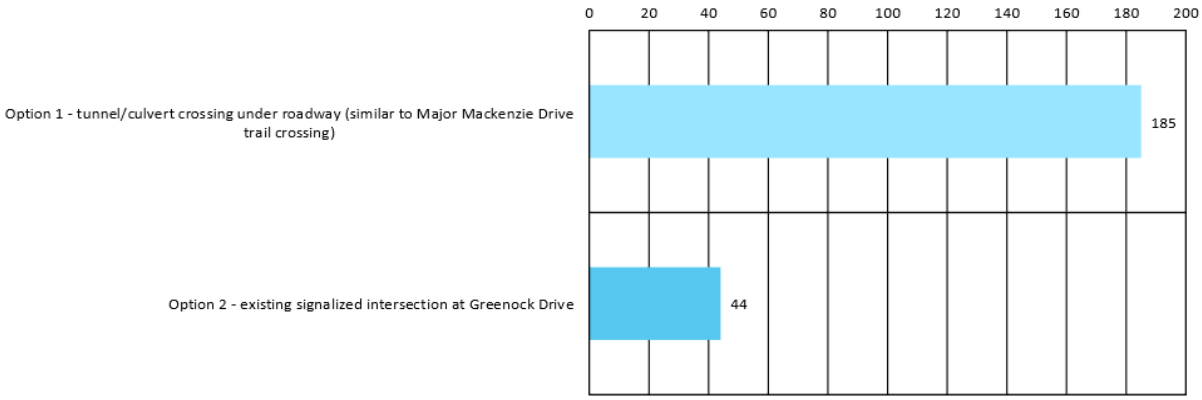
6. **Rutherford Road Crossing Type** – Participants were asked how they would prefer to cross Rutherford Road when using the trail out of two options. The options included:

    1. Option 1 – Tunnel / culvert crossing under roadway (similar to Major Mackenzie Drive trail crossing)
    2. Option 2 – Existing signalized intersection at Greenock Drive



Approximately 80% of community members indicated that they would **prefer Option 1, a tunnel / culvert crossing under roadway (similar to Major Mackenzie Drive trail crossing),** as shown in **Figure 6**. Participants were also able to provide additional comments to explain their preferred choice. The following section summarizes some of the key themes that emerged through the comments received.

Figure 6: Rutherford Road Crossing Type – Preferred Option



WHAT WE HEARD: Option 1 was indicated most favourable as it would provide an opportunity to showcase art, prioritize safety, create an uninterrupted biking and hiking path, and help decrease commute times for those who have to wait for the crosswalk. The tunnel is an extremely admired option already based on user experiences with the Major McKenzie tunnel, as many residents in this area have small children and would prefer to cross less roads when possible. Opposing arguments and concerns stated the need for clean-up and regular maintenance of tunnels as they often become littered with garbage. Other worry that tunnels can lead to increases in crime in the early mornings/late evenings. Some also noted that the feasibility/cost of implementing a tunnel could reduce the chances of Option 1 coming to fruition.

> "This is a very busy intersection/road with high-speed vehicles and large trucks. It's best to keep the trail separated from traffic or intersections"

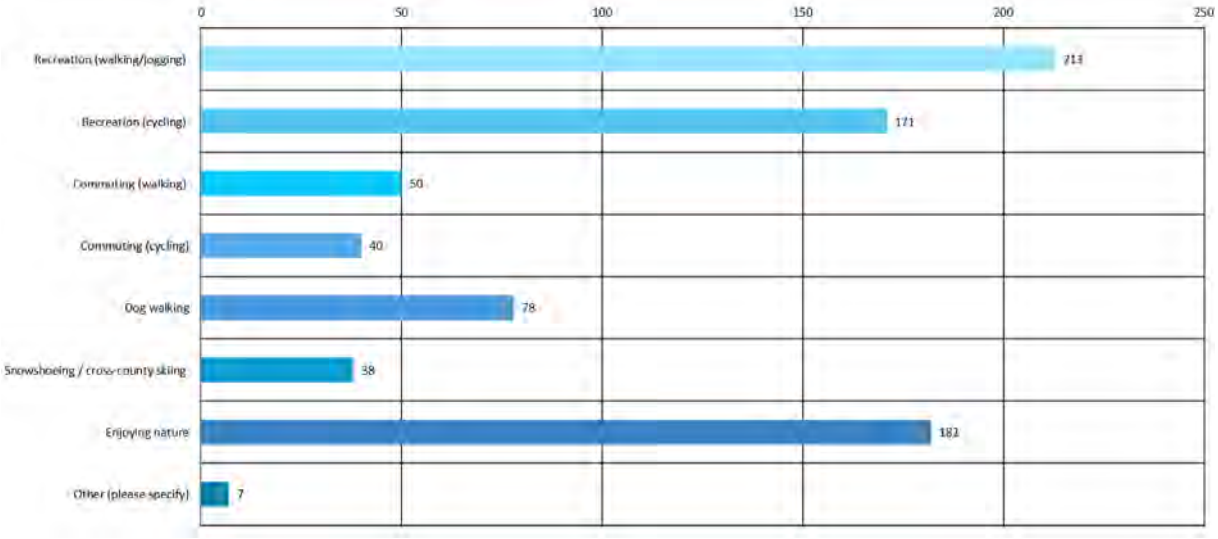
To conclude, Option 1 is very favourable amongst community members if proven to be a feasible option.

7. **Use of Trail** – Participants were asked how they see themselves using the trail out of a list of options. The options included:

    1. Recreation (walking / jogging)
    2. Recreation (cycling)
    3. Dog walking
    4. Enjoying nature
    5. Commuting (walking)
    6. Commuting (cycling)
    7. Snowshoeing / cross-country skiing

    As shown in **Figure 7**, most respondents indicated that they would use the trail in the following ways: 1. **For recreation (walking / jogging); 2. For enjoying nature; and 3. For recreation (cycling).**

    Figure 7: Use of Trail – Preferred Options



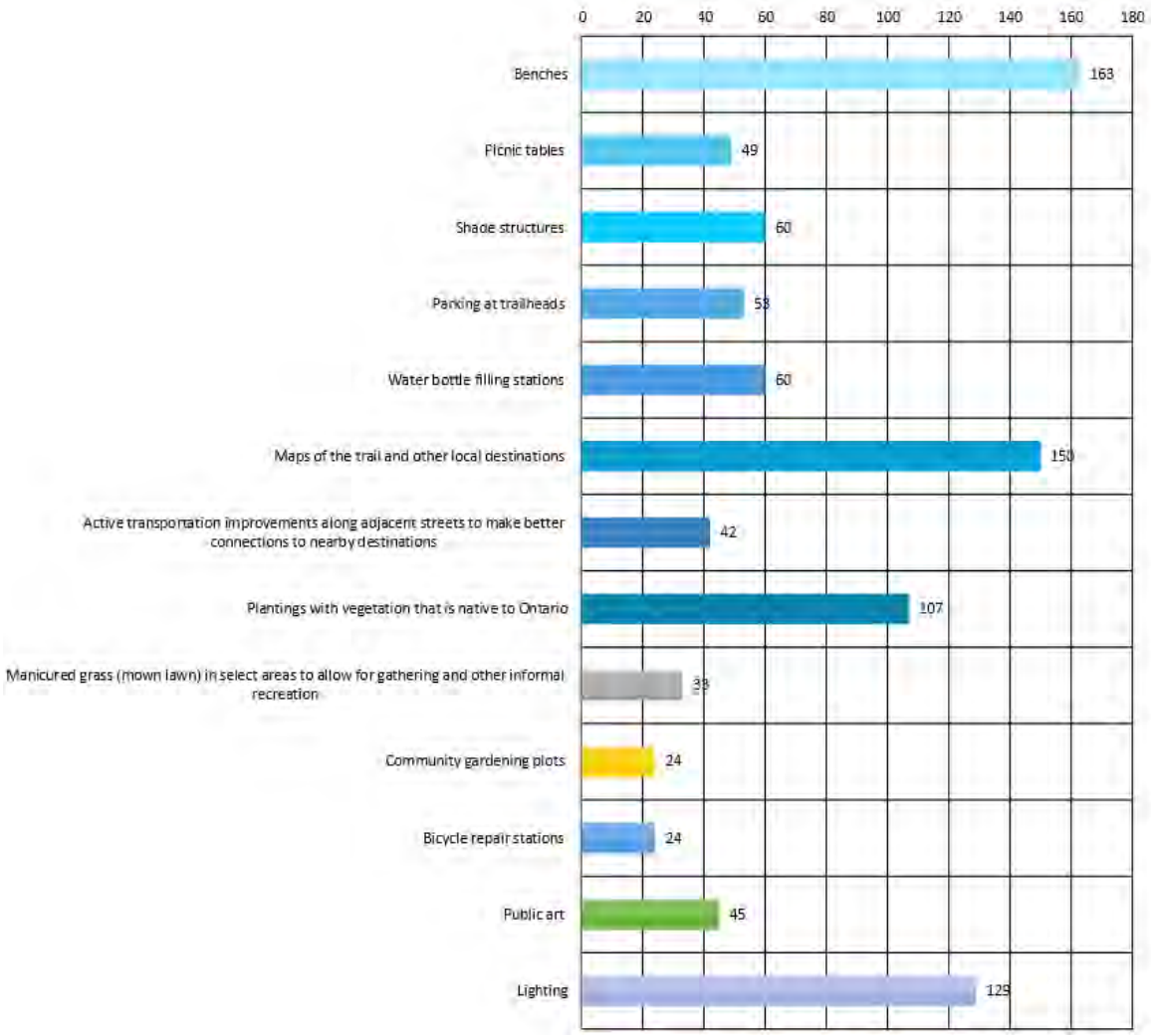
8. **Preferred Amenities** – Participants were asked to indicate the top five amenities or improvements they would like to see as part of this trail project from a list of options. The options included:

    1. Benches
    2. Maps of the trail and other local destinations

3. Active transportation improvements along adjacent streets to make better connections to nearby destinations
4. Lighting
5. Parking at trailheads
6. Bicycle repair stations
7. Plantings with vegetation that is native to Ontario
8. Community gardening plots
9. Public art
10. Water bottle filling stations
11. Picnic tables
12. Shade structures
13. Manicured grass (mown lawn) to allow for gathering and other informal recreation

As shown in **Figure 8**, the top trail amenities chosen were: **1. Benches; 2. Maps of the trail and other local destinations; 3. Shade structures; and 4. Plantings with vegetation that is native to Ontario.**

Figure 8: Preferred Amenities – Preferred Options

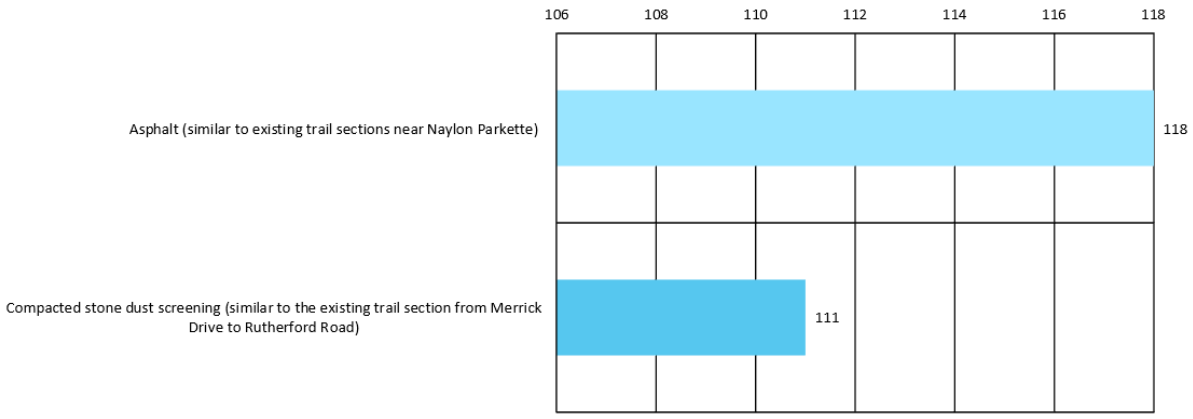


9. **Surfacing Material** – Participants were asked what type of trail surfacing material they would prefer between two options. The options included:

    1. Asphalt (similar to existing trail sections near Naylon Parkette)
    2. Compacted stone dust screening (similar to the existing trail section from Merrick Drive to Rutherford Road)

    Most participants indicated that they would **prefer asphalt for the surfacing material of the trail,** as shown in **Figure 9**.

    Figure 9: Surfacing Material – Preferred Option

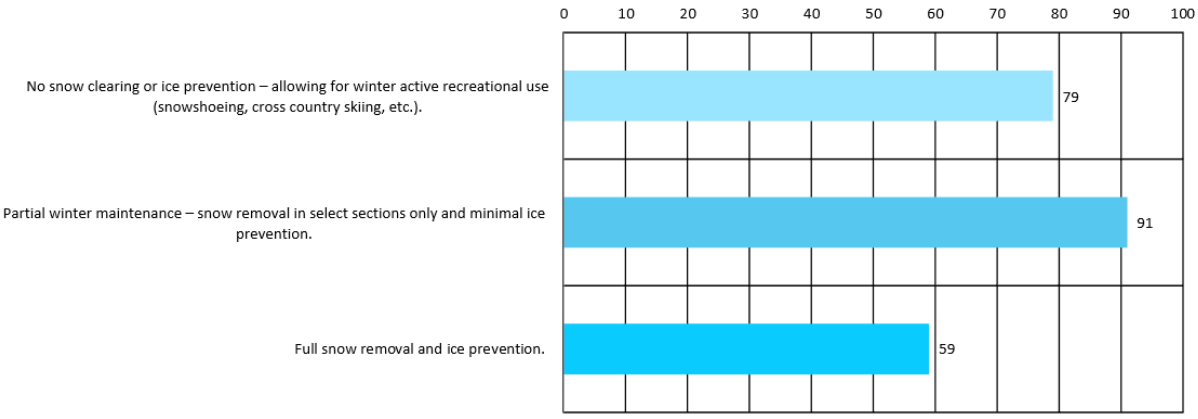


10. **Seasonal Maintenance** – Participants were asked to indicate what type of seasonal maintenance for trails within the subject area they would prefer between three options. The options included:

    1. Partial winter maintenance – snow removal in select sections only and minimal ice prevention
    2. Full snow removal and ice prevention
    3. No snow clearing or ice prevention – allowing for winter active recreational use (snowshoeing, cross country skiing, etc)

    Most participants indicated that they would **prefer partial maintenance; snow removal in select sections only and minimal ice prevention,** as shown in **Figure 10**. That being said, many participants also indicated that they would **prefer no snow clearing or ice prevent – allowing for winter active recreational use.**

    Figure 10: Seasonal Maintenance – Preferred Option



Summary of Key Findings

The input received through the public survey helped to identify several key findings relating to community priorities that the Project Team will use to guide the project going forward. A summary of the overall key findings that emerged throughout the survey and are to be considered moving forward are included below.

- Safety should be a main priority when determining the preferred trail alignment
- There is a desire for low environmental impact and tree removal – residents enjoy walking outdoors through natural environments
- Many participants were against road crossings in general, and connecting trails to roadways/sidewalks
- Residents don't feel the need to create excess construction or trails - connecting existing trails and new entrances creates trail longevity and connectivity that is less impactful to the environment
- Tunnels seem to be a popular choice amongst residents, but the main issue is adequate lighting and safety within the tunnel; unsafe at night/early morning and in the winter, as well as it becomes a graffiti and debris area – as prominent comments
- There were concerns over costs; many participants worry that costs will inhibit decision-making and prolong the approval process
- There is a desire for trail elements and features to look nice/enticing (e.g., bridge)

Next Steps

The feedback received through the online public survey has highlighted several key themes and community priorities. These ideas will be used to help guide the development of a preferred alternative design for the Bartley Smith Trail. The Project Team will also be hosting more Stakeholder Workshops in 2021 and 2022 and a Public Information Centre (PIC) in early 2022 to obtain further input from both the public and stakeholders to ensure the preferred alternative design aligns with community and stakeholder values. The overall trail alignment will be determined based on background research, technical analysis, and findings from the stakeholder and public engagement.

Source Data

Data has been provided by the City of Vaughan. Two site walks have been completed to date with members of the project team and key stakeholders to obtain site data.

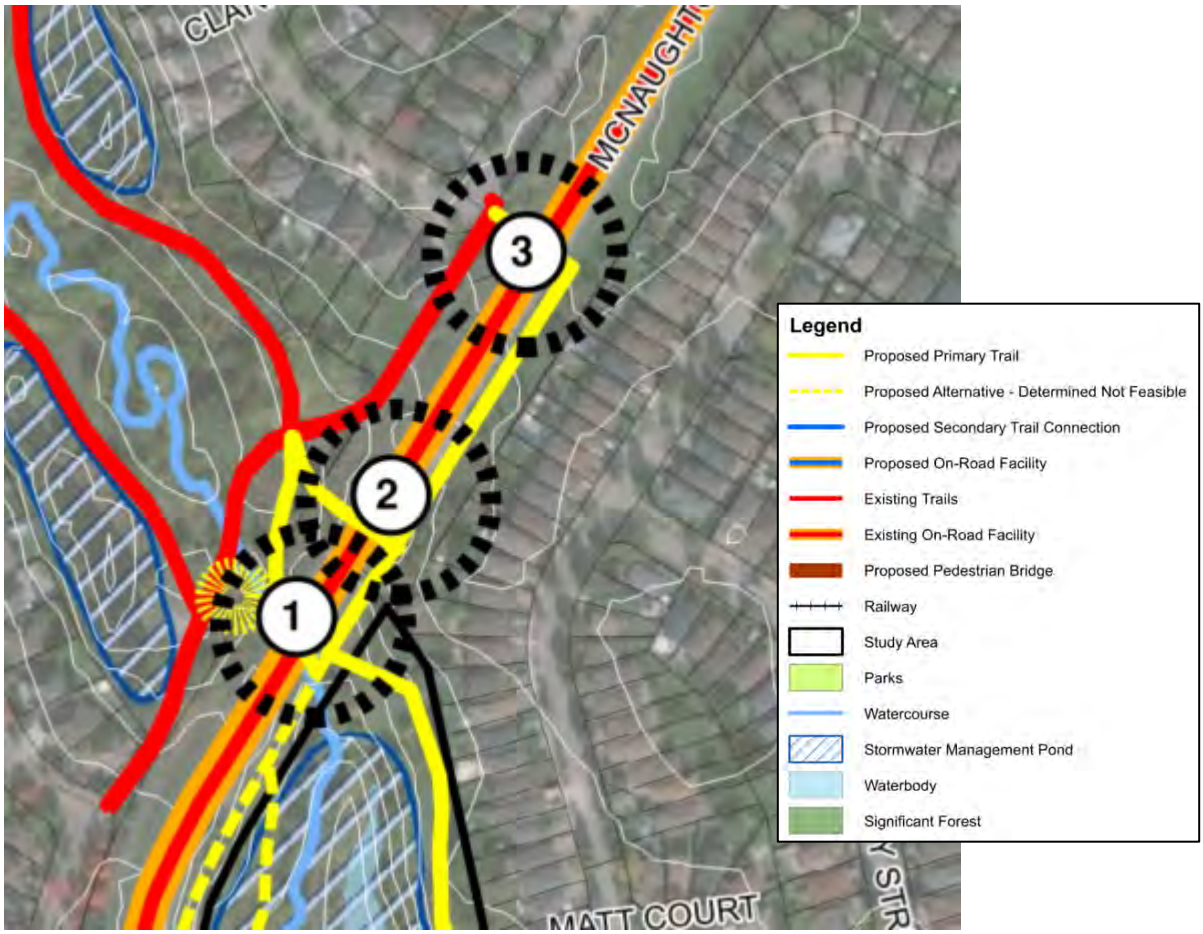
APPENDIX

A SURVEY QUESTIONS

HAVE YOUR SAY, VAUGHAN
BARTLEY SMITH GREENWAY

McNaughton Road to Major Mackenzie Road

1. ***When using the trail, how would you prefer to cross McNaughton Road? Please rank the following three options from most preferred (1) to least preferred (3).**



Alt text: A map showing the three potential crossing options for McNaughton Road using dotted black circles. Option 1 is a tunnel/culvert crossing under the roadway. Option 2 is a new signalized at-grade road crossing near the location of the creek. Option 3 is a new signalized at-grade road crossing connecting to Fletcher Drive.

Ranking Question

- Option 1 - tunnel/culvert crossing under roadway (similar to Major Mackenzie Drive trail crossing)
- Option 2 - new signalized at-grade road crossing near location of the creek
- Option 3 - new signalized at-grade road crossing connecting to Fletcher Drive

If interested, please explain the reasons behind your choice.
Open-ended text box

There are currently two (2) proposed route options to connect the trail between Major Mackenzie Drive and McNaughton Road, of which one will be chosen.

- **Route Option A (with bridge connection)** – this route travels through the creek valley on the east side between the stormwater pond and rear of Mathewson Street residential lots until it crosses the pond and connects with an existing pond service path.

- **Route Option B (connection extending behind Mathewson St. homes)** - travels through the creek valley on the east side between the stormwater pond and rear of Mathewson Street residential lots until reaching the existing Killian-Lamar Parkette trails.

Other Routes Determined Not Feasible – the City also explored routes to the west of the stormwater pond (shown with dashed lines), however they are not feasible due to steep slopes, erosion risks, proximity to the creek and the anticipated negative impact of vegetation removal. Alt text: A map that shows two

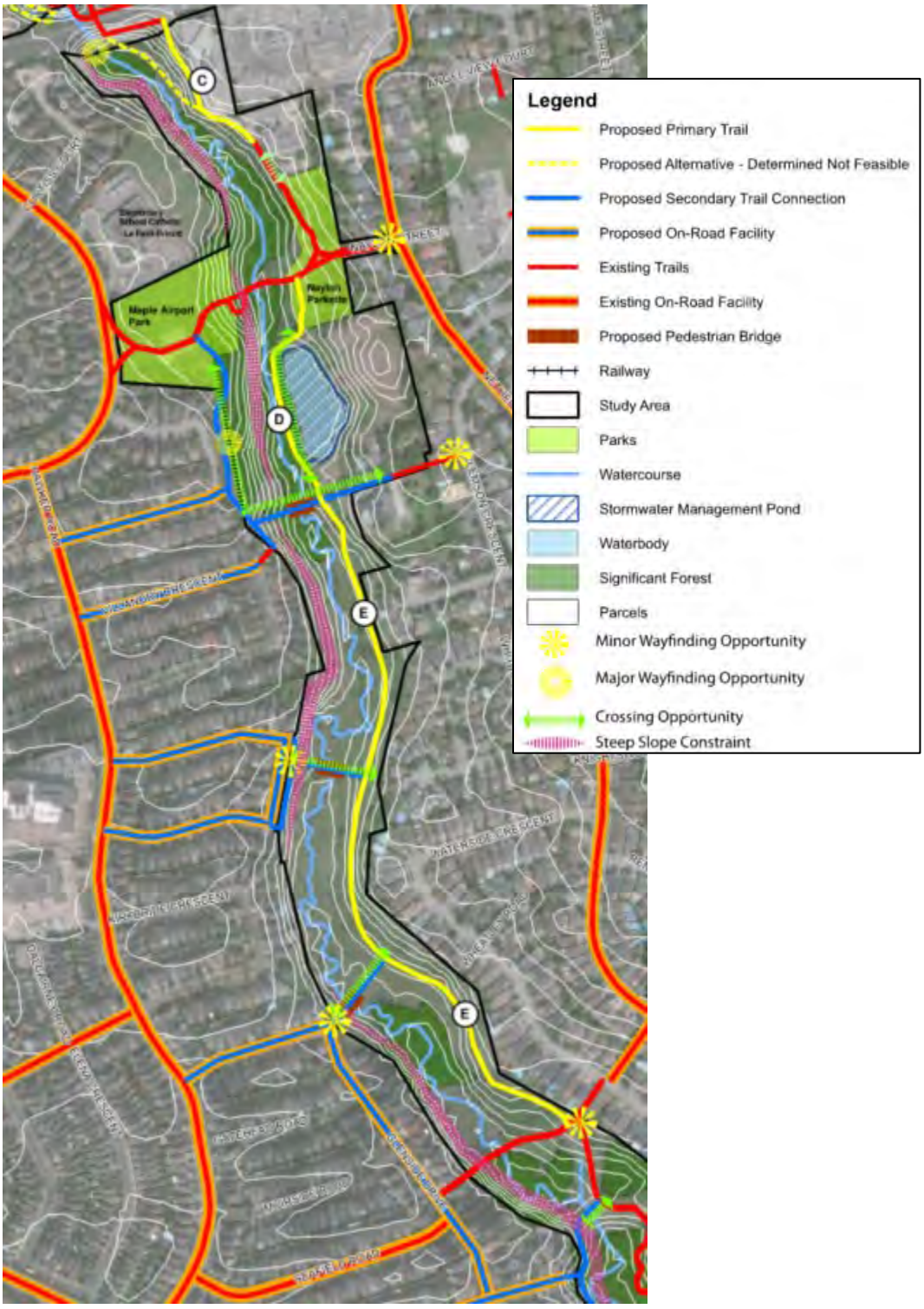
potential trail route options to connect the trail between McNaughton Road and Major Mackenzie Drive. Both routes connect the trail by travelling through the creek valley on the east side between the stormwater pond and rear of Mathewson Street residential lots. Option A is shorter and uses a bridge to cross the stormwater pond to connect with an existing service path. Option B is slightly longer, continuing to travel behind the residential lots along Mathewson Street until it meets with the existing trail.

2. *** Which of the two proposed route options – Option A or B – do you prefer?**
   Multiple choice question
   - Route A
   - Route B

   If interested, please explain the reasons behind your choice.
   Open-ended text box

Major Mackenzie Road to Rutherford Road

A priority for this project is to limit the impact to natural systems in the area. To meet this goal, the trail between Major Mackenzie Road and Rutherford Road is currently proposed to travel along the east side of the creek (Routes C, D and E) since the west side of the creek is heavily treed and sloped.



Alt text: A map that shows the proposed trail route between The route travels from Major Mackenzie Road and crosses within the private property of St. David's Parish, where it then connects to the

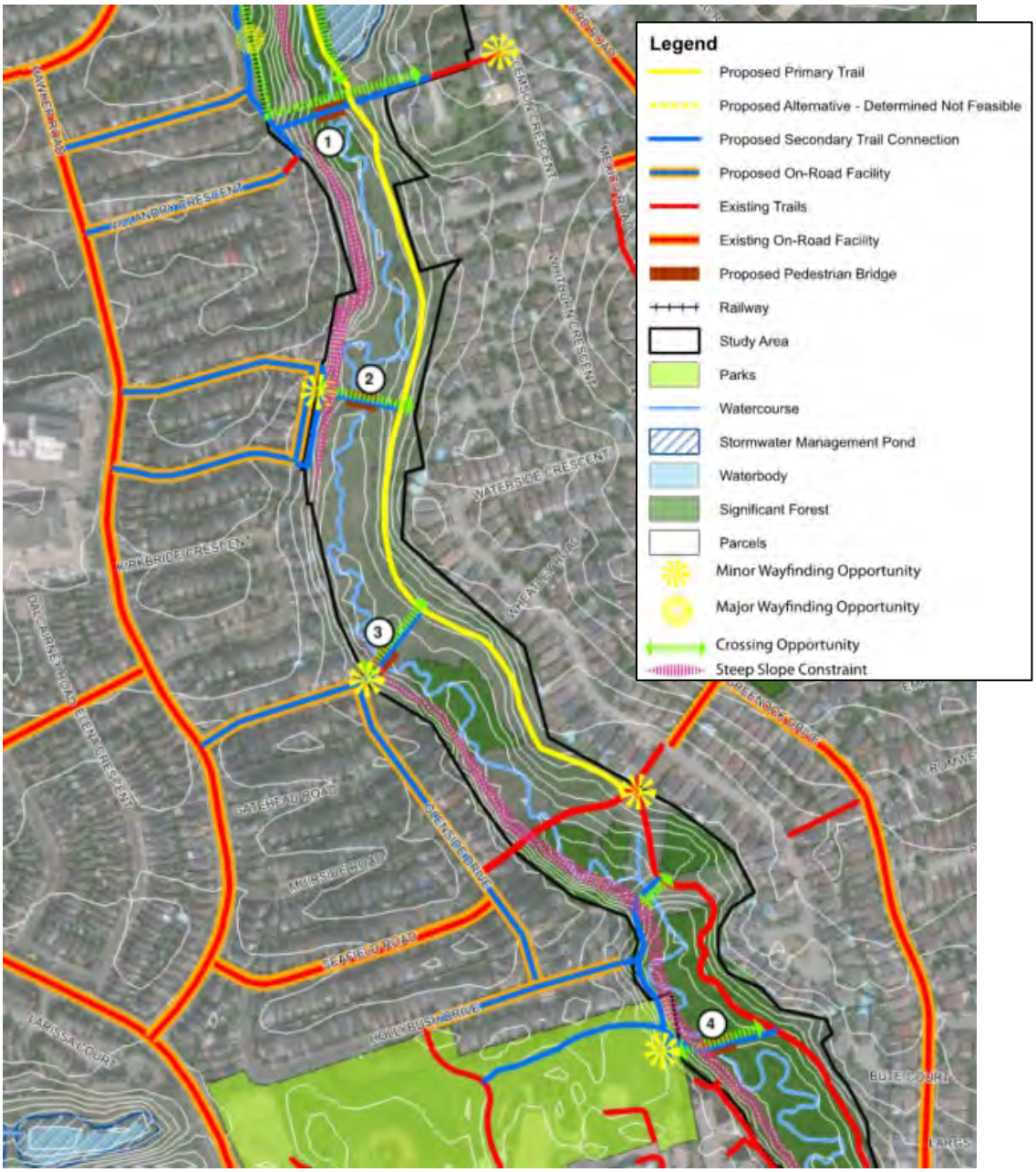
existing trail in the Naylon Parkette. The proposed new trail route continues south of the parkette and travels between the creek and rear of the residential lots that back onto the corridor until it meets an existing trail section that extends to Rutherford Road.

3. ***Do you agree with locating the trail on the east side of the creek?**
   Multiple Choice
   - Yes
   - No

   If interested, please explain the reasons behind your choice.
   Open-ended text box

Existing pedestrian bridges connect neighborhoods to the east and west of the creek at Naylon Parkette and between Seafield Road and Merrick Drive. The project will explore adding new pedestrian bridge crossing(s) between Major Mackenzie Drive and Rutherford Road.

- **Option 1** - a new bridge and trail connecting Bevan Road and Caproni Drive.
- **Option 2** - a new bridge and trail connecting Mount Charles Crescent to the proposed new trail.
- **Option 3** - a new bridge and trail connecting Glenside Drive to the proposed new trail.
- **Option 4** - a new bridge and trail connecting the baseball diamonds at the Sports Village to the existing trail.



Alt text: A map that shows four potential bridge crossing options to connect the potential trail route on the east side of the creek to roadways on the west side of the creek. Option 1 is a new bridge and trail connecting Bevan Road and Caproni Drive. Option 2 is a new bridge and trail connecting Mount Charles Crescent to the proposed new trail. Option 3 is a new bridge and trail connecting Glenside Drive to the proposed new trail. Option 4 is a new bridge and trail connecting the baseball diamonds at the Sports Village to the existing trail.

4. *** Please rank the four crossing options from most preferred (1) to least preferred (4).**

Ranking Question

- Option 1 - a new bridge and trail connecting Bevan Road and Caproni Drive.
- Option 2 - a new bridge and trail connecting Mount Charles Crescent to the proposed new trail.
- Option 3 - a new bridge and trail connecting Glenside Drive to the proposed new trail.

- Option 4 - a new bridge and trail connecting the baseball diamonds at the Sports Village to the existing trail.

If interested, please explain the reasons behind your choice(s).
Open-ended text box

Rutherford Road to Keele Street

There is currently one (1) proposed route option to connect the trail between Rutherford Road and Keele Street. The route would travel parallel to Rutherford Road and Sherwood Park Drive (separate from the road) until it reaches the parkette, after which point it travels along Sherwood Park Drive and along Keele Street. The trail will terminate at the existing signalized crossing at Gantner Gate.

The City explored alternative route options along Tesma Way and to the east of the creek (shown with dashed lines), however these are not feasible due to steep slopes, erosion risk, proximity to the creek, and the anticipated negative impact of vegetation removal.

Alt text:: A map that shows the proposed route to connect the trail between Rutherford Road and Keele Street. The route travels parallel to Rutherford Road and Sherwood Park Drive until it reaches the parkette. Then the trail travels within the boulevard along Sherwood Drive and Keele Street. This route option would provide a connection to the park at the corner of Sherwood Park Drive and Alberta Drive.

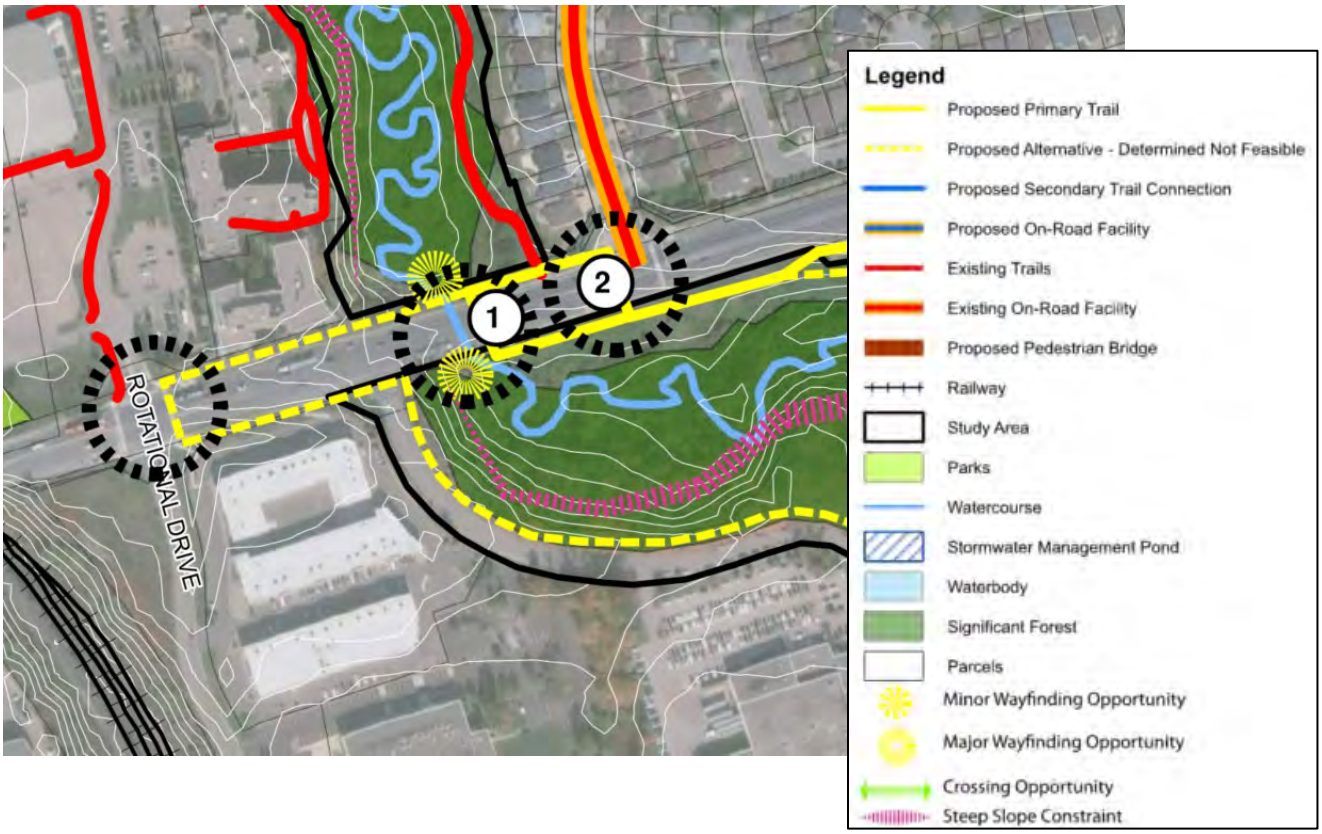
5. ***Do you agree with the proposed trail alignment.**
   Multiple Choice
   - Yes
   - No

   If interested, please explain the reasons behind your choice.
   Open-ended text box

6. ***When using the trail, how would you prefer to cross Rutherford Road?**

Multiple Choice

- Option 1 - tunnel/culvert crossing under roadway (similar to Major Mackenzie Drive trail crossing)
- Option 2 - existing signalized intersection at Greenock Drive.



Alt text: A map showing the two potential crossing options for Rutherford Road. Option 1 utilizes the existing signalized intersection crossing at Rotational Drive. Option 2 utilizes the existing signalized intersection crossing at Greenock Drive.

7. ***How do you see yourself using the trail? Please select all that apply.**

Multiple Choice

- Recreation (walking/jogging)
- Recreation (cycling)
- Commuting (walking)
- Commuting (cycling)
- Dog walking
- Snowshoeing / cross-county skiing
- Enjoying nature
- Other (please specify)

8. ***What type of amenities or improvements would you like to see as part of this trail project? Please select your top five (5) priorities.**

Multiple Choice

- Benches
- Picnic tables
- Shade structures
- Parking at trailheads
- Water bottle filling stations

- Maps of the trail and other local destinations
- Active transportation improvements along adjacent streets to make better connections to nearby destinations
- Native naturalized planting
- Manicured grass (mown lawn) in select areas to allow for gathering and other informal recreation
- Community gardening plots
- Bicycle repair stations
- Public art
- Lighting

9. ***What type of trail surfacing material would you prefer?**
   Multiple Choice
   - Asphalt (similar to existing trail sections near Naylon Parkette)
   - Compacted stone dust screening (similar to the existing trail section from Merrick Drive to Rutherford

10. ***What type of seasonal maintenance for trails within the subject area would you prefer?**
    Multiple Choice
    - No snow clearing or ice prevention, allowing for winter active recreational use (snowshoeing, cross country skiing, etc.).
    - Partial winter maintenance - snow removal in select sections only, minimal ice prevention.
    - Full snow removal and ice prevention.

Personal information in this form is collected under the authority of the *Municipal Act, 2001* and will be used for the purpose of confirming we have obtained feedback from a range of users, including those who live within close proximity and those commuting along the trail from further start/end points. Questions about this collection can be directed to Michael Habib, Senior Planner, Parks Infrastructure Planning and Development at Michael.Habib@vaughan.ca.

11. **What is your postal code?**
    Open-ended text box

12. **What is your age?**
    Multiple Choice
    - 18-24 years old
    - 25-34 years old
    - 35-44 years old
    - 45-54 years old
    - 55-64 years old
    - 65+ years old
    - Prefer not to say

13. **How did you hear about this survey?**
    Multiple Choice
    - Road sign
    - Signs or posters within my community

- Social media
- Mailed notice
- News release/article
- Recommended by a friend/colleague.
- Other

Staying informed

14. **Would you like to be contacted by the City of Vaughan if there is an opportunity to be involved in a focus group discussion or trail walk for the Bartley Smith Greenway study?**
    Multiple Choice
    - Yes, I would like to be contacted about any future focus group discussions or trail walks for the Bartley Smith Greenway study.
    - No thanks.

15. ***Would you like to be contacted by the City of Vaughan about other future conversations about City decisions or matters?**

    - Yes, I would like to like to be contacted about all future engagement opportunities on City-wide decisions or matters.
    - Yes, I would like to be contacted, but only about future engagement opportunities on the Bartley Smith Greenway project.
    - No thanks.

APPENDIX

B DETAILED SUMMARY OF SURVEY RESPONSES

Bartley Smith Greenway Survey

SURVEY RESPONSE REPORT
04 October 2021 - 22 October 2021

PROJECT NAME:
Bartley Smith Greenway Trail Feasibility Study

BANG THE TABLE engagementHQ

SURVEY QUESTIONS

Q1 When using the trail, how would you prefer to cross McNaughton Road? Please rank the following three options from most pref...

OPTIONS	AVG. RANK
Option 1 - tunnel/culvert crossing under roadway (similar to the Major Mackenzie Drive trail crossing)	1.34
Option 2 - new signalized at-grade road crossing near to the creek	2.03
Option 3 - new signalized at-grade road crossing connecting to Fletcher Drive	2.63

Mandatory Question (229 response(s))
Question type: Ranking Question

Q2 If interested, please explain the reasons behind your choice.

Anonymous 10/05/2021 09:38 AM	The tunnel/culvert under MMAC gets vandalized, is dark and often has debris left behind
Anonymous 10/05/2021 10:22 AM	safer, more continuity of trail
Anonymous 10/05/2021 10:31 AM	I’m interested in whatever solution will do the least amount of damage to the creek.
Anonymous 10/05/2021 11:46 AM	There is no need to add a signalized crossing. The best option is one that allows continuous use for walking, biking and driving on McNaughton with any traffic signals for anybody.
Anonymous 10/05/2021 11:56 AM	Shouldn't stop traffic ideally and also safer to tunnel or build a bridge
Anonymous 10/05/2021 12:02 PM	The main reason for tunnel/culvert option is a smooth uninterrupted bike ride as the main point. The other reason, I am also a driver and McNaughton Road does not need an additional stopping area. I use the trail from the northern point at Teston and Cranston park. It already has 2 crossings above ground. The crossing at Melville is problematic, it does not have signalized at-grade crossing, and it is not safe. You need to wait for the cars to pass. The crossing at Cunningham is not aligned, so we (family with kids) have to go on the side-walk disturbing the pedestrians. I feel like option 3 will bring the same experience. When I ride by myself, I want to enjoy a speedy uninterrupted bike ride with easy crossings. Can't wait to be able to bike from my house for 20-50 km a day. Thank you for your efforts!
Anonymous 10/05/2021 12:23 PM	Grade separation is seamless and convenient. Signals aren’t sustainable.
Anonymous 10/05/2021 01:13 PM	Easier access and continuance
Anonymous 10/05/2021 02:48 PM	It would be good to avoid car traffic

Anonymous 10/05/2021 07:37 PM	Allows trail user to not be interrupted by traffic and avoid interrupting nature experience. Reduces traffic disruptions.
Anonymous 10/05/2021 08:14 PM	Tunnel/Culvert is preferred from a safety standpoint.
Anonymous 10/05/2021 09:41 PM	I'd prefer not to cross a road
Anonymous 10/05/2021 10:39 PM	Tunnel is preferred because safer for kids crossing (no traffic to worry about). there is a steep incline to get from the area South of McNaughton to road level which would make a road crossing more difficult on bike. A crossing at Fletcher drive seems a bit out of the way-. Too much backtracking.
Anonymous 10/06/2021 07:36 AM	1 seems like the most ideal, the image is blurry and hard to make out or understand the options clearly.
Anonymous 10/06/2021 11:44 AM	I love tunnels
Anonymous 10/06/2021 11:50 AM	Culvert/Tunnel crossing under roadway tends to get vandalized. Because of the hidden nature and privacy of tunnels and culverts, other activities, other than citizen's crossing tend to occur.
Anonymous 10/06/2021 12:06 PM	I prefer Option 2 because tunnels/culverts can retain water/ice/debris. Bad for bikes and bikers.
Anonymous 10/06/2021 12:40 PM	The at-grade crossing, if designed correctly, will additionally slow traffic. The buried crossing holds perceived risk and exceptional cost. The Fletcher intersection is too indirect
Anonymous 10/06/2021 01:45 PM	The underground passage allows for a semaless flow of human traffic without having to stop for or interfere with road traffic. Also i feel like it would give off a cosy atmosphere to the trail
Anonymous 10/06/2021 01:58 PM	1 is most direct and safest as it doesn’t cross the road. However connections to mcnaughton should also be provided.

Anonymous 10/06/2021 02:22 PM	Most direct crossing is preferred. Also, the tunnel/culvert provides a separate crossing away from the road which is preferred. I have young children and separate trail crossings are preferred.
Anonymous 10/06/2021 02:26 PM	doesn't impact traffic, no concern of being hit by vehicles not stopping
Anonymous 10/06/2021 03:02 PM	Safety
Anonymous 10/06/2021 03:18 PM	The tunnel is definitely the best option as those using the trail whether it be walking or on bike can just continue on without stopping for traffic. This also makes travel on the trail much safer.
Anonymous 10/06/2021 03:26 PM	Safety
Anonymous 10/06/2021 05:13 PM	Not having to intersect traffic and signals etc. is a preferable way to enjoy a hike on the trail.
Anonymous 10/06/2021 05:25 PM	Underground tunnel avoids traffic - cars in Vaughan often don’t watch for pedestrians and bikes.
Anonymous 10/06/2021 06:48 PM	Option 1 is the most safest way to cross and does not disrupt traffic. Option 2 looks like it follows the trail closer than Option 3
Anonymous 10/06/2021 06:53 PM	Much better to have the trail uninterrupted by at-grade road crossings - better immersion in nature, safer for younger users and there’s big benefits to fitness users (runners, cyclists, etc.) to not have to stop at roads.
Anonymous 10/06/2021 09:44 PM	Consider avoiding too much construction work and shorter trail near the houses.
Anonymous 10/06/2021 10:19 PM	more safety for kids, seniors and bike riders..

Anonymous 10/06/2021 10:38 PM	I find tunnels are much safer.
Anonymous 10/07/2021 12:05 AM	Option 1 is safest as it minimizes conflict points between cars and other road users
Anonymous 10/07/2021 09:56 AM	I think option to because it would probably require the least amount of construction.
Anonymous 10/07/2021 11:43 AM	would rather continue the trail under the roadway without having to stop at an intersection
Anonymous 10/07/2021 12:58 PM	In order of most rational and cost-effective options
Anonymous 10/07/2021 03:06 PM	This will remove friction and chokepoints between cars and - pedestrians and cyclists. Moreover, it will allow wildlife to travel under the road, reducing danger to all.
Anonymous 10/07/2021 03:48 PM	I would enjoy a seamless crossing. That's part of what makes this trail better than biking through residential streets…less stopping to cross streets.
Anonymous 10/07/2021 04:34 PM	It would be the safest crossing
Anonymous 10/07/2021 05:08 PM	Safer for children. Minimizes traffic impact. More visually appealing
Anonymous 10/07/2021 05:08 PM	Tunnel crossing under roadway seems the least safe option to me. i am a runner and a woman and prefer more visibility for added safety
Anonymous 10/07/2021 05:11 PM	To not create any additional traffic gridlock along McNaughton.
Anonymous 10/07/2021 05:35 PM	I think it would be easier and you would not have to wait for traffic.

Anonymous 10/07/2021 07:27 PM	Avoiding crossing the road should be the main consideration
Anonymous 10/07/2021 09:27 PM	Traffic on macnaughton regularly travels at 10-20kph over the limit. An at grade crossing will be cheaper, but more dangerous I suspect
Anonymous 10/07/2021 09:42 PM	Tunnel preferred so as not to have to wait for traffic signal and not slow down traffic on McNaughton
Anonymous 10/07/2021 10:04 PM	Safety
Anonymous 10/08/2021 07:24 AM	Reduce impact to local traffic and more safety for trail user
Anonymous 10/08/2021 09:32 AM	all of these would be fine. knowing the costs of the various options would help me make a better decision. my concern about a tunnel would be that people could loiter out of sight making it seem less safe.
Anonymous 10/08/2021 10:13 AM	Pedestrian friendly
Anonymous 10/08/2021 10:33 AM	safety is a priority. winter trails keeping away from local traffic
Anonymous 10/08/2021 11:57 AM	For safety and esthetic reasons
Anonymous 10/08/2021 01:31 PM	Safety
Anonymous 10/08/2021 01:32 PM	The underpass at Major Mac works well and I think it's safer than crossing signals. McNaughton has already to stop lights, a third one may be too much, considering that it's supposed to be a faster option to commute north on Keele.
Anonymous 10/08/2021 01:50 PM	Signals are for roads, not hiking trails

Anonymous 10/08/2021 03:24 PM	Safest choice is #1. As a pedestrian, it’s scary crossing any road in Vaughan
Anonymous 10/08/2021 05:19 PM	I don't feel safe walking alone in tunnel under major Mac bridge
Anonymous 10/08/2021 06:06 PM	don't like waiting to cross at the light, for safety reasons and efficiency.
Anonymous 10/08/2021 07:45 PM	The tunnel seems to be too costly.
Anonymous 10/08/2021 09:35 PM	directly cross
Anonymous 10/09/2021 09:25 AM	Street crossing, no matter how well signalized, are still more hazardous than a tunnel under the road. A tunnel also allows for a seamless enjoyment of the trail. Perhaps it costs more but it is the right choice.
Anonymous 10/09/2021 11:21 AM	Keeping the trail (cyclist) away from traffic.
Anonymous 10/09/2021 04:42 PM	If running, walking or cycling, it’s a pain having to wait for traffic lights to change. An underpass would make it seamless.
Anonymous 10/09/2021 05:47 PM	Easy road crossing
Anonymous 10/09/2021 10:50 PM	Don’t want to wait for a signal
Anonymous 10/10/2021 12:34 AM	Given the population growth, traffic will likely increase on McNaughton in the future as an alternative to Major MacKenzie and thus a tunnel-type crossing appears to be the most reasonable solution.
Anonymous	Safest, uninterrupted route avoids road crossings.

10/10/2021 01:08 AM	
Anonymous 10/10/2021 02:33 PM	Tunnel is too disruptive. There is lots of space on the surface there to create a safe crossing
Anonymous 10/10/2021 03:25 PM	It's preferable to avoid traffic and not have to cross the road.
Anonymous 10/10/2021 03:33 PM	Option 1 is safest for pedestrians.
Anonymous 10/10/2021 08:14 PM	At grade crossing less disruptive to traffic during construction and to the surrounding environment
Anonymous 10/10/2021 08:40 PM	I would prefer to avoid roadways altogether. Tunnels and bridges are safer.
Anonymous 10/11/2021 04:50 PM	Less disruption to the surrounding area
Anonymous 10/11/2021 08:29 PM	Less costly and near to creek
Anonymous 10/11/2021 09:18 PM	Clearly not having to cross traffic and wait at a signal would be best....second best is a crossing directly on the trail near the creek.
Anonymous 10/11/2021 10:01 PM	Better to cross at grade than a tunnel that floods or has other dangers
Anonymous 10/12/2021 08:01 AM	Less interaction with traffic, the better.
Anonymous 10/12/2021 10:17 AM	safer crossing, not having to wait for crossing light, reduces traffic both ways.
Anonymous 10/12/2021 11:38 AM	Most direct path without needing to go out of the way, and Option 1 does not require crossing a street.

Anonymous 10/12/2021 12:17 PM	I'd prefer to not have to cross the road.
Anonymous 10/12/2021 02:23 PM	1 = Safest and no need to stop or slow down when biking
Anonymous 10/12/2021 07:57 PM	Not to disrupt already busy traffic area with more stops unpass is a much safer way as well
Anonymous 10/12/2021 08:46 PM	fell safe
Anonymous 10/12/2021 09:29 PM	Option one creates an uninterrupted cycling path which is worth every penny.
Anonymous 10/12/2021 09:35 PM	Street grade crossing seems safer than a tunnel/culvert
Anonymous 10/12/2021 09:51 PM	A tunnel is a much safer option for bicyclists and pedestrians.
Anonymous 10/12/2021 09:53 PM	Not having to cross a busy road would be best. It would make me feel safer using the trail with my children. Having to cross a busy road would be more of a challenge. So going under the road is better.
Anonymous 10/12/2021 11:07 PM	use the existing creek to create the trail; use nature to it’s fullest
Anonymous 10/13/2021 10:15 AM	Option 1 is best (no interruption for traffic or the trail) but recognize that at a much higher cost than may not be justifiable.
Anonymous 10/13/2021 10:42 AM	Keeps cars away.
Anonymous 10/13/2021 12:20 PM	Ability to avoid crossing vehicle paths is preferable, although unsure about future maintenance.

Anonymous 10/13/2021 12:28 PM	Avoiding traffic, continuity of trail
Anonymous 10/13/2021 01:15 PM	To reduce traffic on McNaughton.
Anonymous 10/13/2021 02:27 PM	I prefer the tunnel because I do not like road crossings at very busy roads, as you know McNaughton is very busy. A grade crossing would expose pedestrians and cyclists to undo risk. Also, I'm sure we don't need another crossing which would slow down traffic.
Anonymous 10/13/2021 02:35 PM	It's better to be away from the traffic. Also probably better for the wildlife.
Anonymous 10/13/2021 02:57 PM	The tunnel provides direct trail access without walking on the road which I think is better for access and safety.
Anonymous 10/13/2021 03:25 PM	The tunnel option like Major Mackenzie would be safer for drivers and pedestrians.
Anonymous 10/13/2021 03:52 PM	Tunnel under the road is safer for pedestrians and for vehicle traffic.
Anonymous 10/13/2021 04:50 PM	I’m disabled and find that it would be easier with mobility scooter to have access without having to cross a road
Anonymous 10/13/2021 05:01 PM	The tunnel would be the safest option for trail users and also road drivers, if it is not cost prohibitive. The next best option would be the at grade crossing by the creek.
Anonymous 10/13/2021 05:27 PM	I don't think McNaughton is busy enough to bother with the cost of a tunnel. It can be done in future if necessary.
Anonymous 10/13/2021 05:32 PM	Safe for the kids
Anonymous 10/13/2021 06:32 PM	The tunnel needs to be made safe. The one on Major Mackenzie is a hang out for teens

Anonymous 10/13/2021 09:23 PM	Signalized crossings are slower for everyone and not as safe as completely separating the traffic.
Anonymous 10/14/2021 10:35 AM	If cost is not a factor, then a tunnel crossing would be ideal. This way the flow of traffic for both pedestrians using the path and cars travelling on McNaughton, is not disrupted by another light.
Anonymous 10/14/2021 02:23 PM	Option 1 provides the safest method to cross McNaughton. Safety should be a priority for these types of projects
Anonymous 10/14/2021 02:35 PM	The tunnel would provide a seemless experience for the trail user.
Anonymous 10/14/2021 02:53 PM	Option #2 Drivers speed through this area and the crossing would be safer with a signal, especially for kids. Regarding Option #1 I would prefer it except that there are people on the trail who use mini-bikes and/or cycle very quickly who could easily collide with pedestrians, given the poor sightlines.
Anonymous 10/14/2021 05:30 PM	Early morning, evening and night use of tunnels can pose safety concerns due to lack of lighting
Anonymous 10/14/2021 06:56 PM	Safer for pedestrians and less inconvenience for cars.
Anonymous 10/14/2021 09:05 PM	Tunnel would be quickest. Otherwise nearer to creek is least diversion.
Anonymous 10/14/2021 09:52 PM	to avoid waiting for a light (e.g. if running don't have to stop)
Anonymous 10/15/2021 07:28 AM	Provides a continuous and uninterrupted experience when using trail
Anonymous 10/15/2021 07:56 AM	More direct. Less interruption with activities. Least dangerous for traffic.

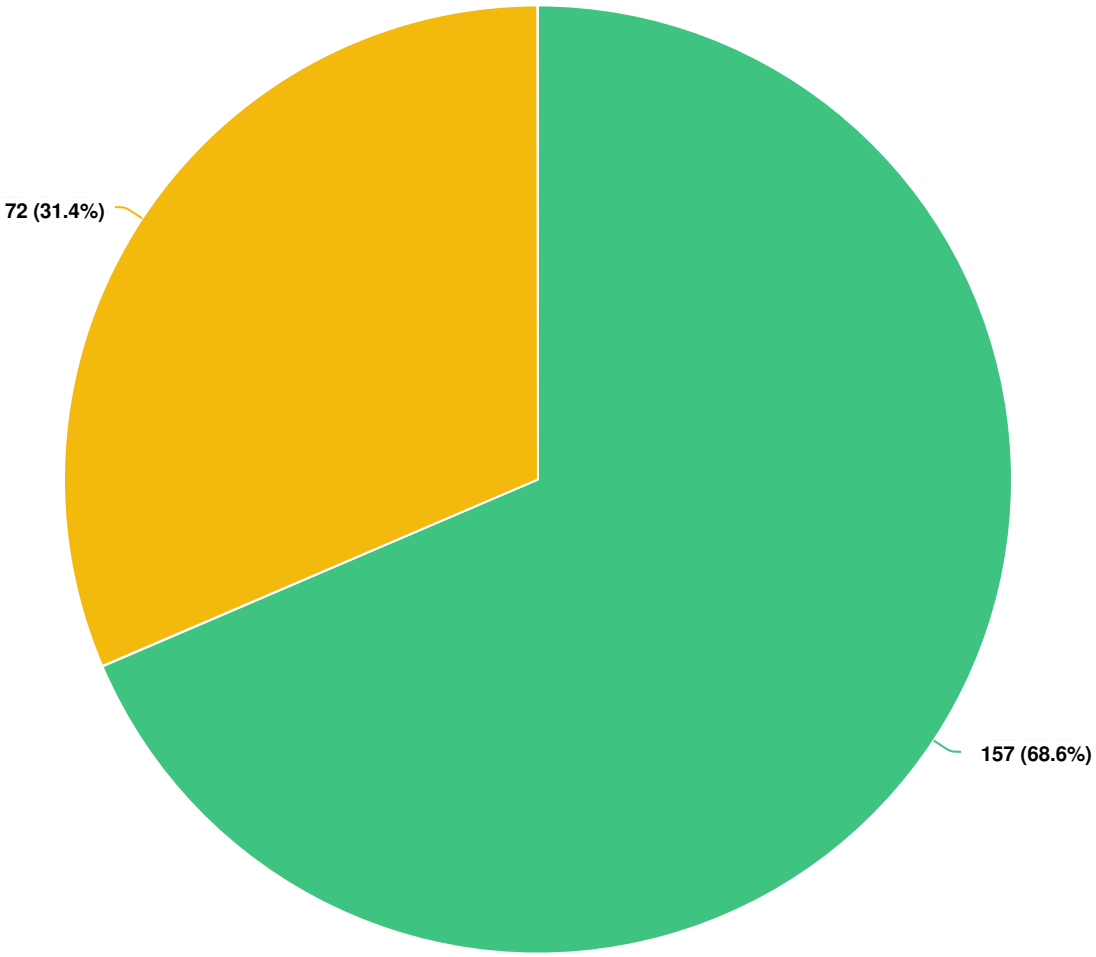
Anonymous 10/15/2021 10:13 AM	Safer for people to walk
Anonymous 10/15/2021 12:25 PM	The tunnel crossing is making the most sense to avoid interruption of the hikers/bikers to the road traffic. Tunnels are safer as well. Additional signalized road crossing is an additional distraction to the heavy traffic in rush hours.
Anonymous 10/15/2021 12:57 PM	Much safer for pedestrians and cyclists with a tunnel/culvert crossing. Vehicles travel fairly quickly on this stretch of road and there are many dump trucks that travel this stretch. Safety first!
Anonymous 10/16/2021 12:35 PM	Tunnel option is not necessary here. Traffic on McNaughton is light enough to accommodate a signalled crossing, and construction of this will not be as disruptive to traffic. Signalled crossing is quite successfully used on the finch hydro corridor trail in North York as well.
Anonymous 10/16/2021 12:49 PM	tunnel/culvert under roadway for seamless, continuity and optimal usage of trail.
Anonymous 10/16/2021 01:56 PM	The underground Major Mackenzie crossing, is dark and night and does not feel safe. At grade, above ground feels safer, more people/vehicle traffic.
Anonymous 10/17/2021 12:47 AM	Please avoid residential neighborhoods as much as possible. People in those neighborhoods will be upset at the increase in foot traffic and possible crime. One neighbor near me whose house is next to the existing trail path has his window continuously broken by thugs throwing rocks. His bay window has now been permanently replaced plywood sheets that look ugly. Since no one can guarantee that only good people will use these trails, we should minimize paths near existing homes.
Anonymous 10/17/2021 12:06 PM	convenience and tranquility away from cars and the hustle of the roads
Anonymous	Grade separation will lead to safer access

10/17/2021 03:50 PM	
Anonymous 10/17/2021 05:30 PM	Tunnel not necessary.
Anonymous 10/17/2021 08:10 PM	Easier to cross if there is a tunnel
Anonymous 10/17/2021 11:24 PM	prefer the trail to continue by under bridge
Anonymous 10/18/2021 02:54 PM	Prefer walking on grade road. I would think Option 1 would create shut down of road and traffic and walking would be horrible.
Anonymous 10/18/2021 04:16 PM	Option 1 is probably the most expensive but allows for the freest movement of people, without having to worry about people and vehicles interacting. Option 2 is my second option because the trail is straight thru connection (most direct) and is probably the best option from a cost and timeline point of view. Option 3 is very similar to Option 2, but requires people to make an unnecessary "jog" in the path route, which I feel people would skip and simply cross the road at the Option 2 location, regardless of their being stop lights/cross walk just up the road.
Anonymous 10/18/2021 10:57 PM	Option 1, Safety key issue, no interaction with any traffic, less confusion for hikers or bikers as to which way the trail continues, continuous enjoyment of trail. Is this not the whole idea of a trail.
Anonymous 10/19/2021 12:21 AM	Safety percentage would be higher.
Anonymous 10/19/2021 09:14 AM	Safest for pedestrians and cyclists (in particular small children) and no impact to traffic.
Anonymous 10/19/2021 12:03 PM	Option 2 would have easier access to trail. Not sure if volume of traffic warrants the creation of a tunnel/culvert at this time.
Anonymous 10/19/2021 03:40 PM	I enjoy using the tunnel at Major Mackenzie without the need to cross at any lights.

Anonymous 10/19/2021 04:45 PM	tunnels creates an unsafe area that at night it might became an area to avoid.
Anonymous 10/19/2021 08:15 PM	The tunnel option is more convenient and keeps you closer to a natural nature experience. The road crossings bring you out of that natural nature experience.
Anonymous 10/19/2021 10:14 PM	Better spot
Anonymous 10/20/2021 09:55 AM	I wouldn't use a tunnel crossing at night for personal safety reasons, also, overall expense and maintenance is not worth it for the municipality
Anonymous 10/20/2021 11:24 AM	Option 1 is the better choice as it is safer because it limits your exposure to roadway traffic and is better exposed to nature as it doesn’t require you to cross a road.
Anonymous 10/20/2021 05:44 PM	Tunnel is best for human and animal passage.
Anonymous 10/20/2021 06:27 PM	SAFETY
Anonymous 10/20/2021 10:17 PM	Safer
Anonymous 10/20/2021 10:26 PM	Does not make any sense to pass 4 lanes of traffic even signalized

Optional question (142 response(s), 87 skipped)
Question type: Essay Question

Q3 Which of the two proposed route options – Option A or Option B – do you prefer?



Question options

Route Option A
Route Option B

Mandatory Question (229 response(s))
Question type: Radio Button Question

Q4 If interested, please explain the reasons behind your choice.

Anonymous 10/05/2021 10:22 AM	more direct route - logical movement
Anonymous 10/05/2021 10:31 AM	Trying to assess which solution would do the least damage to natural environment.
Anonymous 10/05/2021 11:46 AM	Route A requires less disturbance to existing areas as less new trail is required. Also it distances from houses a little more plus the bridge would be a nice scenic addition to the trail.
Anonymous 10/05/2021 12:02 PM	In this case, I don't really have preference. I would go with whatever is cheaper to build and maintain.
Anonymous 10/05/2021 10:39 PM	Bridges are more fun!
Anonymous 10/06/2021 07:36 AM	Would be nice to travel with limited impact on the residents of Mathewson. It would be easier to make this decision if conceptual drawings of the options were able, it's difficult to make the choice based on the image provided.
Anonymous 10/06/2021 11:44 AM	I like the bridge
Anonymous 10/06/2021 11:50 AM	More direct.
Anonymous 10/06/2021 12:06 PM	Seems more straightforward.
Anonymous 10/06/2021 01:45 PM	I feel like the bridge adds more character to the trail, allows people to explore the nature within this area and offers more privacy to the homes on the end of Matthewson street
Anonymous 10/06/2021 01:58 PM	Bridge crossing and being away from homes makes for a more interesting and appealing experience

Anonymous 10/06/2021 02:22 PM	Route A is preferred but could Route B be a secondary route? Route A connects to the existing trail and I think would be a more beautiful alignment.
Anonymous 10/06/2021 02:26 PM	further from road
Anonymous 10/06/2021 03:18 PM	B is the better option as it connects to an existing trail.
Anonymous 10/06/2021 05:25 PM	Route B seems more direct.
Anonymous 10/06/2021 06:48 PM	Similar to Boyd Park... crossing the river does bring some variation to the trail and provides a different angle to look at the stormwater pond.
Anonymous 10/06/2021 06:53 PM	More character to interact with the water features, and trails are more interesting when they meander through an area rather than just taking a straight shot.
Anonymous 10/06/2021 10:19 PM	beautiful view.
Anonymous 10/06/2021 10:38 PM	Beautiful pond crossing and proximity to water features.
Anonymous 10/07/2021 11:43 AM	appears more direct route
Anonymous 10/07/2021 12:58 PM	it's interesting to turn and twist when taking a trail instead of just going straight.
Anonymous 10/07/2021 03:06 PM	Probably more cost-effective (diverting funds to the tunnel)
Anonymous 10/07/2021 03:48 PM	Option B is more direct and likely cheaper. No bridge.

Anonymous 10/07/2021 04:34 PM	It looks like the better option since it connects with an existing pond service path
Anonymous 10/07/2021 05:08 PM	Most natural use of path.
Anonymous 10/07/2021 07:27 PM	Save the bridge cost
Anonymous 10/07/2021 09:27 PM	The easier/cheaper option to an existing underpass below Maj Mack
Anonymous 10/07/2021 09:42 PM	Scenic
Anonymous 10/08/2021 09:32 AM	Crossing the bridge would be interesting but if it cost significantly more the other option would be fine
Anonymous 10/08/2021 10:33 AM	My opinion is more for convenience in line of travel for a North and South trail opposed to re reroute. Probably more cost effective and less disturbance of conservation area.
Anonymous 10/08/2021 01:31 PM	Not much difference
Anonymous 10/08/2021 01:32 PM	A bridge would look nice and I think is may have lower impact on plants and animals. If affordable, I'd prefer this.
Anonymous 10/08/2021 07:45 PM	Really, either one is fine.
Anonymous 10/08/2021 09:35 PM	keep the river to be nature
Anonymous 10/09/2021 11:21 AM	A bridge would be nice view but cost more.

Anonymous 10/09/2021 04:42 PM	No preference of the 2 options
Anonymous 10/10/2021 12:34 AM	A small bridge is generally always more attractive given can stop for a moment and watch the water rush by right below you. But if overall costs are an issue, Route Option B is an appropriate alternative, too.
Anonymous 10/10/2021 01:08 AM	Bridges are aesthetically pleasing, year round.
Anonymous 10/10/2021 02:33 PM	Extending the pathway seems better - again there is lots of space there on surface level
Anonymous 10/10/2021 03:25 PM	I like the idea of crossing a bridge. This option also the creeks.
Anonymous 10/10/2021 03:33 PM	Route Option A is farther from private residential than B.
Anonymous 10/10/2021 08:14 PM	More scenic
Anonymous 10/10/2021 08:40 PM	Route A appears to be more scenic.
Anonymous 10/11/2021 08:29 PM	Scenic
Anonymous 10/12/2021 10:17 AM	more economical
Anonymous 10/12/2021 11:38 AM	The path over the stormwater way already mostly exists and would prevent a dead end.
Anonymous 10/12/2021 12:17 PM	Less new trail needs to be built (less habitat removal), travels further from houses, and has a bridge (nice for the little ones to walk over the creek, more mental health benefits)

Anonymous 10/12/2021 02:23 PM	More scenic
Anonymous 10/12/2021 07:57 PM	Keeping trail as close to nature as possible for all to enjoy
Anonymous 10/12/2021 08:46 PM	easy to identify
Anonymous 10/12/2021 09:29 PM	I think option A created a more interesting path winding through the pond area and further away from houses.
Anonymous 10/12/2021 09:35 PM	Crossing a bridge would five a beautiful view.
Anonymous 10/12/2021 11:07 PM	near pond…bridge seems like a lovely idea. a beautiful bridge will become a “tourist” attraction
Anonymous 10/13/2021 09:50 AM	Prefer the scenic route, further away from residential backyards.
Anonymous 10/13/2021 12:28 PM	I have gone down to the pond several times thinking it’s a shame the path just ends there, I keep looking to make sure I’m not missing a trail, it just seems like it shouldn’t just end there. But it looks to be more expensive with the bridge
Anonymous 10/13/2021 01:15 PM	More interesting walking path.
Anonymous 10/13/2021 02:57 PM	Option A is a more interesting walk into the greenspace as opposed to the periphery along backyards.
Anonymous 10/13/2021 03:25 PM	Route A has better access to the natural area for walking, jogging, etc.
Anonymous 10/13/2021 03:52 PM	Option A is a better use of the trail within the natural area and would offer better views of the natural surrounding.

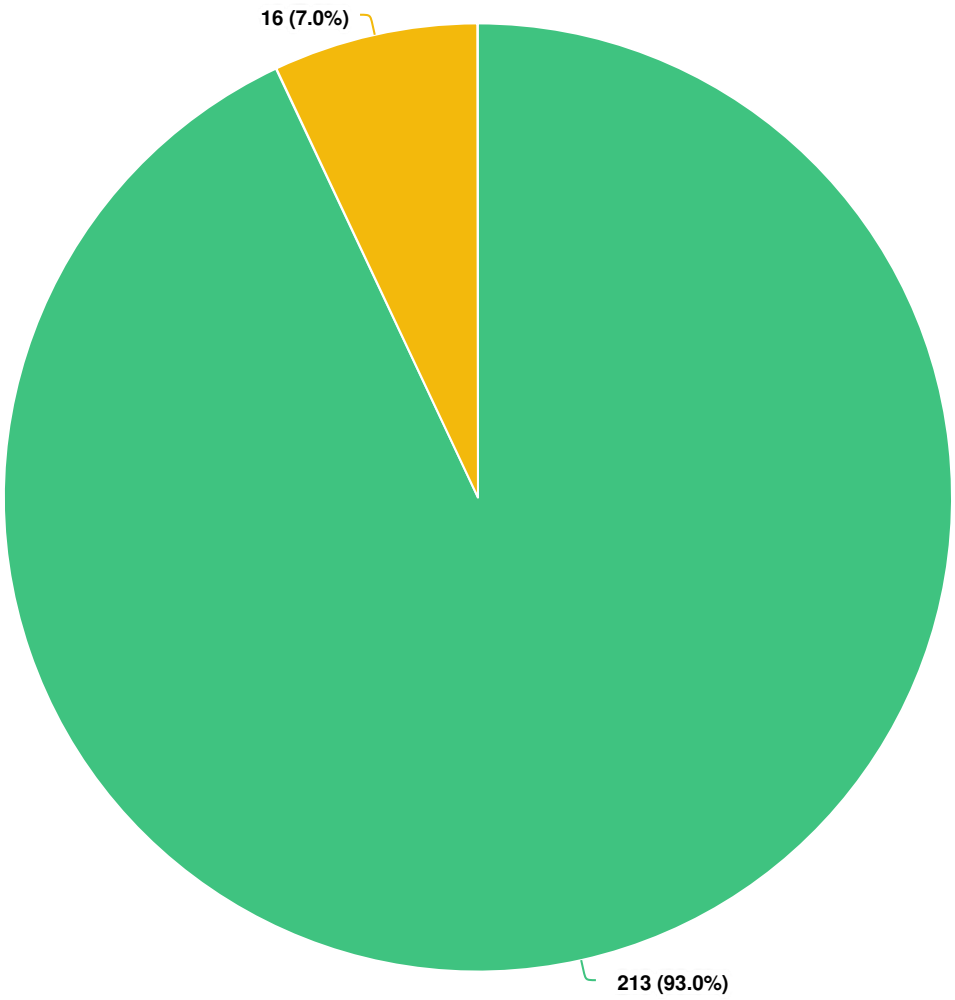
Anonymous 10/13/2021 05:01 PM	Option A would be preferred as it goes into the natural area and is not just a path behind rear yards. The trail should expose the natural area in which it goes through so that trail users can experience the natural area as well as keep the trial away from backyards for privacy and noise concerns of the homeowners.
Anonymous 10/13/2021 05:15 PM	I am guessing option B is the lower cost option. I like Option B from a bicycling standpoint.
Anonymous 10/13/2021 05:27 PM	Option A is nice as a trail since it allows the use of the pond area. The dotted alternative would have been nicer.
Anonymous 10/13/2021 06:32 PM	More trail-like instead of a make-shift trail behind homes
Anonymous 10/13/2021 09:23 PM	More direct and does not rely on the bridge
Anonymous 10/14/2021 10:35 AM	Route A with a bridge just adds a nice break to scenery. There is already a flow towards this option from the Maj Mac tunnel.
Anonymous 10/14/2021 02:23 PM	Route Option A is more interesting and scenic and provides a nice place to stop and enjoy the Pond, its wildlife and its surrounding vegetation.
Anonymous 10/14/2021 02:53 PM	I prefer to be further away from people's back yards. Sometimes their dogs get riled up and start barking like crazy, which scares my kids. Also, they probably don't want looky-loos walking past their back yards anyway.
Anonymous 10/14/2021 06:56 PM	Actually, I have no preference for either routes.
Anonymous 10/14/2021 09:05 PM	More direct
Anonymous 10/14/2021 09:52 PM	there tend to be many little flies on bridges (due to proximity to the water)

Anonymous 10/15/2021 07:56 AM	More greenery for scenery.
Anonymous 10/15/2021 12:57 PM	More scenic route which takes users over the pond.
Anonymous 10/16/2021 12:35 PM	May be more scenic and less disruptive to homeowners. Environmental impact of bridge construction should be minimized and signage should be clear.
Anonymous 10/16/2021 01:56 PM	Trail leads into a more open area, safer.
Anonymous 10/17/2021 12:47 AM	Route A appears to have interaction with the rear of Mathewson Street residential lots. When I'm on a trail, I want to avoid seeing the rear of people's homes. I want to maximize the view of nature.
Anonymous 10/17/2021 09:11 AM	Less exposure to residential properties
Anonymous 10/17/2021 12:06 PM	more picturesque
Anonymous 10/17/2021 12:14 PM	Lower flood risk for use and Maintanance
Anonymous 10/17/2021 03:50 PM	B will allow for easier use of the trail for transportation; less risk of injury due to bridge; lower cost of construction; long term should have both A and B
Anonymous 10/17/2021 08:10 PM	I believe A may work the best.
Anonymous 10/18/2021 04:16 PM	I would choose option B as it appears simpler and probably a cheaper option. My personal goal is to get the path completed sooner than later.
Anonymous 10/18/2021 10:57 PM	Option A continues to an existing path, where as option B stops at the parkette. Option A offers more scenery and enjoyment.

Anonymous 10/19/2021 09:14 AM	Sounds like it would be less costly due to no bridge construction required
Anonymous 10/19/2021 12:03 PM	Route B would provide easier flow by trail users, still allowing appreciation of the pond. and less environmental impact to the pond by creating a bridge.
Anonymous 10/19/2021 03:40 PM	I don't mind which option is actually chosen.
Anonymous 10/19/2021 04:45 PM	is not so close to the backyards
Anonymous 10/19/2021 08:15 PM	Option A appears to connect better with the existing trails
Anonymous 10/19/2021 10:14 PM	Better spot
Anonymous 10/20/2021 11:24 AM	Better connected with nature and the surroundings.
Anonymous 10/20/2021 05:44 PM	Better trail route.

Optional question (90 response(s), 139 skipped)
Question type: Essay Question

Q5 Do you agree with locating the trail on the east side of the creek?



Question options

Yes No

Mandatory Question (229 response(s))
Question type: Radio Button Question

Q6 Please explain the reasons behind your choice.

Anonymous 10/05/2021 09:38 AM	This option has less impact on the environment
Anonymous 10/05/2021 10:22 AM	preservation of environment. More natural route. Terrain on east side is flatter
Anonymous 10/05/2021 10:31 AM	Agree with this rationale. Would also welcome any opportunities the City can take to increase the number of trees, plants and natural shade along the new pathway.
Anonymous 10/05/2021 10:42 AM	looks like there is more land there
Anonymous 10/05/2021 11:33 AM	it seems like the easier choice to put the trail on this side
Anonymous 10/05/2021 11:46 AM	Preserving existing trees as much as possible should be a priority
Anonymous 10/05/2021 11:56 AM	Honestly this question is not clear...I am not a city planner or an environmental advisor and you haven't outlined pro's and con's so not sure how I can can agree or disagree based on the minimal info given. C'mon!
Anonymous 10/05/2021 12:02 PM	As long as the trail is there, I don't have preference where it goes.
Anonymous 10/05/2021 12:23 PM	I accept the city’s justification for the route selection
Anonymous 10/05/2021 01:13 PM	Makes sense
Anonymous 10/05/2021 02:48 PM	Agree we should limit the impact to natural systems in the area

Anonymous 10/05/2021 05:55 PM	I like
Anonymous 10/05/2021 07:37 PM	Protecting nature
Anonymous 10/05/2021 08:14 PM	the terrain on the east side is more suitable for a path
Anonymous 10/05/2021 09:41 PM	Limits the impact to natural systems
Anonymous 10/05/2021 10:03 PM	The west side is steep and would be subject to erosion from weathering
Anonymous 10/05/2021 10:39 PM	Gotta work with the natural landscape!
Anonymous 10/06/2021 07:36 AM	I don't feel I have another choice. Also the images provided for this survey are disappointing. I feel I can't make an informed decision.
Anonymous 10/06/2021 11:17 AM	This has the least impact to the natural habitats.
Anonymous 10/06/2021 11:44 AM	Yes, limit the impact to natural systems in the area
Anonymous 10/06/2021 11:50 AM	Avoid cutting trees. We need to protect our environment and the climate. It is also cost-effective. We need to plant more native trees and shrubs, not eliminate or cut down.
Anonymous 10/06/2021 12:00 PM	Less impact to trees
Anonymous 10/06/2021 12:06 PM	Yes plus there's already a gravel trail on parts of it. (Please keep it gravel to minimize impact).
Anonymous 10/06/2021 12:40 PM	Most direct and cycle friendly

Anonymous 10/06/2021 01:31 PM	Not enough crossing points from West-side of the creek to the pathway
Anonymous 10/06/2021 01:35 PM	Lowest impact
Anonymous 10/06/2021 01:36 PM	Less impactful
Anonymous 10/06/2021 01:39 PM	It already exists and serves a bigger residential area.
Anonymous 10/06/2021 01:41 PM	The purpose of the trail is for us to enjoy nature. Building on the west side would necessitate cutting down trees, which I am against
Anonymous 10/06/2021 01:45 PM	I don't see any problems here, it makes sense to me! It also offers a great view of the pond near section D.
Anonymous 10/06/2021 01:58 PM	I agree with minimizing impacts but please provide connections for western neighbourhood to the trail on the east side
Anonymous 10/06/2021 02:22 PM	I agree with the east side alignment because it a priority for this project is to limit the impact to natural systems in the area.
Anonymous 10/06/2021 02:26 PM	simpler
Anonymous 10/06/2021 02:39 PM	It is much better to walk/bike along the side of the creek.
Anonymous 10/06/2021 03:02 PM	I agree w/ city.
Anonymous 10/06/2021 03:18 PM	East offers less disruption of surrounding environment.
Anonymous	Less impact on environment

10/06/2021 03:26 PM	
Anonymous 10/06/2021 03:27 PM	Keep the natural as much as possible and less on the work.
Anonymous 10/06/2021 04:02 PM	No reason. I don't use the train that far north
Anonymous 10/06/2021 05:13 PM	The least impact to existing trees and natural settings the better.
Anonymous 10/06/2021 05:25 PM	Should limit disturbing the ecosystems/heavily treed areas as much as possible.
Anonymous 10/06/2021 06:48 PM	Based on the information provided, the east side is more accessible and reduces impact on the environment. The only concern is what will hikers do on the west side since there will be access from existing residential areas to the trail?
Anonymous 10/06/2021 06:53 PM	Terrain more suitable - better to spend money on adding more trails in other areas than unnecessarily re-grading land to shoehorn this in.
Anonymous 10/06/2021 07:16 PM	As stated minimal I act to natural landscape
Anonymous 10/06/2021 09:44 PM	Agree with the rationale for the proposal.
Anonymous 10/06/2021 10:19 PM	nice to have a trail beside the creek
Anonymous 10/06/2021 10:38 PM	Less slope
Anonymous 10/06/2021 11:42 PM	Save the mature trees
Anonymous 10/07/2021 12:05 AM	In theory the route makes sense, but the images won't load so I can't provide a fully educated answer

Anonymous 10/07/2021 12:21 AM	Sloped will require more trail maintenance
Anonymous 10/07/2021 09:56 AM	Please limit the amount of construction and damage to the existing greenspace and natural systems. PLEASE DO NOT CUT TREES DOWN or DISRUPT WATER FLOW
Anonymous 10/07/2021 11:43 AM	no preference/not familiar with this section
Anonymous 10/07/2021 12:58 PM	Good
Anonymous 10/07/2021 01:54 PM	Practical is best
Anonymous 10/07/2021 02:00 PM	since the west side of the creek is heavily treed and sloped.
Anonymous 10/07/2021 02:39 PM	Least amount of disruption to environment
Anonymous 10/07/2021 03:05 PM	Better to maintain as much trees as possible.
Anonymous 10/07/2021 03:06 PM	We must share this landscape with wildlife, and not remove the last refuge points they have.
Anonymous 10/07/2021 03:48 PM	A portion of the trail already exists on the east side. Also agree with the reasoning that the west side is steeper and that building and maintaining it there will be more expensive.
Anonymous 10/07/2021 04:29 PM	Less disturbance to natural habitat
Anonymous 10/07/2021 04:34 PM	More space for the trail, and less environmental negative impact.

Anonymous 10/07/2021 04:41 PM	City should avoid disruption and more construction which would be required if the west side was chosen.
Anonymous 10/07/2021 05:08 PM	We agree with your rationale.
Anonymous 10/07/2021 05:08 PM	Seems the beset option for limiting the impact to the environment
Anonymous 10/07/2021 05:11 PM	It is a great idea as long as it does not affect any residential property.
Anonymous 10/07/2021 05:34 PM	I live on the opposite side
Anonymous 10/07/2021 05:35 PM	Slope issues on the west of the river do not allow enough space for a walking trail.
Anonymous 10/07/2021 05:35 PM	There is more space.
Anonymous 10/07/2021 07:27 PM	Easier to build, less environmental impact
Anonymous 10/07/2021 09:27 PM	Cheaper and easier
Anonymous 10/07/2021 09:42 PM	There's more space on the east side. Makes sense.
Anonymous 10/07/2021 10:04 PM	Easier access during trail construction
Anonymous 10/08/2021 07:24 AM	Less impact to natural and current trail all on east side
Anonymous 10/08/2021 08:36 AM	would not like it to be heavily sloped or having to remove lots of trees to build it.

Anonymous 10/08/2021 08:49 AM	Its too close to the fence line of houses.
Anonymous 10/08/2021 09:32 AM	i agree
Anonymous 10/08/2021 10:13 AM	Easiest
Anonymous 10/08/2021 10:33 AM	Same as my opinion from question number 2. This propose trail is less disturbance of tree line and conservation. The proposed area will make it a much easier access for construction crews to build the trail and would require less time to construct the trail. On the west side of the creek the homes that are against the river alongside Glenside Drive would require a retaining wall to not disturb rear yards. The original developer constructed a wall approx 22 years ago, and it took a much longer period of time to get approval from the Conservation Authority.
Anonymous 10/08/2021 11:23 AM	Best to not disrupt the mature trees.
Anonymous 10/08/2021 11:57 AM	It will be easier to construct annd cause less interuption to the environment.
Anonymous 10/08/2021 12:59 PM	Make sense to not disrupt the existing trees and slope.
Anonymous 10/08/2021 01:31 PM	Choice
Anonymous 10/08/2021 01:32 PM	Impacting the environment as less as possible is important.
Anonymous 10/08/2021 01:46 PM	visibly more space on east side
Anonymous 10/08/2021 01:50 PM	Makes sense

Anonymous 10/08/2021 01:53 PM	easier path
Anonymous 10/08/2021 03:24 PM	Lots of consideration has already been taken and this looks to be the best plan.
Anonymous 10/08/2021 05:19 PM	I don't want to see move vegetation removed and wildlife / animals displaced
Anonymous 10/08/2021 06:04 PM	least impact to the natural systems is best
Anonymous 10/08/2021 06:06 PM	It allows for a traffic-free and nature route
Anonymous 10/08/2021 06:27 PM	less trees and slopes
Anonymous 10/08/2021 07:45 PM	We like trees. Leave them be.
Anonymous 10/08/2021 09:35 PM	don't want to cut down forest of creek anymore
Anonymous 10/09/2021 09:25 AM	I agree with limiting the impact to natural systems.
Anonymous 10/09/2021 11:21 AM	Existing trail is already mostly there.
Anonymous 10/09/2021 01:05 PM	West side is swampy and often gets flooded during heavy rains
Anonymous 10/09/2021 04:42 PM	For the reasons you've given
Anonymous 10/09/2021 05:47 PM	It's fine

Anonymous 10/09/2021 10:50 PM	Less impact to environment and lines up with existing trails on east side
Anonymous 10/10/2021 12:34 AM	Seems reasonable. No need to chop down more trees than absolutely necessary. Due to all the new housing developments there is a significant lack of older, tall-grown trees in Maple already.
Anonymous 10/10/2021 01:08 AM	Connects neatly to existing trail that ends at Rutherford.
Anonymous 10/10/2021 12:51 PM	Sloped
Anonymous 10/10/2021 02:33 PM	It is the obvious natural location for the path - as you suggest
Anonymous 10/10/2021 03:25 PM	The alternative involves a sloped surface and heavy woods.
Anonymous 10/10/2021 03:33 PM	I appreciate the stated goal of limiting the impact to natural systems in the area
Anonymous 10/10/2021 06:48 PM	It’s nice
Anonymous 10/10/2021 08:14 PM	West side is too heavily wooded and would cause too much disruption to natural environment if placed there
Anonymous 10/10/2021 08:40 PM	The view would be better.
Anonymous 10/11/2021 08:23 AM	West Side is heavily treed
Anonymous 10/11/2021 12:05 PM	L
Anonymous 10/11/2021 01:57 PM	more scenic route

Anonymous 10/11/2021 02:36 PM	Too many wildlife seen in this area, I wonder the impact of the trail on such wildlife
Anonymous 10/11/2021 04:50 PM	Much better slope situation
Anonymous 10/11/2021 08:29 PM	Makes it easier and less costly to connect and keeps the tree west areas intact. Limits damage to natural environment. Trees provide shelter for foxes and other wild life
Anonymous 10/11/2021 09:18 PM	It makes the most sense and directly connects to the existing section at the south end.
Anonymous 10/11/2021 10:01 PM	Agree with not removing existing vegetation
Anonymous 10/12/2021 08:01 AM	Limits the impact to natural systems in the area.
Anonymous 10/12/2021 10:17 AM	safer route
Anonymous 10/12/2021 11:38 AM	This route seems more direct and easier to build.
Anonymous 10/12/2021 12:17 PM	Seems more reasonable.
Anonymous 10/12/2021 02:07 PM	Trail is narrow
Anonymous 10/12/2021 02:23 PM	Whatever is best for environment and safety of people travelling on path
Anonymous 10/12/2021 04:09 PM	It makes the most sense to have the trail on the east side of the creek because of the trees on the west side. It would be ideal to have to remove as few trees as possible.

Anonymous 10/12/2021 04:17 PM	yes
Anonymous 10/12/2021 07:13 PM	Keep intact
Anonymous 10/12/2021 07:32 PM	Least impact
Anonymous 10/12/2021 07:57 PM	less invasive to nature overall
Anonymous 10/12/2021 08:46 PM	looks like more reasonable
Anonymous 10/12/2021 08:54 PM	To avoid cutting down any trees on the west side
Anonymous 10/12/2021 09:03 PM	Less expensive if the path is flat
Anonymous 10/12/2021 09:29 PM	There are couple existing crossings close to where we live and I can see more crossings are considered.
Anonymous 10/12/2021 09:35 PM	I agree with the explanation above.
Anonymous 10/12/2021 09:43 PM	looks easier to implement
Anonymous 10/12/2021 09:51 PM	This looks like the best option that doesn't disturb the natural habitat.
Anonymous 10/12/2021 09:53 PM	This looks like a good and scenic option.
Anonymous 10/12/2021 11:07 PM	near the creek is an attractive scenic option

Anonymous 10/13/2021 09:50 AM	Appears to be the most economical and viable option.
Anonymous 10/13/2021 10:15 AM	More land on the east side
Anonymous 10/13/2021 10:42 AM	Appears to be more natural and easy walking.
Anonymous 10/13/2021 12:20 PM	Minimal slopes are preferable for long term maintenance and longevity.
Anonymous 10/13/2021 12:28 PM	Seems the logical place for it, least invasive,
Anonymous 10/13/2021 01:10 PM	Keep natural areas natural.
Anonymous 10/13/2021 01:15 PM	Ease of walking paths with more level terrain.
Anonymous 10/13/2021 02:27 PM	East of the creek makes sense to me.
Anonymous 10/13/2021 02:35 PM	Seems to be the only option.
Anonymous 10/13/2021 02:57 PM	If it is easier to construct, maintain, and travel on then that is ok.
Anonymous 10/13/2021 03:15 PM	west side of the creek is heavily treed and sloped. East side is obvious choice.
Anonymous 10/13/2021 03:25 PM	The trail should be situated wherever it is easier to access, construct and maintain, either east or west side of the creek, using the crossings to allow it to go on either the east or west side. There are access points on either side, east and west.
Anonymous 10/13/2021 03:52 PM	The west side has more access points from the community and should be considered for at least some portion of the trial where it

	is feasible. The west side could be used for the trail from Mountcharles to Villandry to Caproni to Maple Airport park.
Anonymous 10/13/2021 04:50 PM	Don’t want to destroy trees along the path
Anonymous 10/13/2021 05:01 PM	The trail should be located as close to the middle of the natural area which it runs through, to allow for maximum use of the natural area for trail users and also to have the trail as far away as possible from homeowners' rear yards. It seems most of the trail is close to rear yards on the east side. This is less desirable for the home owners and also for the trial users. There is more invasion of privacy, noise and light intrusion for the homeowners backing onto the trail. For trail users they are walking against fences instead of within the natural area that a nature trail should be in. If the city is gong to spend the money to construct a nature trail then it should be within the natural area.
Anonymous 10/13/2021 05:15 PM	I support limiting impact on natural systems
Anonymous 10/13/2021 05:27 PM	The east and west side should be used to keep the trail within the natural corridor area that it's going through. Keeping the trail too close to rear yard fences is not really a trail and is a nuisance to the property owners. It's not even nice to walk or bike on since I would feel I'm disturbing the property owners and ruining their privacy.
Anonymous 10/13/2021 05:32 PM	I no want the path in my backyard
Anonymous 10/13/2021 06:32 PM	It seems safer
Anonymous 10/13/2021 09:23 PM	Easier walk or ride and less disruption to the environment
Anonymous 10/13/2021 11:23 PM	Easier to build
Anonymous	As long as this proposal does not destroy existing tree-blinds of the

10/14/2021 10:35 AM	Waterside home owners, and/or is at a good distance from their backyards, this should be fine.
Anonymous 10/14/2021 01:57 PM	I would hate to see the trees removed.
Anonymous 10/14/2021 02:23 PM	This route clearly minimizes impact to natural systems in the ravine.
Anonymous 10/14/2021 02:35 PM	Less disruption to the environment
Anonymous 10/14/2021 02:53 PM	Environmental impact, plus I think it would be nice if the path were navigable for wheelchairs and strollers, which is impossible when there are slopes.
Anonymous 10/14/2021 05:30 PM	Easier to walk and construct
Anonymous 10/14/2021 06:56 PM	Safer.
Anonymous 10/14/2021 09:05 PM	More room there. Not as steep.
Anonymous 10/14/2021 09:52 PM	agree with limiting impact to natural systems
Anonymous 10/15/2021 07:28 AM	Provides a nice pathway next to the water and keeps you in the nature area as opposed to the neighborhood
Anonymous 10/15/2021 07:56 AM	Appears to also be the more densely greener side of the trail.
Anonymous 10/15/2021 10:13 AM	Don’t affect the current flow of the stream
Anonymous 10/15/2021 11:15 AM	N/a

Anonymous 10/15/2021 12:25 PM	Please add more access from the west side. Additional bridges, except the 2 we have now, will be a huge benefit. There are multiple locations availible to that and sidewalks that were already extended towards this project in neighbourhood planning from the past
Anonymous 10/15/2021 12:57 PM	Part of the reason for a trail system, is for the community to interact with the natural elements of the environment. Allowing the trail to go through a treed area and up/down some slopes would be a more appealing and interesting trail. Perhaps some portion of the trail in this area could cross over to the west side then back onto the east side.
Anonymous 10/15/2021 06:18 PM	seems earsier to facilitate
Anonymous 10/15/2021 07:13 PM	Less congestion
Anonymous 10/15/2021 07:39 PM	Trail to close backyard of my house on Waterside Crescent if trail located on east side of creek.
Anonymous 10/15/2021 08:25 PM	Asscesability
Anonymous 10/16/2021 12:35 PM	There is already an established trail further south on the same side of the creek. Due to the location of the creek being more on the west side of the ravine, seems reasonable in terms of placement. Drainage through culvert installation for the new and existing trail to the south should be improved as the existing trail is susceptible to flooding.
Anonymous 10/16/2021 12:49 PM	Preference for a seamless trail without connections through roadways, with least impact to environment.
Anonymous 10/16/2021 01:56 PM	Would make sense to have an established trail on the east side of the creek, and not people just making their way through..

Anonymous 10/16/2021 06:12 PM	Better looking are
Anonymous 10/16/2021 07:47 PM	this will destroy the environment
Anonymous 10/17/2021 12:47 AM	Avoiding slopes is good
Anonymous 10/17/2021 09:11 AM	To much exposure residential properties
Anonymous 10/17/2021 12:06 PM	seems the most logical
Anonymous 10/17/2021 12:14 PM	Existing distance and least flood risk for use and Maintanance
Anonymous 10/17/2021 12:24 PM	It is consistent with the goals and objectives to enjoy
Anonymous 10/17/2021 12:48 PM	large flood area with alternate choice
Anonymous 10/17/2021 01:50 PM	Puts the path along green spaces instead of roads
Anonymous 10/17/2021 03:50 PM	West side is steep; rest of trail is on east side
Anonymous 10/17/2021 05:30 PM	Less impact on wetland/ nature
Anonymous 10/17/2021 06:53 PM	Leave as much natural trees as possible
Anonymous 10/17/2021 08:10 PM	Seems like its the easiest way.
Anonymous 10/17/2021 11:24 PM	connects trail perfectly

Anonymous 10/18/2021 09:24 AM	n/a
Anonymous 10/18/2021 10:42 AM	minimal impact to natural ecosystem
Anonymous 10/18/2021 02:54 PM	Do not want eco system, and trees etc. disturbed or moved.
Anonymous 10/18/2021 03:51 PM	I would like to see as many trees preserved as possible.
Anonymous 10/18/2021 04:16 PM	I agree with the premise of minimizing the impact to the existing vegetation. Also, we need to maximize the available funding for this project and in this case, the easiest route makes the most sense.
Anonymous 10/18/2021 07:57 PM	When riding a bike want to ride through a scenic route with slopes and trees
Anonymous 10/18/2021 08:00 PM	least disturbing
Anonymous 10/18/2021 08:20 PM	when walking or biking the trail one would want hills/slopes and a scenic route with trees and nature
Anonymous 10/18/2021 10:57 PM	The least amount of disruption of existing green foliage the better. East side absolutely. Suggest adding even more green on the east side for privacy related issues for residents.
Anonymous 10/19/2021 12:21 AM	Varied Nattural Settings
Anonymous 10/19/2021 09:14 AM	For the rationale described
Anonymous 10/19/2021 09:32 AM	Closer to my home

Anonymous 10/19/2021 12:03 PM	Trail located on the east having more open space would provide a more esthetic feel to users. Would provide a less environmental impact and easier maintenance of the trail as roots of trees would affect surfaces.
Anonymous 10/19/2021 12:19 PM	Prefer to leave the west side intact
Anonymous 10/19/2021 01:01 PM	Limit impact to Natural system
Anonymous 10/19/2021 02:22 PM	Ok
Anonymous 10/19/2021 03:40 PM	It seems to be safer for walking purposes.
Anonymous 10/19/2021 04:45 PM	higher ground
Anonymous 10/19/2021 05:20 PM	It only makes sense, since the west side is heavily sloped with trees.
Anonymous 10/19/2021 08:15 PM	East side route seems the better option since there is less impact to the surrounding area.
Anonymous 10/19/2021 08:33 PM	I agree that minimum impact to the natural systems is priority. It also seems like the more simpler and natural path one would take is on the east side of the creek.
Anonymous 10/19/2021 08:46 PM	It might be difficult to run the trail on the west side of the creek because of the steep slope.
Anonymous 10/19/2021 10:01 PM	there really needs to be a trail here. if it can only be located on the east side of the creek, i'm okay with it.
Anonymous 10/19/2021 10:14 PM	Better elevation

Anonymous 10/20/2021 08:55 AM	n/a
Anonymous 10/20/2021 09:55 AM	agree with natural protection plan
Anonymous 10/20/2021 11:24 AM	Safer and more accessible
Anonymous 10/20/2021 03:04 PM	i agree with the choice
Anonymous 10/20/2021 05:44 PM	The trail seems very close to the rear backyards of the east lots facing ravine space. These residents have been there a long tie without a trial and the trail will affect these residents' privacy and property value. The trail should be located as far away as possible from the rear backyards of the east or west residents.
Anonymous 10/20/2021 06:26 PM	Too close to residential homes. Better on the other side where it is more distant and isolated
Anonymous 10/20/2021 06:27 PM	Trail is on east side of the creek and "D" portion runs on top of sanitary sewer and its all open space.
Anonymous 10/20/2021 10:17 PM	Makes sense
Anonymous 10/20/2021 10:26 PM	Lower impact to environment and better construction feasibility
Anonymous 10/21/2021 01:38 PM	East is good
Anonymous 10/21/2021 11:22 PM	Limiting impact to natural systems is important to me to enjoy nature as it was meant to be.
Christina Tino 10/22/2021 08:23 AM	Limiting impact on the natural space should always be priority

Mandatory Question (229 response(s))
Question type: Essay Question

Q7 Please rank the four crossing options from most preferred (1) to least preferred (4).

OPTIONS	AVG. RANK
Option 2 - a new bridge and trail connecting Mount Charles Crescent to the proposed new trail	2.29
Option 4 - a new bridge and trail connecting the baseball diamonds at the Sports Village to the existing trail	2.44
Option 3 - a new bridge and trail connecting Glenside Drive to the proposed new trail	2.61
Option 1 - a new bridge and trail connecting Bevan Road and Caproni Drive	2.67

Mandatory Question (229 response(s))
Question type: Ranking Question

Q8 If interested, please explain the reasons behind your choices.

Anonymous 10/05/2021 09:38 AM	Option 1 includes Old Maple
Anonymous 10/05/2021 11:33 AM	Sports village seems to have parking so people could park here and get on the trail easily.
Anonymous 10/05/2021 11:56 AM	More to middle is better in my opinion. Also I think you had lower number is not preferred previously and here you have it as better. You could make this easier and clearer for people to participate. Also you should outline what you see as pros and cons to make it easier for us non-city planners/engineers
Anonymous 10/05/2021 12:02 PM	If only one connection to be build, i would select one in the middle between the existing connections. But, really have no preference.

Anonymous 10/05/2021 01:13 PM	Keeping crossings within the park system
Anonymous 10/05/2021 08:14 PM	crossings should be equi-distant given the exiting crossings.
Anonymous 10/05/2021 09:41 PM	I live closest to Bevan drive
Anonymous 10/05/2021 10:39 PM	Not very familiar with this area. There is already crossing at naylon parkette so makes sense to space them out a bit. Never go to sports village, don't care if it connects.
Anonymous 10/06/2021 07:36 AM	Again it feels impossible to make a decision based on the images provided, what exactly is happening.
Anonymous 10/06/2021 01:31 PM	#1 is the closest to where I live
Anonymous 10/06/2021 01:58 PM	#2 is equidistant between existing crossing to the north and south plus connects the schools to the trail system #1 provides connection across the creek and connects the west snd east neighbourhood
Anonymous 10/06/2021 02:22 PM	Option 2 is in the middle of existing crossings so would provide most connectivity. Option 4 is least preferred because there already is a existing trail connection from Glenside Drive. Option 2 provide connectivity between the west and east neighbourhoods.
Anonymous 10/06/2021 02:26 PM	easy access to and from sport village
Anonymous 10/06/2021 03:18 PM	Option 4 with it being near the Sports Village, it offers people another incentive to use the trail.
Anonymous 10/06/2021 03:26 PM	Ample parking at sports village to start trail at the bridge
Anonymous	There is already a pedestrian bike crossing that connects

10/06/2021 05:25 PM	Waterside Crescent and Glenside Drive. It would be nice to have a pedestrian crossing over the creek further north.
Anonymous 10/06/2021 06:48 PM	Option 4 gives parking access to the trail which is nice for anyone needing a place to park their vehicle accessing the park. Option 2 seems to be closest to school and middle of all the residential areas. Option 1 is the least preferred since there is already access to the park from airport park.
Anonymous 10/06/2021 06:53 PM	More access to the subdivisions will provide better access than into a commercial property. Option 3 already has a rough in so would be a natural choice.
Anonymous 10/06/2021 10:19 PM	easy hiking access to sports village
Anonymous 10/07/2021 09:56 AM	Please consider the option with minimal amount of construction.
Anonymous 10/07/2021 11:43 AM	i wouldn't use these connections so i have no preference.
Anonymous 10/07/2021 12:58 PM	don't prefer any of them... don't need any of them personally...
Anonymous 10/07/2021 02:39 PM	1 is in the middle of the 2 existing connections, makes the most sense
Anonymous 10/07/2021 03:06 PM	Greatest distance from existing bridge
Anonymous 10/07/2021 03:48 PM	I would use bridges closest to me the most.
Anonymous 10/07/2021 05:35 PM	Option 1 is the better option. It connects the both neighborhoods at the mid point of the current pathways. It is more accessible to both neighborhoods
Anonymous	I do not think that Option 2 and 3 are going to be used that much.

10/07/2021 05:35 PM	
Anonymous 10/07/2021 09:42 PM	Option 2 is most central. Honestly there should be multiple connections though. All 4 are necessary to make the trail useful and viable for those west of the creek.
Anonymous 10/08/2021 09:32 AM	I like the idea of a trail that connects streets. It would be good to be able to access the baseball diamonds via the trail. I can't tell from the map where the existing crossings are, but it would be good to space crossings to minimize how far people need to walk to access the trail.
Anonymous 10/08/2021 10:13 AM	More family friendly
Anonymous 10/08/2021 10:33 AM	From the village would make sense for easier access to the trail, would be closer to Rutherford and transit availability. The Mount Charles route will not disrupt any side or rear yards of homeowners. This bridge is more central to get from the east to west sides of the trail and schools are closer to the trail if people want to walk or bike to go to school and local parkettes within the subdivisions of West Maple and East Maple.
Anonymous 10/08/2021 01:31 PM	Na
Anonymous 10/08/2021 01:46 PM	A crossing from the sports village baseball diamonds and the trail is convenient.
Anonymous 10/08/2021 03:24 PM	Picking Caproni cause it's the closest to my house
Anonymous 10/08/2021 07:45 PM	Easy to access from Rutherford.
Anonymous 10/08/2021 09:35 PM	most important things is keep green nature, give residents a nice green nature environment ,people's life is more important than traffic
Anonymous	Mount Charles Crest is in the middle of the two existing bridges.

10/09/2021 11:21 AM	The other choices don't make sense as it is close to existing crossing.
Anonymous 10/09/2021 01:05 PM	Mount Charles Crescent would be in the middle between Glenside and Airport Park. In addition better bike route for kids to school as there would be less road intersections to cross.
Anonymous 10/09/2021 05:47 PM	South connections to far away from major mackenzie
Anonymous 10/10/2021 01:08 AM	Mountcharles introduces a crossing opportunity about midway between Mjr Mck and Rthd. Would prefer to keep the existing trail at Rutherford unspoiled as a good stretch through heavily wooded area.
Anonymous 10/10/2021 02:33 PM	The Sports Village has more space and is in a public place - less disruptive to homes in the area
Anonymous 10/10/2021 03:25 PM	It really doesn't matter that much to us. We don't really need to connect to any of those destinations. We just want to walk the length of the trail.
Anonymous 10/10/2021 03:33 PM	Option 4 most preferred because I walk a loop and would prefer to loop back on a designated secondary trail through parkland instead of on Rutherford Road.
Anonymous 10/10/2021 08:14 PM	Caproni lies roughly halfway between the existing trails, sports village is a common area which many people can/should access
Anonymous 10/11/2021 08:23 AM	I have no particular preference
Anonymous 10/11/2021 09:18 PM	There is already a bridge accessible on Glenside Dr, so I would think adding one north of that makes sense.
Anonymous 10/12/2021 08:01 AM	Option 2 is more central to the north end and south end of the trail.

Anonymous 10/12/2021 10:17 AM	connecting to the community, a break, safer
Anonymous 10/12/2021 11:38 AM	Connection by the sports village would be a good rest stop and meeting place.
Anonymous 10/12/2021 08:46 PM	either 1 or 4 is easier to public
Anonymous 10/12/2021 09:29 PM	I talked those by proximity to where we live. I think option 1 (Caproni) is redundant given proximity of existing northern crossing.
Anonymous 10/12/2021 11:07 PM	simply like the idea of the bridge connecting to the trail
Anonymous 10/13/2021 12:20 PM	I would prefer access routes at the most northern/southern points to promote longer stretches of trail routes.
Anonymous 10/13/2021 12:28 PM	In order of proximity to my house
Anonymous 10/13/2021 01:15 PM	A bridge crossing at Mountcharles is in between the existing bridge crossings at Glenside Dr. and Maple Airport Park, which seems to be the longest stretch without a crossing over the creek. Mountcharles Crescent also has the end of the street without any homes so it is better for access to a visible path and it is also in proximity to the schools and West Maple Creek Park by the schools.
Anonymous 10/13/2021 02:57 PM	The crossing options 2 and 3 allow more people to access the trail from the west side of the creek where there is no access to a bridge.
Anonymous 10/13/2021 03:15 PM	option 2 is obvious choice. we already have bridges at Glenside dr. and at Airport park. why build another bridge few meters from existing one?
Anonymous	To give access to crossing points at places where there is no

10/13/2021 03:25 PM	existing crossing.
Anonymous 10/13/2021 03:52 PM	New bridges should be made where there are currently no crossings available, and not in proximity to existing crossings.
Anonymous 10/13/2021 05:01 PM	The bridges should connect as may community access points as possible and should be in between the existing bridges. The trail can also shift from east to west at a bridge to allow for more community access points. The trail could shift from east to west at Mountcharles to connect the access points from Mountcharles, Villandry, Caproni and Avro (Maple Airport Park and Petit Prince school).
Anonymous 10/13/2021 05:27 PM	The bridge crossing should be distributed evenly. Option 2 is better as it is not between houses so it is more visible and less intrusive to reisdents.
Anonymous 10/13/2021 06:32 PM	A trail behind a sports complex is not scenic or nature-like
Anonymous 10/13/2021 09:23 PM	Trails could be used to attend events at the baseball diamonds / sport village more easily
Anonymous 10/14/2021 10:35 AM	Sports village connection is a great idea.
Anonymous 10/14/2021 02:23 PM	What is important to me is crossings at various points along the route in order to maximize access.
Anonymous 10/14/2021 02:53 PM	It would be great to maximize the potential use of the trail for students at the nearby schools, getting them outdoors and into nature.
Anonymous 10/14/2021 05:30 PM	There is already an existing bridge at the south end of the trail
Anonymous 10/14/2021 06:56 PM	It serves the most residents and it provides sufficient distance between the existing crossings.

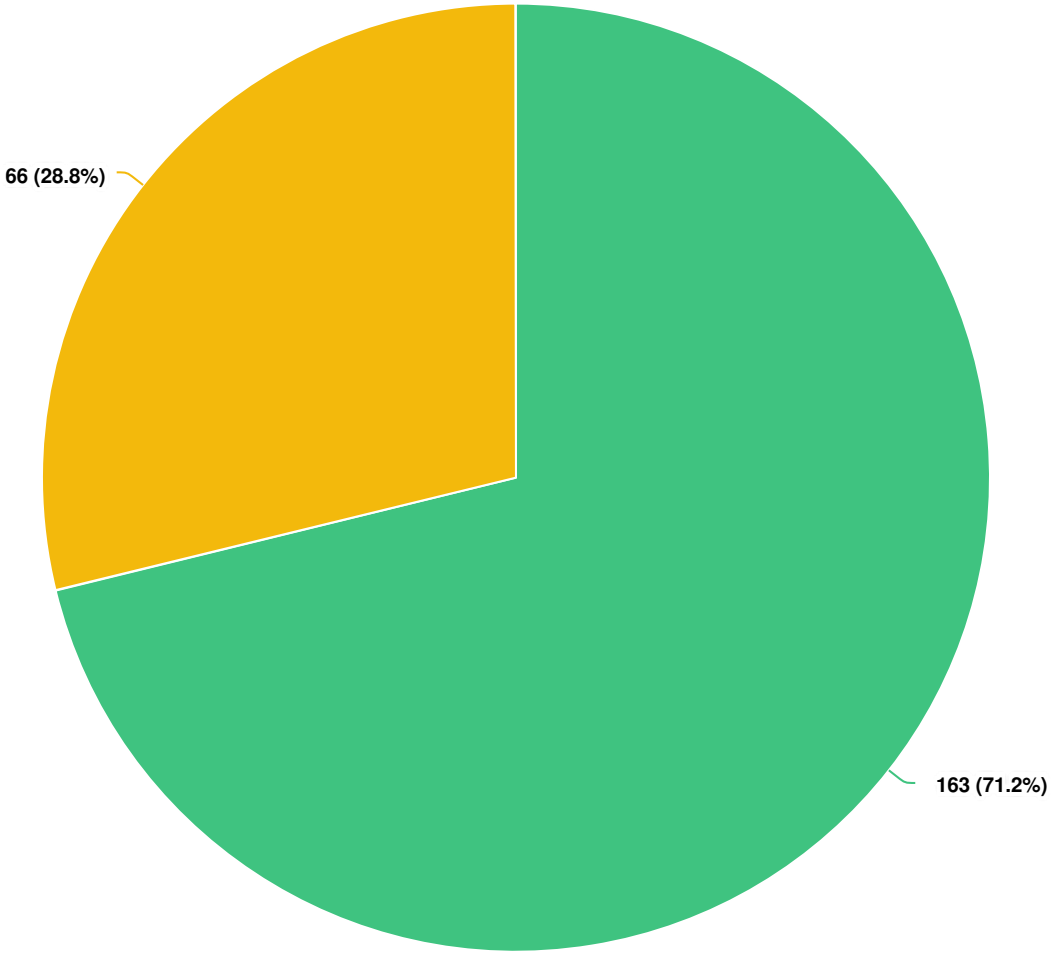
Anonymous 10/14/2021 09:05 PM	Option 2 is the most central. Should really try to have as many connections as possible to make the trail accessible to more of the community west of the creek and not overload any single connection.
Anonymous 10/14/2021 09:52 PM	provides crossing opportunities that are more centralized relative to existing bridge crossings
Anonymous 10/15/2021 07:56 AM	Connecting green space to existing trail makes sense
Anonymous 10/15/2021 12:57 PM	Connecting to the Sports Village to the trail would be an excellent entry/exit point. There is currently parking available which won't impact residents and would allow users easy access.
Anonymous 10/16/2021 12:35 PM	Options 3 and 4 are close to an existing crossing, so should not be prioritized (Option 3 should be prioritized over 4 because it connects a public use area). Option 1 or 2 (whichever is more feasible for construction and has less of an environmental impact) is appropriately interspaced in between existing trail connections. Therefore, it increases accessibility and may promote use.
Anonymous 10/16/2021 12:49 PM	Entrance to trail from Glenside already exists, so this would be preferable to keep costs and impact to environment low. There is not much distance between Glennside, Mount Charles, and Caproni streets... I wonder if this many entrance point to the tail are needed?
Anonymous 10/16/2021 01:56 PM	This should be based on foot traffic, in my opinion the areas with higher traffic should be established first.
Anonymous 10/16/2021 07:47 PM	there are enough crossings which are great, and are not used so much so as to indicate more are needed
Anonymous 10/17/2021 12:47 AM	Aim should be to maximize the amount of new paths while avoiding people's homes as much as possible. I do not live in the area so I am unsure how the creation of these bridges and new paths would increase foot traffic near people's homes.

Anonymous 10/17/2021 12:06 PM	options 2 and 3 are closest to my house
Anonymous 10/17/2021 12:14 PM	Glenside already has access, increases traffic flow, Option 2 allows best access for education and lower age class and best emergency access to trail system. Also best pedestrian traffic management for region and reduce use impact. Option 3 has increased crime risk to TRCA open space existing problem already supported by park ambassador program and YRP.
Anonymous 10/17/2021 12:24 PM	GLENSIDE HAS ACCESS ALREADY WHY CROWD IT!!!! Connect the way it was originally designed
Anonymous 10/17/2021 12:48 PM	Unfair that Areas to the south get easier access. It make it ver inconvenient for us to enjoy the trail system
Anonymous 10/17/2021 03:50 PM	Unbroken East-West connection btwn Bevan & Caproni is very efficent. As well, Glenside helps break the trail up. All crossings should be built
Anonymous 10/17/2021 05:30 PM	Bridge already exists on glenside drive. A different entry point is preferred.
Anonymous 10/17/2021 06:53 PM	Why not have all 4 bridges? Or evenly distanced between bridges along the path?
Anonymous 10/17/2021 08:10 PM	Option 1 seems the best as its furthest from existing bridge from Glenside to Waterside
Anonymous 10/18/2021 04:16 PM	My choice is based on existing crossings. There is already one at the north end, by the French School and there is already one at Seafield. So, the logical option to me is to have one between those two, thus Option 2 is my first choice. Second choice is at Sports Village, Option 4. I would not even consider Option 1 or Option 3. They are not needed in my opinion.
Anonymous	"Can't be blank" so forced to choose. Not happy with any new

10/18/2021 10:57 PM	bridge as I believe the access existing is ample. More access would ruin the green of the trail, create more garbage, loitering, and privacy issues.
Anonymous 10/19/2021 09:14 AM	Best to have east to west connection across creek
Anonymous 10/19/2021 12:03 PM	Access to the trail system would benefit the residence of Villa Giardino wanting to walk to St David's church. Access to Sports village from community on east side would be improved.
Anonymous 10/19/2021 08:15 PM	Ranked based on our usage for the trail
Anonymous 10/19/2021 10:14 PM	Better location more space
Anonymous 10/20/2021 08:55 AM	nice to have trail access to Sports Village
Anonymous 10/20/2021 09:55 AM	This doesn't have as big an impact to me in terms of neighborhood connections
Anonymous 10/20/2021 05:44 PM	The bridges should connect access points from the east and west sides.

Optional question (94 response(s), 135 skipped)
Question type: Essay Question

Q9 Do you agree with the proposed trail alignment between Rutherford Road and Keele Street?



Question options

Yes No

Mandatory Question (229 response(s))
Question type: Radio Button Question

Q10 Please explain the reasons behind your choice.

Anonymous 10/05/2021 09:38 AM	It seems like a safe route
Anonymous 10/05/2021 10:22 AM	brings tril into traffic. less safe and not consistent with rest of trail
Anonymous 10/05/2021 10:31 AM	Sounds like this approach would do the least amount of natural damage.
Anonymous 10/05/2021 10:42 AM	no other choice
Anonymous 10/05/2021 11:33 AM	the other one seems not feasible although they would probably be nicer trails
Anonymous 10/05/2021 11:46 AM	While I understand the constraints here, this would be a very unfortunate part of the trail if constructed like this (and I understand there may be no choice). We would essentially be walking on residential streets. I think sacrificing some of the vegetation from the parkette heading southeast to avoid the some of the sherwood drive walk and all of the keele section would be preferable. Essentially this is a hybrid of what is proposed and what was deemed unfeasible with the dotted lines (though I would try to make the trail closer to creek near Keele if possible and less close to homes.
Anonymous 10/05/2021 11:56 AM	Don't see an option then how can anyone not agree? Not connecting this shouldn't be an option
Anonymous 10/05/2021 12:02 PM	If there is no other option, i agree.
Anonymous 10/05/2021 12:23 PM	More sustainable than the other option.
Anonymous	Access to neighborhood

10/05/2021 01:13 PM

Anonymous
10/05/2021 02:48 PM
steep slopes, erosion risk, proximity to the creek and the anticipated negative impact of vegetation removal are bad

Anonymous
10/05/2021 05:55 PM
Good

Anonymous
10/05/2021 07:37 PM
Protecting nature

Anonymous
10/05/2021 08:14 PM
I would prefer a path through the ravine but given the circumstances the proposed route is OK.

Anonymous
10/05/2021 09:41 PM
Seems like a good option. I like that it's separate from the road

Anonymous
10/05/2021 10:03 PM
Makes sense

Anonymous
10/05/2021 10:39 PM
You seem to have done your research

Anonymous
10/06/2021 07:36 AM
Looks boring from the pictures.

Anonymous
10/06/2021 11:17 AM
Least impact to habitats

Anonymous
10/06/2021 11:44 AM
if it's not possible to follow the creek, then it's ok go by road

Anonymous
10/06/2021 11:50 AM
More feasible and less costly.

Anonymous
10/06/2021 12:00 PM
Limited impact to envt

Anonymous
10/06/2021 12:06 PM
You should fine a connection from the end of the trail on Rutherford east of Jacob Keffer Parkway. Or reroute it to your

	proposed connection.
Anonymous 10/06/2021 12:40 PM	This proposed 'trail' should be the last alternative. Consider what Toronto did in Vale of Avoca using trails in a steep ravine setting.
Anonymous 10/06/2021 01:31 PM	I understand the safety issues in the choice of this route
Anonymous 10/06/2021 01:35 PM	...
Anonymous 10/06/2021 01:36 PM	Les impact
Anonymous 10/06/2021 01:39 PM	It's the only option proposed.
Anonymous 10/06/2021 01:41 PM	Makes logical sense
Anonymous 10/06/2021 01:45 PM	Although I would love to have the trail continue through the green space, I wouldn't want to pose any risks to people on the trail.
Anonymous 10/06/2021 01:58 PM	The on road routes take away from the goals of the Bartley smith trail. This is a trail, not a sidewalk or multi use pathway along roads with cars.
Anonymous 10/06/2021 02:22 PM	Why is Tesma Way not feasible? At least this route would be half in green space and with Tesma Way being a culs de sac, traffic would not take away as much from the natural feel of the trail system as much as the Sherwood park option.
Anonymous 10/06/2021 02:26 PM	much preferred to be in nature
Anonymous 10/06/2021 02:39 PM	It is always safer to have a trail separated from the road.
Anonymous	I agree w/ city.

10/06/2021 03:02 PM	
Anonymous 10/06/2021 03:18 PM	Better solution should be found
Anonymous 10/06/2021 03:26 PM	Seems reasonable
Anonymous 10/06/2021 03:27 PM	Keep nature as much as possible. With a short route on road surface or pass through residential area is fine since there are other trail entrances close to the residential area.
Anonymous 10/06/2021 04:02 PM	Not familiar with that part
Anonymous 10/06/2021 05:13 PM	It sounds like the natural option. The one of least resistance and impact.
Anonymous 10/06/2021 05:25 PM	Agree with the selection, as the best route in terms of longevity and usability of the trail should be considered (erosion and steep terrain could render the trail unusable during certain weather conditions/seasons)
Anonymous 10/06/2021 06:48 PM	The main trail should not go into residential area as it can cause confusion and difficulties crossing roads.
Anonymous 10/06/2021 06:53 PM	Trails that travel by roadways should be minimized - ideally find a way to stay within the nature tract even if it requires more work. The point of trails is to enjoy nature, so it’s jarring to have to come up into a subdivision. It can also be confusing to stay on route even with signs as if a turn is missed it’s hard to find the way back.
Anonymous 10/06/2021 07:16 PM	Less environmental impact
Anonymous 10/06/2021 09:44 PM	Agree with the rationale for the proposal
Anonymous	i like it

10/06/2021 10:19 PM	
Anonymous 10/06/2021 10:38 PM	Rather the Tesma option if it can be made feasible.
Anonymous 10/06/2021 11:42 PM	Safety
Anonymous 10/07/2021 12:05 AM	should be routed behind the parkette and houses along Alberta drive
Anonymous 10/07/2021 12:21 AM	If only feasible route
Anonymous 10/07/2021 09:56 AM	you mentioned other options are not feasible due to steep slopes, erosion risk, proximity to the creek and the anticipated negative impact of vegetation removal.
Anonymous 10/07/2021 11:43 AM	a route parallel to the road needs to be heavily signed and VERY separated. this is a very busy and dangerous area with respect to vehicular traffic.
Anonymous 10/07/2021 12:58 PM	it wud be nice if this were connected.
Anonymous 10/07/2021 01:54 PM	There is no other choice but this would be great
Anonymous 10/07/2021 02:00 PM	Tesma Way and to the east of the creek are not feasible due to slopes, erosion risk, proximity to the creek and the anticipated negative impact of vegetation removal.
Anonymous 10/07/2021 02:39 PM	No good way to stay off Rutherford
Anonymous 10/07/2021 03:05 PM	It's fine as long as its separated from the road.
Anonymous	Let's please preserve the little wild spaces we have

10/07/2021 03:06 PM	
Anonymous 10/07/2021 03:48 PM	I'd rather keep the trail in the valley but if it can't be done than a path along a residential street will have to do.
Anonymous 10/07/2021 04:29 PM	Makes sense
Anonymous 10/07/2021 04:34 PM	The trail would not be near the creek, but will follow some streets
Anonymous 10/07/2021 04:41 PM	New alignment would cause least amount of disruption.
Anonymous 10/07/2021 05:08 PM	The City deemed it feasible and safe and it's the best option. Hopefully it is easily connected to the rest of the trail.
Anonymous 10/07/2021 05:08 PM	Seems appropriate
Anonymous 10/07/2021 05:11 PM	As long as it does not affect traffic and existing residential property.
Anonymous 10/07/2021 05:34 PM	It's good placement
Anonymous 10/07/2021 05:35 PM	Please install large directional signs if the trail ends at Rutherford and starts back up at a different location
Anonymous 10/07/2021 05:35 PM	Because it is very feasible.
Anonymous 10/07/2021 07:27 PM	A sidewalk is not a trail. A real trail east of the creek is preferable.
Anonymous 10/07/2021 09:27 PM	Cost
Anonymous	Makes sense

10/07/2021 09:42 PM	
Anonymous 10/07/2021 10:04 PM	Your choice had it all explained
Anonymous 10/08/2021 07:24 AM	There already existing road in place with this option
Anonymous 10/08/2021 08:36 AM	No comment
Anonymous 10/08/2021 08:49 AM	Should not be behind homes
Anonymous 10/08/2021 09:32 AM	i agree
Anonymous 10/08/2021 10:13 AM	World class trail away from street
Anonymous 10/08/2021 10:33 AM	safe and will move people away from traffic.
Anonymous 10/08/2021 11:23 AM	It seems the only feasible option but it would be best to keep the trail away from streets and developed areas
Anonymous 10/08/2021 11:57 AM	The options are very limited for that area.
Anonymous 10/08/2021 12:59 PM	Makes sense.
Anonymous 10/08/2021 01:31 PM	Work life Balance
Anonymous 10/08/2021 01:32 PM	It's a small part, project could save money focusing on the other norther parts of the trail.
Anonymous 10/08/2021 01:46 PM	avoids steep areas

Anonymous 10/08/2021 01:50 PM	Not ideal, but the only option
Anonymous 10/08/2021 01:53 PM	if it has been investigated deemed best, then i agree
Anonymous 10/08/2021 03:24 PM	NA
Anonymous 10/08/2021 05:19 PM	More likely to use as I live off greenock dr.
Anonymous 10/08/2021 06:04 PM	seems most feasible
Anonymous 10/08/2021 06:06 PM	its a good connection
Anonymous 10/08/2021 06:27 PM	looks fine
Anonymous 10/08/2021 07:45 PM	Works with what’s established.
Anonymous 10/08/2021 09:35 PM	connect the trail
Anonymous 10/09/2021 09:25 AM	I don't see any issue with the proposal.
Anonymous 10/09/2021 11:21 AM	Only choice on that area.
Anonymous 10/09/2021 01:05 PM	I don't think trail along industrial area would get enough use. Also could be a less safe route.
Anonymous 10/09/2021 04:42 PM	For the reasons you’ve provided

Anonymous 10/09/2021 05:47 PM	It's on streets. It will be confusing even with signage.
Anonymous 10/09/2021 10:50 PM	Would be nice to see the trail continue away from traffic and noise
Anonymous 10/10/2021 12:34 AM	I am too unfamiliar with, and have too little information about, the actual topographical set up of the creek section between Rutherford and Keele and thus have to rely on the study's assessment.
Anonymous 10/10/2021 01:08 AM	Since much of this option runs along Rutherford already, why not continue east along Rutherford, across Keele, and meet the trailhead that starts to the south?
Anonymous 10/10/2021 12:51 PM	Avoid impacting creek and vegetation
Anonymous 10/10/2021 02:33 PM	Easier to do
Anonymous 10/10/2021 03:25 PM	no further comment.
Anonymous 10/10/2021 03:33 PM	I agree since alternative routes determined to be not feasible.
Anonymous 10/10/2021 06:48 PM	It’s nice
Anonymous 10/10/2021 08:14 PM	Agreed with respect to disruption concerns, but enough separation between roads and trail must be provided to allow for users to feel safe when using it
Anonymous 10/10/2021 08:40 PM	There doesn't seem to be a choice here based on the material presented.
Anonymous 10/11/2021 08:23 AM	No other options

Anonymous 10/11/2021 12:05 PM	lxd
Anonymous 10/11/2021 01:57 PM	trail should remain within or very close to green spaces
Anonymous 10/11/2021 02:36 PM	I think it’s fine and development can happen sooner
Anonymous 10/11/2021 04:50 PM	The alternative trail would be preferable from a natural surroundings perspective, b if this is not feasible then what is proposed is reasonable.
Anonymous 10/11/2021 08:29 PM	Feasible option, and extension better than nothing
Anonymous 10/11/2021 09:18 PM	If there is no other option then yes, but obviously it would be better to stay near the creek and off of the streets.
Anonymous 10/11/2021 10:01 PM	Same as yours
Anonymous 10/12/2021 08:01 AM	Seems reasonable
Anonymous 10/12/2021 10:17 AM	safer
Anonymous 10/12/2021 11:38 AM	Does not make for a continuous trail through parkland. Travel though neighborhoods makes for getting lost and car/vehicle obstacles.
Anonymous 10/12/2021 12:17 PM	I understand that it would be easier and cheaper to use the road rather than building a new trail, but I think that that would take away from the idea. I do not want to have to walk along the streets and down Keele. It would be safer and more enjoyable to have an actual trail.
Anonymous	It's fine as is

10/12/2021 02:07 PM	
Anonymous 10/12/2021 02:23 PM	Rutherford is extremely busy and concerned for pedestrian and bikers' safety
Anonymous 10/12/2021 04:09 PM	If it is the only option than I agree.
Anonymous 10/12/2021 04:17 PM	yes
Anonymous 10/12/2021 07:13 PM	Tesla way would be nicer
Anonymous 10/12/2021 07:32 PM	Agree with least impact
Anonymous 10/12/2021 07:57 PM	I agree with the city's decision
Anonymous 10/12/2021 08:46 PM	more convenience
Anonymous 10/12/2021 08:54 PM	To avoid negative impact of vegetation.
Anonymous 10/12/2021 09:03 PM	Prefer to travel in forested area and not subdivision where people live. Sherwood park drive has narrow roads and lots of cars parked on the road
Anonymous 10/12/2021 09:29 PM	I think investing in a trail following the ravine would be a better choice. This should be reexamined.
Anonymous 10/12/2021 09:35 PM	Safer
Anonymous 10/12/2021 09:43 PM	uses already developed route

Anonymous 10/12/2021 09:51 PM	It seems like the best option
Anonymous 10/12/2021 09:53 PM	I like the proposed alternative but you say it isn't feasible so this is fine. I'd rather not go close to the houses and I am also concerned about crossing Keele.
Anonymous 10/12/2021 11:07 PM	continuation of trail without worrying about traffic is ideal
Anonymous 10/13/2021 09:50 AM	I understand the constraints to both explored alternative route options determined not feasible; however the one proposed route will be extremely busy and congested with vehicle traffic (even though the trail is passing through the Sherwood Park Drive neighbourhood), resulting in a dangerous route and unpleasant experience in nature. I urge the City to reconsider this section of the proposed plan, suggesting that if cost-saving options are selected elsewhere in the overall plan, additional funds could, and should, be allotted to this troublesome section of the path. Re-examining at least one of the potential trail alignments that have been deemed not feasible is encouraged. Thank you.
Anonymous 10/13/2021 10:15 AM	Seems like the only feasible solution
Anonymous 10/13/2021 10:42 AM	It's a "greenway" and there's nothing "green" about the proposed route.
Anonymous 10/13/2021 12:20 PM	Anything is better than nothing.
Anonymous 10/13/2021 12:28 PM	Not sure, but may also provide an alternative from existing options for riding part of the way to the GO station
Anonymous 10/13/2021 01:10 PM	Other side has steep slopes.
Anonymous 10/13/2021 01:15 PM	This seems to be the easiest route to Keele.

Anonymous 10/13/2021 02:27 PM	It's not a bad route but I prefer wooded routes
Anonymous 10/13/2021 02:35 PM	looks good.
Anonymous 10/13/2021 02:57 PM	Seems to be the most direct route.
Anonymous 10/13/2021 03:15 PM	no other option given
Anonymous 10/13/2021 03:25 PM	Uses mainly existing streets but is not really a trail.
Anonymous 10/13/2021 03:52 PM	This is not much of a nature trial and is more of a walk through the existing community streets. The option along Tesma way would be a better option for a nature trail.
Anonymous 10/13/2021 04:50 PM	Easier without crossing a road
Anonymous 10/13/2021 05:01 PM	The trail should continue along Tesma Way so the benefits of the natural area along Tesma can be utilized. Going through the sidestreets to get to Gantner Gate is not a trail, so it may as well just end at Rutherford Road. Or just have users go onto Cromwell Rd, cross at Keele to Fieldgate Dr. and join the existing trail from Fieldgate Dr. This is a more residential area and Keele is easier to cross.
Anonymous 10/13/2021 05:15 PM	It’s not ideal but it seems to be a short distance.
Anonymous 10/13/2021 05:27 PM	The alternative trail on Tesma is better as it is closer to the natural area and away from residents' homes.
Anonymous 10/13/2021 05:32 PM	Ok
Anonymous	Too close to major roadways

10/13/2021 06:32 PM	
Anonymous 10/13/2021 09:23 PM	No need to go through extra diffculty and environmental impact just to shorten the route by an insignificant amount,
Anonymous 10/13/2021 11:23 PM	Don't use tesma way, rather be near residential
Anonymous 10/14/2021 10:35 AM	Its unfortunate that a trail cannot be away from the busy streets but at least this is an alternate connection.
Anonymous 10/14/2021 01:57 PM	I like to stay as close to nature as possible when I use the trail. I don't like walking in the sub-division.
Anonymous 10/14/2021 02:23 PM	Seem like a reasonable choice given the impact of locating the trail in the ravine
Anonymous 10/14/2021 02:35 PM	The tunnel provides a continuous use experience for the trail user.
Anonymous 10/14/2021 02:53 PM	I'm not clear on how the proposed alignment constitutes a "trail". It sounds like you are proposing that people end their journey on the Sherwood Park sidewalk beside a strip mall. The sidewalk already exists, and does not need to be constructed or designated as part of a trail. Besides which, if I'm going on a nature walk, its not to see the dumpster behind an animal hospital as my final destination.
Anonymous 10/14/2021 05:30 PM	A link is needed
Anonymous 10/14/2021 06:56 PM	Sounds good. The other options were already deemed not feasible.
Anonymous 10/14/2021 09:05 PM	Along the creek would be ideal to have a greater separation from the road and traffic, but if it can't be done...
Anonymous 10/14/2021 09:52 PM	would be nice to have trail in green space but if not feasible agree with alternate

Anonymous 10/15/2021 07:28 AM	Takes you out of nature and back onto major roads
Anonymous 10/15/2021 07:56 AM	If it’s not within green space then people will/can just take the sidewalk.
Anonymous 10/15/2021 10:13 AM	No other choice
Anonymous 10/15/2021 11:15 AM	It will need lights to cross Keele. It looks dangerous
Anonymous 10/15/2021 12:25 PM	trails along the roads are the worse! noisy, smelly not pastoral at all. we want to enjoy the nature and not the super busy road
Anonymous 10/15/2021 12:57 PM	Again, the purpose of a trail system is to be with the environment not to travel through a sub-division. Everything is feasible. How about travelling across Rutherford Rd from the Greenock Rd access, to the trail entry point on Rutherford east of Jacob Keffer. Installing a dedicated bike lane along Rutherford east of Jacob Keffer would be the most direct route if travelling along Tesma Way is truly not feasible.
Anonymous 10/15/2021 06:18 PM	important to connect both streets
Anonymous 10/15/2021 07:13 PM	Close to my house, will be using
Anonymous 10/15/2021 07:39 PM	follows creek
Anonymous 10/15/2021 08:25 PM	Complex
Anonymous 10/16/2021 12:35 PM	Constrains for trail construction are understood.
Anonymous	I'd prefer trail on north side of Rutherford continue through

10/16/2021 12:49 PM	tunnel/culvert underneath Rutherford road headed south all the way to Keele along side Tesma Way, east of the creek.
Anonymous 10/16/2021 01:56 PM	People should not be walking behind residents properties.
Anonymous 10/16/2021 06:12 PM	Close to each other
Anonymous 10/16/2021 07:47 PM	I don't agree with vegetation removal
Anonymous 10/17/2021 12:47 AM	I agree with the reasons on why the alternative paths are not feasible.
Anonymous 10/17/2021 09:11 AM	Because it feels like a walk through a neighborhood instead of a nature trail
Anonymous 10/17/2021 12:06 PM	whatever is most feasible
Anonymous 10/17/2021 12:14 PM	not "world class" defeats the purpose of trail use
Anonymous 10/17/2021 12:24 PM	object is to enjoy the trail
Anonymous 10/17/2021 12:48 PM	less environmental enjoyment.
Anonymous 10/17/2021 01:50 PM	Ido not like the proximity to busy roads
Anonymous 10/17/2021 03:50 PM	The proposed trail alignment does not follow the river and has inaccessible southern entrance at Gantner Gate. This would make the portion of the trail from Jacob Keffer to Rutherford mostly obsolete, while offering little trail through Sherwood Park Dr. I would rather see a multiuse path on Rutherford OR the building of one of the "not feasible" routes. If built, I will continue to take the existing trail to Rutherford and then take the street to the new

	North-side trail
Anonymous 10/17/2021 05:30 PM	Little impact.
Anonymous 10/17/2021 06:53 PM	yes
Anonymous 10/17/2021 08:10 PM	Seems like the only option
Anonymous 10/17/2021 11:24 PM	trail should connect and not confusing as it currently is
Anonymous 10/18/2021 09:24 AM	n/a
Anonymous 10/18/2021 10:42 AM	minimal impact to wildlife
Anonymous 10/18/2021 02:54 PM	Less disruption to the tree area.
Anonymous 10/18/2021 03:51 PM	I agree that you don't want to negatively impact the vegetation but it would be better if the trail could avoid being on the roads
Anonymous 10/18/2021 04:16 PM	I would prefer if the trail was just to the east of the creek, but if the costs and damage to existing vegetation make that not possible, what is proposed is acceptable.
Anonymous 10/18/2021 07:57 PM	To dangerous in this neighbourhood, people use this street as a cut through from keele to Rutherford and very narrow streets
Anonymous 10/18/2021 08:00 PM	most convenient
Anonymous 10/18/2021 08:20 PM	would want to be in nature not on the road

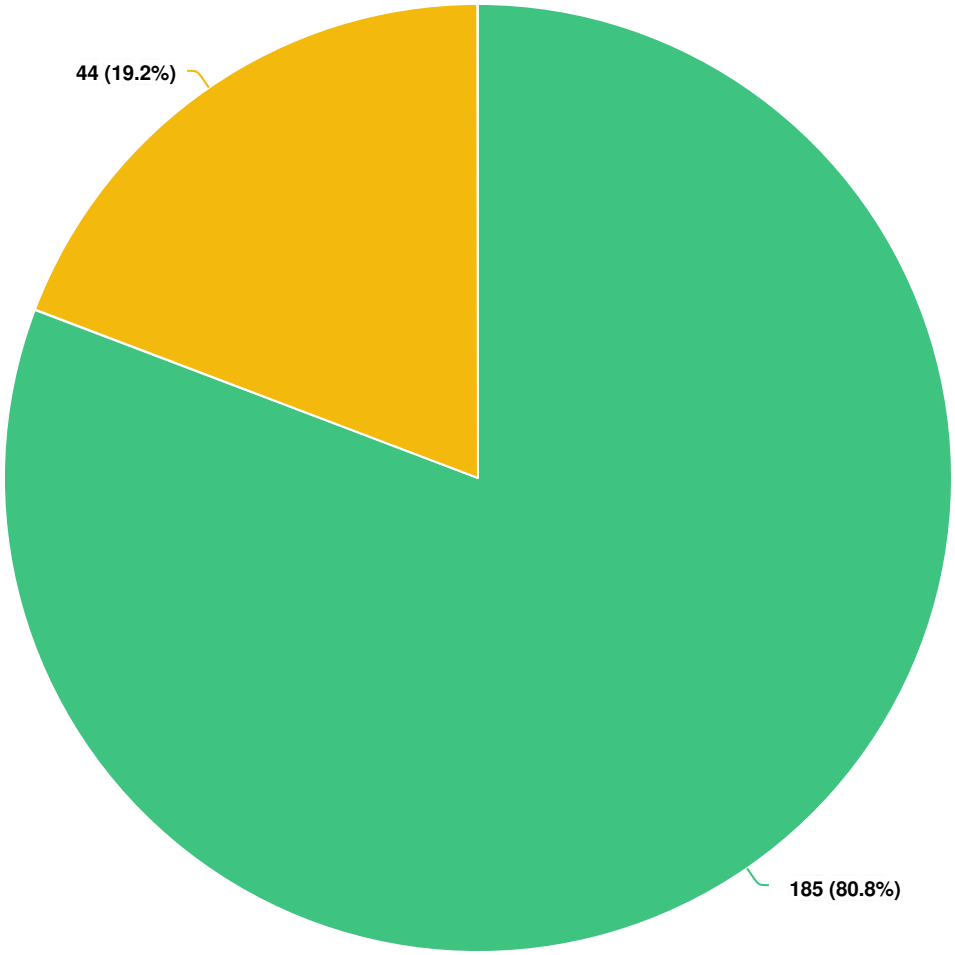
Anonymous 10/18/2021 10:57 PM	A trail that starts as a designated green path should continue so. Introducing hikers and bikers to traffic is asking for an accident to happen. Every effort should be made to keep this as a true green trail. The map reflects a dashed yellow line behind existing homes in Sherwood. I'll refer to as the north dash line and would ask this to be considered. Let's not lose sight of what this is, a trail.
Anonymous 10/19/2021 12:21 AM	Primarily t
Anonymous 10/19/2021 09:14 AM	What is described is not a trail - its a bike lane.
Anonymous 10/19/2021 09:32 AM	Doesn't affect me.
Anonymous 10/19/2021 12:03 PM	This area is one of the most highly vehicle trafficked area in Vaughan. Tunnel/culverts are required and the proposed route would not benefit this proposal because trail would be at road grade.
Anonymous 10/19/2021 12:19 PM	Ok with the proposal
Anonymous 10/19/2021 01:01 PM	Sherwood Park dr is extremely busy and narrow. There is already high traffic here
Anonymous 10/19/2021 02:22 PM	Safer
Anonymous 10/19/2021 03:40 PM	I trust the research done on this.
Anonymous 10/19/2021 04:45 PM	makes more sence
Anonymous 10/19/2021 05:20 PM	It is the only feasible option.
Anonymous	That residential neighbourhood is already a POOR design. It is so

10/19/2021 08:15 PM	tight for cars and pedestrians as it is now and now you want to push trail users into that neighbourhood, not a good decision. I see this as not only disrespectful to the neighbourhood but we are also increasing the health and safety risks to the users.
Anonymous 10/19/2021 08:33 PM	The alternative path would have been nicer but we should be prioritizing simplicity and minimizing impact on the nature.
Anonymous 10/19/2021 08:46 PM	Looks like the alternative routes are not feasible options.
Anonymous 10/19/2021 10:01 PM	this trail doesn't seem to increase access to the neighbourhood...i don't see the benefit of this part of the trail.
Anonymous 10/19/2021 10:14 PM	To connect trail
Anonymous 10/20/2021 08:55 AM	n/a
Anonymous 10/20/2021 09:55 AM	Reasoning provided by staff is acceptable to me.
Anonymous 10/20/2021 11:24 AM	Easily accessible to main streets
Anonymous 10/20/2021 03:04 PM	I live on Sherwood Park and I am concerned that the trail would bring unwanted foot and well as vehicular traffic . The road as is , is quite narrow . I am concerned that the trail will bring increase noise level .
Anonymous 10/20/2021 05:44 PM	The trail would be best along Tesma Way. But it would not be desirable behind the backyards in the neighborhood, and going through he streets is acceptable.
Anonymous 10/20/2021 06:26 PM	To close to residential neighborhood
Anonymous	no comment

10/20/2021 06:27 PM	
Anonymous 10/20/2021 10:17 PM	Closer
Anonymous 10/20/2021 10:26 PM	The options adjacent to the creek should be explored.
Anonymous 10/21/2021 01:38 PM	TRAIL DESIGNER MAXIMIZE WALKING CIRCUIT. VERY WELL THOUGHT OUT.
Anonymous 10/21/2021 11:22 PM	I agree with the proposal.
Christina Tino 10/22/2021 08:23 AM	Decreases impacts on the natural environment

Mandatory Question (229 response(s))
Question type: Essay Question

Q11 When using the trail, how would you prefer to cross Rutherford Road?



Question options

- Option 1 - tunnel/culvert crossing under roadway (similar to Major Mackenzie Drive trail crossing)
- Option 2 - existing signalized intersection at Greenock Drive

Mandatory Question (229 response(s))
Question type: Radio Button Question

Q12 If interested, please explain the reasons behind your choices.

Anonymous 10/05/2021 11:46 AM	Avoiding actual road crossings is always better. (Note, great opportunity for some public art in the tunnel to draw interest and avoid graffitti.
Anonymous 10/05/2021 11:56 AM	Like said before... safer and doesn't disturbed traffic
Anonymous 10/05/2021 12:02 PM	Same reasons as above, uninterrupted bike ride.
Anonymous 10/05/2021 12:23 PM	Tunnel/culvert is always a better choice.
Anonymous 10/05/2021 02:48 PM	Much safer to go under car traffic
Anonymous 10/05/2021 08:14 PM	Tunnel/culvert is preferred for safety reason.
Anonymous 10/05/2021 09:41 PM	Prefer not to cross road
Anonymous 10/05/2021 10:03 PM	Far safer!
Anonymous 10/05/2021 10:39 PM	Rutherford is way too busy for kids to cross. Tunnels are disruptive to build but worth the investment to build a fantastic trail. The major mac tunnel is amazing! We use it every day-. It could use a garbage can to contain all the litter. Off topic but it would be appreciated! A tunnel at Rutherford is higher priority than one at McNaughton.
Anonymous 10/06/2021 07:36 AM	More enjoyable to cross without the worry of crossing on the road.
Anonymous 10/06/2021 11:50 AM	Culvert/Tunnel crossing under roadway tends to get vandalized. Because of the hidden nature and privacy of tunnels and culverts,

	other activities, other than citizen's crossing tend to occur. Especially during the dark.
Anonymous 10/06/2021 12:06 PM	This is a very busy intersection/road with high speed vehicles and large trucks. It's best to keep the trail separated from traffic or intersections.
Anonymous 10/06/2021 12:40 PM	Make walking the fastest and safest alternative.
Anonymous 10/06/2021 01:31 PM	Tunnel or footbridge is much safer on this section of Rutherford. I wouldn't feel safe crossing the road at a signaled crossing.
Anonymous 10/06/2021 01:45 PM	Cosy, and does not interfere with road traffic
Anonymous 10/06/2021 01:58 PM	All trail crossing should be like major Mackenzie crossing. This crossing has provided a more direct and safe crossing for people walking and biking. I love it
Anonymous 10/06/2021 02:22 PM	A tunnel/culver crossing is safer and more direct.
Anonymous 10/06/2021 03:02 PM	Safety
Anonymous 10/06/2021 03:18 PM	Safety and easy navigation
Anonymous 10/06/2021 03:26 PM	Safety
Anonymous 10/06/2021 05:25 PM	Traffic is heavy in that area and cars do not watch for pedestrians and bikes.
Anonymous 10/06/2021 06:48 PM	Rutherford road is very busy and having to cross the intersection will just make it more dangerous.

Anonymous 10/06/2021 06:53 PM	As before, trails should be uninterrupted - never use an at-grade crossing if it's at all avoidable. Trail infrastructure should never interact with other infrastructure.
Anonymous 10/06/2021 07:16 PM	Less pedestrian traffic on rutherford. Avoids signal light activation
Anonymous 10/06/2021 10:19 PM	more safety for pedestrians and bikers
Anonymous 10/06/2021 10:38 PM	I find tunnels safer.
Anonymous 10/07/2021 12:05 AM	minimizes conflict points
Anonymous 10/07/2021 12:58 PM	Opt 1 will be expensive and might require heavy traffic delays due to construction, so it might be better to stick with opt.2
Anonymous 10/07/2021 01:54 PM	Safer for kids And faster
Anonymous 10/07/2021 02:39 PM	at grade crossing over Rutherford unpleasant to pedestrians and bikes
Anonymous 10/07/2021 03:06 PM	Less friction between pedestrians/cyclists and drivers, as well as a wildlife corridor
Anonymous 10/07/2021 03:48 PM	Keep the trail as continuous as possible. I bike to work at Steeles and Dufferin from just north of the sports village and enter the trail at Langstaff. Fewer signalled crossings will make it faster.
Anonymous 10/07/2021 04:34 PM	It would be the safest crossing
Anonymous 10/07/2021 05:08 PM	Tunnel is safer. Cars often speed through the Greenock intersection.

Anonymous 10/07/2021 05:08 PM	safety reasons, as previously
Anonymous 10/07/2021 05:11 PM	It is already there, so why spend additional tax dollars to build a new crossing.
Anonymous 10/07/2021 05:35 PM	I would much rather go under a road than across one.
Anonymous 10/07/2021 09:27 PM	Cost
Anonymous 10/07/2021 09:42 PM	Intersection already there
Anonymous 10/07/2021 10:04 PM	Safety
Anonymous 10/08/2021 09:32 AM	both of these would be fine. knowing the costs of the various options would help me make a better decision. my concern about a tunnel would be that people could loiter out of sight making it seem less safe.
Anonymous 10/08/2021 10:13 AM	Family friendly
Anonymous 10/08/2021 10:33 AM	Less accidents with a tunnel between pedestrians,bikes and motorized vehicles. With new ebikes being a hot commodity as of late, can be a risk of accidents at intersection.
Anonymous 10/08/2021 11:23 AM	Too disruptive to cross the major intersection
Anonymous 10/08/2021 01:31 PM	Safety
Anonymous 10/08/2021 01:32 PM	It's a small part, project could save money focusing on the other norther parts of the trail.

Anonymous 10/08/2021 03:24 PM	Safety first
Anonymous 10/08/2021 05:19 PM	Don't feel safe alone walking in tunnel system
Anonymous 10/08/2021 06:04 PM	safer
Anonymous 10/08/2021 07:45 PM	Less costly
Anonymous 10/08/2021 09:35 PM	easy way to cross under the bridge ,cost will be less
Anonymous 10/09/2021 09:25 AM	Crossing Rutherford should not even be an option with the heavy traffic in the area.
Anonymous 10/09/2021 11:21 AM	Cost.
Anonymous 10/09/2021 01:05 PM	Tunnel/culvert makes scenes only if alternative trail is built. For proposed tail existing intersection would do.
Anonymous 10/09/2021 04:42 PM	Having to wait for a traffic light lessens the enjoyment of the trail
Anonymous 10/09/2021 10:50 PM	Don’t interrupt or wait for traffic on busy street
Anonymous 10/10/2021 12:34 AM	There is already an existing traffic light in the exact right spot. However, to allow trail users to cross on demand, it should be ensured that when they press the button to activate the traffic light, they should be getting a walk signal within 30-60 seconds.
Anonymous 10/10/2021 01:08 AM	Safer, uninterrupted path avoids road crossings.
Anonymous 10/10/2021 02:33 PM	Greenock intersection will be bigger once the road is widened so there should be better pedestrian crossing

Anonymous 10/10/2021 03:25 PM	We always prefer to avoid road crossings. A tunnel/culvert under the roadway is always preferable.
Anonymous 10/10/2021 03:33 PM	Option 1 is safer for pedestrians.
Anonymous 10/10/2021 08:14 PM	Busy stretch of road, crossing should have grade separation for user safety and enjoyment
Anonymous 10/10/2021 08:40 PM	Rutherford is a very busy road, trail users will want to cross at the nearest spot - a tunnel will direct us most safely and effectively towards the trail connections. This section, as proposed will already feel somewhat disjoined so a tunnel would be a very significant way to improve that.
Anonymous 10/11/2021 08:29 PM	Minimize road traffic impact on trail, and pedestrians using trail on road traffic. What was done on Major Mack is excellent
Anonymous 10/11/2021 09:18 PM	It would be a very long annoying wait to cross rutherford rd and an annoyance/delay for traffic.
Anonymous 10/12/2021 08:01 AM	Less interaction with vehicular traffic
Anonymous 10/12/2021 10:17 AM	same as other tunnels
Anonymous 10/12/2021 11:38 AM	Most direct route and avoids major street traffic/break in use.
Anonymous 10/12/2021 12:17 PM	Underpasses are much safer.
Anonymous 10/12/2021 07:57 PM	Less risk to car traffic being slowed due to foot traffic trying to cross

Anonymous 10/12/2021 08:46 PM	fell safe
Anonymous 10/12/2021 09:29 PM	Anything for creating an uninterrupted cycling path north of the city.
Anonymous 10/12/2021 09:51 PM	Tunnel crossing are ultimately safer for bicyclists and pedestrians.
Anonymous 10/13/2021 09:50 AM	Currently not a heavily used pedestrian cross walk - no need to build new infrastructure or spend more funds. Put the saved money towards implementing one of the potential trail alignments determined not-feasible!
Anonymous 10/13/2021 10:42 AM	Keeps the speeding cars away.
Anonymous 10/13/2021 12:20 PM	Poor visibility at the existing intersection frequently results in close calls when crossing Greenock Drive parallel to Rutherford on the North side. I would expect the volume of pedestrians making that crossing to increase with these changes. The intersection also handles an ever increasing amount of vehicle traffic.
Anonymous 10/13/2021 12:28 PM	Much more convenient, safer. traffic is always heavy on Rutherford but assume much more expensive
Anonymous 10/13/2021 01:15 PM	A tunnel would minimize pedestrians on the road and be more safe.
Anonymous 10/13/2021 02:27 PM	Please avoid crossing major roads at grade level, thank you.
Anonymous 10/13/2021 02:57 PM	A tunnel would be safer as Rutherford is very busy.
Anonymous 10/13/2021 03:15 PM	looks safer
Anonymous 10/13/2021 03:25 PM	The tunnel option is safer for pedestrians and drivers.

Anonymous 10/13/2021 03:52 PM	The tunnel would be a safer option for pedestrians and vehicle traffic.
Anonymous 10/13/2021 05:01 PM	The tunnel is a safer option. Not sure if the cost merits a tunnel at this location.
Anonymous 10/13/2021 05:27 PM	The tunnel would be better as Rutherford is very busy.
Anonymous 10/13/2021 05:32 PM	Safer for kids
Anonymous 10/13/2021 06:32 PM	Potentially safer but must be well lit and not a hangout for teenagers
Anonymous 10/13/2021 09:23 PM	Prefer separate grade crossings because they are safer and faster for all users
Anonymous 10/14/2021 10:35 AM	If money is no object, then yes a well lit tunnel is appreciated. Otherwise the light at Greenock is fine
Anonymous 10/14/2021 02:23 PM	Option 1 is the safest give the busy nature of Rutherford Road.
Anonymous 10/14/2021 02:53 PM	sounds like Option #2 is the only feasible one right now
Anonymous 10/14/2021 06:56 PM	Less disruptions to traffic and safer for pedestrians
Anonymous 10/14/2021 09:52 PM	avoid needing to stop and wait for light
Anonymous 10/15/2021 07:28 AM	Prefer to create one long path inside a green space so you have the option of not seeing roads

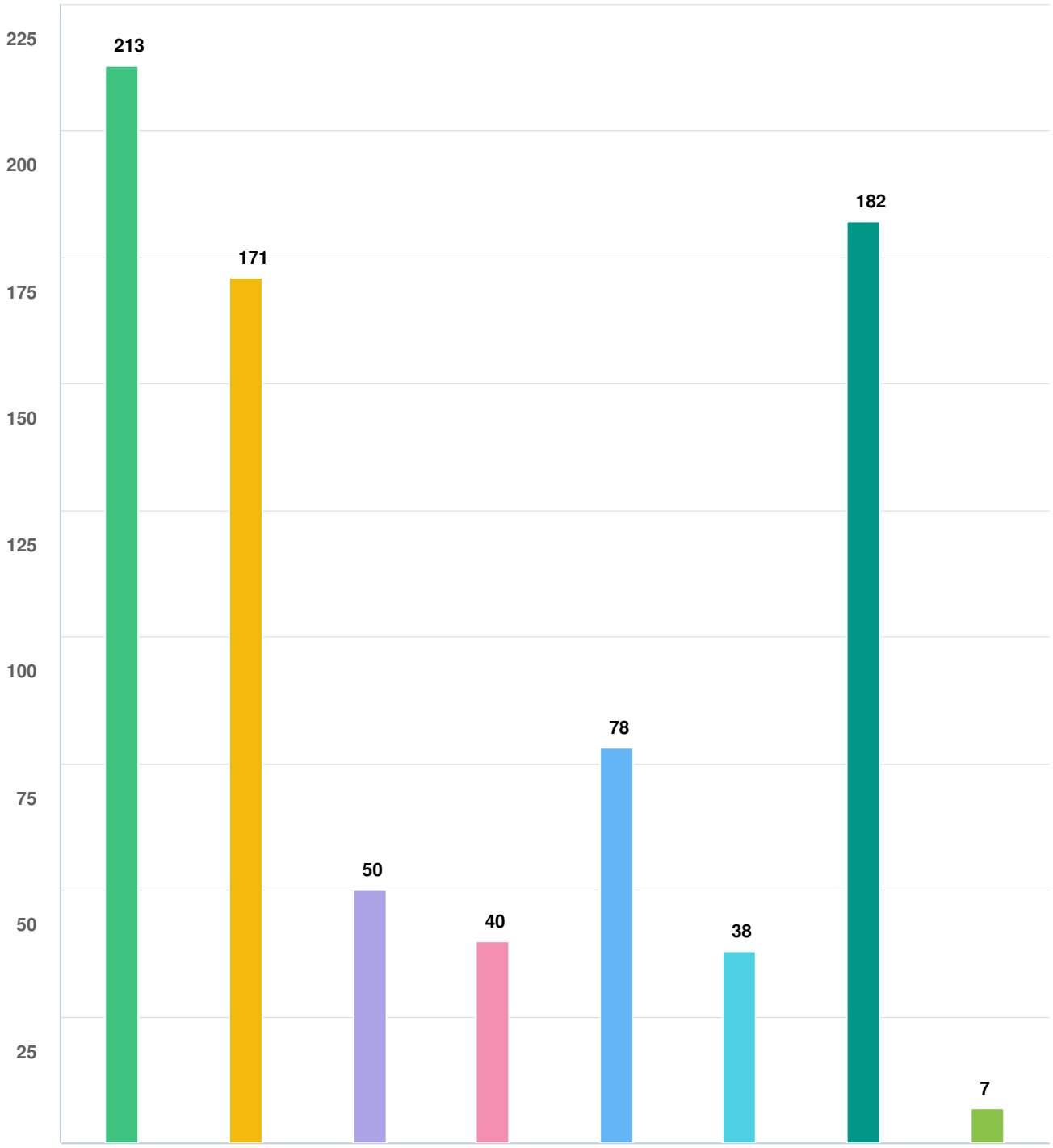
Anonymous 10/15/2021 07:56 AM	Redundant to excavate a tunnel if there's barely a trail on the other side.
Anonymous 10/15/2021 12:25 PM	Please do it a tunnel! Tunnels are safer and no interaction with the traffic for the hikers/bikers
Anonymous 10/15/2021 12:57 PM	Rutherford Rd is EXTREMELY busy. The safest way is the tunnel/culvert
Anonymous 10/15/2021 06:18 PM	inexpensive and easy
Anonymous 10/16/2021 12:35 PM	Rutherford road is busy. An underpass would suit here for safety of crossing.
Anonymous 10/16/2021 12:49 PM	An enjoyable, optimally used trail is one that is seamless and continuous. Multiple cuts in the trail (entrance/exists off roads...starts and stops in other words) is not preferable. For reference, look at the usage and enjoyment of the Humber trail that runs through Boyd-Kortright-Bindertwine... this would be the (my) wish for the Bartley Smith Greenway.
Anonymous 10/16/2021 01:56 PM	Again, under ground roadway is not safe.
Anonymous 10/17/2021 12:47 AM	It is desirable to avoid traffic on this walk but people's safety from crime is also important. Are the culverts open aired? or are they dark places that might be unsafe? I went to a post-secondary school that had an underground tunnel network that people could take to avoid the winter snow. Most women and lots of men felt unsafe walking alone in the tunnels (especially during off-hours).
Anonymous 10/17/2021 09:11 AM	A good way to avoid traffic and not interfere with traffic
Anonymous 10/17/2021 12:06 PM	avoiding traffic
Anonymous	Safer / crime reduction friendly, Controlled, Liability protection for

10/17/2021 12:14 PM	Vaughan
Anonymous 10/17/2021 12:48 PM	would be nice although expensive
Anonymous 10/17/2021 03:50 PM	Option 1 should also include a ramp for street access for residents/cyclists coming down rutherford
Anonymous 10/17/2021 05:30 PM	Less construction and impact on roadway.
Anonymous 10/17/2021 08:10 PM	Tunnel is always the better option than a crossing
Anonymous 10/17/2021 11:24 PM	safer
Anonymous 10/18/2021 02:54 PM	I want as little construction as possible to the areas.
Anonymous 10/18/2021 04:16 PM	Tunnel / Culvert is the best option as it virtually eliminates any interaction between people and vehicles. Rutherford is a very busy road and while the level crossing is feasible, I am concerned about people not wanting to wait for the lights to change and the possibility of people getting hit is too high. I can appreciate that the cost for this is high, but a tunnel culvert here makes the most sense. I would even give up the tunnel at McNaughton to ensure that one is built here. Beyond that, does the City have any plans to extend Langstaff from Keele Street to Jane Street? If that was done (I know it is a lot of bridges over the railway marshalling yard), that would ease a lot of pressure away from Rutherford as well as Major Mackenzie. Also, is there any plan to extend Teston from Keele to Dufferin? Major Mackenzie is getting far too much traffic volume.
Anonymous 10/18/2021 07:57 PM	Safest way
Anonymous 10/18/2021 10:57 PM	Safety and continuous hiking or biking. Have you considered a pedestrian bridge?

Anonymous 10/19/2021 09:14 AM	Crossing over Rutherford in this area is a nightmare and not safe for small children
Anonymous 10/19/2021 12:03 PM	Rutherford road is as busy as Major Mackenzie, if not more congested due to lack of east/west routes created by the CN yard.
Anonymous 10/19/2021 03:40 PM	I prefer the tunnel but understand that it may be cost prohibitive.
Anonymous 10/19/2021 04:45 PM	tunnels are scary
Anonymous 10/19/2021 08:15 PM	A tunnel is the best option, keep the trail users close to the natural nature experience.
Anonymous 10/19/2021 10:01 PM	his crosswalk is SO SLOW, takes so long to change the light.
Anonymous 10/19/2021 10:14 PM	No construction
Anonymous 10/20/2021 09:55 AM	Personal safety.
Anonymous 10/20/2021 11:24 AM	Safer route, limits interaction with heavy traffic
Anonymous 10/20/2021 10:17 PM	Safer
Anonymous 10/20/2021 10:26 PM	Forcing the pedestrian to cross a busy street like Rutherford does not make any safety and connectivity sense.
Anonymous 10/21/2021 01:38 PM	UNDER TRAFFIC IS ALWAYS BEST
Christina Tino 10/22/2021 08:23 AM	The light at Greenock is too long and not timed properly. Traffic often blocks the intersection.

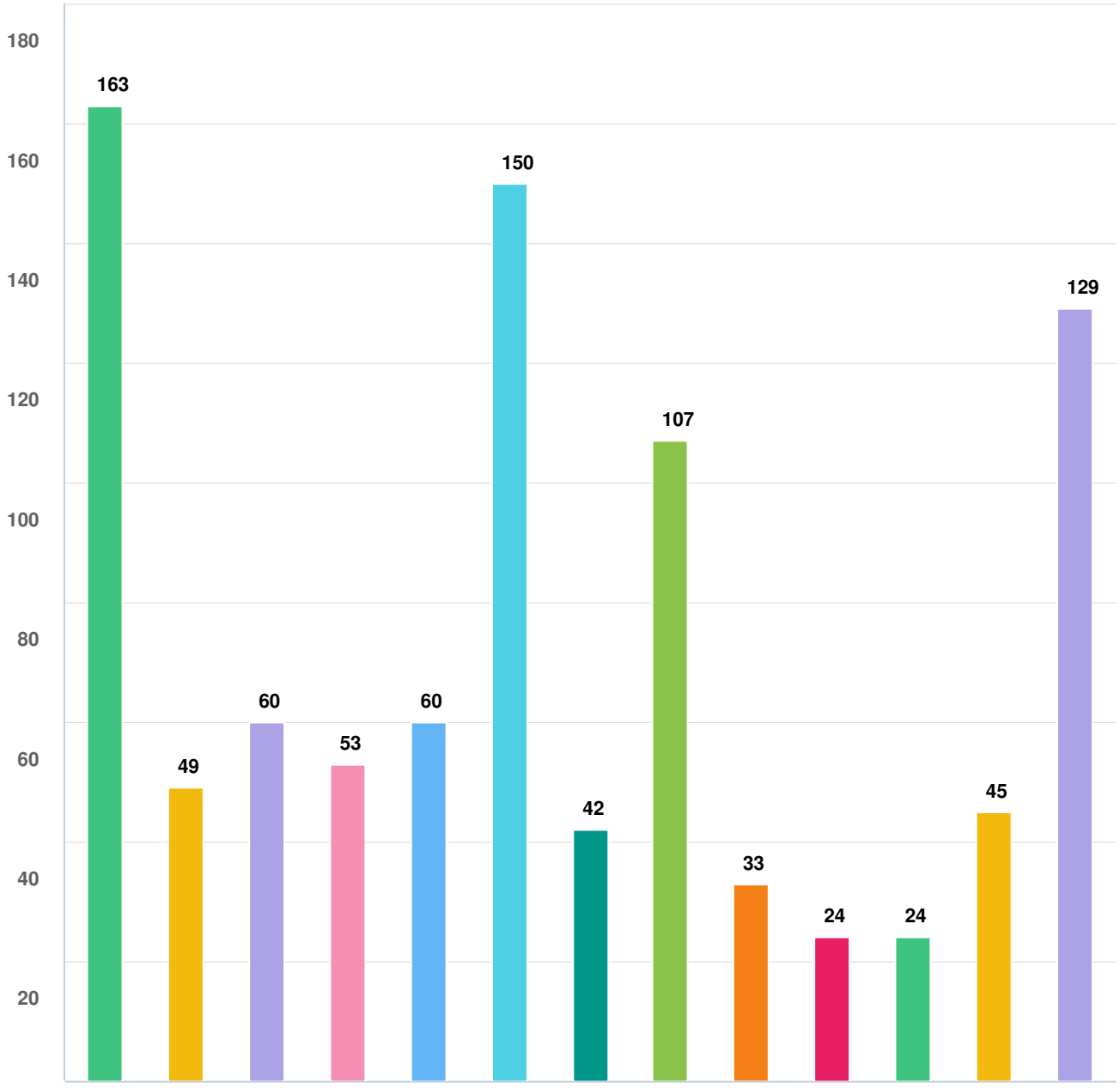
Optional question (127 response(s), 102 skipped)
Question type: Essay Question

Q13 How do you see yourself using the trail? Please select all that apply.



Mandatory Question (229 response(s))
Question type: Checkbox Question

Q14 What type of amenities or improvements would you like to see as part of this trail project? Please select your top five amenities/improvements.

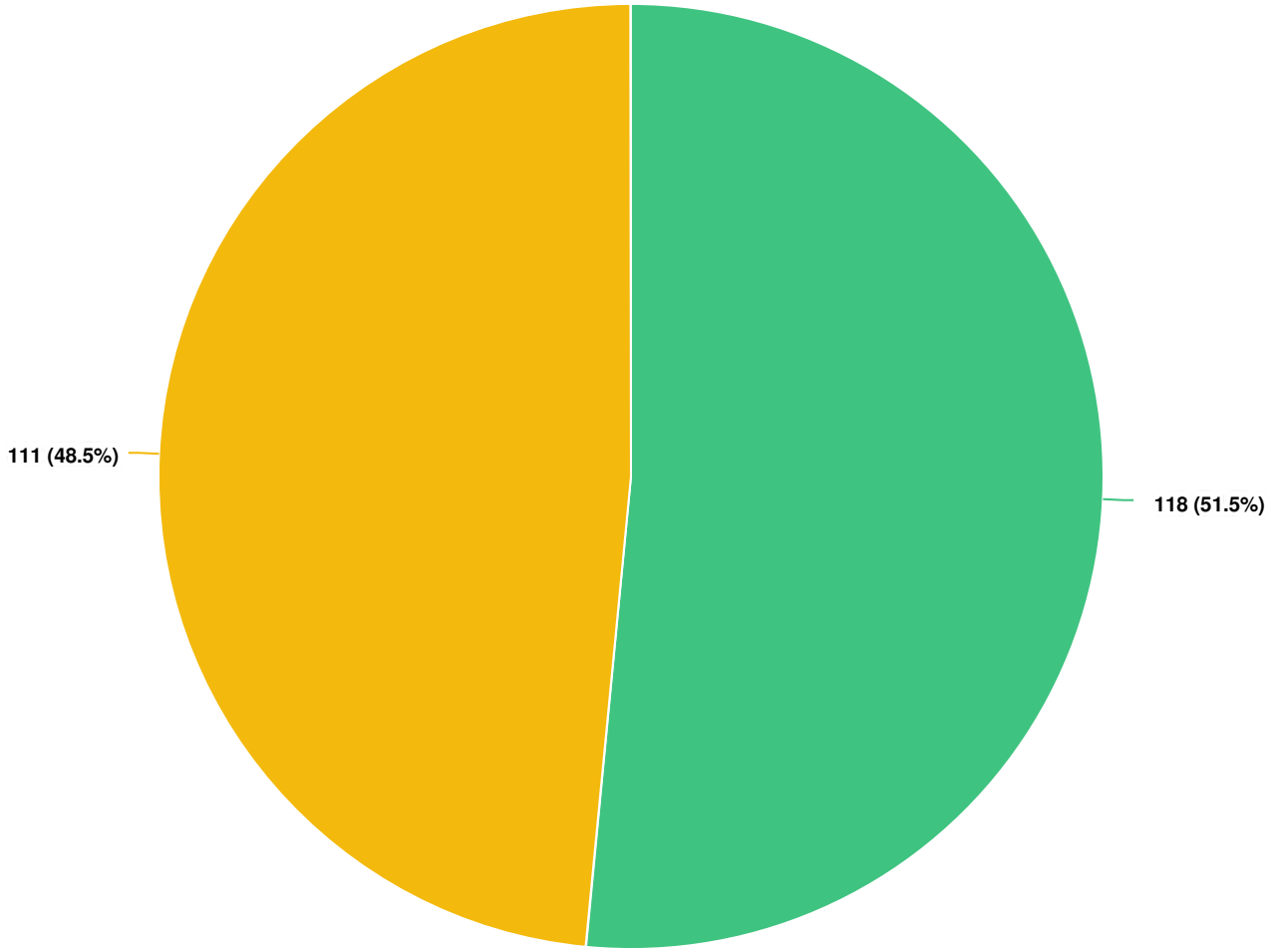


Question options

- Benches
- Picnic tables
- Shade structures
- Parking at trailheads
- Water bottle filling stations
- Maps of the trail and other local destinations
- Active transportation improvements along adjacent streets to make better connections to nearby destinations
- Plantings with vegetation that is native to Ontario
- Manicured grass (mown lawn) in select areas to allow for gathering and other informal recreation
- Community gardening plots
- Bicycle repair stations
- Public art
- Lighting

Mandatory Question (229 response(s))
Question type: Checkbox Question

Q15 What type of trail surfacing material would you prefer?

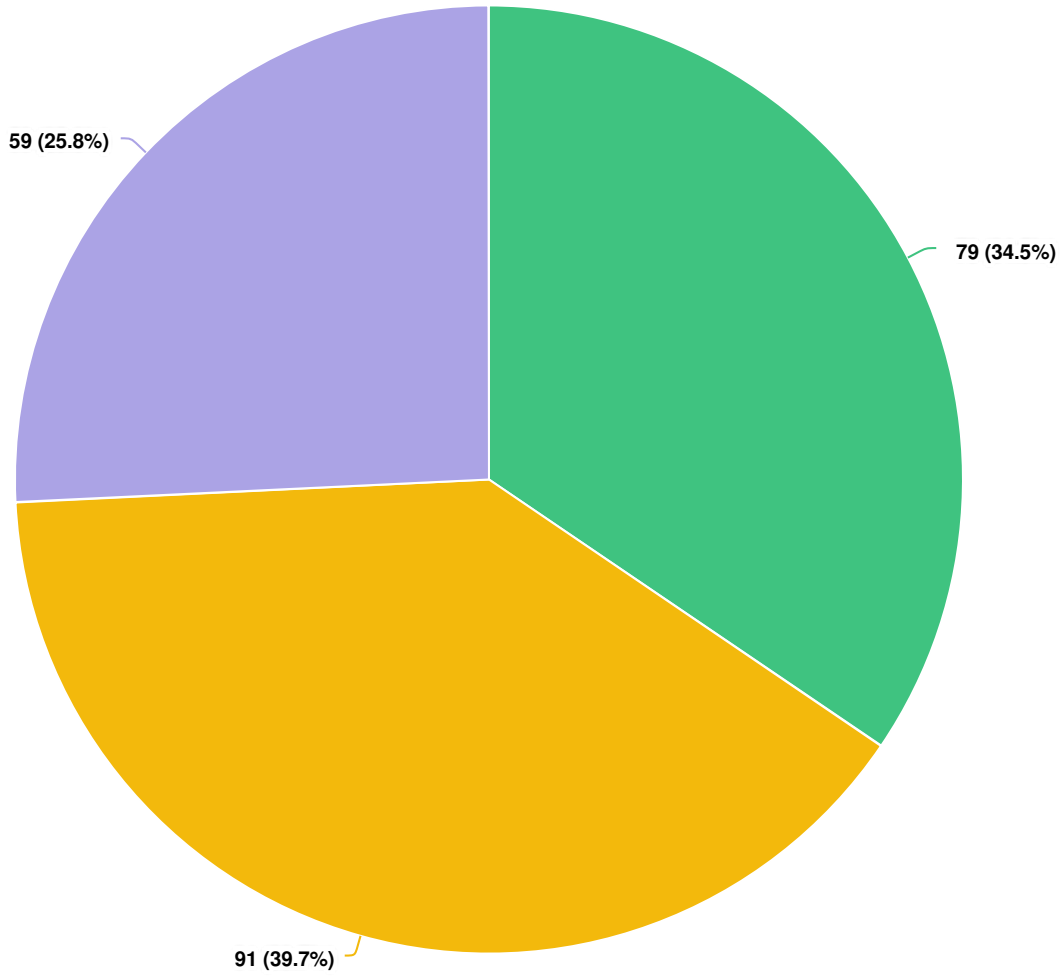


Question options

- Asphalt (similar to existing trail sections near Naylon Parkette)
- Compacted stone dust screening (similar to the existing trail section from Merrick Drive to Rutherford Road)

Mandatory Question (229 response(s))
Question type: Radio Button Question

Q16 What type of seasonal maintenance for trails within the subject area would you prefer?



Question options

- No snow clearing or ice prevention – allowing for winter active recreational use (snowshoeing, cross country skiing, etc.).
- Partial winter maintenance – snow removal in select sections only and minimal ice prevention.
- Full snow removal and ice prevention.

Mandatory Question (229 response(s))
Question type: Radio Button Question

MEMO

TO: Sandra Neal and Michael Habib

FROM: Amanda Gebhardt

SUBJECT: **Bartley Smith Greenway Trail Gap Feasibility Study: Virtual Stakeholder Needs Analysis Workshop Summary**

DATE: September 21, 2021

Introduction to Bartley Smith Greenway Trail Gap Feasibility Study

The City of Vaughan retained WSP Canada Inc. to provide professional services in landscape architecture, design services, master planning, trail and active transportation planning to complete a feasibility study and 30% design to fill critical gaps in the Bartley Smith Greenway (BSG) Trail along a 3 km segment in the Upper West Don River Corridor between McNaughton Avenue to Keele Street. The Bartley Smith Greenway is part of the 100 km city-wide Vaughan Super Trail, a signature recommendation of the City's 2020 Pedestrian and Cycling Master Plan, recently endorsed by City Council. Filling the gaps to provide a continuous north-south pedestrian and cycling trail will provide recreation and active transportation opportunities for residents as well as other community benefits. It also supports several other strategic plans of the City such as the Official Plan, Green Directions Vaughan, Vaughan Active Together Master Plan, and the TRCA Trail Strategy.

The BSG Trail Project is broken into two main components:

Part 1: Research and Preferred Trail Route Analysis (Current Phase)

Evaluate the feasibility of developing a continuous 3km pedestrian and cycling trail system and preferred route alignment through the research, inventory, analysis and review of existing conditions, opportunities and constraints. An impact assessment along with master plan and mapping will be provided, considering a robust public and stakeholder consultation plan including indigenous consultation. Life cycle cost analysis including capital, operations and maintenance costs will inform an implementation plan. Part 1 is to take 32 weeks.

Part 2: 30% Design Development

Prepare a 30% design of the preferred trail alignment including detailed feasibility assessment incorporating consultation feedback; site assessment including geotechnical testing, Stage 1 archaeology; 30% drawings with layout, grading, planting restoration, cross sections, design standards, signage, wayfinding, and pavement markings; and a final implementation plan with project phasing and updated lifecycle costing. Part 2 is to take 24 weeks

Introduction to Virtual Stakeholder Visioning Workshop

As part of **Part 1- Research and Preferred Trail Route Analysis**, the Project Team hosted a Virtual Stakeholder Needs Analysis Workshop on September 8, 2021. Key stakeholders in attendance included representatives from the City of Vaughan and various technical agencies representing Planning, Maintenance and Operations, Transportation, and Parks Operation. The purpose of the workshop was to present and obtain input on the:

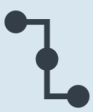
1. **High-level needs, opportunities and strengths** for the study based on feedback received during the Stakeholder Visioning Workshop;
2. **Revised trail mapping** based on feedback received during the Stakeholder Visioning Workshop; and
3. **Draft survey questions** that will be posted on the project website to help gain more feedback about the study from members of the public.

Similar to the Stakeholder Visioning Workshop, the Project Team used Mural, an online whiteboarding tool, to obtain feedback from workshop participants. The Mural Board was accessible to participants both during the workshop and after the workshop (until September 14, 2021) to allow participants to continue adding input beyond the live workshop event. A screenshot of the completed Mural Board is shown in **Appendix A**.

Overview of Questions

During the Needs Analysis Workshop, participants were asked to provide input on the following:

1. **Project Needs, Opportunities and Concerns** – The Project Team presented a high-level overview of the key themes that emerged during the Stakeholder Visioning Workshop relating to project needs, opportunities, and concerns (shown below). Using sticky notes, participants were asked to provide any comments about the key themes. **Memo 1: Bartley Smith Greenway Trail Gap Feasibility Study: Virtual Stakeholder Needs Analysis Workshop Summary** includes a Summary of the Stakeholder Visioning Workshop.

	**Limit the impact to the existing natural heritage system**	Limit the impact to the existing natural heritage system (i.e., avoid higher quality treed areas and vegetated slopes; limit the proximity to the river and the number of watercourse crossings; and consider invasive species management techniques, construction impacts, and trail materials).
	**Protect the creek and flood plain limits while providing a buffer to adjacent residential yards**	Respect the need to protect the creek and flood plain limits, while providing a buffer to adjacent residential rear yards when determining the trail alignment.
	**Provide connections that will link community destinations**	Provide connections that will link key community destinations like schools, shopping centres, childcare centres, parks, etc.

	**Limit the potential impacts of winter maintenance**	Limit the potential impacts of winter maintenance such as salt use in the creek corridor, while still providing a level of year-round function to the trail system.
	**Assess the Major Mackenzie culvert crossing**	When determining the type of crossings for Rutherford Road and McNaughton Road, assess the Major Mackenzie culvert crossing to weigh the pros and cons for users, maintenance and the environment.
	**Support placemaking along the trail with amenities and interpretive signage**	Consider opportunities for placemaking through the use of amenities that align with Crime Prevention Through Environmental Design (CPTED) Principles to increase safety and comfort for trail users (e.g., shaded areas, benches, gathering spaces, Indigenous elements). Develop interpretive signage and educational materials to be placed along the trail to connect users with the natural and cultural heritage of the trail.

2. **Revised Trail Mapping** – The Project Team provided a brief overview of the revised trail mapping, highlighting the following revisions that were made based on feedback gathered at the Stakeholder Visioning Workshop:
   - Alignment D has been eliminated as an option due to being in close proximity to the Provincially Significant Wetland (PSW);
   - Alignment F has been eliminated as an option due to the significant tree lined area and steep slopes;
   - Alignment H has been eliminated as an option due to the encroachment onto residential lots;
   - McNaughton Road Crossing Option #4 has been eliminated as the crossing would be too far from the trail;
   - Rutherford Road Crossing Option #2 has been eliminated as it would be too costly to implement; and
   - An additional alignment option has been added to connect the trail between Rutherford Road and Keele Street which travels through the wooded slopes on the west side of the creek, outside of the Tesma Way road right of way.

   After going through the mapping, participants were asked to provide comments to the map with any of their input. The revised trail mapping is shown in **Appendix B**; and
3. **Draft Survey Questions** – Participants were asked to use sticky notes to provide their feedback on the draft survey questions. The draft survey questions are included in **Appendix C.**

Summary of Key Themes

The input received both during and after the Stakeholder Needs Analysis Workshop helped to highlight several key themes that the Project Team will use to guide the project going forward. A summary of the key themes is included below.

1. Project Needs, Opportunities and Concerns

Overall, the Stakeholders agreed with the key themes presented to help highlight the project needs, opportunities and concerns and there were no additional comments.

2. Revised Trail Mapping

The stakeholders provided several comments about the revised trail mapping. A complete list of all the comments can be found in **Appendix D**. Key themes and revisions that emerged through the stakeholder's mapping comments are provided below:

- Overall agreement with Alignment E as it helps to avoid the Provincially Significant Wetland (PSW);
- Overall agreement with Alignment G as it keeps the trail on the east side of the creek but avoids the future development area east of the stormwater pond;
- Add another potential pedestrian bridge crossing between Bridge Crossing Option #3 and Rutherford Road, given the frequency of crossings towards Major Mackenzie Drive;
- Remove Alignment Q (in addition to the previously removed culvert crossing option along Rutherford Road) as it is very difficult to implement and would work best if the culvert crossing were implemented as well;
- Remove Alignments O and P and replace with new alignments that connect the trail to the Sherwood Park Drive neighbourhood; and
- Remove Rutherford Crossing Option #4 as it is located too far from the trail.

3. Draft Survey Questions

Stakeholders provided the following comments on the draft survey questions:

- In addition to asking about desired amenities, ask the public about potential programming opportunities (e.g., gardening allotment opportunities, etc.).
- Ask the public why they use trail (i.e., to get to school, a community centre, a GO Station, transit; for recreation, etc.);
- The City of Vaughan should work with Bylaw enforcement to develop an education piece (separate from this study) to help address trail encroachment issues; and
- Add a question asking if people are interested in being involved in a focus group/site walk for this study in the future.

Summary and Next Steps

The feedback received at the Stakeholder Needs Analysis Workshop will help to inform the study going forward. The Project Team will complete a full review of the outstanding trail mapping comments received during the Workshop and make adjustments to the trail mapping and survey questions as necessary. Once these materials are finalized based on the feedback received during the Workshop, they will be posted online in October 2021 to obtain feedback from members of the public about the study. In addition to the upcoming online public survey, the Project Team will also be hosting more Stakeholder Workshops and a Public Information Centre (PIC) to obtain further input from both the public and stakeholders. These engagement opportunities will help to further narrow down the alignment options and guide the overall trail design.

Source Data

Data has been provided by the City of Vaughan. A site walk was also conducted through the study area on July 12, 2021 with staff from the City of Vaughan, TRCA and WSP to obtain site data.

APPENDIX

A MURAL BOARD

Bartley Smith Greenway Trail Feasibility Study
Needs Analysis Workshop

Activities Overview

Provide your input on the questions and proposed trail mapping for the Bartley Smith Greenway Trail Feasibility Study.

This interative whiteboard will remain open until Wednesday September 15, 2021.

Short-Cut Tools

Ctrl + C	Ctrl + V	Ctrl + Z
Copy	Paste	Undo

Adding Comments

Double-click anywhere to create a sticky note. A menu bar will appear above your note to allow you to change its colour, font size, and other features. You can drag your note to a new location at any time.

If you would like to remove a note you have created, select it and press the **Delete** button on your keyboard. Please do not delete notes created by other team members.

Project Needs, Opportunities, and Concerns

Summary of Key Themes

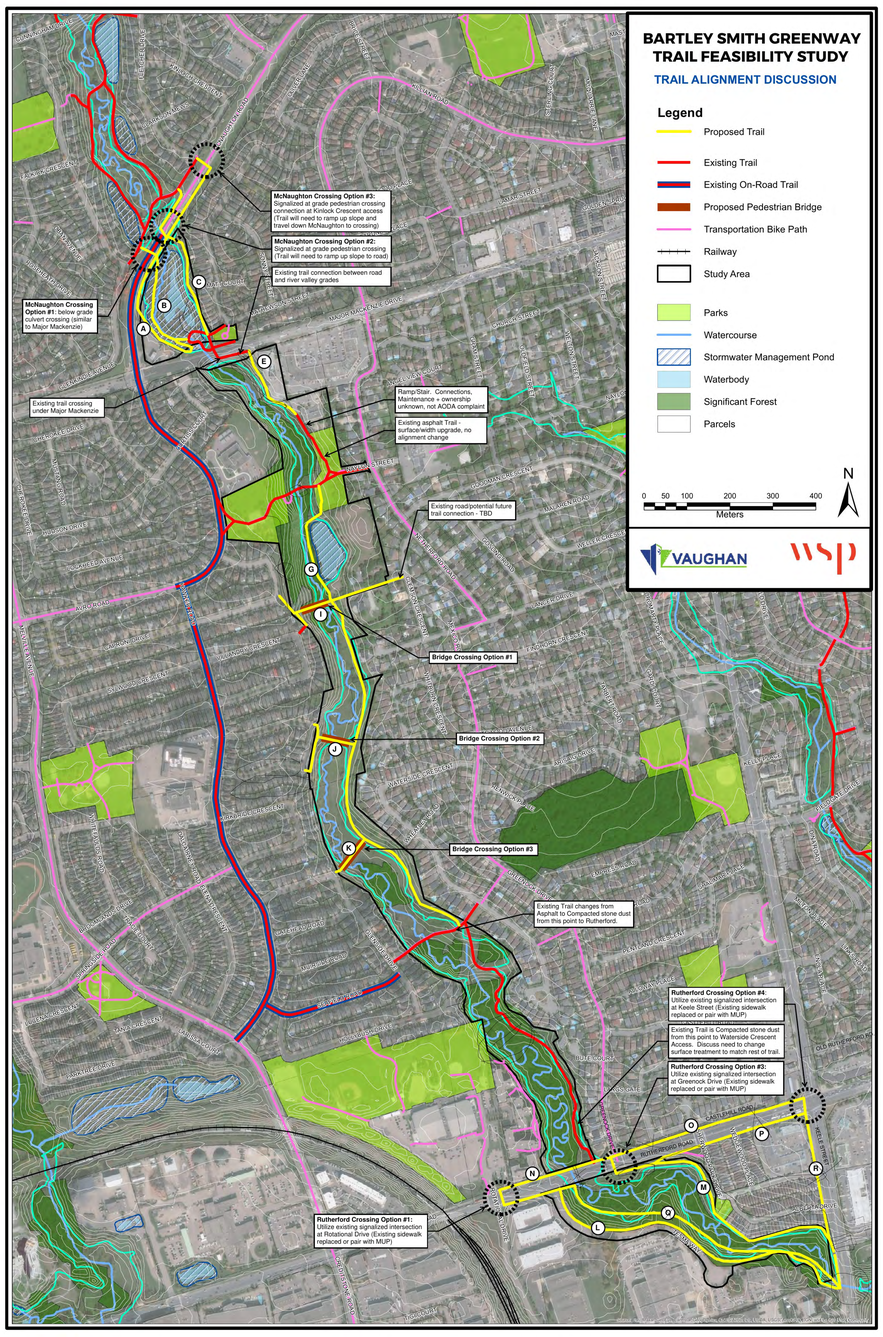
Limit the impact to the existing natural heritage system
Protect the creek and flood plain limits while providing a buffer to adjacent residential yards
Provide connections that will link community destinations
Limit the potential impacts of winter maintenance
Assess the Major Mackenzie culvert crossing
Support placemaking along the trail with amenities and interpretive signage

Do you have any comments about the summary of key themes? Please place sticky notes in the box below.

Revised Trail Mapping

Please add comments on the map with your input.

To add a comment, select the **"text" icon** on the left menu, and then select the **"comment" icon**. You can place your comment at a specific location on the map.



Draft Survey Questions

Please let us know your thoughts on the draft survey questions. Add sticky notes in the blue boxes beside each question to provide any suggestions.

What type of trail surfacing material would you prefer? (select one)

a. Asphalt (similar to existing trail sections near Naylon Park)
b. Compacted stone dust screening (similar to the existing trail section from Merrick Drive to Rutherford Road)

What type of seasonal maintenance for trails within the subject area would you prefer? (select one)

a. No snow clearing or ice prevention, allowing for winter active recreational use (snowshoeing, cross country skiing, etc.)
b. Partial winter maintenance - snow removal in select sections only, minimal ice prevention
c. Full snow removal and ice prevention
d. Notes (please include any comments regarding specific sections or actions to further explain your answer)

A priority for this project is to limit the impact to the natural systems in the area. This means avoiding treed areas, vegetated slopes and keeping the trail away from the creek. In order to meet these goals, the trail between Major Mackenzie and Rutherford Road is being proposed along the east side of the creek. Do you agree with locating the trail on the east side of the creek?

a. Yes
b. No
c. Notes (please explain why you agree or disagree)

There are currently three proposed route options to connect the trail between Major Mackenzie Road and McNaughton Road, of which one will be chosen. Please select all that would be acceptable route options.

a. Route Option A - keeps the trail close to the gas station property and follows along McNaughton Road within the road right of way
b. Route Option B - travels through the creek valley on the west side of the creek and storm pond
c. Route Option C - travels through the creek valley on the east side between the storm pond and rear of Mathewson Street residential lots

There are currently 3 proposed route options to connect the trail between Rutherford Road and Keele Street, of which one will be chosen. The trail will terminate at the existing signalized crossing at Gantner Gate. Please select all that would be acceptable route options.

a. Route Option L - travels within Tesma Way right of way to its terminus and connects to Keele Street through the river corridor
b. Route Option Q - travels through the wooded slopes on the west side of the creek, outside the Tesma Way road right of way
c. Route Option M - travels through the creek valley on the east side between the creek and rear of Sherwood Park Drive residential lots. This route option would provide a connection to the park at the corner of Sherwood Park Drive and Alberta Drive
d. Route Option R - that travels within the Rutherford Road right of way to Keele Street where it would continue along Keele Street to the existing crossing at Gantner Gate

Existing pedestrian bridges connect neighborhoods to the east and west of the creek at Naylon Park and Merrick Drive/Seafield Road. The project will explore adding new pedestrian bridge crossing(s). Please select any or all of the options below that you would consider as an acceptable pedestrian bridge crossing location.

a. No additional pedestrian bridge crossings are needed
b. Option I - I would like to see a new bridge and trail connecting Bevan Road and Caprioni Drive
c. Option J - I would like to see a new bridge and trail connecting Mountcharles Crescent to the proposed new trail
d. Option K - I would like to see a new bridge and trail connecting Glenside Drive to the proposed new trail
e. Notes (if you are opposed to any of the bridge crossing options, please provide an additional explanation)

When using the trail, how would you prefer to cross McNaughton Road? Please select all that would be acceptable crossings.

a. Option 1 - tunnel/culvert crossing under roadway (similar to Major Mackenzie Drive trail crossing)
b. Option 2 - new signalized at-grade road crossing near location of the creek
c. Option 3 - new signalized at-grade crossing connecting to Fletcher Drive

When using the trail, how would you prefer to cross Rutherford Road? Please select all that would be acceptable crossings.

a. Option 1 - existing signalized intersection at Rotational Drive
b. Option 3 - existing signalized intersection at Greenock Drive
c. Option 4 - existing signalized intersection at Keele Street

What type of amenities or improvements would you like to see as part of this trail project? Please select all that apply.

a. Benches
b. Picnic Tables
c. Shade structures
d. Parking at trailheads
e. Water bottle filling stations
f. Maps of the trail and other local destinations
g. Active transportation improvements along adjacent streets to make better connections to nearby destinations
h. Native naturalized planting
i. Manicured areas (mown lawn) in select areas to allow for gathering and other informal recreation
j. Bicycle repair stations
l. Public art
m. Lighting

How do you see yourself using the trail? Please select all that apply.

a. Recreation (walking/jogging)
b. Recreation (cycling)
c. Commuting (walking)
d. Commuting (cycling)
e. Other - e.g., rollerblading, e-scooter, cross country skiing, etc. (please specify)

Please share any other ideas or concerns you may have about this trail project.

h

l

f

Trail programming opportunities - for people to garden, etc. Anything people would like to see?

Perhaps we need to include a separate education piece regarding encroachment - Bylaw should work with corp comms to think about an education piece (separate initiative to project)

a

Perhaps add question about whether people are interested in being involved in a focus group/site walk, etc.

Do you want to be involved in future updates? - this question is usually tagged on at the end of all surveys

APPENDIX

B REVISED TRAIL MAPPING

BARTLEY SMITH GREENWAY TRAIL FEASIBILITY STUDY

TRAIL ALIGNMENT DISCUSSION

McNaughton Crossing Option #3: Signalized at grade pedestrian crossing connection at Kinlock Crescent access (Trail will need to ramp up slope and travel down McNaughton to crossing)

McNaughton Crossing Option #2: Signalized at grade pedestrian crossing (Trail will need to ramp up slope to road)

Existing trail connection between road and river valley grades

McNaughton Crossing Option #1: below grade culvert crossing (similar to Major Mackenzie)

Existing trail crossing under Major Mackenzie

Ramp/Stair. Connections, Maintenance + ownership unknown, not AODA complaint

Existing asphalt Trail - surface/width upgrade, no alignment change

Existing road/potential future trail connection - TBD

Bridge Crossing Option #1

Bridge Crossing Option #2

Bridge Crossing Option #3

Existing Trail changes from Asphalt to Compacted stone dust from this point to Rutherford.

Rutherford Crossing Option #1: Utilize existing signalized intersection at Rotational Drive (Existing sidewalk replaced or pair with MUP)

Rutherford Crossing Option #4: Utilize existing signalized intersection at Keele Street (Existing sidewalk replaced or pair with MUP)

Existing Trail is Compacted stone dust from this point to Waterside Crescent Access. Discuss need to change surface treatment to match rest of trail.

Rutherford Crossing Option #3: Utilize existing signalized intersection at Greenock Drive (Existing sidewalk replaced or pair with MUP)

Legend

- Proposed Trail
- Existing Trail
- Existing On-Road Trail
- Proposed Pedestrian Bridge
- Transportation Bike Path
- Railway
- Study Area
- Parks
- Watercourse
- Stormwater Management Pond
- Waterbody
- Significant Forest
- Parcels

0 50 100 200 300 400
Meters

N

VAUGHAN

wsp

APPENDIX

C DRAFT SURVEY QUESTIONS

SURVEY QUESTIONS

1. What type of trail surfacing material would you prefer? (select one)

a. Asphalt (similar to existing trail sections near Naylon Park)

b. Compacted stone dust screening (similar to the existing trail section from Merrick Drive to Rutherford Road)

2. What type of seasonal maintenance for trails within the subject area would you prefer? (select one)

a. No snow clearing or ice prevention, allowing for winter active recreational use (snowshoeing, cross country skiing, etc.)

b. Partial winter maintenance - snow removal in select sections only, minimal ice prevention.

c. Full snow removal and ice prevention.

d. Notes (please include any comments regarding specific sections or actions to further explain your answer).

3. A priority for this project is to limit the impact to natural systems in the area. This means avoiding treed areas, vegetated slopes and keeping the trail away from the creek. In order to meet these goals, the trail between Major Mackenzie Road and Rutherford Road is currently being proposed along the east side of the creek. Do you agree with locating the trail on the east side of the creek?

a. Yes

b. No

c. Notes (please explain why you agree or disagree)

4. There are currently three proposed route options to connect the trail between Major Mackenzie Road and McNaughton Road, of which one will be chosen. Please select all that would be acceptable route options.

a. Route Option A - keeps the trail close to the gas station property and follows along McNaughton Road within the road right of way.

b. Route Option B - travels through the creek valley on the west side of the creek and storm pond.

c. Route Option C - travels through the creek valley on the east side between the storm pond and rear of Mathewson Street residential lots.

wsp.com

5. There are currently 3 proposed route options to connect the trail between Rutherford Road and Keele Street, of which one will be chosen. The trail will terminate at the existing signalized crossing at Gantner Gate. Please select all that would be acceptable route options.

a. Route Option L - travels within Tesma Way right of way to its terminus and connects to Keele Street through the river corridor.

b. Route Option Q - travels through the wooded slopes on the west side of the creek, outside the Tesma Way road right of way.

c. Route Option M - travels through the creek valley on the east side between the creek and rear of Sherwood Park Drive residential lots. This route option would provide a connection to the park at the corner of Sherwood Park Drive and Alberta Drive.

d. Route Option R - that travels within the Rutherford Road right of way to Keele Street where it would continue along Keele Street to the existing crossing at Gantner Gate.

6. Existing pedestrian bridges connect neighborhoods to the east and west of the creek at Naylon Park and Merrick Drive/Seafield Road. The project will explore adding new pedestrian bridge crossing(s). Please select any or all of the options below that you would consider as an acceptable pedestrian bridge crossing location.

a. No additional pedestrian bridge crossings are needed.

b. Option I - I would like to see a new bridge and trail connecting Bevan Road and Caprioni Drive.

c. Option J - I would like to see a new bridge and trail connecting Mountcharles Crescent to the proposed new trail.

d. Option K - I would like to see a new bridge and trail connecting Glenside Drive to the proposed new trail.

e. Notes (If you are opposed to any of the bridge crossing options, please provide an additional explanation)

7. When using the trail, how would you prefer to cross McNaughton Road? Please select all that would be acceptable crossings.

a. Option 1 - tunnel/culvert crossing under roadway (Similar to Major Mackenzie Drive trail crossing)
b. Option 2 - new signalized at-grade road crossing near location of the creek
c. Option 3 - new signalized at-grade road crossing connecting to Fletcher Drive

8. When using the trail, how would you prefer to cross Rutherford Road? Please select all that would be acceptable crossings.

a. Option 1 - existing signalized intersection at Rotational Drive
b. Option 2 - tunnel/culvert crossing under roadway (similar to Major Mackenzie Drive trail crossing)
c. Option 4 - existing signalized intersection at Keele Street

9. What type of amenities or improvements would you like to see as part of this trail project? Please select all that apply.

a. Benches

b. Picnic Tables

c. Shade Structures

d. Parking at trailheads

e. Water Bottle filling stations

f. Maps of the trail and other local destinations

g. Active transportation improvements along adjacent streets to make better connections to nearby destinations

h. Native naturalized planting

i. Manicured areas (mown lawn) in select areas to allow for gathering and other informal recreation

j. Community gardening plots

k. Bicycle repair stations

l. Public art

m. Lighting

10. How do you see yourself using the trail? Please select all that apply.

a. Recreation (walking/jogging)

b. Recreation (cycling)

c. Commuting (walking or cycling)

d. Commuting (cycling)

e. Other (please specify) - could be e-scooter, rollerblading, x-country skiing, etc.

11. Please share any other ideas or concerns you may have about this trail project.

APPENDIX

D TRAIL MAPPING COMMENTS

BARTLEY SMITH GREENWAY TRAIL FEASIBILITY STUDY

TRAIL ALIGNMENT DISCUSSION

Legend

- Proposed Trail
- Existing Trail
- Existing On-Road Trail
- Proposed Pedestrian Bridge
- Transportation Bike Path
- Railway
- Study Area
- Parks
- Watercourse
- Stormwater Management Pond
- Waterbody
- Significant Forest
- Parcels

0 50 100 200 300 400
Meters

N

VAUGHAN

WSP

If crossing Option #2 is selected, add a community connection from Genkindie Avenue to McNaughton Road to provide a shorter route.

Will culvert crossing require raising of road?

McNaughton Crossing Option #3: Signalized at grade pedestrian crossing connection at Kinlock Crescent access (Trail will need to ramp up slope and travel down McNaughton to crossing)

McNaughton Crossing Option #2: Signalized at grade pedestrian crossing (Trail will need to ramp up slope to road)

Existing trail connection between road and river valley grades

McNaughton Crossing Option #1: below grade culvert crossing (similar to Major Mackenzie)

There is a maintenance line that travels similar to Alignment E and ties into the top of the slope. Alignment E works better.

Complete a historical review to add heritage signage / wayfinding to highlight community history. Not sure what area would be best for this - Greenock, woodlots, Archeolgical significant areas, etc. Could speak to heritage group to get feedback.

Opportunity to add seating node on north side of culvert. Undertaking the design of the nearby park this year. Access to the stormwater pond is still through the park.

Is this grade workable to ensure a maximum of 10% slopes?

There will likely be a lot of water on the trail in this area at certain points during the year.

Existing trail crossing under Major Mackenzie

Alignment E is good for avoiding the PSW.

Ramp/Stair. Connections, Maintenance + ownership unknown, not AODA complaint

Existing asphalt Trail - surface/width upgrade, no alignment change

Consider removing any bollards that don't work and any other upgrades to bring area up to standard.

This section is approximately 2.4 metres wide. As part of future construction, may want to consider opportunity for bridge to be widened and brought up to standard to allow people to access park.

People might wonder about lighting in this area (east/west along Naylon Street).

Important to consider natural heritage impacts of lighting on certain species/habitats.

Existing road/potential future trail connection - TBD

Overall agreement with Alignment G.

Need to have further conversations about the purpose of stormwater ponds. Many developers don't think people should be near stormwater ponds, but there is potential for users to enjoy them.

Look into feasibility of adding a pedestrian bridge across the stormwater pond (weigh user benefits, costs, etc.).

This stormwater pond will be removed after nearby development is completed.

Consider maintenace access route to stormwater pond.

Consider trail head feature, view point, point of interest, etc. in this area.

Is this feasible with grades?

Bridge Crossing Option #1

Bridge Crossing Option #2

Review catchment areas of schools.

Buffers/encroachment will be a big education piece.

Bridge Crossing Option #3

Perhaps suggest a weather structure to see people's thoughts (don't dismiss anything at this point).

Opportunity for placemaking.

Existing Trail changes from Asphalt to Compacted stone dust from this point to Rutherford.

Look into a potential connection to Hollybush Drive

Look into adding a pedestrian crossing in this area, given the frequency of crossings towards Major Mackenzie Drive.

Consider crossing opportunity to connect to Sports Village.

Rutherford Crossing Option #4: Utilize existing signalized intersection at Keele Street (Existing sidewalk replaced or pair with MUP)

Existing Trail is Compacted stone dust from this point to Waterside Crescent Access. Discuss need to change surface treatment to match rest of trail.

Remove Alignments O, P and Q as options.

Rutherford Crossing Option #3: Utilize existing signalized intersection at Greenock Drive (Existing sidewalk replaced or pair with MUP)

Remove Option #4.

Currently being planned as a one-way, but should ideally be two-way.

Crossing option pair: southbound Greenock Drive, northbound Sherwood Park Drive.

Don't think Alberta Drive is viable for an alignment (not enough width).

To add crossing here for public.

Park could become a major destination at some point. There is a new ice skating rink in the winter, potential off-leash dog park in the future, etc.).

Rutherford Crossing Option #1: Utilize existing signalized intersection at Rotational Drive (Existing sidewalk replaced or pair with MUP)

If Alignment Q is selected, it could work well with the culvert crossing option.

Culvert crossing option might be too late at this point since Rutherford Road is already designed for reconstruction.

Alignment Q is almost impossible to implement.

If Alignment M is not feasible, we should add a community connection through Sherwood Park Drive.

Replacing surfacing at Sherwood Parkette. Alignments along Sherwood Park Drive would be a top of bank consideration.

If nothing happens beyond this connection, perhaps an alignment should be carried along Rutherford to reconnect with the existing trail further east.

Private contractor with two accesses off of Keele Street (one north and one south of study area). Understanding property boundaries in this area will be important.

General comment: Look at this project in the long-term (what do we want the trail to look like in the future).

MEMO

TO: Sandra Neal and Michael Habib

FROM: Amanda Gebhardt

SUBJECT: **Bartley Smith Greenway Trail Gap Feasibility Study: Virtual Stakeholder Visioning Workshop Summary**

DATE: **September 7, 2021**

Introduction to Bartley Smith Greenway Trail Gap Feasibility Study

The City of Vaughan retained WSP Canada Inc. to provide professional services in landscape architecture, design services, master planning, trail and active transportation planning to complete a feasibility study and 30% design to fill critical gaps in the Bartley Smith Greenway (BSG) Trail along a 3 km segment in the Upper West Don River Corridor between McNaughton Avenue to Keele Street. The Bartley Smith Greenway is part of the 100 km city-wide Vaughan Super Trail, a signature recommendation of the City's 2020 Pedestrian and Cycling Master Plan, recently endorsed by City Council. Filling the gaps to provide a continuous north-south pedestrian and cycling trail will provide recreation and active transportation opportunities for residents as well as other community benefits. It also supports several other strategic plans of the City such as the Official Plan, Green Directions Vaughan, Vaughan Active Together Master Plan, and the TRCA Trail Strategy.

The BSG Trail Project is broken into two main components:

Part 1: Research and Preferred Trail Route Analysis (Current Phase)

Evaluate the feasibility of developing a continuous 3km pedestrian and cycling trail system and preferred route alignment through the research, inventory, analysis and review of existing conditions, opportunities and constraints. An impact assessment along with master plan and mapping will be provided, considering a robust public and stakeholder consultation plan including indigenous consultation. Life cycle cost analysis including capital, operations and maintenance costs will inform an implementation plan. Part 1 is to take 32 weeks.

Part 2: 30% Design Development

Prepare a 30% design of the preferred trail alignment including detailed feasibility assessment incorporating consultation feedback; site assessment including geotechnical testing, Stage 1 archaeology; 30% drawings with layout, grading, planting restoration, cross sections, design standards, signage, wayfinding, and pavement markings; and a final implementation plan with project phasing and updated lifecycle costing. Part 2 is to take 24 weeks

Introduction to Virtual Stakeholder Visioning Workshop

As part of **Part 1- Research and Preferred Trail Route Analysis**, the Project Team hosted a Virtual Stakeholder Visioning Workshop on August 11, 2021. Key stakeholders in attendance included representatives from the Toronto Regional Conservation Authority (TRCA), the City of Vaughan, and various technical agencies representing Planning, Maintenance and Operations, and Ecology. The purpose of the workshop was to present high-level trail alignment, on road crossing, and bridge location options, identify key priorities for the study, and provide an opportunity to discuss constraints and opportunities for enhancement.

The Project Team used Mural, an online whiteboarding tool, to obtain feedback from workshop participants. The Mural Board was accessible to participants both during the workshop and for one additional week (until August 18, 2021) to allow participants to continue adding input beyond the live workshop event. A screenshot of the completed Mural Board is shown in **Appendix A**.

Overview of Questions

During the Visioning Workshop, participants were asked to provide input on the following:

1. **Key Concerns** – Using sticky notes, participants were asked to list some of their key concerns about the project process, implementation, and/or maintenance. They were also asked to highlight any other influencing factors outside the study area or through other past projects in the neighbourhood;
2. **Key Wish List Items** – Participants were asked to use sticky notes to note what they want to see included in the study and trail design; and
3. **Trail Mapping** – Participants were asked to add comments directly onto the trail map to highlight any key considerations. The trail map is shown in **Appendix B**.

The Project Team also presented the participants with some additional questions to complete after the Visioning Workshop. The additional questions are listed below.

4. **Crossings** – Participants were asked to use sticky notes to indicate their preferred option for the:

Rutherford crossing location

McNaughton crossing location

Bridge crossing location

5. **East/West Connections to the Trail** – Participants were asked to use sticky notes or comment directly on the trail map to note any on-road connections that should be strengthened or identify locations where they would like to see trailheads and/or parking accommodations;

6. **Scope of Encroachment and Invasive Species Management** – Using sticky notes, participants were asked to list what is appropriate to include in the trail project and what is best to address separately. They were also asked to list any potential education opportunities and long-term maintenance and informant abilities/responsibilities; and
7. **Permits, Approval Requirements, and Agreements** – Finally, participants were asked to use sticky notes to list key items that the project team should be aware of regarding permits, approval requirements, and agreements.

Summary of Key Themes

The input received both during and after the stakeholder workshop helped to highlight several key themes that the Project Team will use to guide the project going forward. A summary of the key themes is included below.

	**Limit the impact to the existing natural heritage system**	Limit the impact to the existing natural heritage system (i.e., avoid higher quality treed areas and vegetated slopes; limit the proximity to the river and the number of watercourse crossings; and consider invasive species management techniques, construction impacts, and trail materials).
	**Protect the creek and flood plain limits while providing a buffer to adjacent residential yards**	Respect the need to protect the creek and flood plain limits, while providing a buffer to adjacent residential rear yards when determining the trail alignment.
	**Provide connections that will link community destinations**	Provide connections that will link key community destinations like schools, shopping centres, childcare centres, parks, etc.
	**Limit the potential impacts of winter maintenance**	Limit the potential impacts of winter maintenance such as salt use in the creek corridor, while still providing a level of year-round function to the trail system.
	**Assess the Major Mackenzie culvert crossing**	When determining the type of crossings for Rutherford Road and McNaughton Road, assess the Major Mackenzie culvert crossing to weigh the pros and cons for users, maintenance and the environment.
	**Support placemaking along the trail with amenities and interpretive signage**	Consider opportunities for placemaking through the use of amenities that align with Crime Prevention Through Environmental Design (CPTED) Principles to increase safety and comfort for trail users (e.g., shaded areas, benches, gathering spaces, Indigenous elements). Develop interpretive signage and educational materials to be placed along the trail to connect users with the natural and cultural heritage of the trail.

Appendix C includes a list of all of the comments received as part of the Stakeholder Visioning Workshop.

Revisions

Using the input gathered through the Stakeholder Visioning Workshop, the Project Team was able to make several revisions to the proposed trail alignments and road crossings. Below is a summary of some of the changes that have been made as a result of the feedback received.

1. Alignment D has been eliminated as an option due to being in close proximity to the Provincially Significant Wetland (PSW);
2. Alignment F has been eliminated as an option due to the significant tree lined area and steep slopes;
3. Alignment H has been eliminated as an option due to the encroachment onto residential lots;
4. McNaughton Road Crossing Option #4 has been eliminated as the crossing would be too far from the trail;
5. Rutherford Road Crossing Option #2 has been eliminated as it would be too costly to implement; and
6. An additional alignment option has been added to connect the trail between Rutherford Road and Keele Street which travels through the wooded slopes on the west side of the creek, outside of the Tesma Way road right of way.

Summary and Next Steps

To summarize, the main themes that emerged through the Stakeholder Visioning Workshop include:

1. Limit the impact to the existing natural heritage system;
2. Protect the creek and flood plain limits while providing a buffer to adjacent residential rear yards when determining the trail alignment;
3. Provide connections that will link key community destinations;
4. Limit the potential impacts of winter maintenance while providing a level of year-round maintenance to the trail;
5. Assess the Major Mackenzie culvert crossing to weigh the pros and cons for users, maintenance and environmental impacts when determining the best crossing options for Rutherford Road and McNaughton Road; and
6. Support placemaking along the trail using CPTED-informed design principles and amenities and consider how interpretive and educational signage can enhance the community connection to the area's natural and cultural history.

Based on the feedback received during the Stakeholder Visioning Workshop, the following revisions have been confirmed:

1. Alignment D has been eliminated as an option due to being in close proximity to the Provincially Significant Wetland (PSW);
2. Alignment F has been eliminated as an option due to the significant tree lined area and steep slopes;
3. Alignment H has been eliminated as an option due to the encroachment onto residential lots;
4. McNaughton Road Crossing Option #4 has been eliminated as the crossing would be too far from the trail;
5. Rutherford Road Crossing Option #2 has been eliminated as it would be too costly to implement; and
6. An additional alignment option has been added to connect the trail between Rutherford Road and Keele Street which travels through the wooded slopes on the west side of the creek, outside of the Tesma Way road right of way.

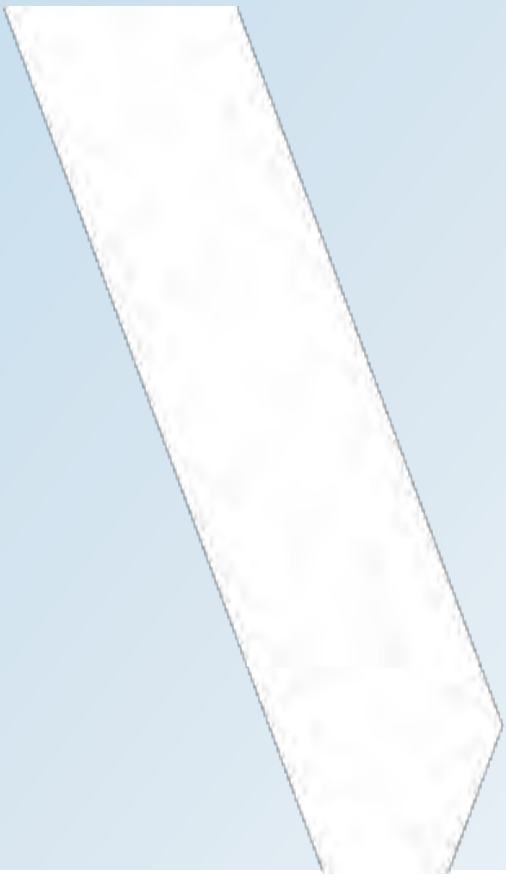
The feedback received at the Stakeholder Visioning Workshop will help to inform the study going forward. As the study progresses, there will be additional opportunities for both public and stakeholder input including an online public survey, additional stakeholder workshops, and a Public Information Centre (PIC). These engagement opportunities will help to further narrow down the alignment options and guide the overall trail design.

Source Data

Data has been provided by the City of Vaughan. A site walk was also conducted through the study area on July 12, 2021 with staff from the City of Vaughan, TRCA and WSP to obtain site data.

APPENDIX

A MURAL BOARD



Bartley Smith Greenway Trail Feasibility Study
Visioning Workshop

Activities Overview

Provide your input on the questions and proposed trail mapping for the Bartley Smith Greenway Trail Feasibility Study.

This interative whiteboard will remain open until Wednesday August 18, 2021

Short-Cut Tools

Ctrl + C	Ctrl + V	Ctrl + Z
Copy	Paste	Undo

Adding Comments

Double-click anywhere to create a sticky note. A menu bar will appear above your note to allow you to change its colour, font size, and other features. You can drag your note to a new location at any time.

If you would like to remove a note you have created, select it and press the **Delete** button on your keyboard. Please do not delete notes created by other team members.

Trail Mapping

Please add comments on the map with your input.

To add a comment, select the **"text" icon** on the left menu, and then select the **"comment" icon.** You can place your comment at a specific location on the map.

Questions

Please place sticky notes under each question to help inform the study.

Key Concerns

What are some of your key concerns about the project process, implementation, and/or maintenance? Are there other influencing factors outside the study area or through other past projects in the neighbourhood that should be noted?

Alignment - to align the trail in the least impactful way

Connections to the

Ways to discourage tagging and vandalism

Archeological Study will / to be done by TRCA staff

Do not drive in sensitive areas

Key Wish List Items

What do you want to see included in the study and trail design?

Material (wood chips)

educational signage

Reduce number of crossings if possible (limit to one)

Viability for grade seperated crossings

paved surface allows for wide range of users - strollers, rollerblading, e-scooters, etc.

Avoid areas being restored / with invasive species

Trail connection to Sport Village complex

Looking for multi-modal option (cycling connections as well as walking connections)

incorporate art, cultural and natural heritage elements

Accessibility features like rest areas

Bartely Smith Greenway Trail Feasibiltiy Study
Homework Questions

Crossings

What is your preferred option for the:

Rutherford crossing location (please see the options on the map):

Signage needed for crossing and where the trail leads to

Specific studies would be required for Option # 2 to be considered.

McNaughton crossing location (please see the options on the map):

Specific studies would be required for Option # 1 to be considered

Bridge crossing location (please see the options on the map):

Design bridges with a natural heritage/cultural aspects

East/West Connections to the Trail

Are there any on-road connections that we should stregthen? Are there locations where you would like to see trailheads and/or parking accomodations? You can share your thoughts by placing a comment on the map or adding a sticky note below.

Utilizing existing east-west connections is preferred from an ecological perspective. If new connections are proposed, then less sensitive areas should be considered. Please check green sticky note with TRCA recommendations for trail alignment review

Scope of Enroachment and Invasive Species Management

What is appropriate to include within the trail project and what is best to address separately? Are there educational opportunities to consider? What are the long-term maintenance and informant abilities/responsibilities?

Hazard tree maintenance

Permits, Approval Requirements, and Agreements

What are key items the project team should be aware of regarding permits, approval requirements, and agreements?

Please engage the [illegible] and provincial agencies (e.g. DFO, MNRF, MMAH) as early in the process as possible

APPENDIX

B TRAIL MAP

BARTLEY SMITH GREENWAY TRAIL FEASIBILITY STUDY

TRAIL ALIGNMENT DISCUSSION

McNaughton Crossing Option #4: Utilize existing signalized intersection at Cranston Park Ave (Trail will need to ramp up slope and travel down McNaughton to crossing)

McNaughton Crossing Option #3: Signalized at grade pedestrian crossing connection at Kinlock Crescent access (Trail will need to ramp up slope and travel down McNaughton to crossing)

McNaughton Crossing Option #2: Signalized at grade pedestrian crossing (Trail will need to ramp up slope to road)

Existing trail connection between road and river valley grades

McNaughton Crossing Option #1: below grade culvert crossing (similar to Major Mackenzie)

Existing trail crossing under Major Mackenzie

Ramp/Stair. Connections, Maintenance + ownership unknown, not AODA complaint

Existing asphalt Trail - surface/width upgrade, no alignment change

Existing road/potential future trail connection - TBD

Bridge Crossing Option #1

Bridge Crossing Option #2

Bridge Crossing Option #3

Existing Trail changes from Asphalt to Compacted stone dust from this point to Rutherford.

Rutherford Crossing Option #1: Utilize existing signalized intersection at Rotational Drive (Existing sidewalk replaced or pair with MUP)

Rutherford Rd Crossing Option #2: below grade culvert crossing (similar to Major Mackenzie)

Rutherford Crossing Option #4: Utilize existing signalized intersection at Keele Street (Existing sidewalk replaced or pair with MUP)

Existing Trail is Compacted stone dust from this point to Waterside Crescent Access. Discuss need to change surface treatment to match rest of trail.

Rutherford Crossing Option #3: Utilize existing signalized intersection at Greenock Drive (Existing sidewalk replaced or pair with MUP)

Legend

- Proposed Trail
- Existing Trail
- Existing On-Road Trail
- Proposed Pedestrian Bridge
- Transportation Bike Path
- Railway
- Study Area
- Parks
- Watercourse
- Stormwater Management Pond
- Waterbody
- Significant Forest
- Parcels
- Road Crossing

0 50 100 200 300 400
Meters

N

VAUGHAN

WSP

APPENDIX

C COMMENTS RECEIVED FROM STAKEHOLDER VISIONING WORKSHOP

BARTLEY SMITH GREENWAY TRAIL FEASIBILITY STUDY

TRAIL ALIGNMENT DISCUSSION

Legend

- Proposed Trail
- Existing Trail
- Existing On-Road Trail
- Proposed Pedestrian Bridge
- Transportation Bike Path
- Railway
- Study Area
- Parks
- Watercourse
- Stormwater Management Pond
- Waterbody
- Significant Forest
- Parcels
- Road Crossing

0 50 100 200 300 400
Meters

N

VAUGHAN

wsp

McNaughton Crossing Option #4: Utilize existing signalized intersection at Cranston Park Ave (Trail will need to ramp up slope and travel down McNaughton to crossing)

McNaughton Crossing Option #3: Signalized at grade pedestrian crossing connection at Kinlock Crescent access (Trail will need to ramp up slope and travel down McNaughton to crossing)

McNaughton Crossing Option #2: Signalized at grade pedestrian crossing (Trail will need to ramp up slope to road)

Concerns about safety of at grade crossing through culvert - would be interested to see what the views are from the road.

Bad experiences with culvert crossings (vandalism, etc.) - important to keep operations in mind.

Existing trail connection between road and river valley grades

Flood flows would need to be evaluated for safety taking trail through the culvert.

McNaughton Crossing Option #1: below grade culvert crossing (similar to Major Mackenzie)

Preferred route.

This area is one of the more sensitive areas in the trail extent due to the presence of Provincially Significant Wetland. Alignment should be as further away from PSW as possible. And in this location, boardwalks should be considered for the design. Please note that the use of salt in this area is not compatible with the presence of PSW.

Material of trail would be a concern in this area - if we had to treat it with salt this could be detrimental to the PSW.

Consideration of SWM servicing access.

Does this connection work here due to slopes and grades?

Existing trail crossing under Major Mackenzie

Show this as below grade crossing.

Ramp/Stair. Connections, Maintenance + ownership unknown, not AODA complaint

Existing asphalt Trail - surface/width upgrade, no alignment change

Please consider utilizing the existing crossing as the east/west crossing for this trail.

Existing road/potential future trail connection - TBD

Not preferred.

H would be the preferred option from an Ecological point of view. It would allow for restoration of the area right beside the watercourse, where it is shown as proposed alignment G.

Alignment G would be preferable over alignment F, since there is a great opportunity to remove the invasive species on area F and plant native species.

Alignment F is the least preferred

Significant treed areas along alignment F - would probably want to avoid this?

Is there an opportunity to connect to neighbourhoods through stairs because of the steep slopes?

Currently a development application for single detached homes east of pond. There will be an extension of Evan Drive to where it meets the proposed road.

The trail alignments will be largely informed by the development proposal.

Alignment H would go through residential lot - the applicant is aware of the need to connect to trails in the area.

Bridge Crossing Option #1

In order to provide comments regarding proposed crossings I, J and K, I woudl need to know about the environmental features on site and the expected impacts that each of these options would bring to them. When assessing the impacts of each option, please also consider the location of the proposed trails, proposed construction methods and associated footprint, type of proposed bridges, etc.

Bridge Crossing Option #2

This connection with school access.

J provides access to two schools and park.

For the proposed trail to the east of the watercourse, please note that the trail should be as further away form the watercourse and wetlands (not shown here) as possible. There are opportunities to add native plantings to the area. Also, the plantings could act as a "privacy screen" between the proposed trail and backyard of houses.

TRCA would recommend setting the trail beyond the 25 or 50 year channel migration limit (from a fluviogeomorhpic perspective).

In terms of a buffer, will want to keep enough room for a landscape strip.

Bridge Crossing Option #3

Existing Trail changes from Asphalt to Compacted stone dust from this point to Rutherford.

Is there an opportunity to utilize the two existing west and east crossing without the need of adding another one (I, J, K)? That would be preferable.

Connect on-road cycling route - map shows a gap.

Existing trail is asphalt ends about here. Dirt trail to Rutherford.

Rutherford Crossing Option #4: Utilize existing signalized intersection at Keele Street (Existing sidewalk replaced or pair with MUP)

There no actual cycling infrastructure/trail on Seafield, Hawker - quiet streets bike routes (shared lanes). Could change name in legend.

This proposed crossing (drawn on map) is really close to an existing crossing to the north, and it would be very difficult to support it from an Ecological impact point of view. The total number of crossings need to be kept to a minimum.

Existing Trail is Compacted stone dust from this point to Waterside Crescent Access. Discuss need to change surface treatment to match rest of trail.

Rutherford Crossing Option #3: Utilize existing signalized intersection at Greenock Drive (Existing sidewalk replaced or pair with MUP)

This will need to be two way cycling. Currently planned as single direction

I would need to understand better proposed alignment L and M in order to comment on them. Would both of them be located outside of the natural features?

Community connection (alignment L does not provide this).

Cross at Gantner Gate signalized intersection.

Detouring 225m west is too far in my opinion - Greenock crossing is best.

Rutherford Crossing Option #1: Utilize existing signalized intersection at Rotational Drive (Existing sidewalk replaced or pair with MUP)

Are crossrides included in Rutherford project?

Tight culvert - almost unachievable. This is why the MUP was identified for that intersection. One option might be to come down through Sherwood Park Drive or Tesma Way. Might need to look at different options to get to Keele.

Is there an opportunity to include both L and M trail alignments? M provides good residential community connections while L provides good connections to businesses. Both could promote active living (recreational and transportation).

Rutherford Rd Crossing Option #2: below grade culvert crossing (similar to Major Mackenzie)

Might be an opportuntiy to speak to businesses to see if we can get easements for certain areas. Perhaps opportunities to look into partnerships/sponsorships to encourage them to support trail. Would provide economic benefits too.

Consider connection further south to the existing VST.

Bartley Smith Greenway Trail Feasibility Study
Stakeholder Visioning Workshop Comment/Response Document

***Comments received during and after Stakeholder Visioning Workshop (August 11, 2021)**

What are some of your key concerns about the project process, implementation, and/or maintenance? Are there other influencing factors outside the study area or through other past

#	Comment
1	Alignment - to align the trail in the least impactful way.
2	Connections to the neighbourhood.
3	User experience.
4	Slopes on west side of valley are steep with little space for trail behind homes.
5	Ways to aleviate the local community of concerns with vandalism or loitering.
6	**Response to above comment:** Design with Crime Prevention Through Environmental Design (CPTED) principles in mind. With that in mind, there are studies that show that crime and vandalism does not increase when trails are close to people's homes as being seen is a big crime deterrent. Consider this when thinking about buffers from people's homes. Suggsest that buffering could be shurbs so that some sightlines are still maintained.
7	Maintenance - only use rock salt.
8	Materials- woodchips would be preferred over asphalt.
9	**Response to above comment:** Would chips present some accessibility concerns and are difficult to maintain. Consider a granular surface of some kind if you don't want asphalt. However, asphalt may be the most resilient surface material in high use areas.
10	Children from Le-Petit Prince School walk across the valley to St Paul's Church for mass twice per year. Stairs to be replaced with sloped accessible walkway.
11	Winter maintenance considerations if using ashpalt (salt impacts).
12	Ways to discourge tagging and vandalism.
13	Maintenance close to sensitive areas (e.g. wetlands) - do NOT use salt.
14	Warning clauses to allow residents to understand new trail features.
15	Finding ways to garner support from the local community or community champions to establish new trails.
16	Identify where people are already going into the greenspace system - this will show desire lines and may help to inform where best to create community connections.
17	Do not plow in sensitive areas.
18	Consider construction access. A lot of the surrounding area is quite developed so access could be limited. This is especially important to consider when thinking about the bridges/river crossings - how will they be installed at the site?
19	Archeology Study will need to be done by TRCA staff.
20	Archeological potential in the area - will need to consider where to complete Stage 1 and 2 assessments.
21	Proximity to residential backyards is an issue - privacy and safety.
22	Encroachments need to be addressed.
23	Avoid environmentally sensitive areas.
24	TRCA's The Living City Policies indicates that the natural features protection hierarchy should be applied in all developments: avoidance, minimization of impacts, and then mitigation/restoration. Compensation should be used as a last resort for impacts that are deemed unavoidable. Please keep this hierarchy in mind when determining the alignment for the proposed recreational trail system. Impacts to ecological sensitive systems such as wetlands and forested areas should be avoided as much as possible.
25	Please utilize a best-efforts approach to achieve the maximum buffer possible from natural features, in particular wetlands. Wetlands that have not been evaluated under OWES and should be assumed to be Provincially Significant, according to the
26	Ecological Land Classification of vegetation communities on site should be considered for avoidance of habitats/communities deemed more sensitive. Additionally, wetlands should be assumed to be sensitive habitats, and all potential impacts to it, including potential modification of water balance or impacts through contamination (e.g., winter maintenance salt) should be avoided.
27	In order to consider potential impacts to the natural features, all stages of the trail should be taken into consideration, including access routes, construction area, staging areas, trail footprint after construction, and long-term maintenance (e.g., use of salt).
28	Please note that where slopes are too steep, buffers from sensitive natural features are not possible, or impacts to the natural features would be deemed too great, the wilderness trail exception under the AODA should be considered (i.e. that specific portion of the trail is allowed not to be accessible).
29	Boardwalks and less intrusive trail design (e.g., mulch, chips) should be favored over more impactful designs, such as hard pavement, particularly when close to a sensitive area (e.g., wetlands).
30	After avoidance and minimization of impacts, if impacts are deemed unavoidable and require compensation, the following Guideline should be applied: Guideline for Determining Ecosystem Compensation (available at: https://s3-ca-central-1.amazonaws.com/trcaca/app/uploads/2019/11/27105627/TRCA-Guideline-for-Determining-Ecosystem-Compensation-June-
31	crossings already existing. For additional bridges and culverts, the requirements under the following guidelines should be incorporated into the design: i. Crossing Guideline for Valley and Stream Corridors (available at: https://drive.google.com/file/d/0BxjqkzmOuaaRMmt1TmdyWUlmUDg/view?resourcekey=0-28vf3yb-j9nnP99nNDPr6A), and ii. Fish and Wildlife Crossing Guidelines (https://cvc.ca/wp-content/uploads//2021/06/CVC-Fish-and-Wildlife-Crossing-Guidelines-

What do you want to see included in the study and trail design?

#	Comment
1	Material (wood chips).
2	**Response to above comment:** Would chips present some accessibility concerns and are difficult to maintain. Consider a granular surface of some kind if you don't want asphalt. However, asphalt may be the most resilient surface material in high use areas.
3	Educational signage.
4	Reduce number of crossings if possible (limit to one).
5	Viability for grade separated crossings.
6	Underpass connection beneath McNaughton Road to connect open space off road.
7	Paved surface allows for wider range of users - strollers, rollerblading, e-scooters, etc.

8	Avoid areas being restored/with invasive species.
9	Trail connection to sport village complex.
10	Looking for multi-modal options (cycling connections as well as walking connections).
11	Incorporate art, cultural and natural heritage elements.
12	**Response to above comment:** There is the opportunity for interpretation here. TRCA could support the City with natural heritage and culutural heritage (especially archaeologial) interpretation content. This is an opportunity to draw attention to the TRCA lands being in public ownership for the purposes of flood and erosion protection, while also providing many other benefits to the local
13	Identify which local roads should have cyling routes established.
14	Design with Crime Prevention through Environmental Design (CPTED) principles in mind.
15	Where are there good vistas along this network? Consider adding resting areas or gathering circles at these locations.
16	Acknowledgement of the need to update land and trail agreement between City of Vaughan and TRCA because trail passes over TRCA managed lands for which there is no current formal agreement with the City.
17	Indigenous placemaking like the Moccasin Identifier Project (https://moccasinidentifier.com/).
18	Show broader connection to regional trails, like the Vaughan Super Trail, the West Don Trail in the City of Toronto and the TRCA's Greater Toronto Regional Trail Network.
19	Accessibility features like rest areas.
20	Gathering/teaching areas for local schools or other groups to use as outdoor classrooms.
21	Parking. This doesn't necessarily need to be new lots for the trail, Consider leveraging existing infrastructure and policies, like on-road parking by-laws, agreements with neighbouring schools or community facilities, etc. so that new parking doesn't need to
22	Active transporation connections to community destinations that can get people out of their cars.
23	Add shade trees or structures at resting and gathering areas and trail heads.
24	Accessible trails for strollers.
25	Recommendations for amenties should be included (i.e., benches).
26	Add public realm elements - historical/indigenous.
27	Include pollinator species mix in plantings/seeding.
28	Include Indigenous place-making and acknowledgement if applicable.

What is your preferred option for the Rutherford crossing location?

#	Comment
1	Specific studies would be required for option #2 to be considered.
2	My understanding is that this a redside dace stream? this needs to be confirmed.
3	Signage needed for crossing and where the trail leads to.

What is your preferred option for the McNaughton crossing location?

#	Comment
1	Culvert, if feasible, would be the best from user experience. PXO at road level is back-up option. Other two options are too far from trail.
2	Specific studies would be required for Option # 1 to be considered.
3	The plan is to widen McNaughton to 4 lanes and this could reduce the boulevard widths that currently exist.
4	There are also considerations to raise the posted speed of McNaughton so the culvert crossing may be more attractive from that perspective.

What is your preferred option for the Bridge crossing location?

#	Comment
1	At this time it is not possible for TRCA Ecology staff to make an assessment regarding the options. All the impacts related to each one of those options should be properly assessed.
2	Design bridges with a natural heritage/cultural aspects.

Are there any on-road connections that we should strengthen? Are there locations where you

#	Comment
1	Utilizing existing east-west connections is preferred from an ecological perspective. If new connections are proposed, then less sensitive areas should be considered. Please check 'green sticky note' with TRCA recommendations for trail alignment to the

What is appropriate to include within the trail project and what is the best to address separately? Are there educational opportunities to consider? What are the long-term maintenance and

#	Comment
1	Disturbance from trail construction provides the opportunity to manage invasive species along the trail corridor. Trail design can also limit the movement of people into areas of invasive species so that those species do not spread as a result of foot/bike/pet
2	Project notices provide the opportunity to outreach to neighbours about how to live next door to and use nature responsibly. This can be a soft approach to existing encroachment issues.
3	The trail design should consider how to deter the spread of social trails so that encroachments and invasive species do not
4	There are several areas where during our walk invasive species establishment was noted and an Invasive Species Management to address those should be incorporated as part of the trail works.
5	Please consider incorporating educational component and stewardship with landowners to resolve encroachments into the valley (e.g., vegetable gardens, sod, planting of non-native species, etc).
6	Operational and maintenance needs to be considered.
7	Hazard tree maintenance.

What are the key items the project team should be aware of regarding permits, approval

#	Comment
1	Some of the land is owned by TRCA and not yet under a formal management agreement with the City of Vaughan. It is TRCA's desire to have an agreement in place for the TRCA lands on which the trail will go. The need for these agreements should be
2	Please engage the appropriate federal and provincial agencies (e.g. DFO, MECP, MNRF) as early in the process as possible.
3	A robust native species Planting Plan and an Invasive Species Management will be required during later stages (detail design). TRCA will provide more detailed comments then.
4	Please note that as part of the permitting process, it will need to be demonstrated that a best-efforts approach regarding avoidance and minimization of impacts to the natural features has been taken in the design.
5	The following are requirements under TRCA approval process, from an Ecological perspective. TRCA's The Living City Policies indicates that the natural features protection hierarchy should be applied in all developments: avoidance, minimization of impacts, and then mitigation/restoration. Compensation should be used as a last resort for impacts that are deemed unavoidable. Please keep this hierarchy in mind when determining the alignment for the proposed recreational trail system. Please note that impacts to ecological sensitive systems such as wetlands and forested areas should be avoided as much as possible.
6	Please utilize a best-efforts approach to achieve the maximum buffer possible from natural features, in particular wetlands. Wetlands that have not been evaluated under OWES should be assumed to be Provincially Significant, according to the
7	Ecological Land Classification of vegetation communities on site should be considered for avoidance of habitats/communities deemed more sensitive. Additionally, wetlands should be assumed to be sensitive habitats, and all potential impacts to it, including potential modification of water balance or impacts through contamination (e.g., winter maintenance salt) should be avoided.
8	In order to consider potential impacts to the natural features all stages of the trail should be taken into consideration, including access routes, construction area, staging areas, trail footprint after construction, and long-term maintenance (e.g., use of salt).
9	Please note that where slopes are too steep, buffers from sensitive natural features are not possible, or impacts to the natural features would be deemed too great, the wilderness trail exception under the AODA should be considered (i.e. that specific portion of the trail is allowed not to be accessible).
10	Boardwalks and less intrusive trail design (e.g., mulch, chips) should be favored over more impactful designs, such as hard pavement, particularly when close to a sensitive area (e.g., wetlands).
11	After avoidance and minimization of impacts, if impacts are deemed unavoidable and require compensation, the following Guideline should be applied: Guideline for Determining Ecosystem Compensation (available at: https://s3-ca-central-1.amazonaws.com/trcaca/app/uploads/2019/11/27105627/TRCA-Guideline-for-Determining-Ecosystem-Compensation-June-
12	The overall design of the trail should include the least amount of watercourse crossings as possible. Please consider utilizing crossings already existing. For additional bridges and culverts, the requirements under the following guidelines should be incorporated into the design: i. Crossing Guideline for Valley and Stream Corridors (available at: https://drive.google.com/file/d/0BxjqkzmOuaaRMmt1TmdyWUlmUDg/view?resourcekey=0-28vf3yb-j9nnP99nNDPr6A), and ii. Fish and Wildlife Crossing Guidelines (https://cvc.ca/wp-content/uploads//2021/06/CVC-Fish-and-Wildlife-Crossing-Guidelines-
13	Land acquisition? Some properities may be in private ownership.

MEMO

TO:	Michael Habib
FROM:	Amanda Gebhardt
SUBJECT:	**Bartley Smith Greenway Trail Gap Feasibility Study: Public Engagement Summary**
DATE:	**March 18, 2022**

INTRODUCTION TO BARTLEY SMITH GREENWAY TRAIL GAP FEASIBILITY STUDY

The City of Vaughan retained WSP Canada Inc. to provide professional services in landscape architecture, design services, master planning, trail and active transportation planning to complete a feasibility study and 30% design to fill critical gaps in the Bartley Smith Greenway (BSG) Trail along a 3 km segment in the Upper West Don River Corridor between McNaughton Avenue to Keele Street. The Bartley Smith Greenway is part of the 100 km city-wide Vaughan Super Trail, a signature recommendation of the City's 2020 Pedestrian and Cycling Master Plan, recently endorsed by City Council. Filling the gaps to provide a continuous north-south pedestrian and cycling trail will provide recreation and active transportation opportunities for residents as well as other community benefits. It also supports several other strategic plans of the City such as the Official Plan, Green Directions Vaughan, Vaughan Active Together Master Plan, and the TRCA Trail Strategy.

The BSG Trail Project is broken into two main components:

Part 1: Research and Preferred Trail Route Analysis (Current Phase)

Evaluate the feasibility of developing a continuous 3km pedestrian and cycling trail system and preferred route alignment through the research, inventory, analysis and review of existing conditions, opportunities and constraints. An impact assessment along with master plan and mapping will be provided, considering a robust public and stakeholder consultation plan including indigenous consultation. Life cycle cost analysis including capital, operations and maintenance costs will inform an implementation plan.

Part 2: 30% Design Development

Prepare a 30% design of the preferred trail alignment including detailed feasibility assessment incorporating consultation feedback; site assessment including geotechnical testing, Stage 1 archaeology; 30% drawings with layout, grading, planting restoration, cross sections, design standards, signage, wayfinding, and pavement markings; and a final implementation plan with project phasing and updated lifecycle costing.

PUBLIC ENGAGEMENT OVERVIEW

As part of **Part 1- Research and Preferred Trail Route Analysis**, the Project Team hosted a Virtual Public Open House (POH) on February 24, 2022 from 7:00pm – 9:30pm. In addition to members of the Project Team, 67 Vaughan community members attended the POH event, and 162 had registered for the zoom session.

The purpose of the POH was to present and obtain input from the public regarding:

1. **General Trail Design Features** based on feedback received to date from the public and key stakeholders
2. **Buffer Enhancement Planting Strategy** based on feedback received to date from the public
3. **Finalizing Trail Alignment** based on feedback received to date from the public and key stakeholders prior to moving into Part 2: 30% Design Development

To inform residents about the POH event, the Project Team:

- Sent 4798 letters to households within 500 m of the study area (as shown in **Appendix A**);
- Released an email blast to residents who expressed in an interest in staying informed about the project and trails in general, including those who participated in previous focus group sessions;
- Released a Public Service Announcement on February 10, 2022;
- Sent a media package to local Councillors;
- Sent a memo to MMOC;
- Installed four mobile signs;
- Advertised on electronic boards;
- Advertised on the City's social media channels.

During the POH, the Project Team presented an overview of the project, work completed to date, stakeholder and public input, and the preferred trail design at this point in the project process. During the presentation, the Project Team used an online survey tool called Menti to ask questions and gain input from participants. At the end of the presentation, the Project Team hosted a Question and Answer period which allowed participants to voice their concerns and provide feedback to the Project Team. In addition, the Project Team also used an online whiteboarding tool called Miro to allow participants to post comments and provide additional feedback. The Miro Board was accessible to participants during the POH and after the workshop (until March 11, 2022) to allow participants to continue to add input beyond the live POH event.

OVERVIEW OF MENTI QUESTIONS

Using Menti, participants were asked to vote on the following questions:

NAYLON PARKETTE TO RUTHERFORD ROAD

1. Do you agree with the approach to minimize impacts within the flood plain and separate trail activity from the more sensitive creek habitat? This would include locating the trail further up the valley slope closer to the residential/private properties.
2. Do you agree with the approach to the trail alignment?
3. Do you agree with the proposed pedestrian bridge location?
4. Which type of vegetation buffer would you prefer in the area between the trail and residential rear yards?

RUTHERFORD ROAD TO KEELE STREET

5. Do you agree with the approach to utilize the active transportation facilities that are scheduled for construction along Rutherford Road?
6. Do you agree with pursuing the Tesma Way alignment as a possible future solution?
7. Would you like the city to investigate Sherwood Park Drive, Alberta Drive, Keele Street (crossing at Gantner Gate) as a potential future alignment?

OVERVIEW OF THE MIRO BOARD

The Miro Board was organized so that participants could provide input through several activities:

1. **Overall Proposed Trail** – The Miro Board included a map which outlined the preferred trail alignment, the general design features, and buffer enhancement strategies. Using the comment tool, participants were asked to provide any questions or comments on the map;
2. **Proposed Planted Buffer Treatments** – The Miro Board used slides to provide a high-level overview of the species and spacings which can be seen in the three (3) types of buffer planting treatments (Light, Medium and Robust). Using the comment tool, participants were asked to provide input;
3. **Poll Questions** – For participants who weren't able to participate using the Menti tool, the Miro Board allowed participants to vote on the same questions to provide input regarding the trail alignment approach, buffer strategy, and trail design features for **Naylon Parkette to Rutherford Road** and **Rutherford Road to Keele Street.**

SUMMARY OF INPUT

WHAT WAS SAID

PUBLIC OPEN HOUSE

The following sections summarize the input that was received during the POH through the chat function and the discussion and answer period. Some of the notable comments that were received include:

- "90% of people that live on Mount Charles Crescent are opposed to the bridge"
- "The two schools at the top of Mount Charles already bring a lot of additional traffic to our street in terms of drop-offs and pick-ups – there are always cars parked on our street and a bridge will bring more"

- “I don't like the idea of the Mount Charles bridge. It will bring vehicle loitering along the ravine”
- “The bridge is giving kids [at the nearby schools] too much convenience and too much access [which could lead to problems]”
- “I think the bridge crossings are evenly spaced, making the use of the trail much better for all users”
- “Crossings are needed to provide safe access to destinations for students and recreationists, including Mount Charles”
- “I think the trail is an excellent idea in terms of recreation, exercise, etc.”
- “The trail is a great idea!”
- “Thanks for getting this project going and connecting our neighbourhoods to nature. This will also encourage the kids to exercise outdoors and learn to appreciate their surroundings. With more people using the trails and with proper lighting this will be a great outdoor space!”
- “Thanks to the City for their work on this. Having a trail with good connection points is a benefit to our neighborhood. Far more positives to me than negatives”
- “A buffer will close our view of the conservation area”
- “My neighbours are all on the same page – we like the idea of the trail, but we just want it further from our fence line [from properties east of the creek]”
- “This plan involves [clearcutting] all the vegetation which is home to many wildlife creatures. This little forest area took years to mature and for animal species to feel comfortable to make it their homes. If this is a go, there will be a lot of clear cutting of mature trees, bushes, [etc.] which have taken years to get to the beautiful vision it is today”
- “Who’s going to maintain the garbage along the trail”
- “It would be good to work with the nearby schools on Earth Day again to help collect garbage along the trail”

MENTI TOOL

During the presentation, over 60 people provided input using the Menti tool. The following section provides an overview of the Menti tool results. It is important to note that some participants opted to provide comments later on during the discussion portion of the POH or using the Miro Board instead of using Menti.

- Out of 40 respondents, **18 agreed with the approach to minimize impacts within the floodplain and separate trail activity from the more sensitive creek habitat.** That being said, 17 people did not agree and believe that the trail should be located near the creek. 5 participants noted that this approach is not preferred, though they would agree providing appropriate buffering is put in place.
- Out of 48 respondents, **22 agreed with the proposed pedestrian bridge location**, 17 would like to see it in another location, and 9 were not sure and would like to see more information.
- Out of 45 respondents, **17 agreed with the proposed trail alignment** and 17 disagreed, with 11 who were unsure.

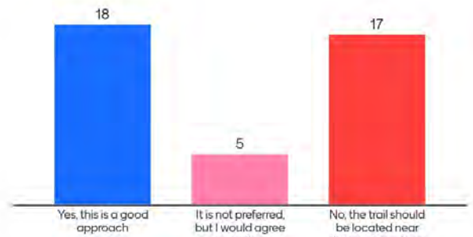
- Out of 53 respondents, **30 indicated that they prefer a dense vegetation buffer with trees and shrubs**, 20 prefer a medium buffer with tall shrubs, and 3 prefer a light buffer with specific trees only.
- Out of 51 respondents, **26 agreed with the approach to utilize the active transportation facilities that are scheduled for construction along Rutherford Road**. 15 people were unsure and 10 people would like to see the approach reconsidered.
- Out of 58 respondents, **22 would like to see the City investigate Sherwood Park Drive, Alberta Drive, and Keele Street (crossing at Gantner Gate) as a potential future alignment**. 19 indicated that they were unsure and indicated that they would like to see the City investigate this option.
- Out of 51 respondents, **21 do not agree with pursuing the Tesma Way alignment as a possible future solution**, while 18 agree, and 12 are unsure.

The following section summarizes the Menti tool results using infographics:

NAYLON PARKETTE TO RUTHERFORD ROAD

Do you agree with the approach to minimize impacts within the flood plain and separate trail activity from the more sensitive creek habitat?

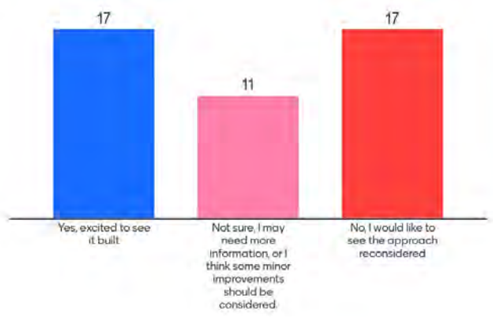
Mentimeter



40

Do you agree with the approach to the trail alignment?

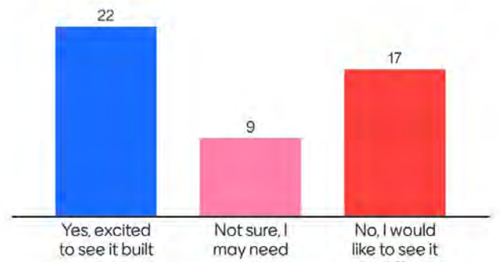
Mentimeter



45

Do you agree with the proposed pedestrian bridge location?

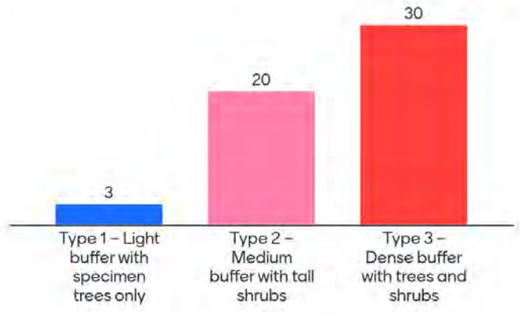
Mentimeter



48

Which type of vegetation buffer would you prefer in the area between the trail and residential rear yards?

Mentimeter

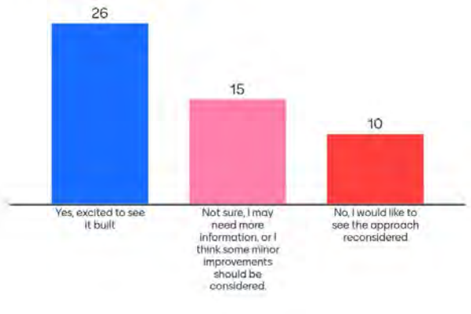


53

RUTHERFORD ROAD TO KEELE STREET

Do you agree with the approach to utilize the active transportation facilities that are scheduled for construction along Rutherford Road?

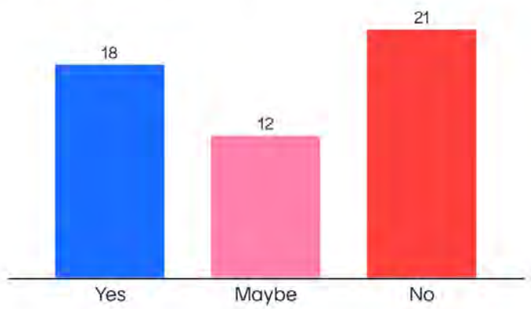
Mentimeter



51

Do you agree with pursuing the Tesma Way alignment as a possible future solution?

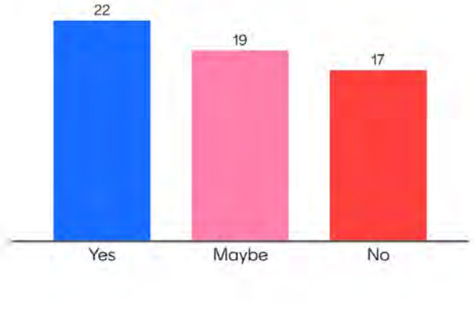
Mentimeter



61

Would you like the city to investigate Sherwood Park Drive, Alberta Drive, Keele Street (crossing at Gantner Gate) as a potential future alignment?

Mentimeter



58

MIRO BOARD TOOL

In addition to the POH, many residents added comments to the Miro Board, as shown in the following figures. A copy of the Miro Board is included in **Appendix B.**

Figure 1: Overview of Miro Board Mapping Comments

Figure 2: Example of Miro Board Comment

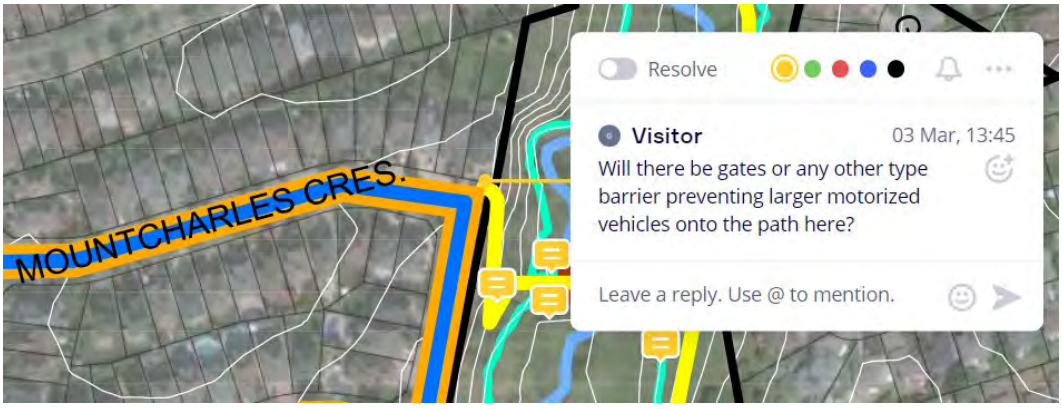


Figure 3: Example of Miro Board Comment

Some notable comments that were added to the Miro Board include:

- “Due to the jog in the creek [near Greenock Drive] and the potential for flooding, the trail should be moved to the west side. For parts of the year the trail will be flooded and probably not usable. And we don't want the trail too close to our backyards”
- “Please ensure good lighting under and around the bridge and on the hill as there can be bikers, walkers, pets and children all at the same time”
- “Move the trail closer to the creek. It is too close to the backyards and there is a lot of space. No reason to be so close”
- “A connection [at Mount Charles] is well planned. Illumination should minimize crime and also encourage accessibility”

WHAT WE HEARD

The results from the POH, Menti tool, and Miro Board provided the Project Team with valuable input outlined the community’s concerns and vision for the trail going forward. Several common themes emerged from these activities which will help to guide the next steps of the project and finalize preferred designs for the trail. Some of the key themes that emerged are summarized below.

KEY THEMES

- Overall, participants demonstrated clear support for the trail itself as it would increase recreation and healthy, active lifestyles, but they would prefer that the Project Team adjusts the proposed alignment and consider the concerns brought forward.
- Many residents were concerned about the proposed bridge crossing at Mount Charles Crescent. In addition to event participation, members of the street organized a petition to express their concerns. Some of the concerns were that adding a bridge at this location could:
    - Attract illegal activity to this area (e.g., people doing drugs, drinking, loitering)
    - Increase the number of break-ins to properties in this area
    - Increase traffic - both vehicle and pedestrian traffic
    - Increase on-street parking along Mount Charles due to cars parking here to access the trail
    - Produce more litter
- With that said, some residents emphasized their agreement with the proposed location of the bridge crossing at Mount Charles Crescent. They noted that this location would:
    - Increase access to the nearby schools
    - Provide more connections to the trail and increase access for many local streets
    - Lead to the development of a more complete trail system
- Several participants noted concerns over security with the addition of the trail near their backyards. Specifically, participants are worried that the trail will lead to increased break-ins, crime, and other activities with additional people travelling through the area. Many participants emphasized a need to plan for these concerns and consider design elements like lighting, cameras, and appropriate buffers

between the trail and backyards (i.e, buffers that would provide privacy but still enhance safety by maintaining a line of sight to the trail).

- Residents are worried that the trail will become a gathering spot for teenagers or big groups of people and disturb nearby homeowners.
- A number of participants highlighted that the trail is very close to their backyards along the east side of the creek. Participants asked the Project Team to consider moving the trail closer to the creek or proposing a new trail alignment along the west side of the creek to provide more room between the trail and resident's properties. Moving the trail further away from backyards would help residents maintain privacy and allow them to continue enjoying their backyards, reduce unnecessary shade over their backyards, and reduce other security/safety concerns.
- Participants are concerned that the trail will negatively impact the natural heritage and wildlife in the area. Residents noted that the implementation and construction of the trail will disturb existing plants and animals and undo the progress that has led to what the ravine looks like today.
- Many of the residents who value the natural area still voiced that there is a strong preference to place the trail further within the natural area to provide a better buffer to houses and most felt the potential negative impacts were not of concern.
- Edge management along rear residential lots greatly differed. While some preferred a thick wooded buffer, others requested open views with minimal planting and even requested a desire for manicured turf.
- Several participants emphasized that the City and TRCA will need to implement a plan for maintaining the trail in terms of picking of garbage, maintaining the natural environment, etc. A few participants suggested that the City should work with the nearby schools to re-implement Earth Day clean-ups along the trail to reduce issues with litter. Other participants also suggested expanding the Park Ambassador Program to help maintain the trail.

In terms of key takeaways, the concerns we heard throughout the POH focused on two major points: the need to revaluate the proposed bridge location at Mount Charles Crescent, and the location of the trail in relation to residential yards – it was clear that residents feel strongly about preserving nature and wildlife, but do not want the trail too close to their homes, and do not want aspects of the trail to negatively impact their quality of life.

It is also important to note that following the POH, a petition was organized by residents of Mount Charles Crescent and forwarded to the City on February 25, 2022. It included 39 signatories expressing and opposing to the pedestrian bridge connection to Mount Charles Crescent. 53 residences are located on Mount Charles Crescent.

WHAT WE ARE DOING

An important aspect of any project is the collection of community input to inform both the broad directions of the project and the specific elements of its implementation that will improve user experience. In the case of the Bartley Smith Trail Feasibility Study, the collection of public input will be used to inform several key aspects of the final recommendations. The following section highlights the next steps the Project Team will take in order to use this input effectively.

- Complete additional site visits to further examine the concerns/considerations brought forward by members of the public. Analyse potential opportunities to alter the preferred trail alignment to help address the concerns and meet the needs of the community.
- Engage in focus group discussions with directly impacted residents (e.g., residents who live on Mount Charles Crescent, etc.) to discuss opportunities to address their concerns while meeting the study objectives.
- Investigate options for alternate bridge crossings or including recommendations to move a bridge crossing to a future phase after trail use can be observed.
- Investigate options to determine how best to balance protecting the natural feature and providing residents with an acceptable buffer. Recommendations from the TRCA, flood plain regulations, and soil stability will be significant factors in this decision making.
- Move forward with **Phase 2: 30% Design Development** where the Project Team will draft a feasibility study, finalize the preferred trail alignment, and prepare the 30% design (including project phasing, implementation, costing, etc.).

CONCLUSION

Community Engagement for the Bartley Smith Trail Feasibility Study is a vital component of the success of the study as it moves into the next phases. Based on the strong response rate and the support from both internal and external stakeholders for the types of recommendations that are emerging through the study, it is clear that the community has a strong interest in seeing this study succeed. The City and WSP will need to revisit the following items: trial proximity to rear lots/creek, bridge crossing at Mountcharles, and a few isolated areas with potential constructability issues identified. As the study moves into Phase 2, the Project Team will use the feedback received from the community to help guide decision-making and continue to engage with stakeholders and residents going forward. The next steps for engagement will include:

- Meeting with City staff and key stakeholders to review the findings of Phase 1 and discuss opportunities to improve the proposed trail design.
- Connecting with specific residents who will be directly impacted by the study and further understanding their concerns and working with them to find solutions to improve the proposed trail design.
- Consulting with the City, TRCA and MECP and other technical agencies regarding habitat and ecological concerns in the subject area.
- Hosting a second virtual Public Open House to summarize the work completed as part of Phase 2, present the 30% Design, and close the loop on the project's public engagement.
- Develop a "What We Heard" Report to summarize the key findings of the Phase 1 and Phase 2 engagement.

APPENDIX

A LETTERS SENT TO RESIDENTS

[obtain from City of Vaughan - Letters sent to household 500m of Study Area]

APPENDIX

B MIRO BOARD

Bartley Smith Greenway Gap Trail | Virtual Public Open House | Additional Feedback Opportunity

Please use the following mapping, images and questions to provide additional feedback on the proposed trail alignment and associated amenities/features.

Activity #1:

Below is an overall map of the proposed trail route and enlargements of sections of trail. Please provide your comments on the map below.

1. Click on the 'sticky note' or 'comment' icon on the left tool bar
2. Drag and drop the sticky note or comment icon to a location on the map
3. Type your comment onto the sticky note or text box that appears

Proposed Trail Route - Overall Map

Proposed Trail Route - Overall Map

Activity #2:

The following three treatments (Type 1, 2 and 3) are proposed between the trail and rear of residential lots. Using the 'comment' or 'sticky note' tools, please share your thoughts and preferences on the image or adjacent space. Please indicate approximate location where you would like or not like the buffer types.

Please see Activity #1 for instructions on how to use the sticky note and comment features.

Proposed Planted Buffer Treatments

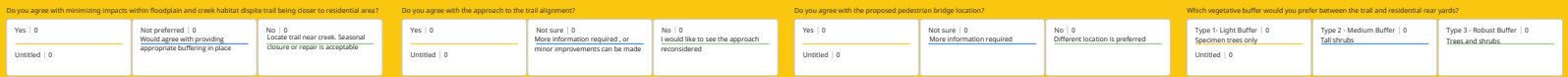
Activity #3:

The following questions were posed at the open house.

After reading through the options, please indicate which option best reflects your thoughts by typing 'Agree' within the drop down boxes. Questions have been divided into three (3) areas of proposed trail routes, as labeled below.

Poll Questions - Share you feedback!

Reponses for area: Naylon Parkette to Rutherford Rd.



Reponses for area: Rutherford Rd. to Keele St.

Do you agree with utilizing active transportation facilities scheduled for construction along Rutherford Rd.?

Yes | 0	Not Sure | 0 More information required , or minor improvements can be made	No | 0 Different approach is preferred
Untitled | 0		

Do you agree with pursuing the Tesma Way alignment as a possible future solution?

Yes | 0	Maybe | 0	No | 0
Untitled | 0		

Would you like the city to investigate Sherwood Park Dr., Alberta Dr., Keele St. (Crossing at Gantner Gate) in the future

Yes | 0	Maybe | 0	No | 0
Untitled | 0		

MEMO

TO: Michael Habib

FROM: Amanda Gebhardt

SUBJECT: **Bartley Smith Greenway Trail Gap Feasibility Study: Public Engagement #2 Summary**

DATE: **September 29, 2022**

INTRODUCTION TO BARTLEY SMITH GREENWAY TRAIL GAP FEASIBILITY STUDY

The City of Vaughan retained WSP Canada Inc. to provide professional services in landscape architecture, design services, master planning, trail and active transportation planning to complete a feasibility study and 30% design to fill critical gaps in the Bartley Smith Greenway (BSG) Trail along a 3 km segment in the Upper West Don River Corridor between McNaughton Avenue to Keele Street. The Bartley Smith Greenway is part of the 100 km city-wide Vaughan Super Trail, a signature recommendation of the City's 2020 Pedestrian and Cycling Master Plan, recently endorsed by City Council. Filling the gaps to provide a continuous north-south pedestrian and cycling trail will provide recreation and active transportation opportunities for residents as well as other community benefits. It also supports several other strategic plans of the City such as the Official Plan, Green Directions Vaughan, Vaughan Active Together Master Plan, and the TRCA Trail Strategy.

The BSG Trail Project is broken into two main components:

Part 1: Research and Preferred Trail Route Analysis (Current Phase)

Evaluate the feasibility of developing a continuous 3km pedestrian and cycling trail system and preferred route alignment through the research, inventory, analysis and review of existing conditions, opportunities and constraints. An impact assessment along with master plan and mapping will be provided, considering a robust public and stakeholder consultation plan including indigenous consultation. Life cycle cost analysis including capital, operations and maintenance costs will inform an implementation plan.

Part 2: 30% Design Development

Prepare a 30% design of the preferred trail alignment including detailed feasibility assessment incorporating consultation feedback; site assessment including geotechnical testing, Stage 1 archaeology; 30% drawings with layout, grading, planting restoration, cross sections, design standards, signage, wayfinding, and pavement markings; and a final implementation plan with project phasing and updated lifecycle costing.

PUBLIC ENGAGEMENT OVERVIEW

As part of **Part 2- 30% Design Development**, the Project Team hosted an In-Person Public Open House (POH) on July 7, 2022 from 6:00pm – 9:00pm. In addition to members of the Project Team, 36 Vaughan community members attended the POH event.

The purpose of the POH was to present and obtain input from the public regarding general comments residents had about the 30% design and strategy of the BSG Trail to date before finalizing the alignment:

To inform residents about the POH event, the Project Team:

- Sent 4798 letters to households within 500 m of the study area;
- Released an email blast to residents who expressed in an interest in staying informed about the project and trails in general, including those who participated in the February Public Information Session;
- Released a Public Service Announcement on September 15, 2022;
- Sent a media package to local Councillors;
- Sent a memo to MMOC;
- Installed four mobile signs;
- Advertised on electronic boards;
- Advertised on the City's social media channels.

During the POH, the Project Team displayed an overview of the project on foam core presentation panels supported by easels. The context includes: work completed to date, stakeholder and public input, and the preferred trail design at this point in the project process. During the public open house, sticky notes, sharpies and stickers were given out to participants to allow individuals post comments and provide additional feedback.

OVERVIEW OF THE PRESENTATION PANELS

The presentation panels were organized so that participants could provide input through several activities:

1. **Schedule and Timeline** – The panel outlines the study area, context, project timeline, and next steps.
2. **Proposed Trail Route** – The panel outlines the proposed trail alignment in the current scope of work.
3. **Alternative Assessment & Future Options** – The panel outlines the alternative assessments and future alignment options.
4. **Features & Amenities** – The panel outlines key amenities and features proposed along the Bartley Smith Greenway Trail.
5. **Fitness Node** – The panel outlines the proposed circuits and fitness node locations and speaks to the mobile application available for participants to access.
6. **Construction Phasing** – The panel outlines the targeted areas and timelines for trail construction.
7. **Landscape Buffers & Rehabilitation** – The panel outlines the various types of enhancement planting, species, characteristics, and application for areas adjacent to the proposed trail.

8. **Landscape Buffers & Rehabilitation Key Map** – The panel outlines where the types of enhancement plantings will be applied on the trail.
9. **Trail Cross Sections** – The panels outlines key cross sections of the trail alignment.
10. **30% Design Construction Package** – The design package includes: plans, details, and cross sections of the proposed trail.

SUMMARY OF INPUT

WHAT WAS SAID

PUBLIC OPEN HOUSE

The following sections summarize the input that was received during the POH through comments received on sticky notes. Comments that were received include (see photos below):

- "Make sure regular trash clean ups so area does not get destroyed"
- "Use permeable pavers not asphalt. Bad for environment"
- "[The possible fitness node at Merrick Dr. is at an] Awesome location"
- "Will the trail be separated for riders/ walking and running?"
- "Any possibility of solar lights on the trail for safety?"
- "Will there be emergencies alarms 'Mikey' equipment?"
- "Any possibility of a washroom by or around the trail?"
- "Prefer exercise node at Naylon"
- "Regular trail clean-up garbage- perhaps encourage people to adopt a potion of the trail"
- "Use of environmentally friendly surface versus asphalt"

WHAT WE HEARD

The results from the POH provided the Project Team with valuable input outlined the community's concerns and vision for the trail going forward. Several common themes emerged from these activities which will help to guide the next steps of the project and finalize preferred designs for the trail. Some of the key themes that emerged are summarized below.

KEY THEMES

- A number of participants highlighted that the trail is very close to their backyards along the east side of the creek (Lancer Dr. to Whitburn Crst.). Participants asked the Project Team to consider moving the trail closer to the creek or proposing a new trail alignment along the west side of the creek to provide more room between the trail and resident's properties. Moving the trail further away from backyards would help residents maintain privacy and allow them to continue enjoying their backyards, reduce unnecessary shade over their backyards, and reduce other security/safety concerns.

- There are participants whom were in favour of adding more amenity spaces such as: washrooms, emergency equipment, lighting, convex mirrors to increase user comfort and safety.

In terms of key takeaways, the concerns we heard throughout the POH focused on one major point: the need to revaluate the location of the trail in relation to residential yards – it was clear that residents feel strongly about preserving nature and wildlife, but do not want the trail too close to their homes, and do not want aspects of the trail to negatively impact their quality of life.

CONCLUSION

Community Engagement for the Bartley Smith Trail Feasibility Study is a vital component of the success of the study as it moves into the next phases. Based on the strong response rate and the support from both internal and external stakeholders for the types of recommendations that are emerging through the study, it is clear that the community has a strong interest in seeing this study succeed.

WHAT WE ARE DOING

An important aspect of any project is the collection of community input to inform both the broad directions of the project and the specific elements of its implementation that will improve user experience. In the case of the Bartley Smith Trail Feasibility Study, the collection of public input will be used to inform several key aspects of the final recommendations. The following section highlights the next steps the Project Team will take in order to use this input effectively.

- Complete additional field staking exercise with members whom have concerns about the trail alignment being close to their homes. This activity helps analyse potential opportunities to alter the preferred trail alignment and is aimed to help address the concerns and meet the needs of the community. Investigate alternate crossings options from Lancer Dr. to Whitburn Crst. to analyze opportunities/ construction methods for addressing the concerns of the trail alignment being close to resident's homes.
- Investigate options to determine how best to balance protecting the natural feature and providing residents with an acceptable buffer regarding height, and balancing the need to maintain views to the natural heritage whilst screening residential back yards.
- Finalize the feasibility study, and the 30% design for city staff and agency review.

MEMO

TO: Michael Habib & Celene Mariano

FROM: Amanda Gebhardt

SUBJECT: **Bartley Smith Greenway Trail Gap Feasibility Study: Field Staking of Trail Alignment and Consultation with Select Residents**

DATE: **November 3, 2022**

INTRODUCTION TO BARTLEY SMITH GREENWAY TRAIL GAP FEASIBILITY STUDY

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PUBLIC ENGAGEMENT OVERVIEW

After the Public Open House in July 2022 which marked the conclusion of **Part 2- 30% Design Development**, a select group of homeowners expressed interest in further consultation due to concerns over the trail alignment and the impact to their properties. The area of concern included homes along Greenock Drive and Whitburn Crescent homes with rear yards abutting the greenspace. In this area there is a location where the trail is within close proximity to the rear yards and is restricted by the location of the creek.

The Project Team hosted 'field' visit where the alignment of the trail was staked out to provide attendees with a tangible overview of what is being proposed. The intent of the exercise was to showcase the distance from the rear fence to the trail, space allotted for buffer screening plant material, location of the trail to the river and how existing trees will be maintained.

Attendees consisted of persons who requested an in-person session, including four homeowners representing two properties and those individuals brought forward questions and comments from additional neighbours who were unable to attend. The field visit meeting took place on October 12, 2022.

SITE CONTEXT

Below is an excerpt of the proposed trail 30% drawing. Note the minimum distance between the rear yard and the fence is between 12m (other sections of trail range from 10m to 20m offsets) and the minimum distance between the trail and the creek is 6m (offset identified through studies and consultation with TRCA).

Image: Graphic map of the proposed trail (yellow), proposed boardwalk trail (black) and proposed vegetation that will be planted as a visual screen (green).

Below is a series of photos depicting views of trail alignment flagging behind homes on Greenock Drive. Flagging and staking was complete behind approximately 8 residential lots with addresses on Lancer Drive, Greenock Drive and Whitburn Crescent.

Photo: View looking southwest showing fence line along rear lots, trail, and example of existing shrub vegetation (similar to what is being proposed) that would screen the views of the trail.

Photo: View looking southwest showing 3m wide trail and two invasive shrub specimens that will be removed as part of the project.

Photo: View looking west showing trail alignment and 6m offset from the top of the creek bank.

Photo: View looking north of the mown area behind the lots and wild turkeys that frequently visit the area. Note the green flag in the top left corner of the image which marks the edge of the trail in this area. The Black Locus tree along the mow strip will remain and be protected during construction, as would the White pines. 1-2 mid-sized trees may need to be removed to construct the trail through this section.

SUMMARY OF INPUT

WHAT WAS SAID

The following sections summarize the input that was received during the site walk through comments received verbally by participants:

- Concerns over the issues that will arise with the trail bringing people behind their homes, including noise, theft, and vandalism.
- Diminished value of their properties as their homes were purchased with the expectation that the back yards would back onto a naturalized greenspace with nice views and privacy.
- Concern over the disturbance to wildlife and the greenspace that construction of a trail and trail users will cause.
- Concern over the trail flooding as the area near the private fence limits sees seasonal flooding.
- Desire for the trail to be routed further into the valley lands on the other side of the creek. Or rooted onto roadways.
- Blocked views of the valley with proposed vegetation.
- Concerns over the removal of trees and shrubs to build the trail.
- Concerns that there will not be police monitoring or response if there are issues.
- Concerns that there will be poor maintenance standards and litter will collect.
- Feel that this project is going to move forward regardless of their feedback.

WHAT WE HEARD

The results from the site walk provided the Project Team with valuable input regarding the specific concerns of individual residents who have continued concern about a trail being developed behind their rear lots. The homeowners do not feel that there is adequate spacing between the trail and the rear lots or that the proposed vegetative screening will resolve their concerns. There is no desire to have the trail between the homes and the creek, and the those present recommended that a bridge be placed to move the bridge to the other side of the creek and back again to avoid this constrained space.

There is a strong desire to maintain the connection to nature that these properties have and they do not feel it is an appropriate space for a trail.

It was noted that some of the homeowners had purchased their lots prior to the high-level trail alignment through this corridor being identified, while other where unaware of future trail plans when they purchased their homes.

In regard to other possible mitigation measures to make the trail more desirable, screening planting options had mixed reviews (some preferred shrubs or nothing, where others desired trees). Pushing the trail as close as possible to the creek and avoiding tree removals are strongly desired.

CONCLUSION

Community Engagement for the Bartley Smith Trail Feasibility Study is a vital component of the success of the study and future trail development. The City of Vaughan will need to weigh the concerns of the homeowners in this area against the community's desire for this corridor to be used for trail infrastructure.

Based on detailed assessments of potential alignments in this area, the low-lying areas on the west side of the creek are not feasibility for the trail due to the anticipated frequency of flooding, increased disturbance to habitat, low elevation of bridge abutments within the flood plain and future projections of creek alignment migration. Alternative routes for the trail would require use of an indirect route through narrow residential roads and use of Keele Street, both of which will have impacts to multiple residential front yards and utility/storm water management conflicts.

Prior to proceeding with detail design of the trail section from Bevan Road to the existing trail at Merrick Drive, additional consultation should be completed with the residents with yards backing onto this section of the trail. At this time, a review of possible alternatives and impact mitigation measures should be reviewed.

WSP recommends that an informal pilot trail be tested using the proposed alignment by mowing the meadow. This will allow for the trail and concerns to be tested and inform the decision to implement a permeant trail. The trail will not be complainant with accessibility standards and undesired by stroller users/cyclists, however there should be enough pedestrian traffic to gain insight into the conditions a future trail would create. Additional efforts may include removing any invasive woody species on the alignment, branch pruning, temporary trial signage, and allowing for minor deviations as needed to facilitate the alignment. Informal trails existing through this space. As the City is already mowing along the rear fence line of the properties, the repurposing of this maintenance to the trail alignment would minimize concerns over an increase to current service/resources.

APPENDIX B

Policy and Land Use Report

MEMO

TO: Michael Habib, Senior Planner, Parks & Open Space Planning

FROM: Andria Sallese, Project Manager, WSP Canada

SUBJECT: **Bartley Smith Greenway Trail – Policy & Land Use Background Report**

DATE: **October 6, 2021**

INTRODUCTION

Greenways and trails link natural areas, parks, cultural features, historic sites, and other public spaces with each other and with urbanized areas. They can create healthy recreation and transportation opportunities by providing a safe space for people of all ages to enjoy, as well as be an element to a seamless urban or regional multi-modal transportation system

The Bartley Smith Greenway (BSG) is a 15-kilometer trail system that generally follows the West Don River. The BSG includes southern and northern trail segments. Some key highlights along the BSG include the Langstaff EcoPark, the most significant natural regeneration area in the Upper West Don sub watershed and home to a variety of trees including Black Willow, Black Walnut, and Sugar Maple. Depending on the season, wildlife may also be observed along the trail, from coyotes and beavers to birds, butterflies and bees. The Keffer Marsh is also located along the existing trail, a low-lying marsh land with a large deciduous swamp. The BSG is part of the 100-kilometre city-wide Vaughan Super Trail, a signature aspect of the City's 2020 Pedestrian and Cycling Master Plan endorsed by City Council. Filling the gaps along a three (3) kilometre segment in the Upper West Don River Corridor between McNaughton Road to Keele Street will provide a continuous north-south pedestrian and cycling trail and recreation and active transportation opportunities for residents, as well as other community benefits. The BSG also supports a number of other City of Vaughan strategic plans such as the City's Official Plan (2010), Green Directions Vaughan (2019), Vaughan Active Together Master Plan (2018), and the TRCA Trail Strategy (2019).

The purpose of this report is to provide a comprehensive policy and land use background review that will support the Bartley Smith Greenway Trail Feasibility Study. Legislation at the federal, provincial, regional, and municipal level has been reviewed and outlined in the sections below.

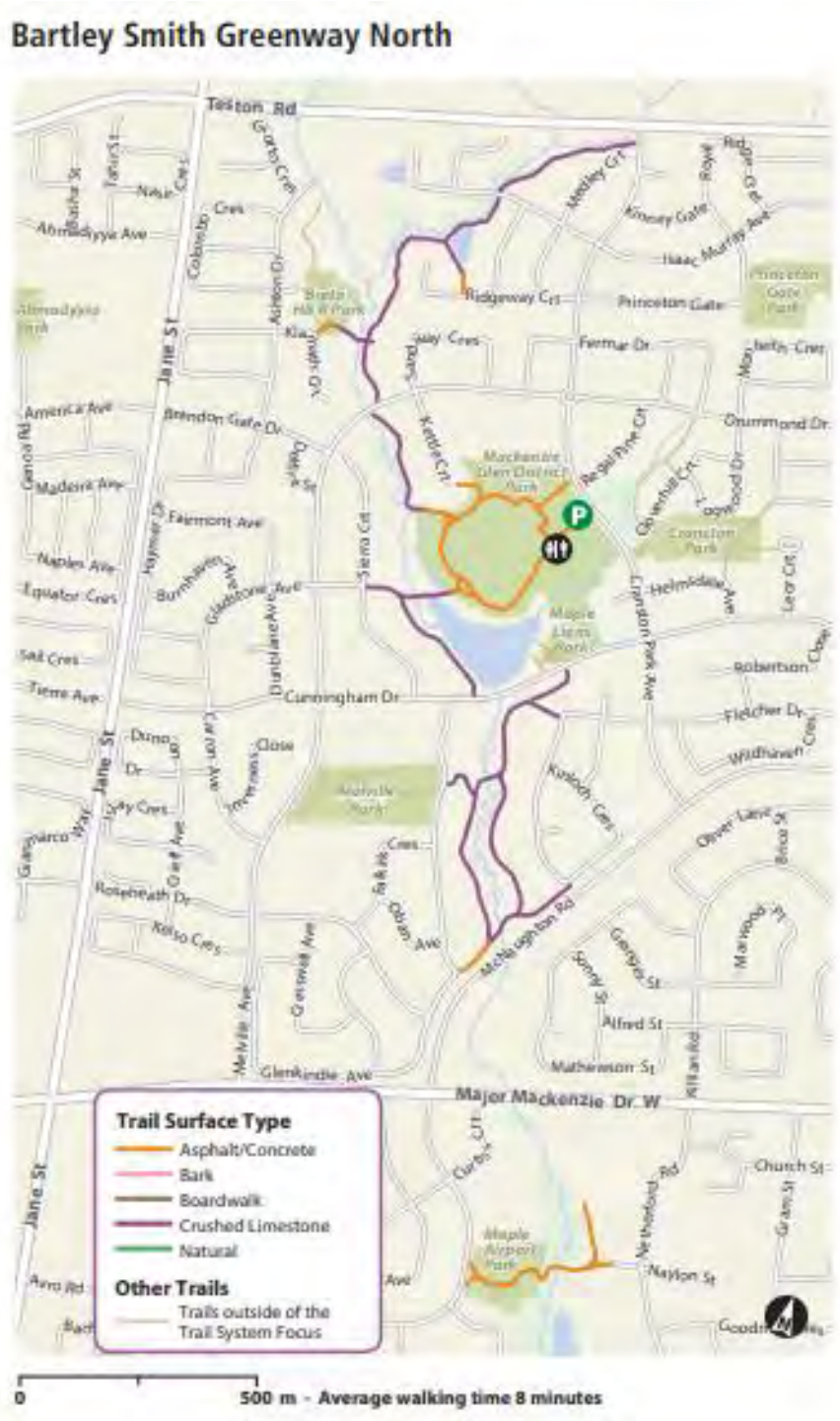


Figure 1: Bartley Smith Greenway North

Figure 2: Bartley Smith Greenway South

Figure 3: Study Area

RELEVANT PLANS AND POLICY FRAMEWORK

The following planning policy analysis describes the policy framework established by the Federal, Provincial, Regional and Municipal governments related to natural heritage, transportation and community planning. In addition, other relevant guidelines and plans have been summarized in

order to provide an overview of the existing planning framework related to the Bartley Smith Greenway Trail.

FEDERAL FRAMEWORK

FISHERIES ACT (1985)

The federal *Fisheries Act*, R.S.C., 1985, c. F-14 provides a framework for the proper management and control of fisheries, and the conservation of fish and fish habitat. It applies to all fish and fish habitat in Canada and includes water frequented by fish and any other areas on which fish depend directly or indirectly to carry out their life processes. It is administered by Fisheries and Oceans Canada.

MIGRATORY BIRDS CONVENTION ACT (1994)

The federal *Migratory Birds Convention Act, 1994*, S.C. 1994, c. 22 (MBCA) contains provisions for protecting the nests and nesting activities of migratory birds listed in Article I of the Migratory Birds Convention. Prohibitions under the Act include "Except as authorized by the regulations, no person shall, without lawful excuse, (a) be in possession of a migratory bird or nest; or (b) buy, sell, exchange or give a migratory bird or nest or make it the subject of a commercial transaction." According to subsection 6 of the Migratory Birds Regulations C.R.C., c. 1035 under the Act, no person shall

a) disturb, destroy or take a nest, egg, nest shelter, eider duck shelter or duck box of a migratory bird, or
b) have in his possession a live migratory bird, or a carcass, skin, nest or egg of a migratory bird except under authority of a permit therefor (SOR/80-577, s. 4).

This statute is administered by Environment and Climate Change Canada.

SPECIES AT RISK ACT (2002)

The federal *Species at Risk Act*, S.C. 2002, c. 29 is legislation that facilitates the designation of species at risk at the federal level. It contains provisions for recovering species designated extirpated, endangered or threatened and for managing species designated special concern to prevent an escalation in risk. The Act applies on federally owned lands and lands subject to federal authority. Whether lands are subject to federal authority is dependant on the land ownership and the type of activity being conducted by the landowner. This statute is administered by Environment and Climate Change Canada.

PROVINCIAL FRAMEWORK

FISHERIES AND WILDLIFE CONSERVATION ACT (1997)

The provincial *Fish and Wildlife Conservation Act, 1997*, S.O. 1997, c. 41 (FWCA) contains provisions for protecting "specially protected wildlife" including most birds not protected under the MBCA. According to the Act:

5 (1) A person shall not hunt or trap specially protected wildlife or any bird that belongs to a species that is wild by nature and is not a game bird. 2009, c. 33, Sched. 22, s. 2 (5).

Among the exceptions are:

a) an American crow, brown-headed cowbird, common grackle, house sparrow, red-winged blackbird or starling; and,
b) a bird that is declared to be a migratory game bird in the Convention set out in the Schedule to the Migratory Birds Convention Act, 1994 (Canada).

This statute is administered by the Ministry of Natural Resources and Forestry (MNRF).

ENDANGERED SPECIES ACT (2007)

The provincial *Endangered Species Act, 2007*, S.O. 2007, c. 6 (ESA) contains provisions for protecting species listed in Ontario Regulation 230/08: Species at Risk in Ontario List, an implementing regulation under the Act. The ESA provisions include protection for the species at risk (SAR) and its habitat. The protection varies depending on the designated level of risk, which include Extirpated, Endangered, Threatened and Special Concern. The ESA affords immediate protection to Extirpated, Endangered and Threatened SAR. In the case of Special Concern SAR, the ESA requires the preparation of management plans to sustain population levels. Though Special Concern SAR are not currently in danger of becoming extinct they possess sensitivities that may render them at risk. This statute is administered by the Ministry of Environment, Conservation and Parks (MECP).

ENVIRONMENTAL ASSESSMENT ACT

The provincial *Environmental Assessment Act*, R.S.O. 1990, c. E. 18, provides for the protection, conservation and wise management of the environment for the betterment of the people of Ontario. The Act facilitates this through an environmental assessment process that ensures governments and public bodies consider potential environmental effects of infrastructure projects before such projects are initiated. This statute is administered by MECP.

The City of Vaughan has ongoing and completed Environmental Assessments, such as a Municipal Class Environmental Assessments in the areas of Rurtherford Road and Major Mackenzie. The details of these Municipal Class Environmental Assessments will be expanded upon in other papers and reports for this project

INVASIVE SPECIES ACT (2015)

The provincial *Invasive Species Act, 2015*, S.O. 2015, c. 22 - Bill 37, prohibits the propagation and sale of prohibited invasive species, and the transport of such species into Ontario unless authorized by the Minister. Under the Act, the Minister may cause an invasive species prevention and

response plan to be prepared. Prohibited species and the area of Ontario in which control is designated are prescribed in the regulations. This statute is administered by MNRF.

CONSERVATION AUTHORITIES ACT (2015)

The *Conservation Authorities Act*, R.S.O. 1990, c. 27 provides for the establishment of conservation authorities to conduct programs and services that further the conservation, restoration, development and management of natural resources in Ontario watersheds. The City of Vaughan is within the jurisdiction of the Toronto and Region Conservation Authority (TRCA). Among the regulations made under the *Conservation Authorities Act* is Ontario Regulation 166/06, the Toronto and Region Conservation Authority Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation of the Conservation Authorities Act.

This regulation applies to lands within river or stream valleys, flood plains, wetlands, watercourses, lakes, hazardous lands or lands within 120 m of a provincially significant wetland or wetlands greater than 2 hectares, or lands within 30 m of non-provincially significant wetlands. The regulation prohibits development, interference or alteration within a regulated area unless it can be demonstrated there are no adverse impacts on a variety of attributes including on natural features and functions. The TRCA manages regulated areas, and flood and erosion risk. It provides programs and services through its conservation areas, education centres, educational tools, recreational activities, ecological restoration projects, environmental monitoring, watershed plans and strategies such as the Terrestrial Natural Heritage System Strategy (2007) and the Trail Strategy (2019). The statute is administered by MECP

THE PLANNING ACT

The *Planning Act* (the Act) is provincial legislation that sets out the ground rules for land use planning in Ontario. The Act describes how land uses may be controlled and the authority that controls them. The purpose of the Act is to provide for planning processes that are fair by making them open, accessible, timely and efficient, promote sustainable economic development in a healthy natural environment within a provincial policy framework.

Section 2 of the Act sets out some matters of provincial interest, including the protection of ecological systems, including natural areas, features and functions; the conservation of features of significant architectural, cultural, historical, archaeological or scientific interest; the adequate provision and distribution of educational, health, social, cultural and recreational facilities; and, the promotion of development that is designed to be sustainable, to support public transit and to be oriented to pedestrians.

THE PROVINCIAL POLICY STATEMENT (2020)

The Provincial Policy Statement (PPS), issued under the *Planning Act* by the Ontario Ministry of Municipal Affairs and Housing (OMMAH) in 2020, provides policy direction for land use planning and development in Ontario. It provides policy support for appropriate and context-sensitive urban and rural development, environmental and resource protection, and social equity in planning matters.

The PPS includes policies for protecting natural heritage features and their ecological functions. Linkages between natural heritage features, surface water and groundwater features are also recognized and afforded similar protections under the PPS. Section 2.1.2 of the PPS also requires

that the diversity and connectivity of natural heritage features and the long-term ecological function of natural heritage systems be maintained, restored or improved where possible.

Significant wetland and ANSI are defined in PPS 2020 as “an area identified as provincially significant by the Ontario Ministry of Natural Resources and Forestry using evaluation procedures established by the Province, as amended from time to time.” Mapping of areas designated by the Province as provincially significant wetland (PSW) and ANSI is available online.

Woodlands are defined in PPS 2020 as "treed areas, woodlots or forested areas that vary in their level of significance at the local, regional and provincial levels. Determination of their significance is the responsibility of local planning bodies. Criteria and standards for guiding this evaluation process are provided in the “Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005. Second Edition” (OMNR 2010).

Valleylands are defined in PPS 2020 as “a natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of the year” and significant valleylands are “ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system.” As for significant woodlands, significant valleylands are identified at the local level using criteria and standards provided in OMNR 2010.

Wildlife habitat is defined in PPS 2020 as “areas where plants, animals, and other organisms live and find adequate amounts of food, water, shelter, and space needed to sustain their populations.” Significant Wildlife Habitat (SWH) is “ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or Natural Heritage System” and significant valleylands are “a natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of the year.” This feature is also identified at the local level. Provincial guidance documents include “Significant Wildlife Habitat Technical Guide” (OMNR 2000) and “Significant Wildlife Habitat Mitigation Support Tool. Version 2014” (OMNRF 2014) for general guidance and “Significant Wildlife Habitat Criteria Schedules For Ecoregion 7E” (OMNRF 2015) for implementation criteria specific to the ecoregion.

SWH is described within the following main categories:

- Seasonal concentration areas;
- Rare vegetation communities;
- Rare or specialized habitat;
- Habitats of species of conservation concern; and,
- Movement corridors.

Further investigations will be required to determine whether there are any of the above-mentioned natural heritage features present in the study area. Natural heritage features can be identified through Official Plan schedules, MNRF online mapping, direct consultation with MECP and MNRF or on the ground field investigations.

The PPS seeks to build strong, healthy communities by, among other matters, recognizing the importance of parks and recreation, green spaces, trails and trail linkages. This is set out through the policies outlined in Section 1.5 of the PPS. This section promotes healthy communities by establishing policies for public spaces, recreation, parks, trails, and open spaces. Trails should facilitate active transportation and community connectivity.

Section 1.6.7.4 of the PPS sets out policies regarding transportation systems, noting as part of a multimodal transportation system, connectivity within and among transportation systems and modes should be maintained and, where possible, improved. An overarching vision for Ontario's land use planning system is articulated in the PPS, stating that the "long-term prosperity and social well-being of Ontarians depend on maintaining strong communities, a clean, healthy environment and a strong economy." Key in achieving these goals involves the promotion of related aspects within transportation, including through efforts to support a greater mode share of walking and cycling.

Site alteration is set out in the PPS as activities such as grading, excavation and the placement of fill that would change the landform and natural vegetative characteristics of a site. There are a number of policies regarding development and site alteration in the PPS that apply to natural heritage, bodies of water, cultural heritage and archeology, and natural hazards. The definition in the PPS has also been integrated in the York Regional Official Plan.

A PLACE TO GROW: GROWTH PLAN FOR THE GREATER GOLDEN HORSESHOE (2019)

Effective May 16, 2019, A Place to Grow: Growth Plan for the Greater Golden Horseshoe (the Growth Plan), replaces the 2017 Growth Plan for the Greater Golden Horseshoe. The 2019 Growth Plan contains revisions associated with completion of the provincially led Natural Heritage System provided for in the 2017 Growth Plan, a system it identifies as the "Natural Heritage System for the Growth Plan."

Applying the policies of the Growth Plan will support the achievement of complete communities that expand convenient access to a range of transportation options, including options active transportation, public service facilities, an appropriate supply of safe, publicly accessible open spaces, parks, trails, and other recreational facilities. Section 4.2.5 of the Growth Plan sets out policies regarding public open space, encouraging municipalities to develop a system of publicly accessible parkland, open space, and trails.

Section 3.2.2 of the Growth Plan outlines general transportation policies, noting there should be a balance of transportation choices that reduces reliance upon the automobile and promotes transit and active transportation, along with the expansion of infrastructure that supports active transportation.

Section 2.2.3 sets out policies for planned urban growth centres, noting the Vaughan Metropolitan Centre (VMC) as an urban growth centre that will be planned to be achieved by 2031 or earlier, a minimum density target of 200 residents and jobs combined per hectare. The VMC is located approximately 6km south west of the proposed trail alignment.

THE GREENBELT PLAN (2017)

The Greenbelt Plan identifies where urbanization should be avoided, to protect the agricultural land base and the area's ecological and hydrological features. It builds on the policies of the PPS. The Greenbelt Area comprises 'Protected Countryside' (including the Natural Heritage System and Towns / Villages), 'Urban River Valleys', 'Niagara Escarpment Plan Area' and the 'Oak Ridges Moraine Area'. The Natural Heritage System includes core areas and linkage areas of the Protected Countryside with the highest concentration of the most sensitive and/or significant natural features and functions. Other new development permitted by the Greenbelt Plan within the

Natural Heritage System must demonstrate several requirements, such as having no negative impact on key natural heritage features and maintaining connections between key features.

Maintaining and expanding the supply of publicly accessible parkland, open space and trails is encouraged in the Greenbelt Plan through strategic planning activities that identify, plan for and protect these resources for current and future generations. A system of parklands, open spaces, water bodies and trails across the Greenbelt serve as an important component of complete communities and provide important benefits to support environmental protection, improved air quality and climate change mitigation. This system currently supports a variety of passive and active uses as well as health, economic and other quality of life benefits within the Greenbelt.

The Greenbelt Plan notes that settlement areas shall support the achievement of complete communities, by facilitating the development of community hubs that involve the co-location of public services to address local community needs that are accessible by active transportation and, where available, transit.

A system of parklands, open spaces, water bodies and trails across the Greenbelt is necessary to provide opportunities for recreation, tourism and appreciation of cultural heritage and natural heritage. Section 3.3 of the Greenbelt Plan describes policies related to the maintenance and expansion of the supply of publicly accessible parkland, open space and trails is encouraged through strategic planning activities that identify, plan for and protect these resources for current and future generations. The planning and activity associated with parkland, open space and trail uses should maximize the opportunity to co-operate with all landowners. Section 3.3.2 describes policies for partnership with municipalities, conservation authorities, non-government organizations and other interested parties for parkland, open space and trail policies. Policies set out in the Urban River Valley Goals include the provision of a range of natural settings on publicly owned lands for recreational, cultural and tourism uses, including parkland, open space land and trails.

OAK RIDGES MORAINE CONSERVATION PLAN (2017)

The Oak Ridges Moraine Conservation Plan provides land use and resource management planning direction concerning the protection of the Moraine's ecological and hydrological features and functions. The Moraine contains a unique concentration of environmental, geological and hydrological features. The ORM comprises part of the Greenbelt area, along with the Niagara Escarpment and the Protected Countryside Areas, and the lands to which the ORMCP apply are also subject to the Greenbelt Plan. Lands within the north east of the municipality are included within the ORMCP area and include the following Oak Ridges Moraine designations: 'Natural Core'; 'Natural Linkage'; 'Countryside', and; 'Settlement Area'.

Also set out in the Oak Ridges Moraine Conservation Plan is the importance of accessible recreational access through the Moraine to link a system of parklands, water bodies, open spaces and trails across the Greenbelt.

MADE IN ONTARIO ENVIRONMENTAL PLAN

This plan for preserving and protecting Ontario's environment for future generations commits to improving the resilience of natural ecosystems; supporting conservation and environmental planning; promoting parks and increasing recreational opportunities; supporting sustainable forest management; and protecting species at risk and responding to invasive species. Progress on plan

implementation will be demonstrated as reduced costs and improved quality of life and communities. In April 2021, the Province announced as an update to the Made in Ontario Plan the establishment of a Protected Areas Working Group that will provide advice on expanding protected and conserved areas.

Fifteen action items directly apply to natural heritage subject areas including protection of wetlands, grasslands and other habitats; climate change adaptation; partnerships; environmental assessment process; conservation financing; healthy parks; forest management; species at risk; and invasive species.

ACCESSIBILITY FOR ONTARIANS WITH DISABILITIES ACT(AODA) (2005)

The Accessibility for Ontarians with Disabilities Act (AODA), 2005 is a statute enacted in 2005 by the Legislative Assembly of Ontario, Canada.

The Accessibility for Ontarians with Disabilities Act (AODA) is an Ontario law that mandates that organizations to follow standards to become more accessible to people with disabilities. The goal of the AODA is for communities to be fully accessible by 2025 by creating and enforcing accessible standards that address key areas of daily life.

There are five accessibly standards under the AODA:

- Customer Service
- Information and Communications
- Employment
- Transportation
- Design of Public Spaces (Built Environment)

To address the design of public spaces standard of the AODA, the Pathways to Recreation: Learning about Ontario's Accessibility Standard for the Design of Public Spaces Standard (2014) was developed by Parks and Recreation Ontario to provide guidance for parks, outdoor recreation facilities, and amenities, to make these facilities accessible for people with disabilities.

The Design of Public Spaces Standard focuses mainly on outdoor spaces, such as recreational trails, outdoor public eating areas and play spaces, accessible parking, and outdoor paths of travel. Public sector organizations, and private organizations with more than fifty workers, are required by law to implement these guidelines and make these spaces accessible.

The intent of the Design of Public Spaces Standard is to help eliminate physical barriers to accessing outdoor recreation spaces and experiences. The standard is law under the AODA and applies to new construction or re-construction of existing public spaces.

#CYCLEON ACTION PLAN 2.0

In 2018, the Ontario Ministry of Transportation (MTO) updated the Ontario Cycling Strategy by publishing #CycleON Action Plan 2.0. #CycleON is being implemented through a series of multi-year actions plan, which will be rolled out every five years. #CycleON Action Plan 2.0 identifies the progress of the cycling strategy since #CycleON was first published in 2014. Through a diverse consultation process, the updated Action Plan outlines the second wave of initiatives across all five of #CycleON's Strategic Directions; these include:

- Design Healthy, Active and Prosperous Communities;
- Improve Cycling Infrastructure;
- Make Highways and Streets Safer;
- Promote Cycling Awareness and Behavioural Shifts; and
- Increase Cycling Tourism Opportunities.

These directions ensure that the action plan continues to advance cycling in Ontario. The Action Plan also guides efforts across governments, provincial policies and initiatives.

The Province-wide Cycling Network study is another component in Ontario's efforts to support the growing trend of cycling as a means of transportation, recreation and tourism. The Ministry of Transportation (MTO) in partnership with the Ministry of Tourism, Culture and Sport (MTCS) initiated the study to complement the numerous policies, plans, projects and initiatives they have already undertaken in the past five (5) years, including the #CycleON: Ontario's Cycling Strategy.

Through the development process, the Province-wide Cycling Network provides guidance for provincial and municipal staff, stakeholders and other partners to inform the future planning, design and implementation of cycling infrastructure at the provincial, regional and local level in Ontario. The Province-wide Cycling Network study is the preliminary identification of a Province-wide Cycling Network intended to inform and guide the future of cycling infrastructure decisions with the goal of establishing a connected and consistent network.

TOUR BY BIKE: ONTARIO'S CYCLING TOURISM PLAN (2017)

The Ontario Cycling Tourism Plan was developed in recognition of cycling's growing potential as a source of tourism and subsequent driver of economic growth. Building upon the direction of the province's cycling and trails action plan, the Ontario Cycling Tourism Plan aims to promote cycling tourism and position Ontario as a respective industry leader.

ONTARIO TRAILS STRATEGY (2010)

The Provincial government developed the Ontario Trails Strategy in response to the increasing popularity of trail activities and infrastructure, the need for government leadership, the need to protect provincial investment in trails and the need to mitigate significant provincial trail issues or challenges. The Ontario Trails Strategy is a long-term plan that will establish a strategic direction for government and stakeholders involved in the planning, management, promotion and use of trails toward a healthier and more prosperous Ontario.

GO EXPANSION

Public transit is a sustainable transportation mode, and includes buses, streetcars, subways and trains. The City of Vaughan is served by three transit systems, York Region Transit (YRT), Toronto Transit Commission (TTC), and GO Transit.

The GO Transit system is the regional public transit service for the Greater Toronto and Hamilton Area. GO Transit offers train services between Union Station, Rutherford Road Station and Maple Station in Vaughan. Go Transit also has bus services serving Kleinburg, Woodbridge, Highway 400 at Major Mackenzie, and Canada's Wonderland.

The Region and City have plans for active transportation facilities on Langstaff Road, and the connection to Highway 7 can be improved to tie in to new Vivanext bikeways near where the Concord GO Station is proposed.

With the expanding GO Transit system, the Bartley Smith Greenway Trail presents an opportunity to be a driver to complete the remaining gaps in this area of the trail, connecting schools, neighbourhoods, parks, City Hall, GO Stations and other amenities and destinations. Connections to new active transportation facilities on Rutherford Road and GO Station improvements will make the trail more attractive for commuting purposes.

As set out in the Growth Plan, major transit station areas will be designed to achieve multimodal access to stations by providing connections to local and regional transit services.

REGIONAL FRAMEWORK

The regional policy framework is the upper-level source of direction for land use and interconnected networks of mobility, greenspace and streets. All municipal level planning must comply with Regional policy.

YORK REGION OFFICIAL PLAN

The York Region Official Plan (YROP) is a guiding document for managing growth and development in the Region while providing for the needs of current residents. It includes direction on policies for Regional considerations of environment, economic, agricultural, and community planning and land use. The YROP identifies the Regional Greenlands System and key natural heritage features and hydrological features to be protected and managed. The OP also identifies environmentally significant areas, species at risk and their habitats in accordance with the PPS. The Greenlands System identified in the Regional Official Plan takes a natural heritage system approach to preserving natural heritage features. Parts of the Greenlands System are identified as Natural Heritage System of the Protected Countryside of the Greenbelt. This approach is aligned with the PPS.

The YROP also sets out healthy communities' goals throughout the OP, with a goal of the Region being the improvement to the health and well-being of residents and workers in the Region by planning and developing sustainable active communities. Policy 5.6.14 of the YROP identifies how a Greenlands System Plan will be managed in an urban environment, including how the system can provide recreational access or contributing to off-site enhancements; developing a trail system, which is integrated as appropriate into the mobility systems of the community. York Region is currently undergoing a Municipal Comprehensive Review.

An objective of the YROP is to ensure that key natural heritage features and key hydrologic features and functions are protected and enhanced where possible. Key natural heritage features are described in Section 2.2 of the YROP and include the habitat of endangered species, threatened species and special concern species, fish habitat, wetlands, Life Science Areas of Natural and Scientific Interest, Environmentally Significant Areas, significant valleylands, significant woodlands, significant wildlife habitat, sand barrens, savannahs and tallgrass prairies.

Woodlands are significant components of York Region's natural systems and provide a variety of important environmental, social and economic benefits. These benefits include clean air and water,

erosion prevention, water retention, provision of wildlife habitat, recreation and the sustainable harvest of woodland products. Criteria for woodland policies are set out in section 2.2.45 of the Plan, except those excluded by policy 2.2.48.

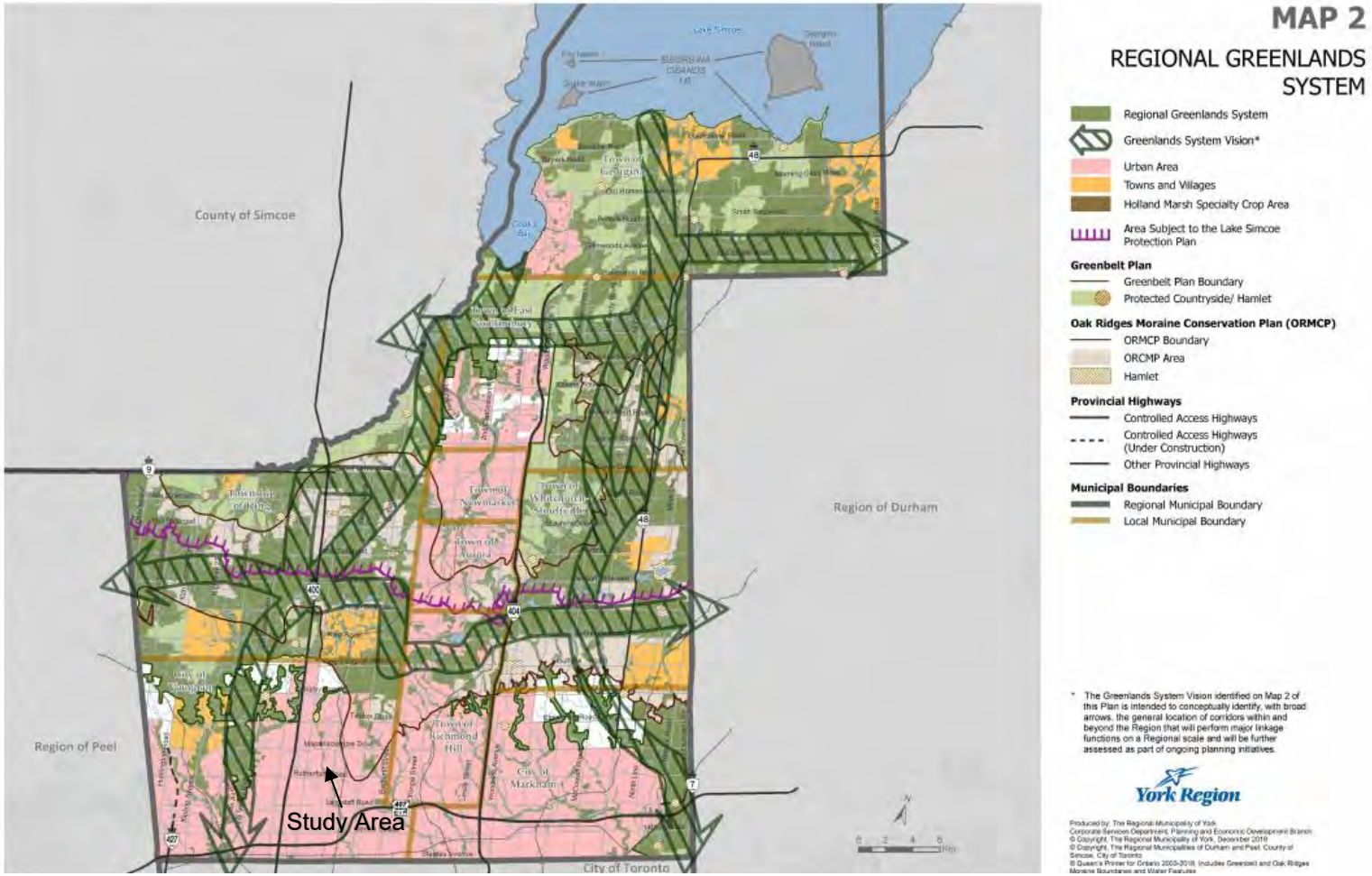


Figure 4: York Region Official Plan Regional Greenlands Systems

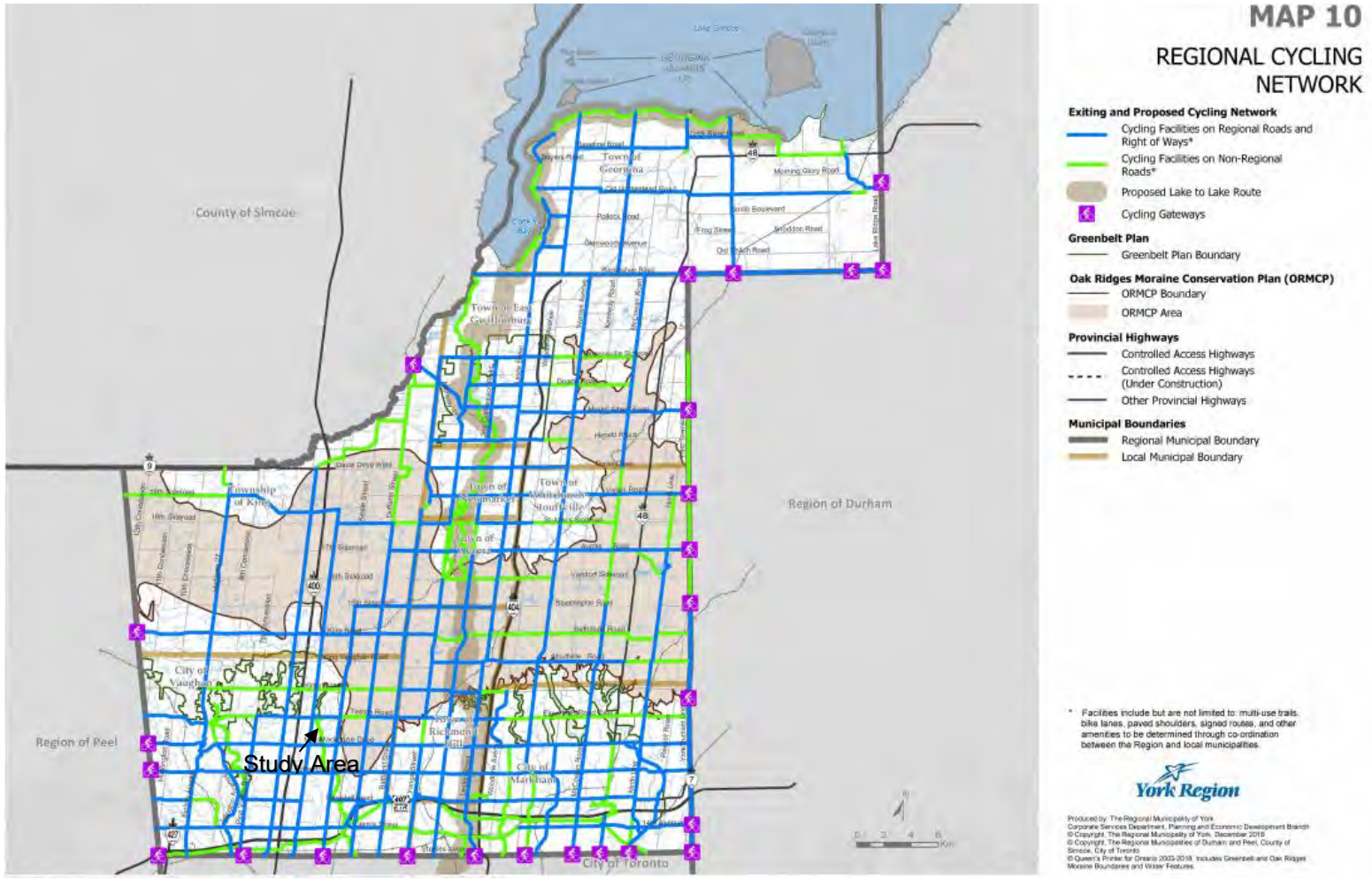


Figure 5: York Region Official Plan Regional Cycling Network

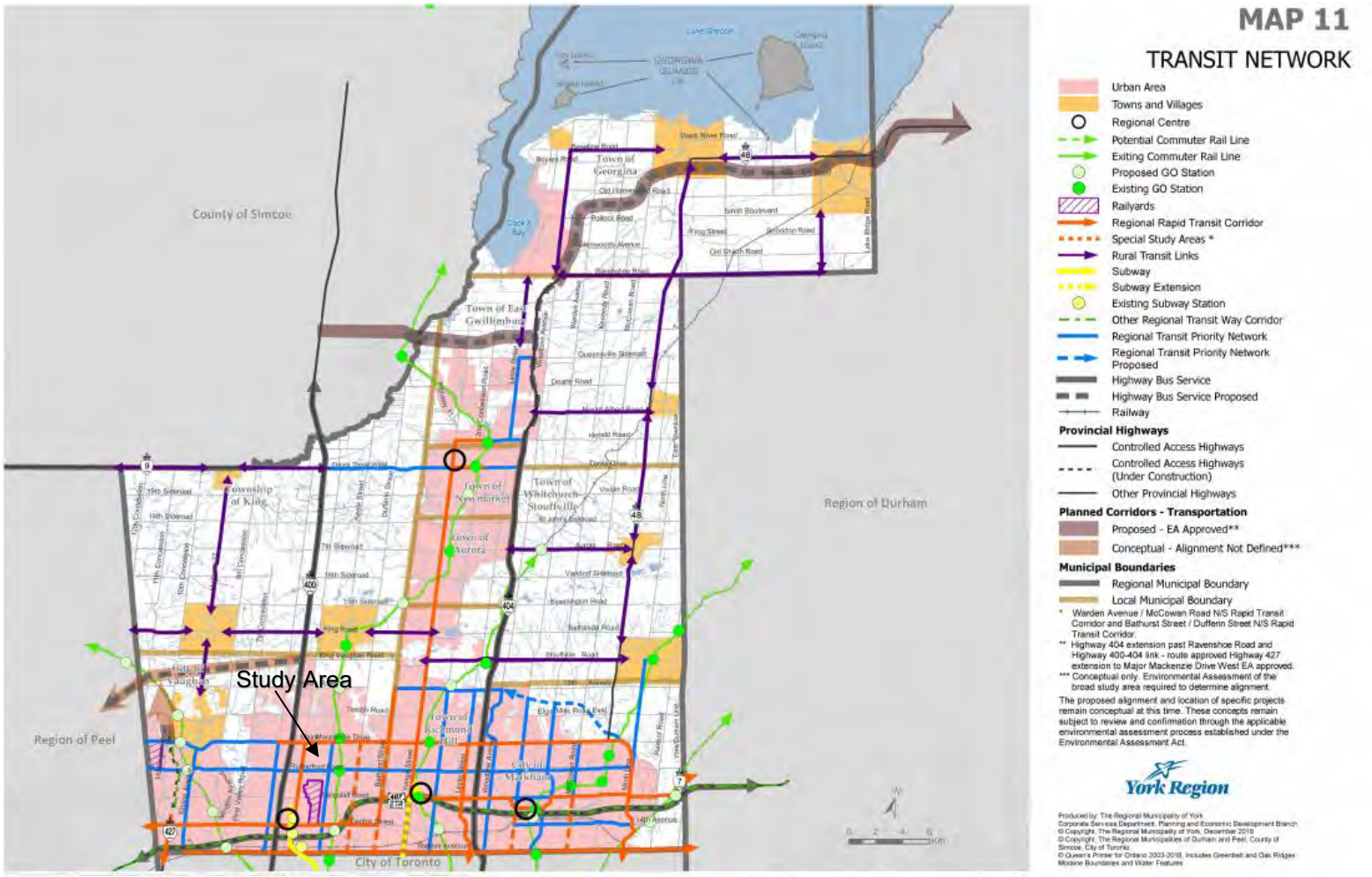


Figure 6: York Region Official Plan Transit Network

TRCA LIVING CITY POLICIES, 2014

The Living City Policies (2014) is the TRCA's vision for the urban region. It contains the principles, goals, objectives and policies approved by the TRCA Board for the administration of TRCA's legislated and delegated roles and responsibilities in the planning and development approvals process. The TRCA compares this document to a combined Official Plan and Zoning By-law. It champions sustainability and environmental management in the Toronto Region. York Region is included in the scope of the TRCA's jurisdiction.

TRCA STATE OF THE DON RIVER WATERSHED REPORT CARD, 2013

The Watershed report cards are a set of documents that provide an overview on the health of Toronto and Regional watersheds. The report cards track and report on surface and groundwater water quality, forest conditions, and stormwater management. The report cards can be used to compare to previous conditions and monitor if conditions are improving, maintaining, or getting worse. In 2013, the Don River Watershed received an 'F' (very poor) in surface water quality. The forest conditions were graded as a 'D' (poor). Stormwater management received an 'F' (very poor). Groundwater quality did not receive a grade due to insufficient data.

TRCA TRAIL STRATEGY, 2019

The TRCA Trail Strategy (2019) is a guiding document for encouraging and protecting potential trail alignments, and guides the planning, development and management of the trails across the Greater Toronto Region. There is a strong emphasis on connecting communities to nature. The Strategy describes how the TRCA plans to partner with municipalities and other community partners to achieve a larger, more connected trail network within the Greater Toronto Region. The TRCA Trail Strategy should be read in conjunction with the Living City Policies. It provides a vision for the Greater Toronto Region trail network and rationale for its choices as well as objectives and actions for achieving this vision.

TRANSPORTATION MASTER PLAN, 2016

The York Region Transportation Master Plan (RTMP) provides a long-term vision for the Region's mobility network. The TMP examines current and future conditions and plans for transportation network and infrastructure, outlining the policy and strategies needed to achieve this vision. It guides development and management of transit systems, cycling networks, road networks, and strategic goods movement. The TMP is designed to support an interconnected transportation system within the region and connected to the GTHA. It includes objectives for the Regional transportation network. One of the objectives of the TMP is to "integrate active transportation into urban areas" which includes walking, cycling, and rolling. The TMP is currently under review and the new TMP will be presented to Council in 2022

The Regional Transportation Master Plan (RTMP) also outlines a regional trails strategy in section 4, noting that the trail system in the region plays a dual role as a key transportation infrastructure element and as a place for recreation. Trails provide the opportunity to provide direct connections for both cyclists and pedestrians by cutting through the street network and natural barriers to link

major destinations and municipalities. The importance of a Regional network of trails throughout York Region has been emphasized throughout planning and policy documents.

Section 5 of the RTMP details policies that support the creation of walkable environments, noting that the ability to walk to destinations in York Region is fundamentally important to building an interconnected system of mobility. A Healthy Communities Practice Guide published by the Canadian Institute of Planners, highlights that walkable neighbourhoods promote physically active and sustainable lifestyle and the Region recognizes that beyond the public health benefits, improving pedestrian facilities and connectivity improves access to public transit.

Figure 7 illustrates the existing transit transportation network in York Region set out in the RTMP and Figure 8 shows the existing cycling network in York Region from the RTMP.

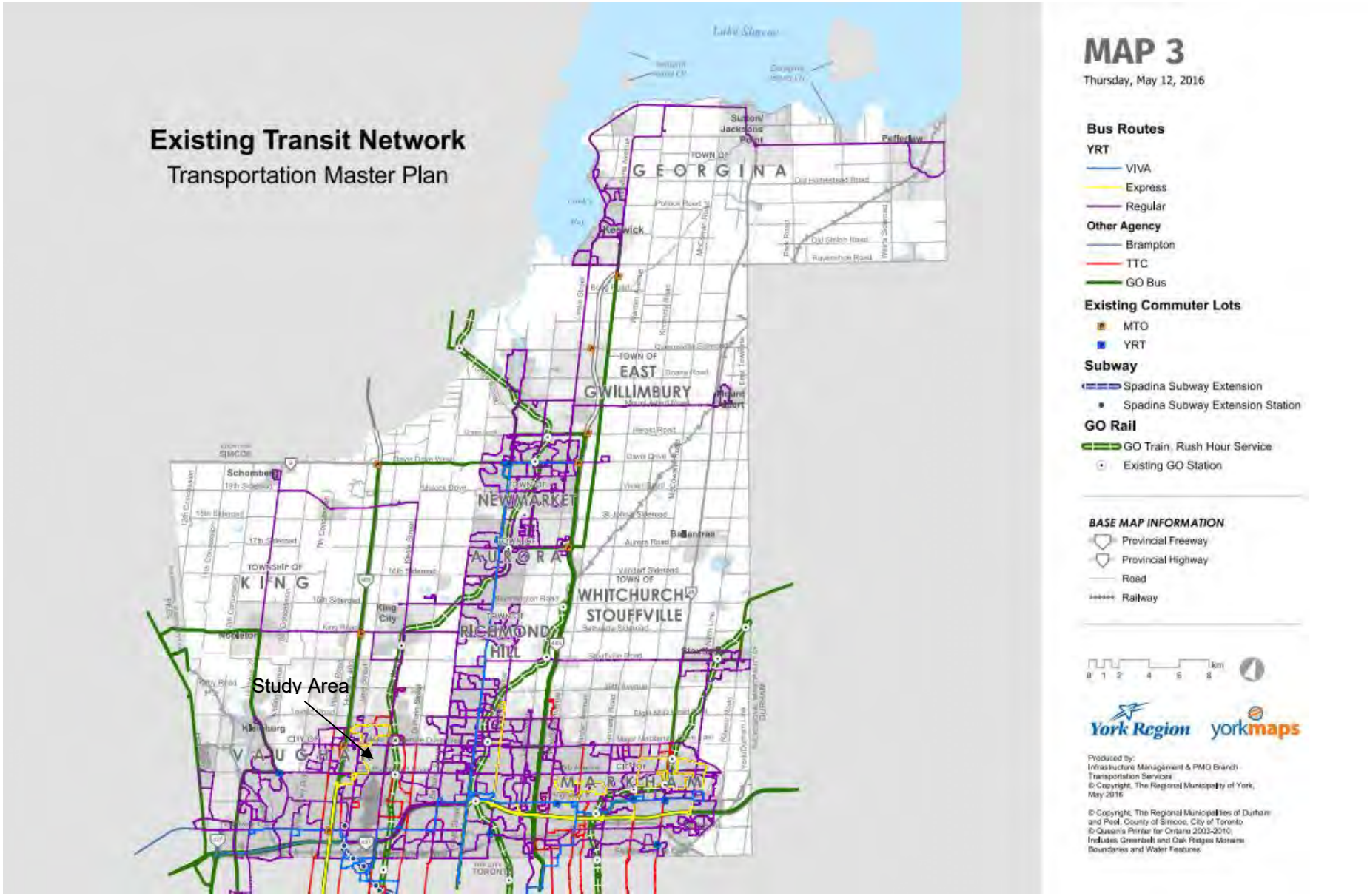


Figure 7: York Region Transportation Master Plan Existing Transit Network

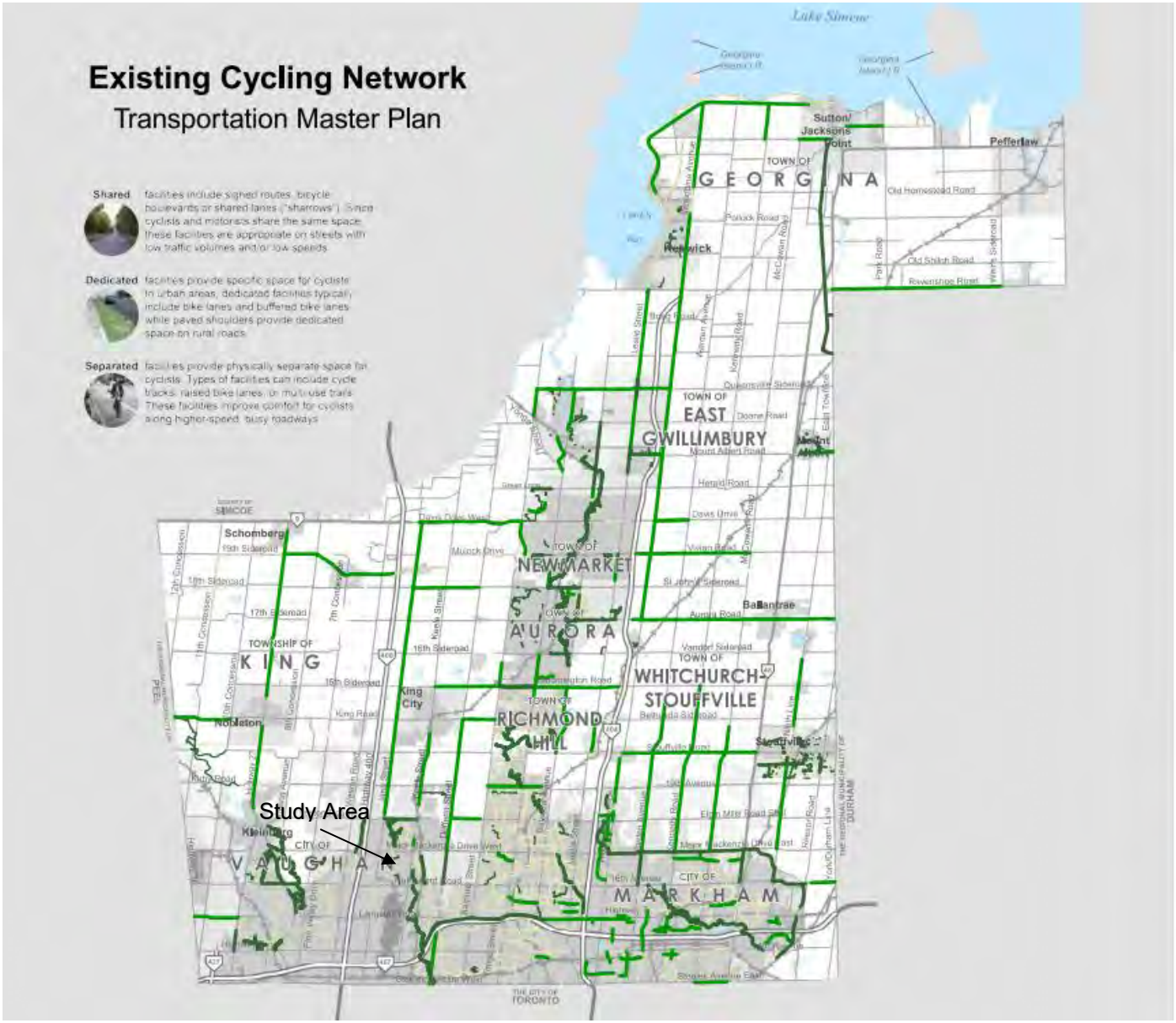


Figure 8: York Region Transportation Master Plan Existing Cycling Network

YORK REGION ACCESSIBILITY DESIGN GUIDELINES FOR YORK REGIONAL FOREST TRAILS

The York Region Accessibility Design Guidelines is a set of design guidelines to fulfill AODA requirements and establish best practices for the design, construction and maintenance of trails in York Region. The aim of the guidelines is: “to provide integrated recreational experiences for all visitors, with and without disabilities”.

The guidelines contain four sections to be considered and included in the design of trails:

1. General Design Guidelines
2. Accessible Parking Facilities
3. Accessible Trail Design
4. Signage Requirements

The contents of the accessibility guidelines apply to all trails, including the BSG. However, it is mentioned in the document that characteristics of the natural environment such as terrain, soils and hydrology could prevent compliance with some technical provisions provided in the guidelines.

The Accessibility Design Guidelines for York Region Forest Trails indicate that the specifications of trail design presented in sections 5.1 - 5.11 of the guidelines shall be met by any trails and connecting surfaces that are designated for pedestrian use, except where the following criteria for exceptions occur:

1. The requirements, or some of them, would likely affect the cultural heritage value or interest of a property identified, designated or otherwise protected under the Ontario Heritage Act as being of cultural heritage value or interest.
2. The requirements, or some of them, would affect the preservation of places set apart as National Historic Sites of Canada by the Minister of the Environment for Canada under the Canada National Parks Act (Canada).
3. The requirements, or some of them, would affect the national historic interest or significance of historic places marked or commemorated under the Historic Sites and Monuments Act (Canada).
4. The requirements, or some of them, might damage, directly or indirectly, the cultural heritage or natural heritage on a property included in the United Nations Educational, Scientific and Cultural Organisation’s World Heritage List of sites under the Convention Concerning the Protection of the World Cultural and Natural Heritage.
5. There is a significant risk that the requirements, or some of them, would adversely affect water, fish, wildlife, plants, invertebrates, species at risk, ecological integrity or natural heritage values, whether the adverse effects are direct or indirect.
6. It is not practicable to comply with the requirements, or some of them, because existing physical or site constraints prohibit modification or addition of elements, spaces or features, such as where surrounding rocks bordering the recreational trail or beach access route impede achieving the required clear width.

In addition, where an exception is permitted, the exception applies solely:

- to the particular requirement for which the exception is allowed and not to any other requirement that applies to the trail;
- to the portion of the trail for which it is claimed and not to the trail in its entirety;
- to the shortest section of trail where trail cannot comply.

PEDESTRIAN AND CYCLING MUNICIPAL PARTNERSHIP PROGRAM

The Pedestrian and Cycling Municipal Partnership Program is a Regional program designed to assist York municipalities and NGOs to encourage active transportation through the development of active transportation infrastructure projects. The Region will assist municipalities up to a value of 50 per cent of total eligible project construction costs. The proposed trail should contribute to the Region's network of walking and cycling infrastructure. The trail should also be aligned with Regional design guidelines and support the objectives and policies of the Region's OP and TMP. It should also help support active transportation connectivity in the Region.

DESIGNING GREAT STREETS

The Designing Great Streets Guidelines provides guidance on the best practices for all elements of street design and how to plan for all road users. The purpose of the document is to streamline decision making and encourage the implementation of progressive roadways and urban design. The Guidelines include six different street typologies that reflect the vision of the Region for its mobility network:

- City Centre Street
- Avenue
- Main Street
- Connector
- Rural Road
- Rural Hamlet Road

Each of the street typologies have a different set of guidelines and recommendations. This is referred to as context-specific design.

YORK REGION PEDESTRIAN AND CYCLING PLANNING AND DESIGN GUIDELINES, 2018

The Pedestrian and Cycling Planning and Design Guidelines provides clear direction on how to plan and design for active transportation facilities in the Region. Active transportation facilities are defined by the Region as: "pieces of infrastructure that support travel by pedestrians, including those using mobility aids or devices, cyclists, and other forms of self-propelled transportation". This document is to be considered in conjunction with the Designing Great Streets Guidelines and the Transportation Master Plan. This set of Guidelines is also context-specific and contains different approaches for different street typologies (identified in the Designing Greet Streets Guidelines) and including multi-use trails.

In addition to this, the Guidelines also provide for network amenities such as street furniture, bicycle parking and signage, railings, barriers and fences.

MUNICIPAL POLICY FRAMEWORK

The municipal policy planning framework is the primary source of direction for land use designations and guides development by identifying where and under what circumstances specific types of land uses can be located. High level parent policies dictating elements such as the urban structure, road classifications, and natural heritage features are supported further by Secondary Plans and other more area-specific plans, guides, policies and by-laws.

CITY OF VAUGHAN OFFICIAL PLAN 2010

The Vaughan Official Plan (VOP) 2010 was adopted by City Council on September 7, 2010, and was subsequently modified by City Council on September 27, 2011, March 20, 2012 and April 17, 2012. The City is currently undertaking a statutory review of its Official Plan to conform with new Provincial policies and plans and 2051 growth targets for people and jobs, to conform with the York Regional Official Plan, the latter which is being updated through a Municipal Comprehensive Review, and better meet the needs of current and future citizens in Vaughan.

As outlined in section 7.3 of the VOP, parks support active and passive recreation, along with open spaces that support passive recreational uses and ecological functions, such as trails, sensitive wetlands, valley lands and forests, cemeteries, the Don and Humber river systems, the casually tended landscapes around stormwater management ponds and greenways. Creating and enhancing the full spectrum of open spaces and parkland is essential in developing a system that connects both significant and minor destinations, encouraging citizens to enjoy a range of recreational activities.

As defined in the VOP, woodlands are comprised of Natural Areas of vegetation in the landscape and their associated wildlife populations, with the variety of available woodland resources influencing the range of native biodiversity in Vaughan. The City is to support the maintenance of important environmental functions, attributes and linkages of woodland resources, recognizing that this will lead to more stable, resilient systems of vegetation and wildlife.

Section 3.3.3. sets out the policies of Council regarding woodlands, noting it is policy to protect and enhance woodlands, by:

- prohibiting development or site alteration in woodlands and their minimum vegetation protection zones except as permitted per the provisions of policy 3.2.3.7 and, in the case of significant woodlands and their vegetation protection zones, the appropriate Regional or Provincial policies shall apply;
- encouraging that minimum vegetation protection zones be restored using a diversity of native tree species that are sensitive to the realities of the impact of invasive species and invasive destructive pests in new development;
- seeking public ownership of woodlands and their ecological buffers through the development process; and,
- using sound woodland management practices that will maintain or enhance existing functions, attributes and linkages, including entering into heritage conservation and other easement agreements, where woodland resources remain in private ownership.

Section 3.3.3.2. describes that an application for development or site alteration on lands adjacent to woodlands will not be considered by Council unless:

- the precise limits of any woodland within the area of the application have been established to the satisfaction of the City; and
- an evaluation is carried out to determine that the required minimum vegetation protection zone between the woodland and the proposed development is sufficient to maintain or enhance existing functions, attributes and linkages of the woodland.

The VOP also sets out policies to encourage the accommodation of all modes of travel in the City of Vaughan, accommodating the different modes in an integrated and linked fashion. Improvements in the networks that support active transportation helps to increase mobility alternatives, which contributes to the establishment of healthy communities.

Section 4.2.3 includes policies that promote City-wide active transportation through the provision of appropriate infrastructure, such as sidewalks, trails and bicycle lanes.

Natural Heritage Networks including watercourses, woodlands, wetlands and related open spaces and agricultural lands each have an important function in maintaining ecological vitality and diversity in the City. The City establishes policies that support Vaughan's network of Natural Heritage Areas as a defining characteristic of the City by protecting and enhancing the Core Features, Enhancement Areas, Built-Up Valley Lands, and the other lands that comprise the Natural Heritage Network, and, specifically; securing wherever possible, through the development process, such lands for public purposes; and, actively seeking, through the development process, to connect Natural Areas with existing parks, open spaces, pedestrian trails, greenways and bicycle routes. As set out in Schedule 13, illustrated below in Figure 9, the land use designation of this area is Natural Areas. Policies regarding Natural Areas and Countryside are detailed in Section 2.2.2. of the VOP. The Natural Heritage designations in the City of Vaughan are key features on the landscape and contribute to the overall environmental health of the City and wider region, as they form part of the larger Regional Greenlands system. The Urban Structure identifies these areas and is designed to protect them in a manner that allows them to continue to provide vital ecosystem functions.

The VOP notes that a significant number of features in the Natural Areas and Countryside are protected by the Provincial Greenbelt and Oak Ridges Moraine Conservation Plans. Therefore the VOP carries forward these policies, that it is the policy of Council that Natural Areas shall be protected and their ecological functions preserved through maintenance, restoration or, where possible, improvement through additional linkages or corridors between features to facilitate the connectivity of the overall network.

Schedule 2 shown in Figure 10 exemplifies that the study area is designated as Core Features in the Natural Heritage Network, Core Features include valley and stream corridors; woodlands; wetlands; fish and wildlife habitat; significant habitat of endangered and threatened species; and Environmentally Significant Areas and Areas of Natural and Scientific Interest. Core Features also include key natural heritage features and key hydrological features within the Greenbelt and Oak Ridges Moraine Conservation Plan Areas. Development and/or site alteration will not be permitted in such areas unless specifically set out in the VOP.

Schedule 10 in Figure 11 is the Major Transit Network in the City of Vaughan's OP. As illustrated on Figure 11, the study area is located along both a Regional Rapid Transit Corridor and the Regional Transit Priority Network.

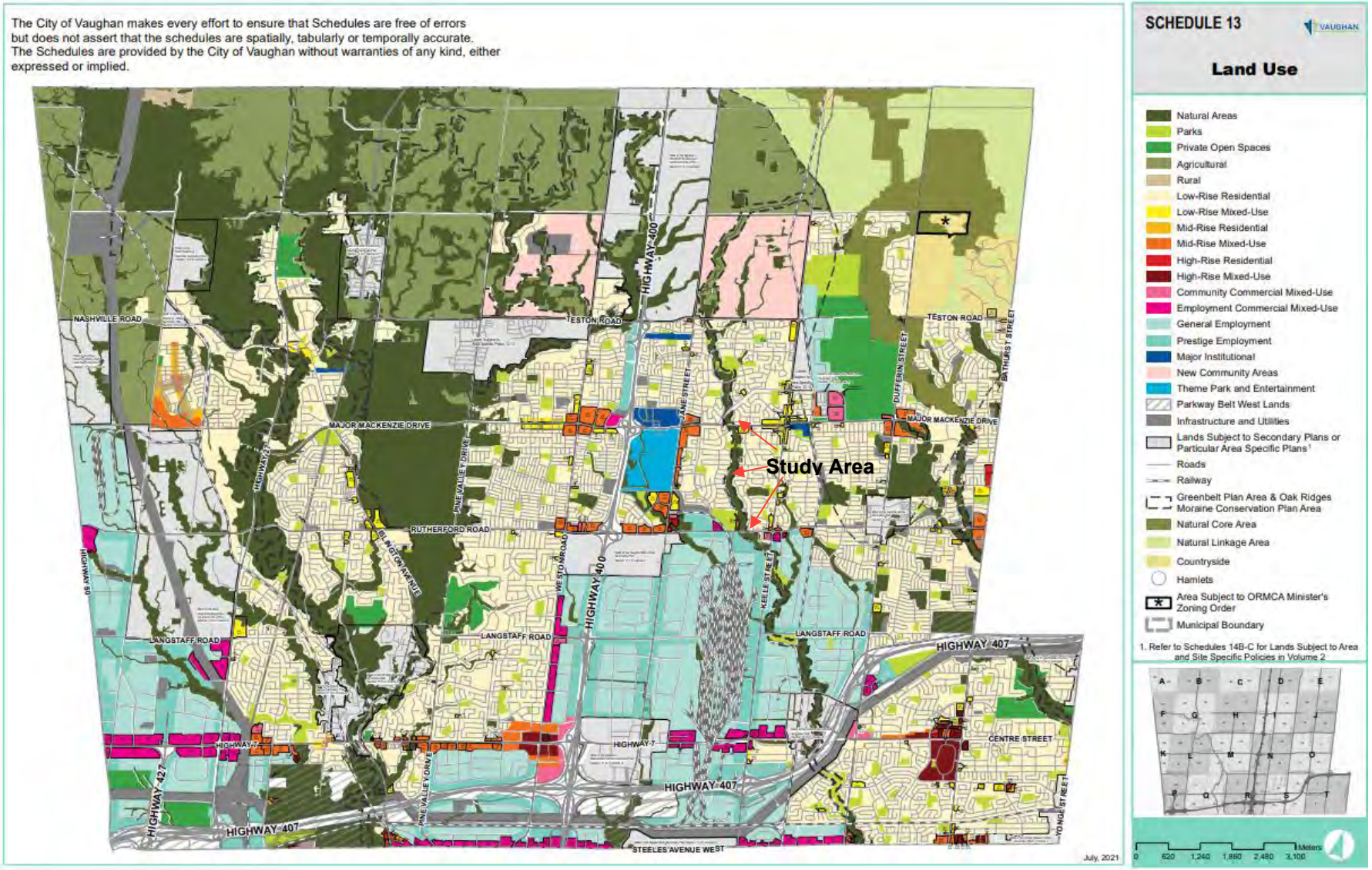


Figure 9: City of Vaughan Official Plan Schedule 13

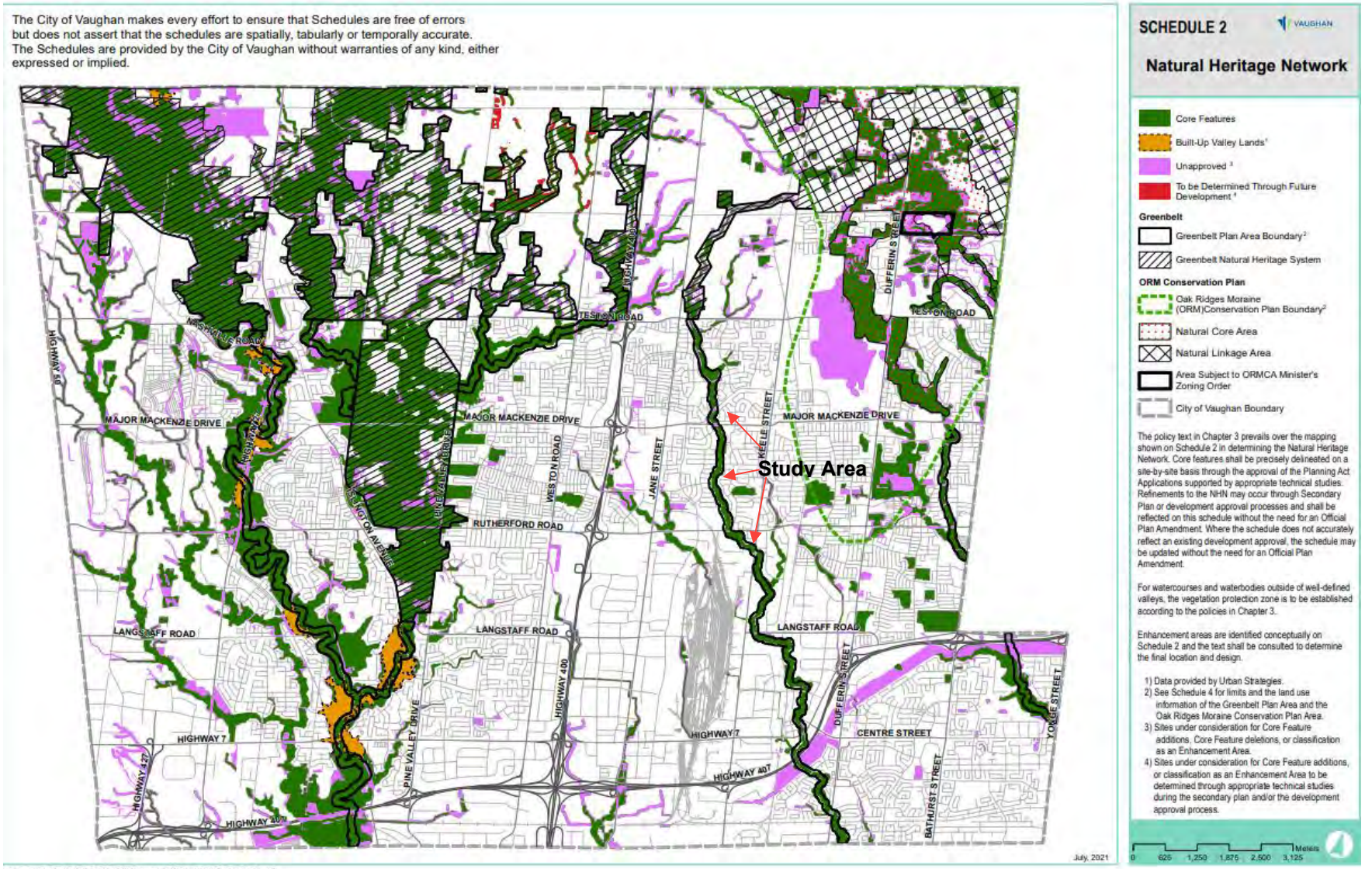


Figure 10: City of Vaughan Official Plan Schedule 2

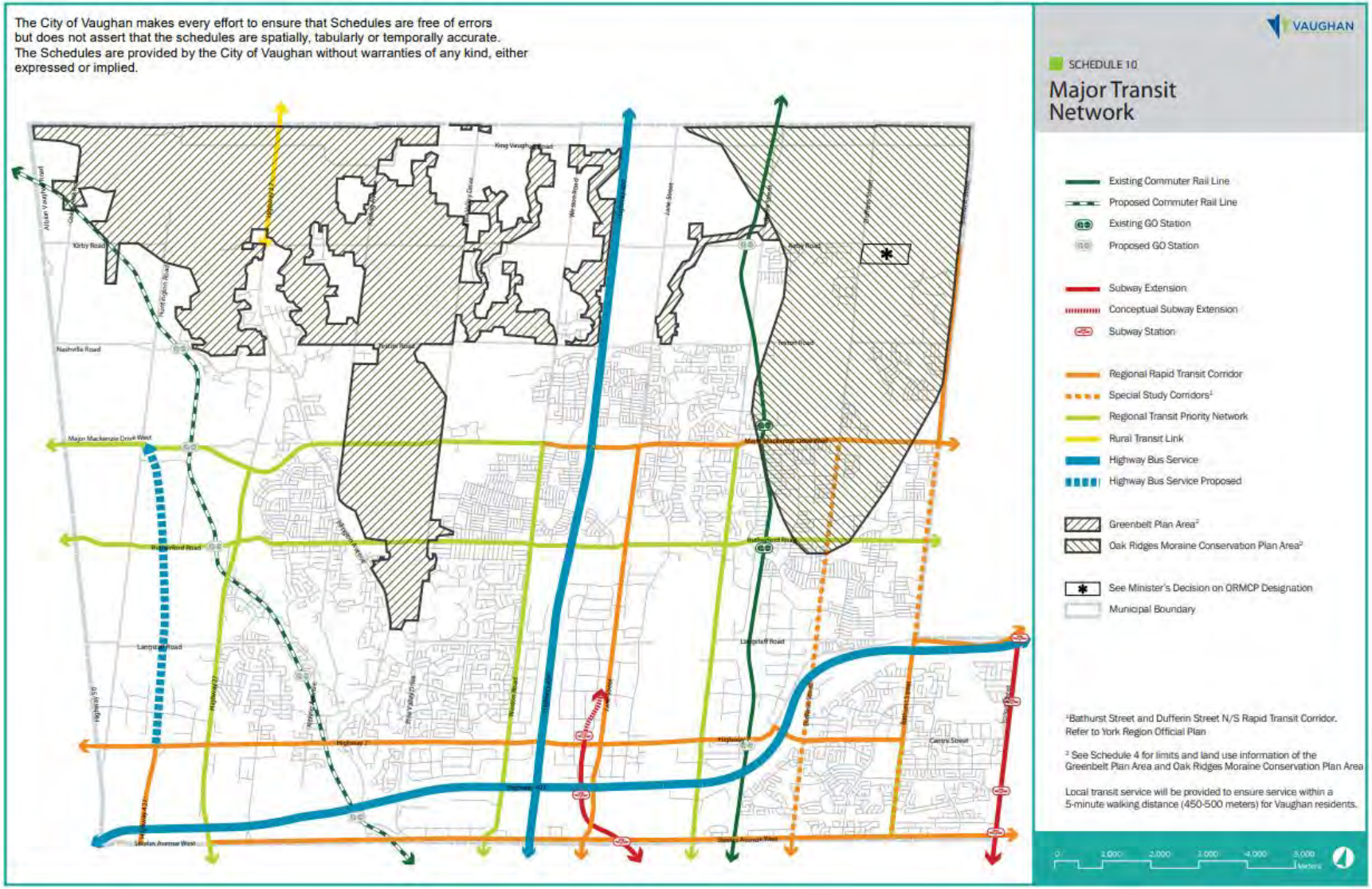


Figure 11: City of Vaughan Official Plan Schedule 10

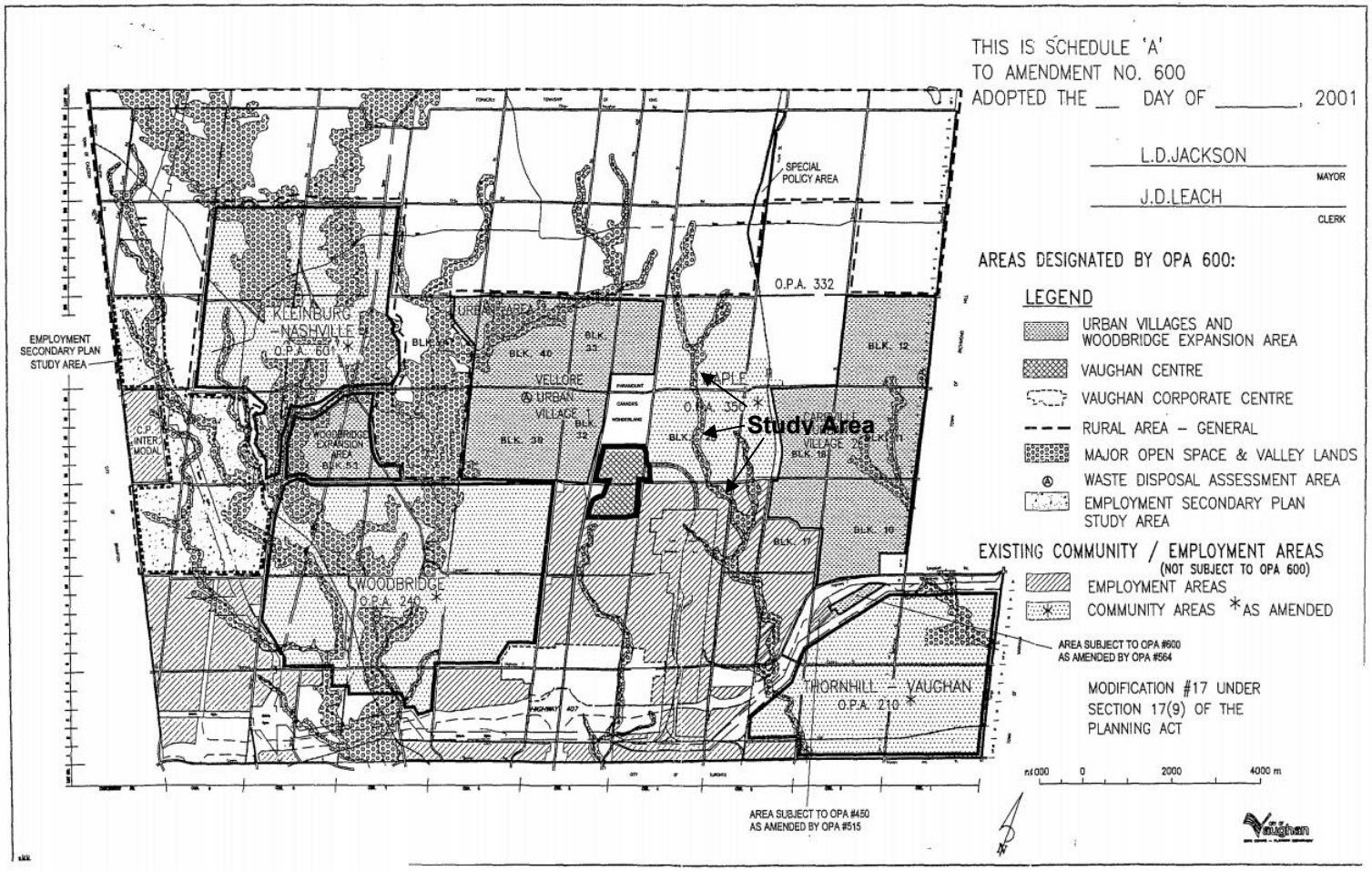


Figure 12: OPA 600 Area Designations

CITY OF VAUGHAN OPA 600

The designations and policies of OPA 600 are a refinement of OPA 400 and are based upon the findings of the OPA 400 Review Process undertaken by the City in response to the *Planning Act*'s requirements for review of local official plans on a 5-year basis. The policies of this amendment are intended to guide the future land use and development decisions of the City into the 21st Century. The designations of OPA 600 are shown in Figure 12, with the study area located within the Maple Community designation.

In section 8.3.2 of OPA 600, transportation policies encourage the provision of higher order transit, along with the provision of additional transit service, as required, on major east-west roads, such as Highway 7, Rutherford Road and Major Mackenzie Drive, and heavy demand north-south roads, such as Weston Road, Jane Street, Keele Street, Dufferin Street and Bathurst Street.

ZONING BY-LAW

By-law 1-88, as amended, is the Comprehensive Zoning By-law of the City of Vaughan. At this time, the City of Vaughan has presented the third draft of the new City-wide Comprehensive Zoning By-law.

As a result of the size of the study area, there are multiple zones noted. These zones include Open Space (OS1), Environmental Protection (EP) Agricultural (A), Commercial (C4), and Residential (R2, R3, R4). Figure 13 is the City's Zoning Map highlighting the study area.

In the zoning by-law Recreational Uses are defined as the use of land for parks, playgrounds, racquet courts, lawn bowling greens, skating and curling rinks, athletic fields, picnic areas, swimming pools, day camps, community centres, snow skiing, walking trails and all similar uses, together with necessary and accessory buildings and structures; but does not include a track for the racing of animals, motor vehicles, snowmobiles, motorcycles, golf driving ranges, miniature golf courses, or golf courses. Passive recreational uses are permitted in Environmental Protection zones, with Passive recreational uses defined as outdoor recreational facilities including walking or hiking trails, interpretative or educational signage, lookouts, boardwalks, benches, shade structures, bicycle paths, and associated parking areas, but shall not include trails for use by motorized vehicles, formalized play fields, or buildings.

Recreational uses are permitted within the OS1 zone and are listed as additional permitted uses in all Residential zones under section 4.1.7., and in all Commercial zones under section 5.1.4. Recreational uses are limited to bowling greens, curling rinks, private or municipal swimming or wading pools, skating rinks and tennis courts within the Agricultural zone.

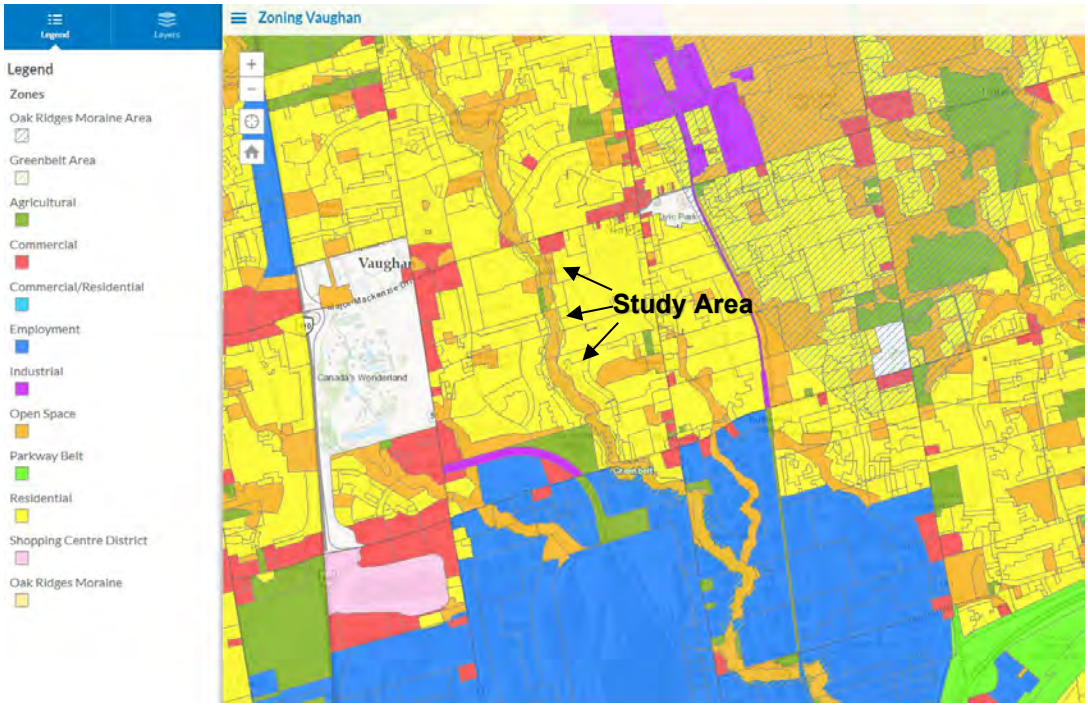


Figure 13: City of Vaughan Zoning Map

CITY OF VAUGHAN URBAN DESIGN GUIDELINES

The City of Vaughan's Urban Design Guidelines (UDG) provide direction for building and site design. Urban Design Guidelines establish a consistent level of design in the City. An approach to extending green networks has been developed to direct the character of the City's streets, public spaces and communities.

As the City is made up of almost forty percent Natural Areas, the UDG has set out policies that support a Green City Approach which focuses on linking the natural areas together. This supports a priority identified by the City in section 3.1, the importance of a well-connected network that is safe, comfortable and accessible. This priority provides direction for the establishment of a network of connections, designed to provide safety and visibility, prioritize active modes of movement and provide access to sunlight and generous landscape, particularly for pedestrians and cyclists.

An additional priority set out in Section 3.1 is enhancing Vaughan's natural heritage network through the extension of tree canopies that provide ecological services, enhancing trail systems, and creating wildlife eco-passages.

VAUGHAN ACESSIBILITY PLAN (2021)

The City of Vaughan strives to meet the needs of people with disabilities in a timely manner by preventing and removing barriers to accessibility and supporting the goals of the Accessibility for Ontarians with Disabilities Act, 2005 (AODA). An update to the Vaughan Accessibility Plan was updated and approved in February 2021. The Accessibility Plan and the Accessibility Policy are

tools to help identify how the City will create a barrier-free community with universal access to its programs, services and facilities.

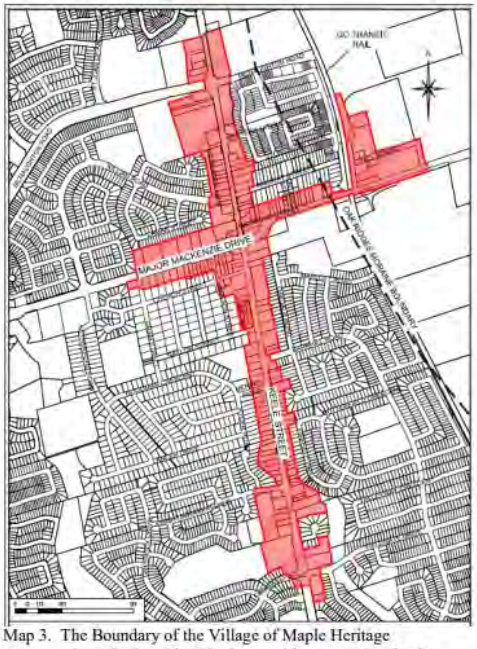
The Vaughan Accessibility Guidelines advises that the design of parks and trails will be undertaken with accessibility and barrier free Universal Accessibility Design Principals as a forefront requirement in all areas.

LOCAL SECONDARY PLANS

VILLAGE OF MAPLE HERITAGE CONSERVATION DISTRICT PLAN 2007 AND UPDATE

Part V of the Ontario Heritage Act R.S.O. 1990, O.18 provides for the designation of heritage conservation districts.

A Heritage Conservation District Study and Plan for the town of Maple was prepared in 2007 by Philip Carter and Paul Oberst. In February 2020, the City of Vaughan commenced a comprehensive update to the 2007 Maple Heritage Conservation District ('MHCD') Plan. The project is being undertaken in two phases. The first phase is an update to the MHCD Study. Phase two is comprised of the update to the 2007 MHCD Plan, including the design guidelines. The final MHCD Plan is expected to be completed in Q4 2021.



Map 3. The Boundary of the Village of Maple Heritage Conservation District. The District provides protection for the heritage resources in the old village, and controls the appearance of future development that will form their setting.

Figure 14: Conservation District Boundary from the 2007 Village of Maple Heritage Conservation District Plan

The MHCD notes that the character of Maple consists of elements that include natural features such as park space, a small tributary of the West Don River, the open spaces of the cemeteries and church yards, and the mature urban forest.

Figure 14 illustrates the boundary of the Village of Maple Heritage Conservation District. The study area is not included in the boundary of the MHCD at this time.

ACTIVE TOGETHER MASTER PLAN (2018)

The 2018 Active Together Master Plan Review & Update was approved by City of Vaughan Council on May 23, 2018. The Active Together Master Plan (2018) provides an overview of the needs and priorities for parks and recreation facilities and spaces in Vaughan.

Section 6.1 of this plan outlines policies for recreational trails, noting that trails are a valued part of Vaughan's open space system and a sustainable active transportation network is a key principle of the Vaughan Official Plan, which refers to the use of "Greenways" as a part of the proposed green infrastructure. Trails provide opportunities for physical activity, social interaction and

environmental sustainability. In Vaughan, trail planning is directed by the Transportation Master Plan (2012) and Pedestrian and Bicycle Master Plan (PBMP, 2020).

This section of the Active Together Master Plan puts forward recommendations regarding recreational trails in the City. These recommendations are shown in Figure 15.

Recreational Trails – Recommendations

26. Regularly update the **Pedestrian and Bicycle Master Plan** and accompanying Implementation Strategy.
27. Ensure that implementation of the City's **proposed recreational trail network** – including the Vaughan Super Trail – is reflected as a **high priority** through the proper allocation of capital and maintenance funding and resources.
28. Work with the development community, TRCA and other landowners to enhance **connectivity of the recreational trail network** by linking woodlots, open spaces, parks, schools, civic destinations, transit hubs, and residential and employment areas. The development of a comprehensive map identifying potential synergies may assist in this regard.
29. Evaluate trail and pathway requirements through the **planning and development process**. Encourage the conveyance of corridors of land (over and above parkland dedication, where applicable) using the various tools available to the City.
30. Seek opportunities to establish **trail loops for walking and running** (as well support amenities such as seating, shade, etc.) within new and redeveloped parks and open spaces.
31. Work with the TRCA and other City departments to explore options for addressing **trail maintenance** (e.g., management agreement) and opportunities for program and facility integration.
32. Continue efforts to improve the quality and quantity of **signage (wayfinding and environmental education), mapping and promotion** of recreational trails in Vaughan.

Figure 15: Active Together Master Plan (2018) Recreational Trails Recommendations

TRANSPORTATION MASTER PLAN (2012)

The 2012 Transportation Master Plan (TMP) identified key transportation issues and provided strategic direction on options to set the stage for development of a long-range transportation vision. At this time, the City is currently completing a new Vaughan Transportation Plan study that will build upon the 2012 TMP.

Section 3.3.3 sets out details regarding future active transportation and Transportation Demand Management (TDM), as the City made a commitment to expand walking and cycling provisions for residents and workers will provide active transportation benefits as well as support transit by enabling easier access to the transit network.

This is expanded upon in Section 5.3 the City's Transit First approach, noting that walking and cycling links to transit stops are critical to transit use and success and a sustainable transportation system provides for trips from door-to-door. Planning for walking and cycling includes implementing sidewalks and bike facilities and ensuring that access to transit is direct and well maintained.

Section 2.2.3 of the TMP advises how the City's Natural Heritage Network serves as a guide for the development of solutions to address Vaughan's potential long-term transportation needs, supporting a balanced transportation system that seeks to avoid negative impacts to its natural heritage system.

Sustainable transportation principles and goals are detailed in policies in section 4.2 of the TMP, noting that these principals and goes are to guide the direction of the TMP. A goal set out by the City is to avoid impacts to the natural environment to the extent possible when expanding its transportation infrastructure.

Both Major Mackenzie Drive West and Keele Street are identified as transit priority corridors in section 4.4 of the TMP. Additionally, as detailed in the TMP one GO Transit rail line serves the City: the Barrie line provides stops at Major Mackenzie Drive ("Maple"); Rutherford Road ("Rutherford"); and York University.

PEDESTRIAN AND CYCLING MASTER PLAN (2020)

The 2007 Pedestrian and Bicycle Master Plan (PBMP) was progressive for its time, setting the City on a path towards becoming a more walkable and bikeable community. The updated plan builds on the original plan, 2010 Vaughan Official Plan and 2012 Transportation Master Plan, as the Vaughan Official Plan 2010 (VOP 2010) calls for a transportation transformation in how people move around Vaughan. It is set out that this is to be done by establishing a comprehensive transportation network that allows a full range of mobility options, including walking, cycling and transit. The 2012 Transportation Master Plan further indicates that it will take more than just large investments in transit infrastructure to cope with future transportation demand. The PBMP update outlines a strategic plan to grow walking, rolling and biking in Vaughan through the development of supportive municipal processes, policies and programs as well as a plan for the implementation of more comfortable infrastructure and connected network. Figure 16 illustrates the City's Priority Cycling and Multi-Use Recreational Trail Networks.

Section 3 of the PBMP outlines the implementation framework, noting that any pedestrian, cycling and multi-use recreational trail infrastructure gaps along key corridors that has not been addressed through routine accommodation should be identified, prioritized and incorporated into the annual active transportation planning and implementation programs and confirmed through the budget approval process. The active transportation planning and implementation programs allow flexibility in responding to active transportation needs and gaps within the pedestrian, cycling and multi-use recreational trail networks as they are identified.

Section 4 provides guidance on the PBMP's pedestrian network, encouraging connectivity through the pedestrian, cycling and multi-use recreational trails network.

Additionally, section 5 of the PBMP details recommendations for the City to support the planning and design of future cycling facilities in the City of Vaughan.

Section 6 of the PBMP sets out details for the City's Multi-Use Recreational Trail (MURT) Network and Policies. The Vaughan Super Trail is outlined in section 6.2, which was first endorsed by Council through the Cycling and Pedestrian Advisory Task Force recommendations in April 19, 2017. The development of the planned multi-use recreational trail network had broad input from the public and during the engagement process there was strong support for the Vaughan Super Trail concept as a multi-use recreational trail network recreational

opportunity/destination was noted as being valuable. As a result of this feedback, the key guiding principles for the multi-use recreational trail network are as follows:

- Promote the Vaughan Super Trail as a signature project
- Enhance the existing multi-use recreational trail network and support the proposed pedestrian and cycling network
- Provide connections to well established trail networks in surrounding municipalities
- Maximize continuous pedestrian and cycling routes in Primary and Secondary loops
- Provide safe pedestrian and cycling routes and crossing locations

The Vaughan Super Trail will be integrated with existing land use patterns optimizing the use of utility and transportation corridors, existing trail facilities, and the cycling network. Proposed additions to the trail network will connect the missing links in order to achieve a continuous network. The Vaughan Super Trail is shown in Figure 17.

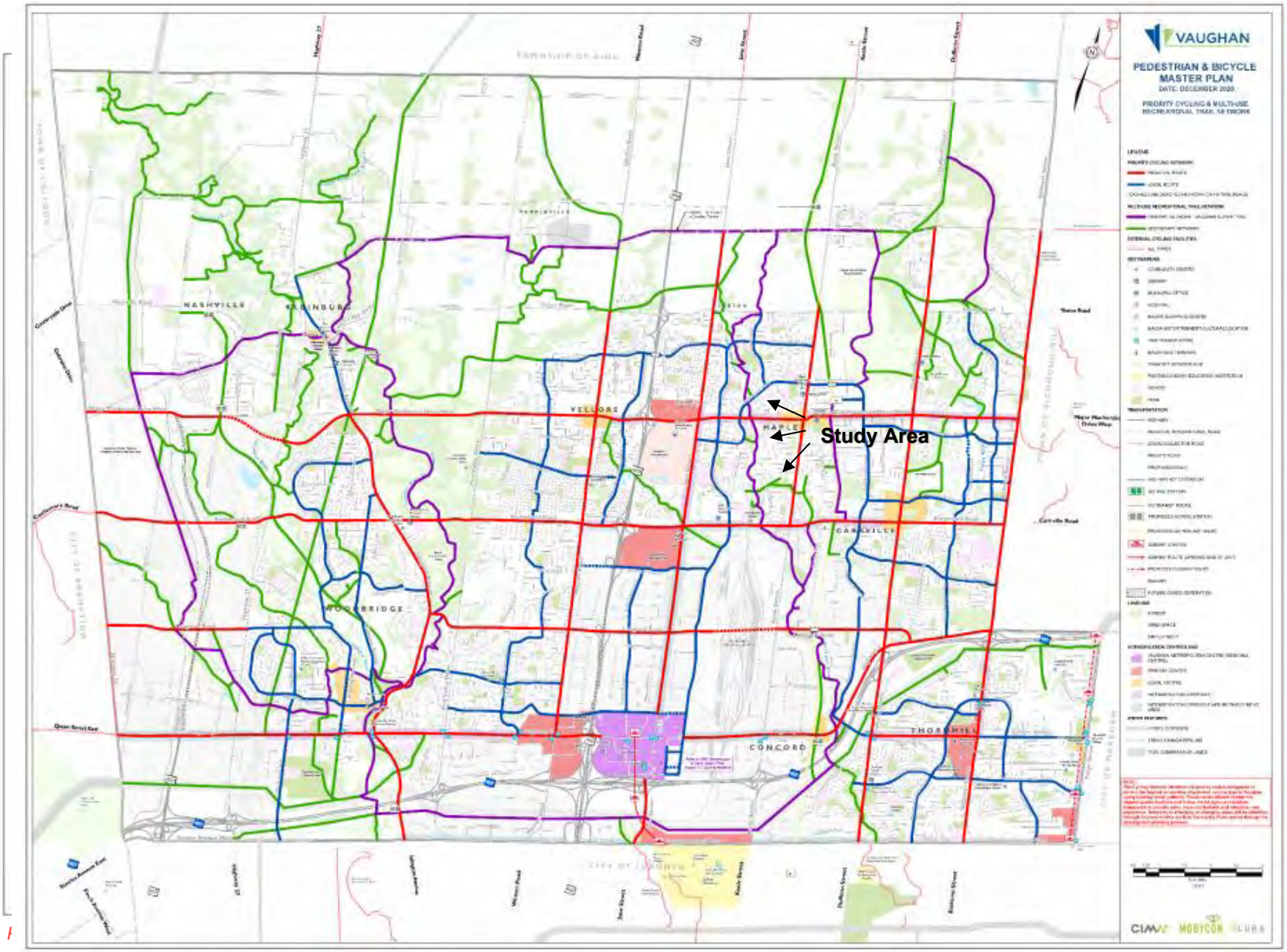


Figure 16: Priority Cycling and Multi-Use Recreational Trail Networks

GREEN DIRECTIONS VAUGHAN (2019)

This document was created to establish sustainability goals for the City of Vaughan which will assist in guiding the development towards achieving a healthy and natural environment, vibrant community, and strong economy. This document was developed in response to Vaughan Vision 2020 and provides a series of recommended actions applicable to all corners of the municipal governing body. The action items in Green Directions Vaughan include the following:

- What We Use: Goal 1 – To significantly reduce waste and the use of our natural resources.
- How and Where We Grow: Goal 2 – To ensure sustainable development and redevelopment.
- How We Get Around: Goal 3 – To ensure that the City is easy to get around with a low environmental impact.
- How We Live: Goal 4 – To create a vibrant community where citizens, businesses and visitors thrive.
- How We Lead: Goal 5 – To be leaders in advocacy and education on sustainability issues.
- How We Operate: Goal 6 – To ensure a supportive system for the implementation of Green Directions Vaughan.

Further, Green Directions acts as Vaughan Integrated Community Sustainability Plan, to provide sustainable community direction regarding social, environmental, cultural, and economic objectives.

Figure 18: Green Directions Vaughan (2019) goals, objectives, and actions

DEVELOPMENT APPLICATIONS IN THE LOCAL AREA

10 BEVAN ROAD

The City received a Zoning By-law Amendment to amend Zoning By-law 1-88, with the intent to rezone a portion of the subject lands shown located at 10 Bevan Road from a Resident Zone (R1) Attachments #1 and #2 from R1 Residential, subject to site-specific Exception 9(96), and OS1 Open Space Conservation Zone to Resident Zone (R2) and Open Space Conservation Zone (OS1).

A Draft Plan of Subdivision was submitted to facilitate a development proposal at this municipal address that would consist of the following:

- Single Detached Residential
- Stormwater Management Easement
- Environmental Protection
- Future Residential
- Future Public Road (Street "A")

Figure 17: 10 Bevan Road

7 BEVAN ROAD

The City received a Zoning By-law Amendment to amend Zoning By-law 1-88, to permit site-specific zoning exceptions to the existing Residential Zone (R1) on the property to implement a related Draft Plan of Subdivision and to maintain the existing single-detached dwelling located at this municipal address.

The application sets out to rezone a portion of the subject lands (7 Bevan Road) from Residential Zone (R1) to Open Space Conservation Zone (Valleylands)(OS1).

Figure 18: 7 Bevan Road

NEXT STEPS

As an outcome of the policy and land use review, we have identified a series of next steps for the Bartley Smith Greenway Trail project:

- Further review of alternative trail alignment plans for the subject area in order to determine the preferred alignment.
- Perform the opportunities and constraints analysis to inform design decisions and understand the surrounding context.
- Undertake an impact assessment to identify any potential risks and help establish mitigation approaches.
- Develop a master plan and mapping of the study area to visualize the design concepts being proposed.
- Conduct a detailed review of the planning framework within the study area and investigate any potential land use processes or policy tools required to implement the preferred trail alignment.

APPENDIX C

Natural Heritage Impact Assessment

CITY OF VAUGHAN

BARTLEY SMITH GREENWAY TRAIL ENVIRONMENTAL ASSESSMENT AND PRELIMINARY DESIGN

NATURAL HERITAGE REPORT

JULY 2022

DRAFT

BARTLEY SMITH GREENWAY TRAIL ENVIRONMENTAL ASSESSMENT AND PRELIMINARY DESIGN

NATURAL HERITAGE REPORT

CITY OF VAUGHAN

DRAFT

PROJECT NO.: 211-07301-00
DATE: JULY 27, 2022

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[1] Approval of this document is an administrative function indicating readiness for release and does not impart legal liability on to the Approver for any technical content contained herein. Technical accuracy and fit-for-purpose of this content is obtained through the review process. The Approver shall ensure the applicable review process has occurred prior to signing the document.

TABLE OF CONTENTS

TABLES

APPENDICES

1 INTRODUCTION

1.1 SITE & STUDY OVERVIEW

WSP Canada Inc. (WSP) was retained by the City of Vaughan (the client) to complete a Trail Gap Feasibility Study to connect critical gaps along the Bartley Smith Greenway ("BSG") Trail in Vaughan, Ontario. The BSG Trail is a 3-km section of the city-wide Vaughan Super Trail (100-km) between McNaughton Road and Keele Street, along the Don Valley Corridor. The location of the study area is depicted on the Natural Heritage Features and Designations Overview as well as on **Maps 1-8**, **Appendix A**.

This Natural Heritage Existing Conditions and Impact Assessment Report has been completed in support of the Environment Assessment and 30% Preliminary Design of the BSG Trail extension areas. This report documents the existing natural heritage features throughout the study area, including a review of available background information, a botanical inventory, confirmation / updates to existing data regarding vegetation communities, wildlife observations such as presence of amphibians, reptiles, insects, and mammals, a screening for records of Species at Risk (SAR) and a field assessment of potential for their habitat, and identification/ confirmation of natural heritage features outlined in the City of Vaughan Natural Heritage Network mapping and York Region Greenlands features. A preliminary assessment of impacts was completed for the 30% design of the trail alignment, as shown on **Maps 1-8, Appendix A**, along with constraints and opportunities for consideration at the detailed design stage. Specific regulations and policy addressed include the *Fisheries Act* (2019), the *Endangered Species Act* (ESA; 2007), the Toronto and Region Conservation Authority (TRCA) Ontario Regulation 166/06, the York Region Official Plan (2010), and the City of Vaughan Official Plan (2010).

2 APPROACH

2.1 BACKGROUND INFORMATION REVIEW

Natural environment features and functions within the vicinity of the study area have been characterized and evaluated using a combination of background information and field surveys, as discussed below. The review of secondary source background information included the following sources:

- eBird website (Cornell Lab of Ornithology 2021)
- Toronto and Region Conservation Authority ELC Mapping (March 2021)
- iNaturalist website – Observation Maps (California Academy of Science 2021)
- Ontario Breeding Bird Atlas
- Ontario Reptile and Amphibian Atlas
- Ontario Butterfly Atlas
- Atlas of the Mammals of Ontario
- Ministry of Natural Resources and Forestry (MNRF) Land Information Ontario (LIO) database (Government of Ontario 2021)
- MNRF Natural Heritage Information Centre (NHIC) mapping website (Government of Ontario 2021)
- Fisheries and Oceans Canada (DFO) – Aquatic SAR mapping (DFO 2021)
- City of Vaughan Official Plan (2010)
- York Region Official Plan (2010)
- Aerial Photography

2.1.1 AGENCY CONSULTATION

The Ontario Ministry of Environment, Conservation, and Parks (MECP) was contacted on October 28, 2021to request available SAR records within or adjacent to project limits. Jeff Anderson, Management Biologist, replied on the same day and indicated that MECP staff has nothing further to add to the lists provided but that surveys to determine presence/ absence should be completed during the appropriate seasons. Relevant correspondence is provided in **Appendix J**.

The Aurora District Ministry Natural Resources and Forestry (MNRF) was contacted on October 28, 2021to request information concerning significant species and designated natural features within or adjacent to the project limits. A response was received on November 8, 2021, which directed the proponent to complete a preliminary screening through utilization of the LIO database.

Toronto and Region Conservation Authority (TRCA) was contacted and provided natural heritage information pertinent to the project limits such as regulated areas or features of significance, including wetlands, woodlands, ELC units for the Don River Valley area etc.).

2.2 FIELD SURVEYS

2.2.1 FISH AND FISH HABITAT

A review of background information from publicly available resources and information provided by reviewing agencies was completed to inform the work program. Data analysis and evaluation included preparation of species inventories, desktop review of potential for SAR and field assessment for significant wildlife habitat (SWH) through evaluations of significance and sensitivity using relevant guidelines and policy, as described in respective areas of this report

All potential watercourse crossings and drainage features in the study area were assessed for direct and indirect fish habitat. Where direct fish habitat was identified, specific habitat information was collected to conduct a fisheries impact assessment with the known proposed works. Detailed habitat assessments were completed at potential bridge crossing locations (**Appendix H**), and habitat was assessed 50 m upstream and downstream of each crossing option. The remaining areas were assessed at a general level. The collection of fish habitat information associated with the field surveys encompassed the following parameters:

- Stream channel dimensions, general gradient and profile,
- Bank/shoreline character (e.g., height and erosion),
- Flow characteristics, including evidence of groundwater discharge,
- Morphology and substrates,
- Instream/in-water cover opportunities (e.g., woody debris, undercut banks, boulders, vegetation),
- Riparian vegetation,
- Presence of physical barriers to fish movement,
- Presence of potential critical or specialized habitat areas including potential spawning areas, good nursery cover, holding habitat (deeper refuge pools),
- Disturbances and past habitat alterations (e.g., channelization, potential pollutant point sources), and
- Potential habitat enhancement opportunities.
- Fish community sampling was completed with a backpack electrofisher and spot shocking.

All habitat data sheets, mapping and other field notes have been included in **Appendix G**.

Where possible, WSP collected general water quality parameters to support the fish community sampling results. Dissolved Oxygen, water pH, conductivity and water temperature were recorded at the time of the sampling.

2.2.2 VEGETATION AND BOTANICAL INVENTORY

Vegetation surveys were conducted by WSP ecologists on August 30 and September 10, 2021, to document the characteristics of the natural and culturally influenced vegetation communities, with a focus on the natural features along potential new trail alignment. Vegetation field work and associated data assessment involved:

- TRCA ELC Units (TRCA, May 21, 2021) identified in the study area were confirmed and boundaries/ community information updated according to the ELC System for Southern Ontario (Lee et. al., 1998). All natural and cultural vegetation communities in the study area were examined.
- Vegetation community significance was evaluated using Natural Heritage Resources of Ontario: Vegetation Communities of Southern Ontario (NHIC website, 2021).
- Completion of botanical inventory and analysis, including preparation of a vascular plant species list (**Appendix B**).
- Evaluating the sensitivity and significance of vegetation species and vegetation communities using the MNRF's NHIC website for provincial rarity ranks (i.e., S-Ranks); the MNRF's SAR in Ontario (SARO) list (updated periodically) for provincial status designations; and the Committee on the Status of Endangered Wildlife in

Canada (COSEWIC) and the federal Species at Risk Act (SARA) Public Registry websites for national status designations (updated periodically), the *Distribution and Status of the Vascular Plants of the Greater Toronto Area* (Varga, et. al. 2000), and the *Annual Local Occurrence Score and Local Rank Update* (TRCA, 2018).

- Evaluating habitat potential for vegetation Species of Conservation Concern (SCC), and in particular, SAR known or thought to exist in the general vicinity of the project limits.
- Compiling a photographic record to document terrestrial habitat condition during the field visit (**Appendix E**).

2.2.3 WILDLIFE AND WILDLIFE HABTIAT

An assessment of available wildlife habitat in the study area was completed, with all incidental wildlife observations recorded, and an assessment of wildlife habitat undertaken during all field surveys, as follows:

- Recording all direct wildlife observations and wildlife signs (including browse, track / trails, animal scat, bird nesting activity, tree cavities, burrows and vocalizations) and identifying potential wildlife usage and habitat functions associated with vegetation communities,
- Assessing potential for SWH features within the subject property, and
- Assessing potential for SAR Habitat, including identification of potential habitat for SAR bats.

Breeding Bird Surveys

Breeding bird surveys were conducted according to standard protocols established in the Ontario Breeding Bird Atlas (Cadman et al. 2007). Two survey visits were completed during appropriate timing (early morning surveys; June 22 and July 5, 2021) and suitable weather conditions (low wind and no precipitation). Breeding bird surveys were conducted by qualified, experienced staff via 10 point-count locations spaced approximately 300 m apart along the study area, through and adjacent to natural areas. Species recorded while travelling between point count locations were included at the nearest point count location. Species, abundance, and level of breeding evidence were recorded for all avifauna observations.

Anuran Calling Surveys

Anuran calling activity was assessed using the Marsh Monitoring Program (MMP) protocol (Bird Studies Canada 2008). Due to the timing of project award only two of the typical three rounds of surveys were completed, the first on June 2, 2021 and the second on June 24, 2021. Following guidelines of the MMP, surveys were conducted during a suitable time of the year and under appropriate weather conditions: low wind and nighttime air temperatures were greater than 10°C for the June 2 survey, and 17°C for the June 24 survey (second and third surveys per the MMP protocol). Calling activity from the station was assessed using 3 minutes of passive listening. Surveys started one half hour after sunset and were completed before midnight. Based on these conditions, the survey effort was considered adequate to inform the assessment of impacts.

- Surveys were completed at 10 stations within the study area; station locations were selected to cover representative areas with potential amphibian breeding habitat throughout the study area.
- Using the MMP, calling activity was rated using three levels: Level 1 (individual calls can be counted with no overlap), Level 2 (some calls can be counted or estimated, some overlap) or Level 3 (calls continuous and overlapping, individuals not distinguishable).

Species at Risk Habitat Assessment

An assessment of available habitat for SAR known to occur in the study area was completed, including a visual assessment of potential roosting habitat for SAR bats.

- Targeted surveys for breeding birds, calling anurans, wildlife habitat, and SAR habitat.
- General wildlife habitat surveys including direct wildlife observations and wildlife signs (including animal browse, track/trails, scat, nests, tree cavities, burrows, excavated holes and vocalizations) with a focus on potential SAR habitat (in conjunction with all other surveys).
- Review of background information from publicly available resources and information provided by reviewing agencies.

3 EXISTING CONDITIONS

3.1 PHYSIOGRAPHY, DRAINAGE, HYDROLOGY & SOILS

The study area falls within the bevelled till plains of the Peel Plain physiographic region and is characterized by undulating clay soils of a stoneless heavy texture; the underlying glacial material is till containing shale and limestone (Chapman and Putnam, 1984).

The general topography of the study area is of a gradual slope south toward Lake Ontario. The study area is within the Upper West Don sub-watershed and follows the valley and floodplain of the Don River West Branch tributary. Areas A and B are mostly characterized by gentle tableland slopes that drain into the tributary. Several marshes associated with the tributary exist where excess flooding occurs. The southern portion of the trail located adjacent to the Vaughan Sports Village and Rutherford Road is more deeply incised and contains treed tablelands, slopes, and bottomlands.

Due to the urban location, there is some human influence altering the drainage path. The tributary is directed through culverts in several locations but is almost entirely daylit. Three ponds exist in the study area. The two north of Major Mackenzie Drive have established marshes associated with them. The pond within the private landowner lands in the central portion near Maple Airport Park is a constructed pond with minimal associated vegetation.

3.2 NATURAL HERITAGE FEATURES & DESIGNATIONS

The following designated natural areas were identified through review of applicable Provincial Policy, Regional and Municipal Official Plans, as well as searches of the Land Information Ontario and Natural Heritage Information Centre Databases. Relevant policy areas are shown on the **Natural Heritage Features and Designations Overview, Appendix A**.

3.2.1.1 *URABN RIVER VALLEY OF THE GREENBELT PLAN*

The Greenbelt Plan (2017) was established under the Greenbelt Act (2005) and builds on the policies of the Provincial Policy Statement (2020). The Greenbelt Plan area consists of Protected Countryside (including the Natural Heritage System and Towns / Villages), Urban River Valleys, Niagara Escarpment Plan Area and the Oak Ridges Moraine Plan Area. The Natural Heritage System of the Greenbelt Plan includes core areas and linkage areas of the Protected Countryside with the highest concentration of the most sensitive and/or significant natural features and functions.

The study area is Urban River Valley under the Greenbelt Plan. Urban River Valleys are designated where the main corridors of river valleys connect areas of the Greenbelt to the Great Lakes and inland lakes. The lands in this designation comprise river valleys and associated lands and are generally characterized as lands containing natural and hydrologic features, and lands designated in official plans for uses such as parks, open space, recreation, conservation and environmental protection (Greenbelt, 2017). Development within the Urban River Valley designation is subject to applicable Official Plan policies.

3.2.1.2 *YORK REGIONAL GREENLANDS*

The York Region Official Plan (2010) identifies a Regional Greenlands System consisting of key natural heritage features and hydrological features to be protected and managed, environmentally significant areas, species at risk and their habitats.

The study area is designated Regional Greenlands System on Map 2 of the York Region Official Plan.

3.2.1.3 *CORE FEATURES OF THE VAUGHAN NATURAL HERITAGE NETWORK*

The in-force Vaughan Official Plan was adopted by City Council on September 7, 2010 and is currently undergoing a statutory review to conform with new Provincial policies and plans and 2051 growth targets for people and jobs, to

conform with the York Regional Official Plan. The in-force Vaughan Official Plan identifies a Natural Heritage Network that protects Core Features, including valley and stream corridors; woodlands; wetlands; fish and wildlife habitat; significant habitat of endangered and threatened species; Environmentally Significant Areas, and Areas of Natural and Scientific Interest.

Land Use Schedule (13) identifies the study area as Natural Area, with a small area south of Major Mackenzie Drive designated Parks. Schedule 2, which identifies components of the Natural Heritage Network, identifies the study area as primarily Core Features, with minor unapproved areas.

3.2.1.4 *TORONTO REGION CONSERVATION AUTHORITY REGULATED LANDS*

The Don River and associated floodplains, which make up the bulk of the study area, are regulated under Ontario Regulation 166/06 Toronto and Region Conservation Authority: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses.

3.2.1.5 *DON RIVER WEST BRANCH HEADWATER PROVINCIALLY SIGNIFICANT WETLANDS*

There are two areas of the Don River West Branch Headwater Provincially Significant Wetland (PSW) Complex located in the northern end of the study area, on either side of Major Mackenzie Road. There are several unevaluated wetlands along the Don River and within the study area; these additional wetlands may complex with the Don River West Branch Headwater PSW, if evaluated. Under Section 2.1.4 of the Provincial Policy Statement (2020), development and site alteration are not permitted in Provincially Significant Wetlands in Eco Region 7E.

3.3 FISH AND FISH HABITAT

3.3.1 RESULTS

Fish and Fish habitat assessment results are discussed with respect to the proposed trail alignments options as shown in **Appendix H**, dated October 2021.The Impact Assessment (**Section 5**) considers the Preferred Route shown in **Maps 1-8, Appendix A**, dated July 2022. It should be noted that the Preferred Route does not cross the Don River West Branch, however the need/feasibility for a bridge crossing will be reassessed in the future after the main trail is operational.

3.3.1.1 FISH HABITAT ASSESSMENT

The Don River West Branch is a permanent, medium-sized watercourse that originates as agricultural drainage northeast of Keele Street and Kirby Road. The watercourse meanders north to south through agricultural and residential areas for approximately 6.5 km before entering the northern limit of the study area. At the north limit, the watercourse crosses McNaughton Road via a concrete twin box culvert and flows around a stormwater management pond (SWMP). The watercourse continues for approximately 3.3 km through the study area, meandering through residential areas and woodland. A weir and a culvert located between Bridge Crossing Option 3 and 4 are as barriers to fish migration. At Rutherford Road, the watercourse crosses the road via a large CSP culvert. Downstream of the study area, the watercourse flows for approximately 27 km through primarily urban areas before outletting into the Don River.

Trail Alignment Option A

The "Trail Alignment Option A" is proposed to cross the southeast section of the SWMP south of McNaughton Road. The SWMP is approximately 60 m in length by 60 m in width. The proposed bridge crossing has a width of 17 m, and a wetted depth greater than 1 m. The substrate consists of silt (40%), sand (40%), muck (10%) and clay (10%). The riparian vegetation around the SWMP consists of cattails, grasses and shrubs. The instream cover in the SWMP consists of moderate instream vegetation and sparse overhanging vegetation.

Bridge Crossing Option 1

The aquatic habitat consists of a mix of flats (60%) and pools (40%). Flat sections have a mean wetted depth of 0.5 m, a mean wetted width of 3.2 m, a mean bankfull depth of 1.0 m and a mean bankfull width of 3.4 m. Substrate consists of sand (90%) and gravel (10%). Pool sections have a mean wetted depth of 0.8 m, a mean wetted width of 3.1 m, a mean bankfull depth of 1.3 m and a mean bankfull width of 3.5 m. Substrate consists of sand (80%), silt (10%) and gravel (10%). The banks are natural and have a steep/vertical slope with moderate erosion. The height of the left upstream bank is 1.6 m, and the right upstream bank is 1.8 m. The instream cover consists of sparse undercut banks, sparse overhanging vegetation and moderate woody / organic debris. Riparian vegetation consists of woodland (mixed deciduous) and shrubs. The forest canopy has 70% cover. Approximately 20 m downstream of the proposed crossing location, there is a debris jam creating a 0.5 m drop acting as a barrier to fish.

Bridge Crossing Option 2

The aquatic habitat consists of a mix of runs (80%) and pools (20%). Run sections have a mean wetted depth of 0.3 m, a mean wetted width of 3.3 m, a mean bankfull depth of 1.0 m and a mean bankfull width of 5.6 m. Substrate consists of sand (50%) and gravel (50%). Pool sections have a mean wetted depth of 0.4 m, a mean wetted width of 3.3 m, a mean bankfull depth of 0.8 m and a mean bankfull width of 3.6 m. Substrate consists of sand (40%), gravel (40%), cobble (10%) and boulder (10%). The banks are natural and have a steep/vertical slope with high levels of erosion. The height of the left upstream bank and right upstream bank is 1.7 m. The instream cover consists of sparse undercut banks, sparse overhanging vegetation and moderate woody / organic debris. Riparian vegetation consists of grasses and shrubs. The forest canopy has 20% cover.

Bridge Crossing Option 3

The aquatic habitat consists of flats (100%). Flat sections have a mean wetted depth of 1.2 m, a mean wetted width of 6.0 m, a mean bankfull depth of 1.7 m and a mean bankfull width of 9.0 m. Substrate consists of sand (50%) and silt (50%). The banks are natural and have a steep/vertical slope with moderate erosion. The height of the left upstream bank and right upstream bank is 2.0 m. The instream cover consists of moderate undercut banks, sparse overhanging vegetation, sparse instream vegetation and moderate woody / organic debris. Riparian vegetation consists of grasses and shrubs. The forest canopy has 70% cover.

Bridge Crossing Option 4

The aquatic habitat consists of a mix of flats (90%) and pools (10%). Flat sections have a mean wetted depth of 0.3 m, a mean wetted width of 3.3 m, a mean bankfull depth of 0.7 m and a mean bankfull width of 5.2 m. Substrate consists of sand (30%), silt (30%), gravel (20%) and cobble (20%). Pool sections have a mean wetted depth of 0.7 m, a mean wetted width of 4.3 m, a mean bankfull depth of 1.2 m and a mean bankfull width of 5.9 m. Substrate consists of sand (50%), cobble (40%) and silt (10%). The banks are natural and have a steep/vertical slope with moderate erosion. The height of the left upstream bank is 1.6 m, and the height of the right upstream bank is 1.8 m. The instream cover consists of sparse undercut banks, sparse overhanging vegetation, and moderate woody / organic debris. Riparian vegetation consists of woodland (mixed deciduous trees) and shrubs. The forest canopy has 90% cover.

3.3.1.2 *FISH COMMUNITY*

Fish community data for the Don River West Branch was obtained from Land Information Ontario, as well as fish community collections completed by WSP Ecologists using a backpack electrofisher. Two sampling locations within the study area were selected to complete the fish community collections: 450 m downstream of the north study limit and 1.2 km upstream of the south study limit. The fish community documented consisted primarily of warmwater/coolwater forage fish and panfish species that are generalists and tolerant, with the potential for sensitive, coldwater fish (i.e., Northern Brook Lamprey, Brook Trout) (**Table 1**).

Table 1. Fish Community of Don River West Branch

COMMON NAME	*SCIENTIFIC NAME*	*ESA / SARA STATUS*
American Brook Lamprey	*Lethenteron appendix*	*None*
Blacknose Dace*	***Rhinichthys atratulus***	***None***
Blacknose Shiner	*Notropis heterolepis*	*None*
Bluntnose Minnow*	***Pimephales notatus***	***None***
Brassy Minnow	*Hybognathus hankinsoni*	*None*
Brook Stickleback	*Culaea inconstans*	*None*
Brook Trout	*Salvelinus fontinalis*	*None*
Brown Bullhead	*Ameiurus nebulosus*	*None*
Brown Trout	*Salmo trutta*	*None*
Common Carp	*Cyprinus carpio*	*None*
Common Shiner*	***Luxilus cornutus***	***None***
Creek Chub*	***Semotilus atromaculatus***	***None***
Fantail Darter	*Etheostoma flabellare*	*None*
Fathead Minnow*	***Pimephales promelas***	***None***
Iowa Darter	*Etheostoma exile*	*None*
Johnny Darter*	***Etheostoma nigrum***	***None***

COMMON NAME	SCIENTIFIC NAME	ESA / SARA STATUS
Largemouth Bass	*Micropterus salmoides*	*None*
Longnose Dace	*Rhinichthys cataractae*	*None*
Mottled Sculpin	*Cottus bairdii*	*None*
Northern Brook Lamprey	*Ichthyomyzon fossor*	*Special Concern*
Northern Hog Sucker	*Hypentelium nigricans*	*None*
Northern Redbelly Dace	*Chrosomus eos*	*None*
Pumpkinseed*	***Lepomis gibbosus***	***None***
Rainbow Darter	*Etheostoma caeruleum*	*None*
Rainbow Trout	*Oncorhynchus mykiss*	*None*
Redside Dace	*Clinostomus elongatus*	*Endangered*
River Chub	*Nocomis micropogon*	*None*
Rock Bass	*Ambloplites rupestris*	*None*
Sea Lamprey	*Petromyzon marinus*	*None*
Spottail Shiner	*Notropis hudsonius*	*None*
Stonecat	*Noturus flavus*	*None*
White Sucker*	***Catostomus commersonii***	***None***

*Collected by WSP on October 5, 2021

3.4 VEGETATION & FLORA

3.4.1 FLORISTICS

Nearly all areas north of Rutherford Road in the study area are typified by cultural influence (**Maps 1-8, Appendix A**). Most communities are undergoing succession and have a high degree of disturbance from introduced species. Garbage and debris (from dumping) were occasionally present especially adjacent to the plaza on 256 Major Mackenzie Drive. A large residential property located in the central area has planted trees and lawn as well as a conifer plantation. The southern portion, South of Rutherford Road, is a patch of somewhat intact remnant forest observable in the 1954 aerial imagery.

A total of 154 vascular plants were identified during the field surveys, of which 13 were identified to genus only. 84 (54%) are native and 56 (36%) are non-native. All the observed species are listed as G5 - G4 (secure to apparently secure nationally), and S5 – S4 (secure to apparently secure provincially) excepting one species. Several Kentucky Coffee-trees (*Gymnocladus dioicus*) were observed; the trees were determined as likely to have been planted, as they are outside the normal range for natural occurrence of the species, but their origin is unconfirmed. If spontaneous, Kentucky Coffee-tree is S2 and listed as Threatened under the Endangered Species Act. The following species are naturally occurring and regionally rare in York Region (Varga et al. 2000): Silky Dogwood (*Cornus obliqua*), Grey Dogwood (*Cornus racemosa*), Black Walnut (*Juglans nigra*), Eastern Red Cedar (*Juniperus virginiana*), False Waterpepper (*Persicaria hydropiperoides*), and White Oak (*Quercus alba*). The following species are locally rare in the TRCA jurisdiction: Fragrant Water-lily (*Nymphaea odorata*) and White Oak. White Spruce (*Picea glauca*) and Red Pine (*Pinus resinosa*) were also observed, and when occurring naturally on the landscape, these species considered locally rare. However, all Red Pine trees observed in the study area appear to be part of plantations and thus not considered rare. White Spruce occur sporadically in cultural units and it is unclear if they have been planted and the area around them naturalized, or if they are truly spontaneous occurrences. Specific transplanting or other

active mitigation measures are not considered critical for any of the rare species noted above. All vascular plants observed during field investigations are listed in the Vascular Plant List (**Appendix B**).

3.4.2 VEGETATION COMMUNITIES

The study area follows the Don River and is surrounded by residential neighbourhoods. Utilizing TRCA ELC mapping (March 2021) for the area, fourteen distinct vegetation community types were updated and refined; updated vegetation units are show on **Maps 1-8, Appendix A**. All vegetation communities observed are common in Ontario (NHIC, 2021); ELC field notes are provided in **Appendix I**.

3.4.2.1 CULTURAL UNITS

Dry – Moist Old Field Cultural Meadow Type CUM1-1

Old Field Cultural Meadows are present throughout the study area. There is some variation in species composition across the entire study area, but typically this vegetation community consisted of Tall Goldenrod (*Solidago altissima*), non-native cold season grasses including Kentucky Bluegrass (*Poa pratensis*) and Smooth Brome (*Bromus inermis*), asters including New-England Aster (*Symphyotrichum novae-angliae*) and Panicled Aster (*Symphyotrichum lanceolatum*), and Field Thistle (*Cirsium arvense*). More sporadically frequent species included Clover (*Trifolium* spp.), Tufted Cow Vetch (*Vicia cracca*), and Wild Carrot (*Daucus carota*). Trees and shrubs were found sparsely throughout the meadows, often in clumps and include Willows (Salix spp.) Common Apple (*Malus pumila*), Common Pear (*Pyrus communis*), Common Buckthorn (*Rhamnus cathartica*), and Honeysuckle (*Lonicera* sp.).

Mineral Cultural Woodland Type CUW1 (Unit 4)

Unit 4 is a Mineral Cultural Woodland located in Area A South of Major Mackenzie Drive. Canopy cover within this area ranges between 35-65% cover and is between 10-25m in height. Dominant species in the canopy include Manitoba Maple (*Acer negundo*), Trembling Aspen (*Populus tremuloides*), and White Spruce. Dominant species in the subcanopy and understorey include Staghorn Sumac (*Rhus Typhina*), Manitoba Maple, Trembling Aspen, Nannyberry (*Viburnum lentago*), and Honeysuckle species. Dominant groundcover species present are Wood Avens (*Geum urbanum*), Tall Goldenrod, Dame's Rocket (*Hesperis matronalis*), and Thicket Creeper (*Parthenocissus vitacea*).

Exotic Successional Woodland Type CUW1-b (Units 6, 10, 21)

Unit 6 is an Exotic Successional Woodland located in Area A South of Major Mackenzie Drive. The canopy is dominated by Black Locust (*Robinia pseudoacacia*), Manitoba Maple, Trembling Aspen, and Little-leaf Linden (*Tilia cordata*). The subcanopy and understorey primarily include Manitoba Maple, Black Locust, White Ash (*Fraxinus americana*), and Common Buckthorn (*Rhamnus cathartica*). Groundcover includes Kentucky Bluegrass, Garlic Mustard (*Alliaria petiolata*), Wood Avens, and Tall Goldenrod.

Unit 10 is located in Area B and extends to Area C South of Major Mackenzie Drive. This community's canopy is dominated by White Willow (*Salix alba*), with the subcanopy and understorey dominated by Riverbank Grape (*Vitis riparia*), Manitoba Maple, Oriental Bittersweet (*Celastrus orbiculatus*), and Dogwood species (*Cornus* spp.). The ground layer includes Dog-Strangling Vine (*Vincetoxicum rossicum*), Tall Goldenrod, Smooth Brome, and Wood Avens. There is evidence of recreational use within this community, as evidenced by the dumping of garbage in some areas. Emerald Ash Borer presence was also noted.

Unit 21 is the same community type as Units 6 and 10 and located in the central portion South of Major Mackenzie Drive. The canopy within this community is over 25m tall in height and is dominated by White Willow. The subcanopy primarily contains White Willow and Manitoba Maple, while the understorey contains Chokecherry (*Prunus virginiana*), Common Buckthorn, Manitoba Maple, and Riverbank Grape. The ground layer includes Smooth Brome, Wood Avens, Thicket Creeper, and Tall Goldenrod.

Exotic Successional Woodland Type CUW1-b and Exotic Successional Savanna Type CUS1-b (Units 7a, 7b)

Unit 7a and 7b are Exotic Successional Woodland Exotic Successional Savanna They are located between the Elementary school and Maple Airport Park. Both communities represent similar successional areas, but canopy cover is sparser in the savanna and has denser shrub cover. Canopy species common in these areas include Manitoba Maple, Trembling Aspen, Black Walnut (*Juglans nigra*), and American Elm (*Ulmus americana*). Subcanopy species include Riverbank Grape, Honeysuckle species, and Manitoba Maple, and understorey species include Dogwood species, Honeysuckle species, White Ash, and Common Buckthorn. Dominant groundcover species were Violet species, Wood Avens, Thicket Creeper, and Dame's Rocket.

Mineral Cultural Savanna Type CUS1 (Unit 13) with Sumac Deciduous Shrub Thicket Type (CUT1-1) inclusion

Unit 13 is a Mineral Cultural Savanna community to the North of Major Mackenzie Drive. The canopy in this community is dominated by White Ash, Manitoba Maple, White Spruce, and Freeman's Maple (*Acer x freemanii*). The subcanopy and understorey consist of Staghorn Sumac, Common Buckthorn, and Willow species (*Salix* spp.), as well as Common Privet (*Ligustrum vulgare*) to a lesser degree. The ground layer primarily includes Smooth Brome, Tall Goldenrod, and Kentucky Bluegrass. This community includes a Sumac Deciduous Shrub Thicket (CUT1-1) inclusion dominated by a pure stand of Staghorn Sumac.

Coniferous Plantation Type CUP3 (Unit 14)

Unit 14 is a Cultural Conifer Plantation located in the central portion, South of Major Mackenzie Drive. This community is dominated by planted White Pine (*Pinus strobus*), Red Pine (*Pinus resinosa*), and White Spruce. The shrub and ground layer vegetation includes Common Buckthorn, Honeysuckle species, Red Elderberry (*Sambucus racemosa*), Red Raspberry (*Rubus idaeus* subsp. *strigosus*), Orange Daylily (*Hemerocallis fulva*), and Tall Goldenrod. Several cleared informal trails are present running north/south in this community.

3.4.2.2 *WETLANDS*

Mixed Mineral Meadow Marsh Type MAMM3-1 (Units 2, 20)

Unit 2 is a Mixed Mineral Meadow Marsh Type located in the northern portion, South of Major Mackenzie Drive. Dominant species include Reed Canary grass (*Phalaris arundinacea*) and Broadleaf Cattail (*Typha latifolia*) in the understorey, and Panicled Aster, Field Thistle, Coltsfoot (*Tussilago farfara*), and Beggarticks species (*Bidens* sp.) on the ground layer. There was no canopy or subcanopy present in this community. A woodchip mesh berm is present adjacent to the watercourse from recent culvert works. A stand of invasive European Reed (*Phragmites australis*) dominated a portion of the marsh at the south end. A Monarch butterfly (*Danaus plexippus*) was also observed in the area.

Unit 20 is a large marsh of the same type as Unit 2 located in the central portion, South of Major Mackenzie Drive. Its groundcover is dominated by Reed Canary Grass, Tall Goldenrod, various Sedge species (*Carex* spp.) including Fox Sedge (*Carex vulpinoidea*), and Aster species New England Aster and Panicled Aster. Occasional woody plants including Red-Osier Dogwood (*Cornus sericea*) and Riverbank Grape are present. This unit was previously identified by TRCA as being two separate shallow marshes. As observable in the aerial imagery and in the field, these areas are connected by a narrow strip of similar vegetation and therefore the wetland boundary has been extended. Shallow marsh flooding conditions were not apparent during the September visit and therefore the community description diverges from TRCA's initial shallow marsh description. The native wetland species present are typical of meadow marsh, but there is abundant introduced species from the adjacent cultural meadows. Overall, the average coefficient of wetness of native species is -2.42.

Meadow Marsh Type MAM (Unit 17)

Unit 17 is a narrow strip of Meadow Marsh South of Major Mackenzie Drive and north of Bevan Road on the banks of a man-made pond. Species distribution is patchy and typical marsh species are present with garden escapes and generally weedy species. The dominant taller species include Broadleaf Cattail, Tall Goldenrod, Panicled Aster, and Staghorn Sumac. Groundcover included Coltsfoot, Thicket Creeper, Orange Daylily, and Field Thistle.

Cattail Mineral Shallow Marsh Type MAS2-1 (Unit 9)

Unit 9 is a Cattail Mineral Shallow Marsh community surrounding two ponds located North of Major Mackenzie Drive. There are sparse shrub sized Meadow Willow (*Salix petiolaris*) and several Crack Willow (*Salix euxina*)

around the south pond. The marsh is dominated by Narrow-Leaved Cattail (*Typha angustifolia*) with occasional Reed Canary Grass, and rare Field Thistle, Tall Goldenrod, and Spotted Jewelweed (*Impatiens capensis*).

Mineral Thicket Swamp Type SWT2 (Unit 11)

Unit 11 is a small Mineral Thicket Swamp Community adjacent to the Don River West Branch located to the North of Major Mackenzie Drive. The subcanopy in this community is sparse and dominated by Manitoba Maple and Green Ash (*Fraxinus pennsylvanica*). The understorey includes Dogwood species, Willow species, Common Elderberry (*Sambucus canadensis*), and Common Buckthorn. Dominant ground layer species include Tall Goldenrod and American Hog-peanut (*Amphicarpaea bracteata*).

3.4.2.3 *FORESTS*

Fresh – Moist Willow Lowland Deciduous Forest Type FOD7-3 (Unit 5)

Unit 5 is a large Fresh – Moist Willow Lowland Deciduous Forest located South of Major Mackenzie Drive. The canopy was over 25m tall in height and was dominated by White Willow (*Salix alba*), Manitoba Maple, and Balsam Poplar (*Populus balsamifera*). The subcanopy primarily consisted of Manitoba Maple, Green Ash, and Riverbank Grape (*Vitis riparia*). The understorey was dominated by Chokecherry (*Prunus virginiana*), Common Buckthorn (*Rhamnus cathartica*), Honeysuckle species, and Round-leaved Dogwood (*Cornus rugosa*). The ground layer was dominated by Violet species (*Viola* sp.), Thicket Creeper (*Parthenocissus vitacea*), Common Buckthorn, and Ground-ivy (*Glechoma hederacea*). All vegetation layers were very dense, at over 60% cover. There were noted openings in the canopy layer however, caused by dying or dead Ash species (*Fraxinus* sp.).

Dry – Fresh White Pine-Sugar Maple Mixed Forest Type FOM2-2 (Unit 18)

Unit 18 is a Dry – Fresh White Pine-Sugar Maple Mixed Forest located in the southern portion North of Rutherford Road. This polygon is a remnant of a small woodlot observable in 1954 aerial imagery. The canopy in this area is dense, over 25m tall in height, and is dominated by White Pine, Sugar Maple (*Acer saccharum*), and Black Cherry (*Prunus serotina*). The subcanopy primarily includes Sugar Maple, Riverbank Grape, White Ash, and Hop-Hornbeam (*Ostrya virginiana*). The understorey contains Chokecherry and White Ash, and the ground layer contains Chokecherry, Herb-Robert (*Geranium robertianum*), Thicket Creeper, and Wood Avens. The topography of this polygon includes a slope down into the adjacent unit 19, Fresh-Moist Manitoba Maple Lowland Deciduous Forest. The tableland portion on the west side of this unit is narrow such that installation of a path through this polygon is likely to require significant mature tree removals.

Fresh-Moist Manitoba Maple Lowland Deciduous Forest Type FOD7a (Unit 19)

Unit 19 is a Fresh-Moist Manitoba Maple Lowland Deciduous Forest community located in the southern portion North of Rutherford Road. No canopy vegetation layer is present within this community. Dominant subcanopy species consist of Manitoba Maple and Riverbank Grape, and the understorey includes the additional species Green Ash and Thicket Creeper. The ground layer primarily includes Violet species, Thicket Creeper, Spotted Jewelweed, and Panicled Aster.

Dry – Fresh Sugar Maple Deciduous Forest Type FOD5-1 (Unit 22)

Unit 22 is a mature Dry – Fresh Sugar Maple Deciduous Forest located South of Rutherford Road. This section is one of the only remnant forests in the area besides the Frank Robson Woodlot to the north and has high quality intact vegetation communities with minimal urban disturbance. The canopy in this community is dense and above 25m tall in height. This vegetation layer primarily contains Sugar Maple, Red Oak (*Quercus rubra*), and Basswood (*Tilia americana*). Dominant species in the subcanopy and understorey include Sugar Maple, White Ash, Common Buckthorn, and Chokecherry. The ground layer primarily includes Sugar Maple, Zigzag Goldenrod (*Solidago flexicaulis*), Thicket Creeper, and White Ash. Disturbance to this community is not recommended due to its local uncommonness in the urban landscape of the Maple community in Vaughan.

3.4.2.4 *RESIDENTIAL*

Low Density Residential Type CVR_1 (Unit 16)

Unit 16 a residential property located in the central portion, South of Major Mackenzie Drive. The property has planted trees and landscaped areas as well as paths for recreation. Planted trees include Norway Maple (*Acer platanoides*), Apple species (*Malus* sp.), Thornless Honey Locust (*Gleditsia triacanthos* var. *inermis*), Paper Birch (*Betula papyrifera*), White Ash, Horse Chestnut (*Aesculus hippocastanum*), Eastern Redcedar, Sugar Maple, and Willow species.

3.5 WILDLIFE

Habitat features present in the study area and broader landscape include urban environments, semi-natural features (e.g., cultural meadows, planted trees, thickets and hedgerows) and natural vegetation features (e.g., riparian corridor, forests). Habitats within the study area show varying levels of anthropogenic disturbance. The suite of wildlife species found was expected and typical of urban environments, riparian areas and small forests. The southern portion of the study area contains more forested habitat, while the northern portion is primarily cultural meadow and thicket habitats.

3.5.1 BREEDING BIRDS

During the 2021 field investigations, 41 avifauna were recorded in the study area; of these, 34 species were recorded with breeding evidence (possible, probable, or confirmed per OBBA protocol) (**Appendix F**). Species with no breeding evidence include: Belted Kingfisher (*Megaceryle alcyon*), Double-crested Cormorant (*Phalacrocorax auritus*), Great Blue Heron (*Ardea herodias*), Ring-billed Gull (*Larus delawarensis*), Rock Pigeon (*Columba livia*), Turkey Vulture (*Cathartes aura*) and Wild Turkey (*Meleagris gallopavo*). Most of the bird species recorded in the study area are common throughout Southern Ontario and expected given the types of habitat available (forest and forest edge, cultural meadow and urban/semi-urban environments). High numbers of urban tolerant bird species were recorded, such as American Robin (*Turdus migratorius*), Black-capped Chickadee (*Poecile atricapillus*), Blue Jay (*Cyanocitta cristata*), American Goldfinch (*Spinus tristis*), European Starling (*Sturnus vulgaris*) and Song Sparrow (*Melospiza melodia*). Species associated with deciduous and mixed forest and forest edge habitats were recorded, including American Redstart (*Setophaga ruticilla*), Great Crested Flycatcher (*Myiarchus crinitus*), Red-breasted Nuthatch (*Sitta canadensis*), and Downy Woodpecker (*Picoides pubescens*) as well as species associated with wetland and riparian habitats, including Mallard (*Anas platyrhynchos*), Red-winged Blackbird (*Agelaius phoeniceus*) and Yellow Warbler (*Setophaga petechia*).

Two of the birds recorded in the broader study area with breeding evidence are considered "Area Sensitive in Ecoregion 7E" according to SWH criteria schedules (MNRF 2015): Cooper's Hawk (*Accipiter cooperii*), which was observed in a cultural woodland, just north of BB8, and Red-breasted Nuthatch, observed in Vegetation Unit 7, between BB3 and BB4. One SAR bird was recorded in the study area during field investigations: Eastern Wood-pewee (*Contopus virens*). Additional discussion regarding SAR are included in **Section 2.6**.

3.5.2 AMPHIBIANS AND REPTILES

Suitable amphibian breeding habitat in the study area is primarily associated with the Don River West Branch, and wetland riparian habitat along its length. In total, three amphibian species were observed during targeted field investigations: American Toad (*Anaxyrus americanus*), Green Frog (*Lithobates clamitans*) and Gray Treefrog (*Hyla versicolor*) were recorded in low numbers at two locations along the Don River West Branch, and in low numbers at a stormwater management pond between Major Mackenzie Drive and McNaughton Road. The Don River West Branch provides suitable habitat for turtle basking and/or foraging, however overwintering habitat potential is low due to the dominant rocky/gravelly substrates and small size of the watercourse.

Habitat conditions observed in the study area, combined with available background data (ORAA), suggest that there is potential for other common amphibian species to occur in the study area, including: Chorus Frog, Eastern Red-backed Salamander (*Plethodon cinereus*), Northern Leopard Frog (*Rana pipiens*), Spotted Salamander (*Ambystoma maculatum*), Spring Peeper (*Pseudacris crucifer*) and Wood Frog (*Lithobates sylvaticus*). In addition, there is potential for common reptile species, including Eastern Gartersnake (*Thamnophis sirtalis sirtalis*), Dekay's Brownsnake (*Storeria dekayi*), Milksnake (*Lampropeltis triangulum*), Snapping Turtle (*Chelydra serpentina*), Midland Painted Turtle (*Chrysemys picta marginata*) and Red-bellied Snake (*Storeria occipitomaculata*).

No herptile SCC were confirmed in the study area; however, there is some potential for Snapping Turtle, as discussed further in **Section 2.6.2**.

3.5.3 MAMMALS

During the 2021 field investigations, evidence of three mammal species was recorded in the study area: Gray Squirrel (*Sciurus carolinensis*), Eastern Chipmunk (*Tamias striatus*) and Eastern Cottontail (*Sylvilagus floridanus*).

In addition, the above noted observations, several other mammal species commonly found in this region are likely to be present, although undetected, including: Coyote (*Canis latrans*), White-tailed Deer (*Odocoileus virginianus*), Virginia Opossum (*Didelphis virginiana*), Muskrat (*Ondatra zibethicus*), Red Fox (*Vulpes vulpes*) Striped Skunk (*Mephitis mephitis*), and small mammals such as Meadow Vole (*Microtus pennsylvanicus*), Deer Mouse (*Peromyscus maniculatus*), and White-footed Mouse (*Peromyscus leucopus*). Note that suitable habitat for SAR bats is present throughout much of the study area. SAR bats and potential for habitat are discussed further in **Section** 3.6.

3.5.4 INSECTS

Monarch was observed foraging in the northern portion of the study area. Milkweed for breeding and wildflowers for foraging are present throughout much of the study area. This species is listed as Special Concern and is discussed further in **Section 3.6** below.

3.6 SPECIES AT RISK

A SAR screening assessment reviews habitat potential and identifies sensitivities and constraints that may be present as input to land management. The SAR screening table incorporates background information collected, as well as the results of the in-field habitat assessment. The table lists potential SAR, habitat preferences for each species, an assessment of habitat within the project area and provides recommendations with respect to potential for the proposed works to impact the species.

The review of available background source information generated a list of 15 potential SAR for the general project vicinity. This list includes SAR known to occur in the City of Vaughan generally, as well as those with records specifically in the vicinity of the study area. specifically. Those species that were considered to have ‘moderate’ to ‘high’ potential to occur in the vicinity of the study area were surveyed for during the field investigations, and habitat conditions were assessed in terms of potential suitability for the various SAR. For the full SAR screening table see **Appendix C**.

3.6.1 CONFIRMED SPECIES AT RISK

The following species was confirmed within the study area during the field investigations. Refer to **Appendix A: Maps 1-8** for locations of SAR observations.

- **Eastern Wood-pewee** (Special Concern, COSEWIC and COSSARO) was recorded in Vegetation Units 12 and 22. A total of two individuals were recorded with ‘Possible’ breeding evidence.
- **Monarch** (Endangered, COSEWIC; Special Concern, COSSARO) was recorded in Vegetation Units 2, 12 and in cultural meadow south of Vegetation Unit 10. Milkweed for breeding and wildflowers for foraging are present throughout much of the study area.
- **Kentucky Coffee-tree** (Threatened, SARA and SARO) was recorded in Vegetation Unit 12. Several mature individuals and natural regeneration saplings. This recording is well outside the known range of spontaneous natural occurrence in southwest Ontario (west of Brantford) where it has been documented at only 20 locations in 2000 (MECP, 2021). It is most likely that these specimens have been planted and as such are not protected under the ESA.

3.6.2 POTENTIAL SPECIES AT RISK

An additional four SAR have 'moderate' to 'high' potential to occur in the study area (based on the presence of suitable habitat features), however were not observed during field investigations. These potential SAR include the following:

- **Little Brown Bat** (*Myotis lucifugus*) and **Northern Long-eared Bat** (*Myotis septentrionalis*). These species have moderate potential to occur in forested areas, and isolated trees / tree clusters throughout the study area. Foraging habitat is present over all open areas. Acoustic surveys were not undertaken to confirm presence.
- **Barn Swallow** – Threatened, COSEWIC and COSSARO): Suitable foraging habitat is present in open areas throughout the study area. Potentially suitable nesting habitat is present on bridges and culvert in the study area, though nesting was not confirmed nor was this species recorded during targeted field investigations.
- **Snapping Turtle** – Special Concern, COSEWIC, COSSARO; SARA Schedule 1): There is potential for this species to be present, however no individuals were recorded during field investigations. Due to the fast flowing and gravelly nature of the Don River West Branch, overwintering habitat is not likely present in the study area.
- **Butternut** (Endangered, COSEWIC, COSSARO): While suitable habitat for this species is present, there were no Butternut observed in the study area.

3.7 SIGNIFICANT WILDLIFE HABITAT

An assessment of candidate and confirmed Significant Wildlife Habitat was completed based on the Significant Wildlife Habitat Ecoregion Criteria Schedules for Ecoregion 7E (MNRF January 2015). SWH is broadly categorized as: Seasonal concentration areas (i.e., conifer forests for deer wintering), Rare vegetation communities or specialized habitats for wildlife, habitats of species of conservation concern, excluding the habitats of endangered and threatened species, and animal movement corridors. Two types of SWH were identified in the study area during field investigations: Candidate (unconfirmed) Bat Maternity Colony, Confirmed Special Concern and Rare Wildlife Species (Eastern Wood-Pewee), and confirmed Other Rare Vegetation Communities. See **Appendix D** for the detailed assessment with a summary of results provided below.

3.7.1 CANDIDATE (UNCONFIRMED) SIGNIFICANT WILDLIFE HABITAT

Bat maternity colonies are typically located in mature deciduous or mixed forest stands of >10/ha, where trees with large diameter (>25cm DBH) are present. Bat Maternity Colony SWH may be present in Vegetation Unit 22, as it is mature, moderately large (~8ha), forested and connected to the forested area south of Rutherford Road. Additionally, isolated, suitable maternity colony trees are likely present in non-forested Vegetation Units (refer to **Appendix E** for representative photographs). Tree removals are anticipated to be confirmed through Arborist works at the detailed design/ construction stage. A permit under the *ESA* is not anticipated to be required for minor tree removals associated with train construction, however consultation with MECP to determine *ESA* compliance should be undertaken.

3.7.2 CONFIRMED SIGNIFICANT WILDLIFE HABITAT

Two Special Concern and Rare Wildlife Species have been confirmed in the study area, Eastern Wood-pewee in Vegetation Units 12 and 22, and Monarch in Vegetation Units 2, 12 and in cultural meadow south of Vegetation Unit 10. The SWH includes the entire ELC Vegetation Units in which the Special Concern Species was recorded. Details concerning habitat requirements and abundance of these species are provided in **Section 3.6**.

No rare vegetation communities were observed in the study area.

4 PREFERRED ROUTE

The Preferred Route is shown on the **Natural Heritage Features and Designations Overview** and **Maps 1-8** in Appendix A. The Preferred Route between McNaughton Rd. to Major Mackenzie Dr. includes (1) signalized pedestrian road crossing and (1) pedestrian bridge. Beginning at the proposed crossing infrastructure on McNaughton Rd, this trail will travel south along the valley land adjacent to the rear yards of the properties on Matthewson St. The trail alignment is proposed to turn west and cross the existing SWM pond with a new pedestrian bridge structure to connect to the existing servicing route.

Between Major Mackenzie to Plaza access point starts form the existing pathway leading to the pedestrian culvert crossing under Major Mackenzie Dr. W and continues south-west of the St. David Parish Church property until it meets the existing pathway. There is a connection point proposed traveling east-west connecting the existing parking lot to the preferred trail alignment. From Mother of Carmel Childcare Centre to Naylon Parkette, the existing trail south of the Mother of Carmel Childcare Centre (located outside of the TRCA regional flood line) is proposed for resurfacing. The extent of resurfacing proposed will extend south until meeting the existing trail running east west of Naylon Parkette. From Naylon Parkette to Bevhan Rd. the trail begins at the existing east to west trail on Naylon St., it travels south-west along the western edge of the existing SWM pond through sparce vegetation to Bevan Rd. There is a east to west trail alignment proposed creating a connection from Bevan Rd to the main trail route. Between Bevan Rd. and Merrick Dr. the trail will travel south from Bevan Rd. and meander south-east of the 7 Bevan property through open space with sparce vegetation. It continues south hugging the 10m property offset behind lots on Lancer Dr. and continues south-west through open valley land. Once the trail reaches Waterside Crest, it travels south until it meets Merrick Dr. From Merrick Dr. to Rutherford Rd. the trail will follow the existing alignment. The Bartley Smith Greenway Gap Trail Part 2: 30% Design Development scope will end at Rutherford Rd. due to inconclusive results through public and stakeholder consultations.

5 IMPACT ASSESSENT

The Preferred Route will have direct and indirect impacts on the natural heritage features within the study area. A preliminary assessment of these impacts is provided in Sections 5.1 to 5.5. Impact assessment and considerations for Detailed Design provided in this report are based on the Preferred Route and Preliminary (30%) Design as available in July 2022. Should the Preferred Route be modified at the Detailed Design stage, additional impacts and mitigation may need to be considered and addressed. The impact assessment herein considers sensitive terrestrial and aquatic features and associated constraints such as timing windows or other mitigation measures to avoid impacts.

5.1 DESIGNATED NATURAL AREAS

Direct impacts are anticipated within TRCA regulation limits and as such a permit under Ontario Regulation 166/06 is expected to be required.

Provincially Significant Wetlands

No development or site alteration is permitted within PSWs. Unevaluated wetlands that may be impacted should be assessed for significance, in accordance with provincial criteria and to determine their importance, functions and means of protection to the satisfaction of the City. Development and site alteration on lands adjacent to wetlands (i.e., within 120 m) must demonstrate that there will be no loss of wetland features and function (including hydroperiod), no loss of contiguous wetland area and that development will not cause increased pressure on the wetland in the future. No impacts are anticipated within 30m of the PSW, however the Preferred Route will include minor vegetation removals within 120 m of the PSW. These minor removals are not anticipated to result in a loss of wetland feature or function, and a restoration planting plan will be developed during Detailed Design to enhance vegetation in the area. Encroachment into PSW adjacent lands should be avoided to the extent possible.

City of Vaughan Core Features

The entire Don River West Branch valley corridor through the study area is considered a Core Feature in the City of Vaughan Official Plan (2010). Features that make up the Core Feature through the study area include: valley and stream corridors, wetlands, woodlands and fish habitat. In addition, based on the results of this study, the Don River West Branch valley may also provide SWH and habitat of endangered and threatened species. Development and site alteration in Core Features are prohibited except for low-intensity and passive recreational activities where such activities will not result in a negative impact on the Core Features and will not have a negative impact on the ecosystem function. The trail works are limited in scope and trail placement avoids sensitive areas to the extent possible. While direct impacts to the Don River West Branch valley are anticipated, no negative impact to the Ecosystem Function is anticipated.

Significant Wildlife Habitat

Development and site alteration within 120 m of significant wildlife habitat is prohibited unless it has been demonstrated that there will be no negative impacts on the features. One candidate SWH type (Bat Maternity Colonies) and one confirmed SWH type (Special Concern and Rare Wildlife Species – Eastern Wood-pewee) were identified through field investigations.

5.2 FISH AND FISH HABITAT

The 30% Preliminary Design does not include any watercourse crossings. Should the Preferred Route be updated to include a watercourse crossing at the Detailed Design stage, an impact assessment of the proposed crossing would be required as the Don River West Branch is classified as permanent direct fish habitat; any in-water works would need to be reviewed under the *Federal Fisheries Act* (1985).

During the construction process there is potential for temporary impacts to fish and fish habitat. These impacts may include:

- Release of construction-generated sediment into the associated watercourses and into Lake Ontario.

- Spills of contaminants, fuels and other materials that may reach natural areas
- Unpermitted / authorized crossings of the Don River West Branch by construction equipment
- localized disturbance of immediately adjacent habitat, and local disturbance of riparian vegetation for construction access.

These potential impacts to fish and fish habitat features can generally be managed through the implementation of standard mitigation measures outlined in **Section 6.**

5.3 VEGETATION

5.3.1 DIRECT IMPACTS

In areas of the project area where the works are expected to be limited to existing trail rehabilitation, impacts will include the negligible removal of vegetation composed Cultural Meadow or turf-grass or low impacts to the edges of vegetation communities already subject to disturbance from pedestrian usage. In areas where new trail will be created, direct impacts to vegetation have potential to be more significant and are discussed by trail section below in reference to Preliminary Trail Route options (**Appendix H**). A Tree Inventory and Preservation Plan is recommended for any planned removals to precisely document tree removals and ensure tree compensation requirements are met where tree preservation is not possible.

Northern Portion (McNaughton Road to Naylon Street / Maple Airport Park)

North of Major Mackenzie Drive, the Preferred Route will be constructed through Cultural Meadow, Cultural Savana and Cultural Woodlot. The Cultural Meadow and Cultural Savana communities are successional and highly resistant to disturbance; tree removals would not occur with enough frequency to alter the community structure and should be considered on an individual basis. Through these areas, the Preferred Route has a moderate slope with a wetland at the bottom. Standard ESC measures would be required to reduce or eliminate indirect impacts to the nearby wetlands. Any construction disturbance or removals can easily be remediated with a standard seed mix or tree replacement planting. A number of tree removals will be required in the Cultural Woodland; however, these units are botanically poor with abundant weedy native and non-native species. There would be opportunity for restoration/ invasive removals along the new trail to enhance the existing woodland area.

Central Portion (Naylon Street / Maple Airport Park to the existing crossing off Merrick Drive)

The Preferred Route continues south of Naylon Street through low-density residential Cultural Meadow, Cultural Savana and skirts the Meadow Marsh areas associated with the current OAO pond area; the pond has been identified for removal as part of private development in the area. The land adjacent to the OAO pond, where the trail will be located, is flat and is currently maintained as a sewage easement, however it is close to the creek and within the flood limit.

The Preferred Route continues south primarily within Cultural Meadow until it reaches the Wheatley Road area, where it will cross Unit 20 marsh wetland. The area is subject to spring flooding and is less disturbance tolerant. Introduction of species such as Common Reed or European Swallowwort (Dog-strangling Vine) with increased pedestrian traffic becomes highly likely for this community. Appropriate compensation or remediation for these effects is unlikely to be achievable. The trail route should remain within the adjacent Cultural Meadow or at minimum, be constructed on the east edge of the marsh to reduce impacts.

The Preferred Route continues south and passes through the corner of Cultural Thicket and through Cultural Woodland as it connects to the existing trail at Merrick Drive. A number of tree removals will be required in the Cultural Woodland. This unit is botanically poor with abundant weedy native and non-native species. There would be opportunity for restoration/ invasive removals along the new trail to enhance the existing woodland area.

Southern Portion (Existing crossing off Merrick Drive to Rotational Drive in the South)

The Preferred Route through this section is existing trail which will be upgraded to 3mm asphalt. The existing trail passes through Dry-Fresh White Pine - Sugar Maple Mixed Forest and adjacent Fresh-Moist Manitoba Maple Lowland

Deciduous Forest. The White Pine and Sugar Maple Forest has mature remnant trees present in the 1954 aerial imagery. Tree removals in this area would have a high degree of impact on a relatively small vegetation community in one of the few sections of remnant forest, which is locally uncommon. No tree removals are anticipated in this area.

Regionally Rare Species Impacts

No flora SAR were recorded within these areas. However, the following is a list of naturally occurring and regionally rare woody species in York Region (Varga *et al*. 2000) that should be avoided for removals if possible: Silky Dogwood, Grey Dogwood, Black Walnut, Eastern Red Cedar, and White Oak. Likewise, locally rare in the TRCA jurisdiction is White Oak, White Spruce and Red Pine. Observed Spruce and Pine in non-Cultural Plantation areas may or may not have been planted. Overall, removals are unlikely to alter the conservation status of these species in York Region. Transplantation or other specific efforts to salvage these species if they are not able to be conserved through standard mitigation measures is not considered warranted.

5.3.2 INDIRECT IMPACTS

As with any construction activities, there is potential for indirect impacts to adjacent retained vegetation features during and following construction, including, but not limited to:

- Release of construction-generated sediment to adjacent habitats,
- Vegetation clearing/damage beyond the working area/trail alignment,
- Damage from excessive or improper application of herbicides and pesticides for maintenance requirements,
- Increased potential for introduction of non-native species,
- Spills of contaminants, fuels and other materials that may reach natural or semi-natural areas, and
- Changes in drainage patterns (groundwater and/or surface runoff flow) that can impact dependent vegetation/wetland areas located either upgradient or downgradient of the trail. Blocking of existing surface/subsurface drainage patterns can result in upstream and downstream vegetation dieback/condition changes. An increase in downstream runoff can result in erosion impacts on receiving vegetation.

5.4 WILDLIFE AND WILDLIFE HABITAT

Wildlife habitat impacts are generally similar to those described for vegetation. Consistent with the urban landscape context and extent, the vegetation supports local habitat and associated wildlife use, however in general, the habitat edges that are likely to be impacted are already disturbed by the surrounding land uses.

There will be a minor loss of wildlife habitat associated with the tree and vegetation removals along the chosen trail alignment, as well as potential temporary disturbances due to construction. These areas provide habitat that generally supports common, disturbance-tolerant wildlife species; there is potential for various wildlife (e.g., turtles, snakes, small mammals, etc.) to wander through the proposed work areas during construction.

Although no nests were found during the field surveys, migratory birds are likely to nest in trees or other vegetation in the impact zones during the year of construction. Therefore, potential impacts to birds include disturbance to nesting birds or possibly loss of nests or young, if nests are present in the year of construction (depending on timing). Most birds and their nests are protected under the federal Migratory Birds Convention Act (MBCA, 1994). Removal of mature trees has the potential to impact roosting bats.

Although no evidence of turtle nesting was observed during field investigations, there is potential for turtles to nest along gravel road shoulders in the vicinity of the Don River West Branch.

The anticipated impacts to wildlife and wildlife habitat as a result of the proposed work can be managed through implementation of standard mitigation measures outlined in the Considerations for Detailed Design. An updated Impact Assessment should be completed as part of Detailed Design if there are changes to the Preferred Route.

5.5 SPECIES AT RISK

Two SAR were confirmed in the study area, and an additional four SAR have 'moderate' to 'high' potential to occur within the study area. Potential impacts on these species are outlined below:

Barn Swallow – *Threatened** under the ESA

- No direct impacts to this species are anticipated. Barn Swallow are unlikely to be impacted as foraging visitants and impacts to foraging habitat will be minimal and temporary. Suitable nesting habitat is limited to culverts and other watercourse crossing structures; however, no nests were observed in the study area. *Note that the status of Barn Swallow was recently assessed by COSSARO as Special Concern. This change in status is anticipated to be adopted by the ESA in the fall of 2022.

Eastern Wood-pewee – *Special Concern* under the ESA

- No direct impacts to this species are anticipated. This species is associated with forest communities, and impacts related to the trail alignment and construction are not expected to include removal of forest areas.

Monarch – *Special Concern* under the ESA

- No direct impacts to this species are anticipated as monarch were identified as foraging visitants to the area. Impacts to Monarch habitat (i.e., Cultural Thicket, Cultural Meadow and mowed areas with wildflowers) will be minor and temporary as these areas will be restored to a similar condition following construction. Abundant habitat of similar character is available in the broader landscape.

Myotis and Perimyotis Bats - *Endangered* under the ESA

- These species typically use mature trees in forested habitats for maternity roost habitat. Trees with features such as cavities, crevices, knots, cracks, loose bark or leaf clusters could provide suitable bat maternity roosting habitat. Given that tree removals may be required, there is some potential for impacts to bats or bat habitat generally throughout the study area. While maternity roosts are unlikely to occur in the edge of a forest habitat, or in isolated trees / tree clusters, this cannot be conclusively eliminated without acoustic surveys. There is potential for breeding activity to be directly impacted if these are removed, or if construction occurs within the sensitive period for bats. Trees requiring removal should be evaluated once a preferred route for BSG Trail extensions have been determined, and again at preliminary and detailed design in case alignment modifications occur.

Butternut *Endangered* under the ESA

- Although this species was assessed has having moderate potential to occur, no individuals were observed in areas of proposed trail routing during 2021 field investigations; direct and indirect impacts are unlikely.

Snapping Turtle *Special Concern* under the ESA

- Impacts to Snapping Turtles are not anticipated as the Don River West Branch in the immediate vicinity of the study area does not contain turtle overwintering habitat. Overwinter habitat is potentially present in a stormwater management pond in the north portion of the study area, however, direct impacts to this pond are not anticipated.

Mitigation recommendations to address potential Impact to aquatic and terrestrial resources as well as Species at Risk are provided in **Section 6**. An update to the Impact Assessment is recommended for the Detailed Design stage to address any variation between the Preferred Route and the final route, and to update the mitigation recommendations made at this Preliminary Design stage.

6 MITIGATION RECOMMENDATIONS

The mitigation and recommendations provided in this report are based on the Preferred Route and Preliminary (30%) Design as available in July 2022. An updated Impact Assessment should be undertaken at Detailed Design to address any design modifications or policy changes, such as Specie at Risk designations under the *ESA*, which may apply.

6.1 FISH AND FISH HABITAT

The mitigation measures outlined below encompass a series of general measures to minimize impacts to fish and fish habitat associated with working near watercourses. The standard mitigation measures have been adapted from DFO's "Measures to protect fish and fish habitat" listed under their Projects Near Water website. These measures will be reviewed and refined at detail design. There are no watercourse crossing anticipated for the Preferred Route.

Fish Protection

- Fish species are protected under the Federal Fisheries Act (FA, 1985). Proponents are responsible for planning and implementing works, undertakings or activities in a manner that avoids harmful impacts, specifically the death of fish and HADD (harmful alteration, disruption or destruction of fish habitat) of fish habitat. Works must respect timing windows to protect fish, including their eggs, juveniles, spawning adults and/or the organisms upon which they feed. As the Don River West Branch has a warmwater thermal regime, it is subject to the permissible in-water timing window of July 1st to March 31st.

Erosion and Sediment Control

- An erosion and sediment control plan will be developed and implemented for the site to minimize risk of sedimentation from works adjacent to the watercourse during all phases of construction.
- Heed weather advisories and scheduling work to avoid wet, windy, and rainy periods that may result in high flow volumes and/ or increase erosion and sedimentation
- Erosion and sediment control measures should be monitored regularly, and any issues addressed immediately. All non-biodegradable materials will be removed at the completion of construction. The need for extended retention of biodegradable materials until full vegetation establishment will be reviewed at the detail design stage to avoid impacts to natural features.

Watercourses

- Under Ontario Regulation 166/06, any proposed development, interference, or alteration within a Regulated Area requires a permit from TRCA. Encroachment into the floodplain should be avoided.

Habitat of endangered and threatened species

- Redside Dace (RSD) is not expected to be impacted by the works. This reach of the Don River West Branch is not confirmed RSD habitat, and individuals are unlikely to be present within the study area. The presence of RSD habitat within the study Area requires confirmation from agencies (MECP, TRCA). Northern Brook Lamprey is classified as Special Concern; under the ESA and SARA, the habitat of special concern species does not receive protection.

Contamination and Spill Management

- All works will be isolated from the watercourse to avoid the introduction of potential contaminants into the watercourse.
- All construction related materials, debris and soil will be stored at least 30 m from the watercourses and contained properly (e.g., within sediment and erosion control barriers) to minimize risk of release to waterbodies.

- An emergency response plan (including response materials and notification procedures) will be developed, reviewed with construction staff and kept on site, to be implemented immediately in the event of a sediment release or spill of deleterious substance.

Operation of Machinery

- All construction machinery will arrive on site in a clean condition and working order, and will be maintained free of fluid leaks, invasive species and noxious weeds.
- No equipment shall ford the watercourses except as specified in the Contract package.
- Conduct equipment maintenance and refueling at a designated and properly contained maintenance area in a works yard or at commercial garages.
- Reporting any spills of sewage, oil, fuel or other deleterious material whether near or directly into a water body.
- Developing a response plan to be implemented immediately in the event of a spill of a deleterious substance.

Fish Habitat Enhancement Opportunities

The following opportunities for fish and general aquatic habitat creation should be considered during Detailed Design:

- Remove weir and debris jams that are creating barriers to fish migration,
- Stabilization of sections of the bank that are highly eroded, and
- Plant riparian vegetation that increases instream cover.

6.2 WILDLIFE AND WILDLIFE HABITAT

The mitigation measures outlined above are designed to minimize effects to vegetation and protect adjacent vegetation areas, which in turn protect the associated wildlife habitat functions, however, it is also necessary to ensure the protection of breeding birds, as well as other wildlife that may nest or otherwise use areas where construction is proposed. Wildlife-specific mitigation measures are outlined below, as well as specific measures to address potential for incidental SAR encounters.

Migratory Birds

Nesting migratory birds and their nests, eggs and young are protected under the Migratory Bird Convention Act (MBCA 1994) and Regulations (2014) under that Act. No work is permitted to proceed that would result in the destruction of active nests (i.e., nests with eggs or young birds), or the wounding or killing of bird species protected under the MBCA.

To ensure compliance with the MBCA, a due diligence approach is recommended, as follows:

Awareness of the potential for nesting activity within the project limits during the Regional Nesting Period.

Avoidance of activities that may disturb or harm nesting migratory birds.

- Vegetation clearing (including grubbing and tree/shrub/grass removal) and any construction activities, in areas where migratory birds might nest (e.g., in culverts) should be scheduled to avoid the Regional Nesting Period (approximately April 1 to August 31). The Contractor will be made aware that occasionally bird species will precede or exceed the approximate breeding bird window.

Prevention and Mitigation of potential impacts on migratory birds:

- No active nests will be removed, or birds or nests disturbed in accordance with the MBCA.
- The Contractor will be advised that all temporary brush and lose soil piles should be tarped or otherwise inspected regularly to prevent nesting as they provide potentially suitable nesting sites for some species.
- If a nesting migratory bird is identified within or adjacent to the construction site and the construction activities are such that continuing construction in that area might result in a contravention of the MBCA (i.e., potential harm or stress to nests, birds, eggs or young), all activities must cease, and the Contractor Administrator immediately notified.

Other Wildlife

There is potential for turtles to nest along gravel road shoulders in the vicinity of the Don River West Branch. Exclusion fencing is recommended to isolate the work area from the Don River where potential turtle nesting habitat occurs. Exclusion fencing should be installed between September 1st and March 31st to prevent nesting in the work area.

For the protection of wildlife in general, the contractor will ensure that:

- Any wildlife incidentally encountered during construction will not be knowingly harmed or harassed and will be allowed to move away on its own.
- In the event that an animal encountered during construction does not move from the construction zone and construction activities are such that continuing construction in the area would result in harm to the animal, all activities that could potentially harm the animal will cease immediately and the Contract Administrator and / or Environmental Inspector will be notified.

6.3 SPECIES AT RISK

Several confirmed and potential SAR are not expected to be impacted by the project. This is due to lack of breeding evidence or breeding habitat, low likelihood of nesting in edge habitat adjacent to urban areas or ability to leave the area of impact. However, SAR bats may pose constraints on the project:

- All mature forested units may support endangered bat habitat. Additionally, albeit to a lesser degree, mature isolated trees / tree clusters may also provide bat habitat. Where tree removals cannot be avoided, impacts are anticipated to be confined to forest edges along existing trails, or to isolated trees / tree clusters and are anticipated to be minimal. Where tree removals are unavoidable, consultation with MECP is recommended to determine whether targeted bat maternity roost habitat assessments, conducted during the appropriate season (i.e., late fall to early spring after leaf-off / prior to leaf-on) are required to identify whether suitable trees will be impacted by the chosen alignment. Ongoing consultation with MECP should be undertaken once the preferred route has been identified and a comprehensive impact assessment completed, to determine whether a permit under the ESA is required, or whether a timing window restriction for tree clearing is sufficient; to avoid impacts to potential bat maternity colonies in treed habitats, no tree removals are permitted within the during the bat active season (i.e., April 1 to September 30).

6.4 VEGETATION

Many of the general best practices outlined in the fish and fish habitat mitigation section (**Section 6.1**) are also relevant to vegetation and habitat protection. Additional recommended mitigation measures to minimize effects to the local vegetation communities and their associated habitat functions are provided below. These measures will be reviewed and refined at detail design.

- Vegetation clearing and retention zones will be delineated clearly on contract documents.
- Limit vegetation removals to the extent required for construction, and as delineated on contract drawings.
- Trees shall not be removed from beyond the grading limits.
- Compensation plantings for tree removals should be considered.
- Seed mixes used for meadow habitat restoration or enhancement adjacent to the new trail should include milkweed seeds and other nectar plant seeds for improved Monarch habitat.
- Cut tree stems should be retained on the ground and in staked piles, where possible, for improved wildlife habitat opportunities
- Employ appropriate vegetation clearing techniques (e.g., trees to be felled away from retained natural areas and watercourses, trimming of damaged branches and roots).
- Install and maintain temporary erosion and sediment control measures as noted above, in Section 0.

- Re-stabilize and re-vegetate exposed surfaces as soon as possible following disturbance, specifically within 15 days near watercourses and within 45 days in other graded areas. It is recommended that all disturbed habitats be re-vegetated with a native seed mix.
- Planting plans for rehabilitation areas (to be developed at detail design) will utilize plant species that are native to this region of Ontario.
- Implement dust control using water, not chemical suppressants.
- The Clean Equipment Protocol for Industry, as prepared by the Peterborough Stewardship Council and Ontario Invasive Plant Council (May 2016) will be adhered to.
- Implement environmental inspection during construction to ensure that all mitigation measures are implemented properly, maintained, and repaired, and remedial measures are initiated in a timely manner where warranted.

7 RECOMMENDATIONS

The Preferred Route does not include watercourse crossings; however options may be explored during Detailed Design. Detailed habitat assessment of crossing areas should be undertaken and works assessed under the Fisheries Act. It should also be noted that the detailed design process is likely to occur in stages and over several years, requiring a review and update of the existing conditions documented herein, including a review of SAR and their respective status under the ESA.

Recommendations for future work include:

- Tree Inventory and Arborist Report
- Bat roost tree assessments (leaf-off) to assess potential for impacts to SAR bat habitat and inform further consultation with MECP regarding ESA approvals for the project.
- Turtle nesting surveys to determine habitat use along the Don River West Branch and inform need and placement of exclusion fencing during construction.
- Aquatic habitat assessments at proposed new watercourse crossings, if identified
- Development of a restoration and enhancement planting plan
- Direct impacts will occur within the TRCA regulation limits and as such a permit under Ontario Regulation 166/06 is anticipated to be required

8 CONCLUSIONS

Terrestrial and aquatic surveys have been conducted within the Don River Valley study area. These surveys, in addition to a background review of online mapping resources, online species observation databases, and agency correspondence provide information on known terrestrial and aquatic conditions. A preliminary SAR screening and SWH assessment was also completed. This review informed the evaluation of alternatives (documented in the ESR) and the preliminary impact assessment of the preferred alternatives, outlined herein.

WSP has identified information gaps and has recommended future surveys (**Section 7**) to address those gaps and potential permitting and approval requirements have been provided. Those surveys, combined with more detailed information about the proposed works (as plans are developed through the detailed design process), will inform a more through assessment of impacts. Preliminary mitigation recommendations to address the anticipated impacts are provided in **Section 5**. These measures will be reviewed, revised and/or refined at detailed design.

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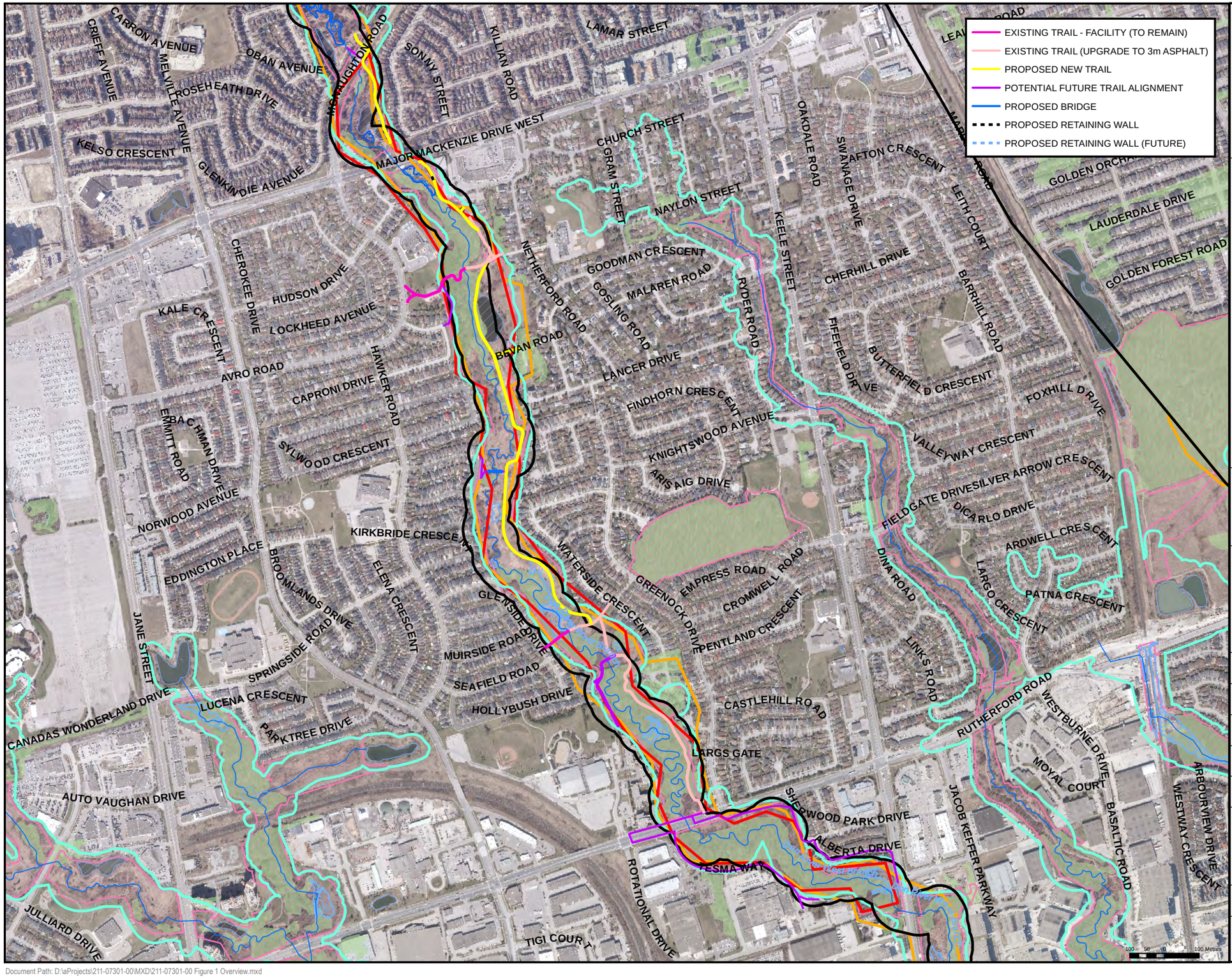
APPENDIX A

Maps



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LEGEND

- STUDY AREA
- WATERCOURSE (MNRF)
- WATERBODIES (MNRF)
- WOODLAND (MNRF)
- UNEVALUATED WETLAND (MNRF)
- EVALUATED WETLAND (OTHER)
- PROVINCIALLY SIGNIFICANT WETLAND
- GREENBELT URBAN RIVER VALLEY
- REGION OF YORK GREENLANDS
- VAUGHAN NATURAL HERITAGE CORE FEATURES
- TRCA REGULATION LIMIT

N W E S

CLIENT:
CIT OF VAUGHAN

PROJECT:
BARTLEY SMITH TRAIL PRELIMINARY DESIGN
CITY OF VAUGHAN

PROJECT NO:	DATE:
211-07301-00	JULY 2022

DESIGNED BY: -

DRAWN BY: TP

CHECKED BY: -

FIGURE NO:	SCALE:
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TITLE:
NATURAL HERITAGE FEATURES AND DESIGNATIONS OVERVIEW

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CUM1-1, DRY-MOIST OLD FIELD MEADOW
CUS1, MINERAL CULTURAL SAVANNAH ECOSITE
CUT1-1, SUMAC DECIDUOUS THICKET
CUW1-B, EXOTIC SUCCESSIONAL WOODLAND
MAMM3-1, MIXED MINERAL MEADOW MARSH TYPE
MAS2-1, CATTAIL MINERAL SHALLOW MARSH TYPE
OAO1-T, TURBID OPEN AQUATIC (UNVEGETATED)
SWT2, WILLOW MINERAL THICKET SWAMP

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LEGEND

- WATERCOURSE (MNRF)
- WATERBODIES (MNRF)
- UNEVALUATED WETLAND (MNRF)
- EVALUATED WETLAND (OTHER)
- PROVINCIALLY SIGNIFICANT WETLAND
- ECOLOGICAL LAND CLASSIFICATION
- AMPHIBIAN CALLING STATION
- BREEDING BIRD POINT COUNT LOCATION
- FISH SAMPLING LOCATION
- AQUATIC HABITAT MAPPING LOCATION

SPECIES AT RISK

- EASTERN WOOD-PEWEE
- KENTUCKY COFFEETREE
- MONARCH

CLIENT:
CIT OF VAUGHAN

PROJECT:
BARTLEY SMITH TRAIL PRELIMINARY DESIGN
CITY OF VAUGHAN

PROJECT NO:	DATE:
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TITLE:
EXISTING CONDITIONS AND SURVEY LOCATIONS
MAP 1

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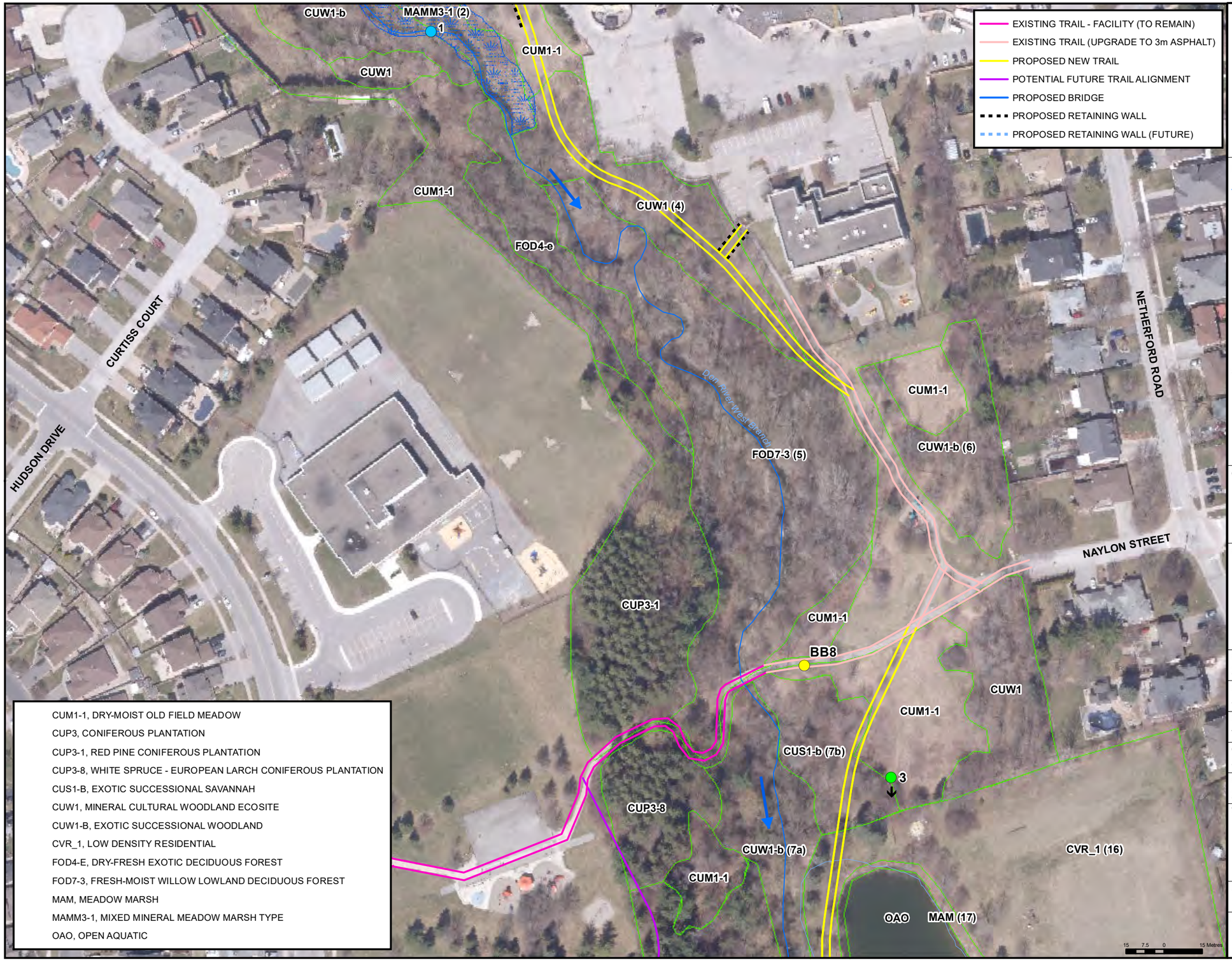

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EXISTING CONDITIONS AND SURVEY LOCATIONS
MAP 2

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TITLE:

EXISTING CONDITIONS AND SURVEY LOCATIONS
MAP 3

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FIGURE NO:	SCALE:
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TITLE:
EXISTING CONDITIONS AND SURVEY LOCATIONS
MAP 4

DISCIPLINE:
ENVIRONMENT

ISSUE:	REV.:
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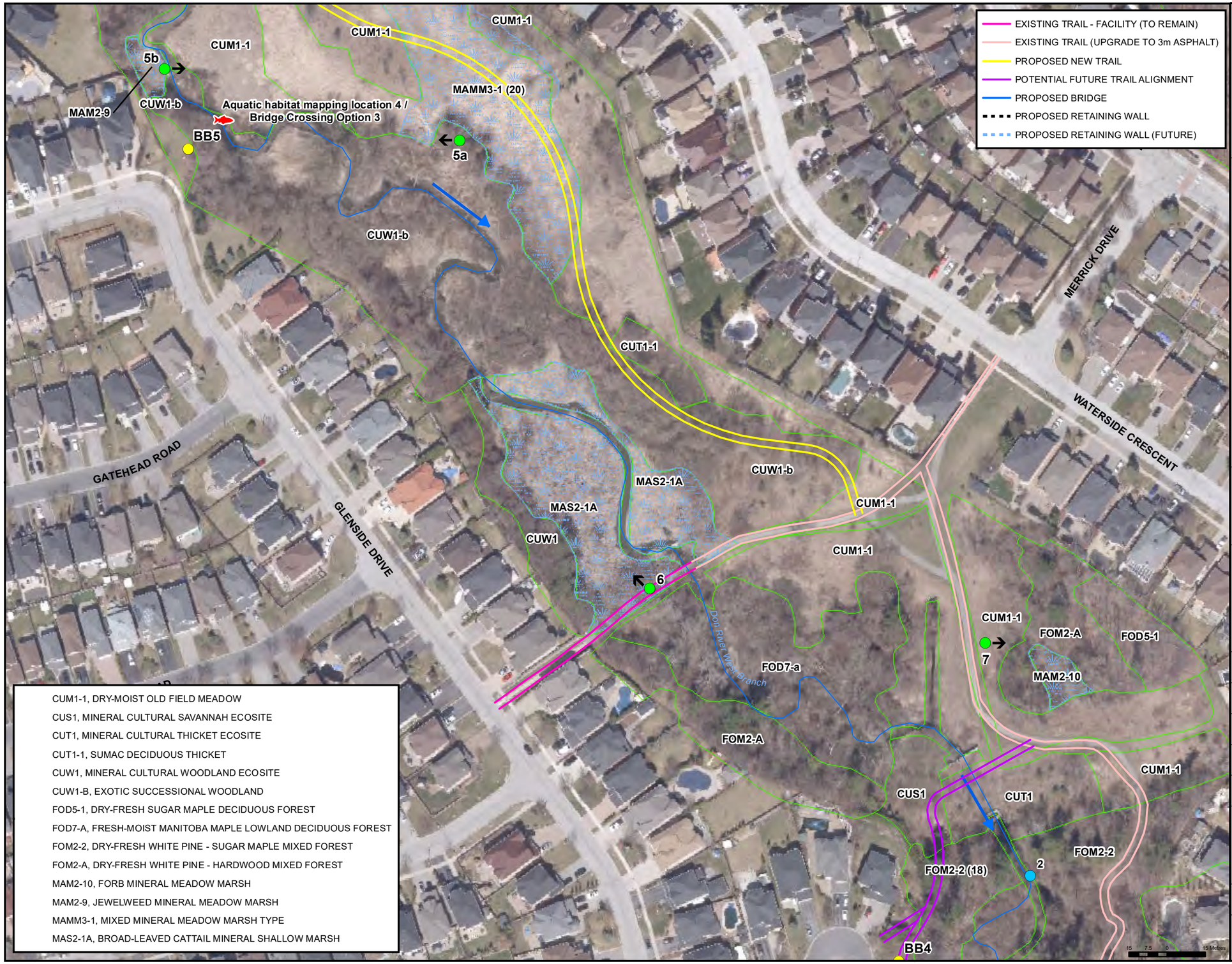

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TITLE:

EXISTING CONDITIONS AND SURVEY LOCATIONS
MAP 5

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EXISTING CONDITIONS AND SURVEY LOCATIONS
MAP 6

DISCIPLINE:

ENVIRONMENT

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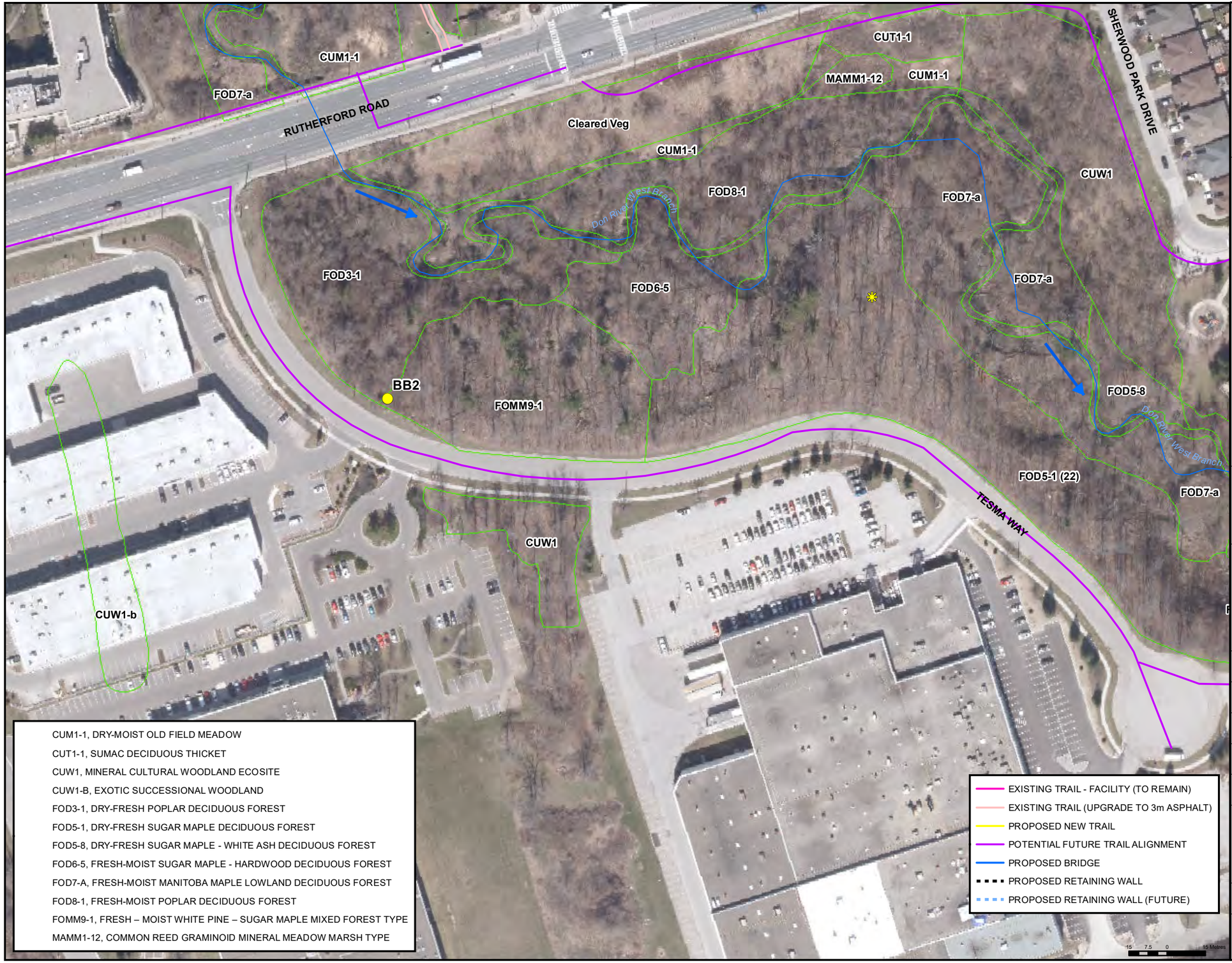

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EXISTING CONDITIONS AND SURVEY LOCATIONS
MAP 7

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TITLE:

EXISTING CONDITIONS AND SURVEY LOCATIONS
MAP 8

DISCIPLINE:

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APPENDIX B

Vascular Plant Species List

SCIENTIFIC NAME	COMMON NAME	CC [1]	CW[1]	WEEDINESS[1]	OWES WETLAND PLANT LIST[2]	G_RANK[3]	N_RANK	S_RANK[4]	COSEWIC[5]	SARA[6]	SARO[7]	PHYSIOLOGY/HABIT[8]	NATIVE STATUS[9]	Unit 1 (CUM1-1)	Unit 2 (MAMM3-1)	Unit 4 (CUW1)	Unit 5 (FOD7-3)	Unit 6 (CUW1-b)	Unit 7 (CUW1-b / CUS1-b)	Unit 9 (MAS2-1)	Unit 10 (CUW1-b)	Unit 11 (SWT2)	Unit 12 (CUW1-b)	Unit 13 (CUS1)	Unit 14 (CUP)	Unit 16 (CVR_1)	Unit 17 (MAM)	Unit 18 (FOM2-2)	Unit 19 (FOD7a)	Unit 20 (MAMM3-1)	Unit 21 (CUW1-b)	Unit 22 (FOD5-1)	Totals
Acer negundo	Manitoba Maple	0	0		X	G5	N5	S5				Tree	N	x		x	x	x	x		x	x	x	x	x				x		x	x	X
Acer platanoides	Norway Maple		5	-3		GNR	NNA	SNA				Tree	I				x									x					x		X
Acer saccharum	Sugar Maple	4	3			G5	N5	S5				Tree	N				x	x							x	x		x			x	x	X
Acer x freemanii	Freeman's Maple	6	-5		X	GNA	NNA	SNA				Tree	N								x			x									X
Aesculus hippocastanum	Horse Chestnut		5	-1		GNR	NNA	SNA				Tree	I													x							X
Alliaria petiolata	Garlic Mustard		0	-3		GNR	NNA	SNA				Forb	I					x															X
Ambrosia trifida	Great Ragweed	0	0			G5	N5	S5				Forb	N	x																			X
Amelanchier sp.	Serviceberry sp.											Tree									x												X
Amphicarpaea bracteata	American Hog-peanut	4	0		X	G5	N5	S5				Forb	N						x		x	x											X
Apocynum androsaemifolium	Spreading Dogbane	3	5			G5	N5	S5				Forb	N	x																			X
Arctium lappa	Great Burdock		3	-2		GNR	NNA	SNA				Forb	I		x								x	x									X
Arctium minus	Common Burdock		3	-2		GNR	NNA	SNA				Forb	I								x												X
Asclepias incarnata	Swamp Milkweed	6	-5		X	G5	N5	S5				Forb	N																	x			X
Asclepias syriaca	Common Milkweed	0	5			G5	N5	S5				Forb	N								x		x								x		X
Betula alleghaniensis	Yellow Birch	6	0		X	G5	N5	S5				Tree	N															x					X
Betula papyrifera	Paper Birch	2	3		X	G5	N5	S5				Tree	N													x							X
Bidens connata	Purple-stemmed Beggarticks	5	-3		X	G5	N4N5	S4?				Forb	N		x																		X
Bidens frondosa	Devil's Beggarticks	3	-3		X	G5	N5	S5				Forb	N		x															x			X
Bromus inermis	Smooth Brome		5	-3		G5	NNA	SNA				Grass	I	x				x			x		x	x						x	x		X
Carex sp.	Sedge sp.											Sedge																		x			X
Carex vulpinoidea	Fox Sedge	3	-5		X	G5	N5	S5				Sedge	N																	x			X
Carpinus caroliniana	Blue-beech	6	0		X	G5	N5	S5				Tree	N																			x	X
Celastrus orbiculatus	Oriental Bittersweet		5	-1		GNR	NNA	SNA				Vine	I								x												X
Chenopodium album	Common Lamb's-quarters		3	-1		G5	NNA	SNA				Forb	I		x																		X
Cicuta maculata var. maculata	Spotted Water-hemlock	6	-5		X	G5T5	N5	S5				Forb	N						x														X
Circaea canadensis	Broad-leaved Enchanter's Nightsha	2	3			G5	N5	S5				Forb	N			x														x		x	x	X
Cirsium arvense	Canada Thistle		3	-1		G5	NNA	SNA				Forb	I	x	x					x							x						X
Cirsium vulgare	Bull Thistle		3	-1		GNR	NNA	SNA				Forb	I	x																			X
Cornus obliqua	Silky Dogwood	2	-3		X	G5	N5	S5				Shrub	N						x		x	x											X
Cornus racemosa	Grey Dogwood	2	0		X	G5	N5	S5				Shrub	N						x		x												X
Cornus rugosa	Round-leaved Dogwood	6	5			G5	N5	S5				Shrub	N			x	x		x		x												X
Cornus sericea	Red-osier Dogwood	2	-3		X	G5	N5	S5				Shrub	N																		x	x	X
Cornus sp.	Dogwood sp.											Shrub										x	x										X
Daucus carota	Wild Carrot		5	-2		GNR	NNA	SNA				Forb	I	x																			X
Dipsacus fullonum	Common Teasel		3	-1		GNR	NNA	SNA				Forb	I											x									X
Dryopteris intermedia	Evergreen Wood Fern	5	0			G5	N5	S5				Fern	N																			x	X
Echinochloa sp.	Barnyard Grass											Grass								x													X
Echinocystis lobata	Wild Cucumber	3	-3		X	G5	N5	S5				Vine	N		x																x		X
Equisetum arvense	Field Horsetail	0	0		X	G5	N5	S5				Fern	N						x														X
Erigeron annuus	Annual Fleabane	0	3			G5	N5	S5				Forb	N						x		x		x										X
Erigeron canadensis	Canada Horseweed	0	3			G5	N5	S5				Forb	N	x																			X
Euonymus alatus	Winged Euonymus		5	-1		GNR	NNA	SNA				Shrub	I								x												X
Euonymus europaeus	European Euonymus		5	-1		GNR	NNA	SNA				Shrub	I																		x		X
Euonymus fortunei	Climbing Euonymus		5	-1		GNR	NNA	SNA				Vine	I						x												x		X
Euthamia graminifolia	Grass-leaved Goldenrod	2	0			G5	N5	S5				Forb	N	x																x			X
Eutrochium maculatum var. mac	Spotted Joe Pye Weed	3	-5		X	G5T5	N5	S5				Forb	N		x															x			X
Fagus grandifolia	American Beech	6	3			G5	N5	S4				Tree	N																x				X
Fragaria virginiana	Wild Strawberry	2	3			G5	N5	S5				Forb	N			x																	X
Fraxinus americana	White Ash	4	3			G5	N5	S4				Tree	N				x	x						x		x		x				x	X
Fraxinus pennsylvanica	Red Ash	3	-3		X	G5	N5	S4				Tree	N	x		x	x				x	x								x				X
Galium sp.	Bedstraw sp.											Forb					x																X
Geranium robertianum	Herb-Robert	2	3	-2		G5	N5	S5				Forb	I				x												x				X
Geum urbanum	Wood Avens		5	-1		G5	NNA	SNA				Forb	I					x	x		x		x						x		x		X
Glechoma hederacea	Ground-ivy		3	-2		GNR	NNA	SNA				Forb	I		x		x														x		X
Gleditsia triacanthos var. inermi	Thornless Honey Locust		0			G5						Tree	N													x							X
Gymnocladus dioicus	Kentucky Coffee-tree	6	3			G5	N2	S2	THR	THR	THR	Tree	N										x											X
Hemerocallis fulva	Orange Daylily		5	-3		GNA	NNA	SNA				Forb	I												x		x						X
Hesperis matronalis	Dame's Rocket		3	-3		G4G5	NNA	SNA				Forb	I			x			x														X
Hypericum perforatum	Common St. John's-wort		5	-3		GNR	NNA	SNA				Forb	I																		x		X
Impatiens capensis	Spotted Jewelweed	4	-3		X	G5	N5	S5				Forb	N		x					x			x							x			X
Juglans nigra	Black Walnut	5	3			G5	N4?	S4?				Tree	N			x			x													x	X
Juncus sp.	Rush sp.											Rush																			x		X
Juniperus virginiana	Eastern Red Cedar	4	3			G5	N5	S5				Tree	N													x							X
Leonurus cardiaca	Common Motherwort		5	-2		GNR	NNA	SNA				Forb	I		x		x																X
Ligustrum vulgare	European Privet		3	-2		GNR	NNA	SNA				Shrub	I											x									X
Lolium perenne	Perennial Ryegrass		3	-1		GNR	NNA	SNA				Grass	I	x																			X
Lolium pratense	Meadow Ryegrass		3	-1		G5	NNA	SNA				Grass	I		x						x												X
Lonicera sp.	Honeysuckle sp.											Shrub				x	x		x		x		x		x								X
Lonicera tatarica	Tatarian Honeysuckle		3	-3		GNR	NNA	SNA				Shrub	I	x																			X
Lotus corniculatus	Garden Bird's-foot Trefoil		3	-2		GNR	NNA	SNA				Forb	I	x																			X
Lycopus americanus	American Water-horehound	4	-5		X	G5	N5	S5				Forb	N																	x			X
Lythrum salicaria	Purple Loosestrife		-5	-3	X	G5	NNA	SNA				Forb	I		x															x			X
Malus sp.	Apple sp.											Tree												x		x							X
Melilotus albus	White Sweet-clover		3	-3		G5	NNA	SNA				Forb	I	x																			X
Myriophyllum sp.	Water-milfoil sp.											Forb								x													X
Nymphaea odorata	Fragrant Water-lily	5	-5		X	G5	N5	S5				Forb	N							x													X
Ostrya virginiana	Eastern Hop-hornbeam	4	3			G5	N5	S5				Tree	N																x				X
Oxalis stricta	Upright Yellow Wood-sorrel		3			G5	N5	S5				Forb	I				x																X
Parthenocissus vitacea	Thicket Creeper	4	3			G5	N5	S5				Vine	N	x		x	x		x		x							x	x	x		x	x	X
Persicaria hydropiperoides	False Waterpepper	4	-5		X	G5	N5	S5				Forb	N		x																		X
Persicaria maculosa	Spotted Lady's-thumb		-3	-1	X	G3G5	NNA	SNA				Forb	I							x													X
Phalaris arundinacea var. arundi	Reed Canarygrass	0	-3		X	G5TNR	NNR	S5				Grass	N	x	x					x				x							x	x	X
Phragmites australis	Common Reed	0	-3		X	G5	N5	S4?				Grass	N		x																		X
Picea glauca	White Spruce	6	3	-1	X	G5	N5	S5				Tree	N	x		x		x			x		x	x	x								X
Picea sp.	Spruce sp.											Tree														x							X
Pinus resinosa	Red Pine	8	3	-1		G5	N5	S5				Tree	N												x								X
Pinus strobus	Eastern White Pine	4	3		X	G5	N5	S5				Tree	N											x	x				x				X
Plantago major	Common Plantain		3	-1		G5	NNA	SNA				Forb	I						x														X
Poa pratensis	Kentucky Bluegrass		3			G5	N5	S5				Grass	I	x				x			x			x							x		X
Populus balsamifera	Balsam Poplar	4	-3		X	G5	NNR	S5				Tree	N				x																X
Populus deltoides	Eastern Cottonwood	4	0			G5	N5	S5				Tree	N	x																			X

SCIENTIFIC NAME	COMMON NAME	CC [1]	CW[1]	WEEDINESS[1]	OWES WETLAND PLANT LIST[2]	G_RANK[3]	N_RANK	S_RANK[4]	COSEWIC[5]	SARA[6]	SARO[7]	PHYSIOLOGY/HABIT[8]	NATIVE STATUS[9]	Unit 1 (CUM1-1)	Unit 2 (MAMM3-1)	Unit 4 (CUW1)	Unit 5 (FOD7-3)	Unit 6 (CUW1-b)	Unit 7 (CUW1-b / CUS1-b)	Unit 9 (MAS2-1)	Unit 10 (CUW1-b)	Unit 11 (SWT2)	Unit 12 (CUW1-b)	Unit 13 (CUS1)	Unit 14 (CUP)	Unit 16 (CVR_1)	Unit 17 (MAM)	Unit 18 (FOM2-2)	Unit 19 (FOD7a)	Unit 20 (MAMM3-1)	Unit 21 (CUW1-b)	Unit 22 (FOD5-1)	Totals
Populus tremuloides	Trembling Aspen	2	0			G5	N5	S5				Tree	N			x		x	x					x									X
Prunus serotina	Black Cherry	3	3			G5	N5	S5				Tree	N															x						X
Prunus virginiana	Chokecherry	2	3			G5	N5	S5				Shrub	N				x				x		x					x			x	x	X
Pyrus communis	Common Pear		5	-1		G5	NNA	SNA				Tree	I	x		x																	X
Quercus alba	White Oak	6	3			G5	N5	S5				Tree	N								x												X
Quercus macrocarpa	Bur Oak	5	3		X	G5	N5	S5				Tree	N								x											x	X
Quercus rubra	Northern Red Oak	6	3			G5	N5	S5				Tree	N																			x	X
Ranunculus acris	Common Buttercup		0	-2	X	G5	NNA	SNA				Forb	I								x		x										X
Ranunculus sceleratus	Cursed Buttercup	2	-5		X	G5	N5	S5				Forb	N		x																		X
Rhamnus cathartica	European Buckthorn		0	-3	X	GNR	NNA	SNA				Tree	I	x		x	x	x	x		x	x		x	x						x	x	X
Rhus typhina	Staghorn Sumac	1	3			G5	N5	S5				Shrub	N	x					x					x			x					x	X
Ribes cynosbati	Eastern Prickly Gooseberry	4	3			G5	N5	S5				Shrub	N																	x			X
Ribes rubrum	European Red Currant		5	-2	X	G4G5	NNA	SNA				Shrub	I				x											x			x		X
Robinia pseudoacacia	Black Locust		3	-3		G5	NNA	SNA				Tree	I			x		x														x	X
Rubus idaeus ssp. strigosus	North American Red Raspberry	2	3			G5T5	N5	S5				Shrub	N				x		x							x							X
Rumex crispus	Curled Dock		0	-2	X	GNR	NNA	SNA				Forb	I	x																			X
Salix alba	White Willow		-3	-2	X	G5	NNA	SNA				Tree	I																			x		X
Salix bebbiana	Bebb's Willow	4	-3		X	G5	N5	S5				Shrub	N								x	x											X
Salix cinerea	Ashy Willow		-3	-1		G5	NNA	SNA				Shrub	I												x								X
Salix eriocephala	Cottony Willow	4	-3		X	G5	N5	S5				Shrub	N									x											X
Salix euxina	Crack Willow		0			GNR	NNA	SNA				Tree	I	x			x			x													X
Salix petiolaris	Meadow Willow	3	-3		X	G5	N5	S5				Shrub	N	x						x					x								X
Salix sp.	Willow sp.																x				x	x	x	x		x							X
Sambucus canadensis	Common Elderberry	5	-3		X	G5	N5	S5				Shrub	N				x					x											X
Sambucus racemosa	Red Elderberry	5	3			G5	N5	S5				Shrub	N													x							X
Sanguinaria canadensis	Bloodroot	5	3			G5	N5	S5				Forb	N																			x	X
Schoenoplectus tabernaemontani	Soft-stemmed Bulrush	5	-5		X	G5	N5	S5				Sedge	N		x																		X
Scirpus atrovirens	Dark-green Bulrush	3	-5		X	G5	N5	S5				Sedge	N																		x		X
Securigera varia	Purple Crown-vetch		5	-2		GNR	NNA	SNA				Forb	I	x										x									X
Solidago altissima	Tall Goldenrod	1	3			G5	N5	S5				Forb	N	x																			X
Solidago altissima var. altissima	Eastern Tall Goldenrod	1	3			G--T5	N5	S5				Forb	N		x	x		x	x	x	x	x	x	x	x		x		x	x	x		X
Solidago canadensis var. canade	Canada Goldenrod	1	3			G5T5	N5	S5				Forb	N				x																X
Solidago flexicaulis	Zigzag Goldenrod	6	3			G5	N5	S5				Forb	N																x	x			x	X
Solidago nemoralis	Grey-stemmed Goldenrod	2	5			G5	N5	S5				Forb	N	x																				X
Sonchus arvensis	Field Sow-thistle		3	-1		GNR	NNA	SNA				Forb	I	x																	x		X
Sonchus oleraceus	Common Sow-thistle		3	-1		GNR	NNA	SNA				Forb	I		x																		X
Sorbus aucuparia	European Mountain-ash		5	-2		G5	NNA	SNA				Tree	I				x																X
Symphyotrichum ericoides	White Heath Aster	4	3			G5	N5	S5				Forb	N																			x		X
Symphyotrichum lanceolatum	Panicled Aster	3	-3		X	G5	N5	S5				Forb	N	x	x		x		x													x		X
Symphyotrichum lateriflorum	Calico Aster	3	0			G5	N5	S5				Forb	N																	x				X
Symphyotrichum novae-angliae	New England Aster	2	-3			G5	N5	S5				Forb	N	x							x			x							x			X
Symphyotrichum sp.	Aster sp.											Forb																			x			X
Thalictrum dioicum	Early Meadow-rue	6	3			G5	N5	S5				Forb	N				x																	X
Thuja occidentalis	Eastern White Cedar	4	-3		X	G5	N5	S5				Tree	N			x					x			x	x								X
Tilia americana	Basswood	4	3			G5	N5	S5				Tree	N																x				x	X
Tilia cordata	Little-leaved Linden		5			GNR	NNA	SNA				Tree	I					x																X
Torilis japonica	Erect Hedge-parsley		3	-3		GNR	NNA	SNA				Forb	I			x																		X
Trifolium sp.	Clover sp.											Forb		x																				X
Tsuga canadensis	Eastern Hemlock	7	3		X	G5	N5	S5				Tree	N												x								X
Tussilago farfara	Coltsfoot		3	-2	X	GNR	NNA	SNA				Forb	I		x		x											x						X
Typha angustifolia	Narrow-leaved Cattail		-5		X	G5	N5	SNA				Forb	I							x													X
Typha latifolia	Broad-leaved Cattail	1	-5		X	G5	N5	S5				Forb	N		x					x								x						X
Ulmus americana	White Elm	3	-3		X	G4	N5	S5				Tree	N	x					x															X
Ulmus pumila	Siberian Elm		3	-1		GNR	NNA	SNA				Tree	I	x							x													X
Urtica dioica ssp. gracilis	Slender Stinging Nettle	2	0		X	G5T5	N5	S5				Forb	N																			x		X
Verbascum thapsus	Common Mullein		5	-2		GNR	NNA	SNA				Forb	I	x																				X
Viburnum lantana	Wayfaring Viburnum		5	-1		GNR	NNA	SNA				Shrub	I									x											X
Viburnum lentago	Nannyberry	4	0		X	G5	N5	S5				Shrub	N			x					x												X
Viburnum opulus ssp. opulus	Cranberry Viburnum		-3	-1	X	G5TNR	NNA	SNA				Shrub	I				x		x		x								x			x		X
Vicia cracca	Tufted Vetch		5	-1		GNR	NNA	SNA				Forb	I	x							x													X
Vincetoxicum rossicum	European Swallowwort		5	-3		GNR	NNA	SNA				Forb	I				x				x											x		X
Viola sp.	Violet sp.											Forb					x		x													x		X
Vitis riparia	Riverbank Grape	0	0			G5	N5	S5				Vine	N	x	x	x	x		x		x		x					x	x	x	x		X
	Total Species:													37	23	19	30	13	25	12	36	12	16	22	13	10	8	16	11	24	24	18	154
	Total Genus Only:													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	13
	Native Species:													18	14	13	14	6	17	6	20	8	9	12	10	5	5	12	10	14	12	15	84
	% Native Species													48.64864865	60.86956522	68.42105263	46.66666667	46.15384615	68	50	55.55555556	66.66666667	56.25	54.54545455	76.92307692	50	62.5	75	90.90909091	58.33333333	50	83.33333333	54.54545455
	Exotic Species													18	9	5	12	7	6	4	13	2	4	8	2	2	3	4	0	7	11	2	56
	% Exotic Species													48.64864865	39.13043478	26.31578947	40	53.84615385	24	33.33333333	36.11111111	16.66666667	25	36.36363636	15.38461538	20	37.5	25	0	29.16666667	45.83333333	11.11111111	36.36363636
	S1 Species													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S1S2													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S2 Species													0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
	S2S3													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S3 Species													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S3S4													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S4 Species													1	0	1	2	1	0	0	1	1	0	1	0	1	0	2	1	0	0	1	3
	S4S5													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S5 Species													18	12	11	14	6	16	6	19	7	8	11	10	3	5	11	9	15	12	13	78
	SU													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SNR													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SNA													1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
	SH													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SR													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total COSEWIC Designated Speci													0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
	Total COSEWIC SC													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total ESA Listed Species (E													0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
	Total ESA SC													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total SARA Listed Species (E													0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
	Total SARA SC													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	mean CC													2.055555556	2.428571429	3	3.066666667	2.833333333	2.411764706	2.333333333	3.05	2.875	2.111111111	2.75	4.1	3.5	2	3.769230769	2.7	2.571428571	1.583333333	3.933333333	161.3333333
	CC 0 to 3													15	10	7	8	3	12	4	10	4	6	7	3	1	4	4	6	11	11	4	41

SCIENTIFIC NAME	COMMON NAME	CC [1]	CW[1]	WEEDINESS[1]	OWES WETLAND PLANT LIST[2]	G_RANK[3]	N_RANK	S_RANK[4]	COSEWIC[5]	SARA[6]	SARO[7]	PHYSIOLOGY/HABIT[8]	NATIVE STATUS[9]	Unit 1 (CUM1-1)	Unit 2 (MAMM3-1)	Unit 4 (CUW1)	Unit 5 (FOD7-3)	Unit 6 (CUW1-b)	Unit 7 (CUW1-b / CUS1-b)	Unit 9 (MAS2-1)	Unit 10 (CUW1-b)	Unit 11 (SWT2)	Unit 12 (CUW1-b)	Unit 13 (CUS1)	Unit 14 (CUP)	Unit 16 (CVR_1)	Unit 17 (MAM)	Unit 18 (FOM2-2)	Unit 19 (FOD7a)	Unit 20 (MAMM3-1)	Unit 21 (CUW1-b)	Unit 22 (FOD5-1)	Totals
													% species with CC 0 t	83.33333333	71.42857143	53.84615385	53.33333333	50	70.58823529	66.66666667	50	50	66.66666667	58.33333333	30	25	80	30.76923077	60	78.57142857	91.66666667	26.66666667	2.053079619
													CC 4 to 6	3	4	6	7	3	5	2	10	4	3	5	5	3	1	9	4	3	1	11	41
													% species with CC 4 t	16.66666667	28.57142857	46.15384615	46.66666667	50	29.41176471	33.33333333	50	50	33.33333333	41.66666667	50	75	20	69.23076923	40	21.42857143	8.333333333	73.33333333	48.80952381
													CC 7 to 8	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	
													% species with CC 7 t	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	2.380952381	
													CC 9 to 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
													% species with CC 9 to	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
													FQI	8.720983635	9.086882225	10.81665383	12.29401713	6.940220938	9.943960626	5.715476066	13.64001466	8.131727984	6.333333333	9.526279442	12.96533841	6.260990337	4.472135955	14.1450816	8.538149682	9.621404709	5.484827557	15.2337345	31.09604936
													average wetness valu	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
													CW of 5	8	1	2	6	3	3	0	8	1	3	2	1	2	1	2	0	3	8	0	25	
													% species with CW of	22.22222222	4.347826087	11.11111111	23.07692308	23.07692308	13.04347826	0	24.24242424	10	23.07692308	10	8.333333333	28.57142857	12.5	12.5	0	14.28571429	34.7826087	0	17.85714286	
													CW of 4, 3 or 2	14	8	9	11	6	8	2	11	1	6	9	8	4	5	11	5	5	5	13	58	
													% species with CW of 4, 3	38.88888889	34.7826087	50	42.30769231	46.15384615	34.7826087	20	33.33333333	10	46.15384615	45	66.66666667	57.14285714	62.5	68.75	50	23.80952381	21.73913043	76.47058824	41.42857143	
													CW of 1, 0 or -1	8	1	5	4	4	7	1	7	3	3	3	2	1	0	2	3	2	4	4	21	
													% species with CW of 1, 0	22.22222222	4.347826087	27.77777778	15.38461538	30.76923077	30.43478261	10	21.21212121	30	23.07692308	15	16.66666667	14.28571429	0	12.5	30	9.523809524	17.39130435	23.52941176	15	
													CW of -2, -3 or -4	6	7	2	5	0	4	4	6	5	1	5	1	0	1	1	2	5	6	0	22	
													% species with CW of -2, -	16.66666667	30.43478261	11.11111111	19.23076923	0	17.39130435	40	18.18181818	50	7.692307692	25	8.333333333	0	12.5	6.25	20	23.80952381	26.08695652	0	15.71428571	
													CW of -5	0	6	0	0	0	1	3	1	0	0	1	0	0	1	0	0	6	0	0	14	
													% species with CW of	0	26.08695652	0	0	0	4.347826087	30	3.03030303	0	0	5	0	0	12.5	0	0	28.57142857	0	0	10	
													OWES Wetland Plants (2013	9	14	6	9	3	10	7	14	8	4	8	6	1	3	4	3	10	10	4	52	
													% OWES Wetland Plants (201	24.32432432	60.86956522	31.57894737	30	23.07692308	40	58.33333333	38.88888889	66.66666667	25	36.36363636	46.15384615	10	37.5	25	27.27272727	41.66666667	41.66666667	22.22222222	33.76623377	

APPENDIX C

SAR Screening

Species At Risk Designations
ENDANGERED
THREATENED
SPECIAL CONCERN
EXTIRPATED

Species	ESA Status[1] and Regional Occurrence	ESA Protection[2]	Source of Record (Date)	Key Habitats Used by Species in Ontario	Reasonable Likelihood of Presence on the Subject Property	Surveys Undertaken	Results of Field Surveys	Likelihood and Magnitude of Impacts to Species or Habitat
Birds								
Bank Swallow (Riparia riparia)	THR	Species and General Habitat Protection	OBBA Square 17TPJ15 (2021)	It nests in a wide variety of naturally and anthropogenically created vertical banks, which often erode and change over time including aggregate pits and the shores of large lakes and rivers (MNRF Guelph - Waterloo List, 2014)	**Minimal**. No suitable nesting habitat is present. May occur as a foraging visitant.	Targeted breeding bird survey (June 22 and July 5, 2021); general wildlife habitat assessment conducted during all field surveys.	No observations	**Minimal**. No nesting habitat impacted. Suitable foraging habitat to be retained. Additional foraging habitat is abundant in the local landscape
Barn Swallow (Hirundo rustica)	THR	Species and General Habitat Protection	OBBA Square 17TPJ15 (2021)	prefers farmland; lake/river shorelines; wooded clearings; urban populated areas; rocky cliffs; and wetlands. They nest inside or outside buildings; under bridges and in road culverts; on rock faces and in caves etc. (MNRF Guelph - Waterloo List, 2014)	**Moderate**. May occur as a foraging visitant, and suitable buildings for nesting are present in the local landscape.	Targeted breeding bird survey (June 22 and July 5, 2021); general wildlife habitat assessment conducted during all field surveys.	No observations	**Minimal**. No potential nesting habitat impacted. Suitable foraging habitat to be retained. Additional foraging habitat is abundant in the local landscape
Bobolink (Dolichonyx oryzivorus)	THR	Species and General Habitat Protection	OBBA Square 17TPJ15 (2021); NHIC database (2021)	Generally prefers open grasslands and hay fields. In migration and in winter uses freshwater marshes and grasslands (MNRF Guelph - Waterloo List, 2014)	**Minimal.** No grassland habitat is present. Potentially suitable open habitat areas (e.g., CUM) are small and marginal.	Targeted breeding bird survey (June 22 and July 5, 2021); general wildlife habitat assessment conducted during all field surveys.	No observations	**None**. Potentially suitable habitat is limited within the study area, no impact to individuals with vegetation removals outside of the nesting season.
Eastern Meadowlark (Sturnella magna)	THR	Species and General Habitat Protection	NHIC database (2021)	Generally prefers grassy pastures, meadows and hay fields. Nests are always on the ground and usually hidden in or under grass clumps (MNRF Guelph - Waterloo List, 2014)	**Minimal.** No grassland habitat is present. Potentially suitable open habitat areas (e.g., CUM) are small and marginal.	Targeted breeding bird survey (June 22 and July 5, 2021); general wildlife habitat assessment conducted during all field surveys.	No observations	**None**. Potentially suitable habitat is limited within the study area, no impact to individuals with vegetation removals outside of the nesting season.
Eastern Wood-pewee (Contopus virens)	SC	N/A	OBBA Square 17TPJ15 (2021); NHIC database (2021)	Associated with deciduous and mixed forests. Within mature and intermediate age stands it prefers areas with little understory vegetation as well as forest clearings and edges (MNRF Guelph - Waterloo List, 2014)	**Confirmed**. Two individuals recorded, each with 'Possible' breeding evidence in Vegetation Units XX and XX. Suitable habitat is present within the mature forest habitat throughout the study area.	Targeted breeding bird survey (June 22 and July 5, 2021); general wildlife habitat assessment conducted during all field surveys.	No observations	**Minimal**. Limited impact to potentially suitable forest habitat in the study area. Preliminary trail alignment avoids forested habitat, or uses existing trails through forested habitat.
Wood Thrush (Hylocichla mustelina)	SC	N/A	OBBA Square 17TPJ15 (2021)	Nests mainly in second-growth and mature deciduous and mixed forests, with saplings and well-developed understory layers. Prefers large forest mosaics, but may also nest in small forest fragments (MNRF Guelph - Waterloo List, 2014)	**Minimal**. Suitable habitat is present in the mature forests throughout the study area; however Wood Thush prefers larger forest areas	Targeted breeding bird survey (June 22 and July 5, 2021); general wildlife habitat assessment conducted during all field surveys.	No observations	**Minimal**. Limited impact to potentially suitable forest habitat in the study area. Preliminary trail alignment avoids forested habitat, or uses existing trails through forested habitat.
Fish								
Redside Dace (Clinostomus elongatus)	END	Species Protection and Habitat Regulation	NHIC database (2021)	Generally found in pools and slow-moving areas of small headwater streams with a moderate to high gradient (MNRF Guelph - Hamilton List, 2013).	**Minimal**. Suitable habitat may be present in the Don River West Branch in areas of open meadow with scattered trees and shrubs. However, the watercourse has several permanent barriers throughout the study area RSD cannot pass.	Fish community sampling on October 5, 2021.	No observations	**Minimal**. No known / confirmed habitat. No direct impacts to potential habitat for this species are anticipated and potential indirect impacts can be mitigated with mitigation measures and best management practices. ESA / SARA compliance requirements to be determined at detailed design.
Insects								
Monarch (Danaus plexippus)	SC	N/A	Previous WSP surveys in GTA	Exist primarily wherever milkweed and wildflowers exist; abandoned farmland, along roadsides, and other open spaces (MNRF Guelph - Waterloo List, 2014)	**Confirmed**. Two foraging individuals recorded in the north portion of the study area. The host plant (Milkweed) is present throughout the study area.	General Wildlife Surveys / SAR habitat assessment	No observations	**Minimal**. Most suitable habitat will be retained (only a small amount of CUM removal likely to be required). Limited impact to high quality habitat (e.g., Milkweed). Both milkweed and nectaring plants for adults are present within the broader landscape.

Species	ESA Status[1] and Regional Occurrence	ESA Protection[2]	Source of Record (Date)	Key Habitats Used by Species in Ontario	Reasonable Likelihood of Presence on the Subject Property	Surveys Undertaken	Results of Field Surveys	Likelihood and Magnitude of Impacts to Species or Habitat
Mammals								
Little Brown Bat (Little Brown Myotis) (Myotis lucifugus)	END	Species and General Habitat Protection	Bat Conservation International distribution maps	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius. Maternal Roosts: Often associated with buildings (attics, barns etc.). Occasionally found in trees (25-44 cm dbh) (MNRF Guelph - Waterloo List, 2014)	**Moderate**. May occur as a foraging visitant. Potential for maternity roosting in forest habitat with cavity trees / loose bark.	General Wildlife Surveys / SAR habitat assessment. No targeted surveys undertaken (acoustic monitoring / exit surveys)	No observations	**Minimal**. No known / confirmed habitat. Minimal impact to potentially suitable habitat in the forested areas (preliminary trail alignment either avoids most suitable habitat or utilizes existing trails through forested areas). No impact to individuals anticipated with removal of trees outside of the active bat period (i.e., between October 1 and March 31) .
Northern Long-eared Bat (Northern Myotis) (Myotis septentrionalis)	END	Species and General Habitat Protection	Bat Conservation International distribution maps	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius. Maternal Roosts: Often associated with cavities of large diameter trees (25-44 cm dbh). Occasionally found in structures (attics, barns etc.)(MNRF Guelph - Waterloo List, 2014)	**Moderate**. May occur as a foraging visitant. Potential for maternity roosting in forest habitat with cavity trees.	General Wildlife Surveys / SAR habitat assessment. No targeted surveys undertaken (acoustic monitoring / exit surveys)	No observations	**Minimal**. No known / confirmed habitat. Minimal impact to potentially suitable habitat in the forested areas (preliminary trail alignment either avoids most suitable habitat or utilizes existing trails through forested areas). No impact to individuals anticipated with removal of trees outside of the active bat period (i.e., between October 1 and March 31) .
Small-footed Bat (Myotis leibii)	END	Species and General Habitat Protection	Bat Conservation International distribution maps	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius. Maternal Roosts: primarily under loose rocks on exposed rock outcrops, crevices and cliffs, and occasionally in buildings, under bridges and highway overpasses and under tree bark (MNRF Guelph - Waterloo List, 2014)	**Minimal**. Low potential to occur in the study area as a foraging visitant (generally less common than other bat species in Southern Ontario). Low potential for maternity roost habitat in forested areas (preferred habitat in cliff faces or exposed rock outcrops).	General Wildlife Surveys / SAR habitat assessment. No targeted surveys undertaken (acoustic monitoring / exit surveys)	No observations	**Minimal**. No known / confirmed habitat. Minimal impact to potentially suitable habitat in the forested areas (preliminary trail alignment either avoids most suitable habitat or utilizes existing trails through forested areas). No impact to individuals anticipated with removal of trees outside of the active bat period (i.e., between October 1 and March 31) .
Tri-colored Bat (Perimyotis subflavus)	END	Species and General Habitat Protection	Bat Conservation International distribution maps	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius. Maternal Roosts: Manmade structures or tree cavities. Foraging over still water, rivers, or in forest gaps (COSEWIC 2013f)	**Minimal**. Low potential to occur as foraging visitant and low potential for maternity roost habitat in forest (uncommon and localized distribution in Ontario, COSEWIC, 2013).	General Wildlife Surveys / SAR habitat assessment. No targeted surveys undertaken (acoustic monitoring / exit surveys)	No observations	**Minimal**. No known / confirmed habitat. Minimal impact to potentially suitable habitat in the forested areas (preliminary trail alignment either avoids most suitable habitat or utilizes existing trails through forested areas). No impact to individuals anticipated with removal of trees outside of the active bat period (i.e., between October 1 and March 31) .
Plants								
Butternut (Juglans cinerea)	END	Species and General Habitat Protection	NHIC Database (2021)	Generally grows in rich, moist, and well-drained soils often found along streams. It may also be found on well-drained gravel sites, especially those made up of limestone. It is also found, though seldomly, on dry, rocky and sterile soils. In Ontario, the Butternut generally grows alone or in small groups in deciduous forests as well as in hedgerows (MNRF Guelph - Waterloo List, 2014).	**Moderate**. Potential habitat on woodland edges and along tributaries.	Botanical Inventory on August 30 and September 25, 2021	No observations	**Minimal**. Not recorded during field investigations and no known records on the subject property, but known from areas within 1km of the subject property and suitable conditions present.
Reptiles								
Blanding's Turtle (Emydoidea blandingii)	THR	Species and General Habitat Protection	NHIC database (2021)	Generally occur in freshwater lakes, permanent or temporary pools, slow-flowing streams, marshes and swamps. They prefer shallow water that is rich in nutrients, organic soil and dense vegetation. Adults are generally found in open or partially vegetated sites, and juveniles prefer areas that contain thick aquatic vegetation including sphagnum, water lilies and algae. They dig their nest in a variety of loose substrates, including sand, organic soil, gravel and cobblestone. Overwintering occurs in permanent pools that average about one metre in depth, or in slow-flowing streams (MNRF Guelph - Waterloo List, 2014)	**None**. No suitable habitat is present within the study area.	General Wildlife Surveys / SAR habitat assessment	No observations	**None.** None suitable habitat is present within the study area.
Snapping Turtle (Chelydra serpentina)	SC	N/A	Ontario Reptile and Amphibian Atlas (2019)	Generally inhabit shallow waters where they can hide under the soft mud and leaf litter. Nesting sites usually occur on gravely or sandy areas along streams. Snapping Turtles often take advantage of man-made structures for nest sites, including roads (especially gravel shoulders), dams and aggregate pits (MNRF Guelph - Waterloo List, 2014)	**Moderate**. Suitable habitat may be present in the Don River West Branch and in a stormwater management pond in the north portion of the study area.	General Wildlife Surveys / SAR habitat assessment	No observations	**Minimal** - Potential habitat may be present in the Don River West Branch, however, any suitable habitat is marginal quality (due to coarse substrates, absence of refuge habitat). No direct impacts to potential habitat for this species are anticipated and potential indirect impacts can be mitigated with mitigation measures and best management practices. May be present in the stormwater management pond in the north portion of the study area, however, direct impacts are unlikely.

APPENDIX D

Significant Wildlife Habitat Assessment

This evaluation is based on the Significant Wildlife Habitat Ecoregion Criteria Schedules for Ecoregion 7E (MNRF January 2015). The following text and tables are from that document, but include an additional 'evaluation' column, with discussion of site-specific attributes within the Bartley Smith Greenway Trail study area.

Table of Contents

Significant Wildlife Habitat Assessment for the Bartley Smith Greenway Trail Study Area: Criteria For Significant Wildlife Habitat in Ecoregion 7E

1. 1 SEASONAL CONCENTRATION AREAS OF ANIMALS

Seasonal concentration areas are areas where wildlife species occur annually in aggregations at certain times of the year. Such areas are sometimes highly concentrated with members of a given species, or several species, within relatively small areas. In spring and autumn, migratory wildlife species will concentrate where they can rest and feed. Other wildlife species require habitats where they can survive winter. Examples of seasonal concentration areas include deer wintering areas, breeding bird colonies and hibernation sites for reptiles, amphibians and some mammals

cxlviii. Table 1.1 outlines what wildlife habitats and defining criteria that are considered for seasonal concentration areas within Ecoregion 7E.

Table 1.1 Seasonal Concentration Areas of Animals.

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
1. Waterfowl Stopover and Staging Areas (Terrestrial) **Rationale;** Habitat important to migrating waterfowl.	American Black Duck American Wigeon Blue-winged Teal Gadwall Green-winged Teal Northern Pintail Northern Shoveler Tundra Swan	CUM1 CUT1 Plus evidence of annual spring flooding from melt water or run-off within these Ecosites. - Fields with seasonal flooding and waste grains in the Long Point, Rondeau, Lk. St. Clair, Grand Bend and Pt. Pelee areas may be important to Tundra Swans.	Fields with sheet water during Spring (mid-March to May). • Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl. • Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH unless they have spring sheet water available [cxlviii]. Information Sources • Anecdotal information from the landowner, adjacent landowners or local naturalist clubs may be good information in determining occurrence. • Reports and other information available from Conservation Authorities • Sites documented through waterfowl planning processes (eg. EHJV implementation plan) • Field Naturalist Clubs • Ducks Unlimited Canada • Natural Heritage Information Centre (NHIC)Waterfowl Concentration Area	Studies carried out and verified presence of an annual concentration of any listed species, evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"[ccxi] • Any mixed species aggregations of 100Ⓔ or more individuals required. • The flooded field ecosite habitat plus a 100-300m radius, dependant on local site conditions and adjacent land use is the significant wildlife habitat . • Annual use of habitat is documented from information sources or field studies (annual use can be based on studies or determined by past surveys with species numbers and dates). • SWH MISTIndex #7 provides development effects and mitigation measures.	No candidate habitat is present. CUM / CUT habitats in the study area are small and anthropogenically disturbed. Targeted breeding bird surveys were undertaken on two dates in 2021, with supplemental observations during other fieldwork. None of the listed species were recorded. **Conclusion: no candidate or confirmed SWH is present.**

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
2. Waterfowl Stopover and Staging Areas (Aquatic) **<u>Rationale:</u>** Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined. Sites identified are usually only one of a few in the eco-district.	American Black Duck American Wigeon Black Scoter Blue-winged Teal Brant Bufflehead Cackling Goose Canada Goose Canvasback Common Goldeneye Common Merganser Gadwall Greater Scaup Green-winged Teal Hooded Merganser Lesser Scaup Long-tailed Duck Northern Pintail Northern Shoveler Red-breasted Merganser Redhead Ring-necked duck Ruddy Duck Ruddy Duck Snow Goose Surf Scoter White-winged Scoter	MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7	• Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Sewage treatment ponds and storm water ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify. • These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water) <u>Information Sources</u> • Environment Canada • Naturalist clubs often are aware of staging/stopover areas. • OMNRF Wetland Evaluations indicate presence of locally and regionally significant waterfowl staging. • Sites documented through waterfowl planning processes (eg. EHJV implementation plan) • Ducks Unlimited projects • Element occurrence specification by Nature Serve: http://www.natureserve.org • Natural Heritage Information Centre (NHIC) Waterfowl Concentration Area	Studies carried out and verified presence of: • Aggregations of 100Ⓔ or more of listed species for 7 daysⒺ, results in > 700 waterfowl use days. • Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH[cxlix] • The combined area of the ELC ecosites and a 100m radius area is the SWH[cxlviii] • Wetland area and shorelines associated with sites identified within the SWHTG[cxlviii] Appendix Kcxlix are significant wildlife habitat. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”[ccxi] • Annual Use of Habitat is Documented from Information Sources or Field Studies (Annual can be based on completed studies or determined from past surveys with species numbers and dates recorded). • SWH MIST[cxlix] Index #7 provides development effects and mitigation measures.	Although some candidate habitat ELC types are present (MAS, SWD), they occupy small areas, are anthropogenically influenced and have limited potential for significant waterfowl use. Targeted breeding bird surveys were undertaken on two dates in 2021, with supplemental observations during other fieldwork. None of the listed species were recorded. **Conclusion: SWH is not present.**

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
3. Shorebird Migratory Stopover Area **<u>Rationale;</u>** High quality shorebird stopover habitat is extremely rare and typically has a long history of use.	American Golden-Plover Baird's Sandpiper Black-bellied Plover Dunlin Greater Yellowlegs Hudsonian Godwit Least Sandpiper Lesser Yellowlegs Marbled Godwit Pectoral Sandpiper Purple Sandpiper Red-necked Phalarope Whimbrel Ruddy Turnstone Sanderling Semipalmated Plover Semipalmated Sandpiper Short-billed Dowitcher Solitary Sandpiper Spotted Sandpiper Stilt Sandpiper White-rumped Sandpiper	BBO1 BBO2 BBS1 BBS2 BBT1 BBT2 SDO1 SDS2 SDT1 MAM1 MAM2 MAM3 MAM4 MAM5	• Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats. • Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October. • Sewage treatment ponds and storm water ponds do not qualify as a SWH. <u>Information Sources</u> • Western hemisphere shorebird reserve network. • Canadian Wildlife Service (CWS) Ontario Shorebird Survey. • Bird Studies Canada • Ontario Nature • Local birders and naturalist clubs • NHIC Shorebird Migratory Concentration Area	Studies confirming: • Presence of 3 or more of listed species and > 1000[í] shorebird use days during spring or fall migration period. (shorebird use days are the accumulated number of shorebirds counted per day over the course of the fall or spring migration period) • Whimbrel stop briefly (<24hrs) during spring migration, any site with >100[í] Whimbrel used for 3 years or more is significant. • The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100m radius area [cxlviii] • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"[ccxi] • SWH MIST[cxlix] Index #8 provides development effects and mitigation measures.	No candidate habitat is present and there are no known areas of regularly used shorebird migratory stopover habitat in the study area. Targeted breeding bird surveys were undertaken on two dates in 2021, with supplemental observations during other fieldwork. None of the listed species were recorded. **Conclusion: no candidate or confirmed SWH is present.**
4. Raptor Wintering Area **<u>Rationale;</u>** Sites used by multiple species, a high number of individuals and used annually are most significant	American Kestrel Northern Harrier Red-tailed Hawk Rough-legged Hawk Snowy Owl **<u>Special Concern:</u>** Bald Eagle Short-eared Owl	<u>Hawks/Owls:</u> Combination of ELC Community Series; need to have present one Community Series from each land class; Forest: FOD, FOM, FOC. Upland: CUM; CUT; CUS; CUW. <u>Bald Eagle:</u> Forest community Series: FOD, FOM, FOC, SWD, SWM or SWC on shoreline areas adjacent to large rivers or adjacent to lakes with open water (hunting area).	• The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors. • Raptor wintering (hawk/owl)sites need to be > 20 ha [cxlviii, cxlix] with a combination of forest and upland.[xvi, xvii, xviii, xix, xx, xxi]. • Least disturbed sites, idle/fallow or lightly grazed field/meadow (>15ha) with adjacent woodlands [cxlix] • Field area of the habitat is to be wind swept with limited snow depth or accumulation. • Eagle sites have open water and large trees and snags available for roosting[cxlix] <u>Information Sources</u>: • OMNR Ecologist or Biologist • Naturalist clubs • Natural Heritage Information Centre (NHIC) Raptor Winter Concentration Area • Data from Bird Studies Canada • Results of Christmas Bird Counts • Reports and other information available from Conservation Authorities.	Studies confirm the use of these habitats by: • One or more Short-eared Owls or; One of more Bald Eagles or; At least10 individuals and two of the listed hawk/owl species[Ê] • To be significant a site must be used regularly (3 in 5 years)[cxlix] for a minimum of 20 days by the above number of birds[Ê]. • The habitat area for an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area[Ê] • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"[ccxi] • SWH MIST[cxlix] Index #10 and #11 provides development effects and mitigation measures.	No candidate habitat is present. There are woodland areas that partially meet the ELC criteria (FOD); however, there are no upland areas (CUM/CUT/CUS/CUW) of sufficient size to qualify as candidate habitat. Targeted breeding bird surveys were undertaken on two dates in 2021, with supplemental observations during other fieldwork. One of the listed species, Red-tailed Hawk was recorded in low numbers. None of the listed species were recorded. **Conclusion: no candidate or confirmed SWH is present.**

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
5. Bat Hibernacula **<u>Rationale:</u>** Bat hibernacula are rare habitats in all Ontario landscapes.	Big Brown Bat Tri-coloured Bat	Bat Hibernacula may be found in these ecosites: CCR1 CCR2 CCA1 CCA2 (Note: buildings are not considered to be SWH)	• Hibernacula may be found in caves, mine shafts, underground foundations and Karsts. • Active mine sites should not be considered as SWH • The locations of bat hibernacula are relatively poorly known. <u>Information Sources</u> • OMNRF for possible locations and contact for local experts • Natural Heritage Information Centre (NHIC) Bat Hibernaculum • Ministry of Northern Development and Mines for location of mine shafts. • Clubs that explore caves (eg. Sierra Club) • University Biology Departments with bat experts.	• All sites with confirmed hibernating bats are SWH Ⓔ. • The area includes 200m radius around the entrance of the hibernaculum , , Ⓔ for most development types and 1000m for wind farms[ccv]. • Studies are to be conducted during the peak swarming period (Aug. – Sept.). Surveys should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects"[ccv]. • SWH MIST[cxlix] Index #1 provides development effects and mitigation measures.	No candidate habitat types are present and no potential hibernacula features (e.g., caves, mines) are known in the study area. **Conclusion: no candidate or confirmed SWH is present.**
6. Bat Maternity Colonies **<u>Rationale:</u>** Known locations of forested bat maternity colonies are extremely rare in all Ontario landscapes.	Big Brown Bat Silver-haired Bat	Maternity colonies considered SWH are found in forested Ecosites. All ELC Ecosites in ELC Community Series: FOD FOM SWD SWM	• Maternity colonies can be found in tree cavities, vegetation and often in buildings[xxii, xxv, xxvi, xxvii, xxxi] (buildings are not considered to be SWH). • Maternity roosts are not found in caves and mines in Ontario[xxii]. • Maternity colonies located in Mature deciduous or mixed forest stands[ccix, ccx] with >10/ha large diameter (>25cm dbh) wildlife trees[ccvii] • Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3 [ccxiv] or class 1 or 2 [ccxii]. • Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred[ccx] <u>Information Sources</u> • OMNRF for possible locations and contact for local experts • University Biology Departments with bat experts.	• Maternity Colonies with confirmed use by; >10 Big Brown BatsⒺ >5 Adult Female Silver-haired BatsⒺ • The area of the habitat includes the entire woodland or a forest stand ELC Ecosite or an Ecoelement containing the maternity coloniesⒺ. • Evaluation methods for maternity colonies should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects"[ccv]. • SWH MIST[cxlix] Index #12 provides development effects and mitigation measures.	Candidate habitat is present within the woodlands in the study area. **Conclusion: Candidate habitat is present in Vegetation Units 5, 18 and 20 and other FOD units within Area C south of Rutherford Road; maternity colony presence has not been confirmed through this study.**

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
7. Turtle Wintering Areas **<u>Rationale;</u>** Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	Midland Painted Turtle **<u>Special Concern:</u>** Northern Map Turtle Snapping Turtle	Snapping and Midland Painted turtles, ELC Community Classes; SW, MA, OA and SA, ELC Community Series; FEO and BOO Northern Map Turtle - Open Water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering habitat.	For most turtles, wintering areas are in the same general area as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates. • Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen. cix, cx, cxi, cxviii • Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH. <u>Information Sources</u> • EIS studies carried out by Conservation Authorities. • Field Naturalists Clubs • OMNRF ecologist or biologist • Natural Heritage Information Centre (NHIC)	• Presence of 5 over-wintering Midland Painted Turtles is significantÍ. • One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significantÍ. • The mapped ELC ecosite area with the over wintering turtles is the SWH. If the hibernation site is within a stream or river, the deep-water pool where the turtles are over wintering is the SWH. • Over wintering areas may be identified by searching for congregations (Basking Areas) of turtles on warm, sunny days during the fall (Sept. – Oct.) or spring (Mar. – May) [cvii]. Congregation of turtles is more common where wintering areas are limited and therefore significant [cix, cx, cxi, cxii]. • SWH MIST[cxlix] Index #28 provides development effects and mitigation measures for turtle wintering habitat.	No candidate habitat types are present in the study area. **Conclusion: no candidate or confirmed SWH is present.**
8. Reptile Hibernaculum **<u>Rationale;</u>** Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	**<u>Snakes:</u>** Eastern Gartersnake Northern Brownsnake Northern Red-bellied Snake Northern Ring-necked Snake Northern Watersnake Smooth Green Snake **<u>Special Concern:</u>** Eastern Ribbonsnake Milksnake	For all snakes, habitat may be found in any ecosite in central Ontario other than very wet ones. Talus, Rock Barren, Crevice, Cave, and Alvar sites may be directly related to these habitats. Observations of congregations of snakes on sunny warm days in the spring or fall is a good indicator.	For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural locations. Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line[xliv, l, li, lii, cxii] . Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover. <u>Information Sources</u> • In spring, local residents or landowners may have observed the emergence of snakes on their property (e.g.old dug wells). • Reports and other information available from Conservation Authorities. • Field Naturalist Clubs • University herpetologists • Natural Heritage Information Centre (NHIC)	Studies confirming: • Presence of snake hibernacula used by a minimum of five individuals of a snake sp. <u>or</u>; individuals of two or more snake spp. • Congregations of a minimum of five individuals of a snake sp. <u>or</u>; individuals of two or more snake spp. near potential hibernacula (eg. foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct)Í . • <u>Note</u>: If there are Special Concern Species present, then site is SWH • <u>Note</u>: Sites for hibernation possess specific habitat parameters (e.g. temperature, humidity, etc.) and consequently are used annually, often by many of the same individuals of a local population [i.e. strong hibernation site fidelity.]. Other critical life processes (e.g. mating) often take place in close proximity to hibernacula. The the feature in which the hibernacula is located plus a 30 m buffer is the SWHÍ • SWH MIST[cxlix] Index #13 provides development effects and mitigation measures for snake hibernacula.	None of the noted candidate habitat types (talus, rock barren, crevice, cave or alvar) is present in the study area. Habitat types with relatively greater potential for hibernacula use may be present within the woodlands. **Conclusion: no candidate or confirmed SWH is present.**

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
9. Colonially -Nesting Bird Breeding Habitat (Bank and Cliff) **<u>Rationale:</u>** Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local populations. All swallow population are declining in Ontario [excix].	Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)	Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles Cliff faces, bridge abutments, silos, barns. Habitat found in the following ecosites: CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1	• Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area. • Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles. • Does not include a licensed/permitted Mineral Aggregate Operation. <u>Information Sources</u> • Reports and other information available from Conservation Authorities. • Ontario Breeding Bird Atlas • Bird Studies Canada; NatureCounts http://www.birdscanada.org/birdmon/ • Field Naturalist Clubs.	Studies confirming: • Presence of 1 or more nesting sites with 8or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding season. • A colony identified as SWH will include a 50m radius habitat area from the peripheral nests • Field surveys to observe and count swallow nests are to be completed during the breeding season. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"[ccxi] • SWH MIST[cxlix] Index #4 provides development effects and mitigation measures	No candidate habitat is present within the study area. Targeted breeding bird surveys were undertaken on two dates in 2021, with supplemental observations during other fieldwork. None of the listed species were recorded. **Conclusion: no candidate or confirmed SWH is present.**
10. Colonially -Nesting Bird Breeding Habitat (Tree/Shrubs) **<u>Rationale:</u>** Large colonies are important to local bird population, typically sites are only known colony in area and are used annually.	Black-crowned Night-Heron Great Blue Heron Great Egret Green Heron	SWM2 SWM3 SWM5 SWM6 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7 FET1	• Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used. • Most nests in trees are 11 to 15 m from ground, near the top of the tree. <u>Information Sources</u> • Ontario Breeding Bird Atlas [ccv], colonial nest records. • Ontario Heronry Inventory 1991 available from Bird Studies Canada or NHIC (OMNRF). • Natural Heritage Information Centre (NHIC) Mixed Wader Nesting Colony • Aerial photographs can help identify large heronries. • Reports and other information available from Conservation Authorities. • MNRF District Offices. • Field Naturalist Clubs	Studies confirming: • Presence of 2[I] or more active nests of Great Blue Heron. • The edge of the colony and a minimum 300m radius or extent of the Forest Ecosite containing the colony or any island <15.0ha with a colony is the SWH [cc, ccvii] • Confirmation of active heronries are to be achieved through site visits conducted during the nesting season (April to August) or by evidence such as the presence of fresh guano, dead young and/or eggshells • SWH MIST[cxlix] Index #5 provides development effects and mitigation measures.	There is no known, regularly used colonially-nesting bird breeding habitat present and none was observed during field surveys. Targeted breeding bird surveys were undertaken on two dates in 2021, with supplemental observations during other fieldwork. One of the listed species, a single Great Blue Heron was recorded, with no breeding evidence. None of the listed species were recorded. **Conclusion: no candidate or confirmed SWH is present.**

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
11. Colonially -Nesting Bird Breeding Habitat (Ground) **<u>Rationale;</u>** Colonies are important to local bird population, typically sites are only known colony in area and are used annually.	Brewer's Blackbird Caspian Tern Common Tern Great Black-backed Gull Herring Gull Little Gull Ring-billed Gull	Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1;50,000 NTS map). Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird) MAM1-6; MAS1-3; CUM CUT CUS	• Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areas. • Brewers Blackbird colonies are found loosely on the ground in or in low bushes in close proximity to streams and irrigation ditches within farmlands. <u>Information Sources</u> • Ontario Breeding Bird Atlas, rare/colonial species records. • Canadian Wildlife Service. • Reports and other information available from Conservation Authorities. • Natural Heritage Information Centre (NHIC) Colonial Waterbird Nesting Area • MNRF District Offices. • Field Naturalist Clubs.	Studies confirming: • Presence of > 25 active nests for Herring Gulls or Ring-billed Gulls, >5 active nests for Common Tern or >2 active nests for Caspian TernⒺ. • Presence of 5 or more pairs for Brewer's BlackbirdⒺ. • Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant Ⓔ. • The edge of the colony and a minimum 150m radius area of habitat, or the extent of the ELC ecosites containing the colony or any island <3.0ha with a colony is the SWH [cc,cvii] • Studies would be done during May/June when actively nesting. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"[ccxi] • SWH MIST[cxiix]Index #6 provides development effects and mitigation measures.	There is no known, regularly used colonially-nesting bird breeding habitat present and none was observed during field surveys. Targeted breeding bird surveys were undertaken on two dates in 2021, with supplemental observations during other fieldwork. One of the listed species, Ring-billed Gull was recorded, with no breeding evidence. None of the listed species were recorded. **Conclusion: no candidate or confirmed SWH is present.**
12. Migratory Butterfly Stopover Areas **<u>Rationale:</u>** Butterfly stopover areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter.	Painted Lady Red Admiral **<u>Special Concern:</u>** Monarch	Combination of ELC Community Series; need to have present one Community Series from each landclass: <u>Field</u>: CUM CUT CUS <u>Forest</u>: FOC FOD FOM CUP Anecdotally, a candidate site for butterfly stopover will have a history of butterflies being observed.	A butterfly stopover area will be a minimum of 10 ha in size with a combination of field and forest habitat present, and will be located within 5 km of Lake Erie or Lake Ontario [cxlix]. • The habitat is typically a combination of field and forest, and provides the butterflies with a location to rest prior to their long migration south [xxxii, xxxiii, xxxiv, xxxv, xxxvi]. • The habitat should not be disturbed, fields/meadows with an abundance of preferred nectar plants and woodland edge providing shelter are requirements for this habitat [cxlviii, cxlix]. • Staging areas usually provide protection from the elements and are often spits of land or areas with the shortest distance to cross the Great Lakes [xxxvii, xxxviii, xxxix, xl, xli]. <u>Information Sources</u> • MNRF District Offices • Natural Heritage Information Centre (NHIC) • Agriculture Canada in Ottawa may have list of butterfly experts. • Field Naturalist Clubs • Toronto Entomologists Association	Studies confirm: • The presence of Monarch Use Days (MUD) during fall migration (Aug/Oct)[xliii]. MUD is based on the number of days a site is used by Monarchs, multiplied by the number of individuals using the site. Numbers of butterflies can range from 100-500/day[xxxvii], significant variation can occur between years and multiple years of sampling should occur [xl, xlii]. • MUD of >5000 **or** >3000 with the presence of Painted Ladies or Red Admiral's is to be considered significant.Í • SWHDSS [cxlix] Index #16 provides development effects and mitigation measures.	No candidate habitat is present. The study area is not within 5 km of Lake Ontario, which is greater than the distance required for candidate SWH to be present. We are aware of no anecdotal / historic evidence of use as a migratory butterfly stopover area. **Conclusion: no candidate or confirmed SWH is present.**

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
13. Landbird Migratory Stopover Areas **<u>Rationale:</u>** Sites with a high diversity of species as well as high numbers are most significant.	All migratory songbirds. Canadian Wildlife Service Ontario website: http://www.on.ec.gc.ca/wildlife_e.html All migrant raptors species: Ontario Ministry of Natural Resources: Fish and Wildlife Conservation Act, 1997. Schedule 7: Specially Protected Birds (Raptors)	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD	• Woodlots >5 haÍ in size and within 5 km [iv, v, vi, vii, viii, ix, x, xi, xii, xiii, xiv, xv] of Lake Erie and Lake Ontario. If woodlands are rare in an area of shoreline, woodland fragments 2-5ha can be considered for this habitat. • If multiple woodlands are located along the shoreline those Woodlands <2km from Lake Erie and Lake Ontario are more significant[cxlix]. Sites have a variety of habitats; forest, grassland and wetland complexes [cxlix]. • The largest sites are more significant [cxlix] • Woodlots and forest fragments are important habitats to migrating birds[ccxviii], these features located along the shore and located within 5km of Lake Erie and Lake Ontario are Candidate SWH [cxlviii]. <u>Information Sources</u> • Bird Studies Canada • Ontario Nature • Local birders and field naturalist club • Ontario Important Bird Areas (IBA) Program	Studies confirm: • Use of the woodlot by >200 birds/day and with >35 spp with at least 10 bird spp. recorded on at least 5 different survey datesÍ. This abundance and diversity of migrant bird species is considered above average and significant. • Studies should be completed during spring (Apr./May) and fall (Aug/Oct) migration using standardized assessment techniques. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"[ccxi] • SWH MIST [cxlix] Index #9 provides development effects and mitigation measures.	No candidate habitat is present. The study area is not within 5 km of Lake Ontario, which is greater than the distance required for candidate SWH to be present. **Conclusion: no candidate or confirmed SWH is present.**
14. Deer Winter Congregation Areas **<u>Rationale:</u>** Deer movement during winter in the southern areas of Eco-region 7E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands to reduce or avoid the impacts of winter conditions [cxlviii].	White-tailed Deer	All Forested Ecosites with these ELC Community Series; FOC FOM FOD SWC SWM SWD Conifer plantations much smaller than 50 ha may also be used.	• Woodlots >100 ha in size or if large woodlotsare rare in a planning area woodlots>50haⒺ • Deer movement during winter in the southern areas of Ecoregion 7E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands . • Large woodlots > 100ha and up to 1500 ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha . • Woodlots with high densities of deer due to artificial feeding are not significantⒺ. <u>Information Sources</u> • MNRF District Offices. • LIO/NRVIS	Studies confirm: • Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF [cxlviii]. • Use of the woodlot by white-tailed deer will be determined by MNRF, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNRF Í.. • Studies should be completed during winter (Jan/Feb) when >20cm of snow is on the ground using aerial survey techniques[ccxxiv] , ground or road surveys. or a pellet count deer density survey[ccxxv]. • SWH MIST [cxlix] Index #2 provides development effects and mitigation measures.	No candidate habitat is present within the study area and there are no known deer winter congregation areas based on the Land Information Ontario database. **Conclusion: no candidate or confirmed SWH is present.**

1.2 RARE VEGETATION COMMUNITIES OR SPECIALIZED HABITAT FOR WILDLIFE

1.2.1 Rare Vegetation Communities

Rare vegetation communities often contain rare species, particularly plants and small invertebrates, which depend on such habitats for their survival and cannot readily move to or find alternative habitats. When assessing rare vegetation communities, one of the most important criteria is the current representation of the community in the planning area based on its area relative to the total landscape or the number of examples within the planning area. There are a number of criterion used to define rare vegetation communities, however the NHIC uses a system that considers the provincial rank of a species or community type as a tool to prioritize protection efforts. These ranks are not legal designations but have been assigned using the best available scientific information, and follow a systematic ranking procedure developed by The Nature Conservancy (U.S.). The ranks are based on three factors: estimated number of occurrences, estimated community aerial extent, and estimated range of the community within the province:

S1 Extremely rare - usually 5 or fewer occurrences in the province, or very few remaining hectares. **S2 Very rare** - usually between 5 and 20 occurrences in the province, or few remaining hectares. **S3 Rare to uncommon** - usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with some extensive examples remaining.

The setting of criteria for significant wildlife habitat (SWH) has incorporated this ranking system into its process of determining rare vegetation communities and as such, a rare vegetation community is defined to include areas that contain a provincially rare vegetation community and/or areas that contain a vegetation community that is rare within the planning area. SWH Table 1.2.1 contains a listing of rare vegetation communities that are considered SWH for the planning area contained within Ecoregion 7E.

Table 1.2.1 Rare Vegetation Communities.

Rare Vegetation Community	CANDIDATE SWH			CONFIRMED SWH	Evaluation
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
15. Cliffs and Talus Slopes **<u>Rationale;</u>** Cliffs and Talus Slopes are extremely rare habitats in Ontario.	Any ELC Ecosite within Community Series: TAO CLO TAS CLS TAT CLT	A Cliff is vertical to near vertical bedrock >3m in height. A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris	Most cliff and talus slopes occur along the Niagara Escarpment. <u>Information Sources</u> • The Niagara Escarpment Commission has detailed information on location of these habitats. • OMNRF Districts • Natural Heritage Information Centre (NHIC) has location information available on their website. • Field Naturalist Clubs • Conservation Authorities	• Confirm any ELC Vegetation Type for Cliffs or Talus Slopes [lxxviii] • SWH MIST[cxlix] Index #21 provides development effects and mitigation measures.	**No candidate or confirmed SHW is present.**
16. Sand Barren **<u>Rationale;</u>** Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry	ELC Ecosites: SBO1 SBS1 SBT1 Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always ≤ 60%.	Sand Barrens typically are exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. They have little or no soil and the underlying rock protrudes through the surface. Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered but less than 60%.	A sand barren area >0.5ha in sizeⒺ. <u>Information Sources</u> • OMNRF Districts. • Natural Heritage Information Centre (NHIC) has location information available on their website. • Field Naturalist Clubs • Conservation Authorities	• Confirm any ELC Vegetation Type for Sand Barrens [lxxviii] • Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics)Í. • SWH MIST[cxlix] Index #20 provides development effects and mitigation measures.	**No candidate or confirmed SHW is present.**

Rare Vegetation Community	CANDIDATE SWH			CONFIRMED SWH	Evaluation
	ELC Ecosite Code	**Habitat Description**	**Detailed Information and Sources**	**Defining Criteria**	
17. Alvar **<u>Rationale;</u>** Alvars are extremely rare habitats in Ecos-region 7E.	ALO1 ALS1 ALT1 CUM2 CUS2 CUT2-1 CUW2 FOC1 FOC2 **<u>Five Alvar Indicator Species:</u>** 1) Carex crawei 2) Panicum philadelphicum 3) Eleocharis compressa 4) Scutellaria parvula 5) Trichostema brachiatum These indicator species are very specific to Alvars within Ecoregion 7EⒺ[cxlix]	An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars is complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plant. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animals species. Vegetation cover varies from patchy to barren with a less than 60% tree cover [lxxviii].	An Alvar site > 0.5 ha in size [lxxv]. Alvar is particularly rare in Ecoregion 7E where the only known sites are found in the western islands of Lake Erie. [cxcix] <u>Information Sources</u> • Alvars of Ontario (2000), Federation of Ontario Naturalists . • Ontario Nature – Conserving Great Lakes Alvars. • Natural Heritage Information Centre (NHIC) has location information available on their website. • OMNRF Staff. • Field Naturalist Clubs. • Conservation Authorities.	• Field studies that identify four of the fiveⒺ Alvar Indicator Species [lxxv,cxlix] at a Candidate Alvar site is Significant. • Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics). • The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses [lxxv] • SWH MIST[cxlix] Index #17 provides development effects and mitigation measures.	**No candidate or confirmed SHW is present.**
18. Old Growth Forest **<u>Rationale:</u>** Due to historic logging practices and land clearance for agriculture, old growth forest is rare in Ecoregion 7E.	Forest Community Series: FOC FOD FOM SWC SWD SWM	Old Growth forests are characterized by heavy mortality or turnover of over-storey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris.	Woodland area is >0.5ha. <u>Information Sources</u> • OMNRF Forest Resource Inventory mapping • OMNRF Districts. • Field Naturalist Clubs • Conservation Authorities • Sustainable Forestry Licence (SFL) companies will possibly know locations through field operations. • Municipal forestry departments	Field Studies will determine: • If dominant trees species of the ecosite are >140 years old, then stand is Significant Wildlife Habitat [cxlviii] • The stand will have experienced no recognizable forestry activities [cxlviii] (cut stumps will not be present) • The area of forest ecosites combined or an eco-element within an ecosite that contain the old growth characteristics is the SWH. • Determine ELC vegetation types for the forest forest area containing the old growth characteristics [lxxviii] • SWH MIST[cxlix] Index #23 provides development effects and mitigation measures.	**No candidate or confirmed SHW is present.**

Rare Vegetation Community	CANDIDATE SWH			CONFIRMED SWH	Evaluation
	ELC Ecosite Code	**Habitat Description**	**Detailed Information and Sources**	**Defining Criteria**	
19. Savannah **<u>Rationale:</u>** Savannahs are extremely rare habitats in Ontario.	CUS2 TPS1 TPS2 TPW1 TPW2	A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%. In ecoregion 7E, known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in the Toronto area (north of Lake Ontario).	No minimum size to site Í Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. <u>Information Sources</u> • Natural Heritage Information Centre (NHIC) has location data available on their website. • OMNRF Districts. • Field Naturalists Clubs. • Conservation Authorities.	Field studies confirm one or more of the Savannah indicator species listed in [lxxv] Appendix N should be present Í. Note: Savannah plant spp. list from Ecoregion 7E should be used[cxlviii]. • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics). • SWH MIST[cxlix] Index #18 provides development effects and mitigation measures.	**No candidate or confirmed SHW is present.**
20. Tallgrass Prairie **<u>Rationale:</u>** Tallgrass Prairies are extremely rare habitats in Ontario.	TPO1 TPO2	A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has < 25% tree cover. In ecoregion 7E, known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in the Toronto area (north of Lake Ontario).	No minimum size to site Í. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. <u>Information Sources</u> • OMNRF Districts. • Natural Heritage Information Centre (NHIC) has location information available on their website. • Field Naturalists Clubs. • Conservation Authorities.	Field studies confirm one or more of the Prairie indicator species listed in [lxxv] Appendix N should be present Í. Note: Prairie plant spp. list from Ecoregion 7E should be used[cxlviii] • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics). • SWHDSS[cxlix] Index #19 provides development effects and mitigation measures.	**No candidate or confirmed SHW is present.**
21. Other Rare Vegetation Communities **<u>Rationale:</u>** Plant communities that often contain rare species which depend on the habitat for survival.	Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG[cxlviii] . Any ELC Ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH.	Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.	ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in appendix M [cxlviii] The OMNRF/NHIC will have up to date listing for rare vegetation communities. <u>Information Sources</u> • Natural Heritage Information Centre (NHIC) has location information available on their website. • OMNRF Districts. • Field Naturalists Clubs. • Conservation Authorities.	Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTG[cxlviii] • Area of the ELC Vegetation Type polygon is the SWH. • SWH MIST [cxlix] Index #37 provides development effects and mitigation measures.	**No candidate or confirmed SHW is present.**

1.2.2 Specialized Habitat for Wildlife

Some wildlife species require large areas of suitable habitat for their long-term survival. Many wildlife species require substantial areas of suitable habitat for successful breeding. Their populations decline when habitat becomes fragmented and reduced in size[cxlviii]. Specialized habitat for wildlife is a community or diversity-based category, therefore, the more wildlife species a habitat contains, the more significant the habitat becomes to the planning area. The largest and least fragmented habitats within a planning area will support the most significant populations of wildlife. The specialized habitats for wildlife that are considered as SWH are outlined in Table 1.2.2.

Table 1.2.2 Specialized Habitats of Wildlife considered SWH.

Specialized Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
22. Waterfowl Nesting Area **<u>Rationale:</u>** Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.	American Black Duck Blue-winged Teal Gadwall Green-winged Teal Hooded Merganser Mallard Northern Pintail Northern Shoveler Wood Duck	All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWT1 SWT2 **Note: includes adjacency to Provincially Significant Wetlands**	A waterfowl nesting area extends 120 m [cxlix] from a wetland (> 0.5 ha) or a wetland (>0.5ha) and any small wetlands (0.5ha) within 120m or a cluster of 3 or more small (<0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur [cxlix]. • Upland areas should be at least 120 m wide so that predators such as racoons, skunks, and foxes have difficulty finding nests. • Wood Ducks and Hooded Mergansers utilize large diameter trees (>40cm dbh) in woodlands for cavity nest sites. <u>Information Sources</u> • Ducks Unlimited staff may know the locations of particularly productive nesting sites. • OMNRF Wetland Evaluations for indication of significant waterfowl nesting habitat. • Reports and other information available from Conservation Authorities.	Studies confirmed: • Presence of 3 or more nesting pairs for listed species excluding Mallards[Í], or; • Presence of 10 or more nesting pairs for listed species including Mallards[Í]. • Any active nesting site of an American Black Duck is considered significant. • Nesting studies should be completed during the spring breeding season (April - June). Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"[ccxi] • A field study confirming waterfowl nesting habitat will determine the boundary of the waterfowl nesting habitat for the SWH, this may be greater or less than 120 m [cxlviii] from the wetland and will provide enough habitat for waterfowl to successfully nest. • SWH MIST[cxlix] Index #25 provides development effects and mitigation measures.	Candidate habitat is present adjacent to Vegetation Unit 20 and a TRCA mapped and confirmed MAS2-1A in the same area. Targeted breeding bird surveys were undertaken on two dates in 2021, with supplemental observations during other fieldwork. One of the listed species (Mallard) was recorded in low numbers. **Conclusion: SWH is not present.**

Specialized Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
23. Bald Eagle and Osprey Nesting, Foraging and Perching Habitat **<u>Rationale:</u>** Nest sites are fairly uncommon in Eco-region 7E and are used annually by these species. Many suitable nesting locations may be lost due to increasing shoreline development pressures and scarcity of habitat.	Osprey **<u>Special Concern:</u>** Bald Eagle	ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands	Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy. Nests located on man-made objects are not to be included as SWH (e.g. telephone poles and constructed nesting platforms). <u>Information Sources</u> • Natural Heritage Information Centre (NHIC) compiles all known nesting sites for Bald Eagles in Ontario. • MNRF values information (LIO/NRVIS) will list known nesting locations. Note: data from NRVIS is provided as a point and does not represent all the habitat. • Nature Counts, Ontario Nest Records Scheme data. • OMNRF District. • Check the Ontario Breeding Bird Atlas [ccv] or Rare Breeding Birds in Ontario for species documented • Reports and other information available from Conservation Authorities. • Field Naturalists clubs	Studies confirm the use of these nests by: • One or more active Osprey or Bald Eagle nests in an area[cxlviii] . • Some species have more than one nest in a given area and priority is given to the primary nest with alternate nests included within the area of the SWH. • For an Osprey, the active nest and a 300 m radius around the nest or the contiguous woodland stand is the SWH [ccvii], maintaining undisturbed shorelines with large trees within this area is important [cxlviii]. • For a Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH. [cvi, ccvii] Area of the habitat from 400-800m is dependant on site lines from the nest to the development and inclusion of perching and foraging habitat [cvi] • To be significant a site must be used annually. When found inactive, the site must be known to be inactive for ≥ 3 years or suspected of not being used for >5 years before being considered not significant. [ccvii] • Observational studies to determine nest site use, perching sites and foraging areas need to be done from mid March to mid August. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"[ccxi] • SWH MIST[cxlix] Index #26 provides development effects and mitigation measures	No candidate habitat is present within the study area – there are no lakes or ponds present and wetlands in the study area are small and not suitable for this type of SWH. The Don River West Branch is present, however its small size would not be suitable to support this type of SWH. Targeted breeding bird surveys were undertaken on two dates in 2021, with supplemental observations during other fieldwork. Neither of the listed species was recorded. **Conclusion: no candidate or confirmed SWH is present.**
24. Woodland Raptor Nesting Habitat **<u>Rationale:</u>** Nests sites for these species are rarely identified; these area sensitive habitats are often used annually by these species.	Barred Owl Broad-winged Hawk Cooper's Hawk Northern Goshawk Red-shouldered Hawk Sharp-shinned Hawk	May be found in all forested ELC Ecosites. May also be found in SWC, SWM, SWD and CUP3	All natural or conifer plantation woodland/forest stands >30ha with >4ha of interior habitat [lxxxviiii, lxxxix, xc, xci, xciii, xciv, xcv,xcvi, cxxxiii]. Interior habitat determined with a 200m buffer[cxlviii] • Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Coopers hawk nest along forest edges sometimes on peninsulas or small off-shore islands. • In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest. <u>Information Sources</u> • OMNRF Districts. • Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented. • Check data from Bird Studies Canada. • Reports and other information available from Conservation Authorities.	Studies confirm: • Presence of 1 or more active nests from species list is considered significant[cxlviii]. • Red-shouldered Hawk and Northern Goshawk – A 400m radius around the nest or 28 ha of suitable habitat is the SWH [ccvii]. (the 28 ha habitat area would be applied where optimal habitat is irregularly shaped around the nest) • Barred Owl – A 200m radius around the nest is the SWH [ccvii]. • Broad-winged Hawk and Coopers Hawk,– A 100m radius around the nest is the SWH[ccvii]. • Sharp-Shinned Hawk – A 50m radius around the nest is the SWH[ccvii]. • Conduct field investigations from mid-March to end of May. The use of call broadcasts can help in locating territorial (courting/nesting) raptors and facilitate the discovery of nests by narrowing down the search area. • SWH MIST [cxlix] Index #27 provides development effects and mitigation measures.	No candidate habitat is present within the study area (all woodlands are less than 30 ha). Targeted breeding bird surveys were undertaken on two dates in 2021, with supplemental observations during other fieldwork. One of the listed species (Cooper's Hawk) was recorded. **Conclusion: no candidate or confirmed SHW is present.**

Specialized Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
25. Turtle Nesting Areas **<u>Rationale;</u>** These habitats are rare and when identified will often be the only breeding site for local populations of turtles.	Midland Painted Turtle **<u>Special Concern Species:</u>** Northern Map Turtle Snapping Turtle	Exposed mineral soil (sand or gravel) areas adjacent (<100m) [cxlviii] or within the following ELC Ecosites: BOO1 FEO1 MAS1 MAS2 MAS3 SAF1 SAM1 SAS1	• Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals. • For an area to function as a turtle-nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH. • Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used. <u>Information Sources</u> • Use Ontario Soil Survey reports and maps to help find suitable substrate for nesting turtles (well-drained sands and fine gravels). • Check the Ontario Herpetofaunal Summary Atlas records or other similar atlases for uncommon turtles; location information may help to find potential nesting habitat for them. • Natural Heritage Information Centre (NHIC) • Field Naturalist Clubs	Studies confirm: • Presence of 5 or more nesting Midland Painted Turtles[Í] • One or more Northern Map Turtle or Snapping Turtle nesting is a SWH[Í]. • The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100m around the nesting area dependant on slope, riparian vegetation and adjacent land use is the SWH.[cxlviii] • Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30-100m area of habitat. • Field investigations should be conducted in prime nesting season typically late spring to early summer. Observational studies observing the turtles nesting is a recommended method. • SWH MIST Index #28 provides development effects and mitigation measures for turtle nesting habitat.	No candidate habitat is present within the study area. None of the listed species was recorded during field surveys and no evidence of turtle nesting was observed. **Conclusion: SWH is not present.**
26. Seeps and Springs **<u>Rationale;</u>** Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.	Ruffed Grouse Salamander spp. Spruce Grouse White-tailed Deer Wild Turkey	Seeps/Springs are areas where ground water comes to the surface. Often they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.	Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system [cxvii, cxlix]. • Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species [cxix, cxx, cxxi, cxxii, cxiii, cxiv]. <u>Information Sources</u> • Topographical Map. • Thermography. • Hydrological surveys conducted by Conservation Authorities and MOE. • Field Naturalists Clubs and landowners. • Municipalities and Conservation Authorities may have drainage maps and headwater areas mapped.	Field Studies confirm: • Presence of a site with 2 or more[Í] seeps/springs should be considered SWH. • The area of a ELC forest ecosite or an ecoelement within ecosite containing the seeps/springs is the SWH. The protection of the recharge area considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation the habitat . • SWH MIST Index #30 provides development effects and mitigation measures	No candidate habitat is present within the study area. **Conclusion: SWH is not present.**

Specialized Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
27. Amphibian Breeding Habitat (Woodland) **<u>Rationale:</u>** These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations	Blue-spotted Salamander Eastern Newt Gray Treefrog Spotted Salamander Spring Peeper Western Chorus Frog Wood Frog	All Ecosites associated with these ELC Community Series; FOC FOD FOM SWC SWD SWM Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to migrating amphibians	• Presence of a wetland, pond or woodland pool (including vernal pools) >500m2 (about 25m diameter) within or adjacent (within 120m) to a woodland (no minimum size)., , , , , , , Some small wetlands may not be mapped and may be important breeding pools for amphibians. • Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat[exlviii] <u>Information Sources</u> • Ontario Herpetofaunal Summary Atlas (or other similar atlases) for records • Local landowners may also provide assistance as they may hear spring-time choruses of amphibians on their property. • OMNRF Districts and wetland evaluations • Field Naturalist clubs • Canadian Wildlife Service Amphibian Road Call Survey • Ontario Vernal Pool Association: http://www.ontariovernalpools.org	Studies confirm; • Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog species with Call Level Codes of 3Ⓔ. • A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the woodland/wetlands. • The habitat is the wetland area plus a 230m radius of woodland area [lxiii, lxv, lxvi, lxvii, lxviii, lxix, lxx, lxxi] . If a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat. • SWH MIST [exlix] Index #14 provides development effects and mitigation measures.	Candidate habitat is not present. SWH was evaluated using targeted amphibian breeding surveys on two dates in 2021. One of the listed species (Gray Treefrog) was recorded in low numbers. **Conclusion: candidate SWH was evaluated, no confirmed SWH is present.**
28. Amphibian Breeding Habitat (Wetlands) **<u>Rationale;</u>** Wetlands supporting breeding for these amphibian species are extremely important and fairly rare within Central Ontario landscapes.	American Toad Blue-spotted Salamander Bullfrog Eastern Newt Four-toed Salamander Gray Treefrog Green Frog Mink Frog Northern Leopard Frog Pickerel Frog Spotted Salamander Western Chorus Frog	ELC Community Classes SW, MA, FE, BO, OA and SA. Typically these wetland ecosites will be isolated (>120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (e.g. Bull Frog) may be adjacent to woodlands	• Wetlands>500m2 (about 25m diameter), supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNRF mapping and could be important amphibian breeding habitats. • Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators. • Bullfrogs require permanent water bodies with abundant emergent vegetation. <u>Information Sources</u> • Ontario Herpetofaunal Summary Atlas (or other similar atlases) • Canadian Wildlife Service Amphibian Road Surveys and Backyard Amphibian Call Count. • OMNRF Districts and wetland evaluations. • Reports and other information available from Conservation Authorities.	Studies confirm: • Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog/toad species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog/toad species with Call Level Codes of 3Ⓔ. or; Wetland with confirmed breeding Bullfrogs are significant. • The ELC ecosite wetland area and the shoreline are the SWH. • A combination of observational study and call count surveys [cviii] will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the wetlands. • If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. • SWH MIST [exlix] Index #15 provides development effects and mitigation measures.	Candidate habitat is present adjacent to Vegetation Units 2, 9 and 20 and a TRCA mapped and confirmed MAS2-1A in the same area as 20. SWH was evaluated using targeted amphibian breeding surveys on two dates in 2021. Two of the listed species (American Toad and Green Frog) were recorded in low numbers. **Conclusion: candidate SWH was evaluated, no confirmed SWH is present.**

Specialized Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
29. Woodland Area-Sensitive Bird Breeding Habitat Rationale: Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats for area sensitive interior forest song birds.	Blackburnian Warbler Black-throated Blue Warbler Black-throated Green Warbler Blue-headed Vireo Northern Parula Ovenbird Pileated Woodpecker Red-breasted Nuthatch Veery Scarlet Tanager Winter Wren Yellow-bellied Sapsucker **Special Concern:** Canada Warbler Cerulean Warbler	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD	• Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs old) forest stands or woodlots >30 ha. [cv, cxxxi, cxxxii, cxxxiii, cxxxiv, cxxxv, cxxxvi, cxxxvii, cxxxviii, cxxxix, cxl, cxli, cxlii, cxliii, cxliv, cxlv, cxlvi, cl, cli, clii, cliii, cliv, clv, clvi, clvii, clviii, clix] • Interior forest habitat is at least 200 m from forest edge habitat. [clxiv] <u>Information Sources</u> • Local birder clubs. • Canadian Wildlife Service (CWS) for the location of forest bird monitoring. • Bird Studies Canada conducted a 3-year study of 287 woodlands to determine the effects of forest fragmentation on forest birds and to determine what forests were of greatest value to interior species • Reports and other information available from Conservation Authorities.	Studies confirm: • Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. Ⓔ • Note: any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH.Ⓔ • Conduct field investigations in spring and early summer when birds are singing and defending their territories. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" [ccxi] • SWH MIST [cxlix] Index #34 provides development effects and mitigation measures.	No candidate habitat is present within the study area (all woodlands are less than 30 ha). Targeted breeding bird surveys were undertaken on two dates in 2021, with supplemental observations during other fieldwork. One of the listed species (Red-breasted Nuthatch) was recorded. **Conclusion: no candidate or confirmed SHW is present.**

1.3 HABITAT FOR SPECIES OF CONSERVATION CONCERN (NOT INCLUDING ENDANGERED OR THREATENED SPECIES)

Habitats of Species of Conservation Concern include wildlife species that are listed as Special Concern or rare, that are declining, or are featured species. Habitats of Species of Conservation Concern do not include habitats of Endangered or Threatened species as identified by the Endangered Species Act 2007. Table 1.3 assists with the identification of SWH for Species of Conservation Concern.

Table 1.3. Habitats of Species of Conservation Concern considered SWH.

Wildlife	Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite	Habitat Criteria and Information Sources	Defining Criteria	
30. Marsh Breeding Bird Habitat **<u>Rationale;</u>** Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes.	American Bittern American Coot Common Loon Common Moorhen Green Heron Marsh Wren Pied-billed Grebe Sandhill Crane Sedge Wren Sora Trumpeter Swan Virginia Rail **<u>Special Concern:</u>** Black Tern Yellow Rail	BOO1 FEO1 MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SAF1 SAM1 SAS1 For Green Heron: All SW, MA and CUM1 sites.	• Nesting occurs in wetlands. • All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present [cxxiv]. • For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently, it may be found in upland shrubs or forest a considerable distance from water. <u>Information Sources</u> • OMNRF District and wetland evaluations. • Field Naturalist clubs • Natural Heritage Information Centre (NHIC) Records. • Reports and other information available from Conservation Authorities. • Ontario Breeding Bird Atlas.	Studies confirm: • Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or breeding by any combination of 4 or more of the listed species Ⓔ. • Note: any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH Ⓔ. • Area of the ELC ecosite is the SWH. • Breeding surveys should be done in May/June when these species are actively nesting in wetland habitats. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” • SWH MIST Index #35 provides development effects and mitigation measures	Candidate habitat is present in riparian wetland areas along the Don River West Branch, although these marsh features are marginal due to their limited size and lack of open aquatic areas. Targeted breeding bird surveys were undertaken on two dates in 2021, with supplemental observations during other fieldwork. None of the listed species was recorded. **Conclusion: SHW is not present.**
31. Open Country Bird Breeding Habitat **<u>Rationale;</u>** This wildlife habitat is declining throughout Ontario and North America. Species such as the Upland Sandpiper have declined significantly the past 40 years based on CWS (2004) trend records.	Grasshopper Sparrow Northern Harrier Savannah Sparrow Upland Sandpiper Vesper Sparrow **<u>Special Concern:</u>** Short-eared Owl	CUM1 CUM2	Large grassland areas (includes natural and cultural fields and meadows) >30 ha [clx, clxi, clxii, clxiii, clxiv, clxv, clxvi, clxvii, clxviii, clxix]. Grasslands not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e. no row cropping or intensive hay or livestock pasturing in the last 5 years) Í. Grassland sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older. The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species. <u>Information Sources</u> • Agricultural land classification maps, Ministry of Agriculture. • Local bird clubs. • Ontario Breeding Bird Atlas • EIS Reports and other information available from Conservation Authorities.	Field Studies confirm: • Presence of nesting or breeding of 2 or more of the listed species.Í • A field with 1 or more breeding Short-eared Owls is to be considered SWH. • The area of SWH is the contiguous ELC ecosite field areas. • Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”[ccxi] • SWH MIST [cxlix] Index #32 provides development effects and mitigation measures	No candidate habitat is present (all CUM areas less than 30 ha in size). Targeted breeding bird surveys were undertaken on two dates in 2021, with supplemental observations during other fieldwork. None of the listed species was recorded. **Conclusion: no candidate or confirmed SHW is present.**

Wildlife	Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite	Habitat Criteria and Information Sources	Defining Criteria	
32. Shrub/Early Successional Bird Breeding Habitat **Rationale;** This wildlife habitat is declining throughout Ontario and North America. The Brown Thrasher has declined significantly over the past 40 years based on CWS (2004) trend records [cxcix].	**Indicator Spp:** Brown Thrasher Clay-coloured Sparrow **Common Spp.:** Black-billed Cuckoo Eastern Towhee Field Sparrow Willow Flycatcher Golden-winged Warbler **Special Concern:** Yellow-breasted Chat	CUT1 CUT2 CUS1 CUS2 CUW1 CUW2 Patches of shrub ecosites can be complexed into a larger habitat for some bird species	Large field areas succeeding to shrub and thicket habitats>10ha[clxiv] in size. Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (i.e. no row-cropping, haying or live-stock pasturing in the last 5 years) Í. Shrub thicket habitats (>10 ha) are most likely to support and sustain a diversity of these species [clxxiii]. Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands. Information Sources • Agricultural land classification maps, Ministry of Agriculture. • Local bird clubs. • Ontario Breeding Bird Atlas • Reports and other information available from Conservation Authorities.	Field Studies confirm: • Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species.Í • A habitat with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as Significant Wildlife Habitat. Í • The area of the SWH is the contiguous ELC ecosite field/thicket area. • Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"[ccxi] • SWH MIST [cxlix] Index #33 provides development effects and mitigation measures.	No candidate habitat is present (all CUT/CUW areas less than 10 ha in size). Targeted breeding bird surveys were undertaken on two dates in 2021, with supplemental observations during other fieldwork. None of the listed species was recorded. **Conclusion: no candidate or confirmed SHW is present.**
33. Terrestrial Crayfish **Rationale:** Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare. [ccii]	Chimney or Digger Crayfish; (*Fallicambarus fodiens*) Devil Crawfish or Meadow Crayfish; (*Cambarus Diogenes*)	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3 SWD SWT SWM CUM1 with inclusions of above meadow marsh ecosites can be used by terrestrial crayfish.	Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish. • Constructs burrows in marshes, mudflats, meadows, the ground can't be too moist. Can often be found far from water. • Both species are a semi-terrestrial burrower which spends most of its life within burrows consisting of a network of tunnels. Usually the soil is not too moist so that the tunnel is well formed. Information Sources • Information sources from "Conservation Status of Freshwater Crayfishes" by Dr. Premek Hamr for the WWF and CNF March 1998	Studies Confirm: • Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or terrestrial sites [cci] • Area of ELC Ecosite or an ecoelement area of meadow marsh or swamp within the larger ecosite area is the SWH. • Surveys should be done April to August in temporary or permanent water. Note the presence of burrows or chimneys are often the only indicator of presence, observance or collection of individuals is very difficult • SWH MIST cxlix Index #36 provides development effects and mitigation measures.	Candidate habitat is present in the suitable ELC types throughout the study area (MAS/MAM/CUM). Searches were undertaken during all field surveys in 2021. No terrestrial crayfish / burrows were recorded. **Conclusion: SWH is not present.**

Wildlife	Species	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Ecosite	Habitat Criteria and Information Sources	Defining Criteria	
34. Special Concern and Rare Wildlife Species **<u>Rationale:</u>** These species are quite rare or have experienced significant population declines in Ontario.	All Special Concern and Provincially Rare (S1-S3, SH) plant and animal species. Lists of these species are tracked by the Natural Heritage Information Centre (NHIC).	All plant and animal element occurrences (EO) within a 1 or 10km grid. Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy.	When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites [lxxviii] <u>Information Sources</u> • Natural Heritage Information Centre (NHIC) will have Special Concern and Provincially Rare (S1-S3, SH) species lists with element occurrences data. • NHIC Website "Get Information" : http://nhic.mnr.gov.on.ca • Ontario Breeding Bird Atlas • Expert advice should be sought as many of the rare spp. have little information available about their requirements.	Studies Confirm: • Assessment/inventory of the site for the identified special concern or rare species needs to be completed during the time of year when the species is present or easily identifiable. • The area of the habitat to the finest ELC scale that protects the habitat form and function is the SWH, this must be delineated through detailed field studies. The habitat needs be easily mapped and cover an important life stage component for a species e.g. specific nesting habitat or foraging habitat. • SWH MIST [exlix] Index #37 provides development effects and mitigation measures.	The following special concern / provincially rare species were recorded during field surveys: • Eastern Wood-pewee: recorded with 'Possible' breeding evidence in Vegetation Units 12 and 22. • Monarch: Two foraging individuals recorded in Vegetation Units 2, 12 and in cultural meadow south of Vegetation Unit 10. **Conclusion: confirmed SWH is present in Vegetation Units XX.**

1.4 ANIMAL MOVEMENT CORRIDORS

Animal Movement Corridors are elongated areas used by wildlife to move from one habitat to another. They are important to ensure genetic diversity in populations, to allow seasonal migration of animals (e.g. deer moving from summer to winter range) and to allow animals to move throughout their home range from feeding areas to cover areas. Animal movement corridors function at different scales often related to the size and home range of the animal. For example, short, narrow areas of natural habitat may function as a corridor between amphibian breeding areas and their summer range, while wider, longer corridors are needed to allow deer to travel from their winter habitat to their summer habitat.

Identifying the most important corridors that provide connectivity across the landscape is challenging because of a lack of specific information on animal movements. There is also some uncertainty about the optimum width and mortality risks of corridors. Furthermore, a corridor may be beneficial for some species but detrimental to others. For example, narrow linear corridors may allow increased access for racoons, cats, and other predators. Also, narrow corridors dominated by edge habitat may encourage invasion by weedy generalist plants and opportunistic species of birds and mammals. Corridors often consist of naturally vegetated areas that run through more open or developed landscapes. However, sparsely vegetated areas can also function as corridors. For example, many species move freely through agricultural land to reach natural areas. Despite the difficulty of identifying exact movement corridors for all species, these landscape features are important to the long-term viability of certain wildlife populations.

Animal Movement Corridors should only be identified as SWH where:

Where a Confirmed or Candidate SWH has been identified by MNR or the planning authority based on documented evidence of a habitat identified within these Criterion Schedules or the Significant Wildlife Habitat Technical Guide. The identified wildlife habitats Table 1.4.1 will have distinct passageways or rely on well defined natural features for movements between habitats required by the species to complete its life cycle.

Table 1.4.1 Animal Movement Corridors

Habitat	SPECIES	CANDIDATE SWH		CONFIRMED SWH	Evaluation
		ELC Eco-sites	Habitat Criteria and Information Sources	Defining Criteria	
35. Amphibian Movement Corridors **<u>Rationale:</u>** Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be extremely important for local populations.	American Toad Blue-spotted Salamander Bullfrog Eastern Newt Four-toed Salamander Gray Treefrog Green Frog Mink Frog Northern Leopard Frog Pickeral Frog Spotted Salamander Western Chorus Frog	Corridors may be found in all ecosites associated with water. • Corridors will be determined based on identifying the significant breeding habitat for these species in Table 1.1	Movement corridors between breeding habitat and summer habitat [clxxiv, clxxv, clxxvi, clxxvii, clxxviii, clxxix, clxxx, clxxxi]. Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH from Table 1.2.2 (**Amphibian Breeding Habitat –Wetland)** of this Schedule Í. <u>Information Sources</u> • MNRF District Office. • Natural Heritage Information Centre (NHIC). • Reports and other information available from Conservation Authorities. • Field Naturalist Clubs.	• Field Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sites. • Corridors should consist of native vegetation, with several layers of vegetation. Corridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant [cxlix] • Corridors should have at least 15m of vegetation on both sides of waterway [cxlix] or be up to 200m wide [cxlix] of woodland habitat and with gaps <20m [cxlix] . • Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat [cxlix]. • SWH MIST [cxlix] Index #40 provides development effects and mitigation measures	No amphibian movement corridors are present based on results of surveys and lack of confirmed amphibian breeding SWH.

1.5 EXCEPTIONS FOR ECOREGION 7E

Exceptions are candidate wildlife habitats that will have different criteria than what is proposed in the above schedules for an area within the Eco-region. The Exceptions will be based on Eco-Districts and municipalities can apply the exception for the eco-district within their planning area.

Table 1.5.1 Significant Wildlife Habitat Exceptions for Ecodistricts within EcoRegion 7E

EcoDistrict	Wildlife Habitat and Species	Candidate SWH			Confirmed SWH	Evaluation
		Ecosites	Habitat Description	Habitat Criteria and Information	Defining Criteria	
7E-2	**Bat Migratory Stopover Area** Rationale: Stopover areas for long distance migrant bats are important during fall migration. Eastern Red Bat Hoary Bat Silver-haired Bat	No specific ELC types.		• Long distance migratory bats typically migrate during late summer and early fall from summer breeding habitats throughout Ontario to southern wintering areas. Their annual fall migration may concentrate these species of bats at stopover areas. • This is the only known bat migratory stopover habitats based on current information. <u>Information Sources</u> • OMNRF for possible locations and contact for local experts • University of Waterloo, Biology Department	• Long Point (42°35'N, 80°30'E, to 42°33'N, 80°03'E) has been identified as a significant stop-over habitat for fall migrating Silver-haired Bats, due to significant increases in abundance, activity and feeding that was documented during fall migration [ccxv]. • The confirmation criteria and habitat areas for this SWH are still being determined. • SWH MIST [cxlix] Index #38 provides development effects and mitigation measures.	This SWH was not assessed through this study.

APPENDIX E

Photo Plates

Site: Bartley Smith Greenway Trail, Vaughan ON

Plate 1: McNaughton Rd crossing, facing upstream (north).

Plate 2: Culvert outlet at McNaughton Rd, facing upstream (north).

Plate 3: McNaughton Crossing Options 2 and 3, facing east.

Plate 4: McNaughton Rd north ditchline facing east.

Plate 5: Trail Alignment Option A proposed bridge crossing, facing east.

Plate 6: SWMP outlet into Don River West Branch.

Plate 7: Major Mackenzie Drive culvert inlet, facing down-stream (south).

Plate 8: Major Mackenzie Drive culvert outlet, facing up-stream (north).

wsp	BARTLEY SMITH GREENWAY TRAIL FEASIBILITY STUDY, VAUGHAN ON FISHERIES AND VEGETATION PHOTOS	Date: October 2021 Project No: 211-07301-00 Figure No: 1

Site: Bartley Smith Greenway Trail, Vaughan ON

Plate 1: Bridge Crossing Option 1, facing downstream (south). Debris jam is evident.

Plate 2: Bridge Crossing Option 1, facing upstream (north).

Plate 3: Private pond outlet 20 m north of Bridge Crossing Option 1, facing north.

Plate 4: Bridge Crossing Option 2, facing downstream (south).

Plate 5: Bridge Crossing Option 2, facing upstream (north).

Plate 6: Bridge Crossing Option 3, facing upstream (north).

Plate 7: Bridge Crossing Option 3, facing downstream (south).

Plate 8: Partial debris jam at Bridge Crossing Option 3.

wsp	BARTLEY SMITH GREENWAY TRAIL FEASIBILITY STUDY, VAUGHAN ON FISHERIES AND VEGETATION PHOTOS	Date: October 2021 Project No: 211-07301-00 Figure No: 2

Site: Bartley Smith Greenway Trail, Vaughan ON

Plate 1: Proposed crossing over culvert, inlet.

Plate 2: Proposed crossing over existing culvert, inlet.

Plate 3: Proposed crossing over existing culvert, outlet.

Plate 4: Bridge Crossing Option 4, facing upstream (north).

Plate 5: Bridge Crossing Option 4, facing downstream (south).

Plate 6: Deteriorated weir, 140 m upstream of proposed crossing over existing culvert.

Plate 7: Rutherford Rd crossing, culvert inlet. Active works are occurring.

Plate 8: Rutherford Rd crossing, culvert outlet. Active works are occurring.

wsp	BARTLEY SMITH GREENWAY TRAIL FEASIBILITY STUDY, VAUGHAN ON FISHERIES AND VEGETATION PHOTOS	Date: October 2021 Project No: 211-07301-00 Figure No: 3

Site: Bartley Smith Greenway Trail, Vaughan ON

Mixed Mineral Meadow Marsh Type MAMM3-1 (Unit 2)

Mineral Cultural Woodland Type CUW1 (Unit 4)

Cattail Mineral Shallow Marsh Type MAS2-1 (Unit 9)

Exotic Successional Woodland Type CUW1-b (Unit 6, 7, 10, 21)

Dry – Fresh White Pine-Sugar Maple Mixed Forest Type FOM2 -2 (Unit 18)

Mixed Mineral Meadow Marsh Type MAMM3-1 (Unit 20)

Dry – Fresh Sugar Maple Deciduous Forest Type FOD5-1 (Unit 22)

Rutherford Road recently cleared of vegetation

wsp	BARTLEY SMITH GREENWAY TRAIL FEASIBILITY STUDY, VAUGHAN ON FISHERIES AND VEGETATION PHOTOS	Date: October 2021 Project No: 211-07301-00 Figure No: 4

APPENDIX F

Breeding Bird Observations Table

Common Name	Scientific Name	GRANK1	SRANK2	SARO (ESA) Status3	COSEWIC Status4	SARA Status5	Schedule5	TRCA rank (2008)6	Habitat Use8	Area Sensitive Birds - Ecoregion 7E	Protected Under MBCA	Overall																				Overall Study Area	
												BB1		BB2		BB3		BB4		BB5		BB6		BB7		BB8		BB9		BB10			
												Highest Abundance	Highest Breeding Status	Highest Abundance	Highest Breeding Status	Highest Abundance	Highest Breeding Status	Highest Abundance	Highest Breeding Status	Highest Abundance	Highest Breeding Status	Highest Abundance	Highest Breeding Status	Highest Abundance	Highest Breeding Status	Highest Abundance	Highest Breeding Status	Highest Abundance	Highest Breeding Status	Highest Abundance	Highest Breeding Status	Highest Abundance	Highest Breeding Status
American Crow	*Corvus brachyrhynchos*	G5	S5B					L5	E									1	Possible							1	Possible					1	Possible
American Goldfinch	*Spinus tristis*	G5	S5B					L5	E		✓	4	Probable	2	Probable	3	Probable			3	Probable	5	Probable	3	Probable	2	Probable	3	Probable	5	Probable	5	Probable
American Redstart	*Setophaga ruticilla*	G5	S5B					L4	I		✓	1	Possible	1	Possible	2	Probable	1	Possible													2	Probable
American Robin	*Turdus migratorius*	G5	S5B					L5	E		✓	4	Possible	3	Possible	1	Probable	3	Probable	2	Probable	5	Confirmed	2	Probable	2	Probable	2	Probable	10	Confirmed	10	Confirmed
Baltimore Oriole	*Icterus galbula*	G5	S4B					L5	E		✓									1	Possible	1	Possible									1	Possible
Belted Kingfisher	*Megaceryle alcyon*	G5	S4B					L4												1	Possible									1	Observed	1	Observed
Black-capped Chickadee	*Poecile atricapillus*	G5	S5					L5	I/E		✓	1	Possible			2	Possible	4	Probable							4	Probable					4	Probable
Blue Jay	*Cyanocitta cristata*	G5	S5					L5	I/E					3	Possible	1	Probable	1	Possible									1	Possible	1	Possible	3	Probable
Brown-headed Cowbird	*Molothrus ater*	G5	S4B					L5	E			2	Possible							1	Possible	3	Possible	1	Possible							3	Possible
Cedar Waxwing	*Bombycilla cedrorum*	G5	S5B					L5	E		✓					1	Possible	1	Possible	1	Possible	1	Possible	6	Probable	1	Possible	1	Possible	3	Probable	6	Probable
Chipping Sparrow	*Spizella passerina*	G5	S5B					L5	E		✓															1	Probable					1	Probable
Common Grackle	*Quiscalus quiscula*	G5	S5B					L5	E		✓	6	Possible	3	Possible							3	Confirmed	4	Probable					1	Possible	6	Confirmed
Cooper's Hawk	*Accipiter cooperii*	G5	S4	NAR	NAR			L4	I	X																1	Possible					1	Possible
Double-crested Cormorant	*Phalacrocorax auritus*	G5	S5B	NAR	NAR			L3																						1	Observed	1	Observed
Downy Woodpecker	*Picoides pubescens*	G5	S5					L5	I/E		✓							1	Possible					1	Possible	1	Possible	1	Possible			1	Possible
Eastern Kingbird	*Tyrannus tyrannus*	G5	S4B					L4	E		✓																			2	Probable	2	Probable
Eastern Wood-pewee	*Contopus virens*	G5	S4B	SC	SC	SC	1	L4	I/E		✓			1	Possible															1	Possible	1	Possible
European Starling	*Sturnus vulgaris*	G5	SNA					L+	E			8	Possible	2	Possible	1	Possible			5	Probable	1	Possible	2	Possible			4	Possible	4	Probable	8	Probable
Gray Catbird	*Dumetella carolinensis*	G5	S4B					L4	I/E		✓			2	Possible	1	Possible			3	Possible	1	Possible	1	Probable	1	Possible			1	Possible	3	Probable
Great Blue Heron	*Ardea herodias*	G5	S4					L3	S/B, M/F		✓																			1	Observed	1	Observed
Great Crested Flycatcher	*Myiarchus crinitus*	G5	S4B					L4	I/E		✓			1	Possible			1	Possible			1	Possible							1	Possible	1	Possible
Hairy Woodpecker	*Picoides villosus*	G5	S5					L4	I		✓			1	Possible	2	Probable													1	Possible	2	Probable
House Wren	*Troglodytes aedon*	G5	S5B					L5	E		✓													1	Possible	1	Probable					1	Probable
Mallard	*Anas platyrhynchos*	G5	S5					L5	S/B, M/F		✓									1	Probable											1	Probable
Mourning Dove	*Zenaida macroura*	G5	S5					L5	E		✓									1	Probable	4	Probable			1	Possible	1	Possible	2	Possible	4	Probable
Northern Cardinal	*Cardinalis cardinalis*	G5	S5					L5	I/E		✓			1	Possible	2	Probable	2	Probable	1	Probable	1	Possible	1	Probable	1	Possible			2	Probable	2	Probable
Northern Flicker	*Colaptes auratus*	G5	S4B					L4	I/E		✓			1	Possible																	1	Possible
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	G5	S4B					L4	M/F		✓													1	Possible							1	Possible
Red-breasted Nuthatch	*Sitta canadensis*	G5	S5					L4	I	X	✓							1	Possible													1	Possible
Red-eyed Vireo	*Vireo olivaceus*	G5	S5B					L4	I/E		✓	1	Possible											1	Possible	1	Possible	1	Possible			1	Possible
Red-tailed Hawk	*Buteo jamaicensis*	G5	S5	NAR	NAR			L5	E													1	Possible									1	Possible
Red-winged Blackbird	*Agelaius phoeniceus*	G5	S4					L5	E		✓	2	Possible					1	Possible	4	Probable	3	Probable	1	Possible			4	Probable	8	Probable	8	Probable
Ring-billed Gull	*Larus delawarensis*	G5	S5B,SZN					L4			✓	6	Observed	1	Observed							1	Observed			1	Observed	1	Observed	1	Observed	6	Observed
Rock Pigeon	*Columba livia*	G5	SNA					L+			✓																	1	Observed			1	Observed
Song Sparrow	*Melospiza melodia*	G5	S5B					L5	E		✓	2	Possible			1	Probable	2	Probable	2	Probable	2	Probable	1	Probable	4	Probable	1	Probable	3	Probable	3	Probable
Tree Swallow	*Tachycineta bicolor*	G5	S4B					L4	E		✓																			1	Possible	1	Possible
Turkey Vulture	*Cathartes aura*	G5	S5B					L5																		1	Observed			1	Observed	1	Observed
Warbling Vireo	*Vireo gilvus*	G5	S5B					L4	E		✓									1	Probable	1	Probable			1	Possible			2	Probable	2	Probable
White-breasted Nuthatch	*Sitta carolinensis*	G5	S5					L4	I		✓			1	Possible			1	Possible													1	Possible
Wild Turkey	*Meleagris gallopavo*	G5	S5					L3	I/E																							12	Observed
Yellow Warbler	*Setophaga petechia*	G5	S5B					L5	E		✓	1	Possible	3	Possible	1	Possible			2	Probable	1	Possible									3	Probable
Totals												12		15		12		13		15	17		14		17		12		22		41	

APPENDIX G

Aquatic Field Notes

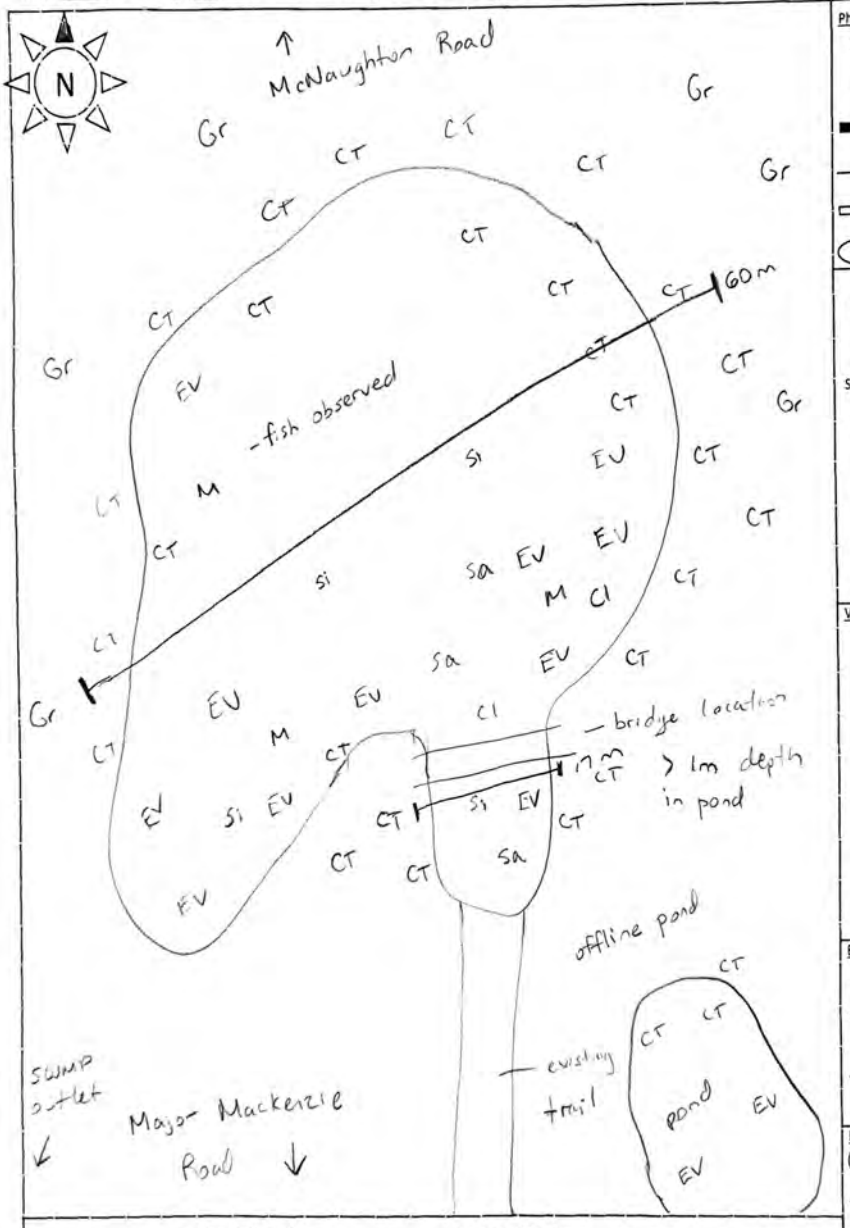
Aquatic Habitat Assessment

Page: ____ of ____

Project Name / #: Bartley Smith Trails **Date:** Oct 5, 2021 **Time:** 09:00 **Photos:** Y

Watercourse Name: SWMP **Location:** Vaughan **Length:** ~100 m **Observers:** KM SL

Zone: 17T **Easting:** 618473 **Northing:** 4856639 **Water Temp:** — **Air Temp:** 17°C **% Overhead Cover:** 10



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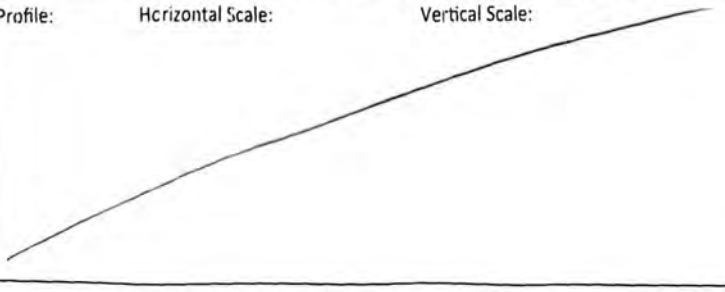


Physical Characteristics:
- 10d — Depth (cm)
- 6w — Width (m)
- — Riffle
- — Flat
- — Run/Glide
- — Pool

Substrate:
- — Island/Bar
- — Fine Substrate
- Sa, Si, M — Sand, Silt, Muck
- #### — Gravel Substrate
- — Cobble
- Sh — Shale
- (B) — Boulder
- **** — Debris

Vegetation:
- CT — Cattail
- RC — Reed Canary
- SV — Submergent Vegetation
- FV — Floating Vegetation
- EV — Emergent Vegetation
- Gr — Grasses
- (R) — Riparian Tree
- — Forested Area

Banks:
- /////// — Eroded Bank
- xxxxxxx — Riprap/other Stabilization
- — — — — Undercut Bank
- TH — Thatch

Barriers:
- — Instream Log/Tree
- ^^^^^^ — Dam/Weir/Obstruction
- — Barrier to fish movement
- S — Seasonal Barrier
- -X- - -X- — Fenceline
- — Culvert

Habitat Indicators:
- Fe — Iron Staining
- — Seep/Spring
- (W) — Watercress

Aquatic Habitat Assessment

Page: ____ of ____

Project Name / #: Bartley Smith Trails **Date:** Oct 5, 2021 **Time:** 09:00 **Photos:** Y

Watercourse Name: SWMP **Location:** Vaughan **Length:** ~100 m **Observers:** KM SL

Zone: 17T **Easting:** 618473 **Northing:** 4856639 **Water Temp:** — **Air Temp:** 17°C **% Overhead Cover:** 10

Section Type and Morphology

Type: (check all that apply	Stream / River	Channelized	Permanent	Intermittent	Ephemeral	~~Associated Wetland~~:
	☐	☐	☑	☐	☐	Pond

Total Section Length:	Current Velocity & Gradient:	Comments / Description
~100 m	n/a	SWMP

Sub-Section(s)	Run ☐	Pool ☐	Riffle ☐	Flats ☐	Culvert ☐	Other ☑ Pond
% Area						100
Mean Depth Wetted (m)						? 1m
Mean Width Wetted (m)						60m
Mean Bankfull width (m)						—
Mean Bankfull Depth (m)						—
Substrate (%)						10 Mu 40 Si 10 Cl 40 Sa

Comments:

Banks / Stability

Bank Averages	Stability	Height (m)	Slope (gradual, steep, vertical)	Natural/Manmade/ Stabilized	Erosion?	Riparian Vegetation
Left Upstream Bank	stable	2m	gradual	natural	n/a	cattails, grasses
Right Upstream Bank						

Habitat / Vegetation

Instream Cover	None	Sparse	Moderate	Dense	% Surface Area	Comments:
Undercut Banks	X					
Overhanging Vegetation		X			10	
Instream Vegetation			X		40	
Woody / Organic Debris	X					
Rocks/Boulders	X					

Aquatic Veg Type (%):	Submergent:	Floating:	Emergent: 100	None
Predominant Species:			cattails, grasses	

Migratory Obstructions:	None	Seasonal: SWMP outlet	Permanent: —
Critical Habitat:	Spawning: —	Groundwater: —	Other:

Enhancement Opportunities / Fish Observed / Comments

Fish observed

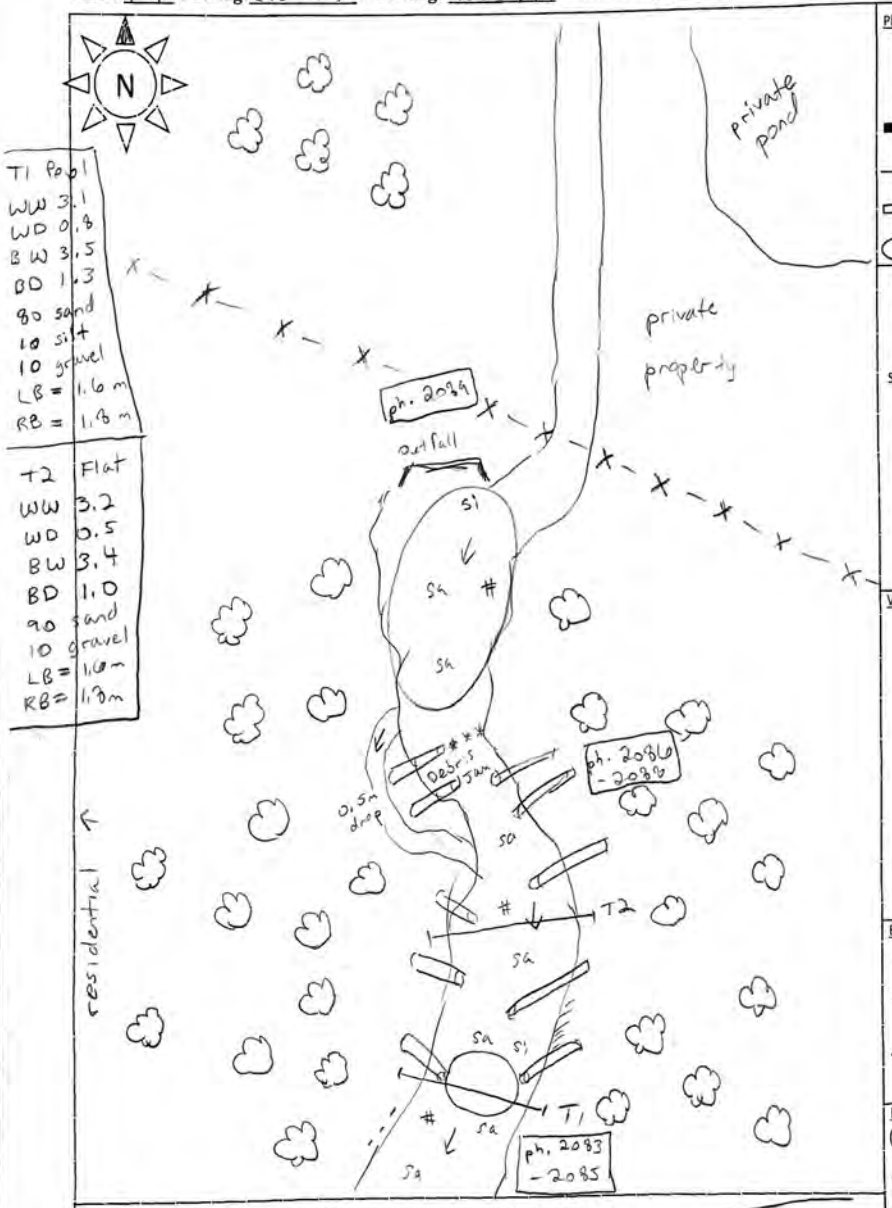
Aquatic Habitat Assessment

Page: ____ of ____

Project Name / #: Bartley Smith Trails **Date:** Oct 5, 2021 **Time:** 11:03 **Photos:** Y

Watercourse Name: Bridge Crossing 1 / Don River West Branch **Location:** Vaughan **Length:** ~100m **Observers:** KM SL

Zone: 17T **Easting:** 618794 **Northing:** 4855946 **Water Temp:** — **Air Temp:** 17°C **% Overhead Cover:** 70



Profile: Horizontal Scale: Vertical Scale:

Physical Characteristics:
- 10d — Depth (cm)
- 6w — Width (m)
- — Riffle
- — Flat
- — Run/Glide
- — Pool

Substrate:
- — Island/Bar
- — Fine Substrate
- Sa, Si, M — Sand, Silt, Muck
- #### — Gravel Substrate
- — Cobble
- Sh — Shale
- (B) — Boulder
- **** — Debris

Vegetation:
- CT — Cattail
- RC — Reed Canary
- SV — Submergent Vegetation
- FV — Floating Vegetation
- EV — Emergent Vegetation
- Gr — Grasses
- (R) — Riparian Tree
- — Forested Area

Banks:
- /////// — Eroded Bank
- xxxxxxx — Riprap/other Stabilization
- — — — — Undercut Bank
- TH — Thatch

Barriers:
- — Instream Log/Tree
- ^^^^^^ — Dam/Weir/Obstruction
- — Barrier to fish movement
- S — Seasonal Barrier
- -X- -X- — Fenceline
- — Culvert

Habitat Indicators:
- Fe — Iron Staining
- — Seep/Spring
- (W) — Watercress

Aquatic Habitat Assessment

Page: ____ of ____

Project Name / #: Bartley Smith Trails **Date:** Oct 5, 2021 **Time:** 11:00 **Photos:** Y

Watercourse Name: Bridge Crossing 1 / Don River West Branch **Location:** Vaughan **Length:** ~100 m **Observers:** KM SL

Zone: 17T **Easting:** 613794 **Northing:** 4855946 **Water Temp:** — **Air Temp:** 17°C **% Overhead Cover:** 70

Section Type and Morphology

Type: (check all that apply	Stream / River	Channelized	Permanent	Intermittent	Ephemeral	Associated Wetland:
	☑	☐	☑	☐	☐	

Total Section Length:	Current Velocity & Gradient:	Comments / Description
~ 100 m	moderate & low	

Sub-Section(s)	Run ☐	Pool ☑	Riffle ☐	Flats ☑	Culvert ☐	Other ☐
% Area		40		60		
Mean Depth Wetted (m)		0.8		0.5		
Mean Width Wetted (m)		3.1		3.2		
Mean Bankfull width (m)		3.5		3.4		
Mean Bankfull Depth (m)		1.3		1.0		
Substrate (%)		80 sa 10 si 10 gr		90 sa 10 gr		

Comments:

Banks / Stability

Bank Averages	Stability	Height (m)	Slope (gradual, steep, vertical)	Natural/Manmade/ Stabilized	Erosion?	Riparian Vegetation
Left Upstream Bank	stable	1.6	steep	natural	some	trees, shrubs
Right Upstream Bank	"	1.8	"	"	"	"

Habitat / Vegetation

Instream Cover	None	Sparse	Moderate	Dense	% Surface Area	Comments:
Undercut Banks		X			10	
Overhanging Vegetation		X			10	
Instream Vegetation	X					
Woody / Organic Debris			X		40	
Rocks/Boulders	X					

Aquatic Veg Type (%):	Submergent:	Floating:	Emergent:	None
Predominant Species:				

Migratory Obstructions:	None	Seasonal:	Permanent: debris jam 0.5 drop
Critical Habitat:	Spawning: —	Groundwater: —	Other:

Enhancement Opportunities / Fish Observed / Comments

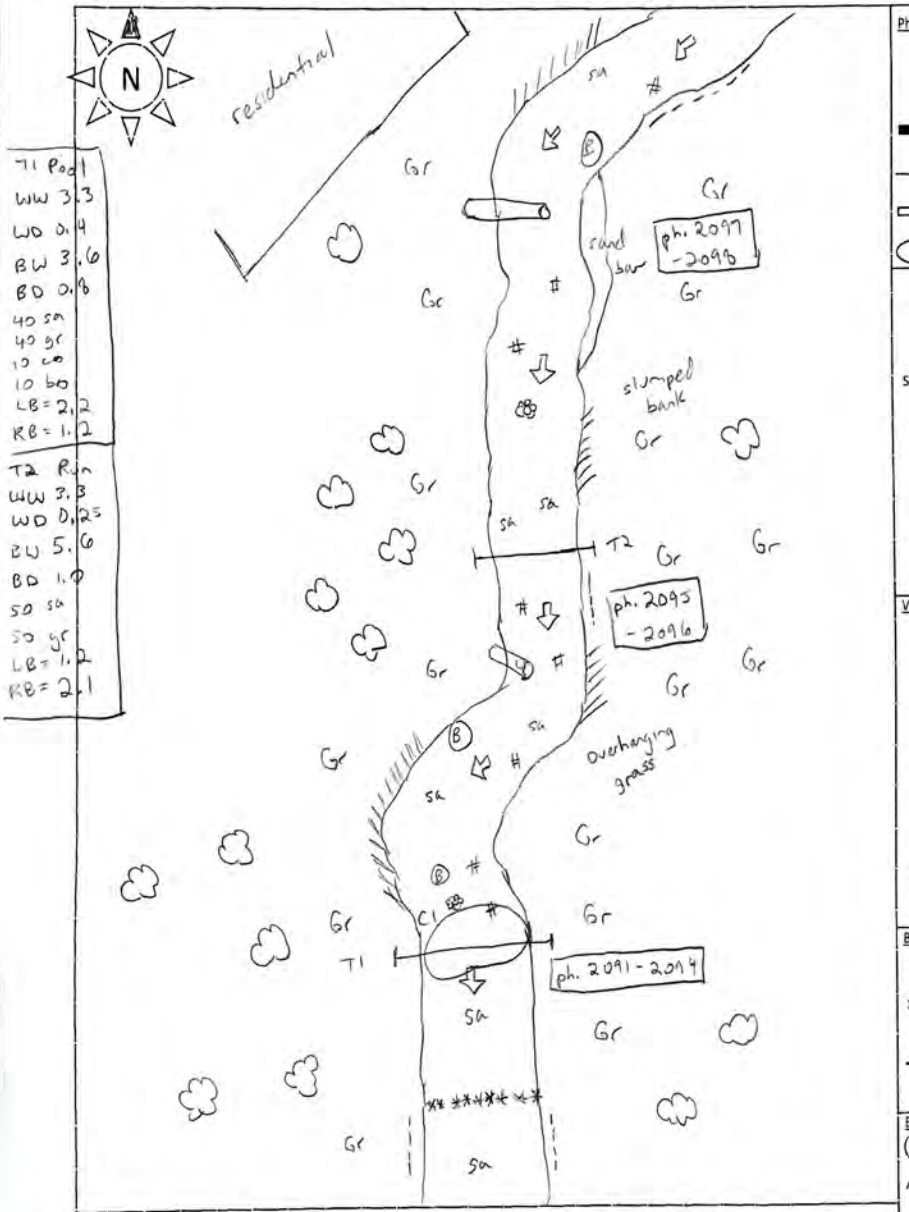
Aquatic Habitat Assessment

Page: ____ of ____

Project Name / #: Bartley Smith Trails **Date:** Oct 5, 2021 **Time:** 12:00 **Photos:** Y

Watercourse Name: Bridge Crossing 2 (Don River West Branch) **Location:** Vaughan Forest **Length:** ~100 m **Observers:** KM SL

Zone: 17T **Easting:** 618794 **Northing:** 4855946 **Water Temp:** — **Air Temp:** 17°C **% Overhead Cover:** 20



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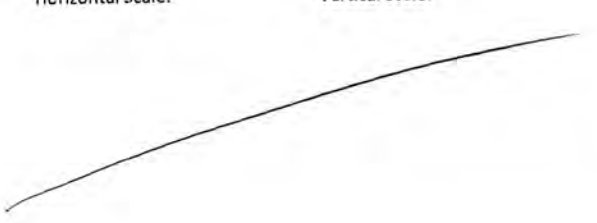


Physical Characteristics:
- 10d — Depth (cm)
- 6w — Width (m)
- — Riffle
- — Flat
- — Run/Glide
- — Pool

Substrate:
- — Island/Bar
- — Fine Substrate
- Sa, Si, M — Sand, Silt, Muck
- #### — Gravel Substrate
- — Cobble
- Sh — Shale
- (B) — Boulder
- **** — Debris

Vegetation:
- CT — Cattail
- RC — Reed Canary
- SV — Submergent Vegetation
- FV — Floating Vegetation
- EV — Emergent Vegetation
- Gr — Grasses
- (R) — Riparian Tree
- — Forested Area

Banks:
- /////// — Eroded Bank
- xxxxxxx — Riprap/other Stabilization
- — — — — Undercut Bank
- TH — Thatch

Barriers:
- — Instream Log/Tree
- ^^^^^^ — Dam/Weir/Obstruction
- — Barrier to fish movement
- S — Seasonal Barrier
- -X---X- — Fenceline
- — Culvert

Habitat Indicators:
- Fe — Iron Staining
- — Seep/Spring
- (W) — Watercress

Aquatic Habitat Assessment

Page: ____ of ____

Project Name / #: Bartley Smith Trails **Date:** Oct 5, 2021 **Time:** 12:00 **Photos:** Y

Watercourse Name: Bridge Crossing 2 / Don River West Branch **Location:** Vaughan **Length:** ~100m **Observers:** KM SL

Zone: 17T **Easting:** 619794 **Northing:** 4855946 **Water Temp:** — **Air Temp:** 17°C **% Overhead Cover:** 20

Section Type and Morphology

Type: (check all that apply)	Stream / River	Channelized	Permanent	Intermittent	Ephemeral	Associated Wetland:
	☑	☐	☑	☐	☐	

Total Section Length:	Current Velocity & Gradient:	Comments / Description
~100m	moderate & low	

Sub-Section(s)	Run ☑	Pool ☑	Riffle ☐	Flats ☐	Culvert ☐	Other ☐
% Area	80	20				
Mean Depth Wetted (m)	0.3	0.4				
Mean Width Wetted (m)	3.3	3.3				
Mean Bankfull width (m)	5.6	3.6				
Mean Bankfull Depth (m)	1.0	0.8				
Substrate (%)	50 sa 50 gr	40 sa 10 bo 40 gr 10 co				

Comments:

Banks / Stability

Bank Averages	Stability	Height (m)	Slope (gradual, steep, vertical)	Natural/Manmade/ Stabilized	Erosion?	Riparian Vegetation
Left Upstream Bank	moderately stable	1.7	steep	natural	Yes (slumped bank)	grasses, shrubs
Right Upstream Bank	"	1.7	"	"	"	"

Habitat / Vegetation

Instream Cover	None	Sparse	Moderate	Dense	% Surface Area	Comments:
Undercut Banks			X		20	
Overhanging Vegetation			X		20	
Instream Vegetation	X					
Woody / Organic Debris			X		30	
Rocks/Boulders	X					

Aquatic Veg Type (%):	Submergent:	Floating:	Emergent:	None
Predominant Species:				

Migratory Obstructions:	None	Seasonal:	Permanent:
Critical Habitat:	Spawning: —	Groundwater: —	Other:

Enhancement Opportunities / Fish Observed / Comments

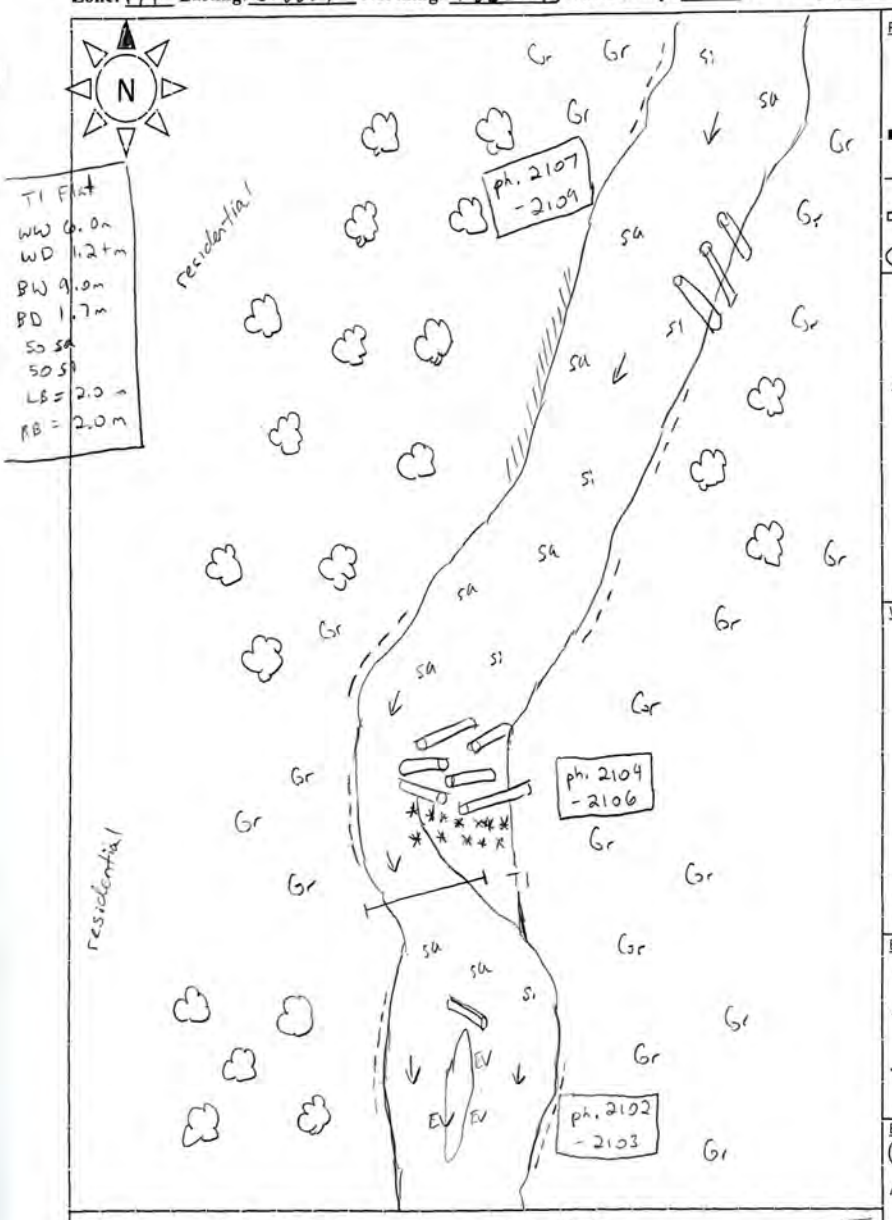
Aquatic Habitat Assessment

Page: ____ of ____

Project Name / #: Bartley Smith Trails **Date:** Oct 5, 2021 **Time:** 13:00 **Photos:** Y

Watercourse Name: Bridge Crossing 3 / Don River West Branch **Location:** Vaughan **Length:** ~100m **Observers:** KM SL

Zone: 17T **Easting:** 618857 **Northing:** 4855343 **Water Temp:** — **Air Temp:** 17°C **% Overhead Cover:** 70



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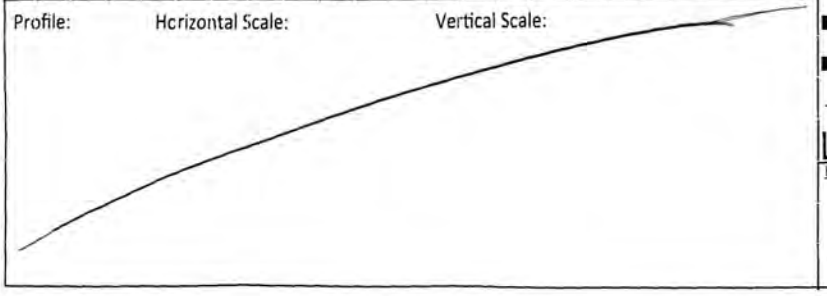


Physical Characteristics:
- 10d — Depth (cm)
- 6w — Width (m)
- — Riffle
- — Flat
- — Run/Glide
- — Pool

Substrate:
- — Island/Bar
- — Fine Substrate
- Sa, Si, M — Sand, Silt, Muck
- #### — Gravel Substrate
- — Cobble
- Sh — Shale
- (B) — Boulder
- **** — Debris

Vegetation:
- CT — Cattail
- RC — Reed Canary
- SV — Submergent Vegetation
- FV — Floating Vegetation
- EV — Emergent Vegetation
- Gr — Grasses
- (R) — Riparian Tree
- — Forested Area

Banks:
- /////// — Eroded Bank
- xxxxxxx — Riprap/other Stabilization
- — — — — Undercut Bank
- TH — Thatch

Barriers:
- — Instream Log/Tree
- ^^^^^^ — Dam/Weir/Obstruction
- — Barrier to fish movement
- S — Seasonal Barrier
- -X- -X- — Fenceline
- — Culvert

Habitat Indicators:
- Fe — Iron Staining
- — Seep/Spring
- (W) — Watercress

Aquatic Habitat Assessment

Page: ____ of ____

Project Name / #: Bartley Smith Trails **Date:** Oct 5, 2021 **Time:** 13:00 **Photos:** Y

Watercourse Name: Bridge Crossing 3 / Don River West Branch **Location:** Vaughan **Length:** ~100 m **Observers:** KM SL

Zone: 17T **Easting:** 619857 **Northing:** 4855343 **Water Temp:** — **Air Temp:** 17°C **% Overhead Cover:** 70

Section Type and Morphology

Type: (check all that apply	Stream / River	Channelized	Permanent	Intermittent	Ephemeral	Associated Wetland:
	☑	☐	☑	☐	☐	

Total Section Length:	Current Velocity & Gradient:	Comments / Description
~100 m	moderate & low	

Sub-Section(s)	Run ☐	Pool ☐	Riffle ☐	Flats ☑	Culvert ☐	Other ☐
% Area				100		
Mean Depth Wetted (m)				1.2		
Mean Width Wetted (m)				6.0		
Mean Bankfull width (m)				9.0		
Mean Bankfull Depth (m)				1.7		
Substrate (%)				50 sa 50 si		

Comments:

Banks / Stability

Bank Averages	Stability	Height (m)	Slope (gradual, steep, vertical)	Natural/Manmade/ Stabilized	Erosion?	Riparian Vegetation
Left Upstream Bank	moderately stable	2.0	steep	natural	Yes	grasses, shrubs
Right Upstream Bank	"	"	"	"	"	"

Habitat / Vegetation

Instream Cover	None	Sparse	Moderate	Dense	% Surface Area	Comments:
Undercut Banks			X		30	
Overhanging Vegetation		X			10	
Instream Vegetation		X			10	
Woody / Organic Debris			X		30	
Rocks/Boulders	X				—	

Aquatic Veg Type (%):	Submergent:	Floating:	Emergent: 100	None
Predominant Species:			grasses	

Migratory Obstructions:	None	Seasonal: —	Permanent: —
Critical Habitat:	Spawning: —	Groundwater: —	Other:

Enhancement Opportunities / Fish Observed / Comments

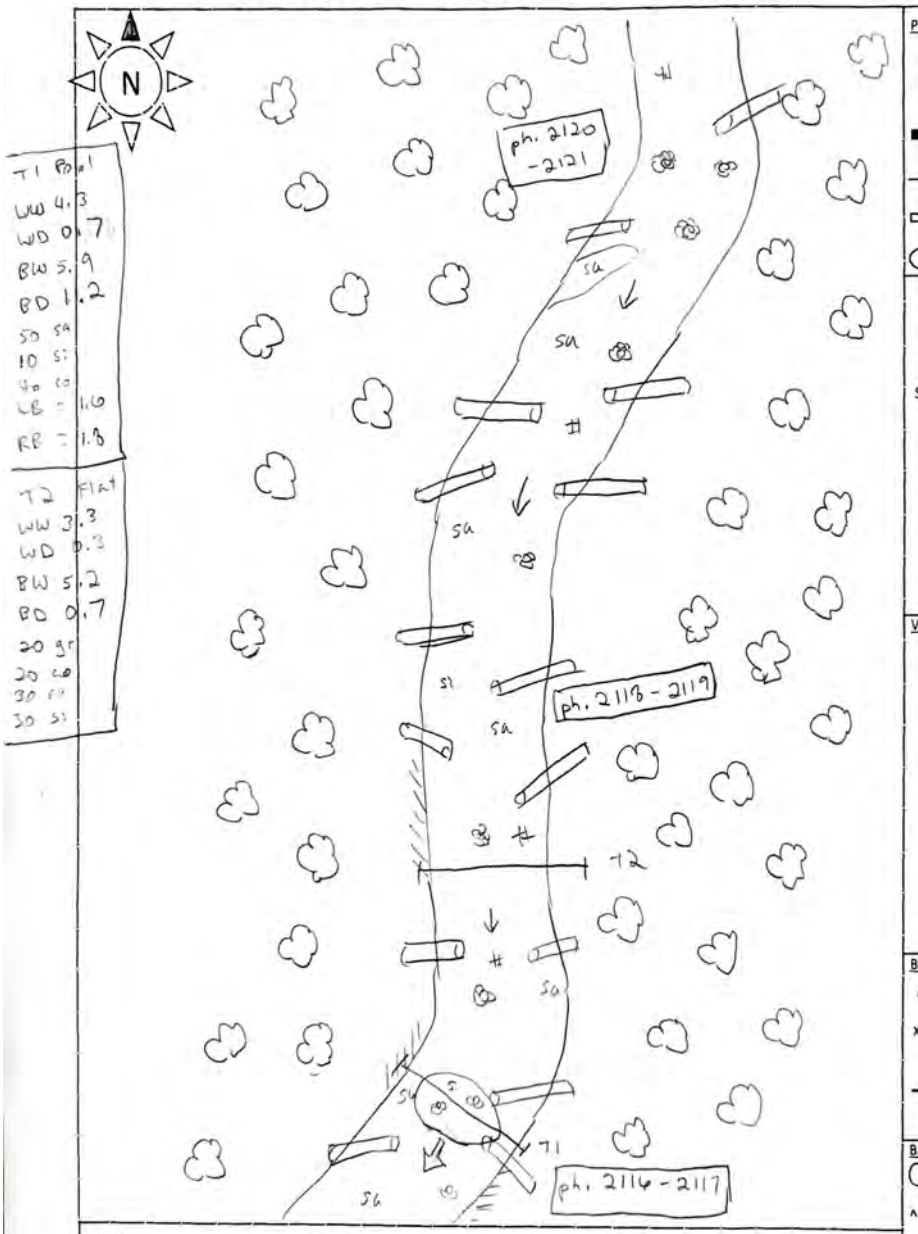
Aquatic Habitat Assessment

Page: ____ of ____

Project Name / #: Bartley Smith Trails **Date:** Oct 5, 2021 **Time:** 14:00 **Photos:** Y

Watercourse Name: Bridge Crossing 4 / Don River West Branch **Location:** Vaughan **Length:** ~100m **Observers:** KM SL

Zone: 17T **Easting:** 619226 **Northing:** 4854914 **Water Temp:** — **Air Temp:** 17°C **% Overhead Cover:** 90



Profile: Horizontal Scale: Vertical Scale:

Physical Characteristics:
- 10d — Depth (cm)
- 6w — Width (m)
- — Riffle
- — Flat
- — Run/Glide
- — Pool

Substrate:
- — Island/Bar
- — Fine Substrate
- Sa, Si, M — Sand, Silt, Muck
- #### — Gravel Substrate
- — Cobble
- Sh — Shale
- (B) — Boulder
- **** — Debris

Vegetation:
- CT — Cattail
- RC — Reed Canary
- SV — Submergent Vegetation
- FV — Floating Vegetation
- EV — Emergent Vegetation
- Gr — Grasses
- (R) — Riparian Tree
- — Forested Area

Banks:
- /////// — Eroded Bank
- xxxxxxx — Riprap/other Stabilization
- — — — — Undercut Bank
- TH — Thatch

Barriers:
- — Instream Log/Tree
- ^^^^^^ — Dam/Weir/Obstruction
- — Barrier to fish movement
- S — Seasonal Barrier
- -X- - -X- — Fenceline
- — Culvert

Habitat Indicators:
- Fe — Iron Staining
- — Seep/Spring
- (W) — Watercress

Aquatic Habitat Assessment

Page: ___ of ___

Project Name / #: Bartley Smith Trails **Date:** Oct 5, 2021 **Time:** 14:00 **Photos:** Y

Watercourse Name: Bridge Crossing 4 / Don River West Branch **Location:** Vaughan **Length:** ~100m **Observers:** KM SL

Zone: 17T **Easting:** 619226 **Northing:** 4854914 **Water Temp:** — **Air Temp:** 17°C **% Overhead Cover:** 90

Section Type and Morphology

Type: (check all that apply	Stream / River	Channelized	Permanent	Intermittent	Ephemeral	Associated Wetland:
	☑	☐	☑	☐	☐	

Total Section Length:	Current Velocity & Gradient:	Comments / Description
~100 m	moderate & low	

Sub-Section(s)	Run ☐	Pool ☑	Riffle ☐	Flats ☑	Culvert ☐	Other ☐
% Area		10		90		
Mean Depth Wetted (m)		0.7		0.3		
Mean Width Wetted (m)		4.3		3.3		
Mean Bankfull width (m)		5.9		5.2		
Mean Bankfull Depth (m)		1.2		0.7		
Substrate (%)		50 sa 10 si 40 co		30 sa 20 co 30 si 20 gr		

Comments:

Banks / Stability

Bank Averages	Stability	Height (m)	Slope (gradual, steep, vertical)	Natural/Manmade/ Stabilized	Erosion?	Riparian Vegetation
Left Upstream Bank	stable	1.6	steep	natural	Yes	Forest, shrubs
Right Upstream Bank	"	1.6	"	"	"	"

Habitat / Vegetation

Instream Cover	None	Sparse	Moderate	Dense	% Surface Area	Comments:
Undercut Banks		X			10	
Overhanging Vegetation		X			10	
Instream Vegetation	X				—	
Woody / Organic Debris			X		50	
Rocks/Boulders	X				—	

Aquatic Veg Type (%):	Submergent:	Floating:	Emergent:	None
Predominant Species:				

Migratory Obstructions:	None	Seasonal: —	Permanent: —
Critical Habitat:	Spawning: —	Groundwater: —	Other:

Enhancement Opportunities / Fish Observed / Comments

APPENDIX H

Preliminary Trail Route Options

BARTLEY SMITH GREENWAY TRAIL FEASIBILITY STUDY

TRAIL ALIGNMENT DISCUSSION

McNaughton Crossing Option #3
Opportunity: Proposed at-grade signalized pedestrian crossing connection at Kinloch Crescent access.
Constraint: Steep slope from river valley to road and location of existing crossing will cause trail to be very indirect.

McNaughton Crossing Option #2
Opportunity: Proposed at-grade signalized pedestrian crossing.
Constraint: Slope from river valley to road will cause crossing to be less direct.

McNaughton Crossing Option #1
Opportunity: Culvert crossing under road will avoid steep slopes and is a direct connection for users.
Constraint: Safety, maintenance, and very steep slopes on north side would create ramp/poor sight lines.

Trail Alignment Option A
Opportunity: Bridge crossing and scenic view of stormwater pond, slopes allow for more space between trail and residential rear lots.
Constraint: Bridge infrastructure needed.

Trail Alignment Option B
Opportunity: Direct connection to Killian-Lamar Parkette.
Constraint: Slope and flood limit will cause trail to be located within close proximity to residential rear yards.

Proposed Alignment C
Opportunity: Outside of floodplain limit, avoids sensitive/wet landscape (Provincially Significant Wetland - PSW)
Constraint: Crosses over private property, some slope challenges.

Potential Trail Alignment (Determined Not-Feasible)
Opportunity: Wood/River valley trail experience.
Constraint: Trail within flood limits, heavily vegetated, flooding and erosion concerns.

Potential Trail Alignment (Determined Not-Feasible)
Opportunity: Minimal environmental impact in valley.
Constraint: Very steep slopes, erosion, less desirable experience for users. Unable to construct trail in most area.

Trail Connection
Constraint: Existing ramp/ stairs. Not AODA Compliant.

Opportunity: Addition of Seating node north of culvert.

Proposed Alignment D
Opportunity: Flat area, no vegetation impacts as area is already disturbed/kept clear as a sewage easement.
Constraint: Within flood limit and close proximity to creek.

Note: Pond being removed through private development

Trail Connection:
Opportunity: Connection to Caproni Drive and Maple Airport Park, possible programmable linear park space along Caproni Drive through development process.
Constraint: Steep slope connection to main trail limits formal trails, however people may create informal paths.

Trail Connection
Opportunity: Connection between Bevhan Road and Caproni Drive accommodated with 9m easement through land development planning.

Bridge Crossing Option #1
Opportunity: Connect Clemson Crescent to Caproni Drive, Villandry Crescent and Maple Airport Park, facilitates trail loop linking residents and destinations.
Constraint: Steep slope on west approach.

Bridge Crossing Option #2
Opportunity: Connect proposed trail to Mountcharles Crescent, facilitates connection to school/park space, good construction feasibility.

Bridge Crossing Option #3
Opportunity: Connect proposed trail to Glenside Drive, facilitates reasonable connection to school/park spaces, good construction feasibility.

Proposed Alignment E
Opportunity: Flat to minor sloped area, minimal vegetation impacts as mostly open field.
Constraint: Flood limit pushes trail close to rear yards - visual buffer may be needed.

Existing Trail
Constraint: Inconsistent trail surfacing. Existing trail changes from asphalt to compacted stone dust from this point to Rutherford.

Trail Connection
Opportunity: Existing culvert could be used to create a trail/creek crossing to connect to Hollybush Drive and Sports Village baseball diamonds.
Constraint: Slopes on west side of connection are steep and wooded.

Bridge Crossing Option #4
Opportunity: Connect existing trail to Sports Village baseball diamonds and Hollybush Drive.
Constraint: Slopes on west side of connection are steep and wooded, high impact for construction and construction access.

Trail Alignment Option F
Opportunity: Flat area that consists of existing lawn, sidewalks, cleared area for Rutherford reconstruction. Connection to Sherwood Park.
Constraint: Users will be directed down roadway with limited space for a formal trail - sidewalk & on-road cycling condition is likely.

Rutherford Crossing Option #2
Opportunity: Utilize existing signalized intersection at Greenock Drive.
Constraint: Existing sidewalk would require upgrade or pair with multi-use path.

Rutherford Crossing Option #1
Opportunity: Culvert crossing will avoid need for users to enter road corridor and cross road.
Constraint: Road is currently being reconstructed and no opportunity to coordinate. Consider installing with future road works only.

Rutherford Crossing (Determined Desirable/Not-Feasible)
Opportunity: Utilize existing signalized intersection at Rotational Drive
Constraint: Existing sidewalk would require upgrade or pair with multi-use path. Alignments that best link to this crossing have been determined not-feasible and would not be desirable for other routes.

Potential Trail Alignment (Determined Not-Feasible)
Opportunity: Road boulevard is flat and would provide many access points.
Constraint: Would require relocation of several utility poles in flat areas. Steep slopes and high quality woodland creates issues with connection at Keele Street.

Potential Trail Alignment (Determined Not-Feasible)
Opportunity: Part of alignment is along manageable slopes with lower quality woodland, connection to Sherwood Park.
Constraint: Part of alignment has steep slopes, high quality woodland and close proximity to residential rear yards.

Opportunity: Connection to existing signalized intersection at Gantner Gate.

Legend

- Proposed Primary Trail
- Proposed Alternative - Determined Not Feasible
- Proposed Secondary Trail Connection
- Proposed On-Road Facility
- Existing Trails
- Existing On-Road Facility
- Proposed Pedestrian Bridge
- Railway
- Study Area
- Parks
- Watercourse
- Stormwater Management Pond
- Waterbody
- Significant Forest
- Parcels
- Minor Wayfinding Opportunity
- Major Wayfinding Opportunity
- Crossing Opportunity
- Steep Slope Constraint

Note: Contour shown at 1.0m intervals

N

0 50 100 200 300 400
Meters

VAUGHAN

wsp

APPENDIX I

Ecological Land Classification Field Sheets

ELC Summary Sheet Project Name: _____ Project No: _____ Page 1 of ___ wsp

UNIT #: 1 Observers: Joseph Mentink Date: _____ Weather / Limitations: 28° Sunny

SYSTEM: Terrestrial Aquatic Wetland	COMMUNITY CLASS: Beach-Bar, Sand Dune, Bluff, Cliff, Talus, Alvar, Rock Barren, Cave, Sand Barren, Prairie-Savannah-Woodland, Forest, Cultural, Swamp, Fen, Bog, Marsh, Open Water, Shallow Water	SERIES: CUM	ECOSITE: CUM1	VEG. TYPE: CUM1-1

STAND DESCRIPTION:	***SOIL ANALYSIS:***	**Community Inclusion:**
COMMUNITY AGE: 1=Pioneer 2=Young 3=Mid-Aged 4=Mature 5=Old Growth	**DRAINAGE:** 1=very well 2=well 3=moderate 4=imperfect 5=poor 6=very poor	
STANDING SNAGS: R=Rare O=Occasional A=Abundant D=Dominant	**SOIL MOISTURE:** 1=wet 2=wet-mesic 3=mesic 4=dry-mesic 5=dry	
DEADFALL LOGS: R=Rare O=Occasional A=Abundant D=Dominant	**TEXTURE:** silt sand clay loam	
BOTANICAL QUALITY: 1=low 2=medium 3=high	**PARENT MATERIAL:** mineral organic	**Complex/Mosaic:**
SLOPE: none gentle moderate steep (simple or complex)	**SUBTRATE DEPTH:** > 15cm < 15cm	

TOPOGRAPHY: lacustrine, riverine, tableland, rolling upland, cliff, talus slope, crevice/cave, alvar, rockland, valley slope, terrace, bottomland, sand dune, bluff, beach/bar

Height code: 1=>25m, 2=10m-25m, 3=2m-10m, 4=1m-2m, 5=0.5m-1m, 6=0.2m-0.5m, 7=< 0.5m **Cover codes:** 0=none, 1=0%- 10%, 2=10%- 25%, 3=25%-60%, 4=>60%

VEGETATION LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE
1	Canopy			
2	Sub-Canopy			
3	Understorey			
4	Ground Layer			

SIZE CLASS ANALYSIS (abundance code): R-Rare, O=Occasional, F=Frequent, A=Abundant, D=Dominant	< 10 cm DBH:	10 - 24 cm DBH:	25 to 50 cm DBH:	> 50 cm DBH:

SPECIES	LAYER / ABUNDANCE 1	2	3	4
A South				
MEL ALBA				
Horsweed				
POA PRAT				
PAR VITA				
VIC CRAC				
SYM LANC				
DAU CARO				
LOT CORN				
RUM CRIS				
SON ARVE				
SEC VARI (CROWN VETCH)				
AMB TRIF				
SYM NOVA				
CIR JULG				
ULM AMER				
ACE NEGU				

SPECIES	LAYER / ABUNDANCE 1	2	3	4
A North				
APO ANDR				
EUT GRAM				
SOL ALTI				
TRI SP				
VER THAP				
SECTION B				
SOL ALTI > POA PRAT > SYM NOVA > CIR HRVI				
RHA CATH			R	
RHA ARAB				
SYM LANC				

EVIDENCE OF DISTURBANCE:
logging, sugar bush, gaps, livestock, exotic species, plantation, trails, dumping, fill, rec. use, noise, disease/death of trees, wind throw, browse, beaver, flooding, fire, ice

WILDLIFE HABITAT OBSERVATIONS:
vernal pools, hibernacula, snags, fallen logs, tracks, den/nest, scat, carcass, vocalization, feeding

HOWREN (OBS) (VO)

COMMENTS / ADDITIONAL NOTES:

continuation of poly 1 CUM1-1

ELC Summary Sheet Project Name: _____ Project No: _____ Page 3 of ___

UNIT #: 3 Observers: _____ Date: _____ Weather / Limitations: _____

SYSTEM: Terrestrial Aquatic Wetland	COMMUNITY CLASS: Beach-Bar, Sand Dune, Bluff, Cliff, Talus, Alvar, Rock Barren, Cave, Sand Barren, Prairie-Savannah-Woodland, Forest, Cultural, Swamp, Fen, Bog, Marsh, Open Water, Shallow Water	SERIES:	ECOSITE:	VEG. TYPE: CUM1-1

STAND DESCRIPTION:	SOIL ANALYSIS:	Community Inclusion:
COMMUNITY AGE: 1=Pioneer 2=Young 3=Mid-Aged 4=Mature 5=Old Growth	DRAINAGE: 1=very well 2=well 3=moderate 4=imperfect 5=poor 6=very poor	
STANDING SNAGS: R=Rare O=Occasional A=Abundant D=Dominant	SOIL MOISTURE: 1=wet 2=wet-mesic 3=mesic 4=dry-mesic 5=dry	
DEADFALL LOGS: R=Rare O=Occasional A=Abundant D=Dominant	TEXTURE: silt sand clay loam	
BOTANICAL QUALITY: 1=low 2=medium 3=high	PARENT MATERIAL: mineral organic	Complex/Mosaic:
SLOPE: none gentle moderate steep (simple or complex)	SUBTRATE DEPTH: > 15cm < 15cm	

TOPOGRAPHY: lacustrine, riverine, tableland, rolling upland, cliff, talus slope, crevice/cave, alvar, rockland, valley slope, terrace, bottomland, sand dune, bluff, beach/bar

Height code: 1=>25m, 2=10m-25m, 3=2m-10m, 4=1m-2m, 5=0.5m-1m, 6=0.2m-0.5m, 7=< 0.5m **Cover codes**: 0=none, 1=0%- 10%, 2=10%- 25%, 3=25%-60%, 4=>60%

VEGETATION LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE
1	Canopy			
2	Sub-Canopy			
3	Understorey			
4	Ground Layer			

SIZE CLASS ANALYSIS (abundance code): R-Rare, O=Occasional, F=Frequent, A=Abundant, D=Dominant	< 10 cm DBH:	10 - 24 cm DBH:	25 to 50 cm DBH:	> 50 cm DBH:

SPECIES	LAYER / ABUNDANCE 1	2	3	4
PYRU COMM		F		
ULM PUMI		F		O
SAL EUXI	O			
PIC GLAU (planted and	O			
POP DELT natural)	O			
FRA PENN		F		
SAL PETI			O	
PAR VITA				
LON TATA (glaberk)		O	O	
VIT RIPA		F		
RHO TYPA		O	F	

SPECIES	LAYER / ABUNDANCE 1	2	3	4
POA PRAT				A
LOL PERE				
SON ARVE				
DAU CARO				
VIC CRAC				
SOL NEMO				
SOL ALTI				
EUT GRAM				
BRO INER				A
CIR ARVE				

EVIDENCE OF DISTURBANCE:
logging, sugar bush, gaps, livestock, exotic species, plantation, trails, dumping, fill, rec. use, noise, disease/death of trees, wind throw, browse, beaver, flooding, fire, ice
EAB

WILDLIFE HABITAT OBSERVATIONS:
vernal pools, hibernacula, snags, fallen logs, tracks, den/nest, scat, carcass, vocalization, feeding

COMMENTS / ADDITIONAL NOTES:
not more than 25% tree, add to unit 1 CUM

ELC Summary Sheet Project Name: _____ Project No: _____ Page 2 of ___ wsp

UNIT #: 2 Observers: _____ Date: _____ Weather / Limitations: _____

SYSTEM: Terrestrial Aquatic Wetland	COMMUNITY CLASS: Beach-Bar, Sand Dune, Bluff, Cliff, Talus, Alvar, Rock Barren, Cave, Sand Barren, Prairie-Savannah-Woodland, Forest, Cultural, Swamp, Fen, Bog, Marsh, Open Water, Shallow Water	SERIES:	ECOSITE:	VEG. TYPE: MAM mixed

STAND DESCRIPTION:	SOIL ANALYSIS:	Community Inclusion:
COMMUNITY AGE: 1=Pioneer 2=Young 3=Mid-Aged 4=Mature 5=Old Growth	DRAINAGE: 1=very well 2=well 3=moderate 4=imperfect 5=poor 6=very poor	
STANDING SNAGS: R=Rare O=Occasional A=Abundant D=Dominant	SOIL MOISTURE: 1=wet 2=wet-mesic 3=mesic 4=dry-mesic 5=dry	
DEADFALL LOGS: R=Rare O=Occasional A=Abundant D=Dominant	TEXTURE: silt sand clay loam	
BOTANICAL QUALITY: 1=low 2=medium 3=high	PARENT MATERIAL: mineral organic	Complex/Mosaic:
SLOPE: none gentle moderate steep (simple or complex)	SUBTRATE DEPTH: > 15cm < 15cm	

TOPOGRAPHY: lacustrine, riverine, tableland, rolling upland, cliff, talus slope, crevice/cave, alvar, rockland, valley slope, terrace, bottomland, sand dune, bluff, beach/bar

Height code: 1=>25m, 2=10m-25m, 3=2m-10m, 4=1m-2m, 5=0.5m-1m, 6=0.2m-0.5m, 7=< 0.5m **Cover codes**: 0=none, 1=0%- 10%, 2=10%- 25%, 3=25%-60%, 4=>60%

	VEGETATION LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE
1	Canopy			
2	Sub-Canopy			
3	Understorey	4	3	PHA AUAU > TYP LATI
4	Ground Layer	6	4	SYM LANC > CIR ARVE > TUS FARF > BID SPP

SIZE CLASS ANALYSIS (abundance code): R-Rare, O=Occasional, F=Frequent, A=Abundant, D=Dominant

< 10 cm DBH:	10 - 24 cm DBH:	25 to 50 cm DBH:	> 50 cm DBH:

SPECIES	LAYER / ABUNDANCE 1	2	3	4
VIT RITA				

SPECIES	LAYER / ABUNDANCE 1	2	3	4
TYPH LATI			A	
BID FRON				
ECH LOBA				
IMP CAPE				
LYT SALI				
RAN SCLE				
PER HYDROPIPEOIDES				
SYM LANC				F
PHA ARAR			A	
BID CONN				
CHE ALBA				
SON OLER				
SOL ALTI				
ARC LAPP				
PHR AUAU				
SCH TABE				R
EUT MAMA				
CIR ARVE				F
TUS FARF				F
GLE HEDE				
LEO CARD				
LOL PRAT				

EVIDENCE OF DISTURBANCE:
logging, sugar bush, gaps, livestock, exotic species, plantation, trails, dumping, fill, rec. use, noise, disease/death of trees, wind throw, browse, beaver, flooding, fire, ice
road

WILDLIFE HABITAT OBSERVATIONS:
vernal pools, hibernacula, snags, fallen logs, tracks, den/nest, scat, carcass, vocalization, feeding
Monarch adult

COMMENTS / ADDITIONAL NOTES:
Woodchip mesh berm runs through poly 2
Not shallow marsh - phrag dominated, smaller typha areas, some disturbed area, now forb dominated

ELC Summary Sheet Project Name: _____ Project No: _____ Page 1 of ___

UNIT #: 4 Observers: _____ Date: _____ Weather / Limitations: _____

SYSTEM:	COMMUNITY CLASS:	SERIES:	ECOSITE:	VEG. TYPE:
Terrestrial Aquatic Wetland	Beach-Bar, Sand Dune, Bluff, Cliff, Talus, Alvar, Rock Barren, Cave, Sand Barren, Prairie-Savannah-Woodland, Forest, Cultural, Swamp, Fen, Bog, Marsh, Open Water, Shallow Water		ECOW1	

STAND DESCRIPTION:	SOIL ANALYSIS:	Community Inclusion:
COMMUNITY AGE: 1=Pioneer 2=Young 3=Mid-Aged 4=Mature 5=Old Growth	DRAINAGE: 1=very well 2=well 3=moderate 4=imperfect 5=poor 6=very poor	
STANDING SNAGS : R=Rare O=Occasional A=Abundant D=Dominant	SOIL MOISTURE: 1=wet 2=wet-mesic 3=mesic 4=dry-mesic 5=dry	
DEADFALL LOGS: R=Rare O=Occasional A=Abundant D=Dominant	TEXTURE: silt sand clay loam	
BOTANICAL QUALITY: 1=low 2=medium 3=high	PARENT MATERIAL: mineral organic	Complex/Mosaic:
SLOPE: none gentle moderate steep (simple or complex)	SUBTRATE DEPTH: > 15cm < 15cm	

TOPOGRAPHY: lacustrine, riverine, tableland, rolling upland, cliff, talus slope, crevice/cave, alvar, rockland, valley slope, terrace, bottomland, sand dune, bluff, beach/bar

Height code: 1=>25m, 2=10m-25m, 3=2m-10m, 4=1m-2m, 5=0.5m-1m, 6=0.2m-0.5m, 7=< 0.5m *Cover codes*: 0=none, 1=0%- 10%, 2=10%- 25%, 3=25%-60%, 4=>60%

	VEGETATION LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE
1	Canopy	2	3	ACE NEGU = POP TREM > PIC GLAU
2	Sub-Canopy	3	3	RHU TYPA > ACE NEGU > POP TREM > VIB LENT
3	Understorey	4	3	CONI = ACE NEGU
4	Ground Layer	6	4	GEU URBA >> SOL ALTI > HES MATR > PAR VITA

SIZE CLASS ANALYSIS (abundance code): R-Rare, O=Occasional, F=Frequent, A=Abundant, D=Dominant

< 10 cm DBH:	10 - 24 cm DBH:	25 to 50 cm DBH:	> 50 cm DBH:

SPECIES	LAYER / ABUNDANCE 1	2	3	4
THU OCCI				
PIC GLAU				
ACE NEGU				
POP TREM				
MYR COMM				
FRA PENN				
ROB PSEU				
JUG NIGR				
VIT RIPA				
RHA CATH			F	
CONI SP			F	
COR RUGO			R	
PAR VITA				
VIB LENT				

SPECIES	LAYER / ABUNDANCE 1	2	3	4
HES MATR			D	
SOL ALTI			F	
TOR JAPO				
FRA VIRG				
CIR CANA				

EVIDENCE OF DISTURBANCE:
logging, sugar bush, gaps, livestock, exotic species, plantation, trails, dumping, fill, rec. use, noise, disease/death of trees, wind throw, browse, beaver, flooding, fire, ice

WILDLIFE HABITAT OBSERVATIONS:
vernal pools, hibernacula, snags, fallen logs, tracks, den/nest, scat, carcass, vocalization, feeding

COMMENTS / ADDITIONAL NOTES:

ELC Summary Sheet Project Name: _____ Project No: _____ Page 5 of ___

UNIT #: 5 Observers: _____ Date: _____ Weather / Limitations: _____

SYSTEM: Terrestrial Aquatic Wetland	COMMUNITY CLASS: Beach-Bar, Sand Dune, Bluff, Cliff, Talus, Alvar, Rock Barren, Cave, Sand Barren, Prairie-Savannah-Woodland, Forest, Cultural, Swamp, Fen, Bog, Marsh, Open Water, Shallow Water	SERIES:	ECOSITE:	VEG. TYPE: FOD7-3

STAND DESCRIPTION:	***SOIL ANALYSIS:***	**Community Inclusion:**
COMMUNITY AGE: 1=Pioneer 2=Young 3=Mid-Aged 4=Mature 5=Old Growth	**DRAINAGE:** 1=very well 2=well 3=moderate 4=imperfect 5=poor 6=very poor	
STANDING SNAGS: R=Rare O=Occasional A=Abundant D=Dominant	**SOIL MOISTURE:** 1=wet 2=wet-mesic 3=mesic 4=dry-mesic 5=dry	
DEADFALL LOGS: R=Rare O=Occasional A=Abundant D=Dominant	**TEXTURE:** silt sand clay loam	
BOTANICAL QUALITY: 1=low 2=medium 3=high	**PARENT MATERIAL:** mineral organic	**Complex/Mosaic:**
SLOPE: none gentle moderate steep (simple or complex)	**SUBTRATE DEPTH:** > 15cm < 15cm	

TOPOGRAPHY: lacustrine, riverine, tableland, rolling upland, cliff, talus slope, crevice/cave, alvar, rockland, valley slope, terrace, bottomland, sand dune, bluff, beach/bar

Height code: 1=>25m, 2=10m-25m, 3=2m-10m, 4=1m-2m, 5=0.5m-1m, 6=0.2m-0.5m, 7=< 0.5m **Cover codes:** 0=none, 1=0%- 10%, 2=10%- 25%, 3=25%-60%, 4=>60%

VEGETATION LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE
1	Canopy	1	4	SAL ALBA > ACE NEGU > POP BALS
2	Sub-Canopy	2	4	ACE NEGU > FRA PENN > JUT RIPA
3	Understorey	4	4	PRU VIRG > RHA CATH > LONI > CORN RUGO
4	Ground Layer	6	4	VIO SP > PAR VITA > RHA CATH > GLE HEDE

SIZE CLASS ANALYSIS (abundance code): R-Rare, O=Occasional, F=Frequent, A=Abundant, D=Dominant

< 10 cm DBH: D | 10 - 24 cm DBH: A | 25 to 50 cm DBH: A | > 50 cm DBH: R

SPECIES	LAYER / ABUNDANCE 1	2	3	4
FRA PENN				
ULM RUBR				
POP BALS				
ACE NEGU				
FRA AMER				
SAL SP				
ACE SACH				
QUR ALBA				
RIB RUBR				
CORN RUGO				
LONI SP				
JUT RIPA				
RUB IDST				
RHA CATH				
PAR VITA				
VIB OPOP				
PRU VIRG				
SAM CANA				

SPECIES	LAYER / ABUNDANCE 1	2	3	4
VIO SP				
OSM CINN				
GLE HEDE				
SYM LAN C				
TUS FARF				
SOL CANA				
LEO CARI				
THA DIOI				
VIN ROSE				
CER ROBE				

EVIDENCE OF DISTURBANCE:

logging, sugar bush, gaps, livestock, exotic species, plantation, trails, dumping, fill, rec. use, noise, disease/death of trees, wind throw, browse, beaver, flooding, fire, ice

foot path Black knot EAB anthracnose

WILDLIFE HABITAT OBSERVATIONS:

vernal pools, hibernacula, snags, fallen logs, tracks, den/nest, scat, carcass, vocalization, feeding

REVI calling, BLJA call

COMMENTS / ADDITIONAL NOTES:

Soils sandy by stream

dense shrub layer, open-ish canopy (dying ash)

ELC Summary Sheet Project Name: _____ Project No: _____ Page 6 of ___

UNIT #: 6 Observers: _____ Date: _____ Weather / Limitations: _____

SYSTEM: Terrestrial Aquatic Wetland	COMMUNITY CLASS: Beach-Bar, Sand Dune, Bluff, Cliff, Talus, Alvar, Rock Barren, Cave, Sand Barren, Prairie-Savannah-Woodland, Forest, Cultural, Swamp, Fen, Bog, Marsh, Open Water, Shallow Water	SERIES: FOD	ECOSITE: exotic?	VEG. TYPE:

STAND DESCRIPTION:	***SOIL ANALYSIS:***	**Community Inclusion:**
COMMUNITY AGE: 1=Pioneer 2=Young 3=Mid-Aged 4=Mature 5=Old Growth	**DRAINAGE:** 1=very well 2=well 3=moderate 4=imperfect 5=poor 6=very poor	
STANDING SNAGS: R=Rare O=Occasional A=Abundant D=Dominant	**SOIL MOISTURE:** 1=wet 2=wet-mesic 3=mesic 4=dry-mesic 5=dry	
DEADFALL LOGS: R=Rare O=Occasional A=Abundant D=Dominant	**TEXTURE:** silt sand clay loam	
BOTANICAL QUALITY: 1=low 2=medium 3=high	**PARENT MATERIAL:** mineral organic	**Complex/Mosaic:**
SLOPE: none gentle moderate steep (simple or complex)	**SUBTRATE DEPTH:** > 15cm < 15cm	

TOPOGRAPHY: lacustrine, riverine, tableland, rolling upland, cliff, talus slope, crevice/cave, alvar, rockland, valley slope, terrace, bottomland, sand dune, bluff, beach/bar

Height code: 1=>25m, 2=10m-25m, 3=2m-10m, 4=1m-2m, 5=0.5m-1m, 6=0.2m-0.5m, 7=< 0.5m **Cover codes:** 0=none, 1=0%- 10%, 2=10%- 25%, 3=25%-60%, 4=>60%

	VEGETATION LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE
1	Canopy	2	4	ROB PSEU > ACE NEGU = POP TREM > TIL CORD
2	Sub-Canopy	3	4	ACE NEGU > ROB PSEU > FRA AMER > RHA CATH
3	Understorey	4	2	FRA AMER >> ACE NEGU > POP TREM > RHA CATH
4	Ground Layer	7	4	POA PRAT > ALL PETI > GEU URBA > SOL ALTI

SIZE CLASS ANALYSIS (abundance code): R-Rare, O=Occasional, F=Frequent, A=Abundant, D=Dominant

< 10 cm DBH: D	10 - 24 cm DBH: A	25 to 50 cm DBH: R	> 50 cm DBH: N

SPECIES	LAYER / ABUNDANCE 1	2	3	4
POP TREM	.	.	.	.
PIC GLAU	-			
ACE SACC	R			
FRA AMER				
RHA CATH		.		

SPECIES	LAYER / ABUNDANCE 1	2	3	4
BRO INER				

EVIDENCE OF DISTURBANCE:
logging, sugar bush, gaps, livestock, exotic species, plantation, trails, dumping, fill, rec. use, noise, disease/death of trees, wind throw, browse, beaver, flooding, fire, ice

WILDLIFE HABITAT OBSERVATIONS:
vernal pools, hibernacula, snags, fallen logs, tracks, den/nest, scat, carcass, vocalization, feeding

EAST COTTONTAIL (OB)

COMMENTS / ADDITIONAL NOTES:

Young weedy CUW with > 60% cover

More POP TREM in Southern half of poly

↳ 50% exotic 50% native check codes

ELC Summary Sheet Project Name: _____ Project No: _____ Page 7 of ___

UNIT #: 7 Observers: _____ Date: _____ Weather / Limitations: _____

SYSTEM: Terrestrial Aquatic Wetland	COMMUNITY CLASS: Beach-Bar, Sand Dune, Bluff, Cliff, Talus, Alvar, Rock Barren, Cave, Sand Barren, Prairie-Savannah-Woodland, Forest, Cultural, Swamp, Fen, Bog, Marsh, Open Water, Shallow Water	SERIES:	ECOSITE:	VEG. TYPE: CUW1

***STAND DESCRIPTION*:**	***SOIL ANALYSIS*:**	**Community Inclusion:**
COMMUNITY AGE: 1=Pioneer 2=Young 3=Mid-Aged 4=Mature 5=Old Growth	**DRAINAGE:** 1=very well 2=well 3=moderate 4=imperfect 5=poor 6=very poor	
STANDING SNAGS : R=Rare O=Occasional A=Abundant D=Dominant	**SOIL MOISTURE:** 1=wet 2=wet-mesic 3=mesic 4=dry-mesic 5=dry	
DEADFALL LOGS: R=Rare O=Occasional A=Abundant D=Dominant	**TEXTURE:** silt sand clay loam	
BOTANICAL QUALITY: 1=low 2=medium 3=high	**PARENT MATERIAL:** mineral organic	**Complex/Mosaic:**
SLOPE: none gentle moderate steep (simple or complex)	**SUBTRATE DEPTH:** > 15cm < 15cm	

TOPOGRAPHY: lacustrine, riverine, tableland, rolling upland, cliff, talus slope, crevice/cave, alvar, rockland, valley slope, terrace, bottomland, sand dune, bluff, beach/bar

***Height code*:** 1=>25m, 2=10m-25m, 3=2m-10m, 4=1m-2m, 5=0.5m-1m, 6=0.2m-0.5m, 7=< 0.5m **Cover codes:** 0=none, 1=0%- 10%, 2=10%- 25%, 3=25%-60%, 4=>60%

VEGETATION LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE
1	Canopy	2	2	ACE NEGU > POP TREM = JUG NIGR = ULM AMER
2	Sub-Canopy	3	3	VIT RIPA > LONI > ACE NEGU
3	Understorey	4		COR SPP = LONI > PRA AMER > RHA CATH
4	Ground Layer	7		VIO SP > GEU URBA > PAR VIT A > HES MATR

SIZE CLASS ANALYSIS (abundance code): R-Rare, O=Occasional, F=Frequent, A=Abundant, D=Dominant	< 10 cm DBH:	10 - 24 cm DBH:	25 to 50 cm DBH:	> 50 cm DBH:

SPECIES	LAYER / ABUNDANCE 1	2	3	4
ULM AMER				
EUO FORT				
VIB OPUL				
RHA CATH				
RUB IDST				
COR RUGO				
COR OBLI				
RHU TYPH				
SAM CANA				
COR RACE				
VIT RIPA				

SPECIES	LAYER / ABUNDANCE 1	2	3	4
SOL ALTI				
ERI ANNU				
EQU ARVE				
PLA MAJO				
CIC MACU				
SYM LANC				
AMP BRAC				

EVIDENCE OF DISTURBANCE:
logging, sugar bush, gaps, livestock, exotic species, plantation, trails, dumping, fill, rec. use, noise, disease/death of trees, wind throw, browse, beaver, flooding, fire, ice

WILDLIFE HABITAT OBSERVATIONS:
vernal pools, hibernacula, snags, fallen logs, tracks, den/nest, scat, carcass, vocalization, feeding

GRCA call, AMGO call, EACO (06), AMRO (06)

COMMENTS / ADDITIONAL NOTES:

add species to (9)

ELC Summary Sheet Project Name: _____ Project No: _____ Page__of___ wsp

UNIT #: 8 Observers: _____ Date: _____ Weather / Limitations: _____

SYSTEM: Terrestrial Aquatic Wetland	COMMUNITY CLASS: Beach-Bar, Sand Dune, Bluff, Cliff, Talus, Alvar, Rock Barren, Cave, Sand Barren, Prairie-Savannah-Woodland, Forest, Cultural, Swamp, Fen, Bog, Marsh, Open Water, Shallow Water	SERIES:	ECOSITE:	VEG. TYPE:

STAND DESCRIPTION:	***SOIL ANALYSIS:***	**Community Inclusion:**
COMMUNITY AGE: 1=Pioneer 2=Young 3=Mid-Aged 4=Mature 5=Old Growth	**DRAINAGE:** 1=very well 2=well 3=moderate 4=imperfect 5=poor 6=very poor	
STANDING SNAGS : R=Rare O=Occasional A=Abundant D=Dominant	**SOIL MOISTURE:** 1=wet 2=wet-mesic 3=mesic 4=dry-mesic 5=dry	
DEADFALL LOGS: R=Rare O=Occasional A=Abundant D=Dominant	**TEXTURE:** silt sand clay loam	
BOTANICAL QUALITY: 1=low 2=medium 3=high	**PARENT MATERIAL:** mineral organic	**Complex/Mosaic:**
SLOPE: none gentle moderate steep (simple or complex)	**SUBTRATE DEPTH:** > 15cm < 15cm	

TOPOGRAPHY: lacustrine, riverine, tableland, rolling upland, cliff, talus slope, crevice/cave, alvar, rockland, valley slope, terrace, bottomland, sand dune, bluff, beach/bar

Height code: 1=>25m, 2=10m-25m, 3=2m-10m, 4=1m-2m, 5=0.5m-1m, 6=0.2m-0.5m, 7=< 0.5m ***Cover codes:*** 0=none, 1=0%- 10%, 2=10%- 25%, 3=25%-60%, 4=>60%

	VEGETATION LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE
1	Canopy			
2	Sub-Canopy			
3	Understorey			
4	Ground Layer			

SIZE CLASS ANALYSIS (abundance code): R-Rare, O=Occasional, F=Frequent, A=Abundant, D=Dominant

< 10 cm DBH:	10 - 24 cm DBH:	25 to 50 cm DBH:	> 50 cm DBH:

SPECIES	LAYER / ABUNDANCE 1	2	3	4
SAL EUX1 edge				

SPECIES	LAYER / ABUNDANCE 1	2	3	4
MYM ODOR				O
MYRIOPHYLLUM SP				O
TYPHA LATI			O	
ANGU			O	
ECH				
PER MACU				

EVIDENCE OF DISTURBANCE:
logging, sugar bush, gaps, livestock, exotic species, plantation, trails, dumping, fill, rec. use, noise, disease/death of trees, wind throw, browse, beaver, flooding, fire, ice

WILDLIFE HABITAT OBSERVATIONS:
vernal pools, hibernacula, snags, fallen logs, tracks, den/nest, scat, carcass, vocalization, feeding

CORMORANT (OB)

COMMENTS / ADDITIONAL NOTES:

mostly on edge – add to 9, OAO water in centre

ELC Summary Sheet Project Name: _____ Project No: _____ Page ___ of ___

UNIT #: 9 Observers: _____ Date: _____ Weather / Limitations: _____

SYSTEM: Terrestrial Aquatic Wetland	COMMUNITY CLASS: Beach-Bar, Sand Dune, Bluff, Cliff, Talus, Alvar, Rock Barren, Cave, Sand Barren, Prairie-Savannah-Woodland, Forest, Cultural, Swamp, Fen, Bog, Marsh, Open Water, Shallow Water	SERIES:	ECOSITE: MAS	VEG. TYPE:

STAND DESCRIPTION:	***SOIL ANALYSIS:***	**Community Inclusion:**
COMMUNITY AGE: 1=Pioneer 2=Young 3=Mid-Aged 4=Mature 5=Old Growth	**DRAINAGE:** 1=very well 2=well 3=moderate 4=imperfect 5=poor 6=very poor	
STANDING SNAGS : R=Rare O=Occasional A=Abundant D=Dominant	**SOIL MOISTURE:** 1=wet 2=wet-mesic 3=mesic 4=dry-mesic 5=dry	
DEADFALL LOGS: R=Rare O=Occasional A=Abundant D=Dominant	**TEXTURE:** silt sand clay loam	
BOTANICAL QUALITY: 1=low 2=medium 3=high	**PARENT MATERIAL:** mineral organic	**Complex/Mosaic:**
SLOPE: none gentle moderate steep (simple or complex)	**SUBTRATE DEPTH:** >15cm < 15cm	

TOPOGRAPHY: lacustrine, riverine, tableland, rolling upland, cliff, talus slope, crevice/cave, alvar, rockland, valley slope, terrace, bottomland, sand dune, bluff, beach/bar

Height code: 1=>25m, 2=10m-25m, 3=2m-10m, 4=1m-2m, 5=0.5m-1m, 6=0.2m-0.5m, 7=< 0.5m **Cover codes:** 0=none, 1=0%- 10%, 2=10%- 25%, 3=25%-60%, 4=>60%

	VEGETATION LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE
1	Canopy			
2	Sub-Canopy	3	1	SAL PET
3	Understorey	4	4	TYPANGU >>
4	Ground Layer	5	4	PHA ARAR >> CIR ARVE > SOL ALTI > IMP CAPE

SIZE CLASS ANALYSIS (abundance code): R-Rare, O=Occasional, F=Frequent, A=Abundant, D=Dominant

< 10 cm DBH:	10 - 24 cm DBH:	25 to 50 cm DBH:	> 50 cm DBH:

SPECIES	LAYER / ABUNDANCE 1	2	3	4	SPECIES	LAYER / ABUNDANCE 1	2	3	4
					TYPANGU				
					PHA ARAR				
					SOL ALTI				
					CIR ARVE				
					IMP CAPE				

EVIDENCE OF DISTURBANCE:
logging, sugar bush, gaps, livestock, exotic species, plantation, trails, dumping, fill, rec. use, noise, disease/death of trees, wind throw, browse, beaver, flooding, fire, ice

historic

WILDLIFE HABITAT OBSERVATIONS:
vernal pools, hibernacula, snags, fallen logs, tracks, den/nest, scat, carcass, vocalization, feeding

COMMENTS / ADDITIONAL NOTES:

very low diversity

ELC Summary Sheet Project Name: _____ Project No: _____ Page 10 of ___

UNIT #: 10 Observers: _____ Date: _____ Weather / Limitations: _____

SYSTEM: Terrestrial Aquatic Wetland	COMMUNITY CLASS: Beach-Bar, Sand Dune, Bluff, Cliff, Talus, Alvar, Rock Barren, Cave, Sand Barren, Prairie-Savannah-Woodland, Forest, Cultural, Swamp, Fen, Bog, Marsh, Open Water, Shallow Water	SERIES:	ECOSITE:	VEG. TYPE:

STAND DESCRIPTION:	SOIL ANALYSIS:	Community Inclusion:
COMMUNITY AGE: 1=Pioneer 2=Young 3=Mid-Aged 4=Mature 5=Old Growth	DRAINAGE: 1=very well 2=well 3=moderate 4=imperfect 5=poor 6=very poor	
STANDING SNAGS: R=Rare O=Occasional A=Abundant D=Dominant	SOIL MOISTURE: 1=wet 2=wet-mesic 3=mesic 4=dry-mesic 5=dry	
DEADFALL LOGS: R=Rare O=Occasional A=Abundant D=Dominant	TEXTURE: silt sand clay loam	
BOTANICAL QUALITY: 1=low 2=medium 3=high	PARENT MATERIAL: mineral organic	Complex/Mosaic:
SLOPE: none gentle moderate steep (simple or complex)	SUBTRATE DEPTH: > 15cm < 15cm	

TOPOGRAPHY: lacustrine, riverine, tableland, rolling upland, cliff, talus slope, crevice/cave, alvar, rockland, valley slope, terrace, bottomland, sand dune, bluff, beach/bar

Height code: 1=>25m, 2=10m-25m, 3=2m-10m, 4=1m-2m, 5=0.5m-1m, 6=0.2m-0.5m, 7=< 0.5m Cover codes: 0=none, 1=0%-10%, 2=10%-25%, 3=25%-50%, 4=50%-

VEGETATION LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE
1	Canopy	1	1	SAL ALBA
2	Sub-Canopy	3	3	VIT RIPA > ACE NEGU
3	Understorey	4	4	VIT RIPA = CEL ORBI > COR SPP >
4	Ground Layer	6	4	VIN ROSS = SOL ALTI = BRO INER = GEU URBA

SIZE CLASS ANALYSIS (abundance code): R=Rare, O=Occasional, F=Frequent, A=Abundant, D=Dominant	< 10 cm DBH: D	10 - 24 cm DBH: O	25 to 50 cm DBH: R	> 50 cm DBH: R

SPECIES	LAYER / ABUNDANCE 1	2	3	4
THU OCCI		R		
ACE NEGU		A		
SAL ALBA/EUXI	O			
ULM AMI		O	O	
QUER ALBA				R
FRA PENN		O		
QUE MACR		R		
PIC GLAU		O		O
ACE KFRE (planted?)		O		
CEL ORBI			A	A
VIT RIPA		A	A	A
COR SPP			O	
LONI SP			O	
EHA CATH			O	O
PAR VITA				O
PRU VIRG			O	O
COR RUGO			O	
VIB DENT				O
COR RACE				
EUO ALAT			O	
SAL BEBB				
VIB LENT		R		
AMPE ARB/LAEV				

SPECIES	LAYER / ABUNDANCE 1	2	3	4
SOL ALTI				
BRO INER				
ARC MINU				
GEU URBA				
LOL PRAT				
SYM NOVA				
RAN ACRIS				
APO ANDR				
POA PRAT				
ASC SYRI				
AMP BRAC				
ERI ANNU				
VIC CRAC				
VIN ROSS				

EVIDENCE OF DISTURBANCE:
logging, sugar bush, gaps, livestock, exotic species, plantation, trails, dumping, fill, rec. use, noise, disease/death of trees, wind throw, browse, beaver, flooding, fire, ice

vines some garbage EAB

WILDLIFE HABITAT OBSERVATIONS:
vernal pools, hibernacula, snags, fallen logs, tracks, den/nest, scat, carcass, vocalization, feeding

COMMENTS / ADDITIONAL NOTES:
Extreme dominance of vine grape + Celastrus

CUS or CUT? check aerial

ELC Summary Sheet Project Name: _____ Project No: _____ Page 11 of ___

UNIT #: 11 Observers: _____ Date: _____ Weather / Limitations: _____

SYSTEM:	COMMUNITY CLASS: Beach-Bar, Sand Dune, Bluff, Cliff, Talus, Alvar, Rock Barren, Cave, Sand Barren, Prairie-Savannah-Woodland, Forest, Cultural, Swamp, Fen, Bog, Marsh, Open Water, Shallow Water	SERIES:	ECOSITE: SWT	VEG. TYPE:
Terrestrial Aquatic Wetland				

STAND DESCRIPTION:	SOIL ANALYSIS:	Community Inclusion:
COMMUNITY AGE: 1=Pioneer 2=Young 3=Mid-Aged 4=Mature 5=Old Growth	DRAINAGE: 1=very well 2=well 3=moderate 4=imperfect 5=poor 6=very poor	
STANDING SNAGS: R=Rare O=Occasional A=Abundant D=Dominant	SOIL MOISTURE: 1=wet 2=wet-mesic 3=mesic 4=dry-mesic 5=dry	
DEADFALL LOGS: R=Rare O=Occasional A=Abundant D=Dominant	TEXTURE: silt sand clay loam	
BOTANICAL QUALITY: 1=low 2=medium 3=high	PARENT MATERIAL: mineral organic	Complex/Mosaic:
SLOPE: none gentle moderate steep (simple or complex)	SUBTRATE DEPTH: > 15cm < 15cm	

TOPOGRAPHY: lacustrine, riverine, tableland, rolling upland, cliff, talus slope, crevice/cave, alvar, rockland, valley slope, terrace, bottomland, sand dune, bluff, beach/bar

Height code: 1=>25m, 2=10m-25m, 3=2m-10m, 4=1m-2m, 5=0.5m-1m, 6=0.2m-0.5m, 7=< 0.5m **Cover codes**: 0=none, 1=0%- 10%, 2=10%- 25%, 3=25%-60%, 4=>60%

VEGETATION LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE
1	Canopy			
2	Sub-Canopy	2	1	ACE NEGU > FRA PENN
3	Understorey	3	4	COR SPP > SAL SPP > SAM CANA > RHA CATH
4	Ground Layer	4	4	SOL ALTI > AMP BRAC >

SIZE CLASS ANALYSIS (abundance code): R-Rare, O=Occasional, F=Frequent, A=Abundant, D=Dominant

< 10 cm DBH: D | 10 - 24 cm DBH: R | 25 to 50 cm DBH: ✓ | > 50 cm DBH: ✓

SPECIES	LAYER / ABUNDANCE 1	2	3	4
FRA PENN				
COR DBL I				
VIB LANTANA				
SAL ERIO				
SAL BEBB				

SPECIES	LAYER / ABUNDANCE 1	2	3	4

EVIDENCE OF DISTURBANCE:
logging, sugar bush, gaps, livestock, exotic species, plantation, trails, dumping, fill, rec. use, noise, disease/death of trees, wind throw, browse, beaver, flooding, fire, ice

WILDLIFE HABITAT OBSERVATIONS:
vernal pools, hibernacula, snags, fallen logs, tracks, den/nest, scat, carcass, vocalization, feeding

COMMENTS / ADDITIONAL NOTES:

ELC Summary Sheet Project Name: _____ Project No: _____ Page 12 of ___

UNIT #: 12 Observers: _____ Date: _____ Weather / Limitations: _____

SYSTEM:	COMMUNITY CLASS:	SERIES:	ECOSITE:	VEG. TYPE:
Terrestrial Aquatic Wetland	Beach-Bar, Sand Dune, Bluff, Cliff, Talus, Alvar, Rock Barren, Cave, Sand Barren, Prairie-Savannah-Woodland, Forest, Cultural, Swamp, Fen, Bog, Marsh, Open Water, Shallow Water		CUW	

STAND DESCRIPTION:	SOIL ANALYSIS:	Community Inclusion:
COMMUNITY AGE: 1=Pioneer 2=Young 3=Mid-Aged 4=Mature 5=Old Growth	DRAINAGE: 1=very well 2=well 3=moderate 4=imperfect 5=poor 6=very poor	
STANDING SNAGS: R=Rare O=Occasional A=Abundant D=Dominant	SOIL MOISTURE: 1=wet 2=wet-mesic 3=mesic 4=dry-mesic 5=dry	
DEADFALL LOGS: R=Rare O=Occasional A=Abundant D=Dominant	TEXTURE: silt sand clay loam	
BOTANICAL QUALITY: 1=low 2=medium 3=high	PARENT MATERIAL: mineral organic	Complex/Mosaic:
SLOPE: none gentle moderate steep (simple or complex)	SUBTRATE DEPTH: > 15cm < 15cm	

TOPOGRAPHY: lacustrine, riverine, tableland, rolling upland, cliff, talus slope, crevice/cave, alvar, rockland, valley slope, terrace, bottomland, sand dune, bluff, beach/bar

Height code: 1=>25m, 2=10m-25m, 3=2m-10m, 4=1m-2m, 5=0.5m-1m, 6=0.2m-0.5m, 7=< 0.5m Cover codes: 0=none, 1=0%- 10%, 2=10%- 25%, 3=25%-60%, 4=>60%

	VEGETATION LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE
1	Canopy	1	3	SALIX > ~~ACE NEGU~~
2	Sub-Canopy	3	3	ACE NEGU
3	Understorey	4	3	LONI > ACE NEGU > PRU VIRG > COR SPP
4	Ground Layer	6	4	BRO INER > GEU URBA > ARC LAPA

SIZE CLASS ANALYSIS (abundance code): R-Rare, O=Occasional, F=Frequent, A=Abundant, D=Dominant

< 10 cm DBH: A | 10 - 24 cm DBH: A | 25 to 50 cm DBH: O | > 50 cm DBH: ~~R~~

SPECIES	LAYER / ABUNDANCE 1	2	3	4
PIC GLAU				R
GYM DIOI	O			
Southern end				
Prob planted				
GPS taken				
x4 large, 80 DBH				
Some Pygm too				
VIT RIPA				

SPECIES	LAYER / ABUNDANCE 1	2	3	4
IMP CAPE				
SOL ALTI				
ASE SYRI				
TRI ANNU				
RAN ACRI				

EVIDENCE OF DISTURBANCE:
logging, sugar bush, gaps, livestock, exotic species, plantation, trails, dumping, fill, rec. use, noise, disease/death of trees, wind throw, browse, beaver, flooding, fire, ice

old silt fencing by stream

WILDLIFE HABITAT OBSERVATIONS:
vernal pools, hibernacula, snags, fallen logs, tracks, den/nest, scat, carcass, vocalization, feeding

COMMENTS / ADDITIONAL NOTES:

Weedy growth under old willows

ELC Summary Sheet Project Name: ______ Project No: ______ Page 13 of ___

UNIT #: 13 Observers: ______ Date: ______ Weather / Limitations: ______

wsp

SYSTEM: Terrestrial Aquatic Wetland	**COMMUNITY CLASS:** Beach-Bar, Sand Dune, Bluff, Cliff, Talus, Alvar, Rock Barren, Cave, Sand Barren, Prairie-Savannah-Woodland, Forest, Cultural, Swamp, Fen, Bog, Marsh, Open Water, Shallow Water	**SERIES:**	**ECOSITE:** COS	**VEG. TYPE:**

STAND DESCRIPTION:	***SOIL ANALYSIS:***	**Community Inclusion:**
COMMUNITY AGE: 1=Pioneer 2=Young 3=Mid-Aged 4=Mature 5=Old Growth	**DRAINAGE:** 1=very well 2=well 3=moderate 4=imperfect 5=poor 6=very poor	
STANDING SNAGS: R=Rare O=Occasional A=Abundant D=Dominant	**SOIL MOISTURE:** 1=wet 2=wet-mesic 3=mesic 4=dry-mesic 5=dry	
DEADFALL LOGS: R=Rare O=Occasional A=Abundant D=Dominant	**TEXTURE:** silt sand clay loam	
BOTANICAL QUALITY: 1=low 2=medium 3=high	**PARENT MATERIAL:** mineral organic	**Complex/Mosaic:**
SLOPE: none gentle moderate steep (simple or complex)	**SUBTRATE DEPTH:** > 15cm < 15cm	

TOPOGRAPHY: lacustrine, riverine, tableland, rolling upland, cliff, talus slope, crevice/cave, alvar, rockland, valley slope, terrace, bottomland, sand dune, bluff, beach/bar

Height code: 1=>25m, 2=10m-25m, 3=2m-10m, 4=1m-2m, 5=0.5m-1m, 6=0.2m-0.5m, 7=< 0.5m ***Cover codes:*** 0=none, 1=0%- 10%, 2=10%- 25%, 3=25%-60%, 4=>60%

VEGETATION LAYER		**HT**	**CVR**	**SPECIES IN ORDER OF DECREASING DOMINANCE**
1	Canopy	2	3	FRA AMER = ACE NEGU > PIC GLAU = ACE XFRE
2	Sub-Canopy	3	4	RHU TYPH > RHA CATH > SAL SPP
3	Understorey	4	3	" > LIG VULG
4	Ground Layer	6	4	BRO INER = SOL ALTI > POA PRAT

SIZE CLASS ANALYSIS (abundance code): R-Rare, O=Occasional, F=Frequent, A=Abundant, D=Dominant	< 10 cm DBH: D	10 - 24 cm DBH: O	25 to 50 cm DBH: N	> 50 cm DBH: N

SPECIES	**LAYER / ABUNDANCE** 1	2	3	4	**SPECIES**	**LAYER / ABUNDANCE** 1	2	3	4
PIC GLAU					SEC VARI				
PIN STRO					SYM NOVA				
ACE XFRE					DIP FULL				
FRA AMER					PHA ARAR				
ACE NEGU					ARC LAPP				
POP TREM									
MALUS SP crab apple									
THU OCCI									
RHA CATH									
LIG VULG									
SAL PETI									
SAL CINE cf									

EVIDENCE OF DISTURBANCE:
logging, sugar bush, gaps, livestock, exotic species, plantation, trails, dumping, fill, rec. use, noise, disease/death of trees, wind throw, browse, beaver, flooding, fire, ice

EAB

WILDLIFE HABITAT OBSERVATIONS:
vernal pools, hibernacula, snags, fallen logs, tracks, den/nest, scat, carcass, vocalization, feeding

COMMENTS / ADDITIONAL NOTES:

thickety cultural savvanah with staghorn CUT inclusion

ELC Summary Sheet Project Name: _____ Project No: _____ Page __ of __

UNIT #: 14 Observers: _____ Date: _____ Weather / Limitations: _____

SYSTEM: Terrestrial Aquatic Wetland	COMMUNITY CLASS: Beach-Bar, Sand Dune, Bluff, Cliff, Talus, Alvar, Rock Barren, Cave, Sand Barren, Prairie-Savannah-Woodland, Forest, Cultural, Swamp, Fen, Bog, Marsh, Open Water, Shallow Water	SERIES:	ECOSITE: CUP	VEG. TYPE:

STAND DESCRIPTION:	***SOIL ANALYSIS:***	**Community Inclusion:**
COMMUNITY AGE: 1=Pioneer 2=Young 3=Mid-Aged 4=Mature 5=Old Growth	**DRAINAGE:** 1=very well 2=well 3=moderate 4=imperfect 5=poor 6=very poor	
STANDING SNAGS: R=Rare O=Occasional A=Abundant D=Dominant	**SOIL MOISTURE:** 1=wet 2=wet-mesic 3=mesic 4=dry-mesic 5=dry	
DEADFALL LOGS: R=Rare O=Occasional A=Abundant D=Dominant	**TEXTURE:** silt sand clay loam	
BOTANICAL QUALITY: 1=low 2=medium 3=high	**PARENT MATERIAL:** mineral organic	**Complex/Mosaic:**
SLOPE: none gentle moderate steep (simple or complex)	**SUBTRATE DEPTH:** > 15cm < 15cm	

TOPOGRAPHY: lacustrine, riverine, tableland, rolling upland, cliff, talus slope, crevice/cave, alvar, rockland, valley slope, terrace, bottomland, sand dune, bluff, beach/bar

Height code: 1=>25m, 2=10m-25m, 3=2m-10m, 4=1m-2m, 5=0.5m-1m, 6=0.2m-0.5m, 7=< 0.5m **Cover codes**: 0=none, 1=0%- 10%, 2=10%- 25%, 3=25%-60%, 4=>60%

VEGETATION LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE
1	Canopy	1	4	PIN STRO = PIN REST > PIC GLAU
2	Sub-Canopy			
3	Understorey			
4	Ground Layer			

SIZE CLASS ANALYSIS (abundance code): R-Rare, O=Occasional, F=Frequent, A=Abundant, D=Dominant

< 10 cm DBH: A | 10 - 24 cm DBH: D | 25 to 50 cm DBH: O | > 50 cm DBH: N

SPECIES	LAYER / ABUNDANCE 1	2	3	4
ACE SACH		O		
ACE NEGU				
THU OCCI				
TSU CANA				
RHA CATH				
LON I				
SAM RACE				
RUB IDST				

SPECIES	LAYER / ABUNDANCE 1	2	3	4
HEM FULV				
SOL ALTI				

EVIDENCE OF DISTURBANCE:
logging, sugar bush, gaps, livestock, exotic species, plantation, trails, dumping, fill, rec. use, noise, disease/death of trees, wind throw, browse, beaver, flooding, fire, ice

WILDLIFE HABITAT OBSERVATIONS:
vernal pools, hibernacula, snags, fallen logs, tracks, den/nest, scat, carcass, vocalization, feeding

COMMENTS / ADDITIONAL NOTES:

Several trails already existing along W side and E with pine needle cleared path

+ extension of (3)? check aerial

ELC Summary Sheet Project Name: _____ Project No: _____ Page___of___

UNIT #: (5) Observers: _____ Date: _____ Weather / Limitations: _____

SYSTEM: Terrestrial Aquatic Wetland	COMMUNITY CLASS: Beach-Bar, Sand Dune, Bluff, Cliff, Talus, Alvar, Rock Barren, Cave, Sand Barren, Prairie-Savannah-Woodland, Forest, Cultural, Swamp, Fen, Bog, Marsh, Open Water, Shallow Water	SERIES:	ECOSITE:	VEG. TYPE:

STAND DESCRIPTION:	***SOIL ANALYSIS:***	**Community Inclusion:**
COMMUNITY AGE: 1=Pioneer 2=Young 3=Mid-Aged 4=Mature 5=Old Growth	**DRAINAGE:** 1=very well 2=well 3=moderate 4=imperfect 5=poor 6=very poor	
STANDING SNAGS : R=Rare O=Occasional A=Abundant D=Dominant	**SOIL MOISTURE:** 1=wet 2=wet-mesic 3=mesic 4=dry-mesic 5=dry	
DEADFALL LOGS: R=Rare O=Occasional A=Abundant D=Dominant	**TEXTURE:** silt sand clay loam	
BOTANICAL QUALITY: 1=low 2=medium 3=high	**PARENT MATERIAL:** mineral organic	**Complex/Mosaic:**
SLOPE: none gentle moderate steep (simple or complex)	**SUBTRATE DEPTH:** > 15cm < 15cm	

TOPOGRAPHY: lacustrine, riverine, tableland, rolling upland, cliff, talus slope, crevice/cave, alvar, rockland, valley slope, terrace, bottomland, sand dune, bluff, beach/bar

Height code: 1=>25m, 2=10m-25m, 3=2m-10m, 4=1m-2m, 5=0.5m-1m, 6=0.2m-0.5m, 7=< 0.5m ***Cover codes:*** 0=none, 1=0%- 10%, 2=10%- 25%, 3=25%-60%, 4=>60%

	VEGETATION LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE
1	Canopy		3	SAL EUXI > ACE PLAT
2	Sub-Canopy			ACE NEGU
3	Understorey			VIT RIPA
4	Ground Layer			TUS FARF > GAL SP > VIO SP

SIZE CLASS ANALYSIS (abundance code): R-Rare, O=Occasional, F=Frequent, A=Abundant, D=Dominant	< 10 cm DBH:	10 - 24 cm DBH:	25 to 50 cm DBH:	> 50 cm DBH:

SPECIES	LAYER / ABUNDANCE 1	2	3	4	SPECIES	LAYER / ABUNDANCE 1	2	3	4
FRA AMER									

EVIDENCE OF DISTURBANCE:
logging, sugar bush, gaps, livestock, exotic species, plantation, trails, dumping, fill, rec. use, noise, disease/death of trees, wind throw, browse, beaver, flooding, fire, ice

WILDLIFE HABITAT OBSERVATIONS:
vernal pools, hibernacula, snags, fallen logs, tracks, den/nest, scat, carcass, vocalization, feeding

COMMENTS / ADDITIONAL NOTES:

Planted and naturalizing trees

skinny polygon 5-10m west of stream, east is all turf and mostly planted

could be just lumped with CUP and described in text

ELC Summary Sheet Project Name: _____ Project No: _____ Page ___ of ___

wsp

UNIT #: 16 Observers: _____ Date: _____ Weather / Limitations: _____

SYSTEM: Terrestrial Aquatic Wetland	COMMUNITY CLASS: Beach-Bar, Sand Dune, Bluff, Cliff, Talus, Alvar, Rock Barren, Cave, Sand Barren, Prairie-Savannah-Woodland, Forest, Cultural, Swamp, Fen, Bog, Marsh, Open Water, Shallow Water	SERIES:	ECOSITE: CUR-1	VEG. TYPE:

STAND DESCRIPTION:	SOIL ANALYSIS:	Community Inclusion:
COMMUNITY AGE: 1=Pioneer 2=Young 3=Mid-Aged 4=Mature 5=Old Growth	DRAINAGE: 1=very well 2=well 3=moderate 4=imperfect 5=poor 6=very poor	
STANDING SNAGS: R=Rare O=Occasional A=Abundant D=Dominant	SOIL MOISTURE: 1=wet 2=wet-mesic 3=mesic 4=dry-mesic 5=dry	
DEADFALL LOGS: R=Rare O=Occasional A=Abundant D=Dominant	TEXTURE: silt sand clay loam	Complex/Mosaic:
BOTANICAL QUALITY: 1=low 2=medium 3=high	PARENT MATERIAL: mineral organic	
SLOPE: none gentle moderate steep (simple or complex)	SUBTRATE DEPTH: > 15cm < 15cm	

TOPOGRAPHY: lacustrine, riverine, tableland, rolling upland, cliff, talus slope, crevice/cave, alvar, rockland, valley slope, terrace, bottomland, sand dune, bluff, beach/bar

Height code: 1=>25m, 2=10m-25m, 3=2m-10m, 4=1m-2m, 5=0.5m-1m, 6=0.2m-0.5m, 7=< 0.5m **Cover codes**: 0=none, 1=0%- 10%, 2=10%- 25%, 3=25%-60%, 4=>60%

	VEGETATION LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE
1	Canopy			NO DOMINANCE
2	Sub-Canopy			
3	Understorey			
4	Ground Layer			

SIZE CLASS ANALYSIS (abundance code): R-Rare, O=Occasional, F=Frequent, A=Abundant, D=Dominant	< 10 cm DBH:	10 - 24 cm DBH:	25 to 50 cm DBH:	> 50 cm DBH:

SPECIES	LAYER / ABUNDANCE 1	2	3	4	SPECIES	LAYER / ABUNDANCE 1	2	3	4
PLANTED TREES									
ACE PLAT	A								
MAL SP		O							
MLE TRIC	O								
BET PAPY	R								
SEVERAL DEAD PIC SP.	O								
PINUS TRA AMER	O								
AES HIPO		R	R						
JUN VIRG		R							
ACE SACH	O								
SAL EUXC/ALBA	R								

EVIDENCE OF DISTURBANCE:
logging, sugar bush, gaps, livestock, exotic species, plantation, trails, dumping, fill, rec. use, noise, disease/death of trees, wind throw, browse, beaver, flooding, fire, ice

WILDLIFE HABITAT OBSERVATIONS:
vernal pools, hibernacula, snags, fallen logs, tracks, den/nest, scat, carcass, vocalization, feeding

COMMENTS / ADDITIONAL NOTES:
Residential / Parkland / Landscaped

path between pond and stream is turf

ELC Summary Sheet Project Name: _____ Project No: _____ Page ___ of ___

wsp

UNIT #: 17 Observers: _____ Date: _____ Weather / Limitations: _____

SYSTEM: Terrestrial Aquatic Wetland	COMMUNITY CLASS: Beach-Bar, Sand Dune, Bluff, Cliff, Talus, Alvar, Rock Barren, Cave, Sand Barren, Prairie-Savannah-Woodland, Forest, Cultural, Swamp, Fen, Bog, Marsh, Open Water, Shallow Water	SERIES:	ECOSITE:	VEG. TYPE:

STAND DESCRIPTION:	***SOIL ANALYSIS:***	**Community Inclusion:**
COMMUNITY AGE: 1=Pioneer 2=Young 3=Mid-Aged 4=Mature 5=Old Growth	**DRAINAGE:** 1=very well 2=well 3=moderate 4=imperfect 5=poor 6=very poor	
STANDING SNAGS : R=Rare O=Occasional A=Abundant D=Dominant	**SOIL MOISTURE:** 1=wet 2=wet-mesic 3=mesic 4=dry-mesic 5=dry	
DEADFALL LOGS: R=Rare O=Occasional A=Abundant D=Dominant	**TEXTURE:** silt sand clay loam	
BOTANICAL QUALITY: 1=low 2=medium 3=high	**PARENT MATERIAL:** mineral organic	**Complex/Mosaic:**
SLOPE: none gentle moderate steep (simple or complex)	**SUBTRATE DEPTH:** > 15cm < 15cm	

TOPOGRAPHY: lacustrine, riverine, tableland, rolling upland, cliff, talus slope, crevice/cave, alvar, rockland, valley slope, terrace, bottomland, sand dune, bluff, beach/bar

Height code: 1=>25m, 2=10m-25m, 3=2m-10m, 4=1m-2m, 5=0.5m-1m, 6=0.2m-0.5m, 7=< 0.5m ***Cover codes:*** 0=none, 1=0%- 10%, 2=10%- 25%, 3=25%-60%, 4=>60%

VEGETATION LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE
1	Canopy			
2	Sub-Canopy			
3	Understorey	4	3	TYP LATI > SOL ALTI > SYM LANC > RHU TYP
4	Ground Layer	7	3	TIO FARF > PAR VITA > HEM FULV > CIR ARV

SIZE CLASS ANALYSIS (abundance code): R-Rare, O=Occasional, F=Frequent, A=Abundant, D=Dominant

< 10 cm DBH:	10 - 24 cm DBH:	25 to 50 cm DBH:	> 50 cm DBH:

SPECIES	LAYER / ABUNDANCE 1	2	3	4	SPECIES	LAYER / ABUNDANCE 1	2	3	4

EVIDENCE OF DISTURBANCE:
logging, sugar bush, gaps, livestock, exotic species, plantation, trails, dumping, fill, rec. use, noise, disease/death of trees, wind throw, browse, beaver, flooding, fire, ice

WILDLIFE HABITAT OBSERVATIONS:
vernal pools, hibernacula, snags, fallen logs, tracks, den/nest, scat, carcass, vocalization, feeding

COMMENTS / ADDITIONAL NOTES:

pond edges, very skinny strip of veg MAM?

ELC Summary Sheet Project Name: _____ Project No: _____ Page ___ of ___

UNIT #: 18 Observers: _____ Date: _____ Weather / Limitations: _____

SYSTEM: Terrestrial Aquatic Wetland	COMMUNITY CLASS: Beach-Bar, Sand Dune, Bluff, Cliff, Talus, Alvar, Rock Barren, Cave, Sand Barren, Prairie-Savannah-Woodland, Forest, Cultural, Swamp, Fen, Bog, Marsh, Open Water, Shallow Water	SERIES: FOM	ECOSITE:	VEG. TYPE:

STAND DESCRIPTION:	***SOIL ANALYSIS:***	**Community Inclusion:**
COMMUNITY AGE: 1=Pioneer 2=Young 3=Mid-Aged 4=Mature 5=Old Growth	**DRAINAGE:** 1=very well 2=well 3=moderate 4=imperfect 5=poor 6=very poor	
STANDING SNAGS : R=Rare O=Occasional A=Abundant D=Dominant	**SOIL MOISTURE:** 1=wet 2=wet-mesic 3=mesic 4=dry-mesic 5=dry	
DEADFALL LOGS: R=Rare O=Occasional A=Abundant D=Dominant	**TEXTURE:** silt sand clay loam	
BOTANICAL QUALITY: 1=low 2=medium 3=high	**PARENT MATERIAL:** mineral organic	**Complex/Mosaic:**
SLOPE: none gentle moderate steep (simple or complex)	**SUBTRATE DEPTH:** > 15cm < 15cm	

TOPOGRAPHY: lacustrine, riverine, tableland, rolling upland, cliff, talus slope, crevice/cave, alvar, rockland, valley slope, terrace, bottomland, sand dune, bluff, beach/bar

Height code: 1=>25m, 2=10m-25m, 3=2m-10m, 4=1m-2m, 5=0.5m-1m, 6=0.2m-0.5m, 7=< 0.5m ***Cover codes:*** 0=none, 1=0%- 10%, 2=10%- 25%, 3=25%-60%, 4=>60%

	VEGETATION LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE
1	Canopy	1	4	PIN STR > ACE SACH > PRU SERO
2	Sub-Canopy	3	3	ACE SACH > VIT RIPA > FRA AMER > OST VIRG
3	Understorey	4	4	PRU VIRG > FRA AMER
4	Ground Layer	7	3	PRU VIRG > GER ROBE > PAR VITA > GEU URBA

SIZE CLASS ANALYSIS (abundance code): R-Rare, O=Occasional, F=Frequent, A=Abundant, D=Dominant

< 10 cm DBH: F	10 - 24 cm DBH: O	25 to 50 cm DBH: A	> 50 cm DBH: O

SPECIES	LAYER / ABUNDANCE 1	2	3	4
BET ALLE				
FAG GRAN				
↳ infected BED				
OST VIRG				
TIL AMER				
VIB OPUP				
RIB RUBR				

SPECIES	LAYER / ABUNDANCE 1	2	3	4
SOL FLEY				

EVIDENCE OF DISTURBANCE:
logging, sugar bush, gaps, livestock, exotic species, plantation, trails, dumping, fill, rec. use, noise, disease/death of trees, wind throw, browse, beaver, flooding, fire, ice

BED

WILDLIFE HABITAT OBSERVATIONS:
vernal pools, hibernacula, snags, fallen logs, tracks, den/nest, scat, carcass, vocalization, feeding

WBNU (V0)

80 - 90 DBH PINE GAPS

COMMENTS / ADDITIONAL NOTES:

(GPS CHOKE POINT)

3-4 clearance between private prop and slope top

heavy tree impact / removals

↳ alt path is down steep slope into floodplain

ELC Summary Sheet Project Name: _____ Project No: _____ Page___of___

UNIT #: 19 Observers: _____ Date: _____ Weather / Limitations: _____

SYSTEM: Terrestrial Aquatic Wetland	COMMUNITY CLASS: Beach-Bar, Sand Dune, Bluff, Cliff, Talus, Alvar, Rock Barren, Cave, Sand Barren, Prairie-Savannah-Woodland, Forest, Cultural, Swamp, Fen, Bog, Marsh, Open Water, Shallow Water	SERIES: FOD	ECOSITE:	VEG. TYPE: FOD7a

STAND DESCRIPTION:	***SOIL ANALYSIS:***	**Community Inclusion:**
COMMUNITY AGE: 1=Pioneer 2=Young 3=Mid-Aged 4=Mature 5=Old Growth	**DRAINAGE:** 1=very well 2=well 3=moderate 4=imperfect 5=poor 6=very poor	
STANDING SNAGS : R=Rare O=Occasional A=Abundant D=Dominant	**SOIL MOISTURE:** 1=wet 2=wet-mesic 3=mesic 4=dry-mesic 5=dry	
DEADFALL LOGS: R=Rare O=Occasional A=Abundant D=Dominant	**TEXTURE:** silt sand clay loam	
BOTANICAL QUALITY: 1=low 2=medium 3=high	**PARENT MATERIAL:** mineral organic	**Complex/Mosaic:**
SLOPE: none gentle moderate steep (simple or complex)	**SUBTRATE DEPTH:** > 15cm < 15cm	

TOPOGRAPHY: lacustrine, riverine, tableland, rolling upland, cliff, talus slope, crevice/cave, alvar, rockland, valley slope, terrace, bottomland, sand dune, bluff, beach/bar

Height code: 1=>25m, 2=10m-25m, 3=2m-10m, 4=1m-2m, 5=0.5m-1m, 6=0.2m-0.5m, 7=< 0.5m ***Cover codes:*** 0=none, 1=0%- 10%, 2=10%- 25%, 3=25%-60%, 4=>60%

VEGETATION LAYER		**HT**	**CVR**	**SPECIES IN ORDER OF DECREASING DOMINANCE**
1	Canopy	2		
2	Sub-Canopy	3	4	ACE NEGU > VIT RIPA
3	Understorey	4	4	VIT RIPA > ACE NEGU > FRA PENN > PAR VITA
4	Ground Layer	7	4	VIO SP > PAR VIT A > IMP CAPE >> SYM LATE

SIZE CLASS ANALYSIS (abundance code): R-Rare, O=Occasional, F=Frequent, A=Abundant, D=Dominant

< 10 cm DBH: A	10 - 24 cm DBH: O	25 to 50 cm DBH: N	> 50 cm DBH: N

SPECIES	LAYER / ABUNDANCE 1	2	3	4
~~VAC GRAN~~	R			
RIB CYNO				

SPECIES	LAYER / ABUNDANCE 1	2	3	4
CIR CANA				
SOL FLEX				
SOL ALTI				

EVIDENCE OF DISTURBANCE:
logging, sugar bush, gaps, livestock, exotic species, plantation, trails, dumping, fill, rec. use, noise, disease, death of trees, wind throw, browse, beaver, flooding, fire, ice

WILDLIFE HABITAT OBSERVATIONS:
vernal pools, hibernacula, snags, fallen logs, tracks, den/nest, scat, carcass, vocalization, feeding

COMMENTS / ADDITIONAL NOTES:

ELC Summary Sheet Project Name: _____ Project No: _____ Page__of___

UNIT #: 26 Observers: _____ Date: _____ Weather / Limitations: _____

SYSTEM:	COMMUNITY CLASS: Beach-Bar, Sand Dune, Bluff, Cliff, Talus, Alvar, Rock Barren, Cave, Sand Barren, Prairie-Savannah-Woodland, Forest, Cultural, Swamp, Fen, Bog, Marsh, Open Water, Shallow Water	SERIES:	ECOSITE:	VEG. TYPE:
Terrestrial Aquatic Wetland		MA		MAMM3-1

STAND DESCRIPTION:	SOIL ANALYSIS:	Community Inclusion:
COMMUNITY AGE: 1=Pioneer 2=Young 3=Mid-Aged 4=Mature 5=Old Growth	DRAINAGE: 1=very well 2=well 3=moderate 4=imperfect 5=poor 6=very poor	
STANDING SNAGS : R=Rare O=Occasional A=Abundant D=Dominant	SOIL MOISTURE: 1=wet 2=wet-mesic 3=mesic 4=dry-mesic 5=dry	
DEADFALL LOGS: R=Rare O=Occasional A=Abundant D=Dominant	TEXTURE: silt sand clay loam	
BOTANICAL QUALITY: 1=low 2=medium 3=high	PARENT MATERIAL: mineral organic	Complex/Mosaic:
SLOPE: none gentle moderate steep (simple or complex)	SUBTRATE DEPTH: > 15cm < 15cm	

TOPOGRAPHY: lacustrine, riverine, tableland, rolling upland, cliff, talus slope, crevice/cave, alvar, rockland, valley slope, terrace, bottomland, sand dune, bluff, beach/bar

Height code: 1=>25m, 2=10m-25m, 3=2m-10m, 4=1m-2m, 5=0.5m-1m, 6=0.2m-0.5m, 7=< 0.5m **Cover codes**: 0=none, 1=0%- 10%, 2=10%- 25%, 3=25%-60%, 4=>60%

VEGETATION LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE
1	Canopy			
2	Sub-Canopy			
3	Understorey			
4	Ground Layer	G	U	PHA ARAR > SOL ALTI > CAR SP > SYM SPP

SIZE CLASS ANALYSIS (abundance code): R-Rare, O=Occasional, F=Frequent, A=Abundant, D=Dominant	< 10 cm DBH: R	10 - 24 cm DBH:	25 to 50 cm DBH:	> 50 cm DBH:

SPECIES	LAYER / ABUNDANCE 1	2	3	4
COR SERI			D	
VIT RIPA				O

SPECIES	LAYER / ABUNDANCE 1	2	3	4
SOL ALTI				A
EUT MACU				
SYM LANC				
TON ARVE				
SYM NOVA				
CAR SP				F
IVS 4mm M Shape Stem triangular not compressed base red/brown rhizomatous				
SOL RUGO				
JUN SP				
LYC AMER				
HYP PERF				
POA PRAT				
VIC CRAC				
PHA ARAR				A
CIR ARVE				F
BID FRON				
LYT SALI				
CAR VULP				F
SYM ERIC				
BRO INER				F
ASC SYRI				
EUT GRAM				

EVIDENCE OF DISTURBANCE:
logging, sugar bush, gaps, livestock, exotic species, plantation, trails, dumping, fill, rec. use, noise, disease/death of trees, wind throw, browse, beaver, flooding, fire, ice

WILDLIFE HABITAT OBSERVATIONS:
vernal pools, hibernacula, snags, fallen logs, tracks, den/nest, scat, carcass, vocalization, feeding

EACO

COMMENTS / ADDITIONAL NOTES:

ELC Summary Sheet Project Name: _____ Project No: _____ Page__of___

UNIT #: 21 Observers: _____ Date: _____ Weather / Limitations: _____

SYSTEM: Terrestrial Aquatic Wetland	COMMUNITY CLASS: Beach-Bar, Sand Dune, Bluff, Cliff, Talus, Alvar, Rock Barren, Cave, Sand Barren, Prairie-Savannah-Woodland, Forest, Cultural, Swamp, Fen, Bog, Marsh, Open Water, Shallow Water	SERIES:	ECOSITE: CUW	VEG. TYPE:

STAND DESCRIPTION:	***SOIL ANALYSIS:***	**Community Inclusion:**
COMMUNITY AGE: 1=Pioneer 2=Young 3=Mid-Aged 4=Mature 5=Old Growth	**DRAINAGE:** 1=very well 2=well 3=moderate 4=imperfect 5=poor 6=very poor	
STANDING SNAGS : R=Rare O=Occasional A=Abundant D=Dominant	**SOIL MOISTURE:** 1=wet 2=wet-mesic 3=mesic 4=dry-mesic 5=dry	
DEADFALL LOGS: R=Rare O=Occasional A=Abundant D=Dominant	**TEXTURE:** silt sand clay loam	
BOTANICAL QUALITY: 1=low 2=medium 3=high	**PARENT MATERIAL:** mineral organic	**Complex/Mosaic:**
SLOPE: none gentle moderate steep (simple or complex)	**SUBTRATE DEPTH:** > 15cm < 15cm	

TOPOGRAPHY: lacustrine, riverine, tableland, rolling upland, cliff, talus slope, crevice/cave, alvar, rockland, valley slope, terrace, bottomland, sand dune, bluff, beach/bar

Height code: 1=>25m, 2=10m-25m, 3=2m-10m, 4=1m-2m, 5=0.5m-1m, 6=0.2m-0.5m, 7=< 0.5m ***Cover codes:*** 0=none, 1=0%- 10%, 2=10%- 25%, 3=25%-60%, 4=>60%

	VEGETATION LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE
1	Canopy	1	3	SAL ALBA
2	Sub-Canopy	3	3	SAL ALBA > ACE NEGU
3	Understorey	4	4	PRU VIRG > RHA CATH > ACE NEGU > VIT RIPA
4	Ground Layer	7	4	BRO INER > GEU URBA > PAR VITA > SOL ALTI

SIZE CLASS ANALYSIS (abundance code): R-Rare, O=Occasional, F=Frequent, A=Abundant, D=Dominant

< 10 cm DBH: A	10 - 24 cm DBH: O	25 to 50 cm DBH: O	> 50 cm DBH: O

SPECIES	LAYER / ABUNDANCE 1	2	3	4
SAL ALBA	D			
LAB-7 downy + silky				
ACE NEGU	A	A		
ACE PLAT			.	.
VIT RIPA	.	.	.	.
PRU VIRG			.	
RHA CATH			O	F
PAR VITA				
RIB RUBR				
PRU VIRG 'SHURERT'				
VIB OPUL				
EUO FORT				
COR SERI				
EUO EURO				

SPECIES	LAYER / ABUNDANCE 1	2	3	4
BRO INER				D
SOL ALTI				A
RHA AMAR				
ASC SYRI				
SYM LANC				
ECH LORE				
GLE HEDE				
VIN ROSS				
CIR CANA				
GEU URBA				
VIO SP				
URT DIOR				

EVIDENCE OF DISTURBANCE:
logging, sugar bush, gaps, livestock, exotic species, plantation, trails, dumping, fill, rec. use, noise, disease/death of trees, wind throw, browse, beaver, flooding, fire, ice

black knot

WILDLIFE HABITAT OBSERVATIONS:
vernal pools, hibernacula, snags, fallen logs, tracks, den/nest, scat, carcass, vocalization, feeding

WITU (OB group of 8 w/ juviniles)

COMMENTS / ADDITIONAL NOTES:

ELC Summary Sheet Project Name: _____ Project No: _____ Page ___ of ___

UNIT #: 22 Observers: _____ Date: _____ Weather / Limitations: _____

SYSTEM:	COMMUNITY CLASS:	SERIES:	ECOSITE:	VEG. TYPE:
Terrestrial Aquatic Wetland	Beach-Bar, Sand Dune, Bluff, Cliff, Talus, Alvar, Rock Barren, Cave, Sand Barren, Prairie-Savannah-Woodland, Forest, Cultural, Swamp, Fen, Bog, Marsh, Open Water, Shallow Water			FODS

STAND DESCRIPTION:	***SOIL ANALYSIS:***	**Community Inclusion:**
COMMUNITY AGE: 1=Pioneer 2=Young 3=Mid-Aged 4=Mature 5=Old Growth	**DRAINAGE:** 1=very well 2=well 3=moderate 4=imperfect 5=poor 6=very poor	
STANDING SNAGS : R=Rare O=Occasional A=Abundant D=Dominant	**SOIL MOISTURE:** 1=wet 2=wet-mesic 3=mesic 4=dry-mesic 5=dry	
DEADFALL LOGS: R=Rare O=Occasional A=Abundant D=Dominant	**TEXTURE:** silt sand clay loam	
BOTANICAL QUALITY: 1=low 2=medium 3=high	**PARENT MATERIAL:** mineral organic	**Complex/Mosaic:**
SLOPE: none gentle moderate steep (simple or complex)	**SUBTRATE DEPTH:** > 15cm < 15cm	

TOPOGRAPHY: lacustrine, riverine, tableland, rolling upland, cliff, talus slope, crevice/cave, alvar, rockland, valley slope, terrace, bottomland, sand dune, bluff, beach/bar

Height code: 1=>25m, 2=10m-25m, 3=2m-10m, 4=1m-2m, 5=0.5m-1m, 6=0.2m-0.5m, 7=< 0.5m ***Cover codes***: 0=none, 1=0%- 10%, 2=10%- 25%, 3=25%-60%, 4=>60%

	VEGETATION LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE
1	Canopy	1	4	ACE SACH >> QUE RUBR > TIL AMER
2	Sub-Canopy	3	3	ACE SACH > ERA AMER > RHA CATH
3	Understorey	4	3	ACE SACH > FRA AMER > PRU VIRG
4	Ground Layer	7	3	ACE SACH >> SOL FLEX > PAR VITA > FRA AMER

SIZE CLASS ANALYSIS (abundance code): R-Rare, O=Occasional, F=Frequent, A=Abundant, D=Dominant

< 10 cm DBH:	10 - 24 cm DBH:	25 to 50 cm DBH:	> 50 cm DBH:
A	A	D	A

SPECIES	LAYER / ABUNDANCE 1	2	3	4
QUE RUBR				
ACE SACH	D	4	A	D
TSU CANA				
La only NW side				
ha several bend				
woodly adjacent?				
EDGE SPECIES				
QUE RUBR				
ROB PSEU				
JUG NIGR				
ACE NEGU				
RHU TYPA				
QUE MACR				
ACE SACH				
CAR CARO				

SPECIES	LAYER / ABUNDANCE 1	2	3	4
SANG CANA				R
CAULOPHYLLUM SP				
CIR CAN				
PRY INTE				

EVIDENCE OF DISTURBANCE:
logging, sugar bush, gaps, livestock, exotic species, plantation, trails, dumping, fill, rec. use, noise, disease/death of trees, wind throw, browse, beaver, flooding, fire, ice

WILDLIFE HABITAT OBSERVATIONS:
vernal pools, hibernacula, snags, fallen logs, tracks, den/nest, scat, carcass, vocalization, feeding

COMMENTS / ADDITIONAL NOTES:

Approx 10-15m from curb space before major slope drop off

Large old trees

APPENDIX J

Agency Correspondence

October 28, 2021

Ontario Ministry of Environment, Conservation and Parks
Permissions and Compliance
Species at Risk Branch
50 Bloomington Road, Aurora, ON L4G 0L8

Dear Madam/Sir:

WSP Canada Inc. (WSP) has been retained by the City of Vaughan to complete a Trail Gap Feasibility Study to connect critical gaps along the Bartley Smith Greenway ("BSG") Trail in Vaughan, Ontario. The BSG Trail is a 3-km section of the city-wide Vaughan Super Trail (100-km) between McNaughton Road and Keele Street, along the Don Valley Corridor. Field investigations for vegetation, breeding birds, and amphibian calls were conducted between June and September 2021. We are formally contacting you to request any available natural heritage information pertinent in this area.

Figure 1. Study Area

582 Lancaster Street West
Kitchener, ON
Canada N2K 1M3

wsp.com

Based on publicly available online databases as well as field investigations, WSP is currently aware of the following SAR that do or have potential to occur within the study area and vicinity:

COMMON NAME	SCIENTIFIC NAME	CONSERVATION STATUS	OBSERVED DURING FIELD INVESTIGATION
Little Brown Bat	*Myotis lucifugus*	Endangered	Potential habitat was observed.
Northern Long-eared Bat	*Myotis septentrionalis*	Endangered	Potential habitat was observed.
Redside Dace	*Clinostomus elongatus*	Endangered	No
Small-footed Bat	*Myotis leibii*	Endangered	Potential habitat was observed.
Tri-colored Bat	*Perimyotis subflavus*	Endangered	Potential habitat was observed.
Eastern Wood-pewee	*Contopus virens*	Special Concern	Two individuals were recorded with 'Possible' breeding evidence.
Monarch	*Danaus plexippus*	Special Concern	No
Snapping Turtle	*Chelydra serpentina*	Special Concern	No
Wood Thrush	*Hylocichla mustelina*	Special Concern	No
Bank Swallow	*Riparia riparia*	Threatened	No
Barn Swallow	*Riparia riparia*	Threatened	No
Blanding's Turtle	*Emydoidea blandingii*	Threatened	No
Bobolink	*Dolichonyx oryzivorus*	Threatened	No
Butternut	*Juglans cinerea*	Threatened	No
Eastern Meadowlark	*Sturnella magna*	Threatened	No

Kentucky Coffee Tree	*Gymnocladus dioicus*	Threatened	Yes. Several mature individuals and natural regeneration saplings. This recording is well outside the known range of spontaneous natural occurrence in southwest Ontario (west of Brantford) where it has been documented at only 20 locations in 2000 (MECP, 2021). It is most likely that these specimens have been planted and as such are not protected under the ESA.

In fulfillment of the Feasibility Study, updated ecological background information is required in the vicinity of the study area. As such, we are formally contacting you to request additional information on the following subjects:

- Records of SAR or locally rare species, including observation dates and UTMs (if known).

WSP will also be contacting the Toronto and Region Conservation Authority (TRCA) and the Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNRF) for relevant natural heritage and SAR information.

Thank you for your assistance, it is greatly appreciated.

Yours sincerely,

Avery Tyrell
Terrestrial Ecologist

RE: WSP Data Request - Bartley Smith Greenway Trail

Species at Risk (MECP) <SAROntario@ontario.ca>

Thu 10/28/2021 3:14 PM

To: Tyrell, Avery <Avery.Tyrell@wsp.com>

Avery;

MECP staff has nothing further to add. We are uncertain what a “No” observa on means, however, the presence/absence of each species will need to be assessed according to accepted standards at an appropriate me of year.

Regards;

JJA

JEFF J. ANDERSEN

MANAGEMENT BIOLOGIST
PERMISSIONS AND COMPLIANCE SECTION, SPECIES AT RISK BRANCH
LAND AND WATER DIVISION
ONTARIO MINISTRY OF THE ENVIRONMENT, CONSERVATION AND PARKS

50 Bloomington Road, Aurora ON L4G 0L8 | jeff.andersen@ontario.ca | 289-221-1705

Ontario

From: Tyrell, Avery <Avery.Tyrell@wsp.com>
Sent: October 28, 2021 2:25 PM
To: Species at Risk (MECP) <SAROntario@ontario.ca>
Cc: Pugh, Margaret <Margaret.Pugh@wsp.com>
Subject: WSP Data Request - Bartley Smith Greenway Trail

Hello,

WSP Canada Inc. (WSP) has been retained by the City of Vaughan to complete a Trail Gap Feasibility Study to connect cri cal gaps along the Bartley Smith Greenway (“BSG”) Trail in Vaughan, Ontario. The BSG Trail is a 3-km sec on of the city-wide Vaughan Super Trail (100-km) between McNaughton Road and Keele Street, along the Don Valley Corridor. Please see the a ached data request le er for addi onal project details and requested informa on.

Please direct all questions and responses to Margaret Pugh (margaret.pugh@wsp.com).

Best,

Avery Tyrell

Avery Tyrell, B.E.S.
Terrestrial Ecologist
Ecology & Environmental Impact Assessment (EIA)

T+ 1 519-904-1866

-LAEmHhHzdJzBlTWfa4Hgs7pbKl

Drost, Heather

From: Scientific Collection Permits Aurora (NDMNRF) <scp.aurora@ontario.ca>
Sent: November 8, 2021 4:14 PM
To: Tyrell, Avery
Subject: RE: WSP Data Request - Bartley Smith Greenway Trail
Attachments: NHGuide_MNRF_2019-04-01.pdf

Hello,

Thank you for your request for information on natural heritage features. In order to provide the most efficient service possible, the attached *Natural Heritage Information Request Guide* has been developed to assist you with accessing natural heritage data and values from convenient online sources.

It remains the proponent's responsibility to complete a preliminary screening for each project, to obtain available information from multiple sources, to conduct any necessary field studies, and to consider any potential environmental impacts that may result from an activity. We wish to emphasize the need for the proponents of development activities to complete screenings prior to contacting the Ministry or other agencies for more detailed technical information and advice.

The Ministry continues to work on updating data housed by Lands Information Ontario and the Natural Heritage Information Centre, and ensuring this information is accessible through online resources. Species at risk data is regularly being updated. To ensure access to reliable and up to date information, please contact SAROntario@ontario.ca.

This information will assist in scoping the necessary field assessments for an area if development or site alteration is proposed. This information is not meant to replace the responsibility of the proponent to undertake species and / or habitat surveys. Surveys or additional site level assessment are often required to confirm presence or absence of natural heritage features and values. Environmental consulting firms have the professional and technical expertise to assess sites for natural heritage features and can gauge the potential for such features to exist.

Absence or lack of information for a given geographic area does not necessarily mean the absence of natural heritage features. Many areas in Ontario have never been surveyed and new plant and animal species records are still being discovered for many localities. In addition, new species may be listed and new natural heritage features may be defined over time. For these reasons, the Ministry cannot provide a definitive statement on the presence, absence or condition of natural heritage features in all parts of Ontario.

Thank you for your inquiry.

NDMNRF Aurora District Office
50 Bloomington Road, Aurora, ON, L4G 0L8
Tel: (905) 713-7400
Email: scp.aurora@ontario.ca

As part of providing accessible customer service, please let us know if you have any accommodation needs or require communication supports or alternate formats.

From: Tyrell, Avery <Avery.Tyrell@wsp.com>
Sent: October 28, 2021 2:25 PM
To: Scientific Collection Permits Aurora (NDMNRF) <scp.aurora@ontario.ca>
Cc: Pugh, Margaret <Margaret.Pugh@wsp.com>
Subject: WSP Data Request - Bartley Smith Greenway Trail

Hello,

WSP Canada Inc. (WSP) has been retained by the City of Vaughan to complete a Trail Gap Feasibility Study to connect critical gaps along the Bartley Smith Greenway ("BSG") Trail in Vaughan, Ontario. The BSG Trail is a 3-km section of the city-wide Vaughan Super Trail (100-km) between McNaughton Road and Keele Street, along the Don Valley Corridor. Please see the attached data request letter for additional project details and requested information.

Please direct all questions and responses to Margaret Pugh (margaret.pugh@wsp.com).

Best,

Avery Tyrell

Avery Tyrell, B.E.S.
Terrestrial Ecologist
Ecology & Environmental Impact Assessment (EIA)

T+ 1 519-904-1866

-LAEmHhHzdJzBITWfa4Hgs7pbKI

APPENDIX D

Floodplain Analysis

MEMO

TO:	Albert Zhuge, P.Eng.
FROM:	Xiaoxu (Iris) Qu, P.Eng.
SUBJECT:	**Bartley Smith Greenway Trail Gap Feasibility Study: Hydraulic Memo**
DATE:	**October 29, 2021**

1. Introduction

WSP is retained by the City of Vaughan to complete a feasibility study and 30% design to fill critical gaps in the Bartley Smith Greenway (BSG) Trail along a 3 km segment in the Upper West Don River Corridor between McNaughton Avenue to Keel Street. The study area is situated within the Don River watershed, which falls in the Toronto and Region Conservation Authority (TRCA) jurisdiction. The TRCA completed the Don River Flood Mapping Phase II Study in 2020, which included a HEC-RAS hydraulic model and Regulatory floodplain map for the existing conditions.

2. Background Information

The current Don River Phase II HEC-RAS model and two floodplain map sheets that cover the study area were provided by the TRCA in September 2021. The model and floodplain map were reviewed by the water resources staff.

3. TRCA Criteria

In order to fully understand the TRCA's criteria/expectation related to the locations of the trail alignments and water crossings, the water resources staff consulted the TRCA on September 13, 2021. The TRCA provided general criteria for the development and additional criteria on September 14, 2021 by email, as shown below:

General Criteria

- Where the development is within the Regulatory floodplain, TRCA requires to demonstrate no loss to the floodplain storage and a hydraulic impact analysis.

Additional Criteria

- For Water Crossing(s):
  - Minimize fill placement within the Regulatory floodplain.
  - If possible, reduce the number of crossings (limit to one).
  - Clearly show the top of bank on the drawings and the location of the erosion and sediment control features. This is necessary to show that silt fencing will be placed outside of the channel.
  - If it is a new bridge or a replacement bridge with different geometry, a HEC-RAS model for 2 – 100 year and Regional storm is required to demonstrate no adverse impacts to the local floodplain.

- Stone sizing should be provided based on the anticipated velocities through the channel. Supporting calculations should be provided and sizing details should be included on the drawings.
- Fluvial geomorphological analysis is required to support the proposed study, e.g., meander belt, 25/50 year channel migration, 25yr and/or 50yr erosion limit, etc.

- For the Trail:
  - Minimize fill placement within the Regulatory floodplain.
  - Update the HEC-RAS model with the proposed changes to the geometry and show no impacts for the 2-100 year and regional storm events.
  - Less intrusive trail design should be favored over impactful design such as pavement. It is recommended to reduce the number of impervious surfaces as much as possible.
  - The trail should be set outside of the 25/50 year channel migration to prevent hardening the creek in the future to protect the trail.
  - Address the sediment and erosion control measures proposed for the site and ensure the details are shown on the drawings.

The TRCA's email is enclosed to the end of this memo.

4. Next Steps

Upon preferred trail alignments and water crossings are determined, the water resources staff will update the HEC-RAS hydraulic model and simulate the 2 – 100 year and Regional storm for the proposed conditions. We will ensure they will meet the TRCA's criteria stated above and to demonstrate no negative impacts to the existing floodplain.

Fluvial geomorphological analysis will be required to support the location of the preferred trail alignment, crossing location, span and stream bank / abutment erosion protection requirements. This will be accomplished through the determination of stream meander belt widths and 25yr and/or 50yr steam erosion limits.

:

MEMO

TO:	City of Vaughan
FROM:	Xiaoxu (Iris) Qu, P.Eng., Albert Zhuge, P.Eng.
SUBJECT:	**Bartley Smith Greenway Trail Gap Feasibility Study: Floodplain Analysis**
DATE:	**July 29, 2022**

1. Introduction

WSP is retained by the City of Vaughan to complete a feasibility study and 30% design to fill critical gaps in the Bartley Smith Greenway (BSG) Trail along a 3 km segment in the Upper West Don River Corridor between McNaughton Avenue to Keel Street. The study area is situated within the Don River watershed, which falls in the Toronto and Region Conservation Authority (TRCA) jurisdiction. The TRCA completed the Don River Flood Mapping Phase II Study in 2020, which included a HEC-RAS hydraulic model and Regulatory floodplain map for the section of Don River associated with the subject site.

2. Background Information

The current Don River Phase II HEC-RAS model and two floodplain map sheets (Don # 08 and Don # 09) that cover the study area were provided by the TRCA in September 2021, and reviewed by WSP. The TRCA Regulatory floodlines are illustrated in **Figure 1**.

3. TRCA Criteria

In order to fully understand the TRCA's criteria/expectation related to the locations of the trail alignments and water crossings, the water resources staff consulted the TRCA on September 13, 2021. The TRCA provided general criteria for the development and additional criteria on September 14, 2021 by email, as shown below:

General Criteria

- Where the development is within the Regulatory floodplain, TRCA requires to demonstrate no loss to the floodplain storage and a hydraulic impact analysis.

Additional Criteria

- For Water Crossing(s):
  - Minimize fill placement within the Regulatory floodplain.
  - If possible, reduce the number of crossings (limit to one).
  - Clearly show the top of bank on the drawings and the location of the erosion and sediment control features. This is necessary to show that silt fencing will be placed outside of the channel.

- If it is a new bridge or a replacement bridge with different geometry, a HEC-RAS model for 2 – 100 year and Regional storm is required to demonstrate no adverse impacts to the local floodplain.
- Stone sizing should be provided based on the anticipated velocities through the channel. Supporting calculations should be provided and sizing details should be included on the drawings.
- Fluvial geomorphological analysis is required to support the proposed study, e.g., meander belt, 25/50 year channel migration, 25yr and/or 50yr erosion limit, etc.

- For the Trail:
  - Minimize fill placement within the Regulatory floodplain.
  - Update the HEC-RAS model with the proposed changes to the geometry and show no impacts for the 2-100 year and regional storm events.
  - Less intrusive trail design should be favored over impactful design such as pavement. It is recommended to reduce the number of impervious surfaces as much as possible.
  - The trail should be set outside of the 25/50 year channel migration to prevent hardening the creek in the future to protect the trail.
  - Address the sediment and erosion control measures proposed for the site and ensure the details are shown on the drawings.

The TRCA's email is provided in **Appendix A**.

4. Floodplain Analysis

4.1 Preferred Trail Alignments and Watercourse Crossing

For the subject feasibility study and 30% design completion, the preferred trail alignment was completed in June, 2022, as shown in **Figure 1**. One watercourse crossing is proposed approximately 1 km south of Major Mackenzie Drive West. The River ID (West Don Reach 18) and Cross Sections from the TRCA existing HEC-RAS Don River model are also illustrated in **Figure 1**. As shown in **Figure 1**, portions of the proposed trail are located outside the Regulatory floodlines.

4.2 Potential Hydraulic Impacts

Proposed Trail

To examine the potential hydraulic impacts of the proposed trail, the cross sections that show the elevation of both the existing ground and the proposed trail were generated with a space of approximately 25 m along the trail alignment. As indicated, the proposed trail elevations generally remain unchanged at the existing ground elevations. Therefore, there would be no impacts to the existing Regulatory floodlines. The layout (**Figure 2**) and plots of the cross sections are provided in **Appendix B**. Note that the cross sections with the proposed trail outside the Regulatory floodlines are marked as "O_F". Two examples of the cross sections are shown in **Exhibit 1**.

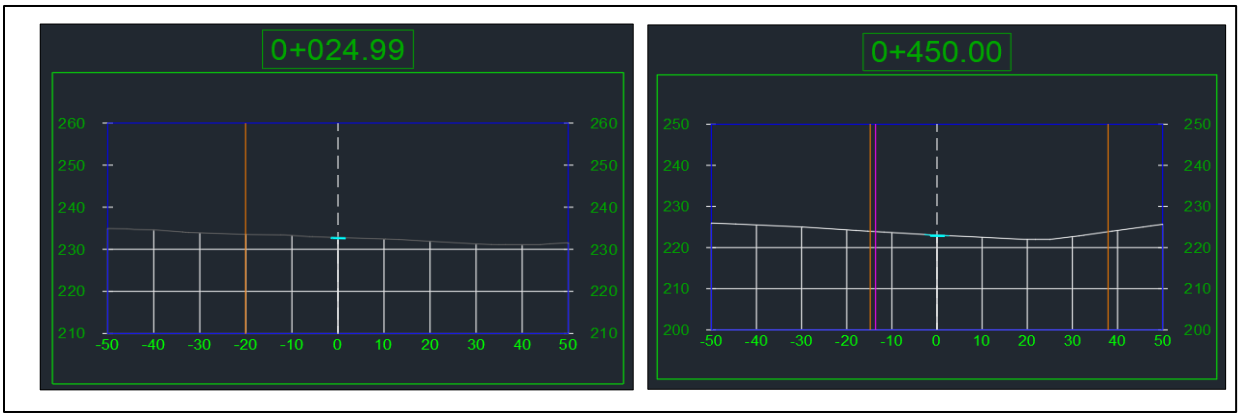


Exhibit 1 Cross Section Samples

Proposed Bridge

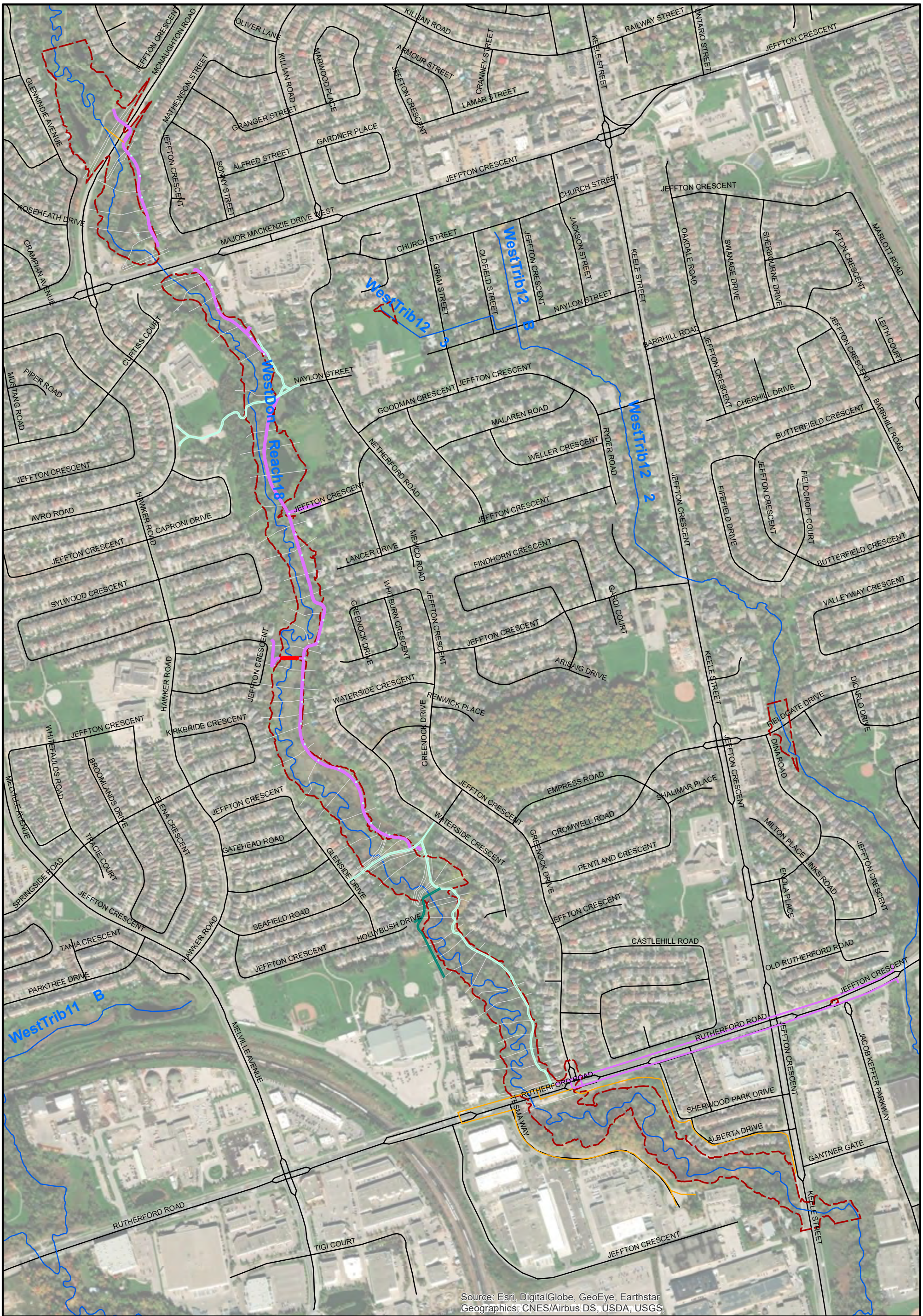
As stated above, there is a proposed 33 m bridge located approximately 1 km south of Major Mackenzie Drive West. The layout of this bridge is presented in the drawing L306. As shown in this drawing, the abutments of the proposed bridge are situated outside of the TRCA Regulatory floodlines. As such, there would be no impacts to the existing Regulatory floodlines.

5. Conclusion

The preferred trail alignment was completed in June, 2022. A 33 m bridge is proposed approximately 1 km south of Major Mackenzie Drive West. To examine the potential hydraulic impacts, the cross sections were generated at a space of approximately 25 m along the proposed trail to compare the elevations between the existing ground and proposed trail. Since the proposed trail is generally at the existing ground elevations, there would be no negative impacts to the existing Regulatory floodlines.

The abutments of the proposed bridge are located outside of the TRCA Regulatory floodlines. As such, there would be no impacts to the existing Regulatory floodlines.

FIGURE AND DRAWING



Legend

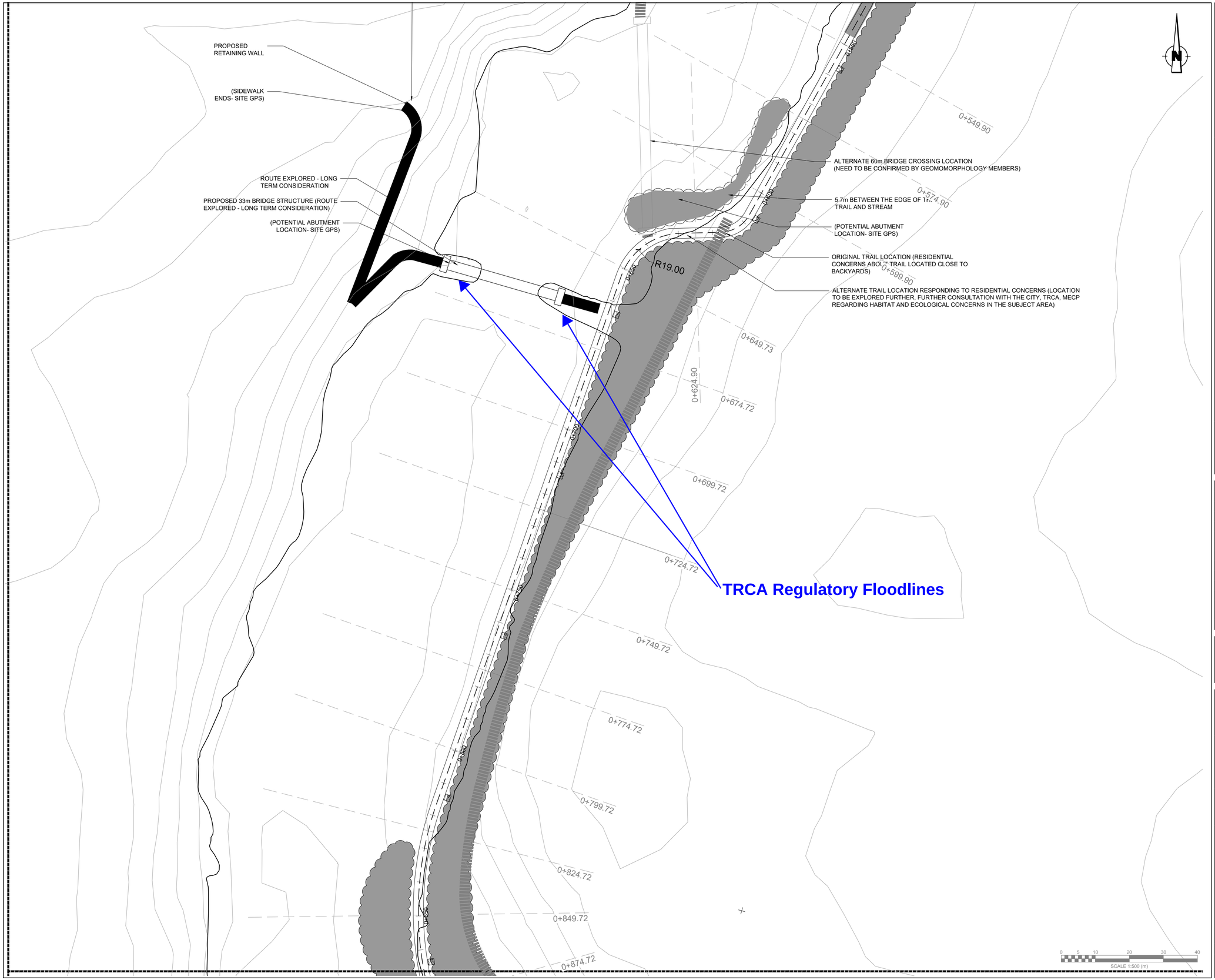
- Existing Asphalt
- Proposed BSG Trail
- Proposed Watercourse Crossing
- Proposed BSG Trail_Future
- Proposed BSG Trail_Alternative
- TRCA Regulatory Floodline
- TRCA Model Cross Section
- TRCA Model Don River

CLIENT: CITY OF VAUGHAN

TITLE: BARTLEY SMITH GREENWAY TRAIL GAP FEASIBILITY STUDY

FLOODPLAIN ANALYSIS

Checked: I.Q	Drawn: J.C
Date: July 2022	Proj. No.: 211-07301-00
Scale: 1:8,000	Figure No.: **1**



KEY MAP

LEGEND

BENCHMARK INFORMATION

ELEVATIONS ARE IN METRES AND ARE DERIVED FROM
BENCHMARK No. XXXXXXXXXX,
ELEVATION = XXX.XX

SURVEY - DRAWING REF #: XXX-XXX-XX-XXX

BY: DATE:

NO	DATE	REVISION/ISSUED	BY	APPD

wsp
Landscape Architecture
582 Lancaster Street West
Kitchener, ON N2K 1M3
t. 519-743-8777
www.wsp.com

CLIENT:
CITY OF VAUGHAN
2141 Major MacKenzie Dr W, Maple, ON L6A 1T1

PROJECT TITLE:
BARTLEY SMITH GREENWAY TRAIL
TRAIL ALIGNMENT
SP #

SITE ADDRESS:
MCNAUGHTON RD. & MAJOR MACKENZIE DR.

DRAWING TITLE:
LAYOUT PLAN

STAMP
NOT FOR CONSTRUCTION

STAMP

DESIGNED	DRAWN	CHECKED
WL	WL	##

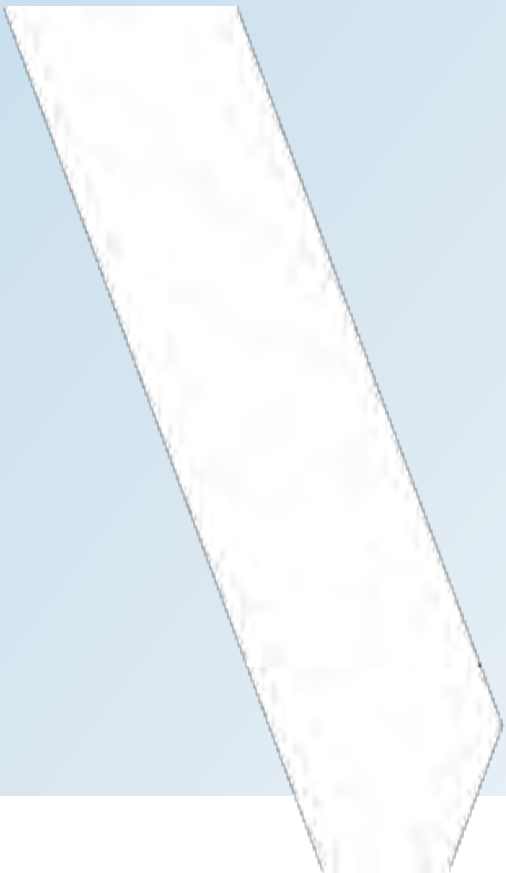
SCALE 1:500 DATE DEC 10 2021

PROJECT NUMBER 211-07301-00

DWG. NUMBER L-306

APPENDIX

A TRCA EMAIL



From: Shilla Shahlaee <Shilla.Shahlaee@trca.ca>
Sent: Tuesday, September 14, 2021 11:25 AM
To: Zhuge, Albert <Albert.Zhuge@wsp.com>
Cc: Manirul Islam <manirul.islam@trca.ca>
Subject: TRCA's Water Resources Requirements for Bartley Smith Trail Feasibility Study

Hello Albert,

Thank you for your email.

In your email to Manirul you mentioned that some sections of the trail system such as water crossings will be within the regulatory flood plain. In such cases where the development is within a floodplain, TRCA requires the proponent to demonstrate no loss to the floodplain storage and a hydraulic impact analysis. As such, the approach you mentioned is acceptable, however, we also require for additional info that I have listed below for your reference:

For Water Crossing(s):

1. Please ensure that fill placement within the regulatory floodplain is minimized.

2. If possible, please reduce the number of crossings (limit to one).

3. A letter report/design brief should be provided that speaks to the fluvial geomorphological condition of the watercourse (including channel stability, erosion rate, design flows and velocities) and the recommendations for the crossing at this location with regards to crossing on a straight stretch of the watercourse, at a perpendicular angle, etc. It is recommended to include an overview of the channel (at the upstream and downstream of the proposed crossing, at least 200m or whatever length necessary to show at least two major meanders). Please note, TRCA typically requires a pedestrian bridge to span the 25yr and/or 50yr erosion limit.

4. Please clearly show the top of bank on the drawings and the location of the erosion and sediment control features. This is necessary to show that silt fencing will be placed outside of the channel.

5. If it is a new bridge, or a replacement bridge with different geometry, then the bridge should be modelled in HEC-RAS for 2-100 year and Regional storm events to demonstrate no adverse impacts to the local floodplain. The railings should be modelled as blocked as it is to be assumed that railings will catch debris. This design report and model needs to be stamped by a P. Eng.

6. Stone sizing should be provided based on the anticipated velocities through the channel. Supporting calculations should be provided and sizing details should be included on the drawings.

For the Trail:

7. Please ensure that the fill placement within the regulatory floodplain is minimized.

8. Please update the HEC-RAS model with the proposed changes to the geometry and show no impacts for the 2-100 year and regional storm events.

9. Less intrusive trail design should be favored over impactful design such as pavement. It is recommended to reduce the number of impervious surfaces as much as possible.

10. Please ensure the trail is set outside of the 25/50 year channel migration. This is to prevent hardening the creek in the future to protect the trail.

11. Please address the sediment and erosion control measures proposed for the site and ensure the details are shown on the drawings.

I hope the information provided above is helpful. Should you have any additional questions, please don't hesitate to email me.

Kind Regards,

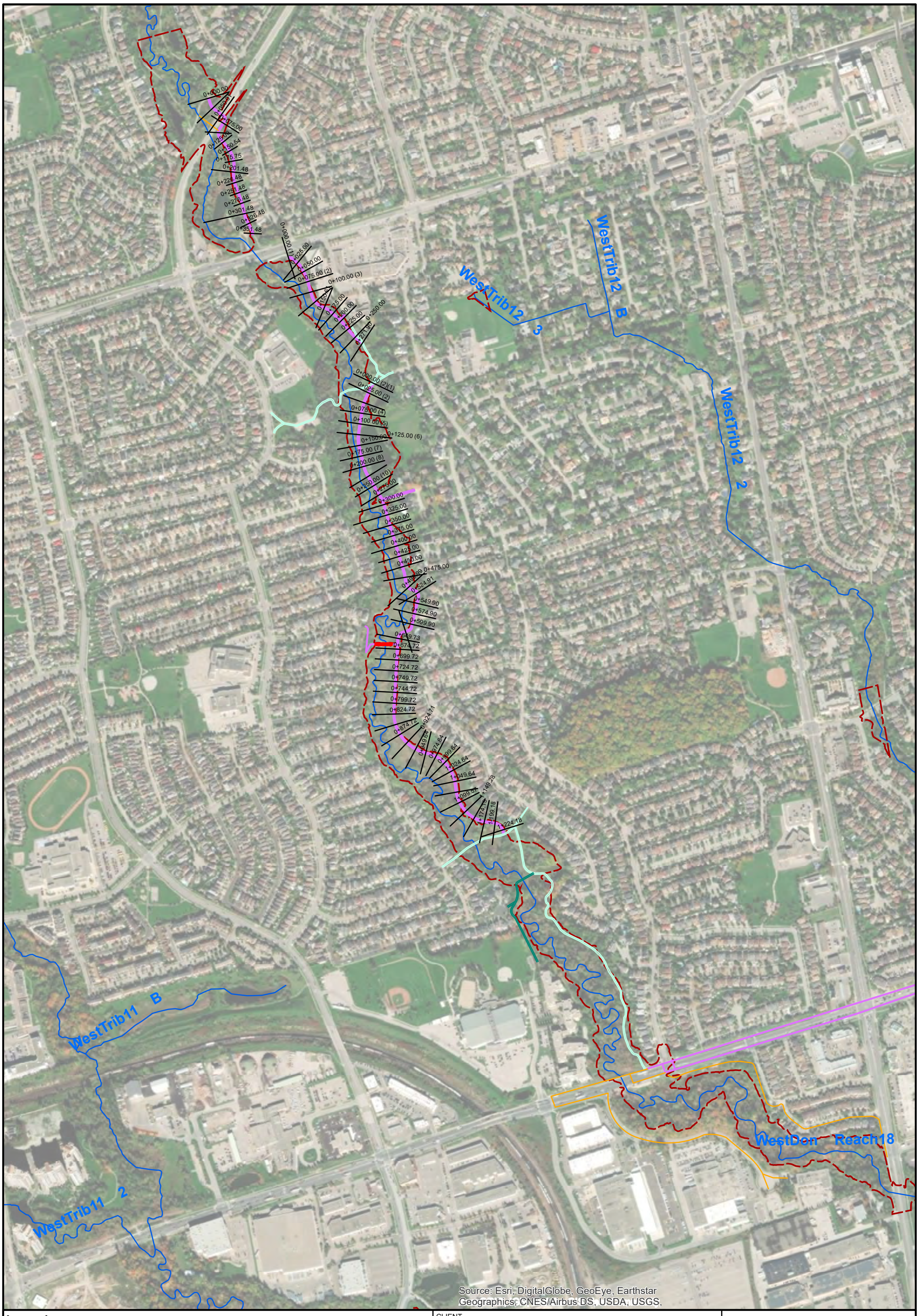
Shilla Shahlaee, M.S.c., E.I.T.
Technologist, Water Resources Engineering
Engineering Services | Development and Engineering Services

T: (416) 661-6600 ext. 6490
E: shilla.shahlaee@trca.ca
A: 101 Exchange Avenue, Vaughan, ON, L4K 5R6 | trca.ca

Toronto and Region Conservation Authority

APPENDIX

B CROSS SECTION LAY-OUT AND CROSS SEC-TIONS



Legend

- TRCA Model Don River
- TRCA Regulatory Floodline
- Existing
- Proposed BSG Trail
- Proposed Watercourse Crossing
- Proposed BSG Trail_Future
- Proposed BSG Trail_Alternative
- Cross Section_Sample Line

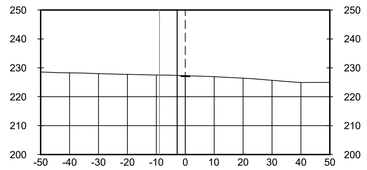
CLIENT: CITY OF VAUGHAN

TITLE: BARTLEY SMITH GREENWAY TRAIL GAP FEASIBILITY STUDY

Cross Section - Sample Lines

Checked: I.Q	Drawn: J.C
Date: July 2022	Proj. No.: 211-07301-00
Scale: 1:8,000	Figure No.: **2**

0+000.00



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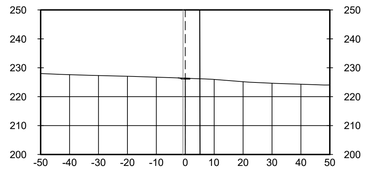

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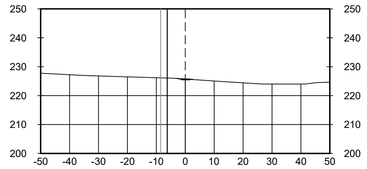

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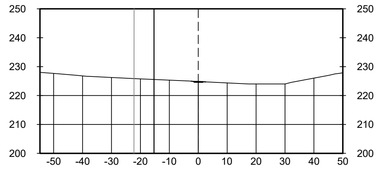

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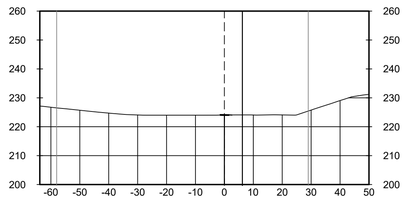

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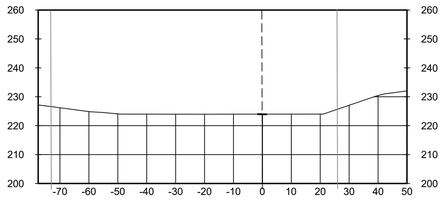

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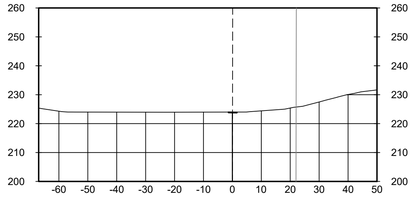

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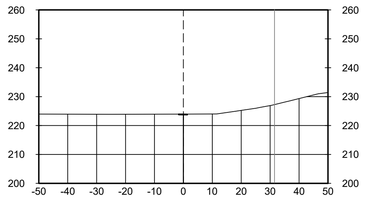

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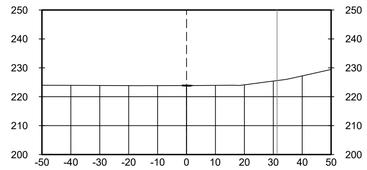

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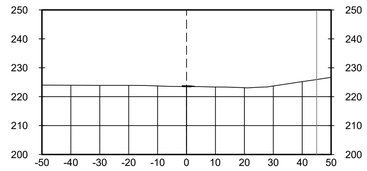

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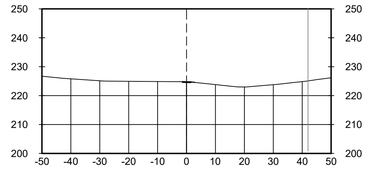

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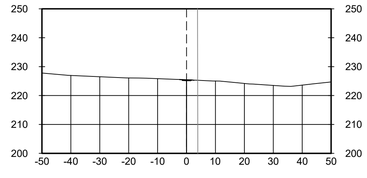

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SCALE 1:500 (m)

KEY MAP

LEGEND

- PROPOSED RECOMMENDED ALIGNMENT
- PROPOSED ALTERNATIVE ALIGNMENT
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BENCHMARK INFORMATION

ELEVATIONS ARE IN METRES AND ARE DERIVED FROM
BENCHMARK No. XXXXXXXXXX,
ELEVATION = XXX.XX

SURVEY - DRAWING REF #: XXX-XXX-XX-XXX

BY: DATE:

NO	DATE	REVISION/ISSUED	BY	APPD

wsp
Landscape Architecture
582 Lancaster Street West
Kitchener, ON N2K 1M3
t. 519-743-8777
www.wsp.com

CLIENT:
CITY OF VAUGHAN
2141 Major MacKenzie Dr W, Maple, ON L6A 1T1

PROJECT TITLE:
BARTLEY SMITH GREENWAY TRAIL
TRAIL ALIGNMENT
SP #

SITE ADDRESS:
MCNAUGHTON RD. & MAJOR MACKENZIE DR.

DRAWING TITLE:
LAYOUT PLAN

STAMP: NOT FOR CONSTRUCTION

STAMP

DESIGNED	DRAWN	CHECKED
WL	WL	##

SCALE 1:500 DATE DEC 10 2021

PROJECT NUMBER 211-07301-00

DWG. NUMBER L-301

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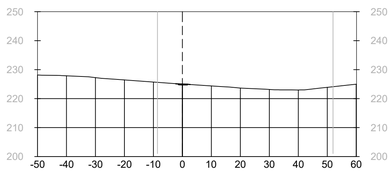

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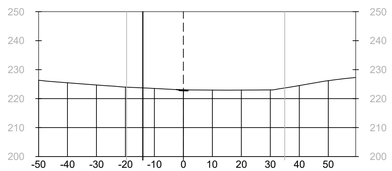

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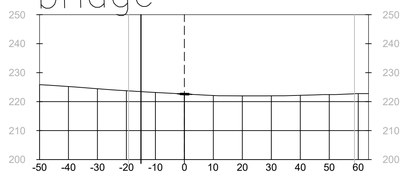

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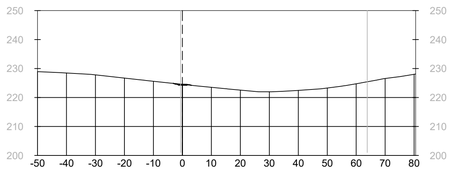

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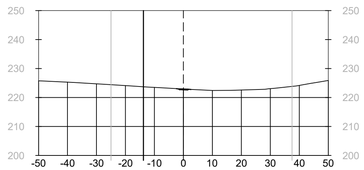

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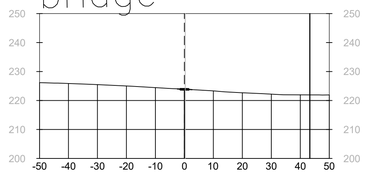
bridge



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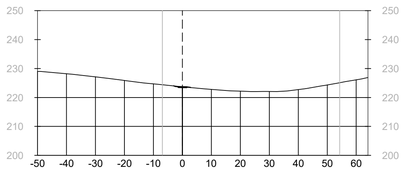

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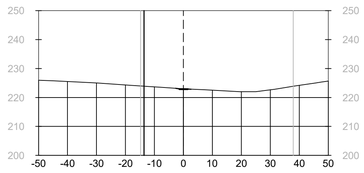

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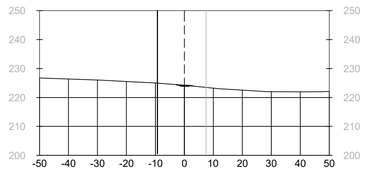

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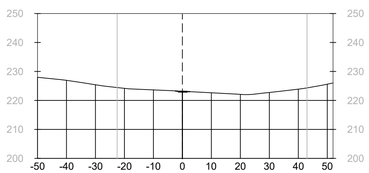

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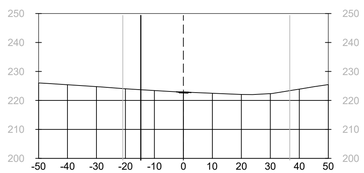

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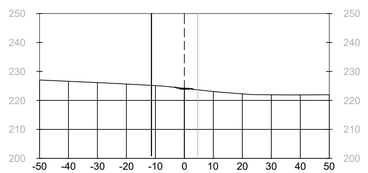

KEY MAP

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BENCHMARK INFORMATION

ELEVATIONS ARE IN METRES AND ARE DERIVED FROM BENCHMARK No. XXXXXXXXXX, ELEVATION = XXX.XX

SURVEY - DRAWING REF #: XXX-XXX-XX-XXX

BY: DATE:

NO	DATE	REVISION/ISSUED	BY	APPD

wsp

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2141 Major MacKenzie Dr W, Maple, ON L6A 1T1

PROJECT TITLE:

BARTLEY SMITH GREENWAY TRAIL

TRAIL ALIGNMENT

SP #

SITE ADDRESS:

MCNAUGHTON RD. & MAJOR MACKENZIE DR.

DRAWING TITLE:

LAYOUT PLAN

STAMP

STAMP

DESIGNED	DRAWN	CHECKED
WL	WL	##

SCALE 1:500

DATE DEC 10 2021

PROJECT NUMBER 211-07301-00

DWG. NUMBER L-301

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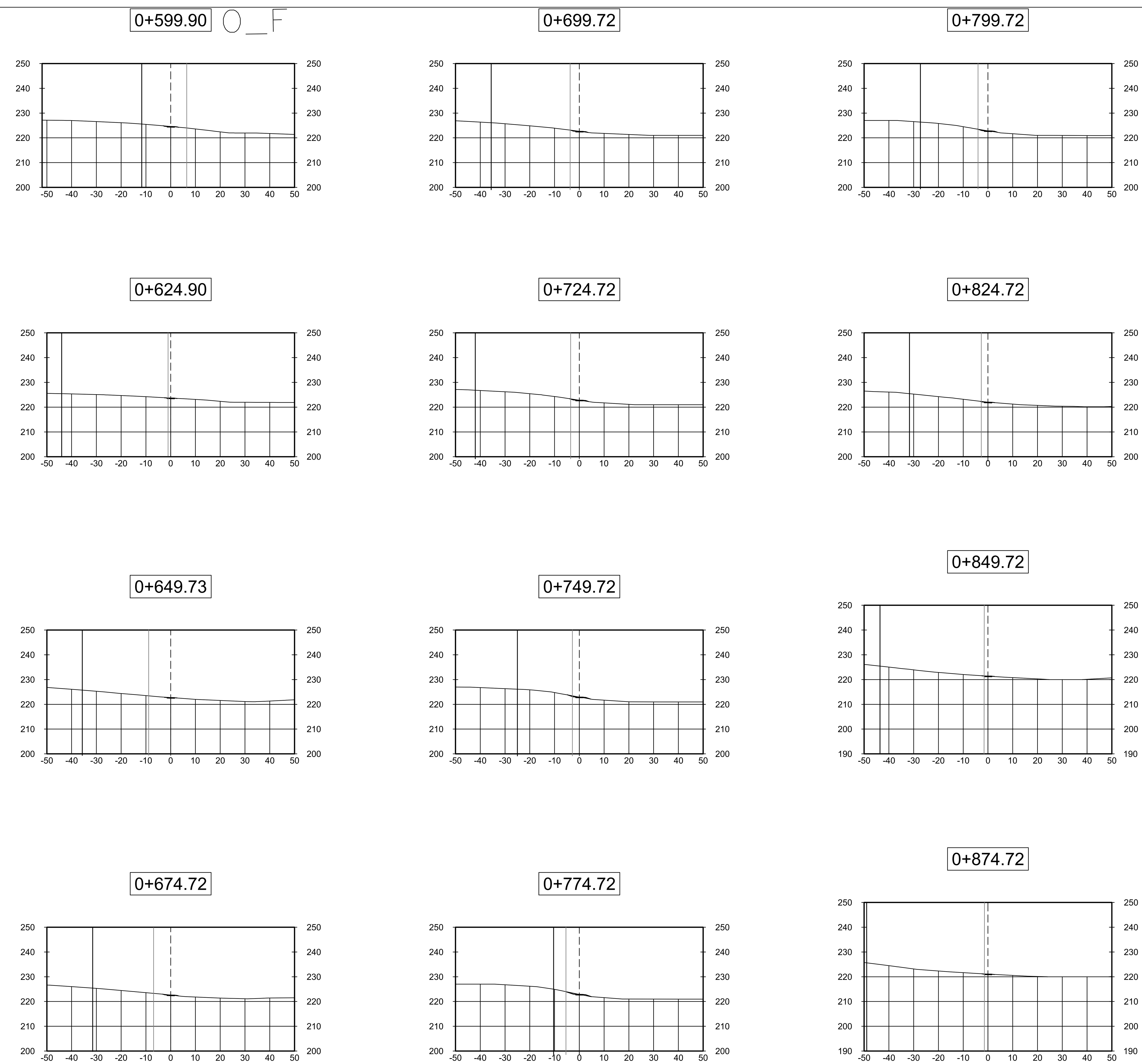

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SCALE 1:500 (m)

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BENCHMARK INFORMATION

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SURVEY - DRAWING REF #: XXX-XXX-XX-XXX

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SP #

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DRAWING TITLE:
LAYOUT PLAN

STAMP
NOT FOR CONSTRUCTION
STAMP

DESIGNED WL | DRAWN WL | CHECKED ##
SCALE 1:500 | DATE DEC 10 2021
PROJECT NUMBER 211-07301-00 | DWG. NUMBER L-301

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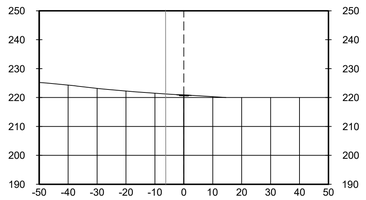

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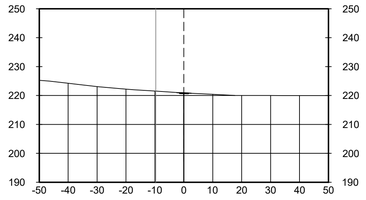

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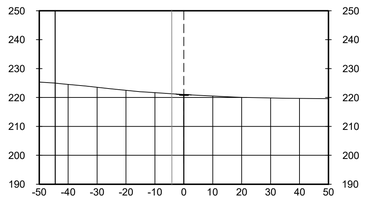

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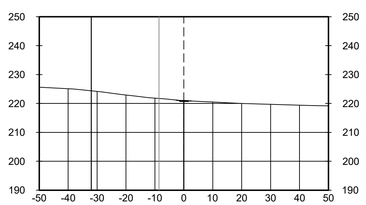

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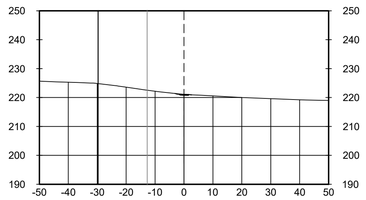

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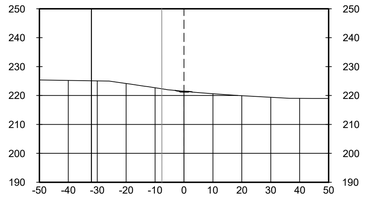

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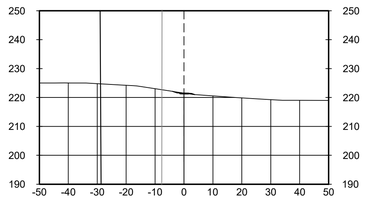

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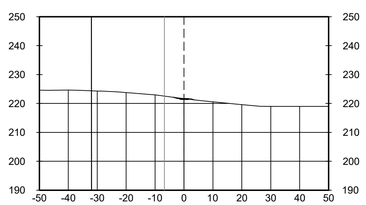

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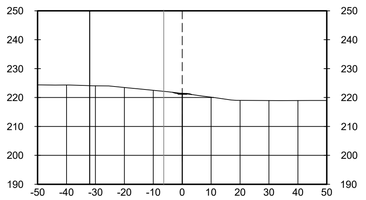

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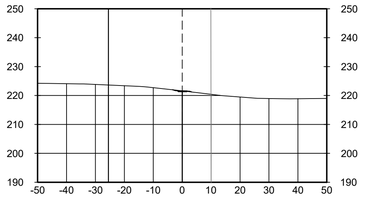

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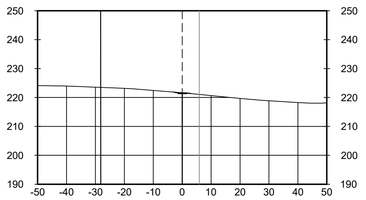

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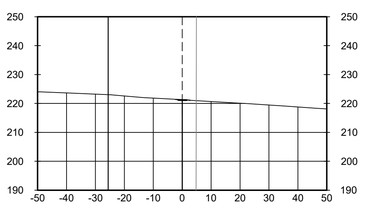

0 5 10 20 30 40
SCALE 1:500 (m)

KEY MAP

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BENCHMARK INFORMATION

ELEVATIONS ARE IN METRES AND ARE DERIVED FROM BENCHMARK No. XXXXXXXXXX.
ELEVATION = XXX.XX

SURVEY - DRAWING REF #: XXX-XXX-XX-XXX

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Landscape Architecture
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PROJECT TITLE:
BARTLEY SMITH GREENWAY TRAIL
TRAIL ALIGNMENT
SP #

SITE ADDRESS:
MCNAUGHTON RD. & MAJOR MACKENZIE DR.

DRAWING TITLE:
LAYOUT PLAN

STAMP: NOT FOR CONSTRUCTION

STAMP

DESIGNED	DRAWN	CHECKED
WL	WL	##

SCALE 1:500 | DATE DEC 10 2021

PROJECT NUMBER 211-07301-00 | DWG. NUMBER L-301

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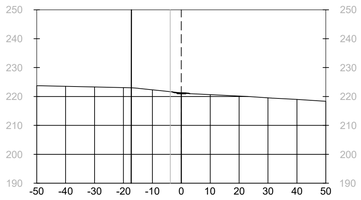

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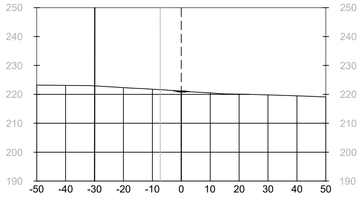

0 5 10 20 30 40

SCALE 1:500 (m)

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WL	WL	##

SCALE 1:500 | DATE DEC 10 2021

PROJECT NUMBER 211-07301-00 | DWG. NUMBER L-301

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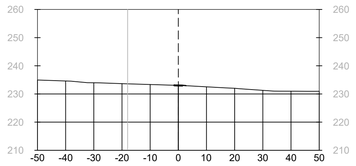

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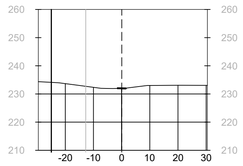

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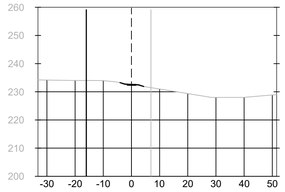

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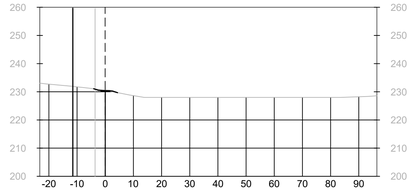

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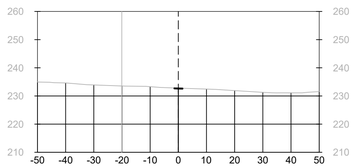

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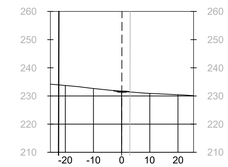

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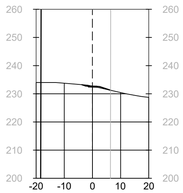

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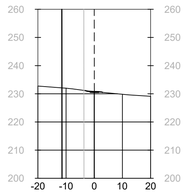

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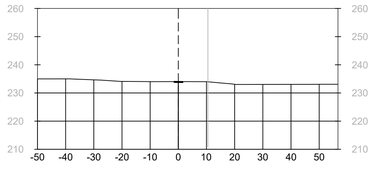

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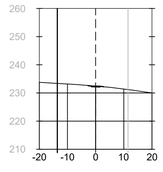

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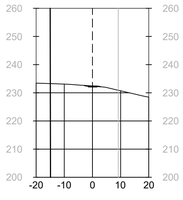

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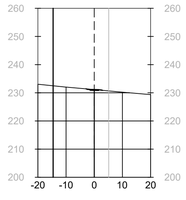

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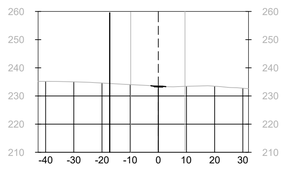

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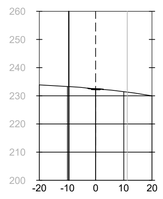

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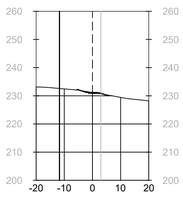

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SCALE 1:500 (m)

KEY MAP

LEGEND

- PROPOSED RECOMMENDED ALIGNMENT
- PROPOSED ALTERNATIVE ALIGNMENT
- EXISTING TRAIL PROPOSED FOR RE-PAVING
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- PROPOSED TRAIL (OUT OF PROJECT SCOPE)
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- PROPOSED BRIDGE
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- 20m OFFSET FROM THE DON VALLEY WEST BRANCH
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- TRCA 100 YEAR FLOODLINE
- PROPOSED PLANTING - TYPE A (LIGHT BUFFER)
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- PROPOSED PLANTING - TYPE C (ROBUST BUFFER)

BENCHMARK INFORMATION

ELEVATIONS ARE IN METRES AND ARE DERIVED FROM BENCHMARK No. XXXXXXXXX.
ELEVATION = XXX.XX

SURVEY - DRAWING REF #: XXX-XXX-XX-XXX

BY: DATE:

NO	DATE	REVISION/ISSUED	BY	APPD

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CLIENT:
CITY OF VAUGHAN
2141 Major MacKenzie Dr W, Maple, ON L6A 1T1

PROJECT TITLE:
BARTLEY SMITH GREENWAY TRAIL
TRAIL ALIGNMENT
SP #

SITE ADDRESS:
MCNAUGHTON RD. & MAJOR MACKENZIE DR.

DRAWING TITLE:
LAYOUT PLAN

STAMP: NOT FOR CONSTRUCTION

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DESIGNED	DRAWN	CHECKED
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PROJECT NUMBER	DWG. NUMBER
211-07301-00	L-301

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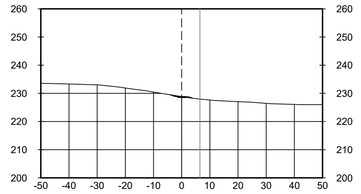

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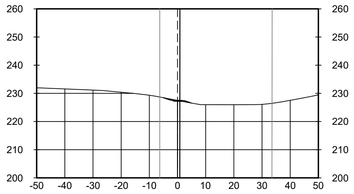

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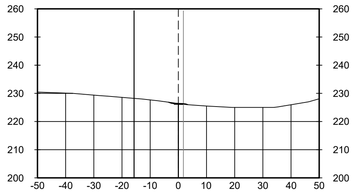

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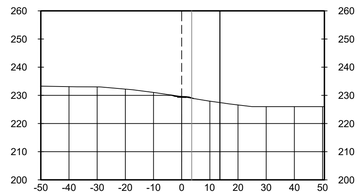

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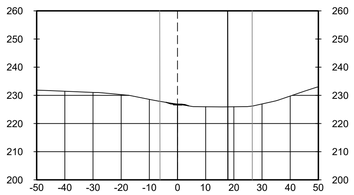

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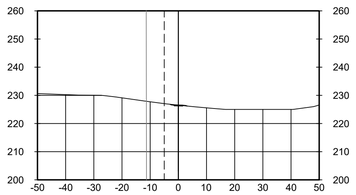

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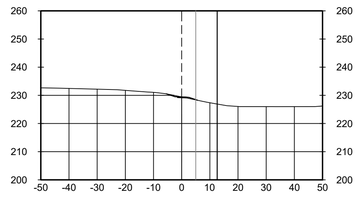

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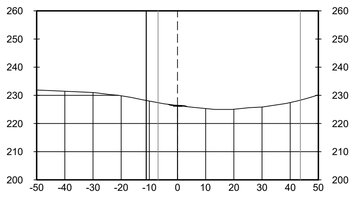

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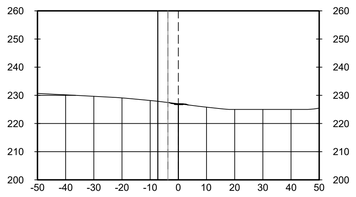

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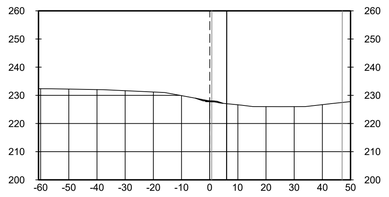

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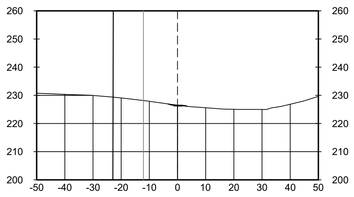

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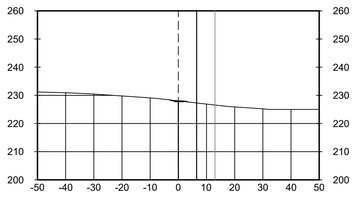

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SCALE 1:500 (m)

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BENCHMARK INFORMATION

ELEVATIONS ARE IN METRES AND ARE DERIVED FROM BENCHMARK No. XXXXXXXXXX, ELEVATION = XXX.XX

SURVEY - DRAWING REF #: XXX-XXX-XX-XXX

BY: DATE:

NO	DATE	REVISION/ISSUED	BY	APPD

Landscape Architecture
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CLIENT:
CITY OF VAUGHAN
2141 Major MacKenzie Dr W, Maple, ON L6A 1T1

PROJECT TITLE:
BARTLEY SMITH GREENWAY TRAIL
TRAIL ALIGNMENT
SP #

SITE ADDRESS:
MCNAUGHTON RD. & MAJOR MACKENZIE DR.

DRAWING TITLE:
LAYOUT PLAN

STAMP: NOT FOR CONSTRUCTION

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DESIGNED	DRAWN	CHECKED
WL	WL	##

SCALE 1:500 | DATE DEC 10 2021

PROJECT NUMBER 211-07301-00 | DWG. NUMBER L-301

MEMO

TO: Amanda Gebhardt, WSP

FROM: Peter Hayes, P.Geo., WSP

SUBJECT: Bartley Smith Trail Preliminary Design City of Vaughan, Ontario – Desktop Fluvial Geomorphology Assessment

DATE: September 26, 2022

Project No.: 211-07301-00

This memo presents the desktop fluvial geomorphological assessment of the subject watercourse (Don River West Branch) channel located along the Bartley Smith Trail Preliminary Design City of Vaughan, Ontario. The site location is shown on attached **Figure 9**.

BACKGROUND

The site is located in an urban setting within the City of Vaughan with primarily residential commercial, and natural land uses surrounding the site. The site is located in the South Slope and Peel Plain physiographic regions as per Chapman and Putman (1984). Quaternary mapping of the area shows the geology consists of silt/silty clay (Halton Till) and silt and clay as per Ontario Geological Survey (2000).

APPROACH

WSP's approach for the desktop fluvial geomorphology assessment was as follows:

- Obtaining historical aerials;
- Adding watercourse alignments on historical aerials;
- Reviewing relevant TRCA guidance documents;
- Assessing historical aerials, including a composite figure; and
- Finally making recommendations for the site based on the findings, including a proposed set back.

HISTORICAL AERIAL IMAGES

As a part of the desktop fluvial geomorphology assessment WSP retrieved aerial imagery of the site, as far back as available (1946, 1954, 1960, 1970, 1988, 1999, 2005, 2014 and 2020). The individual historical aerial images are provided on **Figures 1 to 9**. Watercourse alignments are shown on individual aerials, it is noted that various colours were used such the specific historical aerial watercourse alignments could easily be identified on the composite figure (**Figure 10**).

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1946, 1954, 1960 AND 1970

In 1946, 1954, 1960 and 1970 (**Figures 1, 2, 3 and 4**) the area was mostly rural, with agricultural fields and residences and natural areas. Urban developments (residential) started to appear in the southwest corner of Major Mackenzie Drive West and Keele Street in 1954 (roads) (**Figure 2**) by 1960 (**Figure 3**) houses had been constructed along the roads and the development had expand to the south. Additionally there appears to have been a landing strip of airplanes to the west of watercourse just south of Major Mackenzie Drive West. By 1970 (**Figure 4**) more houses had been built and a rail line was constructed in the northeast corner of Jane Street and Rutherford Road.

1988, 1999 AND 2005

In 1988, 1999 and 2005 (**Figures 5, 6 and 7**) the area was continually developed, becoming almost entirely urban by 2005 (**Figure 7**). By 1988 (**Figure 5**) residential developments had expanded to east of Keele Street, north of Major Mackenzie Drive West and in the northwest corner of Rutherford Road and Keele Street. By 1999 (**Figure 6**) residential developments had grown to west of the watercourse with almost the entire area east of the watercourse having been developed. By 2005 (**Figure 7**) the area was entirely urban with development having extended west of the watercourse.

2014 AND 2020

In 2014 and 2020 (**Figures 8 and 9**) the site was urban. There were some developments in 2014 (**Figure 8**) on the outside edge of the site.

ASSESSMENT

Based on the historical aerials the area was developed from a rural setting to an urban gradually between 1954 (**Figure 2**) and 2005 (**Figure 7**).

WSP approximated the watercourse channel for each historical aerial photograph and compiled the approximated watercourse channels onto one figure to highlight the historical variations of the watercourse over the 74 year timeframe, 1946 to 2020 (**Figure 10**). As noted previously watercourse alignments have various colours for individual historical aerial watercourse alignments such that each can be easily identified on the composite figure (**Figure 10**).

Based on **Figure 10** it is interpreted that this watercourse channel has followed the same alignment with minor fluctuations over the 74 year assessment timeframe. The watercourse has shifted an approximate maximum 15 m in select locations since 1988; however, the watercourse channel has generally remained quite consistent with no significant channel shifts in most areas; however, there are some areas where there was channel migration of 10m since 1988.

WSP completed an estimation of lateral 100-year erosion rates based on the TRCA (2015) *Crossing Guidelines for Valley and Corridors (Appendix 2.A).* This method is for a proposed crossing and involves measurements at two meanders upstream and downstream of the crossing. However, as this rate was requested for the entire watercourse alignment at the site, WSP measured meander extension (lateral migration) for seventeen meanders generally between 2020 and 1988 along the alignment. A value

of 0.5m was assumed for 4 meanders that were selected for the assessment and had shifts too small to measure. Overall the meander extension (lateral migration) ranged from 8.84 m to 0.5 m with an average of 4 m.

CONCLUSIONS AND RECOMMENDATIONS

Based on the desktop fluvial geomorphology assessment the following conclusions and recommendations were determined:

1. Based on the historical aerials, the area was historically rural and is now urban, having been developed gradually between 1954 and 2005.
2. Based on the historical aerials, the watercourse channel has generally remained within a narrow band for approximately for 74 years with some minor fluctuations.
3. Based on the TRCA (2015) *Crossing Guidelines for Valley and Corridors (Appendix 2.A) the* 100-year erosion rates for this reach were estimated as 4 m.
4. As per TRCA (2014) *The Living City Polices for Planning and Development in the Watersheds of the Toronto and Region Conservation* Authority *(Section 7.4.5.1.(h) and 8.10.5)* WSP considers the appropriate set back limit for the trail from the edge of the existing watercourse is 4 m as shown on attached **Figure 9** (2020 aerial).

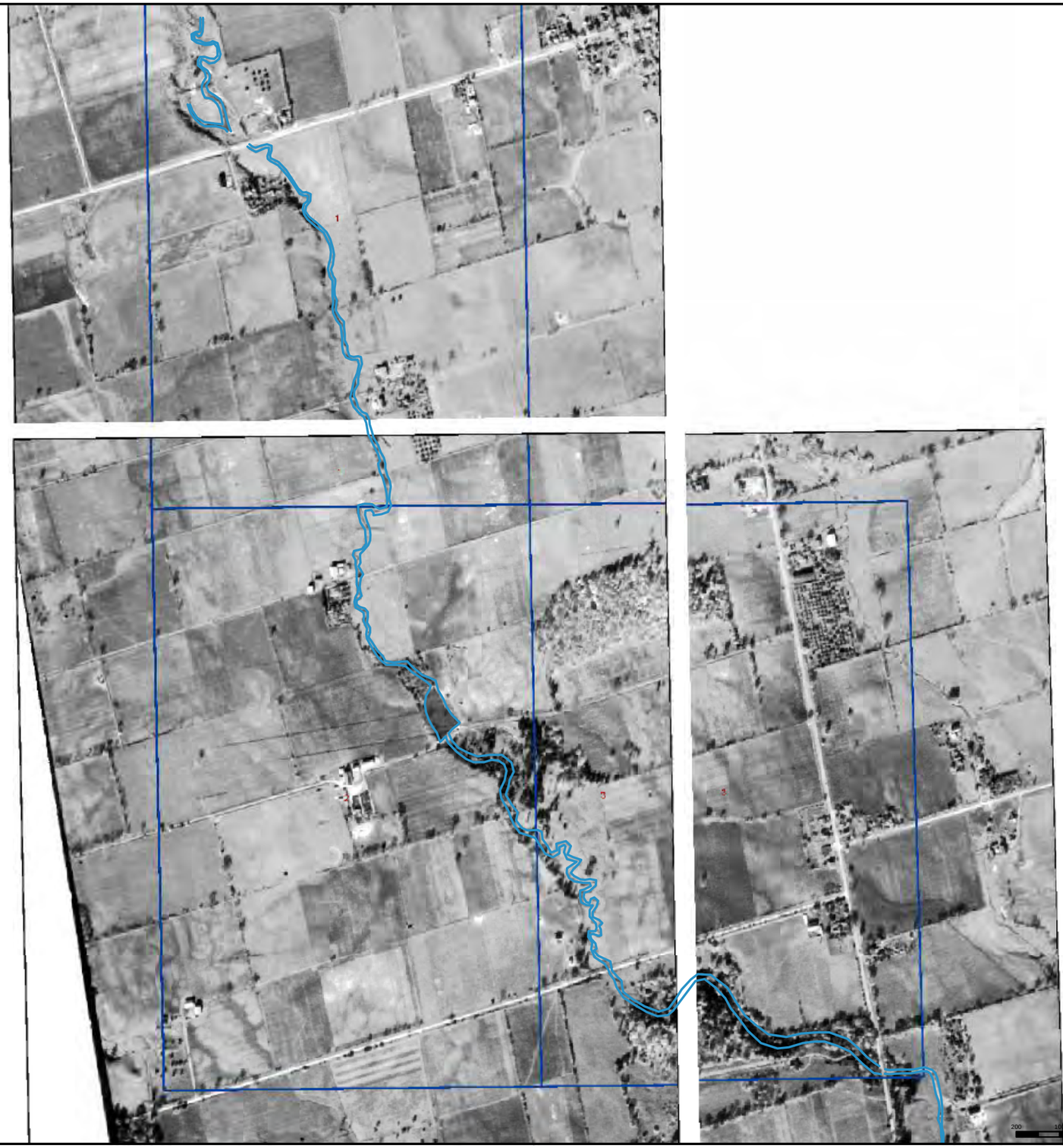
REFERENCES

- Chapman, L.J. and Putnam, D.F., 1984. The Physiography of Southern Ontario, Ontario Geological Survey Special Volume 2.
- Ontario Geological Survey, 2000. Quaternary geology, seamless coverage of the Province of Ontario; Ontario Geological Survey, Data Set 14---Revised.
- Toronto and Region Conservation Authority, 2015. Crossing Guidelines for Valley and Corridors.
- Toronto and Region Conservation Authority, 2012. The Living City Polices for Planning and Development in the Watersheds of the Toronto and Region Conservation Authority.

ATTACHMENTS:

Figures 1 to 9: Individual Historical Aerials
Figure 10: Composite Historical Watercourse

FIGURES



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LEGEND

1946 WATERCOURSE

N
W E
S

CLIENT:

CITY OF VAUGHAN

PROJECT:

BARTLEY SMITH TRAIL PRELIMINARY DESIGN
CITY OF VAUGHAN

PROJECT NO:	DATE:
211-07301-00	MAY 2022

DESIGNED BY:
-

DRAWN BY:
LT

CHECKED BY:
-

FIGURE NO:	SCALE:
1	1:10,500

TITLE:

1946 AERIAL PHOTOGRAPH

DISCIPLINE:
ENVIRONMENT

ISSUE:	REV.:
-	-

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LEGEND

1954 WATERCOURSE

N W E S

CLIENT:

CITY OF VAUGHAN

PROJECT:

BARTLEY SMITH TRAIL PRELIMINARY DESIGN
CITY OF VAUGHAN

PROJECT NO:	DATE:
211-07301-00	MAY 2022

DESIGNED BY: -

DRAWN BY: LT

CHECKED BY: -

FIGURE NO:	SCALE:
2	1:10,500

TITLE:

1954 AERIAL PHOTOGRAPH

DISCIPLINE: ENVIRONMENT

ISSUE:	REV.:
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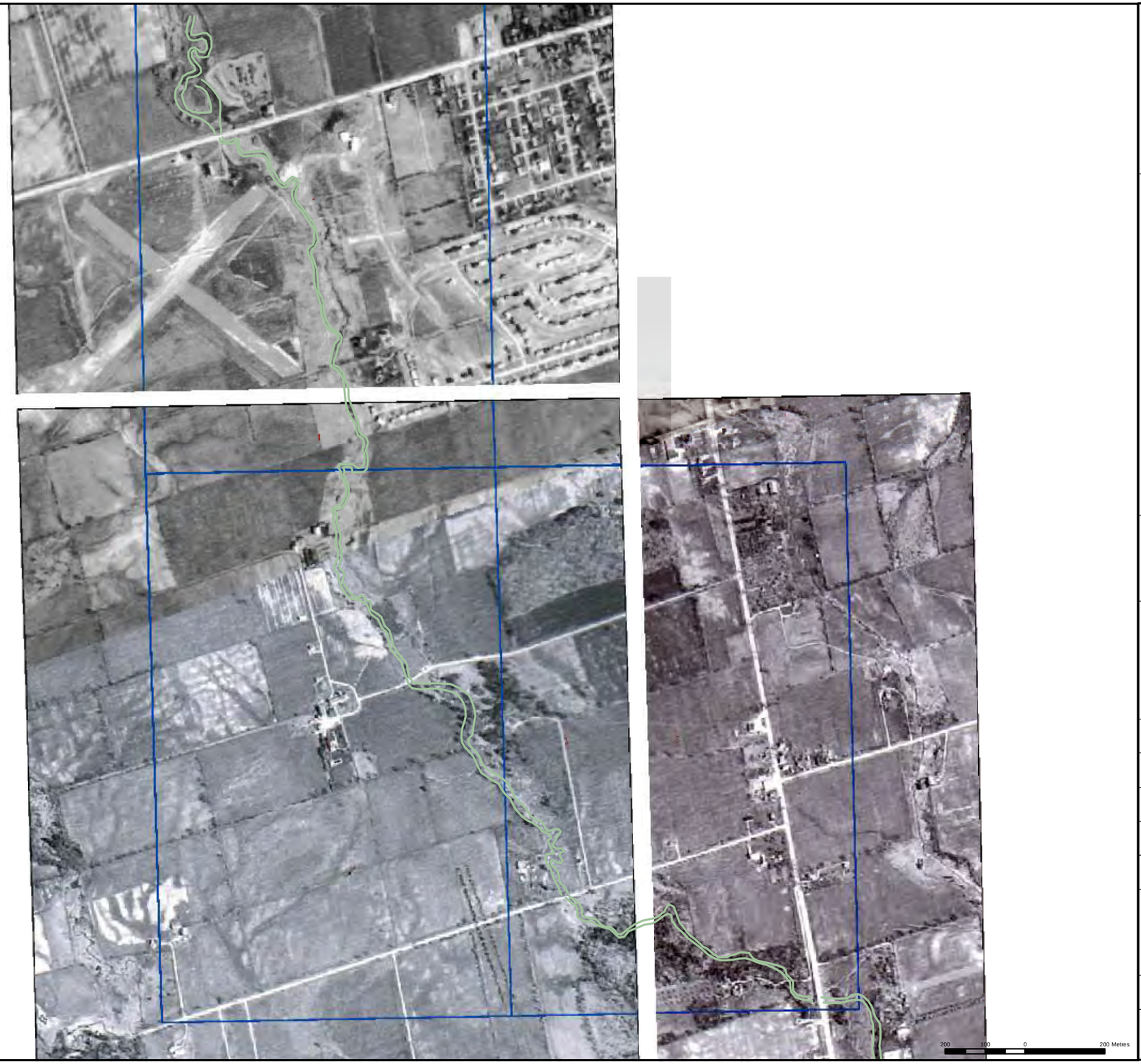

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LEGEND

1960 WATERCOURSE

N
W E
S

CLIENT:

CITY OF VAUGHAN

PROJECT:

BARTLEY SMITH TRAIL PRELIMINARY DESIGN
CITY OF VAUGHAN

PROJECT NO:	DATE:
211-07301-00	MAY 2022

DESIGNED BY:
-

DRAWN BY:
LT

CHECKED BY:
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FIGURE NO:	SCALE:
3	1:10,500

TITLE:

1960 AERIAL PHOTOGRAPH

DISCIPLINE:
ENVIRONMENT

ISSUE:	REV.:
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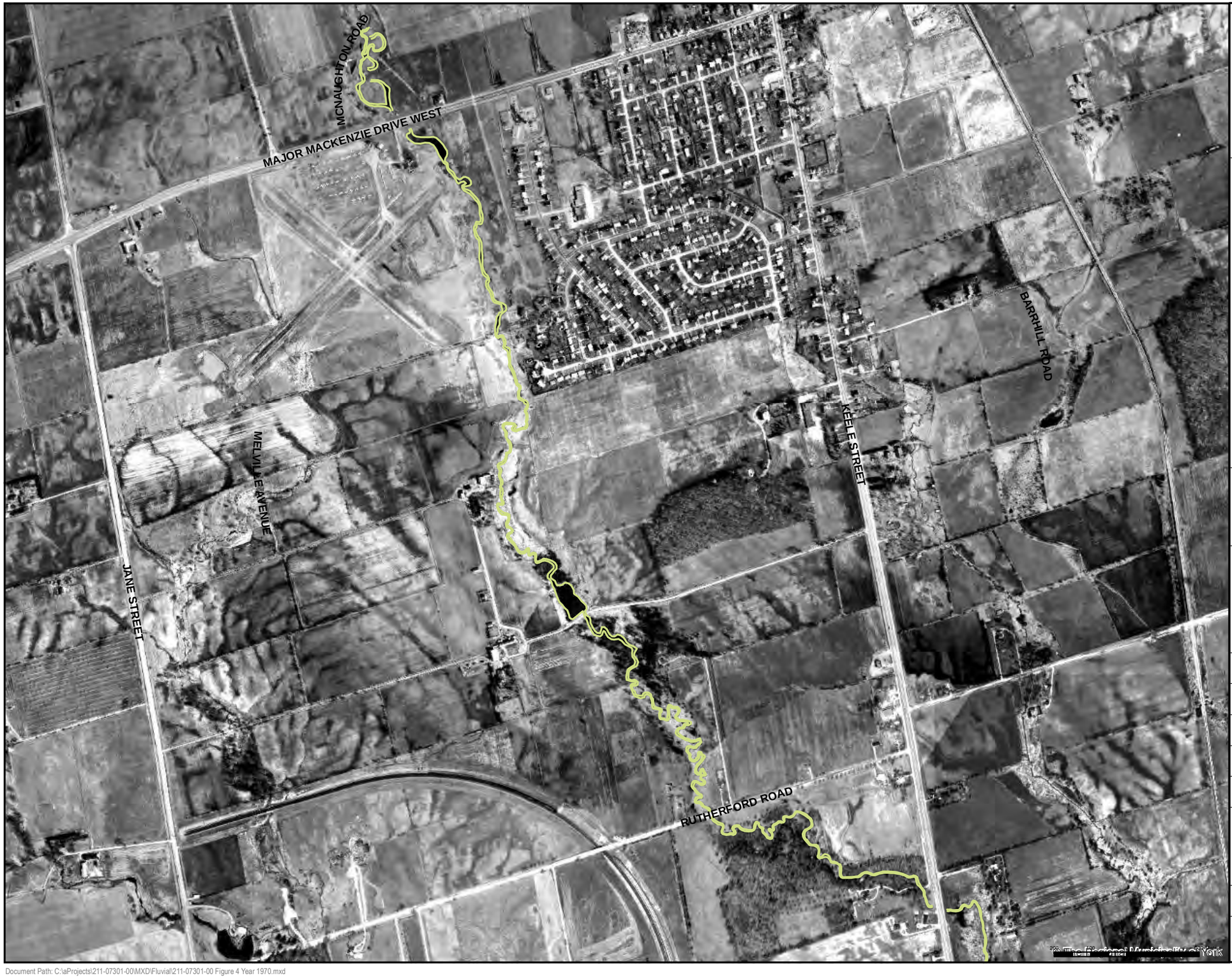

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LEGEND

1970 WATERCOURSE

N
W E
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CLIENT:

CITY OF VAUGHAN

PROJECT:

BARTLEY SMITH TRAIL PRELIMINARY DESIGN
CITY OF VAUGHAN

PROJECT NO:	DATE:
211-07301-00	MAY 2022

DESIGNED BY:
-

DRAWN BY:
LT

CHECKED BY:
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FIGURE NO:	SCALE:
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TITLE:

1970 AERIAL PHOTOGRAPH

DISCIPLINE:

ENVIRONMENT

ISSUE:	REV.:
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126 DON HILLOCK DRIVE, UNIT 2
AURORA, ONTARIO CANADA L4G 0G9
TEL.: 905-750-3080 | FAX: 905-727-0463 | WWW.WSP.COM

LEGEND

1988 WATERCOURSE

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CLIENT:

CITY OF VAUGHAN

PROJECT:

BARTLEY SMITH TRAIL PRELIMINARY DESIGN
CITY OF VAUGHAN

PROJECT NO:	DATE:
211-07301-00	MAY 2022

DESIGNED BY:
-

DRAWN BY:
LT

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FIGURE NO:	SCALE:
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TITLE:

1988 AERIAL PHOTOGRAPH

DISCIPLINE:

ENVIRONMENT

ISSUE:	REV.:
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LEGEND

1999 WATERCOURSE

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W E
S

CLIENT:

CITY OF VAUGHAN

PROJECT:

BARTLEY SMITH TRAIL PRELIMINARY DESIGN
CITY OF VAUGHAN

PROJECT NO:	DATE:
211-07301-00	MAY 2022

DESIGNED BY:
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DRAWN BY:
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FIGURE NO:	SCALE:
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TITLE:

1999 AERIAL PHOTOGRAPH

DISCIPLINE:

ENVIRONMENT

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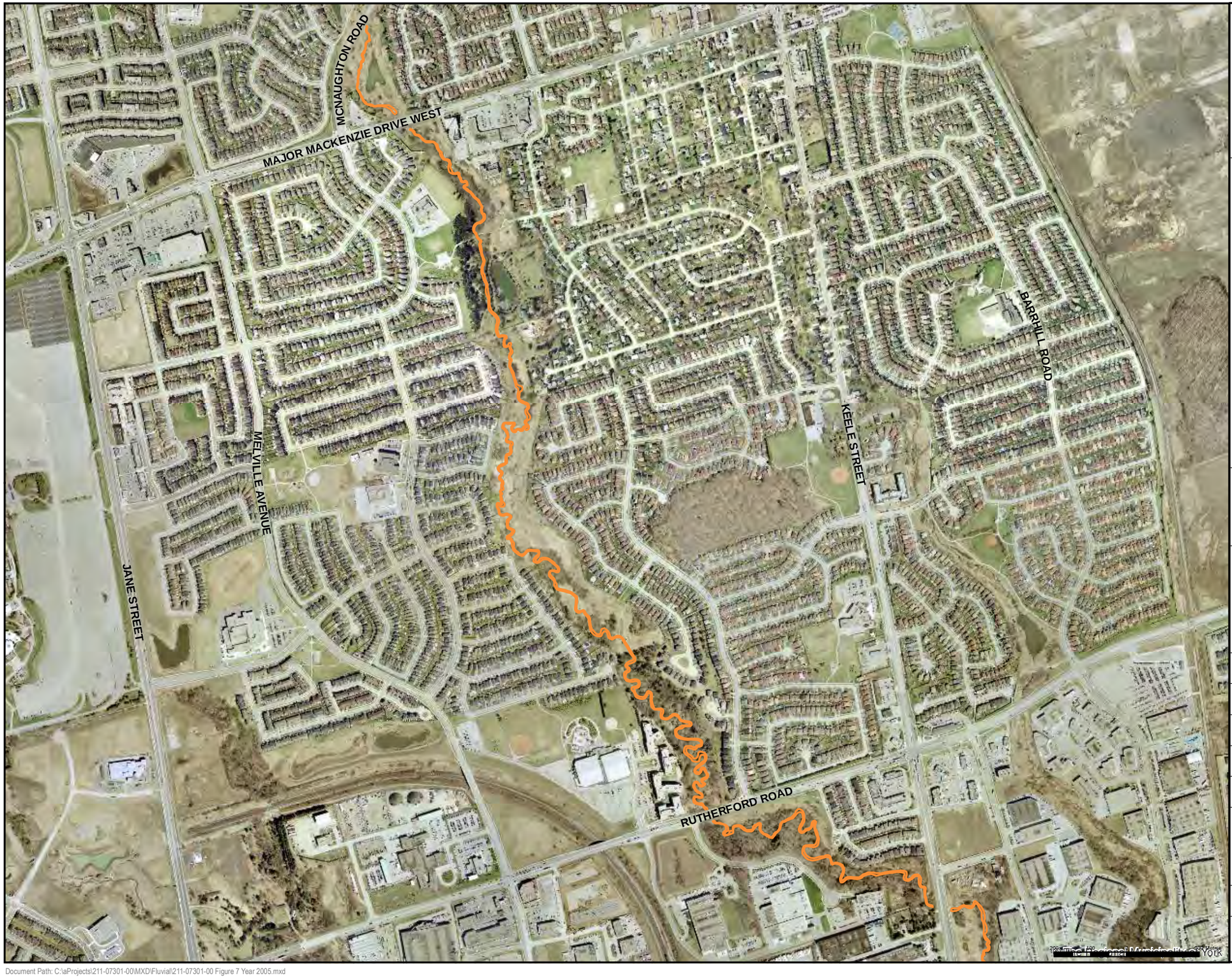

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LEGEND

2005 WATERCOURSE

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CLIENT:

CITY OF VAUGHAN

PROJECT:

BARTLEY SMITH TRAIL PRELIMINARY DESIGN
CITY OF VAUGHAN

PROJECT NO:	DATE:
211-07301-00	MAY 2022

DESIGNED BY:
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DRAWN BY:
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2005 AERIAL PHOTOGRAPH

DISCIPLINE:

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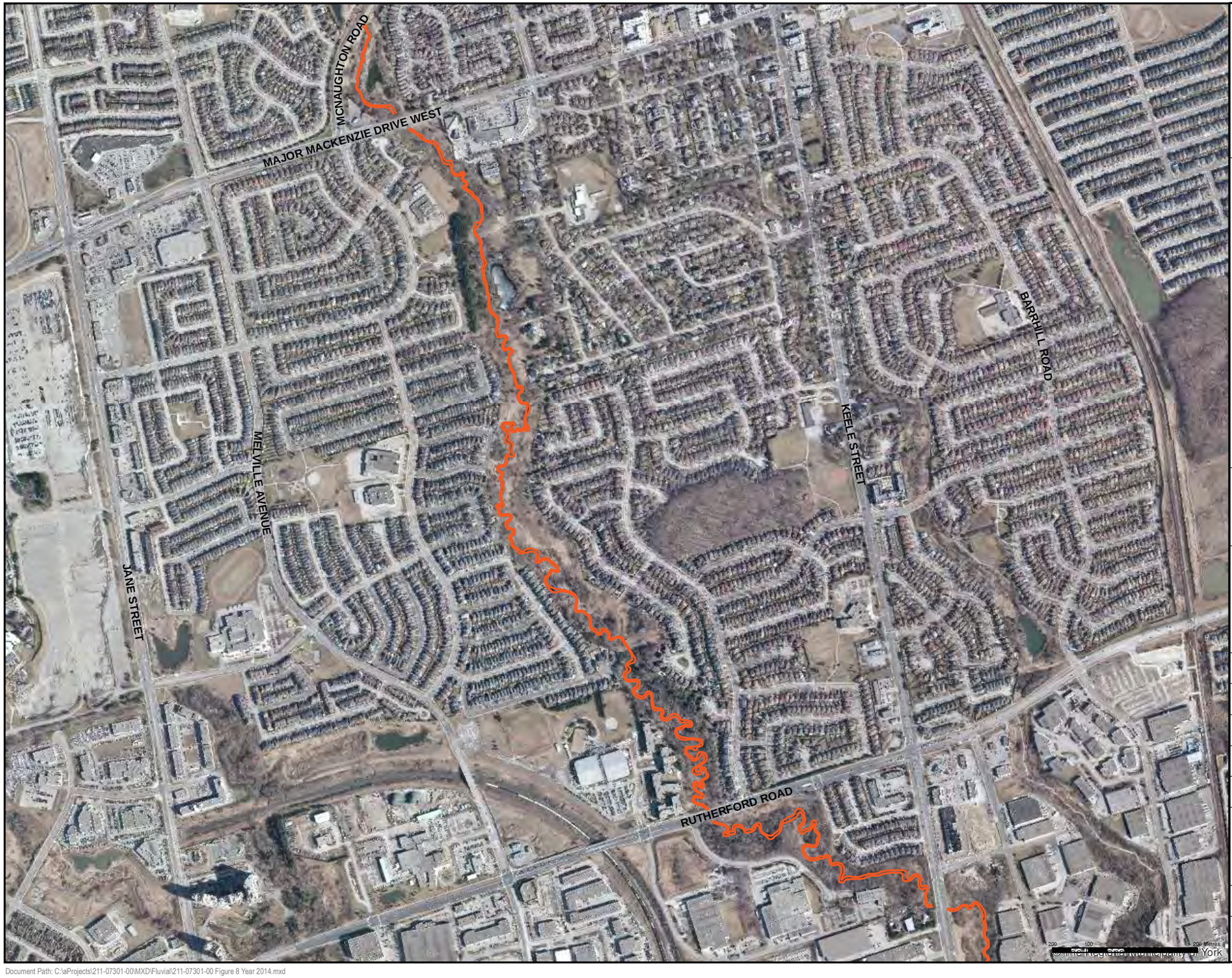

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LEGEND

2014 WATERCOURSE

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CLIENT:

CITY OF VAUGHAN

PROJECT:

BARTLEY SMITH TRAIL PRELIMINARY DESIGN
CITY OF VAUGHAN

PROJECT NO:	DATE:
211-07301-00	MAY 2022

DESIGNED BY: -

DRAWN BY: LT

CHECKED BY: -

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2014 AERIAL PHOTOGRAPH

DISCIPLINE:

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LEGEND

- 2020 WATERCOURSE
- 4 m WATERCOURSE SETBACK

N W E S

CLIENT:
CITY OF VAUGHAN

PROJECT:
BARTLEY SMITH TRAIL PRELIMINARY DESIGN
CITY OF VAUGHAN

PROJECT NO:	DATE:
211-07301-00	SEPTEMBER 2022

DESIGNED BY: -

DRAWN BY: LT

CHECKED BY: -

FIGURE NO:	SCALE:
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TITLE:
2020 AERIAL PHOTOGRAPH

DISCIPLINE:
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TEL.: 905-750-3080 | FAX: 905-727-0463 | WWW.WSP.COM

LEGEND

- 1946 WATERCOURSE
- 1954 WATERCOURSE
- 1960 WATERCOURSE
- 1970 WATERCOURSE
- 1988 WATERCOURSE
- 1999 WATERCOURSE
- 2005 WATERCOURSE
- 2014 WATERCOURSE
- 2020 WATERCOURSE

N W E S

CLIENT:
CITY OF VAUGHAN

PROJECT:
BARTLEY SMITH TRAIL PRELIMINARY DESIGN
CITY OF VAUGHAN

PROJECT NO:	DATE:
211-07301-00	MAY 2022

DESIGNED BY: -

DRAWN BY: LT

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FIGURE NO:	SCALE:
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TITLE:
COMBINED HISTORICAL WATERCOURSES

DISCIPLINE:
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APPENDIX E

Archaeological Assessment

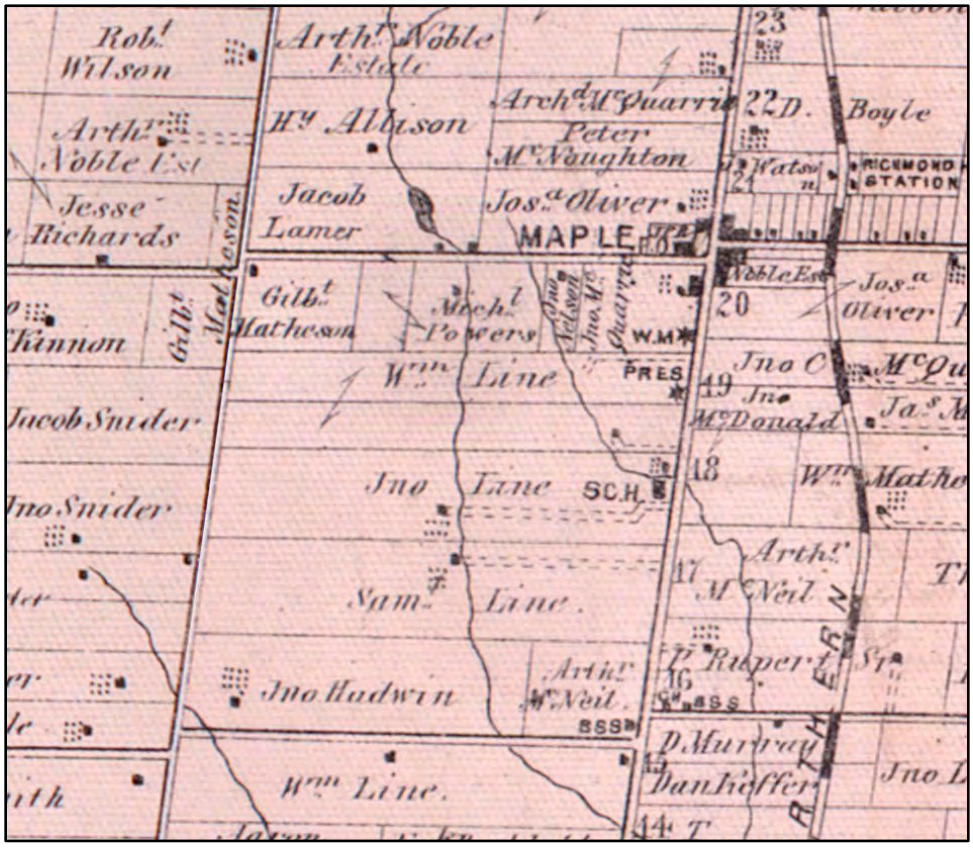
CITY OF VAUGHAN

STAGE 1 ARCHAEOLOGICAL ASSESSMENT

BARTLEY SMITH GREENWAY TRAIL

JUNE 15, 2022

DRAFT



PIF 1006-0049-2021
ALEXANDRA MULLAN – P1006

STAGE 1 ARCHAEOLOGICAL ASSESSMENT

BARTLEY SMITH GREENWAY TRAIL

CITY OF VAUGHAN

PART OF LOTS 15, 17-21, CONCESSION 4, IN THE FORMER GEOGRAPHIC TOWNSHIP OF VAUGHAN, YORK COUNTY, NOW IN THE CITY OF VAUGHAN, REGIONAL MUNICIPALITY OF YORK, ONTARIO

DRAFT REPORT

PROJECT NO.: 211-07301-00
DATE: JUNE 14, 2022

WSP
582 LANCASTER STREET WEST
KITCHENER, ON
CANADA N2K 1M3

F: +1 519 743-8778
WSP.COM

June 14, 2022

Stage 1 Archaeological Assessment: Bartley Smith Greenway Trail, Part of Lots 15, 17-21, Concession 4, in the Former Geographic Township of Vaughan, York County, now in the City of Vaughan, Regional Municipality of York, Ontario.

Prepared for:

City of Vaughan
2141 Major Mackenzie Drive
Vaughan, ON
L6A 1T1

SIGNATURES AND DISCLAIMERS

PREPARED BY

DRAFT

Alexandra Mullan, MA
Professional Archaeologist

REVIEWED BY

DRAFT

Jennifer Morgan, PhD
Ontario Archaeology Lead

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The content and opinions contained in the present report are based on the observations and/or information available to WSP at the time of preparation, using investigation techniques and engineering analysis methods consistent with those ordinarily exercised by WSP and other engineering/scientific practitioners working under similar conditions, and subject to the same time, financial and physical constraints applicable to this project.

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EXECUTIVE SUMMARY

WSP Canada Inc. (WSP) was retained by the City of Vaughan (the Client) to conduct a Stage 1 archaeological assessment for a Trail Gap Feasibility Study being undertaken to connect gaps along the Bartley Smith Greenway Trail, which forms part of the Vaughan Super Trail. The study area subject to assessment is located on part of Lot 15 and Lots 17-21, Concession 4, in the Former Geographic Township of Vaughan, York County, now in the City of Vaughan, Regional Municipality of York, Ontario (Figure 1 and Figure 2).

The study area subject to assessment in this report includes an approximately 3 kilometre (km) long recreational trail route between McNaughton Avenue and Keele Street along the Don Valley Corridor in the City of Vaughan, Ontario. Portions of the proposed trail route are within lands managed by the Toronto Regional Conservation Authority and these lands were not subject to assessment in this report.

This archaeological assessment was conducted as part of a feasibility study to support future decisions about trail development, and to evaluate potential assessment requirements under the *Ontario Heritage Act, 1990*. The assessment was carried out in accordance with the Ministry of Heritage, Sport, Tourism and Culture Industries' (MHSTCI) *Standards and Guidelines for Consultant Archaeologists* (MHSTCI, 2011).

The Stage 1 archaeological assessment of the study area included a review of previous archaeological research, historic maps, aerial imagery, land registry documents, and local histories. Based on the results of the Stage 1 archaeological assessment, a **Stage 2 archaeological assessment is recommended for parts of the study area that hold potential for the presence of archaeological resources** (Figure 9).

The Stage 2 archaeological assessment is to be completed following the requirements of Section 2 of the *Standards and Guidelines for Consultant Archaeologists* (MHSTCI, 2011):

- The parts of the study area that have been previously assessed and cleared of archaeological concern do not require further archaeological investigation;
- Areas that cannot be subject to ploughing, including manicured lawn, scrub, and woodlot, must be subject to test pit survey at 5 m intervals as per section 2.1.2 of the *Standards and Guidelines for Consultant Archaeologists* (2011).
- Test pit survey can be increased to 10 m intervals in areas of encountered disturbance to confirm the extent of disturbance. In areas of suspected disturbance, test pits may be placed throughout the areas according to professional judgement so as to confirm the degree of disturbance following Section 2.1.8 of the *Standards and Guidelines for Consultant Archaeologists* (2011); and,
- Areas of visually confirmed disturbance, low-lying and permanently wet areas, and areas of steep slope (>20˚) will be subject to photo-documentation only.

If proposed construction impacts are changed to include areas outside of the current study area boundaries as illustrated in Figure 2, further archaeological assessment may be required. It should be noted that the results of this Stage 1 archaeological assessment are not considered final until the above stated recommendations have been reviewed by the MHSTCI and the report has been accepted into the Ontario Public Register of Archaeological Reports.

PROJECT PERSONNEL

WSP

Project Manager	Amanda Gebhardt, BLA, OALA, CLSA *Manager, Landscape Architecture*
Discipline Lead	Jennifer Morgan, PhD (R1176) *Ontario Archaeology Lead*
Project Licencee	Alexandra Mullan, MA (P1006) *Professional Archaeologist*
Report Preparation	Alexandra Mullan
Mapping/GIS	Rebecca Remmer, MA, CAHP (R1252) *Archaeologist*
Report Review	Jennifer Morgan

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

1 PROJECT CONTEXT

1.1 OBJECTIVES

The objectives of a Stage 1 Archaeological Assessment are:

- To provide information regarding the property's geography, history, previous archaeological fieldwork, and current land condition;
- To provide a detailed evaluation of the property's archaeological potential; and
- To recommend appropriate strategies for Stage 2 survey when required.

1.2 DEVELOPMENT CONTEXT

WSP Canada Inc. (WSP) was retained by the City of Vaughan (the Client) to conduct a Stage 1 archaeological assessment for a Trail Gap Feasibility Study being undertaken to connect gaps along the Bartley Smith Greenway Trail, which forms part of the Vaughan Super Trail. The study area subject to assessment is located on part of Lot 15 and Lots 17-21, Concession 4, in the Former Geographic Township of Vaughan, York County, now in the City of Vaughan, Regional Municipality of York, Ontario (Figure 1 and Figure 2).

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The Stage 1 archaeological assessment of the study area includes a review of previous archaeological research, historic maps, aerial imagery, land registry documents, and local histories. A property inspection was not completed as part of the assessment.

1.3 HISTORICAL CONTEXT

The following sections provide a general review of the pre-contact and post-contact periods of southern Ontario as well as the history of the study area, specifically, to provide a generalized historical framework for the archaeological assessment.

1.3.1 PRE-CONTACT PERIOD

The following provides a generalized cultural history of Indigenous people within the region the study area is situated. Information is primarily derived from the archaeological record and the interpretations of archaeologists.

Technological or temporal divisions have been defined to describe adaptations to changing climates, physiography, subsistence patterns, and geopolitical pressures which do not necessarily provide an accurate reflection of fluid cultural practices spanning thousands of years. The following presents a sequence of Indigenous land-use from earliest human occupation following deglaciation to the recent past based on periods defined by archaeologists as:

- The Paleo Period
- The Archaic Period
- The Woodland Period

PALEO PERIOD

Paleo period populations were the first to occupy what is now southern Ontario, moving into the region following the retreat of the Laurentide Ice Sheet approximately 11,000 years before present (BP). The first Paleo period populations to occupy southern Ontario are referred to by archaeologists as Early Paleo (Ellis and Deller, 1990).

Early Paleo period groups are identified by their distinctive projectile point types, exhibiting long grooves, or 'flutes', that likely functioned as a hafting mechanism (method of attaching the point to a wooden shaft). These Early Paleo group projectile types include Gainey (ca. 10,900 BP), Barnes (ca. 10,700), and Crowfield (ca. 10,500) (Ellis & Deller, 1990). By approximately 10,400 BP, Paleo projectile points transitioned to various unfluted varieties, such as Holcombe (ca. 10,300 BP), Hi Lo (ca. 10,100 BP), and Unstemmed and Stemmed Lanceolate (ca. 10,400 to 9,500 BP). These types were utilized by Late Paleo period groups (Ellis and Deller, 1990). Both Early and Late Paleo period populations were highly mobile, participating in the hunting of large game animals. Paleo period sites often functioned as small campsites where stone tool production and maintenance occurred (Ellis and Deller, 1990).

ARCHAIC PERIOD

Climatic warming, approximately 8,000 BP, was accompanied by the arrival of the deciduous forest in southern Ontario. With this shift in flora came new faunal resources, resulting in a change in cultural adaptations in the region. This change is reflected in new tool-kits and associated subsistence strategies referred to archaeologically as the Archaic period. The Archaic period in southern Ontario is divided into three phases: the Early Archaic (ca. 10,000 to 8,000 BP), the Middle Archaic (ca. 8,000 to 4,500 BP), and the Late Archaic (ca. 4,500 to 2,800 BP) (Ellis et al. 1990). Generally, in North America, the Archaic period represents a transition from big game hunting to broader, more generalized subsistence strategies dependent on local environmental parameters. This period is characterized by the following traits:

- An increase in stone tool variation and reliance on local stone sources,
- The emergence of notched and stemmed projectile point types,
- A reduction in extensively flaked tools,
- The use of native copper,
- The use of bone tools for hooks, gorges, and harpoons,
- An increase in extensive trade networks, and,
- The production of ground stone tools and an increase in larger, less portable tools.

The Archaic period is also marked by population growth. Archaeological evidence suggests that by the end of the Middle Archaic period (ca. 4,500 BP) populations were steadily increasing in size (Ellis et al., 1990). Over the course of the Archaic period, populations began to rely on more localized hunting and gathering territories. By the end of the Archaic period, populations were utilizing more encampments that are seasonal. From spring to fall, the

archaeological record shows populations were shifting their settlement patterns on a regular, seasonal basis. From spring to fall, settlements would exploit lakeshore/riverine locations where a broad-based subsistence strategy could be employed, while the late fall and winter months would be spent at interior site where deer hunting was likely a primary focus with some wild edibles likely being collected (Ellis et al. 1990, p. 114). This steady increase in population size and adoption of a more localized seasonal subsistence strategy eventually evolved into what is termed the Woodland period.

EARLY AND MIDDLE WOODLAND PERIODS

The beginning of the Woodland period is defined by the emergence of ceramic technology. Similar to the Archaic period, the Woodland period is separated into three timeframes: the Early Woodland (ca. 2,800 to 2,000 BP), the Middle Woodland (ca. 2,000 to 1,200 BP), and the Late Woodland (ca. 1,200 to 350 BP) (Spence et al., 1990; Fox, 1990).

The Early Woodland period is represented in southern Ontario by two cultural complexes: the Meadowood Complex (ca. 2,900 to 2,500 BP), and the Middlesex Complex (ca. 2,500 to 2,000 BP). During this period, the life ways of Early Woodland populations differed little from that of the Late Archaic with hunting and gathering representing the primary subsistence strategies. The pottery of this period is characterized by its relatively crude construction and lack of decoration. These early ceramics exhibit cord impressions, which are likely the result of the techniques used during manufacture rather than decoration (Spence et al., 1990).

The Middle Woodland period has been differentiated from the Early Woodland period by changes in lithic tool forms (e.g. projectile points, expedient tools), and the increased decorative elaboration of ceramic vessels (Spence et al., 1990). Additionally, archaeological evidence suggests the rudimentary use of maize (corn) horticulture by the end of the Middle Woodland Period (Warrick, 2000).

In southern Ontario, the Middle Woodland has been divided into three different complexes based on regional cultural traditions: the Point Peninsula Complex, the Couture Complex, and the Saugeen Complex. These groups are differentiated by sets of characteristics that are unique to regions within the province, specifically regarding ceramic decorations.

The Point Peninsula Complex extends from south-central and eastern Ontario into southern Quebec. The northernmost borders of the complex can be found along the Mattawa and French Rivers. Ceramics are coil constructed with conical bases, outflaring rims, and flat, rounded, or pointed lips. The interior surfaces of vessels are often channelled with a comb-like implement, creating horizontal striations throughout. The exterior is smoothed, or brushed, and decoration generally includes pseudo-scallop stamps or dentate impressions. Occasionally, ceramics will have been treated with a red ochre wash (Spence et al, 1990).

The Saugeen Complex is found generally in south-central Ontario and along the eastern shores of Lake Huron. The Saugeen Complex ceramics are similar in style to Point Peninsula Complex; however, the vessels tended to be cruder than their Point Peninsula counterparts. They were characterized by coil construction with thick walls, wide necks, and poorly defined shoulders. Usually, the majority of the vessel was decorated with pseudo-scallop stamps or dentate impressions, with the latter occurring more frequently at later dates (Spence et al., 1990).

LATE WOODLAND PERIOD

There is much debate as to whether a transitional phase between the Middle and Late Woodland periods is present in Southern Ontario, but it is generally agreed that the Late Woodland period begins around 1,100 BP. The Late Woodland period in Southern Ontario can be divided into three cultural sub-phases: The early, middle, and late Late Woodland periods. The early Late Woodland is characterized by the Glen Meyer and Pickering cultures and the

middle Late Woodland is characterized by the Uren and Middleport cultures. These groups are ancestral to the Iroquoian-speaking Neutral-Erie (Neutral), the Huron-Wendat (Huron), and Petun Nations that inhabited Southern Ontario during the late-Late Woodland period (Smith, 1990, p. 285).

The Pickering and Glen Meyer cultures co-existed within Southern Ontario during the early Late Woodland period (ca. 1250-700 BP). Pickering territory is understood to encompass the area north of Lake Ontario to Georgian Bay and Lake Nipissing (Williamson, 1990). Glen Meyer is centred around Oxford and Norfolk counties, but also includes the southeastern Huron basin and the western extent is demarcated by the Ekfrid Clay Plain southwest of London, Ontario (Noble, 1975). Villages of either tradition were generally smaller in size (~1 ha) and composed of smaller oval structures, which were later replaced by larger structures later in the Late Woodland period. Archaeological evidence suggested a mixed economy where hunting and gathering played an important role, but small-scale horticulture was present, indicating a gradual shift from hunting-gathering to a horticultural economy (Williamson, 1990).

The first half of the middle Late Woodland period is represented by the Uren culture (700-650 BP) and the second half by the Middleport (650-600 BP). Uren and Middleport sites of the middle Late Woodland share a similar distribution pattern across much of southwestern and south-central Ontario. (Dodd et al., 1990). Significant changes in material culture and settlement-subsistence patterns are noted during this short time. Iroquois Linear, Ontario Horizontal, and Ontario Oblique pottery types are the most well-represented ceramic assemblages of the middle Late Woodland period (Dodd et al., 1990). At Middleport sites, material culture changes included an increase in the manufacture and use of clay pipes as well as bone tools and adornments (Dodd et al., 1990; Ferris & Spence, 1995).

During this period, evidence in the archaeological record of small year-round villages, secondary ossuary burials, and what are thought to be semi-subterranean sweat lodges suggest a marked increase in sedentism in Southern Ontario during the Uren and Middleport cultures (Ferris & Spence, 1995). The increasing permanency of settlements was a result of the development of small-scale cultivation and a subsequent increased reliance on staple crops such as maize, beans, and squash (Dodd et al., 1990; Warrick, 2000; Ferris & Spence, 1995).

Archaeological evidence from the middle Late Woodland sites also documents increases in population size, community organization and village fissioning, and the expansion of trade networks. The development of trade networks with northern Algonquian peoples has also been inferred from findings at Middleport sites along the northern parts of southwestern and south-central Ontario. These changes resulted in the more organized and complex social structures observed in the late Late Woodland period.

During the late Late Woodland period, village size significantly increased as did the complexity of community and political systems. Villages were often fortified with palisade walls and ranged in size from smaller villages with a few longhouses to larger villages with over 100 longhouses. Larger longhouses oriented differently than others in the village have been associated with primary familial groups, while longhouses that were located outside of palisade walls may have been for visiting groups for the purposes of trade or social gatherings (Ramsden, 1990). More recent research has indicated that smaller, temporary camp or cabin sites were often used seasonally for the tending of agricultural fields or as fishing camps (Ramsden, 1990). By this time, large-scale agriculture had taken hold, making year-round villages even more practical with the improved ability to store large crop yields over winter.

Late Woodland villages in the vicinity of the study area were typically associated with the Huron-Wendat nations who occupied areas as far east as the Trent River and as far west as the Niagara Escarpment. They typically inhabited each village for several decades before moving settlements to more fertile land when resources were exhausted. Throughout the fifteenth and sixteenth centuries, these settlement shifts often included northern migrations and the incorporation of multiple smaller villages into larger coalescent villages. This pattern of settlement is notable at the McKenzie-Woodbridge (AkGv-2), Boyd (AkGv-3), and Seed-Barker (AkGv-1) village

sites, which are located between 3-5 km to the east and northeast of the study area along the Humber River (Williamson, 2014).

The Huron-Wendat eventually migrated out of the Toronto area and into present-day Simcoe County and the Penetanguishene Peninsula, an area known as Historic Wendake. This movement northward is considered to be the result of a number of socio-political factors, including increased conflict with the Five Nations Iroquois, an increased complexity in political organization, increasing trade relations with Northern Algonquian groups, and interactions with early European traders (Ramsden, 1990; Birch, 2012; Ferris & Spence, 1995).

During the fifteenth century, ceramic styles on Huron village sites were typically consistent with the Lalonde High Collar type, which included high collars and a complex neck decoration. Artifact assemblages became more heterogenous by the sixteenth century as ceramic styles began to favor castellation for decoration. Huron-Wendat ceramic motifs also began to reflect influences from Iroquoian speaking groups from the St. Lawrence River area to the east. European goods obtained through extensive trade routes have also been found at Huron-Wendat village sites during this time. These goods include iron kettles, axes, and knives, as well as glass beads (Ramsden, 1990). Changes in ceramic styles observed in the archaeological record also reflect increasing levels of inter-community relationships, integration, and trade between different groups during this period. For example, oral histories of the Michi Saagiig (Mississauga Anishinaabeg) speak to the arrival of, and relationships with, the Huron “corn growers” (Migizi & Kapyrka, 2015, pp. 127-136).

Early contact with European settlers at the end of the Late Woodland period resulted in extensive changes to the traditional lifestyles of most populations inhabiting Ontario including settlement size, population distribution, and material culture. The introduction of European-borne diseases significantly increased mortality rates, resulting in a drastic drop in population size (Warrick, 2000).

1.3.2 POST-CONTACT PERIOD

Early European presence within the study area began as early as 1615 with the travels of the French explorer Etienne Brulé who travelled with the Huron along the major portage route known as the Toronto Carrying Place Trail, which connected Lake Ontario with Lake Simcoe to the north by way of the Humber River and the Holland Marsh. In September of 1615, Brulé camped on the shores of Humber Bay with the Huron (Mika & Mika, 1977, p. 694; Steckley, 1987; Ramsden, 1990). In 1615-1616, Samuel De Champlain also travelled with the Huron northward to Georgian Bay. By the 1640s, the Huron, Petun, Neutral, and Mississauga Anishinaabeg (Michi Saagiig) had dispersed out of this region of Southern Ontario as a result of increasing conflicts with the Five Nations Iroquois, and the warfare and disease that had arrived with European colonization.

The large-scale population dispersals gave way for the Haudenosaunee to occupy the territory north of Lake Ontario where they settled along inland-running trade routes. These settlements included the villages of Ganatsekwyagon on the Rouge River and Teiaiagon on the Humber River at the head of the Toronto Carrying Place Trail (Steckley, 1987; Ramsden, 1990). Due to increased military pressure from the French, and the Anishinaabe Nations (Ojibwa, Odawa, and Potawatomi) who had previously retreated to the north, the Haudenosaunee abandoned their villages along Lake Ontario.

By the 1680s, the Anishinaabeg had returned and re-occupied the land along Lake Ontario, as well as northward beyond the Haliburton Highlands. The Anishinaabeg later participated in a significant number of treaty agreements with the British Crown, establishing the foundation of Euro-Canadian settlement in Southern Ontario (Ferris & Spence, 1995).

In addition to archaeological interpretations, oral histories provide a valuable contribution to our understanding of the history of Indigenous peoples in Ontario. The following oral history, provided by Michi Saagiig elder Gitiga

Migizi, speaks to the occupation of this area of Southern Ontario by the Anishinaabeg throughout the pre-contact and post-contact periods (see Appendix A for the full text provided):

> The traditional homelands of the Michi Saagiig (Mississauga Anishinaabeg) encompass a vast area of what is now known as southern Ontario. The Michi Saagiig occupied and fished the north shore of Lake Ontario where the various tributaries emptied into the lake. Their territories extended north into and beyond the Kawarthas as winter hunting grounds onwhich they would break off into smaller social groups for the season, hunting and trapping on these lands, then returning to the lakeshore in spring for the summer months.
>
> The Michi Saagiig were a highly mobile people, travelling vast distances to procure subsistence for their people. They were also known as the "Peacekeepers" among Indigenous nations. The Michi Saagiig homelands were located directly between two very powerful Confederacies: The Three Fires Confederacy to the north and the Haudenosaunee Confederacy to the south. The Michi Saagiig were the negotiators, the messengers, the diplomats, and they successfully mediated peace throughout this area of Ontario for countless generations.
>
> Michi Saagiig oral histories speak to their people being in this area of Ontario for thousands of years. These stories recount the "Old Ones" who spoke an ancient Algonquian dialect. The histories explain that the current Ojibwa phonology is the 5th transformation of this language, demonstrating a linguistic connection that spans back into deep time. The Michi Saagiig of today are the descendants of the ancient peoples who lived in Ontario during the Archaic and Paleo periods. They are the original inhabitants of Southern Ontario, and they are still here today.
>
> The traditional territories of the Michi Saagiig span from Gananoque in the east, all along the north shore of Lake Ontario, west to the north shore of Lake Erie at Long Point. The territory spreads as far north as the tributaries that flow into these lakes, from Bancroft and north of the Haliburton highlands. This also includes all the tributaries that flow from the height of land north of Toronto like the Oak Ridges Moraine, and all of the rivers that flow into Lake Ontario (the Rideau, the Salmon, the Ganaraska, the Moira, the Trent, the Don, the Rouge, the Etobicoke, the Humber, and the Credit, as well as Wilmot and 16 Mile Creeks) through Burlington Bay and the Niagara region including the Welland and Niagara Rivers, and beyond. The western side of the Michi Saagiig Nation was located around the Grand River which was used as a portage route as the Niagara portage was too dangerous. The Michi Saagiig would portage from present-day Burlington to the Grand River and travel south to the open water on Lake Erie.
>
> Michi Saagiig oral histories also speak to the occurrence of people coming into their territories sometime between 500-1000 A.D. seeking to establish villages and a corn growing economy – these newcomers included peoples that would later be known as the Huron-Wendat, Neutral, Petun/Tobacco Nations. The Michi Saagiig made Treaties with these newcomers and granted them permission to stay with the understanding that they were visitors in these lands. Wampum was made to record these contracts, ceremonies would have bound each nation to their respective responsibilities within the political relationship, and these contracts would have been renewed annually (see Gitiga Migizi and Kapyrka 2015). These visitors were extremely successful as their corn economy grew as well as their populations. However, it was understood by all nations involved that this area of Ontario were the homeland territories of the Michi Saagiig.
>
> The Odawa Nation worked with the Michi Saagiig to meet with the Huron-Wendat, the Petun, and Neutral Nations to continue the amicable political and economic relationship that existed – a symbiotic relationship that was mainly policed and enforced by the Odawa people.

Problems arose for the Michi Saagiig in the 1600s when the European way of life was introduced into southern Ontario. Also, around the same time, the Haudenosaunee were given firearms by the colonial governments in New York and Albany which ultimately made an expansion possible for them into Michi Saagiig territories. There began skirmishes with the various nations living in Ontario at the time. The Haudenosaunee engaged in fighting with the Huron-Wendat and between that and the onslaught of European diseases, the Iroquoian speaking peoples in Ontario were decimated.

The onset of colonial settlement and missionary involvement severely disrupted the original relationships between these Indigenous nations. Disease and warfare had a devastating impact upon the Indigenous peoples of Ontario, especially the large sedentary villages, which mostly included Iroquoian speaking peoples. The Michi Saagiig were largely able to avoid the devastation caused by these processes by retreating to their wintering grounds to the north, essentially waiting for the smoke to clear.

Often times, southern Ontario is described as being "vacant" after the dispersal of the Huron-Wendat peoples in 1649 (who fled east to Quebec and south to the United States). This is misleading as these territories remained the homelands of the Michi Saagiig Nation.

The Michi Saagiig participated in eighteen treaties from 1781 to 1923 to allow the growing number of European settlers to establish in Ontario. Pressures from increased settlement forced the Michi Saagiig to slowly move into small family groups around the present day communities: Curve Lake First Nation, Hiawatha First Nation, Alderville First Nation, Scugog Island First Nation, New Credit First Nation, and Mississauga First Nation. The Michi Saagiig have been in Ontario for thousands of years, and they remain here to this day.

Migizi and Kapyrka pp. 127-136 (2015)

YORK COUNTY

The study area is situated in the historic County of York, now the City of Toronto. The land that includes York County was surrendered by the Mississauga to the British Crown as part of Treaty No. 13, the Toronto Purchase (1805). After the American Revolution ended in 1783, those who remained loyal to the British Crown (United Empire Loyalists) began to move into Southern Ontario, creating a greater demand for land.

In 1787, senior officials from the former Indian Department met with the Mississaugas of the Carrying Place to acquire land along the northern shores of Lake Ontario extending northward toward Lake Simcoe (Surtees, 1994, p. 107). Due to irregularities in the land boundaries of the original 1787 land surrender, the Deputy Superintendent of Indian Affairs, William Claus, entered into negotiations with the Mississauga to redefine the northern and western boundaries as well as purchase a larger tract of land. The irregularities disputed between the Crown and the Mississauga over the original 1787 land surrender was whether or not the Humber or Etobicoke Creek was the western boundary of the purchase (Harris, n.d.). Stretching from the Scarborough Bluffs in the east and Etobicoke Creek in the west, the final agreement included much of what was once the western half of York County, including Etobicoke Township. In 1805, the Crown purchased the 250,000 acres of land that is included in the Toronto Purchase.

After the British conquest of the area, the land that became York County was originally part of the District of Nassau and, later, the Home District. York County was created in 1791 and consisted of an east and west Riding extending from the County of Durham to the east, the La Trench River (now Thames River) to the west, and Lake Geneva (now Burlington Bay) to the south (Mika & Mika, 1983, p. 681). Governor John Graves Simcoe was among the first to settle in the newly established county. Accompanied by the Queen's Rangers, he occupied the area around what was once Fort Rouille on the modern-day Exhibition lands in Toronto. Fort Rouille was originally

constructed by the French in 1751 to control the fur trade in the area and was subsequently destroyed in 1759 to prevent its use by the British. It was at this site that Simcoe began to lay the foundations of York, the new capital of Upper Canada (Mika & Mika, 1983, p. 681).

Early settlers in York County included the Pennsylvania Quakers, Germans from Genesee Valley, Pennsylvania Dutch, and French Royalists. The population in the county grew rapidly as a result of the construction of two major transportation routes, historic Yonge and Dundas Streets, and the desire to settle in the capital of Upper Canada. Yonge Street was constructed from Toronto Harbour to Holland Landing in the north, and Dundas Street was established from Downtown Toronto to London in the West. These became major transportation routes as they allowed for settlement and trade with the interior of Southern Ontario (Mika & Mika, 1983, p. 682).

In 1851, the County of York encompassed the townships of Etobicoke, Vaughan, Markham, Scarborough, York, King, Whitchurch, Gwillimbury East, and Gwillimbury North. The County of York was briefly united with the County of Peel from 1853 to 1866. Municipalities including the Township of Georgina, the City of Toronto, and villages of Aurora, Holland Landing, Newmarket, Richmond Hill, and Yorkville were added to the boundaries of York County after 1866 (Mika & Mika, 1983, p. 682).

TOWNSHIP OF VAUGHAN

The first survey of the former township of Vaughan was completed by Abraham Tredell in 1795 at the request of Sir John Graves Simcoe. His goal was to establish a road (present-day Yonge Street) through the township to connect the community of York, present-day Toronto, with more northerly trading areas, including Georgian Bay. The concessions were laid out with Yonge Street marking the border in the east and present-day Highway 50 in the west. The township eventually covered a total of 67,510 acres (Reaman, 1971). It was the third largest township in York County and was named after Benjamin Vaughan, a representative of Lord Melbourne who was involved with peace negotiations with the Americans in 1783 (Mika & Mika, 1983, p. 574). While the township survey was not completed until 1851, European settlers began to arrive in 1796, including German settlers of Pennsylvania, French Huguenots and English Quakers (Mika & Mika, 1983, p. 574). The first sawmill was built in 1801 by John Lyons, and was constructed at time when the population sat at only 103 inhabitants. By 1817, the population had risen to 510 (Mika & Mika, 1983, p. 574).

Between 1815 and 1840, patents for lands around the Humber River were issued, encouraging an influx of settlers from the British Isles. The first schoolhouse was built in 1815 and, by 1825, the township had grown to see the establishment of 19 schoolhouses. By this time, Vaughan Township included at least six sawmills and two grist mills. Between 1825 and 1840, the number of mills constructed to support the growing need for lumber and the processing of agricultural products had increased to include 34 sawmills, 5 grist mills, and a number of flour and woollen mills (Mika & Mika, 1983, p. 574). By 1842, the township residents had cleared and planted 18,026 acres of land, mostly for wheat, and the population was recorded at 4,187. Most of the farming in Vaughan Township was small-scale until horsepower gradually replaced manpower after 1840.This shift helped to significantly increase crop yields (Mika and Mika, 1983, p. 575).

By 1849, the township was incorporated, and a municipal system of government was implemented (Reaman, 1971). A thriving agricultural industry supported the continual growth of the township, and the development of extensive transportation infrastructure over the next several decades. Major transportation routes constructed through the township included the establishment of the Northern Railway between 1851 and 1855, the Vaughan Plank Road in 1860, the Metropolitan Railway in 1896, and the Toronto Suburban Electric Railway in 1914 (Mika & Mika, 1983, 574).

In the early 1900s, Vaughan experienced an influx of inhabitants as Toronto began to grow beyond its early established boundaries. With this influx of inhabitants, small suburban communities were quickly developed and, by

1911, the population of the township had reached over 20,000 people (Reaman, 1971). Over the course of the twentieth century, the area was increasingly dominated by suburban developments inhabited by those commuting to Toronto for work (Mika & Mika, 1983, 575). In 1971, the Township was incorporated as the Town of Vaughan and, 20 years later, it became the City of Vaughan (City of Vaughan, 2020a).

COMMUNITY OF MAPLE

Centered on the intersection of Keele Street and Major MacKenzie Drive West, the Town of Maple was established in the early nineteenth century to the northeast of the study area. Prior to being named Maple, the community was originally called Noble's Corner or Nobleville after the local post master, Joseph Noble (Mika & Mika, 1981, p. 610). The Noble family had been one of the original settlers of the area. It was later named Rupertsville after a respected doctor of the community, Dr. Rupert. It has been suggested that the large number of maple trees growing along Keele Street eventually gave the community its current name (City of Vaughan, 2020b).

Among the first notable structures in Maple was a Presbyterian Church, built in the 1830s and St. Stephen's Anglican Church, which was built in 1838 (Mika & Mika, 1981, pp. 610-661). One of the initial obstacles for the town was the swampy land located along Keele Street, which impeded travel from larger communities to the south. Eventually, with the infilling of swampy areas, the resultant completion of the north-south roadway, and the arrival of the Ontario, Simcoe and Huron railway in 1853, Maple began to prosper and grow. The increase in travel was reflected by the later establishment of a hotel in the 1850s. A masonic lodge was added in 1854, one of the earliest in Upper Canada, and a Methodist church was added in 1870. By the late nineteenth century, Maple also had a sawmill, a rope factory, a creamery, a hardware store, a shoemaker and a harness shop. The third Women's Institute in the world was built in Maple in 1899 (Mika & Mika, 1981, pp. 610-611).

By 1904, there were approximately 100 homes in the community, mostly retired farmers-turned-business owners. In 1907 the Sterling Bank was established and, later, the Canadian National Railway began operating a station in the community. By 1928, the community had grown to the point of designation as a Police Village with a population of 2,000 (City of Vaughan, 2020b). In the following decades, business within the town decreased but when it became part of the Town of Vaughan in 1971, it maintained a population of 1,000 (Mika & Mika, 1981, p. 610).

1.3.3 STUDY AREA SPECIFIC HISTORY

To better understand the historic land use of the study area, George C. Tremaine's 1860 *Map of York County* and Miles & Co.'s 1878 *Illustrated Historical Atlas of the County of York and the Township of West Gwillimbury & Town of Bradford in the County of Simcoe* were reviewed to examine whether historic features are located within or directly adjacent to the study area. This analysis contributes to the determination of archaeological potential. A description of the lots and concessions, including their listed occupants at the time of the atlas production, any features of interest are listed in Table 1.

Table 1: Historic landowners and illustrated features

Lot	Concession	Tremaine 1860		Miles & Co. 1878	
		Occupants	**Features**	**Occupants**	**Features**
15	**4**	Estate of Late John Line	-	William Line	Structure
17		Samuel Line	-	Sam Line	Structure, orchard, laneway
18		Henry Line	Structure, saw mill	Jonathan Line	Structure, orchard, laneway
19		William Line	-	William Line (north)	-
				William Line (south)	-
		Mrs. Powers (centre)	-	Michael Powers (centre)	Structure
21		Jacob Rupert (west)	Structure, saw mill	Jacob Lamer (west)	Two structures
		Adam Rupert (east)	Multiple structures within Village of Maple	Joseph Oliver (east)	Multiple structures within Village of Maple including Post Office

-denotes no information or features listed

The 1860 Tremaine's Map illustrates three structures directly adjacent to the study area. A homestead and sawmill are located along the Don River on the property of Henry Line on Lot 18, Concession 4 and a second sawmill on the river is illustrated on Jacob Rupert's property on Lot 21, Concession 4. Present-day Major Mackenzie Road, Rutherford Road, Keele Street, and Jane Street had been constructed by 1860 along historic lot and concession lines. The Northern Railway line (formerly the Toronto, Simcoe and Huron Railway) had arrived to the east, and the Village of Maple has been established at the intersection of present-day Major Mackenzie Road and Keele Street (Figure 3).

Several structures are illustrated within, or directly adjacent to the study area in the 1878 map, including homesteads with orchards on each of Lots 17 and 18. There is also a structure along the West Bank of the Don River within the central portion of Lot 20 that lies adjacent to the study area. Additionally, by this time the Village of Maple has become more established, with multiple structures and several town lots added to the east (Figure 4).

To gain a better understanding of the more recent land use of the study area, aerial imagery from 1954 and 1970 was reviewed. In 1954, the majority of the surrounding area was under cultivation. The Town of Maple had expanded to just east of the study area, and an airport had been established adjacent to the western portion of the study area. The homestead and orchard illustrated in the 1878 historic atlas map within Lot 18 appears to still be standing as does the homestead on Lot 20 (Figure 5).

In 1970, although much of the area remains under cultivation, residential development is evident to the east encroaching along the east side of the West Bank of the Don River. The airport had become more substantial with multiple buildings added, and the homestead within Lot 18 is still present (Figure 6).

1.4 ARCHAEOLOGICAL CONTEXT

1.4.1 CURRENT CONDITIONS

The study area includes three separate parcels of land along the West Branch of the Don River and is comprised of scrub and woodlots as well as two large ponds. The study area extends from north of Major Mackenzie Drive to south of Rutherford Road and is surrounded by extensive urban development outside of the study area to the east and west.

1.4.2 PHYSIOGRAPHY AND ECOLOGY

The study area is located within both the Peel Plain and the South Slope physiographic regions. The Peel Plain is a clay tract that covers an area of approximately 300 square miles over the central areas of the Regional Municipalities of York, Peel, and Halton. (Chapman & Putnam, 1984, pp. 174-175). A number of large rivers and streams have cut deep valleys across the plain, leaving much of the area fairly well drained. The plain is largely shale and limestone, covered in either level or undulating heavy, usually red, clay. The clay is often a veneer on the plain but can also be quite deep with evidence of varving. It is more calcareous than the underlying shale till which is the result of being brought in from limestone areas in the east and north by meltwater. The clay is most often imperfectly drained, dark brown Peel clay followed by a sub-surface layer of brown-grey, clay loam (Chapman & Putnam, 1984, pp. 174-175). The Peel clay is found across the study area (Hoffman & Richards, 1955). This soil type is ideal for agricultural purposes and would have been desirable for both pre-contact and European settlement.

The first settlers in this area favored grain and wheat, which thrived in this soil, and became abundant enough to be exported as cash crops to the rest of Ontario. The focus on crops would later shift to a focus on livestock and animal products, including beef cattle, hogs, and dairy. Much of the Peel Plain was later developed by the increasing level of urbanization as a result of the expansion of the City of Toronto (Chapman & Putnam, 1983, pp. 174-175).

The South Slope is situated between Lake Ontario and the Oak Ridges Moraine. This physiographic region is higher than the glacial Lake Iroquois Plain and extends from the Niagara Escarpment to the Trent River (Chapman & Putnam 1984, p. 172). The South Slope is primarily a ground moraine with irregular knolls and hollows with Chinguacousy clay loam soil. These soils are developed on tills which are often also very clayey with black and grey shale (Chapman & Putnam, 1983, pp. 173-174). The soil within the study area is identified as King clay loam, a grey-brown podzolic with good drainage (Hoffman & Richards, 1955).

Proximity to natural sources of water is an important indicator of archaeological potential. The West Branch of the Don River flows through the entire length of the study area, with several other small tributaries located to the west and east. These would have served as important sources of potable water, riverine resources, and transportation routes during the pre- and post-contact periods which would have provided access to Lake Ontario located approximately 25 km to the south.

1.4.3 PREVIOUS ARCHAEOLOGICAL ASSESSMENTS

A search of the *Ontario Public Register of Archaeological Reports* indicates that eight archaeological assessments have been conducted on or within 50 metres (m) of the study area (MHSTCI, 2022). Details on the previous

archaeological assessments are provided in Table 2 and Figure 7, and assessments concerning work conducted within the current study area are bolded.

Table 2: Previous archaeological assessments

Year	PIF	Title	Researcher
1989	**89-130B**	***An Archaeological Resource Assessment of Proposed Plan of Subdivision Part of Lots 19 and 20, Concession 4, 19T-86052, Town of Vaughan Regional Municipality of York, Ontario***	**Archaeological Services Inc. (ASI)**
1993	93-016	*An Archaeological Assessment of Draft Plan of Subdivision, Part of Lot 15, Concession 4, Town of Vaughan, RM of York*	ASI
2001	CIF#2001-020-194	*Stage 1 and 2 Archaeological Assessment of the North Star Lands at Rutherford Road and Greenock Drive, Lot 16, Concession 4, City of Vaughan, Regional Municipality of York, Ontario*	ASI
2013	P141-151-2011	*Stage 1 & 2 Archaeological Background Study and Property Assessment of 7 Bevan Road, City of Vaughan, Regional Municipality of York, Historically Part Lot 20, Concession 4, Township of Vaughan, County of York*	AMEC Americas Limited (AMEC)
2017	**P474-0025-2017**	***Stage 1 Archaeological Assessment of 10 Brevan Road Lot 19, Concession 4, City of Vaughan, Regional Municipality of York, Former Geographic Township of Vaughan, Historic York County, Province of Ontario***	**WSP Canada Inc. (WSP)**
2018	**P327-0004-2018**	***Stage 1 Archaeological Assessment of the Proposed Improvements to Major Mackenzie Drive from McNaughton Road to Keele Street, within Lots 20-21, Concession 3-4, former Geographic Township of Vaughan, County of York, now the City of Vaughan, Regional Municipality of York, Ontario***	**Golder Associates Ltd. (Golder)**
2020	**P383-0237-2020**	***Stage 2 Archaeological Assessment of Major Mackenzie Drive Detail Design Between McNaughton Road/Avro Road and Keele Street, Part of Lots 20-21, Concession 3-4, Former Township of Vaughan, County of York, Ontario***	**ASI**
2021	P089-0097-2018	*Stage 1 Archaeological Assessment for the Teston Road Individual Environmental Assessment, on Lots 47-54 Concession 1 West of Yonge Street, and on Lots 19-32 Concession 2, 3, and 4 West of Yonge Street in the Geographic Township of Vaughan, York*	New Directions Archaeology (NDA)

ASI completed an archaeological resource assessment in 1989 for the proposed subdivision plan on part of Lots 19 and 20, Concession 4. This assessment included a portion of the current study area south of Major Mackenzie Road to approximately Bevan Road. The majority of the study area was found to have been previously disturbed by excessive earth moving activities, and all undisturbed portions were subject to survey. No archaeological resources were found, and no further work was recommended (ASI, 1989). As this report was completed prior to the MHSTCI's *Standards and Guidelines for Consultant Archaeologists* (2011), this area is not considered fully mitigated to current standards.

In 1993, ASI completed an archaeological assessment on behalf of Dew Investments Ltd. on part of Lot 15, Concession 4. This assessment resulted in the identification of two pre-contact Indigenous sites and two Indigenous findspots. Both archaeological sites were recommended for a Stage 3 archaeological assessment. The survey was conducted adjacent to the southern portion of the current study area, and one of the findspots (AlGv-102) is located directly adjacent to the study area. No further work was recommended for AlGv-102.

ASI conducted a Stage 1-2 archaeological assessment in 2001 on behalf of Weston Consulting Group for part of Lot 16, Concession 4. This assessment was located between the southern and central parts of the current study area. The Stage 1-2 assessment resulted in the identification of one pre-contact isolated findspot and one multi-component archaeological site (AlGv-196). The pre-contact isolated findspot was not recommended for further work, however AlGv-196 was recommended for a Stage 3 archaeological assessment (ASI, 2001). Further work on this site has not yet been completed.

In 2013, AMEC completed a Stage 1-2 archaeological assessment for the residential property located at 7 Bevan Road. The property is located directly adjacent to the central portion of the current study area. The Stage 1 background study indicated that the study area contained high archaeological potential for both pre-contact and Euro-Canadian archaeological resources and recommended a Stage 2 assessment. The Stage 2 survey did not result in the identification of any archaeological materials, and no further work was recommended (AMEC, 2013).

WSP completed a Stage 1 archaeological assessment in 2017 for the property located at 10 Bevan Road, which included part of the southern limits of the current study area. The results of this assessment found that portions of the property retained archaeological potential and the remainder of the property was found to be previously disturbed or sloped. A Stage 2 archaeological assessment was recommended for the areas retaining archaeological potential (WSP, 2017).

Golder completed a Stage 1 archaeological assessment in 2018 for proposed road improvements to Major Mackenzie Drive from McNaughton Road to Keele Street in the City of Vaughan, Ontario. This study assessed an approximately 1.65 km long stretch of Major Mackenzie Drive that was 150 m wide and included part of the northern section of the current study area. The results of the assessment found that the majority of the study area no longer contained archaeological potential due to previous disturbance, but that this would need to be confirmed through a Stage 2 archaeological assessment. The portion of the current study area that falls within this previously assessed area was recommended for further work (Golder, 2018).

In 2020, ASI conducted the recommended Stage 2 archaeological assessment for the Major Mackenzie Drive road improvements between McNaughton Road/Avro Road to Keele Street. The majority of the study area was found to be previously disturbed and small areas were subject to test pit survey. No archaeological resources were identified, and no further work was recommended (ASI, 2020).

NDA completed a Stage 1 archaeological assessment in 2021 for the Teston Road Individual Environmental Assessment on behalf of the Regional Municipality of York. This study assessed approximately 3900 ha of land bounded by Kirby Road in the north, Bathurst Street to the east, Major Mackenzie Road to the south, and Highway 400 to the west. A portion of this assessment was located within 50 m of the northern section of the current study area. The results of the Stage 1 study found that much of the study area holds archaeological potential and further work was recommended (NDA, 2021).

1.4.4 REGISTERED ARCHAEOLOGICAL SITES

A search of the *Ontario Archaeological Sites Database* indicates that there are 25 registered archaeological sites within 1 km of the study area (MHSTCI, 2021). Of these, twelve do not have a recorded cultural affinity, seven are

pre-contact, three are multi-component, and two are Euro-Canadian. Only one of the registered archaeological sites, the Salaberry Site (AlGv-102), is located within 50 m of the study area. Table 3 provides additional details on the registered archaeological sites.

Table 3: Registered archaeological sites within 1 km of the study area

Borden	Site Name	Time Period	Cultural Affinity	Site Type	Current Development Status
AlGv-38	Packers 4	Archaic	Indigenous	Camp/campsite	-
AlGv-60	Packers 9	-	-	-	-
AlGv-61	-	Middle Archaic	Indigenous	Unknown	-
AlGv-39	ShurGain	Late Woodland	Indigenous	Village	-
AlGv-58	Packers 7	Pre-Contact	Indigenous	Camp/campsite	-
AlGv-43	Musselman	Post-Contact	Euro-Canadian	Cabin	-
AlGv-42	Packers 6	-	-	Findspot	-
AlGv-59	Packers 8	-	-	-	-
AlGv-41	Packers 5	-	-	Findspot	-
AlGv-37	Packers 3	-	-	Campsite	-
AlGv-36	Williams	Post-Contact	Euro-Canadian	Other	-
AlGv-35	Packers 2	-	-	Camp/campsite	-
AlGv-34	Packers 1	-	-	Findspot	-
AlGv-96	Maple N'Hood 4 #1	Late Archaic	Indigenous	Findspot	-
AlGv-82	Fieldgate	Early Archaic, Post-contact	Indigenous, Euro-Canadian	Findspot, homestead	-
AlGv-63	Packers 11	-	-	-	-
AlGv-5	-	Other	-	Burial	-
AlGv-196	Hudwin	Post-Contact, Pre-Contact	Indigenous, Euro-Canadian	Findspot, Homestead	Further work required
AlGv-102	Salaberry	Late Archaic	Indigenous	Findspot	No further work required
AlGv-101	Ravensway	Late Archaic	Indigenous	Other campsite/campsite	No further work required
AlGu-355	-	Late Woodland, Post-Contact	Indigenous, Euro-Canadian	Homestead	Further work required
AkGu-30	Keelang 1	-	-	-	-
AkGu-31	Keelang 2	-	-	-	-
AlGu-22	Keelang 3	-	-	-	-
AkGv-14	Keffer	-	-	-	-

- denotes no information listed

The Salaberry Site (AlGv-102) is located adjacent to the southern portion of the study area. The site was identified by ASI in 1993 and consisted of a single Late Archaic isolated artifact and no further work was recommended. The presence of a previously identified archaeological site supports that the area has potential for the presence of both pre-contact and post-contact archaeological resources.

1.4.5 DESIGNATED HERITAGE PROPERTIES

A search of the York Region Heritage Register indicated that there are two designated heritage properties within 300 m of the study area (York Region, n.d.). Details on the identified heritage properties are provided in Table 4.

Table 4: Listed and designated Heritage properties within 300 m of the study area

Location	Status	Address	Details
9470 Keele Street	Designated	9470 Keele Street	Frank Robson log house was originally located at Keele Street and Rutherford Road, moved to 9470 Keele Street.
2600 Major Mackenzie Drive	Designated	2600 Major Mackenzie Drive	Jacob Rupert House, a red brick octagonal house.

1.4.6 ARCHAEOLOGICAL MANAGEMENT PLAN

The Archaeological Management Plan for the Region of York was developed by ASI in 2014 (York Region, 2014). The York Region archaeological potential mapping created based on the results of this report was consulted to further inform the determination of archaeological potential of the study area as per Section 1.1, Standard 1, and Section 7.5.6, Standard 2 of the Standards and Guidelines for Consultant Archaeologists (MHSTCI, 2011). It should be noted that while the Archaeological Management Plan is useful to assist in municipal planning and the stewardship of archaeological resources, they do not negate the MHSTCI's requirement for a site inspection or archaeological field survey to confirm actual conditions.

According to the Archaeological Management Plan, archaeological potential exists within 100 m of historic transportation routes and identified features of potential, and within 300 m of rivers and bodies of water (York Region, 2014). Based on these criteria, the current study area holds archaeological potential (Figure 8).

2 ANALYSIS AND CONCLUSIONS

The criteria for determining the level of archaeological potential are primarily focused on physiographic variables that include distance and nature of the nearest source/body of water, distinguishing features in the landscape (e.g. ridges, knolls, eskers, wetlands), the agricultural viability of soils, resource availability, and other features which would have made the area more suitable for settlement and occupation. Historic background and archival research, including reviews of historic maps and county/township histories, provide the basis for determining historic archaeological potential. A more comprehensive list of features indicative of archaeological potential, as outlined in the *Standards and Guidelines for Consultant Archaeologists* (MHSTCI, 2011), can be found in Appendix B.

The results of the Stage 1 background review determined that there is high potential for the presence of pre-contact archaeological resources given that the West Branch of the Don River flows through the study area. Additionally, several small tributaries are located to the east and west of the study area. These would have been major pre-contact sources of riverine resources and major transportation routes for access to and from Lake Ontario. There are also seven registered pre-contact and three multi-component archaeological sites within 1 km of the study area, one of which is within 50 m of the study area boundaries.

The potential for the presence of Euro-Canadian archaeological resources is also high given the proximity of the study area to the historic village of Maple and the location of several nineteenth century homesteads and sawmills within and directly adjacent to the study area. Parts of the study area are also located along historic Major Mackenzie and Rutherford Road and in close proximity to Keele Street and Jane Street, all of which are historic transportation routes. Additionally, three multi-component and two nineteenth century Euro-Canadian archaeological sites are located within 1 km of the study area.

The Stage 1 archaeological assessment determined that the property exhibits potential for the presence of both pre-contact and historic archaeological resources, and while some portions have been previously assessed and do not require further work, the remaining areas must be subject to further archaeological investigation (Figure 9).

3 RECOMMENDATIONS

The Stage 1 archaeological assessment was carried out in accordance with the MHSTCI's *Standards and Guidelines for Consultant Archaeologists* (2011) to meet the requirements for compliance with the *Ontario Heritage Act, 1990*. The assessment of the study area included a review of previous archaeological research, historic maps, aerial imagery, land registry documents, and local histories. Based on the results of the Stage 1 archaeological assessment, a **Stage 2 archaeological assessment is recommended for parts of the study area that hold potential for the presence of archaeological resources** (Figure 9).

The Stage 2 archaeological assessment is to be completed following the requirements of Section 2 of the *Standards and Guidelines for Consultant Archaeologists* (MHSTCI, 2011):

- The parts of the study area that have been previously assessed and cleared of archaeological concern do not require further archaeological investigation;
- Areas that cannot be subject to ploughing, including manicured lawn, scrub, and woodlot, must be subject to test pit survey at 5 m intervals as per section 2.1.2 of the *Standards and Guidelines for Consultant Archaeologists* (2011).
- Test pit survey can be increased to 10 m intervals in areas of encountered disturbance to confirm the extent of disturbance. In areas of suspected disturbance, test pits may be placed throughout the areas according to professional judgement so as to confirm the degree of disturbance following Section 2.1.8 of the *Standards and Guidelines for Consultant Archaeologists* (2011); and,
- Areas of visually confirmed disturbance, low-lying and permanently wet areas, and areas of steep slope (>20˚) will be subject to photo-documentation only.

If proposed construction impacts are changed to include areas outside of the current study area boundaries as illustrated in Figure 2, further archaeological assessment may be required. It should be noted that the results of this Stage 1 archaeological assessment are not considered final until the above stated recommendations have been reviewed by the MHSTCI and the report has been accepted into the Ontario Public Register of Archaeological Reports.

4 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the Minister of Heritage, Sport, Tourism and Culture Industries as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18. The report is reviewed to ensure that it complies with the Standards and Guidelines for Consultant Archaeologists (2011a) that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Heritage, Sport, Tourism and Culture Industries, a letter will be issued by the Ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeological Reports referred to in Section 65.1 of the *Ontario Heritage Act*.

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48(1) of the *Ontario Heritage Act*.

The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 requires that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.

Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48 (1) of the Ontario Heritage Act and may not be altered, or have artifacts removed from them, except by a person holding an archaeological licence.

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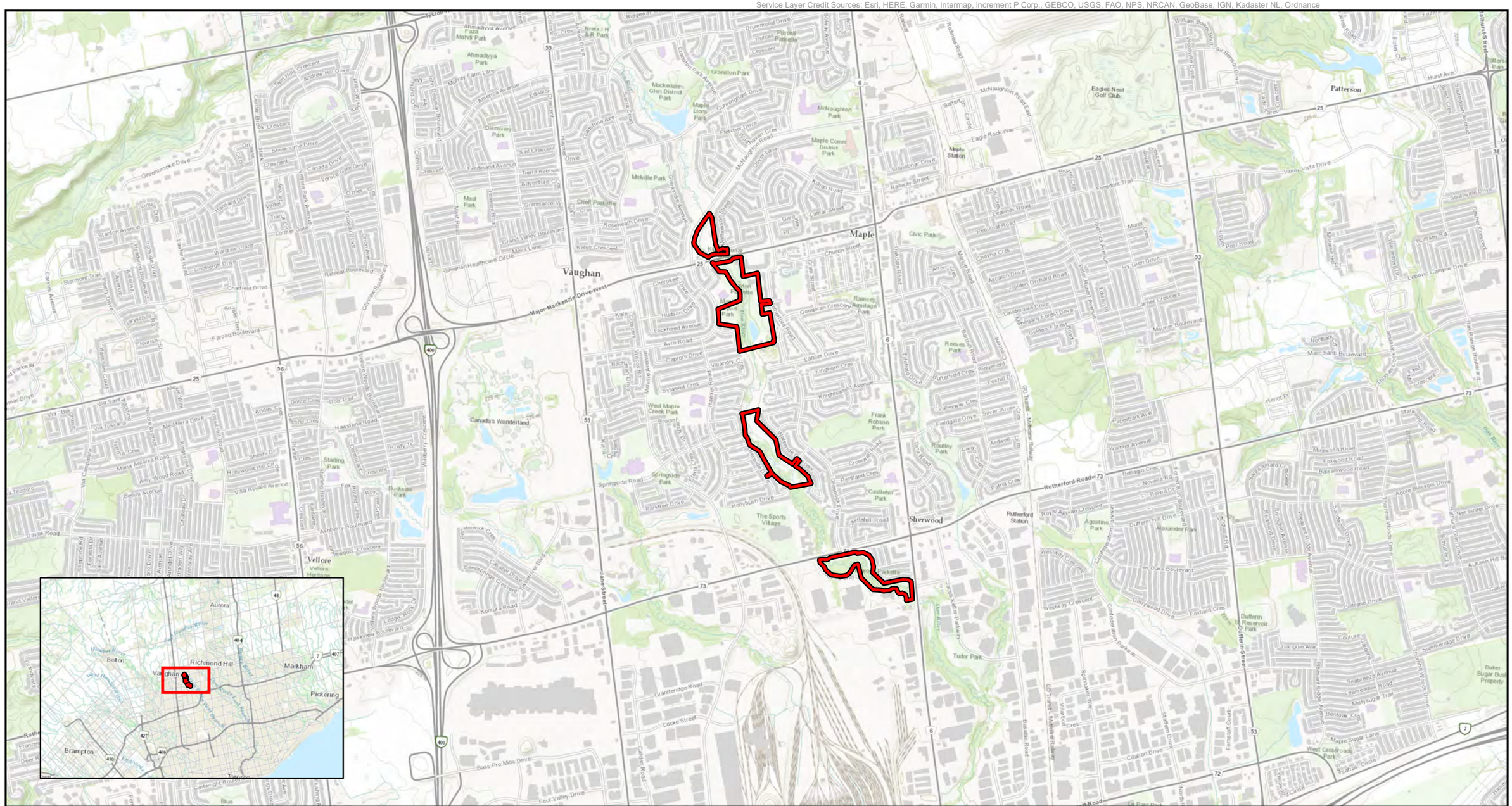
6 FIGURES

Service Layer Credit Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance



LEGEND

Study Area

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PROJECT: STAGE 1 ARCHAEOLOGICAL ASSESSMENT BARTLEY SMITH GREENWAY TRAIL	CREDITS: Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community	

0 500 1,000 m

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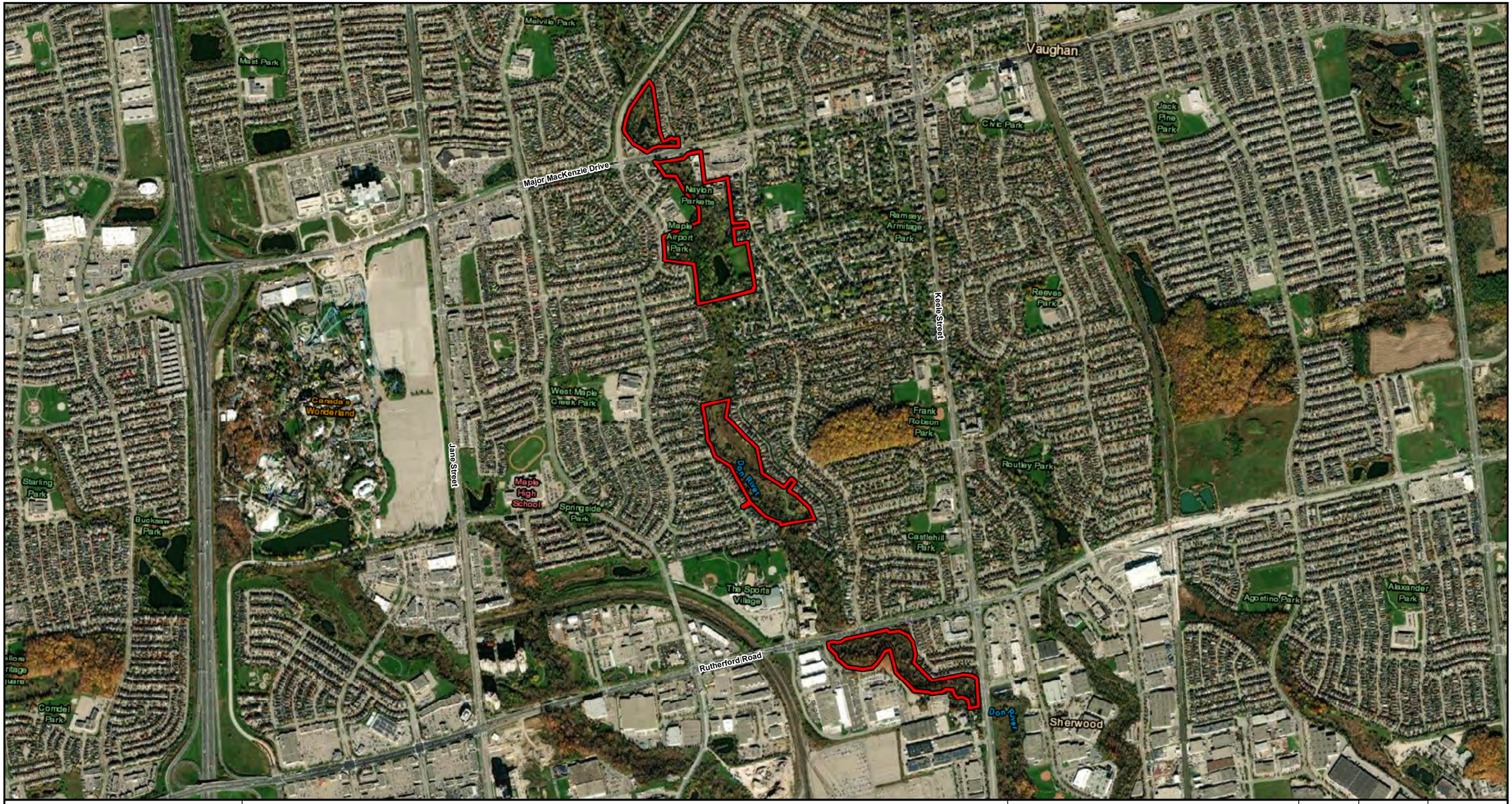

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BR	CITY OF VAUGHAN

PROJECT: STAGE 1 ARCHAEOLOGICAL ASSESSMENT
BARTLEY SMITH GREENWAY TRAIL

0 325 650 m

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CREDITS:

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

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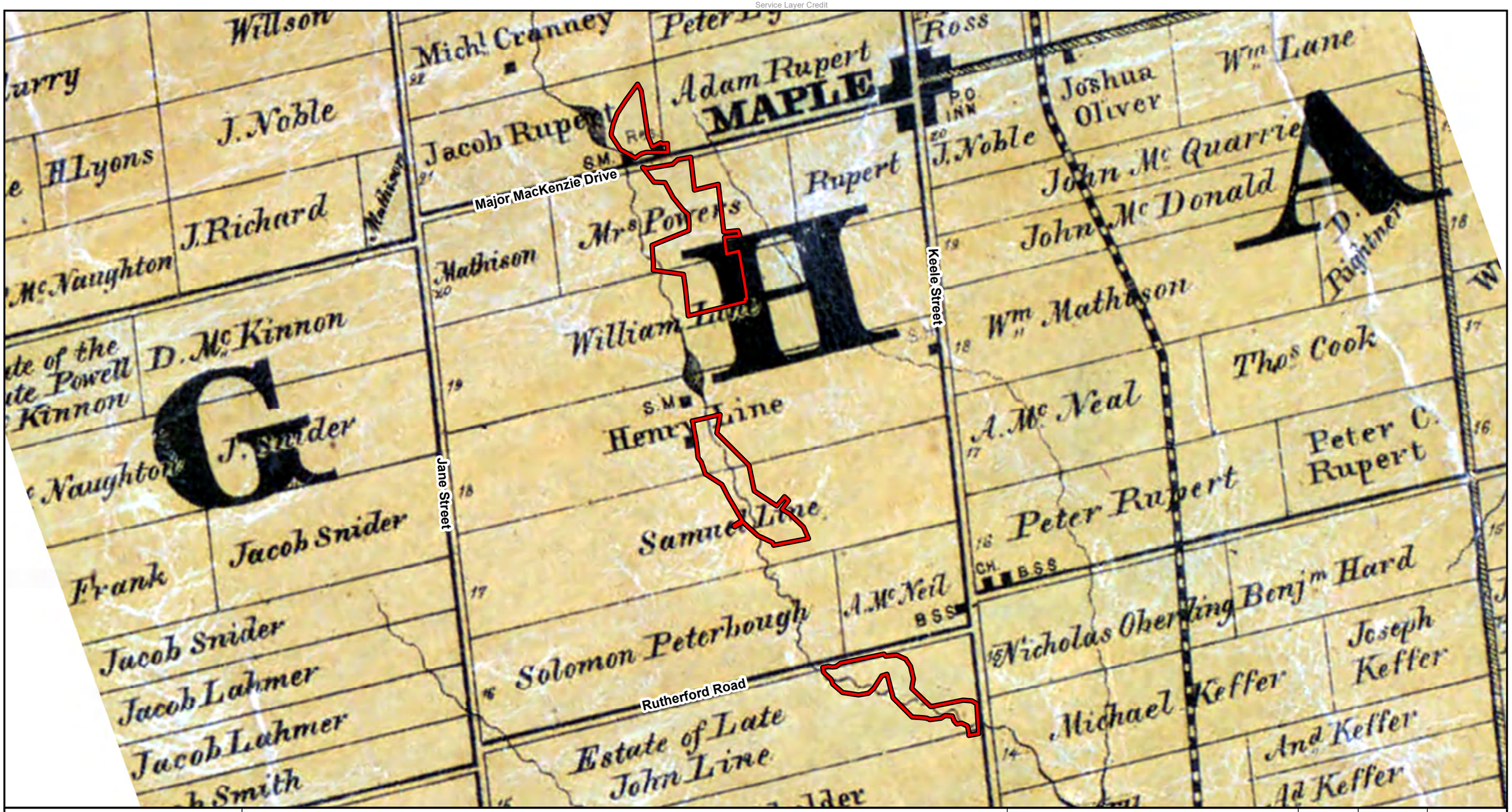

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Study Area

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PROJECT: STAGE 1 ARCHAEOLOGICAL ASSESSMENT BARTLEY SMITH GREENWAY TRAIL			
0 312.5 625 m N	CREDITS: Tremaine 1860 Map of York County, Vaughan Township		

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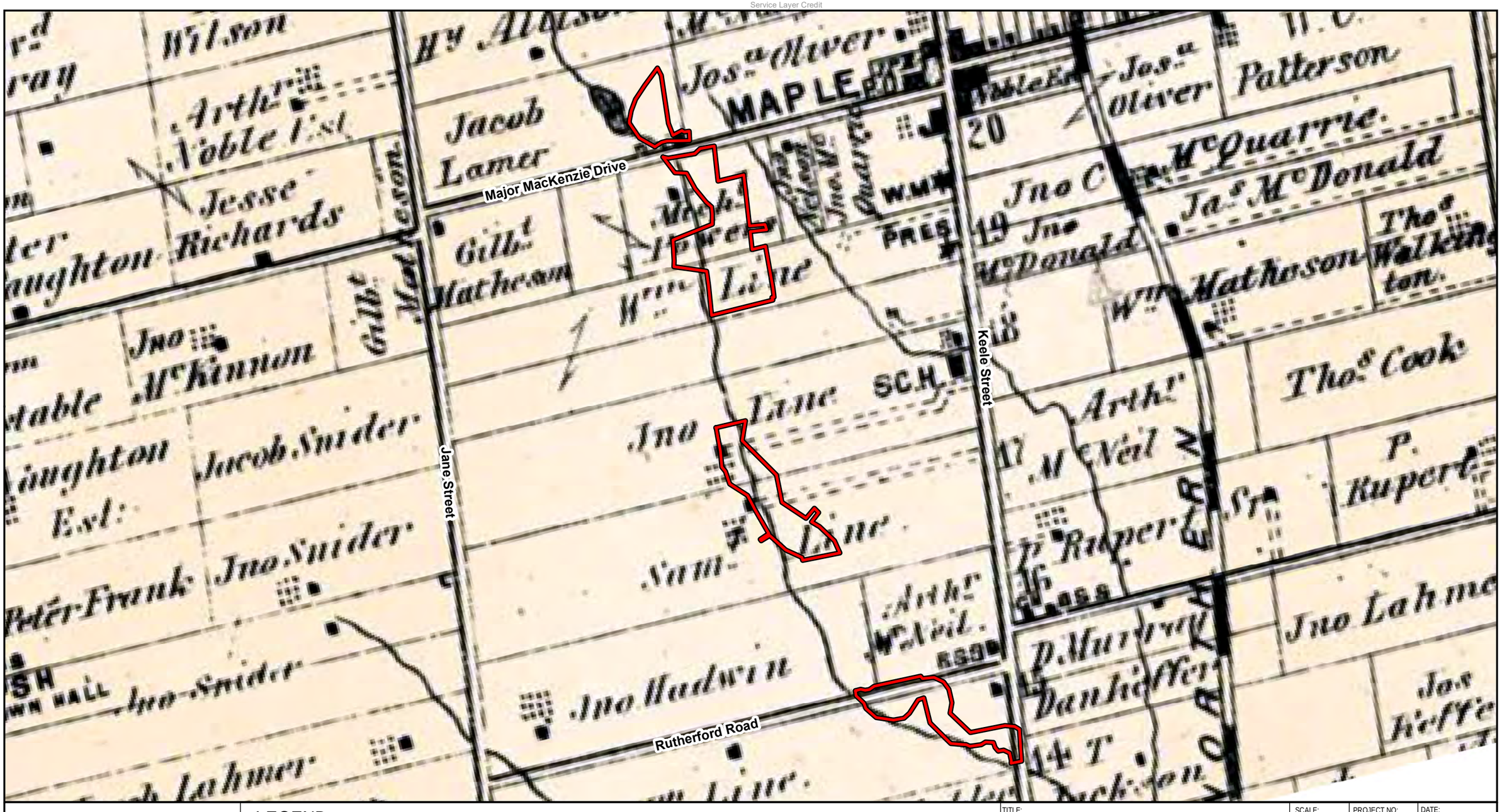

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Study Area

TITLE:
FIGURE 4: 1878 MILES & CO'S ILLUSTRATED HISTORIC ATLAS OF THE COUNTY OF YORK

SCALE:	PROJECT NO:	DATE:
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DRAWN BY:	CLIENT:	
BR	CITY OF VAUGHAN	

PROJECT:
STAGE 1 ARCHAEOLOGICAL ASSESSMENT
BARTLEY SMITH GREENWAY TRAIL

CREDITS:
Miles & Co. 1878 Vaughan Township

0 287.5 575 m

N

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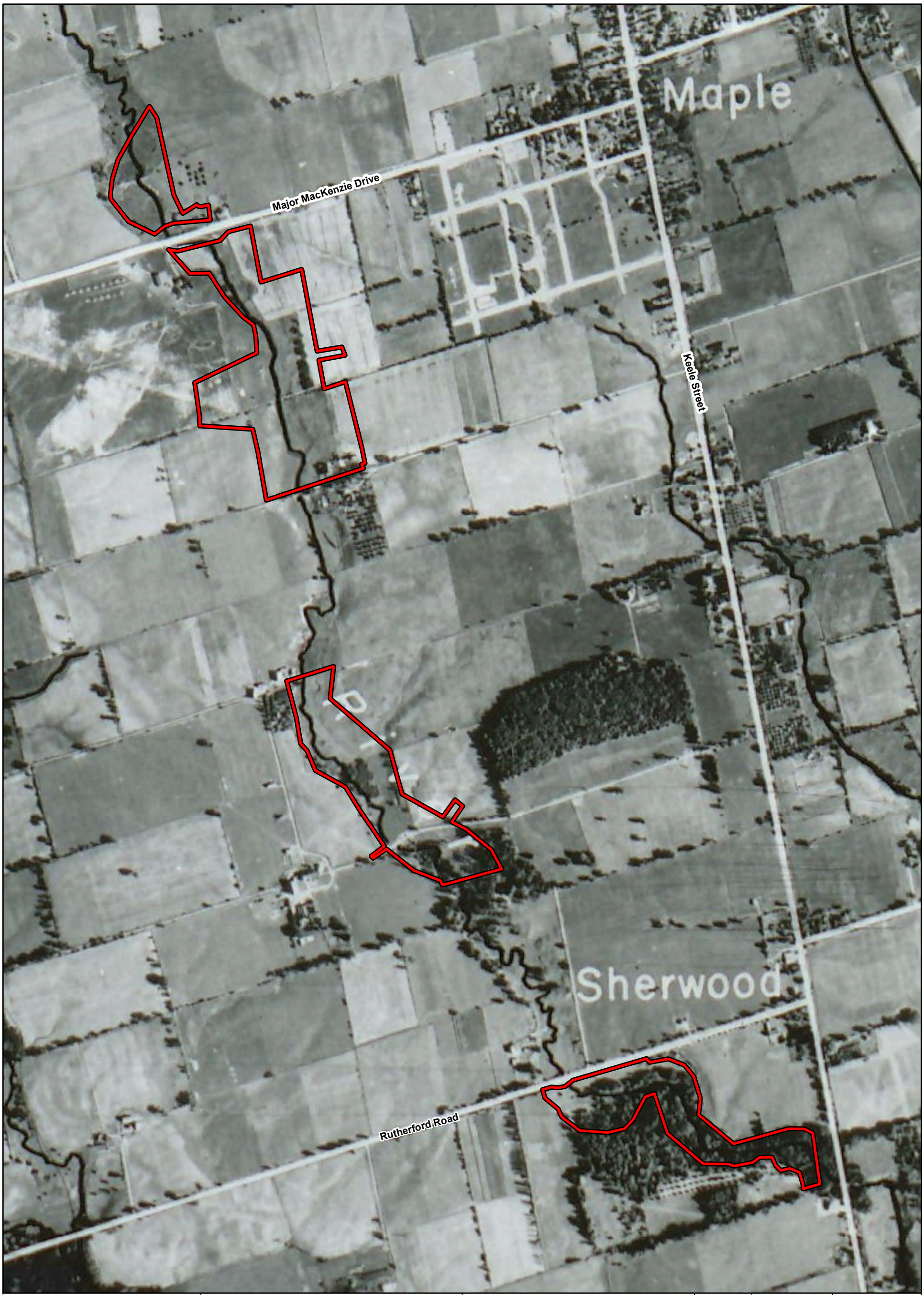

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LEGEND

Study Area

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	DRAWN BY: BR	CLIENT: CITY OF VAUGHAN	
PROJECT: STAGE 1 ARCHAEOLOGICAL ASSESSMENT BARTLEY SMITH GREENWAY TRAIL	CREDITS: University of Toronto Map and Data Library		

0 190 380 m N

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Study Area

TITLE: FIGURE 6: AERIAL IMAGERY (1970)	SCALE: 1:8,206	PROJECT NO: 211-07301-00	DATE: JULY 2022
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0 190 380 m N

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Major MacKenzie Drive

Jane Street

Keele Street

Rutherford Road

LEGEND

- Study Area
- ASI, 2020 (P383-0237-2020)
- Golder, 2018 (P327-0004-2018)
- WSP, 2017 (P474-0025-2017)
- ASI, 1989 (89-1360B)

TITLE: FIGURE 7: PREVIOUS ARCHAEOLOGICAL ASSESSMENTS

SCALE: 1:16,222

PROJECT NO: 211-07301-00

DATE: JUNE 2022

DRAWN BY: BR

CLIENT: CITY OF VAUGHAN

PROJECT: STAGE 1 ARCHAEOLOGICAL ASSESSMENT BARTLEY SMITH GREENWAY TRAIL

0 340 680 m

N

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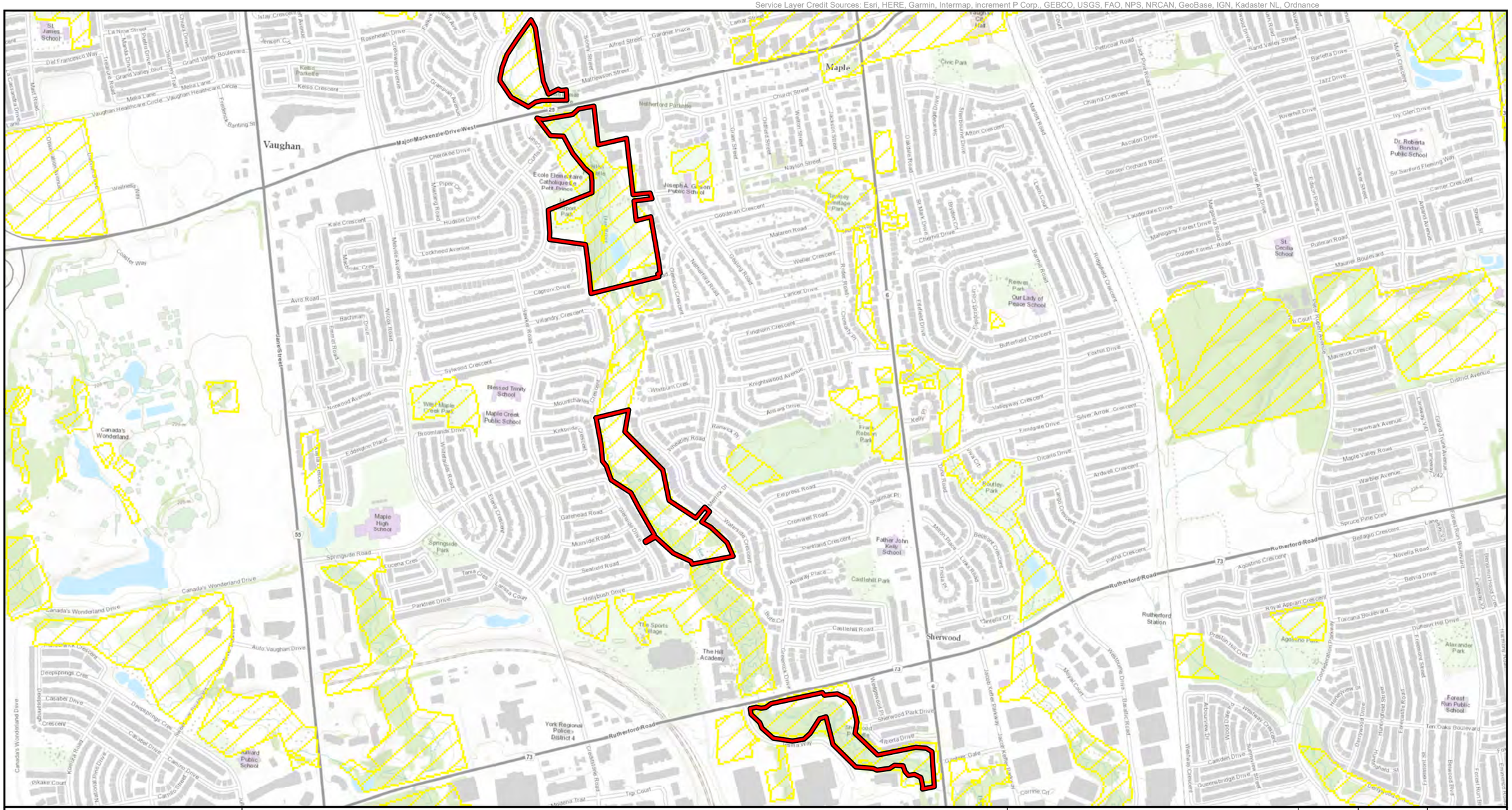

LEGEND

- Study Area
- York Region Archaeological Potential

TITLE: FIGURE 8: ARCHAEOLOGICAL POTENTIAL	SCALE: 1:12,582	PROJECT NO: 211-07301-00
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PROJECT: STAGE 1 ARCHAEOLOGICAL ASSESSMENT BARTLEY SMITH GREENWAY TRAIL	CREDITS: York Region Land Information Viewer	

0 262.5 525 m

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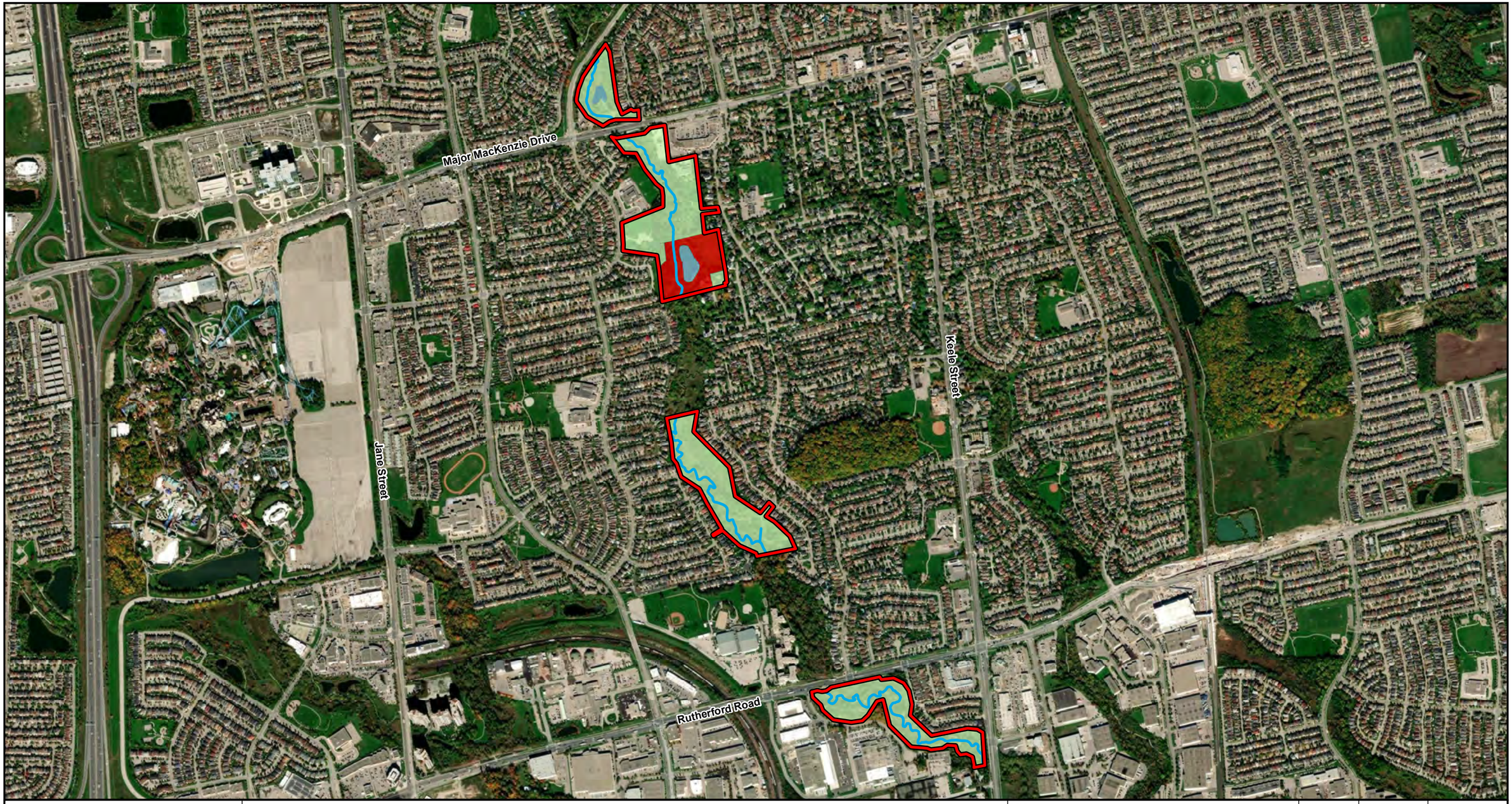

LEGEND

Study Area

Results

- Previously Assessed - No further work required
- Stage 2 test pit survey recommended
- Low-lying/permanently wet - No further work required

TITLE: FIGURE 9: ASSESSMENT RESULTS

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BR	CITY OF VAUGHAN	

PROJECT: STAGE 1 ARCHAEOLOGICAL ASSESSMENT BARTLEY SMITH GREENWAY TRAIL

0 280 560 m

N

CREDITS:

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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APPENDIX

A FEATURES OF ARCHAEOLOGICAL POTENTIAL

APPENDIX

MICHI SAAGIIG HISTORICAL/BACKGROUND CONTEXT:

The traditional homelands of the Michi Saagiig (Mississauga Anishinaabeg) encompass a vast area of what is now known as southern Ontario. The Michi Saagiig are known as “the people of the big river mouths” and were also known as the “Salmon People” who occupied and fished the north shore of Lake Ontario where the various tributaries emptied into the lake. Their territories extended north into and beyond the Kawarthas as winter hunting grounds on which they would break off into smaller social groups for the season, hunting and trapping on these lands, then returning to the lakeshore in spring for the summer months.

The Michi Saagiig were a highly mobile people, travelling vast distances to procure subsistence for their people. They were also known as the “Peacekeepers” among Indigenous nations. The Michi Saagiig homelands were located directly between two very powerful Confederacies: The Three Fires Confederacy to the north and the Haudenosaunee Confederacy to the south. The Michi Saagiig were the negotiators, the messengers, the diplomats, and they successfully mediated peace throughout this area of Ontario for countless generations.

Michi Saagiig oral histories speak to their people being in this area of Ontario for thousands of years. These stories recount the “Old Ones” who spoke an ancient Algonquian dialect. The histories explain that the current Ojibwa phonology is the 5th transformation of this language, demonstrating a linguistic connection that spans back into deep time. The Michi Saagiig of today are the descendants of the ancient peoples who lived in Ontario during the Archaic and Paleo-Indian periods. They are the original inhabitants of southern Ontario, and they are still here today.

The traditional territories of the Michi Saagiig span from Gananoque in the east, all along the north shore of Lake Ontario, west to the north shore of Lake Erie at Long Point. The territory spreads as far north as the tributaries that flow into these lakes, from Bancroft and north of the Haliburton highlands. This also includes all the tributaries that flow from the height of land north of Toronto like the Oak Ridges Moraine, and all of the rivers that flow into Lake Ontario (the Rideau, the Salmon, the Ganaraska, the Moira, the Trent, the Don, the Rouge, the Etobicoke, the Humber, and the Credit, as well as Wilmot and 16 Mile Creeks) through Burlington Bay and the Niagara region including the Welland and Niagara Rivers, and beyond. The western side of the Michi Saagiig Nation was located around the Grand River which was used as a portage route as the Niagara portage was too dangerous. The Michi Saagiig would portage from present-day Burlington to the Grand River and travel south to the open water on Lake Erie.

Michi Saagiig oral histories also speak to the occurrence of people coming into their territories sometime between 500-1000 A.D. seeking to establish villages and a corn growing economy – these newcomers included peoples that would later be known as the Huron-Wendat, Neutral, Petun/Tobacco Nations. The Michi Saagiig made Treaties with these newcomers and granted them permission to stay with the understanding that they were visitors in these lands. Wampum was made to record these contracts, ceremonies would have bound each nation to their respective responsibilities within the political relationship, and these contracts would have been renewed annually (see Gitiga Migizi and Kapyrka 2015). These visitors were extremely successful as their corn economy grew as well as their populations. However, it was understood by all nations involved that this area of Ontario were the homeland territories of the Michi Saagiig.

The Odawa Nation worked with the Michi Saagiig to meet with the Huron-Wendat, the Petun, and Neutral Nations to continue the amicable political and economic relationship that existed – a symbiotic relationship that was mainly policed and enforced by the Odawa people.

Problems arose for the Michi Saagiig in the 1600s when the European way of life was introduced into southern Ontario. Also, around the same time, the Haudenosaunee were given firearms by the colonial governments in New York and Albany which ultimately made an expansion possible for them into Michi Saagiig territories. There began skirmishes with the various nations living in Ontario at the time. The Haudenosaunee engaged in fighting with the Huron-Wendat and between that and the onslaught of European diseases, the Iroquoian speaking peoples in Ontario were decimated.

APPENDIX

The onset of colonial settlement and missionary involvement severely disrupted the original relationships between these Indigenous nations. Disease and warfare had a devastating impact upon the Indigenous peoples of Ontario, especially the large sedentary villages, which mostly included Iroquoian speaking peoples. The Michi Saagiig were largely able to avoid the devastation caused by these processes by retreating to their wintering grounds to the north, essentially waiting for the smoke to clear.

Michi Saagiig Elder Gitiga Migizi (2017) recounts:

"We weren't affected as much as the larger villages because we learned to paddle away for several years until everything settled down. And we came back and tried to bury the bones of the Huron but it was overwhelming, it was all over, there were bones all over – that is our story.

There is a misnomer here, that this area of Ontario is not our traditional territory and that we came in here after the Huron-Wendat left or were defeated, but that is not true. That is a big misconception of our history that needs to be corrected. We are the traditional people, we are the ones that signed treaties with the Crown. We are recognized as the ones who signed these treaties and we are the ones to be dealt with officially in any matters concerning territory in southern Ontario.

We had peacemakers go to the Haudenosaunee and live amongst them in order to change their ways. We had also diplomatically dealt with some of the strong chiefs to the north and tried to make peace as much as possible. So we are very important in terms of keeping the balance of relationships in harmony.

Some of the old leaders recognized that it became increasingly difficult to keep the peace after the Europeans introduced guns. But we still continued to meet, and we still continued to have some wampum, which doesn't mean we negated our territory or gave up our territory – we did not do that. We still consider ourselves a sovereign nation despite legal challenges against that. We still view ourselves as a nation and the government must negotiate from that basis."

Often times, southern Ontario is described as being "vacant" after the dispersal of the Huron-Wendat peoples in 1649 (who fled east to Quebec and south to the United States). This is misleading as these territories remained the homelands of the Michi Saagiig Nation.

The Michi Saagiig participated in eighteen treaties from 1781 to 1923 to allow the growing number of European settlers to establish in Ontario. Pressures from increased settlement forced the Michi Saagiig to slowly move into small family groups around the present day communities: Curve Lake First Nation, Hiawatha First Nation, Alderville First Nation, Scugog Island First Nation, New Credit First Nation, and Mississauga First Nation.

Note: This historical context was prepared by Gitiga Migizi, a respected Elder and Knowledge Keeper of the Michi Saagiig Nation.

Source

Migizi, G. & J Kapyrka (2015). Before, During, and After: Mississauga Presence in the Kawarthas. In D. Verhulst (eds.) *Peterborough Archaeology* (pp.127-136). Peterborough, Ontario: Peterborough Chapter of the Ontario Archaeological Society.

APPENDIX

B

FEATURES INDICATING ARCHAEOLOGICAL POTENTIAL

APPENDIX

FEATURES INDICATING ARCHAEOLOGICAL POTENTIAL

The following are features or characteristics that indicate archaeological potential:

- Previously identified archaeological sites.
- Water sources:
- Primary water sources (lakes, rivers, streams, creeks).
- Secondary water sources (intermittent streams and creeks, springs, marshes, swamps).
- Features indicating past water sources (e.g. glacial lake shorelines, relic river or stream channels, shorelines of drained lakes or marshes, cobble beaches).
- Accessible or inaccessible shoreline (e.g. high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh).
- Elevated topography (e.g. eskers, drumlins, large knolls, plateaux).
- Pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground.
- Distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases.
- Resource areas, including:
- Food or medicinal plants (e.g. migratory routes, spawning areas, prairie).
- Scarce raw materials (e.g. quartz, copper, ochre, or outcrops of chert).
- Early Euro-Canadian industry (e.g. fur trade, logging, prospecting, mining).
- Areas of early Euro-Canadian settlement. These include places of early military or pioneer settlement (e.g. pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches and early cemeteries.
- Early historical transportation routes (e.g. trails, passes, roads, railways, portage routes).
- Property listed on a municipal register or designated under the Ontario Heritage Act or that is federal, provincial or municipal historic landmark or site.
- Property that local histories or informants have identified with possible archaeological sites, historic events, activities, or occupations

Source

Ontario Ministry of Heritage, Sport, Tourism and Culture Industries

2011 Standards and Guidelines for Consultant Archaeologists

Section 1.3

APPENDIX F

Schematic Trail Options and Final Mapping

N

VAUGHAN

wsp

MCNAUGHTON CROSSING: SIGNALIZED AT GRADE PEDESTRIAN CROSSING (TRAIL WILL NEED TO RAMP UP SLOPE TO ROAD

MCNAUGHTON CROSSING: BELOW GRADE CULVERT CROSSING (SIMILAR TO MAJOR MACKENZIE)TO BE STUDIED AS PART OF THE MCNAUGHTON ROAD EA TO COMMENCE IN 2022..

MCNAUGHTON CROSSING: UTILIZE EXISTING SIGNALIZED INTERSECTION AT CRANSTON PARK AVE (TRAIL WILL NEED TO RAMP UP SLOPE AND TRAVEL DOWN MCNAUGHTON TO CROSSING)

MCNAUGHTON CROSSING: SIGNALIZED AT GRADE PEDESTRIAN CROSSING CONNECTION AT KINLOCK CRESCENT ACCESS (TRAIL WILL NEED TO RAMP UP SLOPE AND TRAVEL DOWN MCNAUGHTON TO CROSSING)

MCNAUGHTON RD.

OVERLAND FLOW ROUTE FROM PARK

KILLIAN-LAMAR PARKETTE

ROAD IMPROVEMENTS ON MAJOR MACKENZIE DR. IN PROGRESS

MAJOR MACKENZIE DR. W

STEEP SLOPE WEST OF DON RIVER WEST BRANCH

ST. DAVID'S PARISH CHURCH

AVRO RD.

MOTHER OF CARMEL CHILD CARE CENTER

ELEMENTARY SCHOOL CATHOLIC LE PETIT-PRINCE

POSSIBLE LOCATION FOR SHELTER

MAPLE AIRPORT PARK

NAYLON ST.

NAYLON PARKETTE

POSSIBLE LOCATION FOR FITNESS NODE

ROUTES TO BE REASSESSED AND DETAILED DESIGNED DEPENDING ON USER DEMAND

SWM POND TO BE REMOVED BY DEVELOPMENT

STEEP SLOPE WEST OF DON RIVER WEST BRANCH

PRIVATE ACTIVE DEVELOPMENT APPLICATION (10 BEVAN RD.)

CAPRONI DR.

FUTURE TRAIL BY OTHERS

BEVAN RD.

PRIVATE ACTIVE DEVELOPMENT APPLICATION (7 BEVAN RD.)

VILLANDRY CRES.

LANCER DR.

STEEP SLOPE WEST OF DON RIVER WEST BRANCH

BRIDGE CROSSING TO BE REASSESSED IN FUTURE AFTER TRAIL INSTALL TO DETERMINE NEED AND FEASIBILITY. PUBLIC WILL BE RE-CONSULTED IF ROUTE IS RECONSIDERED.

GREENOCK DR.

BOARDWALK

MOUNTCHARLES CRES.

WATERSIDE CRES.

GLENSIDE DR.

STEEP SLOPE WEST OF DON RIVER WEST BRANCH

POSSIBLE LOCATION FOR SHELTER

HOLLYBUSH DR.

SPORTS VILLAGE BASEBALL DIAMOND

ROUTE TO BE ASSESSED WHEN ADJACENT TRAILS ARE IMPLEMENTED. TRAIL WILL LIKELY BE A MORE INFORMAL STONE DUST OR COMPACTED EARTH NATURE TRAIL.

RUTHERFORD RD CROSSING: BELOW GRADE CULVERT CROSSING (SIMILAR TO MAJOR MACKENZIE)

RUTHERFORD CROSSING: UTILIZE EXISTING SIGNALIZED INTERSECTION AT GREENOCK DRIVE (EXISTING SIDEWALK REPLACED OR PAIR WITH MUP)

RUTHERFORD ROAD ACTIVE TRANSPORTATION FACILITY (INSTALLATION IN PROGRESS)

RUTHERFORD CROSSING: UTILIZE EXISTING SIGNALIZED INTERSECTION AT ROTATIONAL DRIVE (EXISTING SIDEWALK REPLACED OR PAIR WITH MUP)

RUTHERFORD RD.

ROUTES TO BE REASSESSED AND DETAILED DESIGNED WHEN REDEVELOPMENT PRESENTS AN OPPORTUNITY

RUTHERFORD CROSSING: UTILIZE EXISTING SIGNALIZED INTERSECTION AT KEELE STREET (EXISTING SIDEWALK REPLACED OR PAIR WITH MUP)

SHERWOOD PARK

KEELE ST.

9.76

12.83

7.46

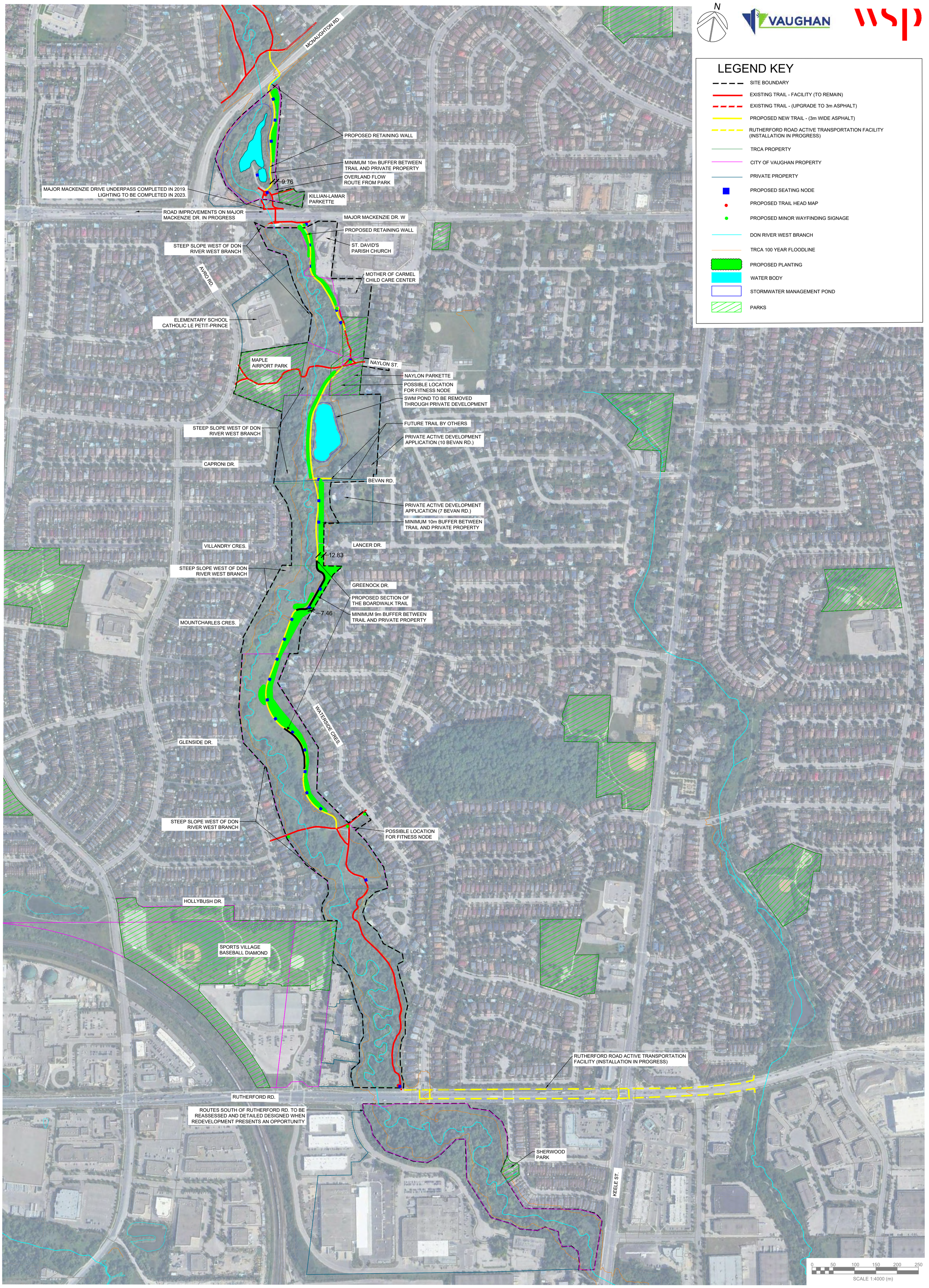
LEGEND KEY

- SITE BOUNDARY
- EXISTING TRAIL - FACILITY (TO REMAIN)
- EXISTING TRAIL - (UPGRADE TO 3m ASPHALT)
- PROPOSED NEW TRAIL - (3m WIDE ASPHALT)
- RUTHERFORD ROAD ACTIVE TRANSPORTATION FACILITY (INSTALLATION IN PROGRESS)
- TRAIL ALIGNMENT LABELS
- PROPOSED CROSSING
- PROPOSED CROSSING - EXPLORED AND NOT RECOMMENDED
- PROPOSED CROSSING - POTENTIAL FUTURE OPTION (REQUIRES FUTURE STUDY)
- TRAIL ALIGNMENT - EXPLORED AND NOT RECOMMENDED (REFER TO SECTION 4.0 ALTERNATIVE ROUTE ANALYSIS IN REPORT FOR JUSTIFICATION)
- TRAIL ALIGNMENT - POTENTIAL FUTURE OPTION (REQUIRES FUTURE STUDY)
- TRCA PROPERTY
- CITY OF VAUGHAN PROPERTY
- PRIVATE PROPERTY
- PROPOSED SEATING NODE
- PROPOSED TRAIL HEAD MAP
- PROPOSED MINOR WAYFINDING SIGNAGE
- DON RIVER WEST BRANCH
- TRCA 100 YEAR FLOODLINE
- PROPOSED PLANTING
- WATER BODY
- STORMWATER MANAGEMENT POND
- PARKS

0 50 100 150 200 250

SCALE 1:4000 (m)

BARTLEY SMITH GREENWAY TRAIL - CONNECTING THE GAPS
ALTERNATIVE ASSESSMENT & FUTURE OPTIONS



BARTLEY SMITH GREENWAY TRAIL - CONNECTING THE GAPS
MASTER PLAN - PROPOSAL TRAIL ROUTE

APPENDIX G

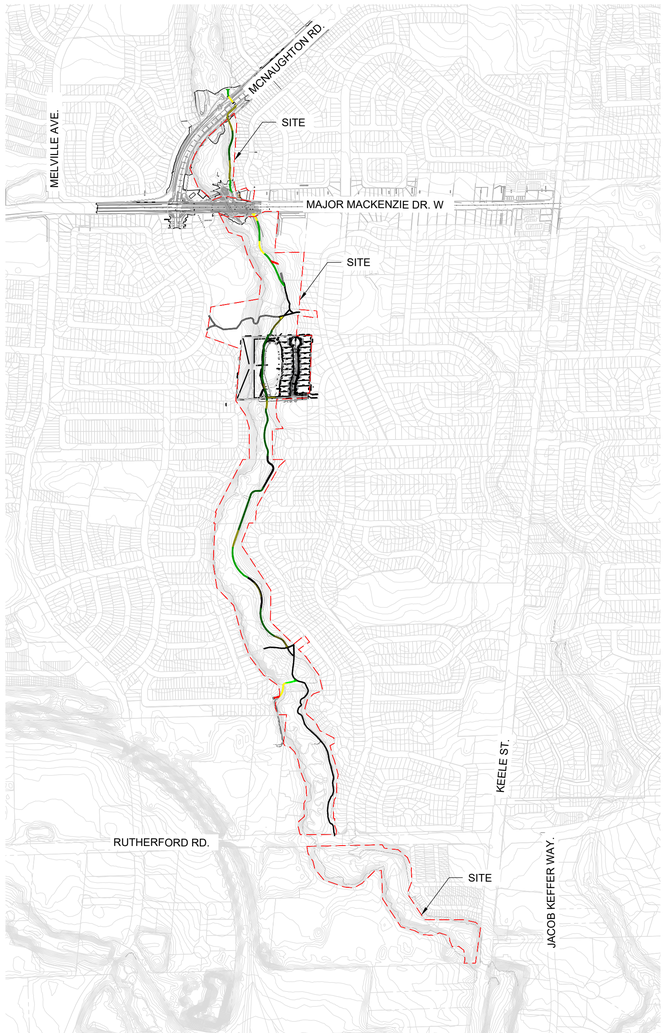
Trail Design Drawings

CITY OF VAUGHAN

CITY OF VAUGHAN
BARTLEY SMITH GREENWAY GAP TRAIL 30% DESIGN

Project No. 211-03701-00
SUMMER 2021

SITE AND ADJACENT PROPERTY CONTEXT:
ADDRESS:



DRAWING INDEX

PREPARED BY:

Landscape Architecture
582 Lancaster Street West
Kitchener, ON N2K 1M3
t. 519-743-8777
www.wsp.com

GENERAL NOTES:

- CONTRACTOR TO REMOVE AND DISPOSE OF OFF-SITE AT NO ADDITIONAL COST TO THE CONTRACT ITEMS NOTED FOR REMOVAL INCLUDING BUT NOT LIMITED TO ALL ASPHALT PAVING, CONCRETE CURBS, CONCRETE PAVING, STUMPS, SOD,TOPSOIL, SIGNAGE AND FILL AS REQUIRED TO FACILITATE THE IMPLEMENTATION OF CHANGES AS PER PLANS AND DETAILS. ANY SIGNAGE OR ANY OTHER ITEMS IDENTIFIED BY THE CLIENT TO BE SALVAGED, SHALL BE STORED AT A LOCATION ON-SITE AS IDENTIFIED BY THE CLIENT.
- CONTRACTOR TO MAKE GOOD TO CONTRACT ADMINISTRATOR'S APPROVAL ALL DAMAGES THAT OCCUR DURING CONSTRUCTION.
- CONTRACTOR TO REVIEW DRAWINGS AND REPORT ANY ERRORS, OMISSIONS, AND / OR DISCREPANCIES TO CONTRACT ADMINISTRATOR IN WRITING PRIOR TO CONSTRUCTION. PROPERTY LINES TO BE VERIFIED PRIOR TO INITIATING ANY CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY LOCATES. CONTRACTOR TO VERIFY LOCATION AND PROTECT ALL SERVICES PRIOR TO ANY EXCAVATION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CALL A PRIVATE LOCATING COMPANY AND PAY ALL COSTS RELATING TO ALL SERVICES NOT STAKED OUT BY GAS, HYDRO, BELL, AND CABLE.
- EXTENT OF WORK SHOWN IS TO CONVEY INTENT ONLY. EXTENT OF CONSTRUCTION IS TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. IF THERE IS AMBIGUITY OR LACK OF INFORMATION, THE CONTRACTOR SHALL IMMEDIATELY INFORM THE CONTRACT ADMINISTRATOR. THE CONTRACTOR MAY BE HELD RESPONSIBLE TO REMOVE ANY CHANGES MADE WITHOUT WRITTEN PERMISSION OF THE CONTRACT ADMINISTRATOR.
- ALL CONSTRUCTION TO BE CARRIED OUT IN ACCORDANCE WITH THE MOST CURRENT DESIGN STANDARDS, CRITERIA, AND SPECIFICATIONS FORM THE ONTARIO BUILDING CODE, THE ONTARIO PROVINCIAL STANDARD DETAIL, THE ONTARIO PROVINCIAL STANDARD SPECIFICATION AND LANDSCAPE ONTARIO.
- CONTRACTOR TO ENSURE PROPER DEPTH OF EXCAVATIONS ACCOMMODATE HARD SURFACE AND LANDSCAPING AS SPECIFIED ON THESE DRAWINGS.
- CONTRACTOR IS RESPONSIBLE FOR ALL FEES ARISING FROM THE COMPLETION OF WORKS CONVEYED BY THESE DRAWINGS AND IN THE SPECIFICATION PACKAGE. FEES INCLUDE BUT ARE NOT LIMITED TO SECURITIES, PERMIT FEES, DEPOSITS, APPLICATION FEES, LETTERS OF CREDIT, OR ANY OTHER RELATED FUNDING REQUIREMENTS.
- CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO ALL UNDERGROUND SERVICES INCLUDING LIGHT STANDARD ELECTRICAL LINES.
- QUALIFIED REGISTERED LAND SURVEYOR (OLS), ACCEPTABLE TO OWNER. TO LOCATE, CONFIRM AND PROTECT CONTROL POINTS PRIOR TO STARTING SITE WORK. PRESERVE PERMANENT REFERENCE POINTS DURING CONSTRUCTION.
- ESTABLISH TWO PERMANENT BENCH MARKS ON SITE, REFERENCED TO ESTABLISHED BENCH MARKS BY SURVEY CONTROL POINTS. RECORD LOCATIONS, WITH HORIZONTAL AND VERTICAL DATA IN PROJECT RECORD DOCUMENTS.
- ESTABLISH LINES AND LEVELS, LOCATED AND LAY OUT, BY INSTRUMENTATION.
- THE CONTRACTOR SHALL RETAIN AN INDEPENDENT INSPECTION AND TESTING COMPANY TO ENSURE THAT ALL WORK IS DONE IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS. TESTING SHALL INCLUDE REINFORCING STEEL PLACEMENT, CONCRETE TESTS, SOIL BEARING AND COMPACTION TESTS AND STRUCTURAL STEEL.
- SUBSTITUTIONS FROM SPECIFIED PRODUCTS AND MATERIALS MUST BE APPROVED BY THE CONTRACT ADMINISTRATOR PRIOR TO THE ORDERING OF MATERIALS.
- THESE DESIGN DRAWINGS ARE PREPARED SOLELY FOR THE USE BY THE PARTY WITH WHOM THE DESIGN PROFESSIONAL HAS ENTERED INTO A CONTRACT WITH.

SITE PREPARATION NOTES:

- CONTRACTOR TO ENSURE POSITIVE DRAINAGE OF ALL AREAS WITHIN THE LIMIT OF THE CONTRACT.
- CONTRACTOR TO WORK WITHIN GUIDELINES FOR THE MUNICIPALITY'S NOISE BY-LAWS.
- ANY REFUSE, GARBAGE, OR OTHER DEBRIS ON SITE MUST BE REMOVED AND DISPOSED OF OFF SITE AT THE EXPENSE OF THE CONTRACTOR.
- AREAS TO BE SODDED SHALL BE BACKFILLED WITH NATIVE SOIL TO 150mm BELOW FINISHED GRADE TO ALLOW FOR TOPSOIL INSTALLATION.
- CONTRACTOR TO DETERMINE A SINGLE POINT OF CONSTRUCTION ACCESS AND RESTORE BOULEVARD TO EXISTING OR BETTER CONDITION AFTER THE COMPLETION OF CONSTRUCTION.
- ABSOLUTELY NO STORAGE OF EQUIPMENT OR MATERIALS OUTSIDE OF CONSTRUCTION FENCING.

TREE PROTECTION NOTES:

- TREE PROTECTION AND PRESERVATION METHODS MUST BE FOLLOWED ACCORDING TO THE CITY OF VAUGHAN'S TREE PROTECTION BY-LAW 052-2018.
- TREE PROTECTION SHALL BE INSTALLED AS OUTLINED IN THE ARBORIST REPORT PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION/ DEMOLITION ACTIVITIES.
- WHERE TREES LOCATED WITHIN THE PROJECT AREA THAT IT HAS BEEN DETERMINED THE FEASIBILITY FOR PRESERVATION IS GOOD, TREE PROTECTION BARRIERS ARE PROPOSED TO ESTABLISH A TREE PROTECTION ZONE (REFER TO CONSTRUCTION DRAWINGS WHICH WILL BE OUTLINED IN THE ARBORIST REPORT). ALL TREES LOCATED ON ADJACENT PROPERTIES SHALL BE PRESERVED.
- THE TREE PROTECTION ZONE SHALL BE ESTABLISHED BY THE INSTALLATION OF TREE PROTECTION FENCING. THE TREE PROTECTION FENCING SHALL FOLLOW MUNICIPAL GUIDELINES AND/OR REQUIREMENTS UNLESS STATED OTHERWISE WITHIN THE CONSTRUCTION DRAWINGS.
- TREE PROTECTION BARRIERS ARE TO BE ERECTED PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION OR GRADING ACTIVITIES ON THE SITE AND ARE TO REMAIN IN PLACE THROUGHOUT THE ENTIRE DURATION OF THE PROJECT UNTIL CONSTRUCTION IS COMPLETED AS PER BY-LAW 052-2018 (APPLICABLE TO PRIVATE AND PUBLIC TREES). THE APPLICANT SHALL NOTIFY THE VAUGHAN FORESTRY ONCE TREE PROTECTION BARRIERS HAVE BEEN INSTALLED, TO ALLOW VAUGHAN FORESTRY TO INSPECT AND APPROVE ACCORDING TO BY-LAW 052-2018 AND/ OR IN ACCORDANCE WITH THE CITY OF VAUGHAN'S TREE PROTECTION PROTOCOL (2018). THIS NEEDS TO OOCUR PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITIES TO CONFIRM THAT THE TREE PROTECTION BARRIERS ARE IN PLACE.
- ALL SUPPORTS AND BRACING USED TO SAFELY SECURE THE BARRIER SHOULD BE LOCATED OUTSIDE THE TREE PROTECTION ZONE. ALL SUPPORTS AND BRACING SHOULD MINIMIZE DAMAGE TO ROOTS.
- WHERE SOME FILL OR EXCAVATED MATERIAL MUST BE TEMPORARILY LOCATED NEAR THE TREE PROTECTION ZONE, A WOODEN BARRIER MUST BE USED TO ENSURE NO MATERIAL(S) ENTERS THE TREE PROTECTION ZONE.
- ALL TREES LOCATED WITHIN THE PROJECT AREA DESIGNATED FOR PRESERVATION, OR DENOTED EXISTING , AND ALL TREES LOCATED ON ADJACENT PROPERTIES SHALL BE PRESERVED. IN THE EVENT THAT ANY TREES DESIGNATED FOR PRESERVATION LOCATED WITHIN THE PROJECT AREA OR ON ADJACENT PROPERTIES ARE DAMAGED OR KILLED BY THE ACTIONS OF A CONTRACTOR OR THEIR AGENTS/SUB-CONTRACTORS, THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REPLACEMENT OF THE DESTROYED PLANT MATERIAL WITH MATERIAL OF EQUAL VALUE AND COMPARABLE SPECIES TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR AND/OR PROJECT ARBORIST.
- AREAS WITHIN THE DRIPLINE OF THE TREES DESIGNATED FOR PRESERVATION ARE NOT TO BE USED FOR ANY TYPE OF STORAGE (I.E. STORAGE OF DEBRIS, CONSTRUCTION MATERIAL, SURPLUS SOILS, AND CONSTRUCTION EQUIPMENT). NO TRENCHING OR TUNNELING FOR UNDERGROUND SERVICES SHALL BE LOCATED WITHIN THE TREE PROTECTION ZONE OR DRIPLINE OF TREES DESIGNATED FOR PRESERVATION WITHIN OR ADJACENT TO CONSTRUCTION ZONE.
- NO CONSTRUCTION ACTIVITY, SURFACE TREATMENT, EXCAVATION OR GRADE CHANGES SHALL OCCUR WITHIN TREE PROTECTION ZONE. IN THE EVENT THAT GRADE CHANGES MAY OCCUR THE CONSULTING ARBORIST MUST BE NOTIFIED SO THAT PRECAUTIONS TO PRESERVE THE TREE, SUCH DRY WELLING OR ROOT FEEDING CAN BE DETERMINED PRIOR TO THE PLACEMENT OF FILL OR EXCAVATION ACTIVITIES.
- TREES SHALL NOT HAVE ANY RIGGING CABLES OR HARDWARE OF ANY SORT ATTACHED OR WRAPPED AROUND THEM, NOR SHALL ANY CONTAMINANTS BE DUMPED WITHIN THE PROTECTIVE AREAS. FURTHERMORE, NO CONTAMINANTS SHALL BE DUMPED OR FLUSHED WHERE THEY MAY COME IN CONTACT WITH THE FEEDER ROOTS OF THE TREES.
- THE CONTRACTOR WILL TAKE EVERY PRECAUTION TO PREVENT DAMAGE TO TREES OR SHRUBS. THE CONTRACTOR WILL TAKE EVERY PRECAUTION TO PROTECT PLANT AND ROOT SYSTEMS FROM DAMAGE, COMPACTION AND CONTAMINATION RESULTING FROM THE CONSTRUCTION TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR AND/OR CONSULTING ARBORIST.
- TREES THAT REQUIRE PRUNING PRIOR TO CONSTRUCTION TO PERMIT CONSTRUCTION ACTIVITIES, HAVE BEEN IDENTIFIED IN THE CONSTRUCTION DRAWINGS. IN THE EVENT THAT IT IS NECESSARY TO REMOVE ADDITIONAL LIMBS OR PORTIONS OF TREES AFTER CONSTRUCTION HAS COMMENCED, TO ACCOMMODATE CONSTRUCTION, THE CONTRACT ADMINISTRATOR AND/OR CONSULTING ARBORIST IS TO BE INFORMED AND THE REMOVAL IS TO BE EXECUTED CAREFULLY AND IN FULL ACCORDANCE WITH ARBORICULTURAL TECHNIQUES BY A CERTIFIED ARBORIST.
- DURING EXCAVATION OPERATIONS IN WHICH ROOTS ARE AFFECTED, THE CONTRACTOR IS TO PRUNE ALL EXPOSED ROOTS CLEANLY. PRUNE ENDS TO POINT OBLIQUELY DOWNWARDS THE EXPOSED ROOTS SHOULD NOT BE ALLOWED TO DRY OUT, AND THE CONTRACTOR SHALL DISCUSS WATERING THE ROOTS WITH THE OWNER AND CONTRACT ADMINISTRATOR SO THAT THE ROOTS SHALL MAINTAIN OPTIMUM SOIL MOISTURE DURING CONSTRUCTION AND BACKFILLING OPERATIONS. BACKFILLING MUST BE WITH CLEAN UNCONTAMINATED TOPSOIL FROM AN APPROVED SOURCE.
- THE CONTRACTOR MUST REPORT IMMEDIATELY ANY DAMAGE TO TREES SUCH AS BROKEN LIMBS, DAMAGE TO ROOTS OR WOUNDS TO THE MAIN TURN OR STEM SYSTEMS SO THAT THE DAMAGE CAN BE ADDRESSED IMMEDIATELY.
- ANY ROOTS OR BRANCHES WHICH EXTEND BEYOND THE TREE PROTECTION ZONE(S) INDICATED ON THIS PLAN WHICH REQUIRE PRUNING, MUST BE PRUNED BY A CERTIFIED ARBORIST OR OTHER TREE PROFESSIONAL AS APPROVED BY THE GOVERNING MUNICIPALITY. ALL PRUNING OF TREE ROOTS AND BRANCHES MUST BE IN ACCORDANCE WITH GOOD ARBORICULTURAL STANDARDS.
- ALL TREE REMOVALS MUST BE COMPLETED OUTSIDE OF NESTING SEASON WHICH WILL EXTEND FROM APRIL 1ST TO AUGUST 31ST.

YY/MM/DD5/31/2023 4:06 PM
C:\Users\caw1070378\WSP O365\211-07301-00 - CAD (1)\2023-05-29 BSG Trail 30% Drawings.dwg

SEDIMENTATION CONTROL:

- ALL SILTATION CONTROL FENCING SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF EXCAVATION OR GRADING.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL SILTATION CONTROL DEVICES IN GOOD WORKING ORDER AT ALL TIMES. CONTRACTOR SHALL INSPECT SUCH DEVICES DAILY AND AFTER EACH RAINFALL EVENT.
- FOLLOWING COMPLETION OF CONSTRUCTION, COLLECTED SILT SHALL BE DISPOSED OFF-SITE, SILT FENCE SHALL BE REMOVED AND THE AFFECTED AREAS SHALL BE RESTORED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DRAWINGS.
- ALL ON-SITE STORAGE OF GRANULAR MATERIALS WILL BE ISOLATED AND SECURED WITH SILT FENCING
- NO IN-WATER WORKS ARE PERMITTED.
- NO VEHICLES OR EQUIPMENT WILL BE REFUELLED WITHIN 30 METRES OF THE WATERCOURSE.
- NO MATERIAL WILL BE STOCKPILED ON THE WATERCOURSE BANKS.
- THE EROSION AND SEDIMENT CONTROL STRATEGIES OUTLINED ON THE PLANS ARE NOT STATIC AND MAY NEED TO BE UPGRADED/AMENDED AS SITE CONDITIONS CHANGE TO PREVENT SEDIMENT RELEASES TO THE NATURAL ENVIRONMENT. THE CONTRACT ADMINISTRATOR ENFORCEMENT OFFICER SHOULD BE IMMEDIATELY CONTACTED SHOULD THE EROSION AND SEDIMENT CONTROL PLANS CHANGE FROM THE APPROVED PLANS. FAILED EROSION AND SEDIMENTATION CONTROL MEASURES SHOULD BE REPAIRED IMMEDIATELY.

UNDERGROUND SERVICING AND UTILITIES:

- ALL UNDERGROUND SERVICE INFORMATION IS DERIVED FROM RECORDS AND SERVICES HAVE NOT BEEN LOCATED BY THE UTILITY COMPANIES OR BY DAYLIGHTING. WSP GEOMATICS AND WSP CANADA GROUP LIMITED ASSUME NO RESPONSIBILITY AS TO THE ACCURACY, CORRECTNESS AND COMPLETENESS OF THE UNDERGROUND SERVICE INFORMATION SHOWN ON THE FACE OF THIS PLAN. UTILITIES MUST BE LOCATED BY THE UTILITY COMPANIES BEFORE CONSTRUCTION BEGINS. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES WHICH OCCUR TO EXISTING SERVICES DURING CONSTRUCTION.
- CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES ON THE SITE.
- CONTRACTOR MUST CHECK & VERIFY ALL DIMENSIONS AND CONDITIONS ON THE JOB, REPORTING ALL DISCREPANCIES TO THE CONTRACT ADMINISTRATOR BEFORE PROCEEDING WITH THE WORK.
- CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE CAUSED TO EXISTING SERVICES WHEN EXCAVATING.

GRADING NOTES:

- CONTRACTOR TO ENSURE POSITIVE DRAINAGE OF ALL AREAS WITHIN THE LIMIT OF THE CONTRACT.
- ENSURE TRANSITION OF EXISTING AND NEW GRADE ELEVATIONS IS SMOOTH.
- MINIMUM PERMITTED HARDSCAPE SLOPE IS 2%; MAXIMUM PERMITTED IS 5%.
- MINIMUM GROUND SLOPE TO BE 2%, MAXIMUM PERMITTED 33%.
- PROPOSED ELEVATIONS ALONG LIMIT OF CONTRACT MUST MATCH EXISTING ELEVATIONS.
- NOTIFY CONTRACT ADMINISTRATOR IMMEDIATELY, IN WRITING, IF ANY DISCREPANCIES WITH STATED REQUIREMENTS ARE DISCOVERED.

LAYOUT NOTES:

- LAYOUT TO BE STAKED BY CONTRACTOR AND APPROVED BY THE CONTRACT ADMINISTRATOR.
- ALL PLANT MATERIAL TO BE INSPECTED BY CONTRACT ADMINISTRATOR PRIOR TO INSTALLATION. ALL PLANT MATERIAL MAY BE REJECTED AT ANY TIME DURING CONSTRUCTION AND WARRANTY PERIOD.
- CONTRACTOR TO REVIEW DRAWINGS AND REPORT ANY ERRORS, OMISSIONS, OR DISCREPANCIES TO THE CONTRACT ADMINISTRATOR IN WRITING.
- PROPERTY LINES TO BE VERIFIED PRIOR TO INITIATING CONSTRUCTION.
- SITE FURNISHINGS TO BE AS SPECIFIED UNLESS SUBSTITUTION IS APPROVED IN WRITING BY CONTRACT ADMINISTRATOR.
- NOTIFY CONTRACT ADMINISTRATOR IMMEDIATELY, IN WRITING, IF ANY DISCREPANCIES WITH STATED REQUIREMENTS ARE DISCOVERED.

TOPSOIL PLANTING BED PREPARATION:

- MIX TOPSOIL AS RECOMMENDED BY SOIL TEST RESULTS AND RECOMMENDATIONS OF SOIL TESTING AGENCY.
- TOPSOIL SHALL NOT BE USED TO CONSTRUCT PERMANENT BERMS.
- ALL TOPSOIL SHOULD BE FREE OF SUBSOILS, CLAY, STONES, ROOTS, EXCESS WATER, FROST AND OTHER EXTRANEOUS MATTER.
- PREPARE PLANTING BEDS PRIOR TO ARRIVAL OF PLANT MATERIAL ON SITE.

EXCAVATE PER PLANTING DETAILS. THE FOREGOING PROPORTIONS ARE SUBJECT TO CHANGE UPON RECEIPT OF TOPSOIL ANALYSIS.
PREPARE PLANTING SOIL BY EVENLY MIXING:

- 5 PARTS NATIVE SOIL
- 1 PART SHARP SAND
- 2 PARTS $\frac{1}{4}$" SCREENED COMPOST
- 500g OF BONE MEAL PER CUBIC METRE.
- MIX THOROUGHLY

SODDING NOTES:

- ALL SOD SHALL BE GUARANTEED FOR 3 MONTHS FROM DATE OF SUBSTANTIAL PERFORMANCE.
- SODDING SHALL CONFORM TO LANDSCAPE ONTARIO'S 'GENERAL LANDSCAPE SPECIFICATIONS'.
- TOPSOIL SHALL BE EVENLY SPREAD OVER SUB-GRADE AND LOOSELY COMPACTED TO 150mm MINIMUM DEPTH.
- ALL STONES AND DEBRIS OVER 25mm DIA. SHALL BE REMOVED.
- TOPSOIL SHALL BE SUPPLEMENTED WITH A 10-6-4 FERTILIZER AND 20% SUPERPHOSPHATE APPLIED AT A RATE OF 5 KILOS PER 100 SQUARE METRES EACH, PRIOR TO PLACEMENT OF SOD.
- SOD SHALL BE PLACED WITH STAGGERED BUTT JOINTS, WATERED THOROUGHLY, AND ROLLED WHEN DRY.
- LAY SOD SECTIONS PERPENDICULAR ON SLOPES GREATER THAN 3:1 AND SECURE WITH WOODEN PEGS. WOODEN PEGS TO BE 17 X 17 X 300mm. PLACE PEGS 3 PER SQUARE METRE, 100mm BELOW TOP EDGE TO PREVENT SHIFTING OF SOD AND DRIVE PEGS FLUSH WITH TOP OF SOD SOIL. PROVIDE A MINIMUM OF 2 STAKES PER ROLL OF SOD.
- MAINTAIN SODDED AREA FROM THE TIME OF INSTALLATION UNTIL THIRTY (30) CALENDAR DAYS AFTER ALL SODDED AREAS HAVE BEEN INSPECTED BY THE CONTRACT ADMINISTRATOR AND A CERTIFICATE OF COMPLETION IS ISSUED. MINIMUM OF TWO CUTS.
- MAINTENANCE SHALL INCLUDE ALL NECESSARY MEASURES TO ESTABLISH AND MAINTAIN GRASS IN A HEALTHY, VIGOROUS GROWING CONDITION.
- MAINTENANCE SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING WORK:
  a. MOWING AT REGULAR INTERVALS TO MAINTAIN A MAXIMUM HEIGHT OF 60MM. DO NOT CUT MORE THAN 1/3 OF THE GRASS HEIGHT AT ANY ONE MOWING. TRIM AND CLIP EDGES. REMOVE CLIPPINGS AFTER MOWING AND TRIMMING.
  b. WATERING WHEN REQUIRED IN SUFFICIENT QUANTITIES AND AT A FREQUENCY TO PREVENT SOD FROM DRYING OUT AND TO MAINTAIN SOIL UNDER SOD CONTINUOUSLY MOIST TO A DEPTH OF 75 TO 100MM.
  c. FERTILIZE SODDED AREAS ONE MONTH AFTER SODDING WITH 2:1:1 RATIO FERTILIZER. SPREAD EVENLY AT A RATE AS PER MANUFACTURER'S INSTRUCTIONS AND WATER IN WELL, WITH A MINIMUM OF 50CM INFILTRATION AS PREVIOUSLY MENTIONED.

TERRASEEDING:

TERRASEEDING SHALL BE APPLIED TO ALL AREAS DISTURBED BY THE CONSTRUCTION OPERATION THAT WILL NOT BE COVERED WITH ASPHALT OR MULCH/OTHER PATHWAY SURFACING.
AT TIME OF TERRASEEDING, ALL SURFACE AREAS MUST BE UNIFORMLY GRADED AND SHALL BE FREE OF EROSION, STONES GREATER THAN 50mm IN DIAMETER, WEEDS AND ANY OTHER UNWANTED VEGETATION. EXISTING SURFACE SOIL SHALL BE UNIFORMLY CULTIVATED TO A MINIMUM DEPTH 50mm TO PROVIDE A LOOSE AND FRIABLE SEEDBED TO ACCELERATE GERMINATION OF SEED.

THE BLOWER TRUCK SHALL BE EQUIPPED WITH A COMPUTER-CALIBRATED SEED INJECTION SYSTEM AND SHALL BE CAPABLE OF UNIFORMLY APPLYING COMPOSTED TOPSOIL AND SEED AT A RATE GREATER THAN 0.25 m3 PER MINUTE.
COMPOSTED TOPSOIL SHALL BE PRE-MIXED AND CONSIST OF A MINIMUM 60% COMPOST MATERIAL.

NOTE:

- SEEDING SHALL BE PLACED ON 150mm OF TOPSOIL.
- ALL SEED TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS FOR MULCH, TACKIFIER, AND SPECIFIC SEEDING RATE AND TIMING OF APPLICATION.
- CONTRACTOR TO VERIFY SEEDING RATES RELATIVE TO SOIL TYPE PRIOR TO INSTALLATION OF SEED.
- ALL SEEDING ON SLOPES GREATER THAN 3 (HORIZONTAL) : 1 (VERTICAL) SHALL BE PROTECTED WITH 'SOIL GUARD FIBRE MATRIX' TO MANUFACTURER'S SPECIFICATIONS.

'BOBOLINX & MEADOWLARK SEED MIX'
(ST.WILLIAMS NURSERY)

30% Riverbank Rye (Elymus riparius)
30% Virginia Rye (Elymus virginicus)
10% Big Blue Stem (Andropogon gerrardii)
10% Canada Rye (Elymus canadensis)
5% Fox Sedge (Carex vulpinoida)
3% Switch Grass (Panicum virgatum)
2% Awl-Fruited Sedge (Carex stipata)
2% Fringed Sedge (Carex crinite)
1% Showy Trefoil (Desmodium canadense)
1% Brown Eyed Susan (Rudbekia hirta)
1% Green Headed Coneflower (Rudbeckia laciniata)
1% Bergamot (Monarda fistulosa)
1% Common Milkweed (Asclepias syriaca)
1% Blue Vervain (Verbena hastate)
1% Virginia Mountain Mint (Pycnanthemum virginianum)
0.5% Woolgrass (Scirpus cyperinus)
0.5% Bluejoint (Calamagrostis canadensis)

SEED AT RATE OF **"XXX"**KG/HA. SIMULTANEOUSLY SOW COVER CROP OF ANNUAL RYE GRASS FOR EROSION CONTROL AT A RATE OF 22KG/HA. ALL SEED MIXTURE MANUFACTURED BY 'ST. WILLIAMS NURSERY' OR APPROVED EQUAL.

ALL PACKING SLIPS MUST BE PROVIDED TO CLIENT PRIOR TO SEED PLACEMENT.

'BEE FORAGE MEADOW SEED MIX'
(ST.WILLIAMS NURSERY)

30% Virginia Rye (Elymus virginicus)
20% Indian Grass (Sorghastrum nutans)
10% Slender Wheat Grass (Elymus trachycaulis)
10% Canada Rye (Elymus canadensis)
10% Little Blue Stem (Shizachyrium scoparium)
3% Hairy Beard Tongue (Penstemon hirsutus)
2% Green Headed Coneflower (Rudbekia laciniata)
2% Virginia Mountain Mint (Pycnanthemum virginianum)
2% Brown Eyed Susan (Rudbekia hirta)
2% Spiked Blazing Star (Liatris spicata)
2% Grey Goldenrod (Solidago nemoralis)
2% Evening Primrose (Oenothera biennis)
1% Showy Trefoil (Desmodium canadense)
1% Prairie Cinquefoil (Potentilla arguta)
1% Wild Bergamot (Monarda fistulosa)
1% Bushclover (Lespedeza capitate)
1% Upland White Aster (Solidago ptarmicoides)

SEED AT RATE OF **"XXX"**KG/HA. SIMULTANEOUSLY SOW COVER CROP OF ANNUAL RYE GRASS FOR EROSION CONTROL AT A RATE OF 22KG/HA. ALL SEED MIXTURE MANUFACTURED BY 'ST.WILLIAMS NURSERY' OR APPROVED EQUAL.

ALL PACKING SLIPS MUST BE PROVIDED TO CLIENT PRIOR TO SEED PLACEMENT.

PLANT MATERIAL ORDER, DELIVERY AND INSPECTION:

- CONTRACTOR TO CHECK ALL QUANTITIES AND REPORT ANY DISCREPANCIES TO THE CONTRACT ADMINISTRATOR IN WRITING. THE QUANTITIES INDICATED ON THE PLAN SUPERCEDE THE TOTALS OF THE PLANT LIST.
- OBTAIN CONTRACT ADMINISTRATOR'S APPROVAL ON ALL PLANT MATERIAL AT SOURCE OR UPON DELIVERY, PRIOR TO COMMENCEMENT OF PLANTING WORK.
- APPROVAL OF PLANT MATERIAL PRIOR TO PLANTING SHALL NOT IMPAIR THE RIGHT OF THE CONTRACT ADMINISTRATOR TO REJECT PLANTS AFTER PLANTING, WHICH HAVE BEEN DAMAGED, OR WHICH IN ANY WAY DO NOT CONFORM TO THE SPECIFICATIONS.
- SUBSTITUTIONS OF SIZE, OR WITH OTHER PLANT MATERIAL WILL ONLY BE ALLOWED WITH THE WRITTEN APPROVAL OF THE CONTRACT ADMINISTRATOR.
- ALL MATERIAL MUST CONFORM TO THE SIZES SHOWN ON THE PLANT LIST, EXCEPT WHERE LARGER PLANT MATERIAL IS USED WHEN APPROVED BY THE CONTRACT ADMINISTRATOR. USE OF LARGER PLANTS WILL NOT INCREASE THE CONTRACT PRICE. UNDERSIZED MATERIAL WILL BE REJECTED.
- ALL SHRUBS AND TREES SHALL CONFORM TO THE PRESENT STANDARDS OF THE CANADIAN NURSERY TRADES ASSOCIATION FOR SIZE AND SPECIES.
- PLANTS ARE TO BE NURSERY GROWN UNDER PROPER CULTURAL CONDITIONS, IN PARTICULAR WITH RESPECT TO SPACING, PEST AND DISEASE CONTROL, AND BRANCH AND ROOT PRUNING.
- TREES ARE TO HAVE STRAIGHT STURDY TRUNKS.
- TREES SHALL BE WELL BRANCHED AND BALANCED WITH A STRONG CENTRAL LEADER.
- DECIDUOUS SHADE TREES SHALL BE FREE OF BRANCHES FROM GROUND LEVEL TO A HEIGHT OF 1.8M ABOVE THE GROUND.
- TREES WITH OPEN SCARS ARE NOT ACCEPTABLE.
- KEEP ALL ROOTS AND ROOTBALLS MOIST PRIOR TO PLANTING.

PLANT MATERIAL GUARANTEE AND FINAL INSPECTION:

- AT THE COMPLETION OF PLANTING OPERATIONS, REMOVE ALL SURPLUS MATERIAL FROM THE SITE AT NO EXTRA CHARGE TO THE PROJECT.
- MAKE GOOD ALL DAMAGE RESULTING FROM PLANTING OPERATIONS AT NO EXTRA CHARGE TO THE PROJECT.
- PLANT MATERIAL SHALL BE GUARANTEED FOR A MINIMUM OF TWO YEARS FROM THE ISSUE DATE OF THE CERTIFICATE OF COMPLETION.
- ALL PLANTS SHALL BE INSPECTED TWICE, ONCE HALFWAY THROUGH THE GUARANTEE PERIOD, AND AGAIN AT THE END OF THE GUARANTEE PERIOD. PLANTS WHICH, AT THAT TIME, ARE NOT IN HEALTHY VIGOROUS GROWING CONDITION, TO THE CONSULTANT'S APPROVAL, SHALL BE REPLACED AT NO EXTRA CHARGE TO THE PROJECT.
- CONTRACTOR TO CONTACT CONTRACT ADMINISTRATOR AND/OR APPROVAL AGENCY/MUNICIPALITY TO REVIEW PROJECT FOR GUARANTEE INSPECTIONS.

CONCRETE NOTES:

- ALL CONCRETE WORK SHALL CONFORM TO CSA STANDARDS A23.1, A23.2, & A23.3.
- CONFORM TO THE REQUIREMENTS OF CAN/CSA G30.18 SERIES OF REINFORCING STEEL. REINFORCING BARS SHALL BE DEFORMED HI-BOND HARD GRADE WITH MINIMUM YIELD STRENGTH OF FY = 400MPa. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
- CONFORM TO THE CONCRETE COVER REQUIREMENTS OF CSA A23.1 AND THE FOLLOWING, UNLESS OTHERWISE NOTED:
  a. CONCRETE CAST AGAINST EARTH: 100mm (4")
  b. PIERS AND WALL: 100mm (4")
  c. EXPOSED TO DE-ICING CHEMICALS: 100mm (4")
- WELDING OF REINFORCING STEEL SHALL NOT BE PERMITTED UNLESS SPECIFICALLY NOTED ON THE DRAWINGS.
- ALL REINFORCING STEEL FABRICATION AND PLACEMENT DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION.
- CONCRETE PROPERTIES:
  a. EXPOSED CONCRETE TO BE CLASS C-2 CONCRETE (28 DAY COMPRESSIVE STRENGTH OF 32MPa) WITH AIR ENTRAINMENT.
  b. FOUNDATION WALLS AND CONCRETE EXPOSED TO FREEZE THAW SHALL BE CLASS F-2, HAVE A 28 DAY COMPRESSIVE STRENGTH OF 25 MPa, 0.55 WATER-CEMENT RATIO WITH AIR ENTRAINMENT.
  c. CONCRETE MIX DESIGN SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO USE AT JOB SITE.
- ALL CONCRETE FORMS TO BE WET THOROUGHLY BEFORE POURING CONCRETE.
- DO NOT ADD WATER TO CONCRETE UNLESS WRITTEN APPROVAL GIVEN BY THE ENGINEER. IF HIGHER SLUMP CONCRETE IS DESIRED, CONCRETE SUPPLIER SHALL DESIGN AND SUPPLY ACCORDINGLY.
- SLUMP OF CONCRETE TO BE 75mm +/- 25mm (3" +/- 1") OR AS OTHERWISE SPECIFIED. CONCRETE WITH 110mm (4.5") SLUMP OR MORE IS TO BE REJECTED.
- WATER SURING OF CONCRETE IS RECOMMENDED. CURE ALL CONCRETE IN ACCORDANCE WITH CSA A23.1 SECTION 7.4
- ALL OIL, GREASE, MUD AND DEBRIS SHALL BE ENTIRELY REMOVED FROM THE REINFORCING STEEL AND ANCHOR BOLTS PRIOR TO THE PLACEMENT OF THE CONCRETE. REBAR REBAR SHALL BE STORED ON-SITE IN A MANNER TO BE KEPT CLEAN AND FREE FROM DELETERIOUS MATERIALS.
- REINFORCING BARS, DOWELS AND ANCHOR BOLTS SHALL BE SECURELY TIED IN PLACE SO AS TO MAINTAIN THEIR EXACT POSITION BEFORE AND DURING PLACEMENT OF THE CONCRETE. BAR SUPPORTS SHALL ONLY BE MADE OF PRECAST CONCRETE BLOCKS, PLASTIC OR WIRE.
- ALL CONCRETE EXCEPT SLABS ON GRADE 125mm THICK OR LESS SHALL BE MECHANICALLY VIBRATED SO AS TO COMPLETELY FILL THE FORM WITHOUT CAUSING UNDUE SEGREGATION. ANY DEFECTS IN THE HARDENED CONCRETE SHALL BE SATISFACTORY REPAIRED OR SHALL BE REPLACED.

KEY MAP

DIGITAL DATA DISCLAIMER

BENCHMARK INFORMATION

ELEVATIONS ARE IN METRES AND ARE DERIVED FROM
BENCHMARK No. XXXXXXXXXX,
ELEVATION = XXX.XX

SURVEY - DRAWING REF #: XXX-XXX-XX-XXX

BY: DATE:

NO	DATE	REVISION/ISSUED	BY	APPD

Landscape Architecture
582 Lancaster Street West
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CLIENT:
CITY OF VAUGHAN
2141 Major MacKenzie Dr W, Maple, ON L6A 1T1

PROJECT TITLE:
BARTLEY SMITH GREENWAY TRAIL
TRAIL ALIGNMENT
SP #

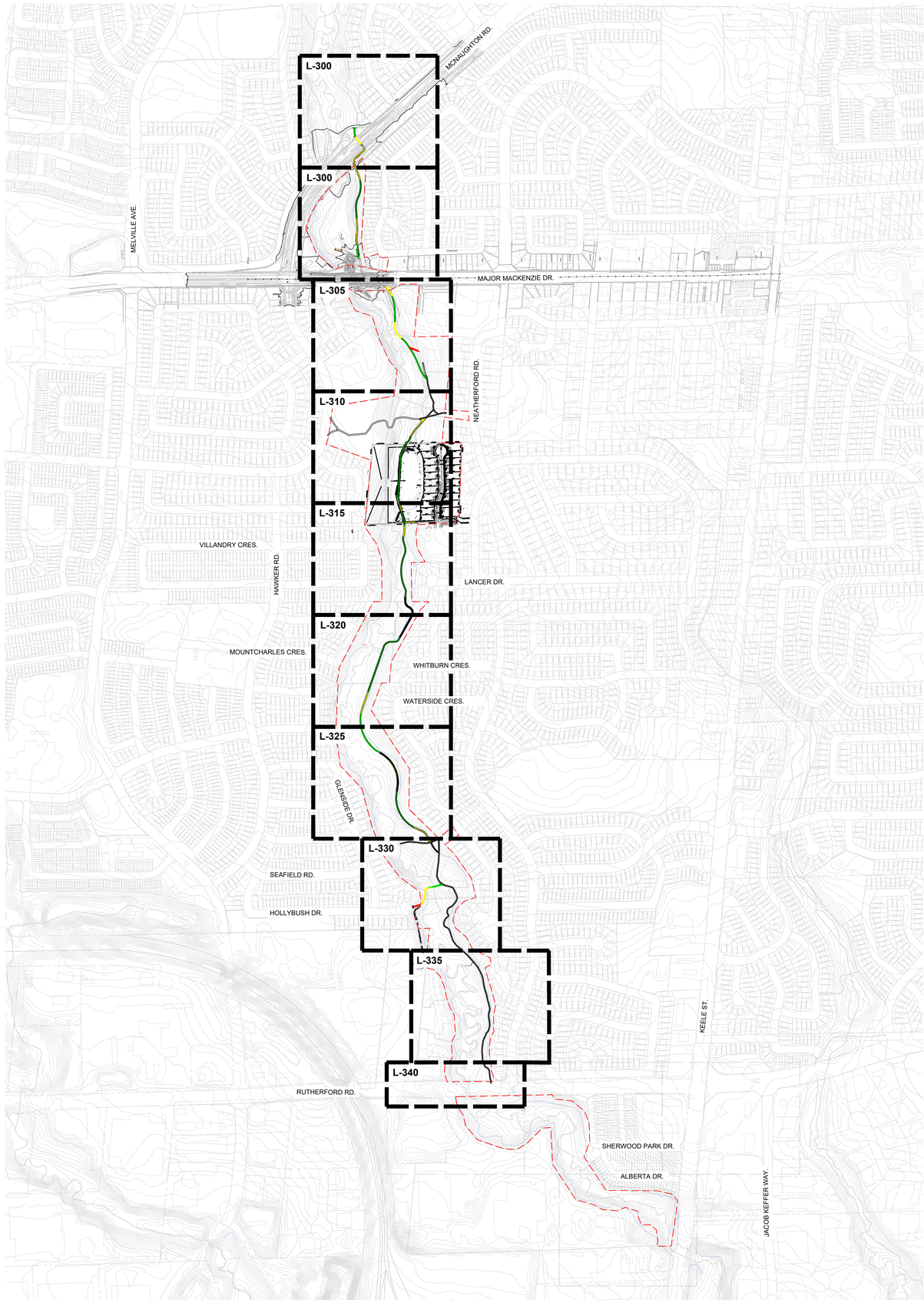
SITE ADDRESS:
MCNAUGHTON RD. & MAJOR MACKENZIE DR.

DRAWING TITLE:
TRAIL NOTES

STAMP: NOT FOR CONSTRUCTION

STAMP

DESIGNED WL	DRAWN WL	CHECKED BV
SCALE 1:xxx	DATE DEC 10 2021	
PROJECT NUMBER 211-07301-00	DWG. NUMBER L-100	



KEY MAP

LEGEND

TRCA REGULATORY FLOODLINE

SITE BOUNDARY

DRAWING INFORMATION

ORIGINAL DESIGN AND/OR DRAWING BASE COMPLETED BY:
CITY OF VAUGHAN.
YEAR:
ADDRESS: 2141 MAJOR MACKENZIE DR.

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DRAWING TITLE:
TRAIL LAYOUT PLAN

STAMP
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STAMP

DESIGNED	DRAWN	CHECKED
WL	WL	BV

SCALE 1:6000
DATE DEC 10 2021

PROJECT NUMBER
211-07301-00

DWG. NUMBER
L-KEY

MATCH LINE | REFER TO 1/L-300

MATCH LINE | REFER TO 1/L-300

MCNAUGHTON RD.

MCNAUGHTON RD.

CULVERT 3 L-500
SUPPLY AND INSTALL CULVERT. TO BE EVALUATED DURING DETAILED DESIGN. CULVERT MAY BE NECESSARY TO ACCOMMODATE DRAINAGE.

PROPOSED FUTURE CULVERT CROSSING

EXISTING CONCRETE PAVED DITCH

EXISTING EDGE OF PAVEMENT

PROPOSED CROSSING - PXO LEVEL B OR C TO BE CONFIRMED AT DETAILED DESIGN (REFER TO MTO BOOK 15)

EXISTING LIGHT STANDARD

3 L-504 **WASTE RECEPTACLE**
SUPPLY AND INSTALL TRIPLE UNIT SYSTEM FROM LANDSCAPEFROMS. STYLE AND PRODUCT TBD IN DETAILED DESIGN.

2 L-500 **TYPICAL TRAIL ENTRANCE**
SUPPLY AND INSTALL P-GATE, TRAIL ENTRANCE SIGNAGE, AND PAVEMENT MARKING

4 L-503 **MAJOR WAYFIDNING SIGNAGE**
SUPPLY AND SUPPLY AND INSTALL MAJOR WAYFINDING SIGNAGE

2 L-504 **BENCH**
SUPPLY AND INSTALL NEOLIVIANO BY LANDSCAPE FORMS OR APPROVED EQUIVALENT.

4 L-504 **ARMOURSTONE RETAINING WALL**
SUPPLY AND INSTALL 15.5m OF RETAINING WALL

EXISTING DITCH

5 L-502 **MEDIUM BUFFER PLANTING** SUPPLY AND INSTALL 58m2 OF SHRUBS

6 L-502 **ROBUST BUFFER PLANTING**
SUPPLY AND INSTALL 2 DECIDUOUS TREES

EXISTING LIGHT STANDARD

CULVERT 3 L-500
SUPPLY AND INSTALL CULVERT. TO BE EVALUATED DURING DETAILED DESIGN. CULVERT MAY BE NECESSARY TO ACCOMMODATE DRAINAGE.

11.95 R4.50 18.45 R28.00 18.12 R274.60 22.16 17.02 R18.00

MATCH LINE | REFER TO 2/L-300

MATCH LINE | REFER TO 2/L-300

1 L-300 BARTLEY SMITH GREENWAY 30% DESIGN

Scale: NTS

0 5 10 20 30 40
SCALE 1:500 (m)

MATCH LINE | REFER TO 1/L-300

MATCH LINE | REFER TO 1/L-300

23.28 27.92 8.20 R73.00 4.03 R60.00 16.36 48.15 R10.00 29.62 R10.00 10.03 R2.55 1.02 R4.50

2 L-504 **SEATING NODE**
SUPPLY AND INSTALL BENCH ON CONCRETE PAD

5 L-502 **MEDIUM BUFFER PLANTING** SUPPLY AND INSTALL 1,352m2 OF SHRUBS

VEGETATION REMOVAL MAY BE REQUIRED. TO BE DETERMINED IN DETAILED DESIGN THROUGH ARBORIST REPORT.

2 L-505 **SEATING NODE**
SUPPLY AND INSTALL 3 SEAT STONES AT EDGE OF TRAIL

2 L-301

VEGETATION REMOVAL MAY BE REQUIRED. TO BE DETERMINED IN DETAILED DESIGN THROUGH ARBORIST REPORT.

2 L-505 **SEATING NODE**
SUPPLY AND INSTALL 3 SEAT STONES AT EDGE OF TRAIL

6 L-502 2 L-502 **ROBUST BUFFER PLANTING**
SUPPLY AND INSTALL 12 DECIDUOUS TREES

6 L-502 **ROBUST BUFFER PLANTING**
SUPPLY AND INSTALL 15 CONIFEROUS TREES

3 L-501 **ASPHALT TRAIL**
SUPPLY AND INSTALL ASPHALT TRAIL

3 L-500 **CULVERT**
TO BE EVALUATED DURING DETAILED DESIGN. CULVERT MAY BE NECESSARY TO ACCOMMODATE DRAINAGE UNDER RETAINING WALL.

1 L-311

4 L-504 **ARMOURSTONE RETAINING WALL**
SUPPLY AND INSTALL 27m OF RETAINING WALL. IF THE HEIGHT OF THE ELEVATION IS 40-80cm FROM EDGE OF TRAIL TO LOW POINT, THIS CAN BE MITIGATED WITH GRADING. TBD IN DETAILED DESIGN IF RAILING IS NEEDED. REDI-ROCK OR APPROVED ALTERNATE MODULAR CONCRETE WALL IN LIEU OF ARMOURSTONE COULD BE EXPLORED IN DETAILED DESIGN IF RAILING IS NEEDED.

3 L-500 **CULVERT**
SUPPLY AND INSTALL CULVERT FOR OVERLAND FLOW FROM KILLIAN-LAMAR PARKETTE

VEGETATION REMOVAL MAY BE REQUIRED. TO BE DETERMINED IN DETAILED DESIGN THROUGH ARBORIST REPORT.

4 L-503 **MAJOR WAYFINDING SIGNAGE**
SUPPLY AND INSTALL MAJOR WAYFINDING SIGNAGE.

INTERPRETIVE SIGNAGE
CONSIDER LOCATION FOR INTERPRETIVE SIGNAGE. CONTENT CAN INCLUDE: INDIGENOUS & LOCAL HISTORIES, OR NATURAL HERITAGE FEATURES

2 L-504 **SEATING NODE**
SUPPLY AND INSTALL BENCH ON CONCRETE PAD

IMPROVEMENTS TO KILLIAN-LAMAR PARKETTE DESIGN UNDERWAY. NEW PLAYGROUND AND IMPROVEMENT TO TRAILS. IDENTIFY OVERLAND FLOW/ DRAINAGE TO BE EXAMINED AT THIS LOCATION. COORDINATE WITH PARKS DELIVERY AT DETAILED DESIGN.

GRAVEL POND ACCESS ROAD

PROVINCIALLY SIGNIFICANT WETLAND

SEATING NODE
TO BE RELOCATED AND RE-EVALUATED DURING DETAILED DESIGN. DUE TO MAINTENANCE ACCESS AND OVERLAND FLOW FROM KILLIAN-LAMAR PARKETTE

INVASIVE SPECIES WERE OBSERVED IN THIS AREA (PHRAGMITES) OPPORTUNITIES FOR REMOVAL AND RESTORATION SHOULD BE REVIEWED DURING NEXT PHASE DETAILED DESIGN

MATHEWSON ST.

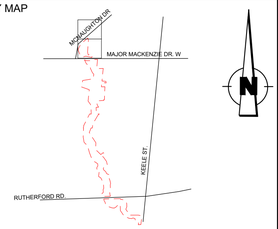
MATCH LINE | REFER TO L-305

MATCH LINE | REFER TO L-305

2 L-300 BARTLEY SMITH GREENWAY 30% DESIGN

Scale: NTS

KEY MAP



LEGEND KEY

- SITE BOUNDARY
- EXISTING TRAIL - FACILITY (TO REMAIN)
- EXISTING TRAIL - (UPGRADE TO 3m ASPHALT)
- DON RIVER WEST BRANCH
- TRCA 100 YEAR FLOODLINE
- PROPOSED TRAIL 3m ASPHALT WITH SLOPE (1-3% INCLINE)
- PROPOSED TRAIL 3m ASPHALT WITH SLOPE (3-5% INCLINE)
- PROPOSED TRAIL 3m ASPHALT WITH SLOPE (5-8% INCLINE)
- PROPOSED TRAIL 3m MULCH
- EXISTING STORM SERVICE LINE
- EXISTING SANITARY
- EXISTING WATERMAIN

NOTE:

UNDERGROUND UTILITIES AND PLANTING LAYOUT TO BE DETERMINED BASED OFF THE TOTAL COMPENSATION DENOTED BY THE ARBORIST REPORT. THE LOCATION OF PLANTINGS CAN BE ADJUSTED IN THE DETAILED DESIGN.

AS PER TRCA'S STANDARD NOTES FOR EROSION AND SEDIMENT CONTROL 'ALL ACCESS TO THE WORK SITE SHALL BE FROM EITHER SIDE OF THE WATERCOURSE. NO EQUIPMENT OR VEHICLES ARE PERMITTED TO CROSS THROUGH THE WATERCOURSE UNLESS APPROVED BY TRCA.

DRAWING INFORMATION

ORIGINAL DESIGN AND/OR DRAWING BASE COMPLETED BY:
CITY OF VAUGHAN.
YEAR:
ADDRESS: 2141 MAJOR MACKENZIE DR.

NO	DATE	REVISION/ISSUED	BY	APPD

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2141 Major MacKenzie Dr W, Maple, ON L6A 1T1

PROJECT TITLE:
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TRAIL ALIGNMENT
SP #

SITE ADDRESS:
MCNAUGHTON RD. & MAJOR MACKENZIE DR.

DRAWING TITLE:
TRAIL LAYOUT PLAN

STAMP: NOT FOR CONSTRUCTION

STAMP

DESIGNED	DRAWN	CHECKED
WL	WL	BV

SCALE 1:500 DATE DEC 10 2021

PROJECT NUMBER 211-07301-00

DWG. NUMBER L-300

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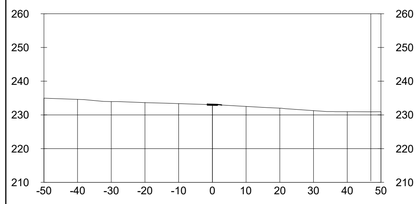

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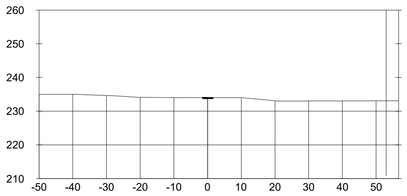

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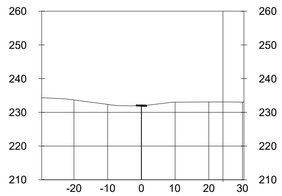

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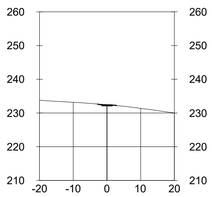

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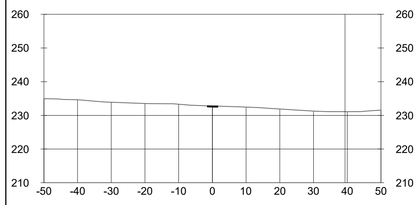

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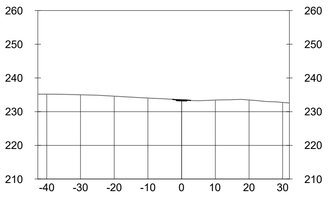

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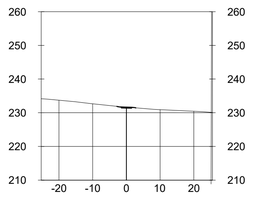

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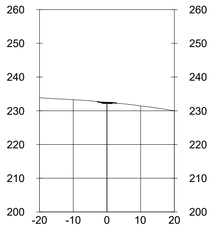

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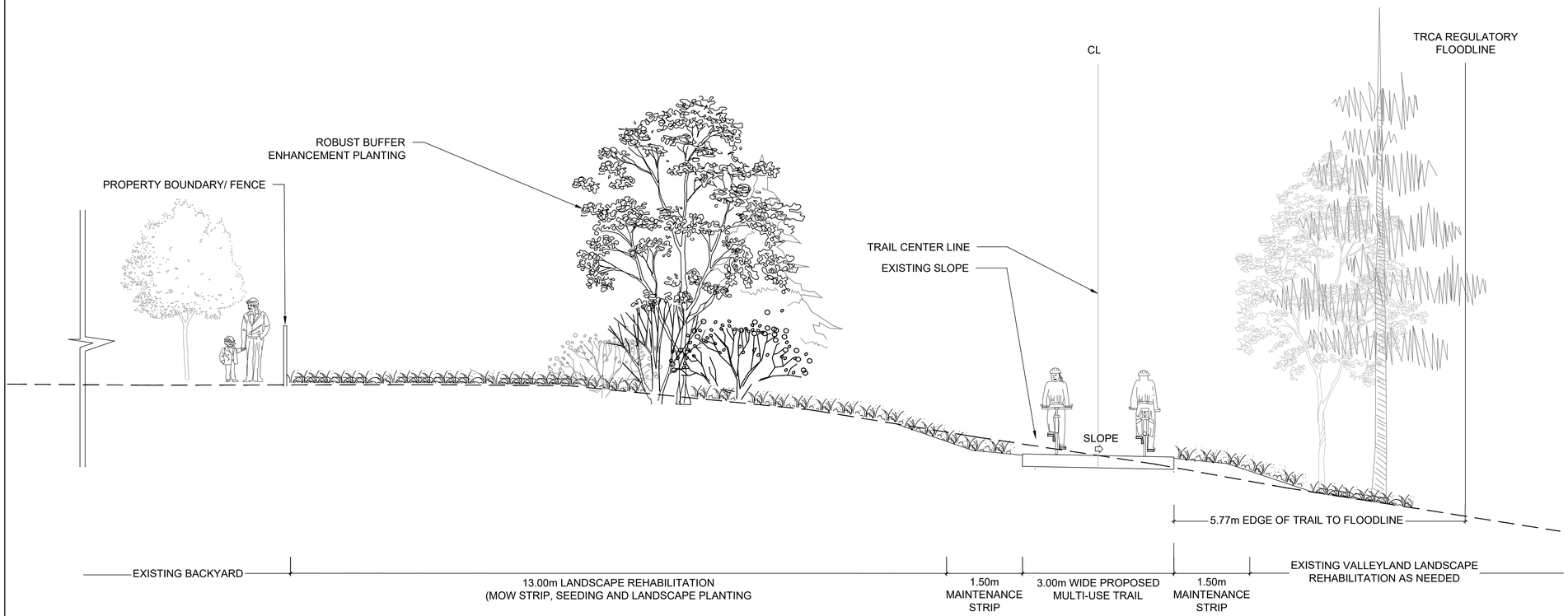
L-301

ADDITIONAL CROSS SECTIONS

Scale: NTS



2
L-301

SECTION 0+201.48 WETLAND

Scale: NTS

KEY MAP

BENCHMARK INFORMATION

ELEVATIONS ARE IN METRES AND ARE DERIVED FROM
BENCHMARK No. XXXXXXXXXX,
ELEVATION = XXX.XX

SURVEY - DRAWING REF #: XXX-XXX-XX-XXX

BY: DATE:

NO	DATE	REVISION/ISSUED	BY	APPD

Landscape Architecture
582 Lancaster Street West
Kitchener, ON N2K 1M3
t. 519-743-8777
www.wsp.com

CLIENT:
CITY OF VAUGHAN
2141 Major MacKenzie Dr W, Maple, ON L6A 1T1

PROJECT TITLE:
BARTLEY SMITH GREENWAY TRAIL
TRAIL ALIGNMENT
SP #

SITE ADDRESS:
MCNAUGHTON TO RUTHERFORD RD.

DRAWING TITLE:
TRAIL SECTIONS

STAMP
NOT FOR CONSTRUCTION

STAMP

DESIGNED	DRAWN	CHECKED
WL	WL	BV

SCALE	DATE
N/A	DEC 10 2021

PROJECT NUMBER: 211-07301-00
DWG. NUMBER: L-301

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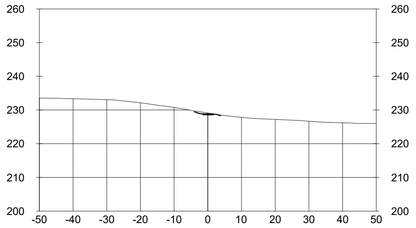

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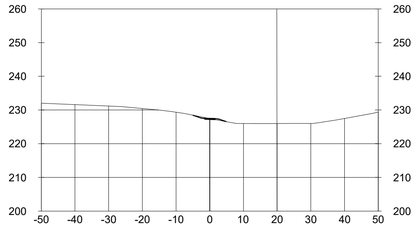

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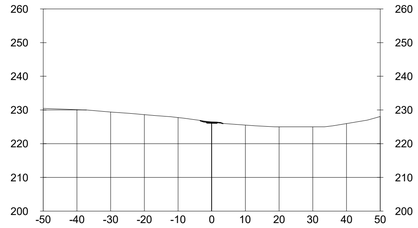

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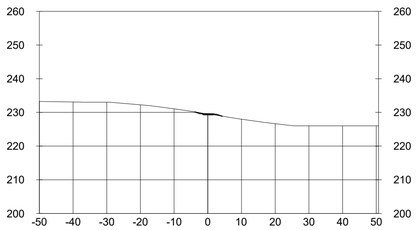

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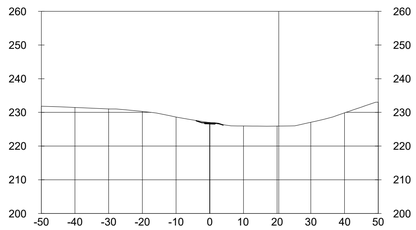

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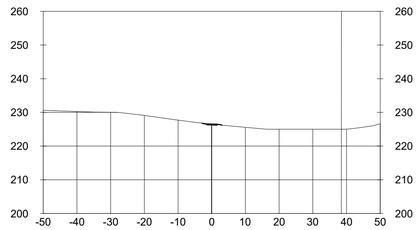

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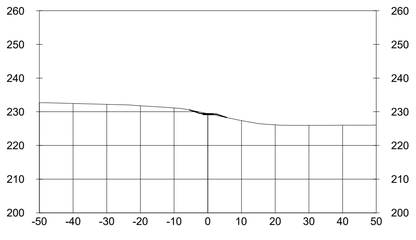

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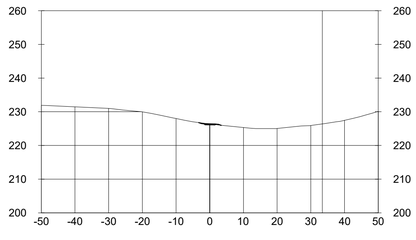

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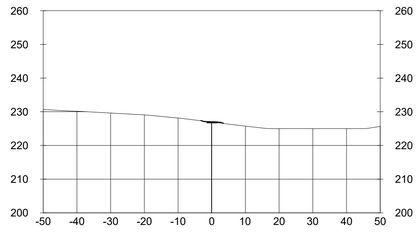

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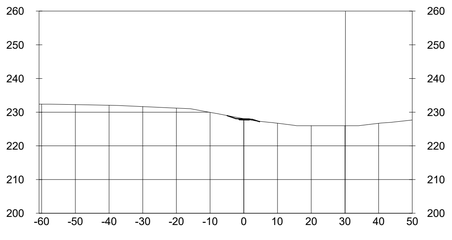

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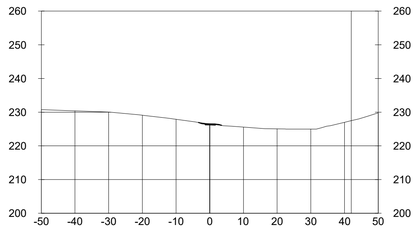

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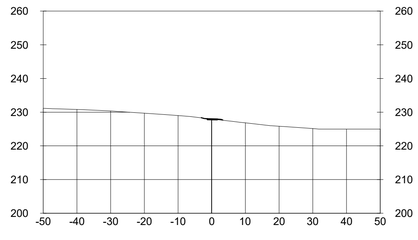

1
L-302

ADDITIONAL CROSS SECTIONS

Scale: NTS

KEY MAP

BENCHMARK INFORMATION

ELEVATIONS ARE IN METRES AND ARE DERIVED FROM
BENCHMARK No. XXXXXXXXXX,
ELEVATION = XXX.XX

SURVEY - DRAWING REF #: XXX-XXX-XX-XXX

BY: DATE:

NO	DATE	REVISION/ISSUED	BY	APPD

wsp
Landscape Architecture
582 Lancaster Street West
Kitchener, ON N2K 1M3
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www.wsp.com

CLIENT:
CITY OF VAUGHAN
2141 Major MacKenzie Dr W, Maple, ON L6A 1T1

PROJECT TITLE:
BARTLEY SMITH GREENWAY TRAIL
TRAIL ALIGNMENT
SP #

SITE ADDRESS:
MCNAUGHTON TO RUTHERFORD RD.

DRAWING TITLE:
TRAIL SECTIONS

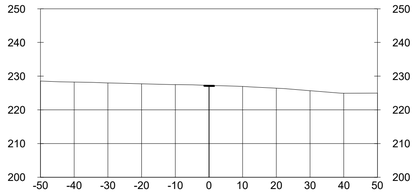
STAMP
NOT FOR CONSTRUCTION

STAMP

DESIGNED	DRAWN	CHECKED
WL	WL	BV

SCALE NA
DATE DEC 10 2021
PROJECT NUMBER 211-07301-00
DWG. NUMBER L-302

0+000.00



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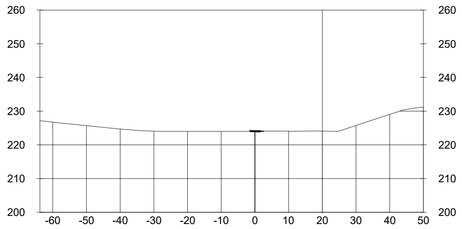

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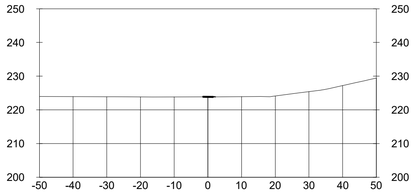

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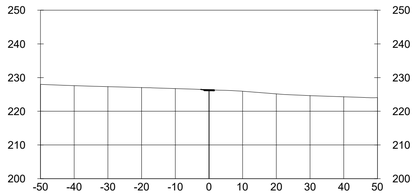

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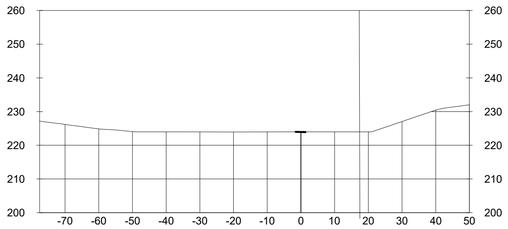

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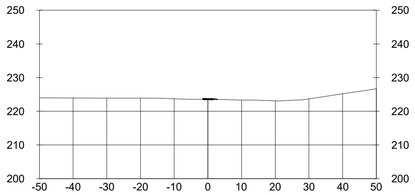

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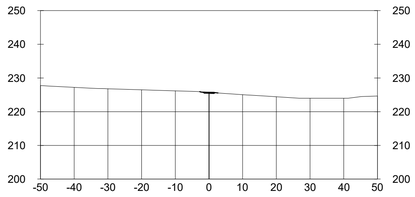

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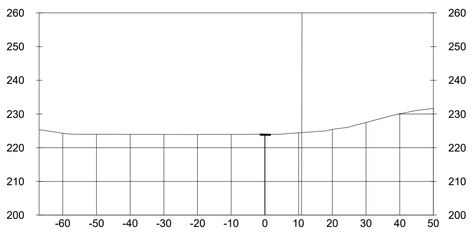

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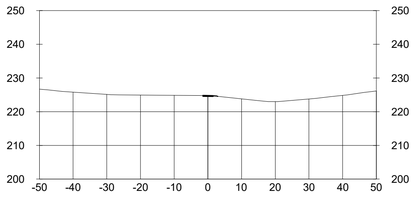

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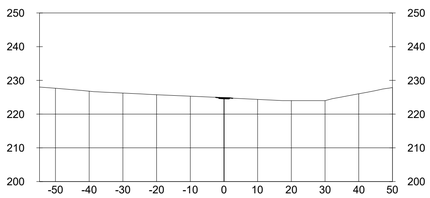

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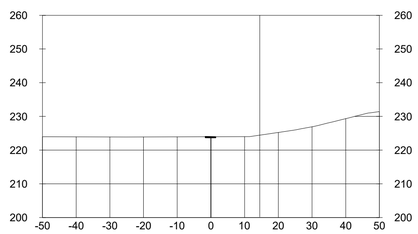

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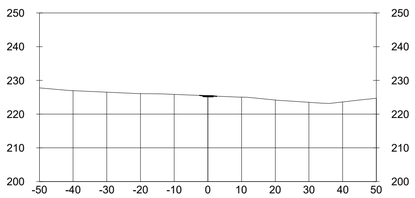

1
L-303

ADDITIONAL CROSS SECTIONS

Scale: NTS

BENCHMARK INFORMATION

ELEVATIONS ARE IN METRES AND ARE DERIVED FROM
BENCHMARK No. XXXXXXXXXX,
ELEVATION = XXX.XX

SURVEY - DRAWING REF #: XXX-XXX-XX-XXX

BY: DATE:

NO	DATE	REVISION/ISSUED	BY	APPD

Landscape Architecture
582 Lancaster Street West
Kitchener, ON N2K 1M3
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www.wsp.com

CLIENT:
CITY OF VAUGHAN
2141 Major MacKenzie Dr W, Maple, ON L6A 1T1

PROJECT TITLE:
BARTLEY SMITH GREENWAY TRAIL
TRAIL ALIGNMENT
SP #

SITE ADDRESS:
MCNAUGHTON TO RUTHERFORD RD.

DRAWING TITLE:
TRAIL SECTIONS

STAMP

STAMP

DESIGNED	DRAWN	CHECKED
WL	WL	BV

SCALE	DATE
NA	DEC 10 2021

PROJECT NUMBER: 211-07301-00
DWG. NUMBER: L-303

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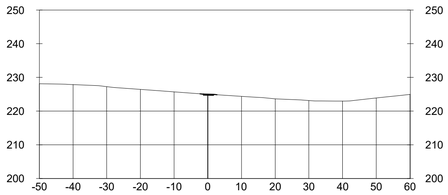

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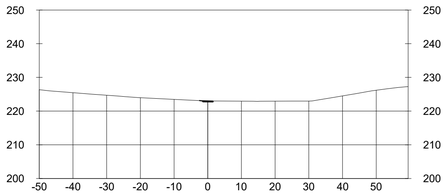

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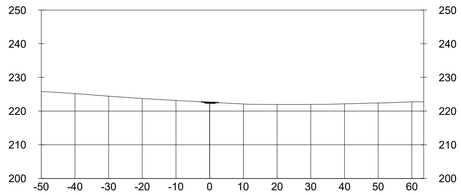

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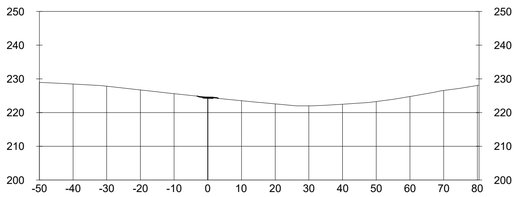

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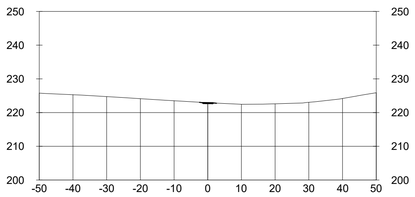

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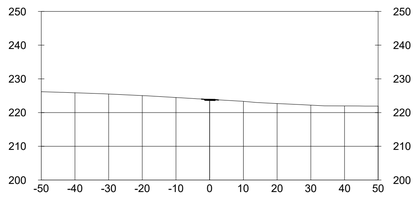

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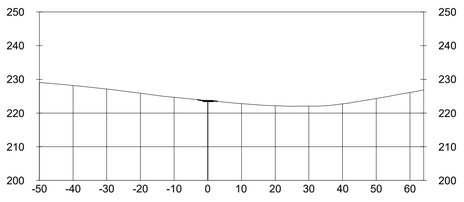

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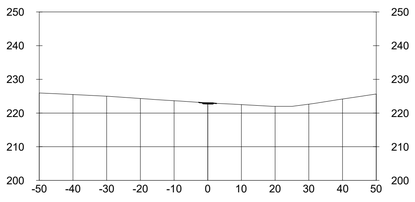

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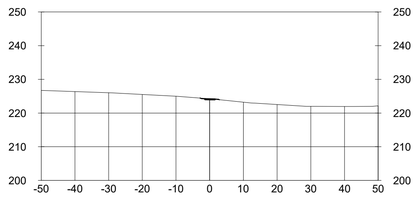

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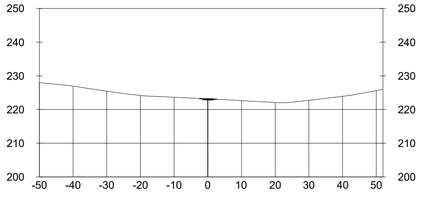

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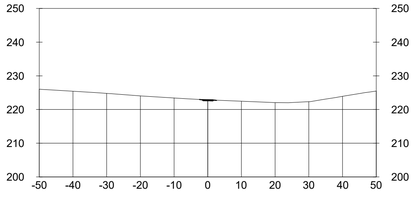

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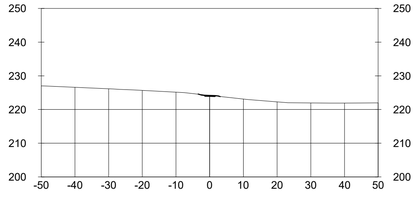

1
L-304

ADDITIONAL CROSS SECTIONS

Scale: NTS

BENCHMARK INFORMATION

ELEVATIONS ARE IN METRES AND ARE DERIVED FROM
BENCHMARK No. XXXXXXXXXX,
ELEVATION = XXX.XX

SURVEY - DRAWING REF #: XXX-XXX-XX-XXX

BY: DATE:

NO	DATE	REVISION/ISSUED	BY	APPD

Landscape Architecture
582 Lancaster Street West
Kitchener, ON N2K 1M3
t. 519-743-8777
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CLIENT:
CITY OF VAUGHAN
2141 Major MacKenzie Dr W, Maple, ON L6A 1T1

PROJECT TITLE:
BARTLEY SMITH GREENWAY TRAIL
TRAIL ALIGNMENT
SP #

SITE ADDRESS:
MCNAUGHTON TO RUTHERFORD RD.

DRAWING TITLE:
TRAIL SECTIONS

STAMP: NOT FOR CONSTRUCTION

STAMP

DESIGNED	DRAWN	CHECKED
WL	WL	BV

SCALE NA | DATE DEC 10 2021

PROJECT NUMBER 211-07301-00 | DWG. NUMBER L-304

MATCH LINE | REFER TO L-300

MAJOR MACKENZIE RD. W

CURTISS COURT

CURTISS CT.

AVRO RD.

ELEMENTARY SCHOOL CATHOLIC LE PETIT-PRINCE

ST. DAVID'S PARISH

MOTHER OF CARMEL CHILDCARE CENTRE

EXISTING BARRIER FENCE TO REMAIN

PROVINCIALLY SIGNIFICANT WETLAND

EXISTING PROVINCIALLY SIGNIFICANT WETLAND TO REMAIN

AROUND 19% SLOPE WITH EXISTING CONDITIONS

1 L-501 **MINOR WAYFINDING SIGNAGE**
SUPPLY AND INSTALL MINOR WAYFINDING SIGNAGE.

EXISTING CONCRETE PATHWAY TO REMAIN

VEGETATION REMOVAL MAY BE REQUIRED. TO BE DETERMINED IN DETAILED DESIGN THROUGH ARBORIST REPORT.

ROBUST BUFFER PLANTING
SUPPLY AND INSTALL 4 DECIDUOUS TREES — 6 L-502, 2 L-502

ROBUST BUFFER PLANTING
SUPPLY AND INSTALL 9 CONIFEROUS TREES — 6 L-502, 3 L-502

RIVER VALLEY BUFFER PLANTING
SUPPLY AND INSTALL 472 m2 OF SHRUBS — 7 L-502, 1 L-503

4 L-504 **RETAINING WALL WITH RAILING**
SUPPLY AND INSTALL 29m OF RETAINING WALL, NATURAL STONE OR REDI-ROCK, PRODUCT AND DESIGN TO BE DETERMINED AT DETAILED DESIGN.

3 L-501 **ASPHALT TRAIL**
SUPPLY AND INSTALL 270m OF ASPHALT TRAIL

4 L-502, 2 L-502 **LIGHT BUFFER PLANTING**
SUPPLY AND INSTALL 4 DECIDUOUS TREES

4 L-502, 3 L-502 **LIGHT BUFFER PLANTING**
SUPPLY AND INSTALL 6 CONIFEROUS TREES

2 L-504, 2 L-505 **SEATING NODE**
SUPPLY AND INSTALL 3 ARMOURSTONE, CONCRETE PAD, AND 1 BENCH.

5 L-502, 1 L-503 **MEDIUM BUFFER PLANTING**
SUPPLY AND INSTALL 380 m2 SHRUBS

2 L-504, 2 L-505 **SEATING NODE**
SUPPLY AND INSTALL 3 ARMOURSTONE, CONCRETE PAD, AND 1 BENCH.

VEGETATION REMOVAL MAY BE REQUIRED ALONG TRAIL TO CONNECT TO EXISTING RAMP. TO BE DETERMINED IN DETAILED DESIGN THROUGH ARBORIST REPORT.

1 L-501 **MINOR WAYFINDING SIGNAGE**
SUPPLY AND INSTALL MINOR WAYFINDING SIGNAGE.

4 L-501 **ASPHALT TRAIL**
SUPPLY AND INSTALL 7m OF ASPHALT TRAIL. CONNECTION AND SLOPE TO BE VERIFIED AT DETAILED DESIGN.

2 L-505 **SEATING NODE**
SUPPLY AND INSTALL CONCRETE PAD, AND 1 BENCH.

APPROXIMATE EXISTING RAMP/ STAIRS ON PRIVATE PROPERTY AND CANNOT BE MODIFIED.

CONNECTION TO EXISTING TRAIL

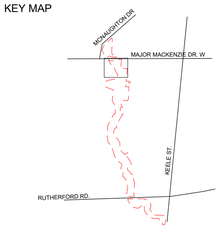
SEATING NODE
SUPPLY AND INSTALL 1 BENCH. — 2 L-504

R4.55, R4.60, 19.62, R18.00, 13.12, R110.00, 16.96, 12.74, 31.88, R40.00, 35.47, 3.71, R48.00, 18.92, R4.50, 29.02, R1.50, R47.59, R80.00, 13.18, 29.52, 6.22, R101.00, 30.67, R4.67

1 L-308

MATCH LINE | REFER TO L-310

KEY MAP



LEGEND KEY

- SITE BOUNDARY
- EXISTING TRAIL - FACILITY (TO REMAIN)
- EXISTING TRAIL - (UPGRADE TO 3m ASPHALT)
- DON RIVER WEST BRANCH
- TRCA 100 YEAR FLOODLINE
- PROPOSED TRAIL 3m ASPHALT WITH SLOPE (1-3% INCLINE)
- PROPOSED TRAIL 3m ASPHALT WITH SLOPE (3-5% INCLINE)
- PROPOSED TRAIL 3m ASPHALT WITH SLOPE (5-8% INCLINE)
- PROPOSED TRAIL 3m MULCH
- EXISTING STORM SERVICE LINE
- EXISTING SANITARY
- EXISTING WATERMAIN

NOTE:

UNDERGROUND UTILITIES AND PLANTING LAYOUT TO BE DETERMINED BASED OFF THE TOTAL COMPENSATION DENOTED BY THE ARBORIST REPORT. THE LOCATION OF PLANTINGS CAN BE ADJUSTED IN THE DETAILED DESIGN.

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BENCHMARK INFORMATION

ELEVATIONS ARE IN METRES AND ARE DERIVED FROM BENCHMARK No. XXXXXXXXXX.
ELEVATION = XXX.XX

SURVEY - DRAWING REF #: XXX-XXX-XX-XXX

BY: DATE:

NO	DATE	REVISION/ISSUED	BY	APPD

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Landscape Architecture
582 Lancaster Street West
Kitchener, ON N2K 1M3
t. 519-743-8777
www.wsp.com

CLIENT:
CITY OF VAUGHAN
2141 Major MacKenzie Dr W, Maple, ON L6A 1T1

PROJECT TITLE:
BARTLEY SMITH GREENWAY TRAIL
TRAIL ALIGNMENT
SP #

SITE ADDRESS:
MCNAUGHTON RD. & MAJOR MACKENZIE DR.

DRAWING TITLE:
TRAIL LAYOUT PLAN

STAMP — NOT FOR CONSTRUCTION

STAMP

DESIGNED	DRAWN	CHECKED
WL	WL	BV

SCALE 1:500 | DATE DEC 10 2021

PROJECT NUMBER 211-07301-00 | DWG. NUMBER L-305

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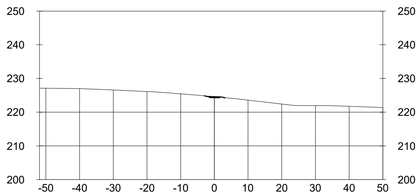

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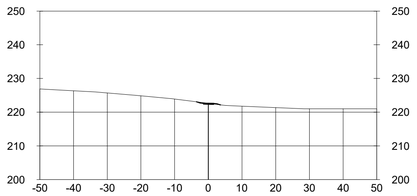

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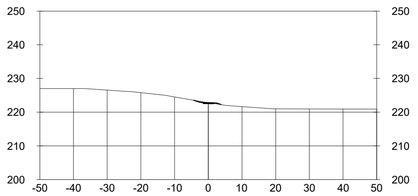

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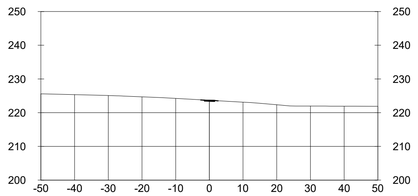

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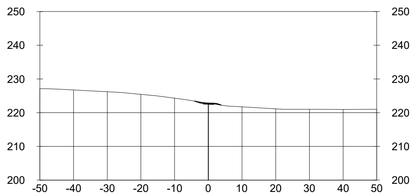

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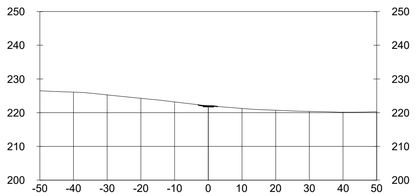

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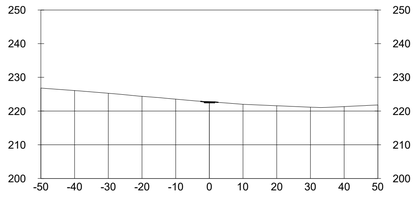

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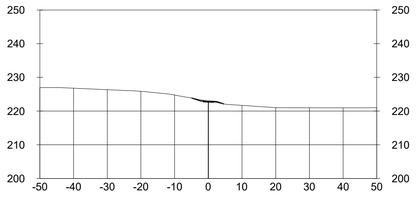

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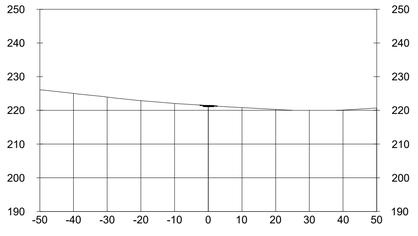

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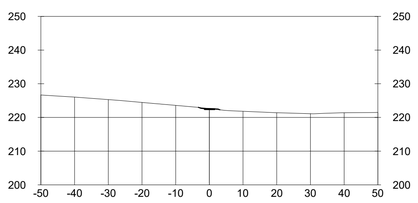

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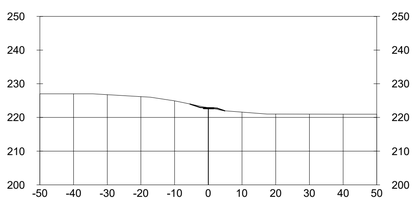

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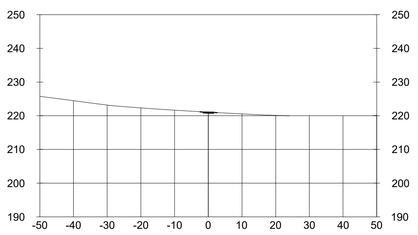

1
L-306

ADDITIONAL CROSS SECTIONS

Scale: NTS

BENCHMARK INFORMATION

ELEVATIONS ARE IN METRES AND ARE DERIVED FROM
BENCHMARK No. XXXXXXXXXX,
ELEVATION = XXX.XX

SURVEY - DRAWING REF #: XXX-XXX-XX-XXX

BY: DATE:

NO	DATE	REVISION/ISSUED	BY	APPD

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TRAIL ALIGNMENT
SP #

SITE ADDRESS:
MCNAUGHTON TO RUTHERFORD RD.

DRAWING TITLE:
TRAIL SECTIONS

STAMP

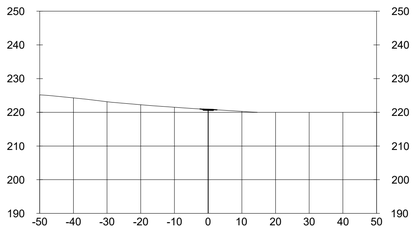
STAMP

DESIGNED	DRAWN	CHECKED
WL	WL	BV

SCALE	DATE
NA	DEC 10 2021

PROJECT NUMBER: 211-07301-00
DWG. NUMBER: L-306

0+899.72



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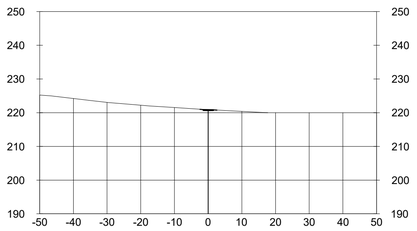

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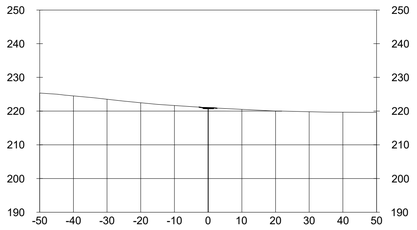

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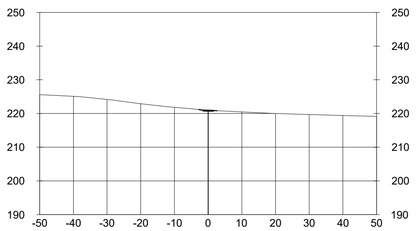

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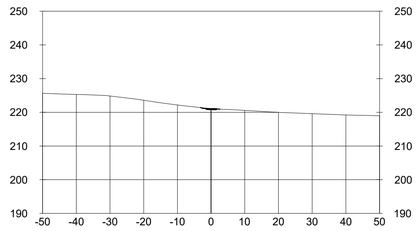

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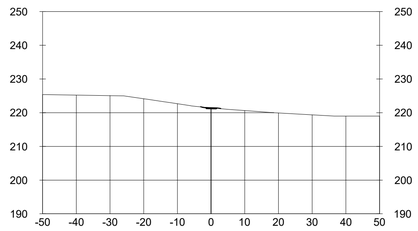

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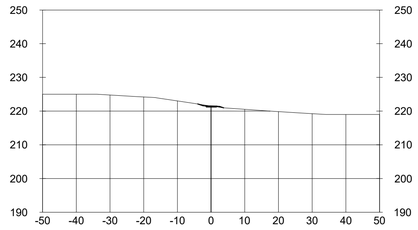

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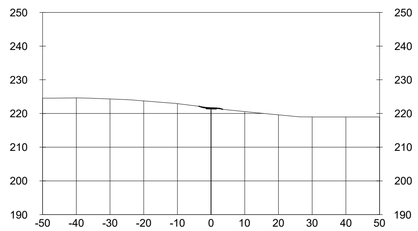

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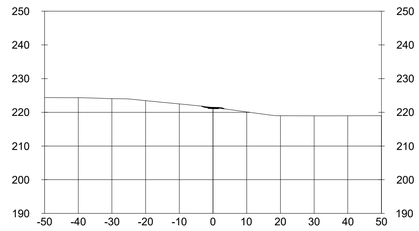

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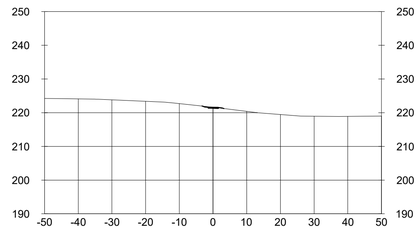

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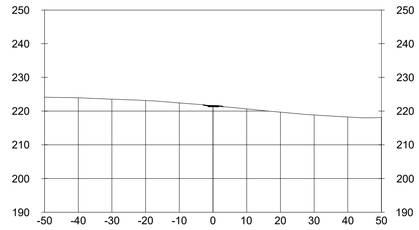

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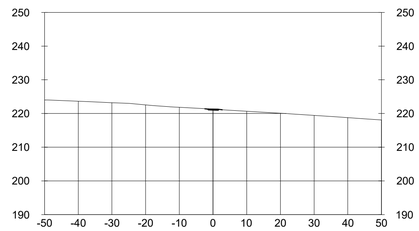

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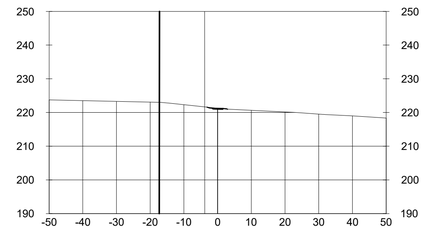

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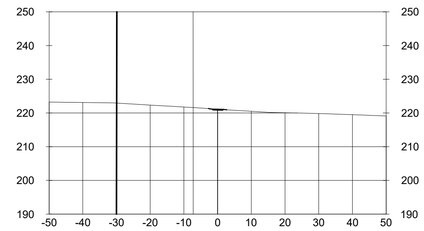

1 / L-307 ADDITIONAL CROSS SECTIONS

Scale: NTS

BENCHMARK INFORMATION

ELEVATIONS ARE IN METRES AND ARE DERIVED FROM
BENCHMARK No. XXXXXXXXXX,
ELEVATION = XXX.XX

SURVEY - DRAWING REF #: XXX-XXX-XX-XXX

BY: DATE:

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2141 Major MacKenzie Dr W, Maple, ON L6A 1T1

PROJECT TITLE:
BARTLEY SMITH GREENWAY TRAIL
TRAIL ALIGNMENT
SP #

SITE ADDRESS:
MCNAUGHTON TO RUTHERFORD RD.

DRAWING TITLE:
TRAIL SECTIONS

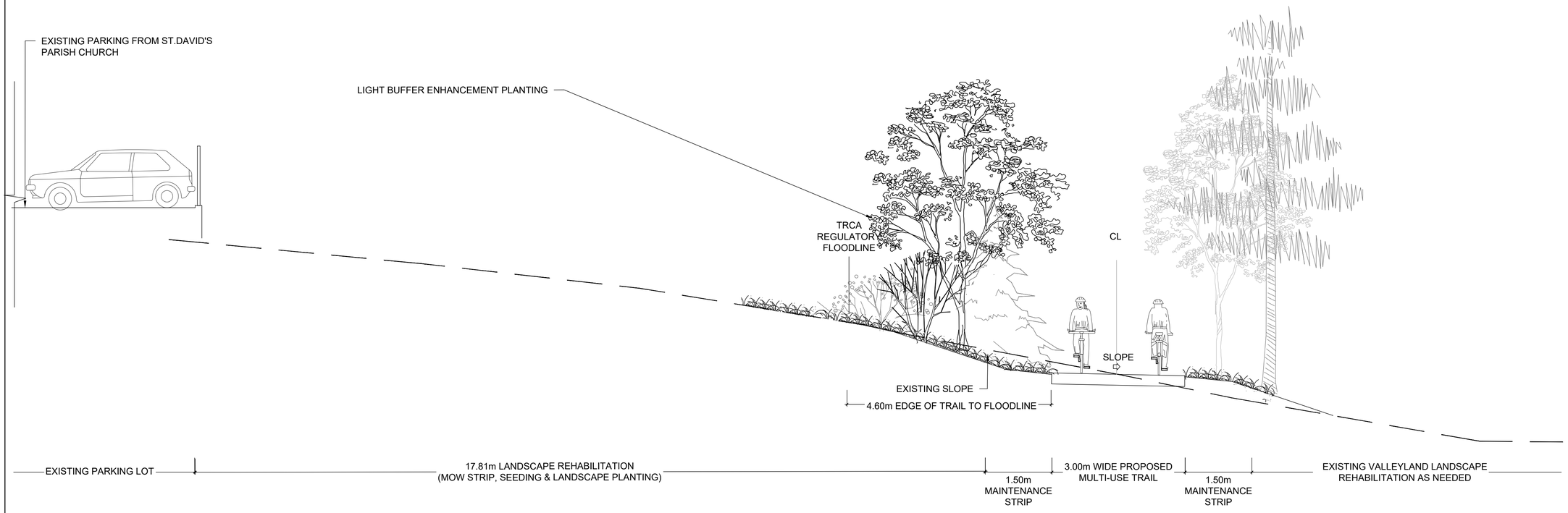
STAMP
CONSTRUCTION NOT FOR

STAMP

DESIGNED	DRAWN	CHECKED
WL	WL	BV

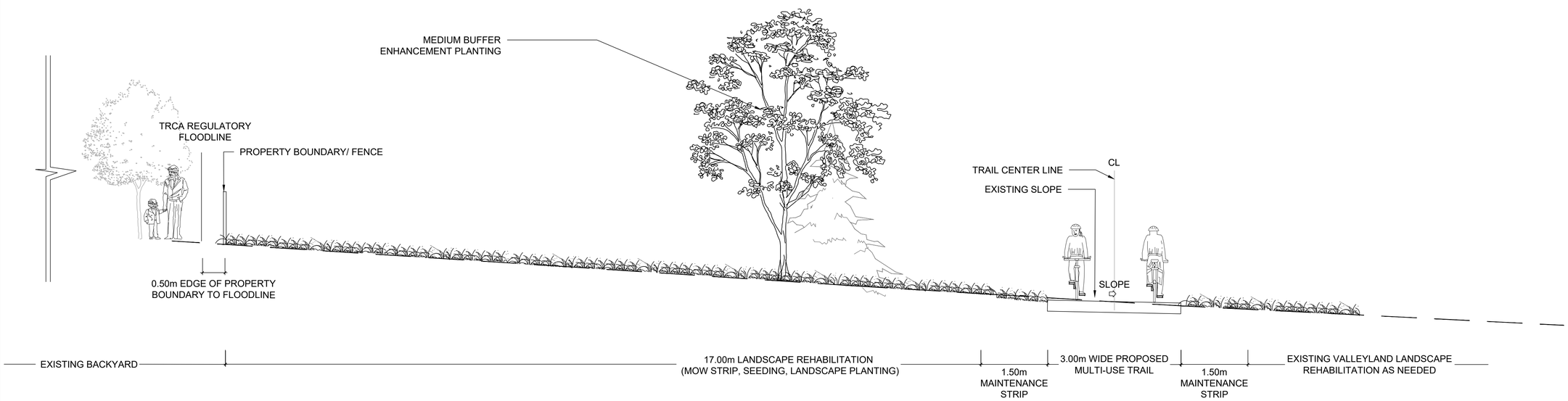
SCALE NA DATE DEC 10 2021

PROJECT NUMBER 211-07301-00 DWG. NUMBER L-307



1 L-308 SECTION 0+100.00 CHRUCH PARKING

Scale: NTS



2 L-308 SECTION 0+450.00 RESIDENTIAL

Scale: NTS

BENCHMARK INFORMATION

ELEVATIONS ARE IN METRES AND ARE DERIVED FROM BENCHMARK No. XXXXXXXXXX, ELEVATION = XXX.XX

SURVEY - DRAWING REF #: XXX-XXX-XX-XXX

BY: DATE:

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2141 Major MacKenzie Dr W, Maple, ON L6A 1T1

PROJECT TITLE:
BARTLEY SMITH GREENWAY TRAIL
TRAIL ALIGNMENT
SP #

SITE ADDRESS:
MCNAUGHTON TO RUTHERFORD RD.

DRAWING TITLE:
LANDCSAPE SECTIONS

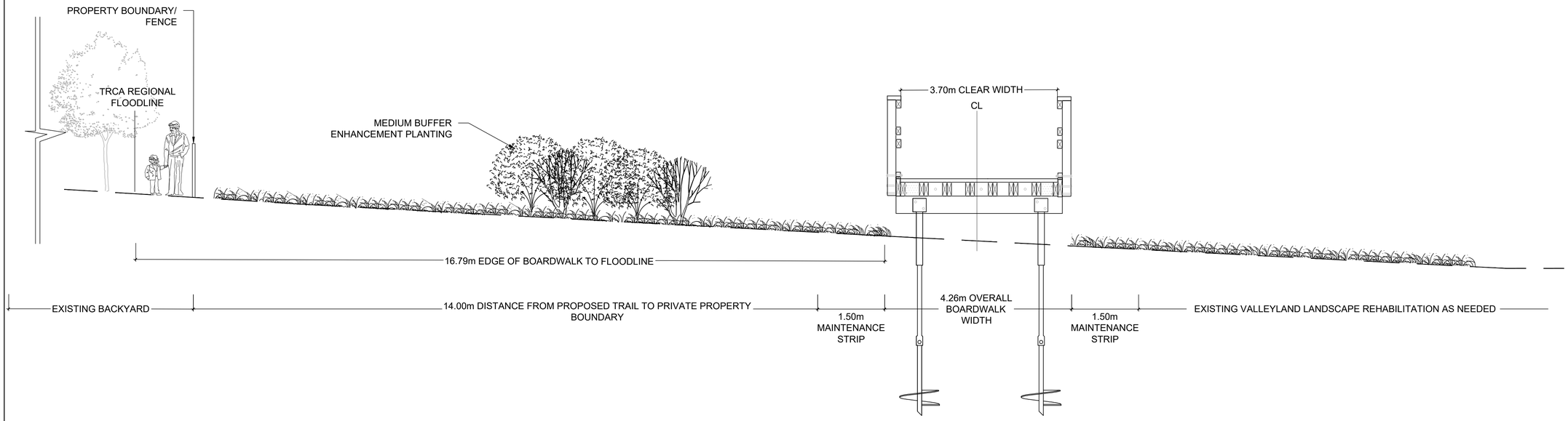
STAMP: NOT FOR CONSTRUCTION

STAMP

DESIGNED	DRAWN	CHECKED
WL	WL	BV

SCALE NA DATE DEC 10 2021

PROJECT NUMBER 211-07301-00 DWG. NUMBER L-308



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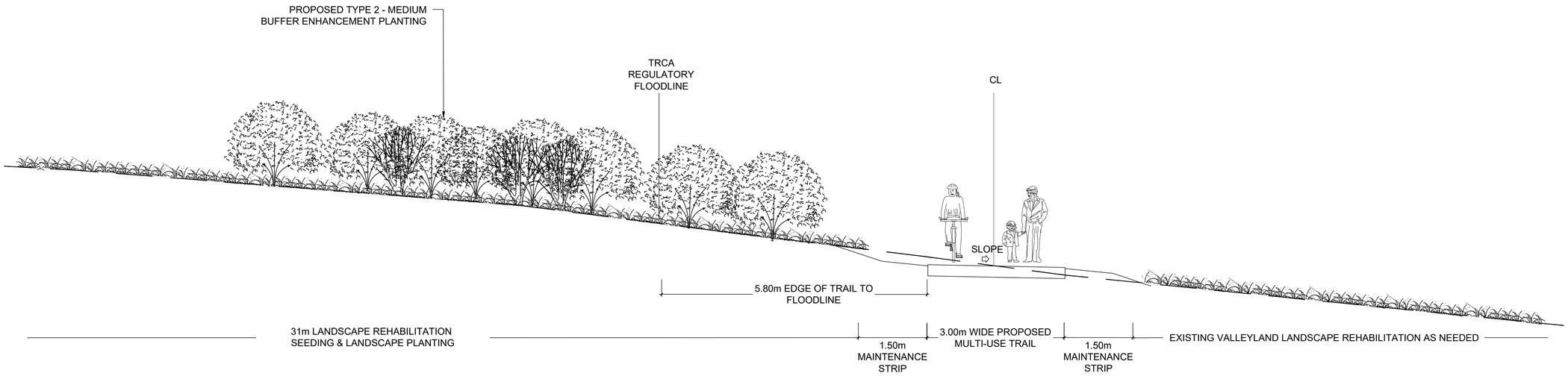
L-309
SECTION 0+499.99 BOARDWALK

Scale: NTS



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L-309
SECTION 1+074.64 RESIDENTIAL

Scale: NTS

BENCHMARK INFORMATION

ELEVATIONS ARE IN METRES AND ARE DERIVED FROM
BENCHMARK No. XXXXXXXXXX,
ELEVATION = XXX.XX

SURVEY - DRAWING REF #: XXX-XXX-XX-XXX

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STAMP

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WL	WL	BV

SCALE NA
DATE DEC 10 2021

PROJECT NUMBER
211-07301-00

DWG. NUMBER
L-309

MATCH LINE | REFER TO L-305

XXX

AVRO RD.

APPROXIMATE LOCATION OF EXISTING MINOR WAYFINDING SIGNAGE.

MAPLE AIRPORT PARK

NAYLON PARKETTE

EXISTING NAYLON PARKETTE TO REMAIN

MINOR WAYFINDING SIGNAGE
SUPPLY AND INSTALL MINOR WAYFINDING SIGNAGE. (1, L-501)

SEATING NODE
SUPPLY AND INSTALL 3 ARMOURSTONE. (2, L-505)

CONNECTION TO EXISTING TRAIL

NAYLON ST.

R4.50

MINOR WAYFINDING SIGNAGE
SUPPLY AND INSTALL (2) MINOR WAYFINDING SIGNAGE. (1, L-501)

UPGRADE EXISITNG TRAIL
SUPPLY AND INSTALL 307m OF ASPHALT TRAIL (3, L-501)

ASPHALT TRAIL
SUPPLY AND INSTALL 1235m OF ASPHALT TRAIL (3, L-501)

36.62

R93.87

9.54

VEGETATION REMOVAL MAY BE REQUIRED. TO BE DETERMINED IN DETAILED DESIGN THROUGH ARBORIST REPORT.

R101.00

9.91

PUBLIC PATHWAY BLOCK 24 (6.0m)

EXISTING PARK

10.0M BUFFER TO TRCA STAKED ENVIRONMENTAL FEATURE LINE

10.35

10.46

R17.23

N74°06'40"E 72.177

N73°18'15"E 104.891

N73°20'4

53.50

PART OF BLOCK 22

EXISTING CHAIN LINK FENCE ALONG PRIVATE PROPERTY TO REMAIN

EXISTING SEWAGE EASEMENT TO REMAIN

EXISTING SWM POND TO BE FILLED PER SUBDIVISION DRAFT PLAN

RE-EVALUATE AREA FOR SEATING (TARGETING EVERY 50m) IN DETAILED DESIGN

R188.22

204.914

R53.56

TRCA STAKED ENVIRONMENTAL FEATURE LINE – JULY 25, 2017

25.51

10.00

13.56

10.31

10.00

16.04

10.57

FUTURE 3.0m WIDE MULTI-USE TRAIL (BY OTHERS)

TRCA STAKED ENVIRONMENTAL FEATURE LINE – OCT 25, 2017

74.80

PART OF BLOCK 22

BLOCK 22 ENVIRONMENTAL PROTECTION (2.61 ha)

10.47

R47.87

29.11

11

10

09

08

07

06

05

04

34.46

35.87

36.94

36.37

37.27

38.46

37.16

36.30

24.46

24.16

R18.50

R15.00

20.20

20.26

18.03

18.30

17.50

8.00

18.42

18.02

18.00

18.04

18.25

18.20

19.25

19.51

18.97

R65.0

STREET 'B'

10.0M BUFFER TO REGIONAL FLOODLINE AND VEGETATION PROTECTION ZONE

CAPRONI DR.

EXISTING CHAIN LINK FENCE ALONG PRIVATE PROPERTY TO REMAIN

RECOMMENDATIONS OF TURNING THIS AREA INTO A COMMUNITY GARDEN (WE WOULD HAVE TO IDENTIFY THE PROPERTY ACQUISITION IN THIS AREA) - ON SUBDIVISION DRAFT PLAN THIS AREA IS SHOWN AS FUTURE RESIDENTIAL

EXISTING RESIDENTIAL

INVASIVE SPECIES WERE OBSERVED IN THIS AREA (VARIOUS HERBACEOUS PERENNIALS AND SHRUBS) OPPORTUNITIES FOR REMOVAL AND RESTORATION SHOULD BE REVIEWED AS A PART OF SITE PLAN APPROVALS FOR FUTURE DEVELOPMENT.

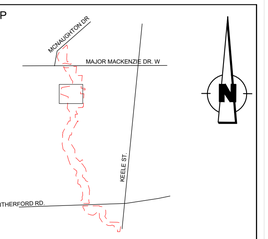
N9°27'

223

0 5 10 20 30 40
SCALE 1:500 (m)

MATCH LINE | REFER TO L-315

KEY MAP



LEGEND KEY

- SITE BOUNDARY
- EXISTING TRAIL - FACILITY (TO REMAIN)
- EXISTING TRAIL - (UPGRADE TO 3m ASPHALT)
- DON RIVER WEST BRANCH
- TRCA 100 YEAR FLOODLINE
- PROPOSED TRAIL 3m ASPHALT WITH SLOPE (1-3% INCLINE)
- PROPOSED TRAIL 3m ASPHALT WITH SLOPE (3-5% INCLINE)
- PROPOSED TRAIL 3m ASPHALT WITH SLOPE (5-8% INCLINE)
- PROPOSED TRAIL 3m MULCH
- EXISTING STORM SERVICE LINE
- EXISTING SANITARY
- EXISTING WATERMAIN

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DRAWING INFORMATION

ORIGINAL DESIGN AND/OR DRAWING BASE COMPLETED BY:
CITY OF VAUGHAN.
YEAR:
ADDRESS: 2141 MAJOR MACKENZIE DR.

NO	DATE	REVISION/ISSUED	BY	APPD

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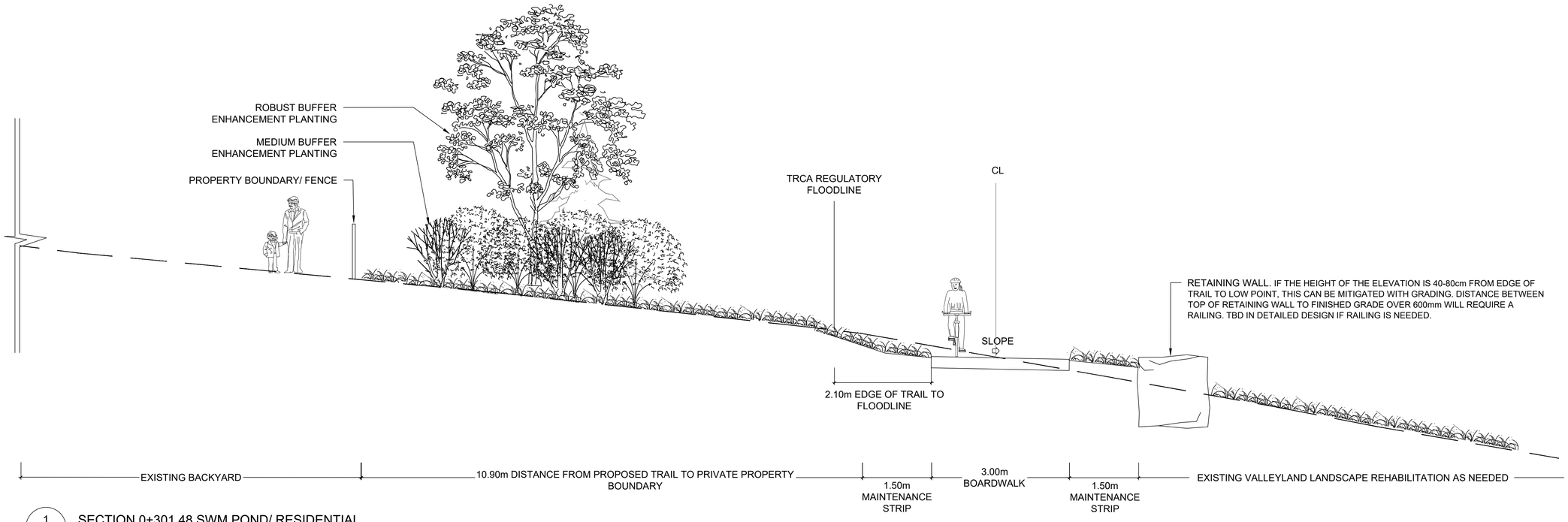
WL	WL	BV

SCALE 1:500 | DATE DEC 10 2021

PROJECT NUMBER 211-07301-00 | DWG. NUMBER L-310



1
L-311 SECTION 0+301.48 SWM POND/ RESIDENTIAL

Scale: NTS

BENCHMARK INFORMATION

ELEVATIONS ARE IN METRES AND ARE DERIVED FROM BENCHMARK No. XXXXXXXXXX, ELEVATION = XXX.XX

SURVEY - DRAWING REF #: XXX-XXX-XX-XXX

BY: DATE:

NO	DATE	REVISION/ISSUED	BY	APPD

Landscape Architecture
582 Lancaster Street West
Kitchener, ON N2K 1M3
t. 519-743-8777
www.wsp.com

CLIENT:
CITY OF VAUGHAN
2141 Major MacKenzie Dr W, Maple, ON L6A 1T1

PROJECT TITLE:
BARTLEY SMITH GREENWAY TRAIL
TRAIL ALIGNMENT
SP #

SITE ADDRESS:
MCNAUGHTON TO RUTHERFORD RD.

DRAWING TITLE:
LANDCSAPE SECTIONS

STAMP: NOT FOR CONSTRUCTION

STAMP

DESIGNED	DRAWN	CHECKED
WL	WL	BV

SCALE NA DATE DEC 10 2021

PROJECT NUMBER 211-07301-00 DWG. NUMBER L-311

MATCH LINE | REFER TO L-310

CAPRONI DR.

VILLANDRY CRESCENT

VILLANDRY CRESCENT

PART OF BLOCK 22

PART OF BLOCK 22

N72°33'50"E

102.869

TRCA STAKED ENVIRONMENTAL FEATURE LINE JAN 25, 2017

R30.37

R28.88

7.64

R19.15

R107.94

10.86

R19.04

13.10

14.43

R16.50

R15.50

12.43

PUBLIC PATHWAY
BLOCK 24
(3.0m)

R3.79

3.00

R1.50

PROPOSED CHAINLINK FENCE

N72°26'20"E

BEVAN RD.

STREET 'A'

BLOCK 23
(0.30m RESERVE)

10 BEVAN RD.

7 BEVAN RD.

LANCER DR.

RESIDENTIAL

35.38

33.44

17.50

18.00

23.72

5.0

5.0

5.75

20.00

1 m SIDEWALK

1 **MINOR WAYFINDING SIGNAGE** (L-501)
SUPPLY AND INSTALL MINOR WAYFINDING SIGNAGE.

EXISTING SEWER EASEMENT TO REMAIN

9m LANDS SUBJECT TO EASEMENTS IN FAVOUR OF THE CITY OF VAUGHAN AND POWERSTREAM INC.

CONNECT ROADWAY WITHIN DEVELOPER EASEMENT. COORDINATION TO BE CONTINUED WITH 7 AND 10 BEVAN. APPLICATION UNDERWAY NEGOTIATION THROUGH DEVELOPMENT TO CONNECT TRAIL TO CLEMSON CRESCENT.

3 **ASPHALT TRAIL** (L-501)
SUPPLY AND INSTALL 33m OF ASPHALT TRAIL

2 **SEATING NODE** (L-504)
SUPPLY AND INSTALL CONCRETE PAD, AND 1 BENCH.

VEGETATION REMOVAL MAY BE REQUIRED. TO BE DETERMINED IN DETAILED DESIGN THROUGH ARBORIST REPORT.

2 **SEATING NODE** (L-505)
SUPPLY AND INSTALL 3 SEAT STONES AT EDGE OF TRAIL

2 **SEATING NODE** (L-504)
SUPPLY AND INSTALL CONCRETE PAD, AND 1 BENCH.

5 (L-502) 1 (L-503) **MEDIUM BUFFER PLANTING**
SUPPLY AND INSTALL 1120 m2 OF SHRUBS

1 (L-308)

2 **SEATING NODE** (L-505)
SUPPLY AND INSTALL 3 SEAT STONES AT EDGE OF TRAIL

5 **BOARDWALK** (L-503)
SUPPLY AND INSTALL 120m OF BOARDWALK

1 (L-309)

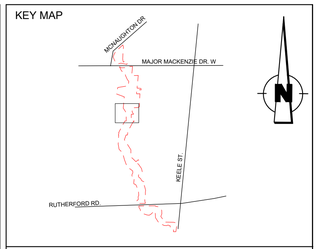
VEGETATION REMOVAL MAY BE REQUIRED. TO BE DETERMINED IN DETAILED DESIGN THROUGH ARBORIST REPORT.

1 (L-503) 5 (L-502) **MEDIUM BUFFER PLANTING**
SUPPLY AND INSTALL 575 m2 OF SHRUBS

MATCH LINE | REFER TO L-320

0 5 10 20 30 40
SCALE 1:500 (m)

KEY MAP



LEGEND KEY

- SITE BOUNDARY
- EXISTING TRAIL - FACILITY (TO REMAIN)
- EXISTING TRAIL - (UPGRADE TO 3m ASPHALT)
- DON RIVER WEST BRANCH
- TRCA 100 YEAR FLOODLINE
- PROPOSED TRAIL 3m ASPHALT WITH SLOPE (1-3% INCLINE)
- PROPOSED TRAIL 3m ASPHALT WITH SLOPE (3-5% INCLINE)
- PROPOSED TRAIL 3m ASPHALT WITH SLOPE (5-8% INCLINE)
- PROPOSED TRAIL 3m MULCH
- EXISTING STORM SERVICE LINE
- EXISTING SANITARY
- EXISTING WATERMAIN

NOTE:

UNDERGROUND UTILITIES AND PLANTING LAYOUT TO BE DETERMINED BASED OFF THE TOTAL COMPENSATION DENOTED BY THE ARBORIST REPORT. THE LOCATION OF PLANTINGS CAN BE ADJUSTED IN THE DETAILED DESIGN.

AS PER TRCA'S STANDARD NOTES FOR EROSION AND SEDIMENT CONTROL 'ALL ACCESS TO THE WORK SITE SHALL BE FROM EITHER SIDE OF THE WATERCOURSE. NO EQUIPMENT OR VEHICLES ARE PERMITTED TO CROSS THROUGH THE WATERCOURSE UNLESS APPROVED BY TRCA.

DRAWING INFORMATION

ORIGINAL DESIGN AND/OR DRAWING BASE COMPLETED BY:
CITY OF VAUGHAN.
YEAR:
ADDRESS: 2141 MAJOR MACKENZIE DR.

NO	DATE	REVISION/ISSUED	BY	APPD

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2141 Major MacKenzie Dr W, Maple, ON L6A 1T1

PROJECT TITLE:
BARTLEY SMITH GREENWAY TRAIL
TRAIL ALIGNMENT
SP #

SITE ADDRESS:
MCNAUGHTON RD. & MAJOR MACKENZIE DR.

DRAWING TITLE:
TRAIL LAYOUT PLAN

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DESIGNED	DRAWN	CHECKED
WL	WL	BV

SCALE 1:500 | DATE DEC 10 2021

PROJECT NUMBER 211-07301-00 | DWG. NUMBER L-315

MATCH LINE | REFER TO L-315

MOUNTCHARLES CRESCENT

MOUNTCHARLES CRESCENT

KIRKBRIDE CRESCENT

WHITBURN CRESCENT

WATERSIDE CRESCENT

GREENOCK DR.

WATERSIDE CRESCE

9.66

10.34

R10.00

R19.00

25.25

23.01

R95.00

220

5 L-502 1 L-503 **MEDIUM BUFFER PLANTING**
SUPPLY AND INSTALL 1120 m2 OF SHRUBS

1 L-503 7 L-502 2 L-502 3 L-502 **RIVER VALLEY BUFFER PLANTING**
SUPPLY AND INSTALL 468 m2 OF SHRUBS, 5 DECIDUOUS TREES, AND 9 CONIFEROUS TREES

2 L-505 **SEATING NODE**
SUPPLY AND INSTALL 3 SEAT STONES AT EDGE OF TRAIL

2 L-505 **SEATING NODE**
SUPPLY AND INSTALL 3 SEAT STONES AT EDGE OF TRAIL

2 L-505 **SEATING NODE**
SUPPLY AND INSTALL 3 SEAT STONES AT EDGE OF TRAIL

VEGETATION REMOVAL MAY BE REQUIRED. TO BE DETERMINED IN DETAILED DESIGN THROUGH ARBORIST REPORT.

2 L-505 **SEATING NODE**
SUPPLY AND INSTALL 3 SEAT STONES AT EDGE OF TRAIL

2 L-505 **SEATING NODE**
SUPPLY AND INSTALL 3 SEAT STONES AT EDGE OF TRAIL

5 L-502 1 L-503 **MEDIUM BUFFER PLANTING**
SUPPLY AND INSTALL 1148 m2 OF SHRUBS

1 L-503 7 L-502 2 L-502 3 L-502 **RIVER VALLEY BUFFER PLANTING**
SUPPLY AND INSTALL 499 m2 OF SHRUBS, 3 DECIDUOUS TREES, AND 7 CONIFEROUS TREES

MATCH LINE | REFER TO L-325

0 5 10 20 30 40
SCALE 1:500 (m)

YYMMDD\5\31\2023 4:08 PM
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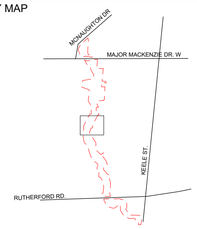
KEY MAP



LEGEND KEY

- SITE BOUNDARY
- EXISTING TRAIL - FACILITY (TO REMAIN)
- EXISTING TRAIL - (UPGRADE TO 3m ASPHALT)
- DON RIVER WEST BRANCH
- TRCA 100 YEAR FLOODLINE
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- PROPOSED TRAIL 3m ASPHALT WITH SLOPE (3-5% INCLINE)
- PROPOSED TRAIL 3m ASPHALT WITH SLOPE (5-8% INCLINE)
- PROPOSED TRAIL 3m MULCH
- EXISTING STORM SERVICE LINE
- EXISTING SANITARY
- EXISTING WATERMAIN

NOTE:

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2141 Major MacKenzie Dr W, Maple, ON L6A 1T1

PROJECT TITLE:
BARTLEY SMITH GREENWAY TRAIL
TRAIL ALIGNMENT
SP #

SITE ADDRESS:
MCNAUGHTON RD. & MAJOR MACKENZIE DR.

DRAWING TITLE:
TRAIL LAYOUT PLAN

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STAMP

DESIGNED	DRAWN	CHECKED
WL	WL	BV

SCALE 1:500 | DATE DEC 10 2021

PROJECT NUMBER 211-07301-00 | DWG. NUMBER L-320

MATCH LINE | REFER TO L-320

RIVER VALLEY BUFFER PLANTING
SUPPLY AND INSTALL 98 m2 OF SHRUBS, 1 DECIDUOUS TREES, AND 2 CONIFEROUS TREES
1 L-503 | 7 L-502 | 2 L-502 | 3 L-502

R95.00

2 L-505 **SEATING NODE** SUPPLY AND INSTALL 3 SEAT STONES AT EDGE OF TRAIL

2 L-505 **SEATING NODE** SUPPLY AND INSTALL 3 SEAT STONES AT EDGE OF TRAIL

2 L-505 **SEATING NODE** SUPPLY AND INSTALL 3 SEAT STONES AT EDGE OF TRAIL

R30.00

R85.00

5 L-503 **BOARDWALK** SUPPLY AND INSTALL 118m OF BOARDWALK

1 L-503 | 5 L-502 **MEDIUM BUFFER PLANTING** SUPPLY AND INSTALL 2885 m2 OF SHRUBS

2 L-505 **SEATING NODE** SUPPLY AND INSTALL 3 SEAT STONES AT EDGE OF TRAIL

2 L-309 VEGETATION REMOVAL MAY BE REQUIRED. TO BE DETERMINED IN DETAILED DESIGN THROUGH ARBORIST REPORT.

EXISTING SIGNIFICANT FOREST TO REMAIN AND BE PROTECTED

2 L-505 **SEATING NODE** SUPPLY AND INSTALL 3 SEAT STONES AT EDGE OF TRAIL

2 L-505 **SEATING NODE** SUPPLY AND INSTALL 3 SEAT STONES AT EDGE OF TRAIL

23.44

R83.00

12.92

R20.00

MATCH LINE | REFER TO L-330

GLENSIDE DR.

GLENSIDE DR.

GATEHEAD RD.

MUIRSIDE RD.

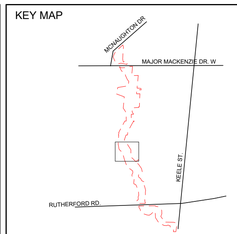
WATERSIDE CRESCENT

WHEATLEY RD.

219

0 5 10 20 30 40
SCALE 1:500 (m)

KEY MAP



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- EXISTING TRAIL - (UPGRADE TO 3m ASPHALT)
- DON RIVER WEST BRANCH
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- PROPOSED TRAIL 3m ASPHALT WITH SLOPE (5-8% INCLINE)
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- EXISTING WATERMAIN

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CLIENT:
CITY OF VAUGHAN
2141 Major MacKenzie Dr W, Maple, ON L6A 1T1

PROJECT TITLE:
BARTLEY SMITH GREENWAY TRAIL
TRAIL ALIGNMENT
SP #

SITE ADDRESS:
MCNAUGHTON RD. & MAJOR MACKENZIE DR.

DRAWING TITLE:
TRAIL LAYOUT PLAN

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STAMP

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WL	WL	BV

SCALE 1:500 | DATE DEC 10 2021

PROJECT NUMBER 211-07301-00 | DWG. NUMBER L-325

MATCH LINE | REFER TO L-325

EXISTING TRAIL TO BE WIDENED AND RESURFACED. GRADE TO STAY THE SAME.

1 L-501 **MINOR WAYFINDING SIGNAGE**
SUPPLY AND INSTALL MINOR WAYFINDING SIGNAGE.

PROPOSED LOCATION FOR SHADE STRUCTURE, BENCH SEATING, PICNIC TABLE, WASTE RECEPTACLES. LAYOUT FOR FURNISHING APPROPRIATE FOR THE DETAILED DESIGN.

EXISTING TRAIL TO REMAIN

EXISTING TRAIL TO BE REMOVED AND REPLACED

3 L-501 **UPGRADE EXISITNG TRAIL**
SUPPLY AND INSTALL 86.1m OF ASPHALT TRAIL (EXISTING TRAIL TO BE WIDENED AND RESURFACED. GRADE TO STAY THE SAME).

WATERSIDE CRESCENT

GLENSIDE DR.

HOLLYBUSH DR.

PROPOSED TRAIL TO EXTEND OVER EXISTING BOX CULVERT

VEGETATION REMOVAL MAY BE REQUIRED. TO BE DETERMINED IN DETAILED DESIGN THROUGH ARBORIST REPORT.

3 L-501 **ASPHALT TRAIL**
SUPPLY AND INSTALL 106m OF ASPHALT TRAIL

1 L-501 **MINOR WAYFINDING SIGNAGE**
SUPPLY AND INSTALL MINOR WAYFINDING SIGNAGE.

PROPOSED 3m WIDE MULCH TRAIL

2 L-505 **SEATING NODE**
SUPPLY AND INSTALL 3 SEAT STONES AT EDGE OF TRAIL

INVASIVE SPECIES WERE OBSERVED ALONG FULL LENGTH OF TRAIL WITHIN WOODLOT (BUCKTHORN) OPPORTUNITIES FOR REMOVAL AND RESTORATION SHOULD BE REVIEWED DURING THE NEXT PHASE OF DETAILED DESIGN.

R4.49 R8.00 R45.03 R7.43 R13.94 R15.00

217 219 219 216

0 5 10 20 30 40
SCALE 1:500 (m)

MATCH LINE | REFER TO L-335

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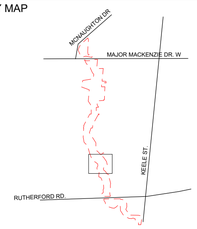
KEY MAP



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- EXISTING STORM SERVICE LINE
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NOTE:

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2141 Major MacKenzie Dr W, Maple, ON L6A 1T1

PROJECT TITLE:
BARTLEY SMITH GREENWAY TRAIL
TRAIL ALIGNMENT
SP #

SITE ADDRESS:
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DRAWING TITLE:
TRAIL LAYOUT PLAN

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WL	WL	BV

SCALE 1:500 | DATE DEC 10 2021

PROJECT NUMBER 211-07301-00 | DWG. NUMBER L-330

MATCH LINE | REFER TO L-330

POTENTIAL CONNECTION TO EXISTING TRAIL

EXISTING TRAIL TO REMAIN

EXISTING TRAIL PROPOSED FOR REPAVING

THE SPORTS VILLAGE

VILLA GIRADINO

215

214

CASTLEHILL RD.

BUTE CT.

GREENOCK DR.

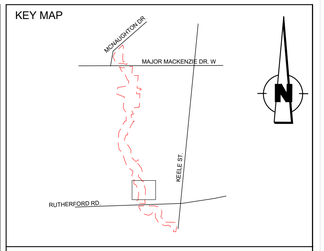
LARGS GATE.

0 5 10 20 30 40

SCALE 1:500 (m)

MATCH LINE | REFER TO L-340

KEY MAP



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- PROPOSED TRAIL 3m ASPHALT WITH SLOPE (5-8% INCLINE)
- PROPOSED TRAIL 3m MULCH
- EXISTING STORM SERVICE LINE
- EXISTING SANITARY
- EXISTING WATERMAIN

NOTE:

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STAMP

DESIGNED	DRAWN	CHECKED
WL	WL	BV

SCALE 1:500 | DATE DEC 10 2021

PROJECT NUMBER 211-07301-00 | DWG. NUMBER L-335

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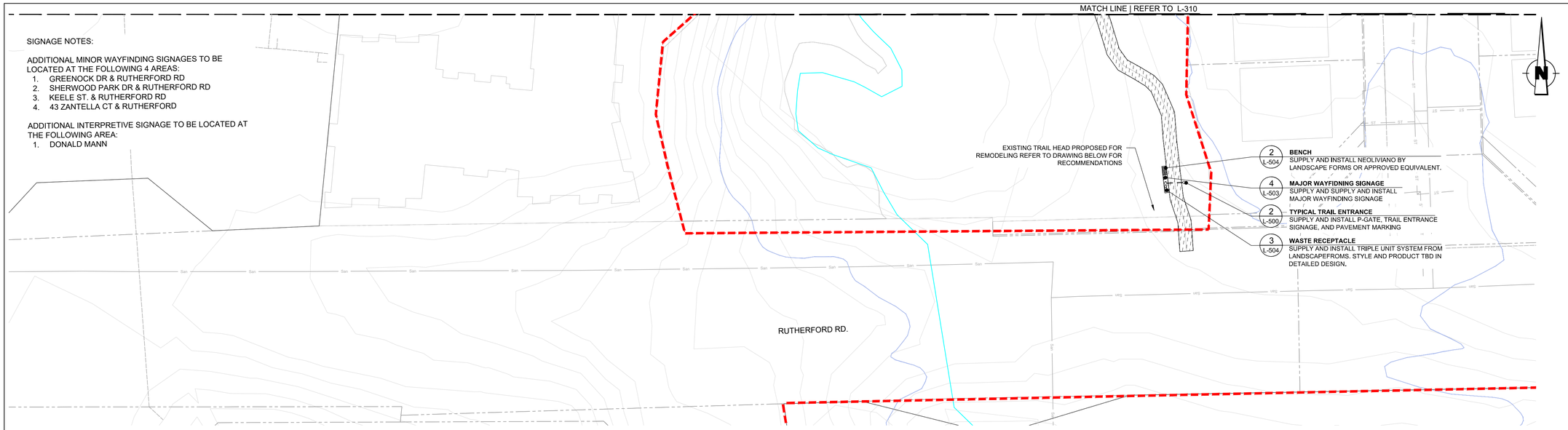
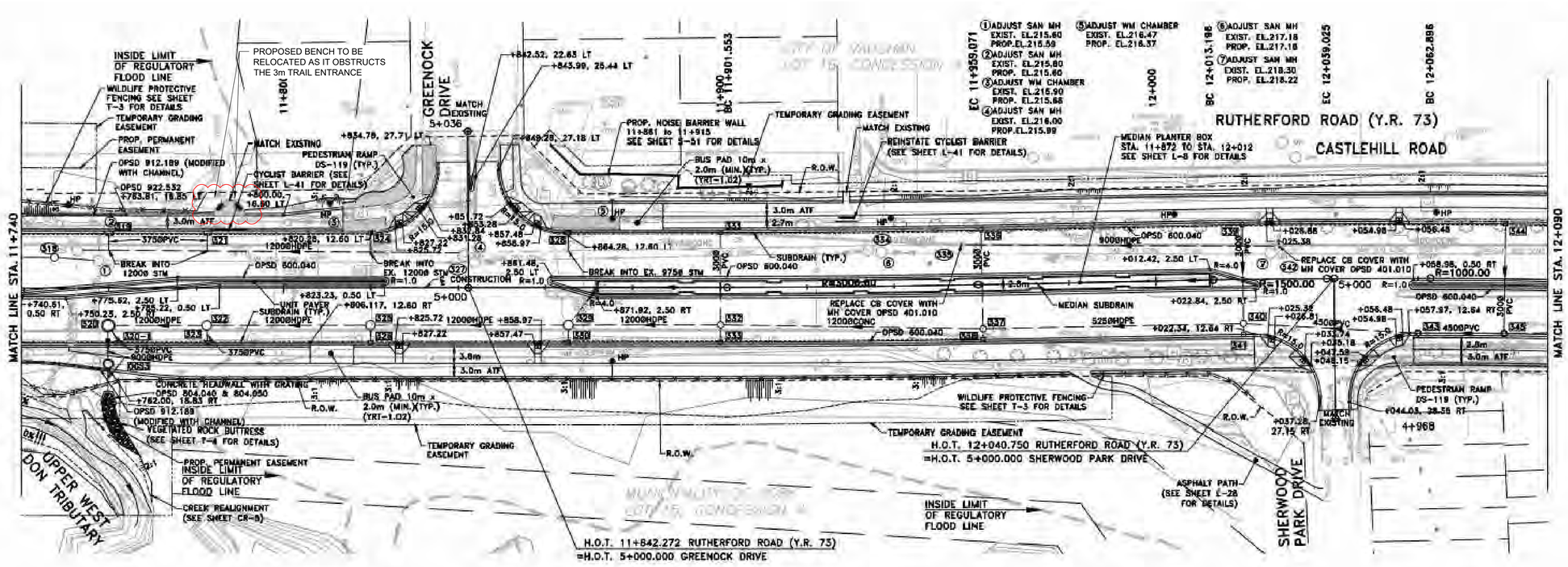
SIGNAGE NOTES:

ADDITIONAL MINOR WAYFINDING SIGNAGES TO BE LOCATED AT THE FOLLOWING 4 AREAS:
1. GREENOCK DR & RUTHERFORD RD
2. SHERWOOD PARK DR & RUTHERFORD RD
3. KEELE ST. & RUTHERFORD RD
4. 43 ZANTELLA CT & RUTHERFORD

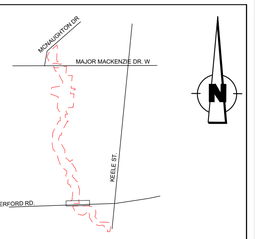
ADDITIONAL INTERPRETIVE SIGNAGE TO BE LOCATED AT THE FOLLOWING AREA:
1. DONALD MANN



NEW CONSTRUCTION DRAWINGS FOR RUTHERFORD ROAD (OCT 2018) FROM SNC LAVALIN



KEY MAP



LEGEND KEY

- SITE BOUNDARY
- EXISTING TRAIL - FACILITY (TO REMAIN)
- EXISTING TRAIL - (UPGRADE TO 3m ASPHALT)
- DON RIVER WEST BRANCH
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- PROPOSED TRAIL 3m ASPHALT WITH SLOPE (1-3% INCLINE)
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- PROPOSED TRAIL 3m ASPHALT WITH SLOPE (5-8% INCLINE)
- PROPOSED TRAIL 3m MULCH
- EXISTING STORM SERVICE LINE
- EXISTING SANITARY
- EXISTING WATERMAIN

NOTE:

UNDERGROUND UTILITIES AND PLANTING LAYOUT TO BE DETERMINED BASED OFF THE TOTAL COMPENSATION DENOTED BY THE ARBORIST REPORT. THE LOCATION OF PLANTINGS CAN BE ADJUSTED IN THE DETAILED DESIGN.

AS PER TRCA'S STANDARD NOTES FOR EROSION AND SEDIMENT CONTROL 'ALL ACCESS TO THE WORK SITE SHALL BE FROM EITHER SIDE OF THE WATERCOURSE. NO EQUIPMENT OR VEHICLES ARE PERMITTED TO CROSS THROUGH THE WATERCOURSE UNLESS APPROVED BY TRCA.

DRAWING INFORMATION

ORIGINAL DESIGN AND/OR DRAWING BASE COMPLETED BY:
CITY OF VAUGHAN.
YEAR:
ADDRESS: 2141 MAJOR MACKENZIE DR.

NO	DATE	REVISION/ISSUED	BY	APPD

wsp
Landscape Architecture
582 Lancaster Street West
Kitchener, ON N2K 1M3
t. 519-743-8777
www.wsp.com

CLIENT:
CITY OF VAUGHAN
2141 Major MacKenzie Dr W, Maple, ON L6A 1T1

PROJECT TITLE:
BARTLEY SMITH GREENWAY TRAIL
TRAIL ALIGNMENT
SP #

SITE ADDRESS:
MCNAUGHTON RD. & MAJOR MACKENZIE DR.

DRAWING TITLE:
TRAIL LAYOUT PLAN

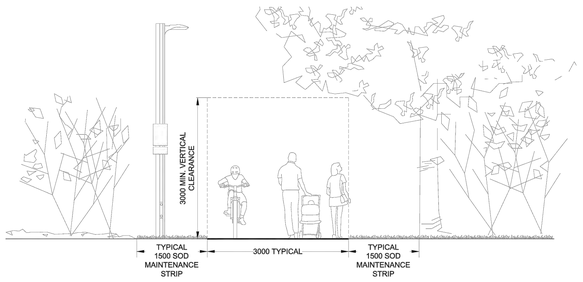
STAMP: NOT FOR CONSTRUCTION

DESIGNED	DRAWN	CHECKED
WL	WL	BV

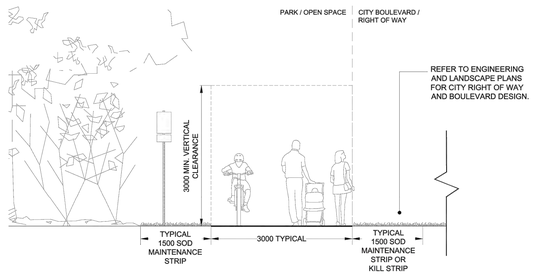
SCALE 1:500 | DATE DEC 10 2021

PROJECT NUMBER 211-07301-00 | DWG. NUMBER L-340

TYPICAL MULTI-USE RECREATIONAL TRAIL WITHIN PARK OR OPEN SPACE
N.T.S.



TYPICAL MULTI-USE RECREATIONAL TRAIL ABUTTING RIGHT OF WAY
N.T.S.



NOTES:

1) REFER TO LANDSCAPE PLANS TO CONFIRM PATH WIDTH AND SURFACING.
2) REFER TO LANDSCAPE PLANS FOR AREAS ABUTTING MULTI-USE TRAIL (FOR PLANTING AND OTHER FEATURES).
3) ALL MEASUREMENTS ARE IN MILLIMETERS UNLESS STATED OTHERWISE.

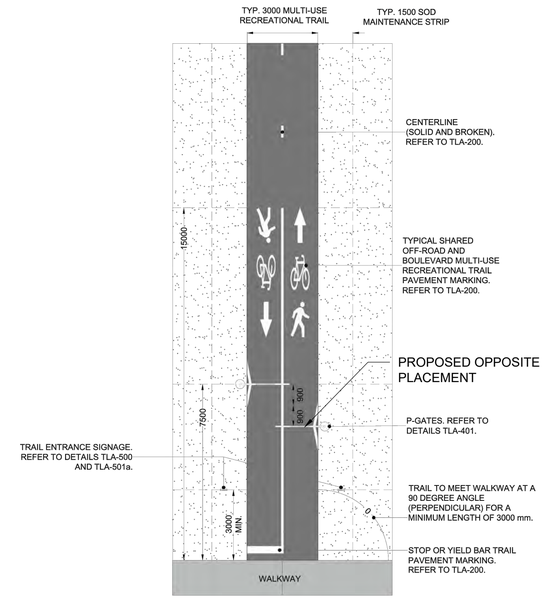
#	REVISIONS	APR'D	DATE
2.			
1.			

VAUGHAN

MULTI-USE RECREATIONAL TRAIL
TYPICAL CROSS-SECTIONS

DRAWN: PP APPROVED: MT
SCALE: N.T.S. DATE: 25/08/20
DRAWING NO. TLA 100

1 L-500 TYPICAL CROSS-SECTIONS
Scale: NTS



NOTES:

1) REFER TO LANDSCAPE PLANS TO CONFIRM PATH WIDTH AND SURFACING.
2) REFER TO LANDSCAPE PLANS FOR AREAS ABUTTING MULTI-USE TRAIL (FOR PLANTING AND OTHER FEATURES).
3) ALL MEASUREMENTS ARE IN MILLIMETERS UNLESS STATED OTHERWISE.

#	REVISIONS	APR'D	DATE
2.			
1.			

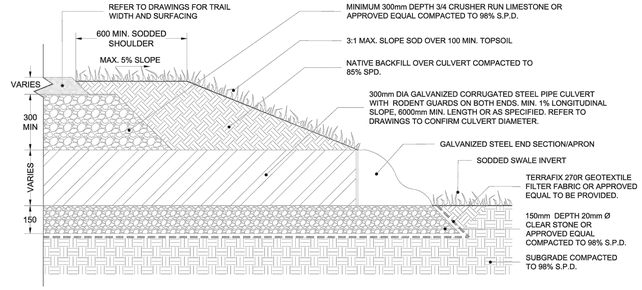
VAUGHAN

MULTI-USE RECREATIONAL TRAIL
TYPICAL TRAIL ENTRANCE LAYOUT

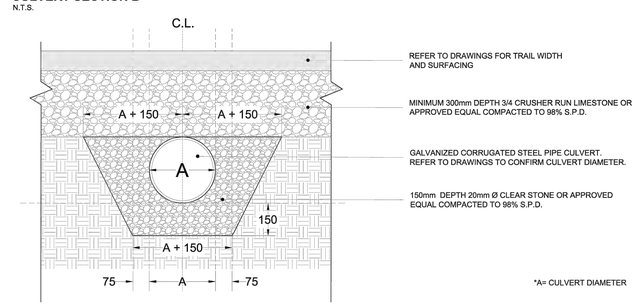
DRAWN: PP APPROVED: MT
SCALE: N.T.S. DATE: 25/08/20
DRAWING NO. TLA 101

2 L-500 TYPICAL TRAIL ENTRANCE LAYOUT
Scale: NTS

CULVERT SECTION A
N.T.S.



CULVERT SECTION B
N.T.S.



*A= CULVERT DIAMETER

NOTES:

1) CORRUGATED STEEL PIPE CULVERT SHALL BE GALVANIZED, 1.6mm THICK, COMPLETE WITH PREFABRICATED GALVANIZED STEEL END SECTIONS, WITH COLLAR BOLTS, BURIED BELOW GRADE AND WITH RODENT GUARDS ON BOTH ENDS.
2) END SECTION COLLAR BOLTS TO BE LOCATED LUSH OR BELOW GRADE.
3) INVERT ELEVATIONS OF CULVERTS MUST MATCH ELEVATIONS OF SWALE CENTER.
4) **REFER TO GEOTECHNICAL REPORT TO CONFIRM SUBGRADE AND BASE REQUIREMENTS OF TRAIL WORKS**, A MINIMUM OF 300mm DEPTH 3/4 CRUSHER RUN LIMESTONE OR APPROVE EQUAL COMPACTED TO 98% S.P.D. IS REQUIRED FOR CULVERT INSTALLATION.
5) ALL MEASUREMENTS ARE IN MILLIMETERS UNLESS STATED OTHERWISE.

#	REVISIONS	APR'D	DATE
2.			
1.			

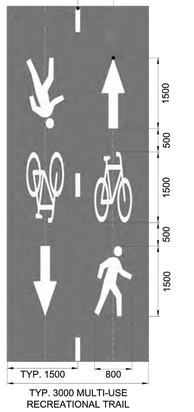
VAUGHAN

MULTI-USE RECREATIONAL TRAIL
TRAIL CULVERT

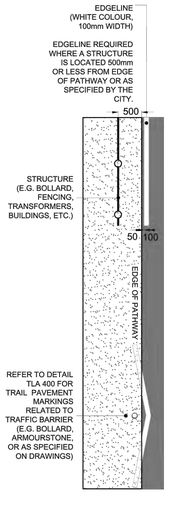
DRAWN: PP APPROVED: MT
SCALE: N.T.S. DATE: 25/08/20
DRAWING NO. TLA 320

3 L-500 TRAIL CULVERT
Scale: NTS

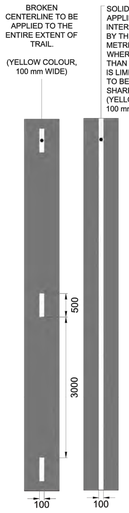
A) TYPICAL SHARED OFF-ROAD AND BOULEVARD MULTI-USE RECREATIONAL TRAIL PAVEMENT MARKINGS



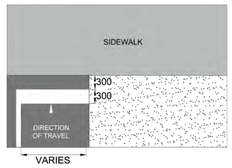
B) EDGELINE



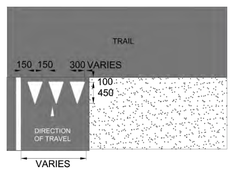
C) BROKEN AND SOLID CENTERLINES



D) STOP BAR



E) YIELD BAR



NOTES:

1) SHARED PATHWAY MARKINGS SET TO CONSIST OF WHITE COLOURED ARROW, BICYCLE, AND PEDESTRIAN SYMBOLS.
2) CONTRACTOR TO PREMARK ALL PAVEMENT MARKING LOCATIONS ALONG TRAIL FOR APPROVAL BY THE CITY.
3) ALL PAVEMENT MARKINGS TO BE DURABLE PAVEMENT MARKINGS - FIELD REACTED POLYMERIC PAVEMENT MARKING MATERIAL AS PER OPSS 710.05.04. FIELD REACTED POLYMERIC PAVEMENT MARKING MATERIALS SHALL CONFORM TO OPSS 1714.
4) ALL MEASUREMENTS ARE IN MILLIMETERS UNLESS STATED OTHERWISE.

VAUGHAN

MULTI-USE RECREATIONAL TRAIL
PAVEMENT MARKING

DRAWN: PP APPROVED: MT
SCALE: N.T.S. DATE: 25/08/20
DRAWING NO. TLA 200

#	REVISIONS	APR'D	DATE
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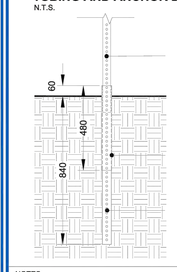
4 L-500 PAVEMENT MARKING
Scale: NTS

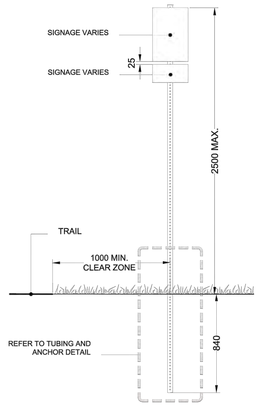
TUBING AND ANCHOR DETAIL
N.T.S.



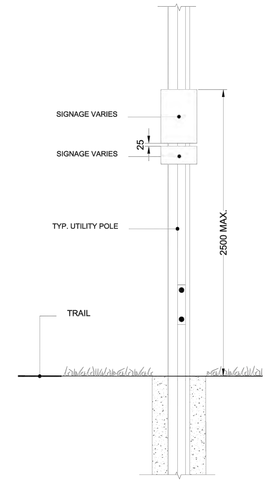
NOTES:

1) MOUNTING:
   A) ALL SIGNAGE TO BE MOUNT PERPENDICULAR TO THE DIRECTION OF TRAVEL UNLESS SPECIFIED OTHERWISE.
   B) SIGNAGE TO BE MOUNTED TO A 44 mm "TELESPAR" ARE TO BE FASTENED WITH A MINIMUM OF TWO (2) 5/16" TAMPER-PROOF GALVANIZED BOLTS.
   C) SIGNAGE TO BE MOUNTED TO UTILITY POLE ARE TO BE FASTENED WITH STAINLESS STEEL OR GALVANIZED HOSE CLAMP (COMPLETE WITH BRACKETS).
   D) SHOULD MULTIPLE SIGNS ARE TO BE MOUNTED ON ONE POLE, THE LARGER SIGN SHALL BE MOUNTED ON THE TOP.
   E) SHOULD MULTIPLE SIGNS BE MOUNTED AND THE MAX. POLE HEIGHT OF 2500 MM IS REACHED, SIGNS ARE TO BE MOUNTED BELOW THE TYPICAL HEIGHT OF 1800 mm.
2) POST LOCATION:
   A) WARNING POSTS TO BE LOCATED A MINIMUM OF 5.0 METERS BEFORE POINT OF CAUTION (E.G. TRAIL NARROWS OR STEEP SLOPE (GREATER THAN 10%)).
   B) AVOID LOCATING POSTS NEXT TO TREES, VEGETATION OR OTHER VISUAL OBSTRUCTIONS.
   C) FINAL LOCATIONS & ORIENTATION TO BE STAKED OUT AND CONFIRMED ON SITE AT THE APPROVAL OF THE CITY PRIOR TO INSTALLATION.
3) ALL MEASUREMENTS ARE IN MILLIMETERS UNLESS STATED OTHERWISE.

SIGN MOUNTED ON METAL TUBING
N.T.S.



SIGN MOUNTED ON UTILITY POST
SCALE 1:300



VAUGHAN

MULTI-USE RECREATIONAL TRAIL
TRAIL SIGN POST & INSTALLATION

DRAWN: PP APPROVED: MT
SCALE: N.T.S. DATE: 25/08/20
DRAWING NO. TLA 500

#	REVISIONS	APR'D	DATE
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5 L-500 TRAIL SIGN POST & INSTALLATION
Scale: NTS

KEY MAP

LEGEND

BENCHMARK INFORMATION

ELEVATIONS ARE IN METRES AND ARE DERIVED FROM BENCHMARK No. XXXXXXXXXX, ELEVATION = XXX.XX

SURVEY - DRAWING REF #: XXX-XXX-XX-XXX

BY: DATE:

NO	DATE	REVISION/ISSUED	BY	APPD

wsp
Landscape Architecture
582 Lancaster Street West
Kitchener, ON N2K 1M3
t. 519-743-8777
www.wsp.com

CLIENT:
CITY OF VAUGHAN
2141 Major MacKenzie Dr W, Maple, ON L6A 1T1

PROJECT TITLE:
BARTLEY SMITH GREENWAY TRAIL
TRAIL ALIGNMENT

SITE ADDRESS:
MCNAUGHTON RD. & MAJOR MACKENZIE DR.

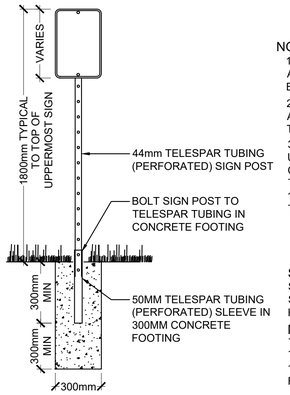
DRAWING TITLE:
DETAILS

STAMP
NOT FOR CONSTRUCTION

STAMP

DESIGNED	WL	DRAWN	WL	CHECKED	BV
SCALE	NA	DATE	DEC 10 2021		

PROJECT NUMBER 211-07301-00
DWG. NUMBER L-500



NOTE:

1. WHERE 2 OR MORE SIGNS ARE LOCATED, SIGNS SHALL BE STACKED VERTICALLY.
2. SIGNS SHALL BE PLACED A MINIMUM OF 0.6m OFF OF TRAIL EDGE
3. HEIGHT TO TOP OF UPPERMOST SIGN TO BE CONSISTENT THROUGHOUT TRAIL. TYPICAL HEIGHT OF 1800mm IS RELATIVE TO THE TRAIL SURFACE.

SIGNAGE FACE
STANDARD ENGINEERING GRADE SHEETING
HOLES - METRO PUNCH

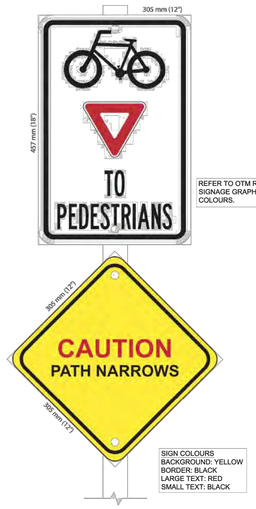
MOUNTING
THE SIGN FACE MUST BE SECURED TO A POST WITH TWO GALVANIZED 12MM HEX BOLTS AND NUTS WITH FLAT WASHERS ON BOTH SIDES

C:\Users\cwelf0078\Desktop\Minor Wayfinding Signage.JPG

1 L-501 MINOR WAYFINDING SIGNAGE

Scale: NTS

STANDARD PATH NARROWS GRAPHICS
N.T.S.



STANDARD STEEP SLOPES GRAPHICS
N.T.S.

STANDARD NO WINTER MAINTENANCE GRAPHICS
N.T.S.

NOTES:

1) SIGNAGE TEXT:
   A) LARGE TEXT: FONT TYPE ARIAL, BOLD AND 51 mm (2.00") HEIGHT OR REFER TO OTM SIGNAGE GRAPHICS STANDARD.
   B) SMALL TEXT: FONT TYPE ARIAL, BOLD AND 32 mm (1.25") HEIGHT OR REFER TO OTM SIGNAGE GRAPHICS STANDARD.
2) MANUFACTURING: CONTRACTOR TO PROVIDE SHOP DRAWING COMPLETE WITH COLOURS AND DIMENSIONS FOR APPROVAL PRIOR TO MANUFACTURING.
3) POST LOCATION: REFER TO DETAIL TLA-500 (TRAIL SIGNAGE - POST & INSTALLATION.
4) MOUNTING: REFER TO DETAIL TLA-500 (TRAIL SIGNAGE - POST & INSTALLATION)
5) ALL MEASUREMENTS ARE IN MILLIMETERS UNLESS STATED OTHERWISE.

VAUGHAN

MULTI-USE RECREATIONAL TRAIL
TRAIL SIGNAGE GRAPHICS - OTHER (A)

DRAWN: PP APPROVED: MT
SCALE: NTS DATE: 25/08/20

DRAWING NO. TLA 501b

#	REVISIONS	APR'D	DATE
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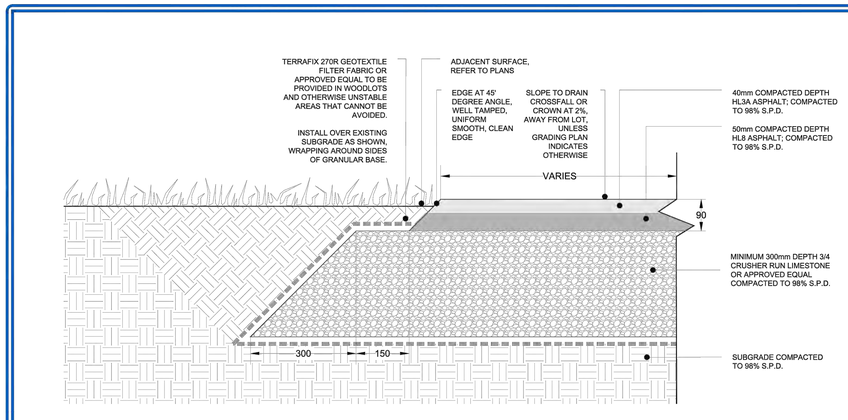
2 L-501 TRAIL SIGNAGE GRAPHICS - OTHER (A)

Scale: NTS



NOTES:

1) ASPHALT PAVING IS REQUIRED IF TRAIL SLOPE IS STEEPER THAN 10% OR AS SPECIFIED BY THE CITY.
2) ALL VEGETATION AND TOPSOIL TO BE REMOVED AS PART OF TRAIL SUBGRADE PREPARATION. EXPOSED SUBGRADE SURFACE IS TO BE COMPACTED AND PROOF-ROLLED WITH A HEAVY ROLLER AND INSPECTED BY A GEOTECHNICAL ENGINEER. ANY SOFT AREAS DURING PROOF-ROLLING SHALL BE SUB-EXCAVATED AND REPLACED WITH IMPORTED GRANULAR, SUCH AS OPSS GRANULAR 'B' AND COMPACTED TO 98% S.P.D.
3) **REFER TO GEOTECHNICAL REPORT TO CONFIRM SUBGRADE AND BASE REQUIREMENTS.**
4) IN WOODLOTS, ALL DISTURBED AREAS ADJACENT TO TRAIL SHALL BE RESTORED WITH SHREDDED BARK MULCH (CANADA RED OR GRO BARK) 700 TO 1000 mm WIDE STRIP CONTINUOUS ALONG THE EDGE OF ASPHALT TRAIL TO A DEPTH OF 100 mm.
5) SOD LAID AT TRAIL EDGE TO BE PLACED 25 mm BELOW THE DOWNHILL SIDE OF A CROSS SLOPE. SOD LAID ON THE UPHILL SIDE OF A CROSS SLOPE TO BE LEVEL WITH FINISHED GRADE OF THE WALKWAY TO ENSURE POSITIVE
6) ALL MEASUREMENTS ARE IN MILLIMETERS UNLESS STATED OTHERWISE.

VAUGHAN

MULTI-USE RECREATIONAL TRAIL
HEAVY-DUTY ASPHALT PAVING

DRAWN: PP APPROVED: MT
SCALE: N.T.S. DATE: 25/08/20

DRAWING NO. TLA 300a

#	REVISIONS	APR'D	DATE
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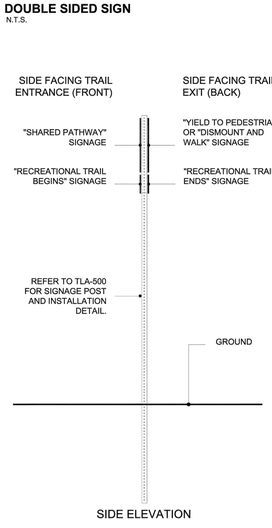
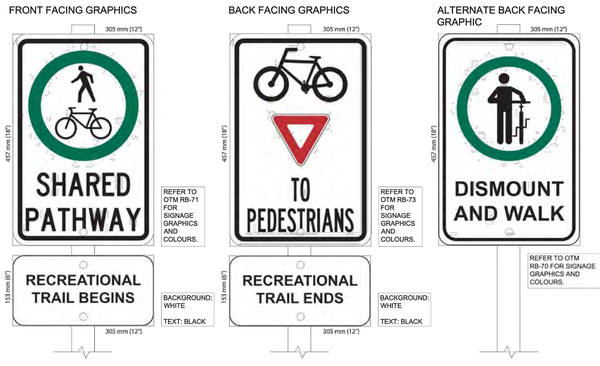
3 L-501 HEAVY-DUTY ASPHALT PAVING

Scale: NTS

DOUBLE SIDED SIGN
N.T.S.



STANDARD ENTRANCE SIGNAGE GRAPHICS
N.T.S.



NOTES:

1) SIGNAGE TEXT: FONT TYPE ARIAL, BOLD AND 32 mm (1.25") HEIGHT OR REFER TO OTM SIGNAGE GRAPHICS STANDARD.
2) MANUFACTURING: CONTRACTOR TO PROVIDE SHOP DRAWING COMPLETE WITH COLOURS AND DIMENSIONS FOR APPROVAL PRIOR TO MANUFACTURING.
3) POST LOCATION: REFER TO DETAIL TLA-500 (TRAIL SIGNAGE - POST & INSTALLATION)
4) MOUNTING: REFER TO DETAIL TLA-500 (TRAIL SIGNAGE - POST & INSTALLATION)
5) ALL MEASUREMENTS ARE IN MILLIMETERS UNLESS STATED OTHERWISE.

VAUGHAN

MULTI-USE RECREATIONAL TRAIL
TRAIL ENTRANCE SIGNAGE

DRAWN: PP APPROVED: MT
SCALE: N.T.S. DATE: 25/08/20

DRAWING NO. TLA 501a

#	REVISIONS	APR'D	DATE
7.			
6.			
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4.			
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1.			

4 L-501 TRAIL ENTRANCE SIGNAGE

Scale: NTS

KEY MAP

LEGEND

BENCHMARK INFORMATION

ELEVATIONS ARE IN METRES AND ARE DERIVED FROM BENCHMARK No. XXXXXXXXXX,
ELEVATION = XXX.XX

SURVEY - DRAWING REF #: XXX-XXX-XX-XXX

BY: DATE:

NO	DATE	REVISION/ISSUED	BY	APPD

wsp
Landscape Architecture
582 Lancaster Street West
Kitchener, ON N2K 1M3
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www.wsp.com

CLIENT:
CITY OF VAUGHAN
2141 Major MacKenzie Dr W, Maple, ON L6A 1T1

PROJECT TITLE:
BARTLEY SMITH GREENWAY TRAIL
TRAIL ALIGNMENT

SITE ADDRESS:
MCNAUGHTON RD. & MAJOR MACKENZIE DR.

DRAWING TITLE:
DETAILS

STAMP
NOT FOR CONSTRUCTION

STAMP

DESIGNED	DRAWN	CHECKED
WL	WL	BV

SCALE: NA
DATE: DEC 10 2021
PROJECT NUMBER: 211-07301-00
DWG. NUMBER: L-501

SIGN COLOURS
BACKGROUND: WHITE
BORDER: BLUE
TEXT: BLUE
SYMBOLS: BLACK / RED / GREEN

NOTES:

1) MANUFACTURING: CONTRACTOR TO PROVIDE SHOP DRAWING COMPLETE WITH COLOURS AND DIMENSIONS FOR APPROVAL PRIOR TO MANUFACTURING.
2) POST LOCATION: REFER TO DETAIL TLA-500 (TRAIL SIGN POST & INSTALLATION)
3) MOUNTING: REFER TO DETAIL TLA-500 (TRAIL SIGN POST & INSTALLATION)
4) ALL MEASUREMENTS ARE IN MILLIMETERS UNLESS STATED OTHERWISE.

#	REVISIONS	APR'D	DATE
2.			
1.			

VAUGHAN

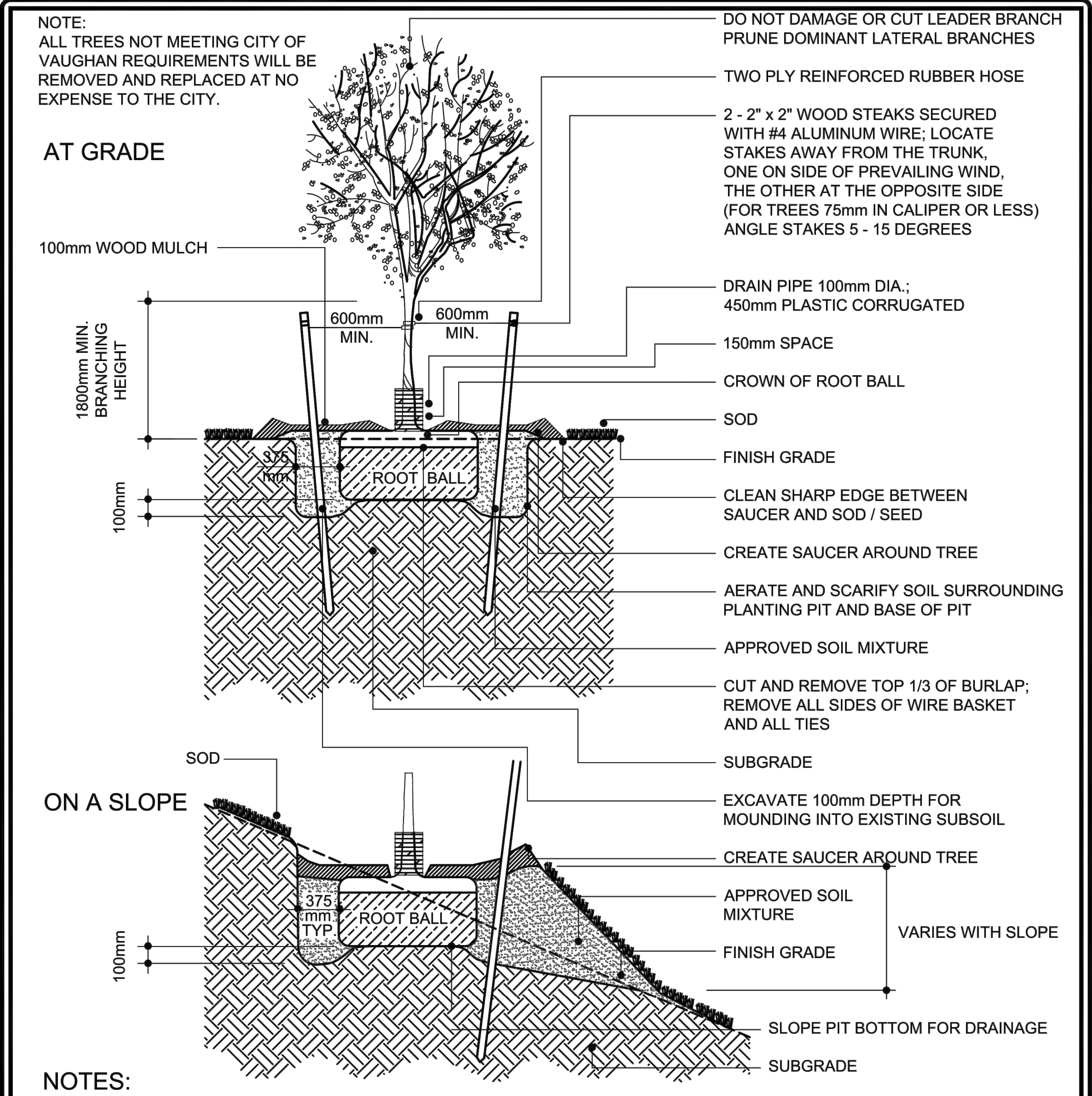
PARK BY-LAW SIGNAGE GRAPHIC

DRAWN: PP APPROVED: MT
SCALE: N.T.S. DATE: 25/08/20
DRAWING NO. MLA 708

1 / L-502 PARK BY-LAW SIGNAGE GRAPHIC

Scale: NTS

NOTE:
ALL TREES NOT MEETING CITY OF VAUGHAN REQUIREMENTS WILL BE REMOVED AND REPLACED AT NO EXPENSE TO THE CITY.



NOTES:
1. Position crown of root ball 50mm above finish grade to allow for settling.
2. Do corrective pruning to retain natural form of tree as directed by City Forestry Supervisor.
3. Water all plant material sufficiently to maintain vigorous, healthy growth from time of delivery/ installation until the end of the specified guarantee period.
4. Stake height shall be a minimum of 1.5 metres above finish grade.
5. For trees planted within planting or shrub beds, delete saucer around base of tree.
6. Remove all tree guards/ stakes 12 months after acceptance/ assumption or as specified.
7. No tree pits shall be left open overnight.
8. Do not allow air pockets when backfilling.
9. All dimensions are in millimeters.

VAUGHAN
DEVELOPMENT PLANNING DEPT.
URBAN DESIGN DIVISION

DECIDUOUS TREE
PLANTING DETAIL FOR
TREES UNDER 90mm IN CALIPER

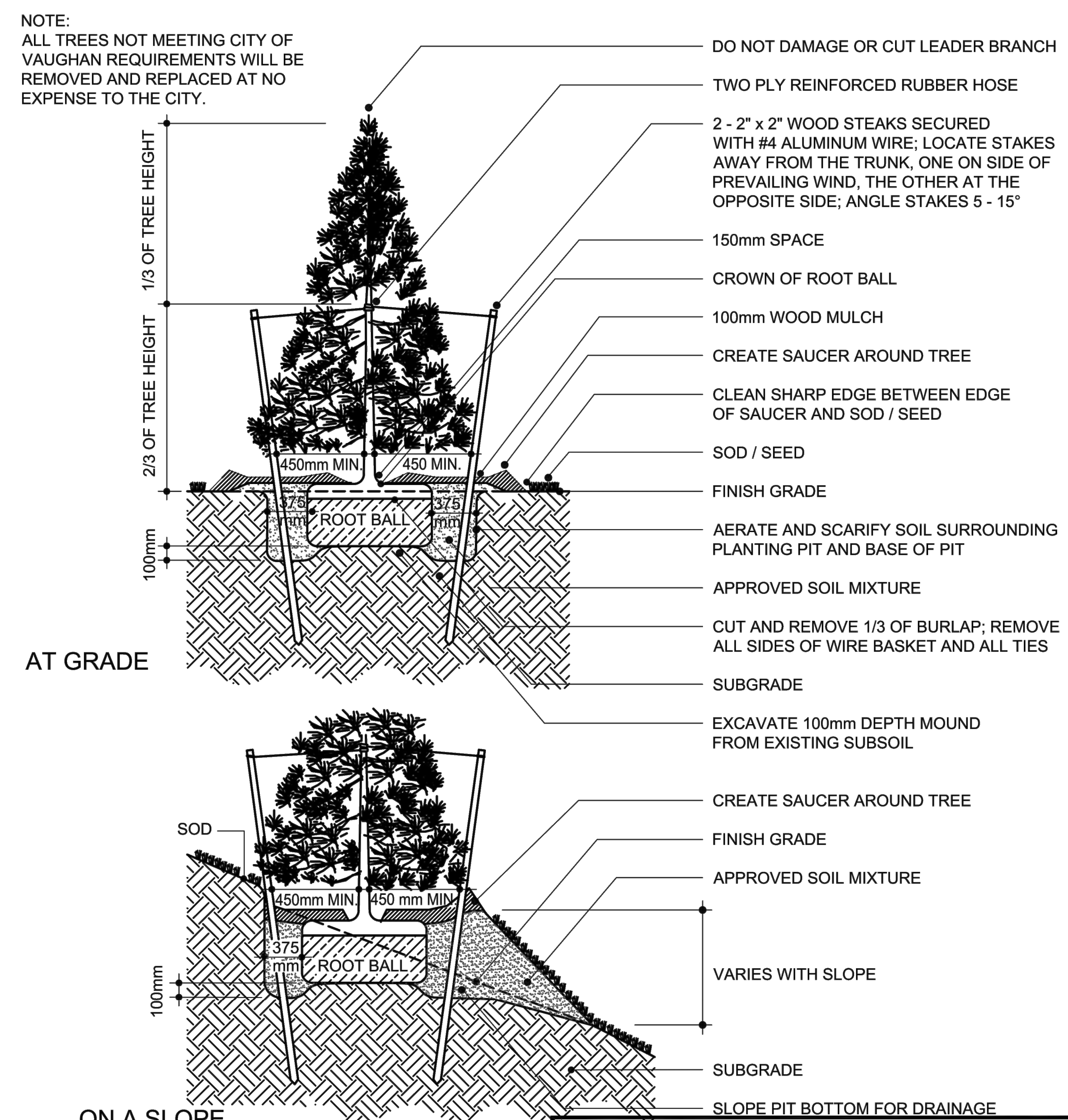
NOTE: THIS TYPICAL DETAIL IS INTENDED TO PROVIDE DESIGN DIRECTION AND IS FOR REFERENCE ONLY. IT MAY BE USED AS PART OF THE CONSTRUCTION PACKAGE OR SITE PLAN APPLICATION PROVIDED THE DETAIL IS CERTIFIED BY A REGISTERED LANDSCAPE ARCHITECT OR PROFESSIONAL ENGINEER AS APPLICABLE.

DRAWN & DESIGNED: URBAN DESIGN
NOT TO SCALE DATE: 03 / 01 / 2011
STD. DWG. NO. ULA 101

2 / L-502 DECIDUOUS TREE PLANTING FOR TREES UNDER 90mm IN CALIPER

Scale: NTS

NOTE:
ALL TREES NOT MEETING CITY OF VAUGHAN REQUIREMENTS WILL BE REMOVED AND REPLACED AT NO EXPENSE TO THE CITY.



NOTES:
1. All dimensions are in millimeters.
2. No tree pits shall be left open overnight.
3. Do not allow air pockets when backfilling.
4. Position crown of root ball 50mm above finish grade to allow for settling.
5. Water all plant material sufficiently to maintain vigorous, healthy growth from time of delivery/ installation until the end of the specified guarantee period.
6. For trees planted within planting or shrub beds, delete saucer around base of tree.
7. Remove all tree guards/ stakes 12 months after acceptance/ assumption or as specified.

VAUGHAN
DEVELOPMENT PLANNING DEPT.
URBAN DESIGN DIVISION

CONIFEROUS TREE
PLANTING DETAIL FOR
TREES 2500mm IN HEIGHT OR LESS

NOTE: THIS TYPICAL DETAIL IS INTENDED TO PROVIDE DESIGN DIRECTION AND IS FOR REFERENCE ONLY. IT MAY BE USED AS PART OF THE CONSTRUCTION PACKAGE OR SITE PLAN APPLICATION PROVIDED THE DETAIL IS CERTIFIED BY A REGISTERED LANDSCAPE ARCHITECT OR PROFESSIONAL ENGINEER AS APPLICABLE.

DRAWN & DESIGNED: URBAN DESIGN
NOT TO SCALE DATE: 03 / 01 / 2011
STD. DWG. NO. ULA 103

3 / L-502 CONIFEROUS TREE PLANTING FOR TREES 2500mm IN HEIGHT OR LESS

Scale: NTS

Key	Qty.	Botanical Name	Common Name	Condition	Spacing	Spread
Trees						
Deciduous						
AG		Aesculus glabra	Ohio Buckeye	60mm Cal., W.B.	As Shown	10m
AS		Acer saccharum	Sugar Maple	60mm Cal., W.B.	As Shown	15m
ASC		Acer saccharinum	Silver Maple	60mm Cal., W.B.	As Shown	15m
AC		Amelanchier canadensis	Serviceberry	60mm Cal., W.B.	As Shown	4m
BP		Betula papyrifera	Paper Birch	60mm Cal., W.B.	As Shown	12m
CC		Carya cordiformis	Bitternut Hickory	60mm Cal., W.B.	As Shown	15m
CO		Celtis occidentalis	Hackberry	60mm Cal, W.B.	As Shown	18m
FG		Fagus grandifolia	American Beech	60mm Cal., W.B.	As Shown	20m
GT		Gleditsia tricanthos var. inermis Skyline ('Skycole')		60mm Cal., W.B.	As Shown	
QR		Quercus rubra	Red Oak	60mm Cal, W.B.	As Shown	15m
QM		Quercus macrocarpa	Burr Oak	60mm Cal, W.B.	As Shown	13m
Coniferous						
PG		Picea glauca	White Spruce	200cm Tall, W.B.	As Shown	6m
PS		Pinus strobus	Eastern White Pine	200cm Tall, W.B.	As Shown	7m

Note: Plant Quantities Indicated on the Planting Plan will Supercede the Quantities Listed Above.

4 / L-502 TYPE 1 - LIGHT BUFER ENHANCEMENT PLANTING LIST

Scale: NTS

Key	Qty.	Botanical Name	Common Name	Condition	Spacing	Spread
Shrubs						
Deciduous						
cs		Cornus sericea	Red Osier Dogwood	3gal, 60cm	As Shown	2.5m
po		Physocarpus opulifolius	Common Ninebark	3 gal, 60cm	As Shown	2.0m
rt		Rhus typhina	Staghorn Sumac	3gal, 60cm	As Shown	2.5m
rp		Rosa palustris	Swamp Rose	3 gal, 60cm	As Shown	1.75m
sa		Symphoricarpos albus	Snowberry	3gal, 60cm	As Shown	1.25m
sc		Sambucus canadensis	American Black Elderberry	3gal, 60cm	As Shown	2.0m
va		Viburnum acerifolium	Maple Leaf Viburnum	3gal, 60cm	As Shown	1m
Coniferous						
tc		Taxus canadensis	Canadian Yew	3gal, 60cm	As Shown	2m

Note: Plant Quantities Indicated on the Planting Plan will Supercede the Quantities Listed Above.

5 / L-502 TYPE 2 - MEDIUM BUFFER ENHANNCEMENT PLANTING

Scale: NTS

Key	Qty.	Botanical Name	Common Name	Condition	Spacing	Spread
Trees						
Deciduous						
AS		Acer saccharum	Sugar Maple	60mm Cal., W.B.	As Shown	15m
ASC		Acer saccharinum	Silver Maple	60mm Cal., W.B.	As Shown	15m
CO		Celtis occidentalis	Hackberry	60mm Cal, W.B.	As Shown	18m
OV		Ostrya virginiana	Ironwood	60mm Cal, W.B.	As Shown	7m
QR		Quercus rubra	Red Oak	60mm Cal, W.B.	As Shown	15m
QM		Quercus macrocarpa	Burr Oak	60mm Cal, W.B.	As Shown	13m
Coniferous						
AB		Aibes balsamea	Balsam Fir	200cm Tall, W.B.	As Shown	8m
JV		Juniperus virginiana	Eastern Red Cedar	200cm Tall, W.B.	As Shown	2m
PG		Picea glauca	White Spruce	200cm Tall, W.B.	As Shown	6m
PS		Pinus strobus	Eastern White Pine	200cm Tall, W.B.	As Shown	7m
TO		Thuja occidentalis	Eastern White Cedar	200cm Tall, W.B.	As Shown	3m
Shrubs						
Deciduous						
co		Cornus alternifolia	Pagoda Dogwood	BBC 150cm	As Shown	7m
cs		Cornus sericea	Red-Osier Dogwood	3 gal, 60cm	As Shown	2m
po		Physocarpus opulifolius	Common Ninebark	3 gal, 60cm	As Shown	2.0m
rp		Rosa palustris	Swamp Rose	3 gal, 60cm	As Shown	1.75m
sa		Symphoricarpos albus	Snowberry	3gal, 60cm	As Shown	1.25m
Coniferous						
tc		Taxus canadensis	Canadian Yew	3 gal, 60cm	As Shown	2m

Note: Plant Quantities Indicated on the Planting Plan will Supercede the Quantities Listed Above.

6 / L-502 TYPE 3 - ROBUST BUFFER ENHANCEMENT PLANTING

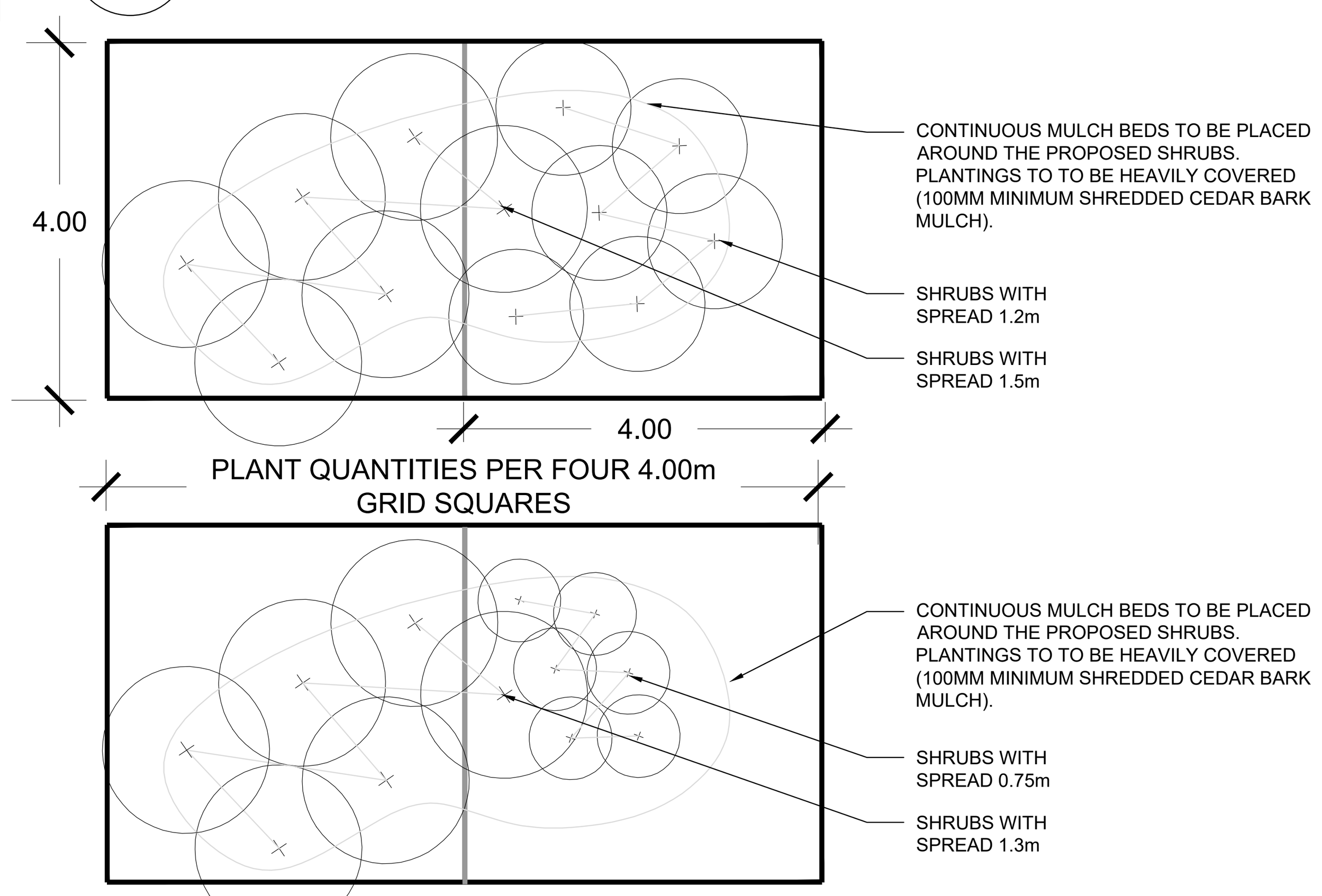
Scale: NTS

Key	Qty.	Botanical Name	Common Name	Condition	Spacing	Spread
Trees						
Deciduous						
ASC		Acer saccharinum	Silver Maple	60mm Cal, W.B.	As Shown	
JN		Juglans nigra	Black Walnut	250cm, 15 gal	As Shown	16m
QR		Quercus rubrum	Red Oak	60mm Cal, W.B.	As Shown	
Coniferous						
TO		Thuja occidentalis	Eastern White Cedar	200cm Tall, W.B.	As Shown	3m
Shrubs						
Deciduous						
cr		Cornus racemose	Gray Dogwood	3gal, 60cm	As Shown	3m
sb		Salix bebbiana	Beaked Willow	3gal, 60cm	As Shown	9m
li		Lonicera involucrata	Black Twinberry	3gal, 60cm	As Shown	2m
ra		Rhus aromatica	Fragrant Sumac	3 gal, 60cm	As Shown	2.0m
ri		Rubus idaeus	Wild Red Raspberry	3gal, 60cm	As Shown	1.7m
roc		Rubus occidentalis	Black Raspberry	3gal, 60cm	As Shown	2.5m
ro		Rubus odoratus	Flowering Raspberry	3gal, 60cm	As Shown	1.5m
va		Viburnum acerifolium	Maple Leaf Viburnum	3gal, 60cm	As Shown	1m

Note: Plant Quantities Indicated on the Planting Plan will Supercede the Quantities Listed Above.

7 / L-502 TYPE 4 - RIVER VALLEY BUFFER ENHANNCEMENT PLANTING

Scale: NTS



8 / L-502 PLANTING SCHEMATIC - BUFFER ENHANCEMENT

1:75

KEY MAP

LEGEND

BENCHMARK INFORMATION
ELEVATIONS ARE IN METRES AND ARE DERIVED FROM BENCHMARK No. XXXXXXXXXX, ELEVATION = XXX.XX
SURVEY - DRAWING REF #: XXX-XXX-XX-XXX
BY: DATE:

NO	DATE	REVISION/ISSUED	BY	APPD

Landscape Architecture
582 Lancaster Street West
Kitchener, ON N2K 1M3
t. 519-743-8777
www.wsp.com

CLIENT:
CITY OF VAUGHAN
2141 Major MacKenzie Dr W, Maple, ON L6A 1T1

PROJECT TITLE:
BARTLEY SMITH GREENWAY TRAIL
TRAIL ALIGNMENT

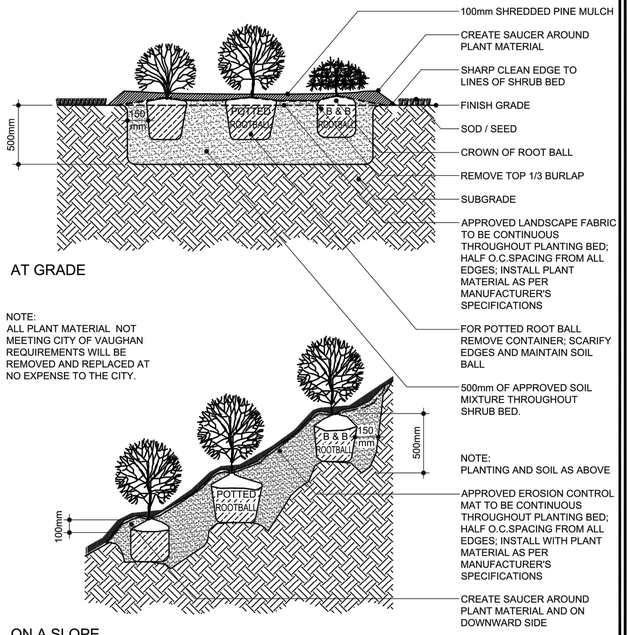
SITE ADDRESS:
MCNAUGHTON RD. & MAJOR MACKENZIE DR.

DRAWING TITLE:
DETAILS

STAMP: NOT FOR CONSTRUCTION
STAMP

DESIGNED WL | DRAWN WL | CHECKED BV
SCALE NA | DATE DEC 10 2021
PROJECT NUMBER 211-07301-00 | DWG. NUMBER L-502

YY/MM/DD6/28/2023 10:57 AM
C:\Users\caw070378\WSP O365\211-07301-00 - CAD (1)\2023-06-28 BSG Trail 30% Details.dwg



AT GRADE

NOTE:
ALL PLANT MATERIAL NOT MEETING CITY OF VAUGHAN REQUIREMENTS WILL BE REMOVED AND REPLACED AT NO EXPENSE TO THE CITY.

ON A SLOPE

NOTES:
1. All dimensions are in millimeters.
2. Do not allow air pockets when backfilling.
3. Position crown of root ball 50mm above finish grade to allow for settling.
4. For bare root planting.
5. Water all plant material sufficiently to maintain vigorous, healthy growth from time of delivery/ installation until the end of the specified guarantee period.

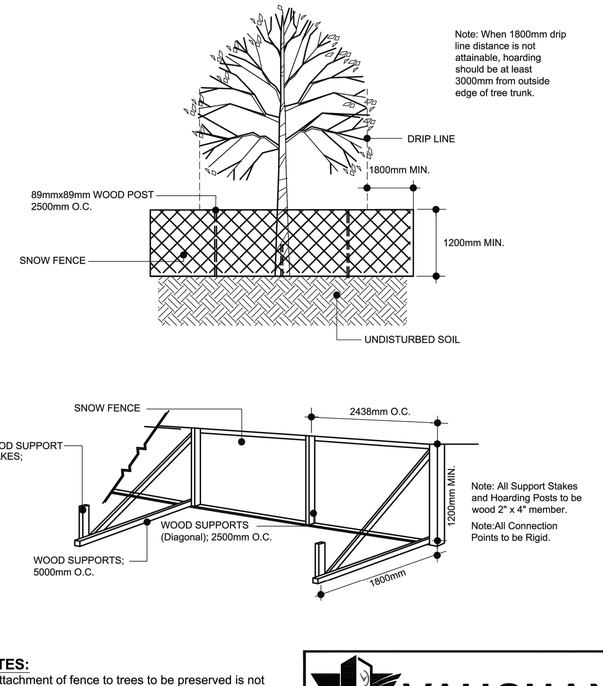
VAUGHAN
DEVELOPMENT PLANNING DEPT.
URBAN DESIGN DIVISION

SHRUB PLANTING DETAIL

NOTE: THIS TYPICAL DETAIL IS INTENDED TO PROVIDE DESIGN DIRECTION AND IS FOR REFERENCE ONLY. IT MAY BE USED AS PART OF THE CONSTRUCTION PACKAGE OR SITE PLAN APPLICATION PROVIDED THE DETAIL IS CERTIFIED BY A REGISTERED LANDSCAPE ARCHITECT OR PROFESSIONAL ENGINEER AS APPLICABLE

DRAWN & DESIGNED: URBAN DESIGN	STD. DWG. NO.
NOT TO SCALE DATE: 03 / 01 / 2011	ULA 105

1 L-503 SHRUB PLANTING DETAIL
Scale: NTS



NOTES:
1. Attachment of fence to trees to be preserved is not allowed.
2. Ensure fence is continuous and is located beyond the drip line of trees to be preserved.
3. Fencing to be installed prior to start of construction.
4. All supports and bracing should be inside the Tree Protection Zone. All such supports should minimize damaging roots outside the Tree Protection Barrier.
5. No Construction activity, grade changes, surface treatment or excavations of any kind is permitted within the Tree Protection Zone.

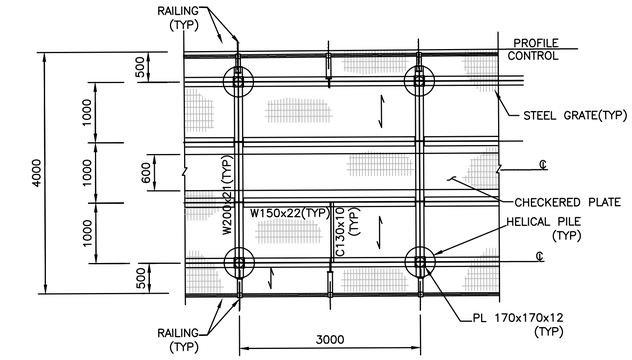
VAUGHAN
DEVELOPMENT PLANNING DEPT.
URBAN DESIGN DIVISION

LIGHT DUTY TREE HOARDING PROTECTION DETAIL (SNOW FENCE)

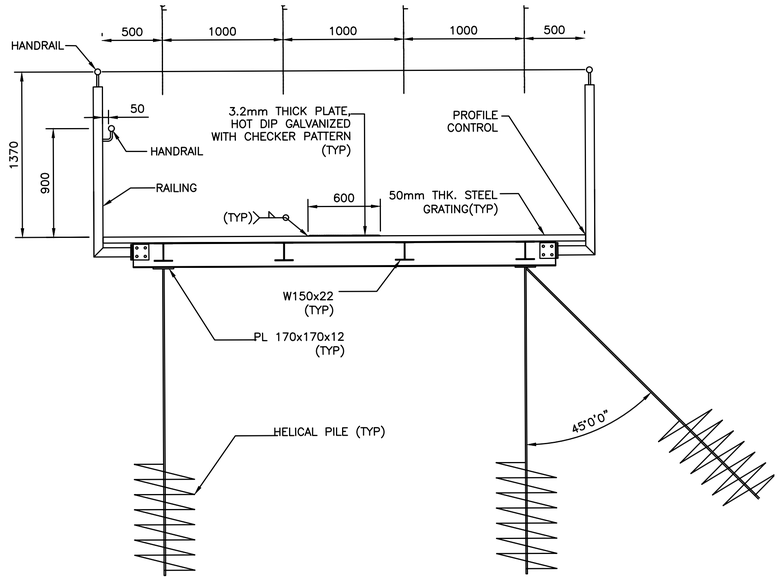
NOTE: THIS TYPICAL DETAIL IS INTENDED TO PROVIDE DESIGN DIRECTION AND IS FOR REFERENCE ONLY. IT MAY BE USED AS PART OF THE CONSTRUCTION PACKAGE OR SITE PLAN APPLICATION PROVIDED THE DETAIL IS CERTIFIED BY A REGISTERED LANDSCAPE ARCHITECT OR PROFESSIONAL ENGINEER AS APPLICABLE

DRAWN & DESIGNED: URBAN DESIGN	STD. DWG. NO.
NOT TO SCALE DATE: 04 / 07 / 2016	ULA 110B

2 L-503 LIGHT DUTY TREE HOARDING PROTECTION DETAIL (SNOW FENCE)
Scale: NTS

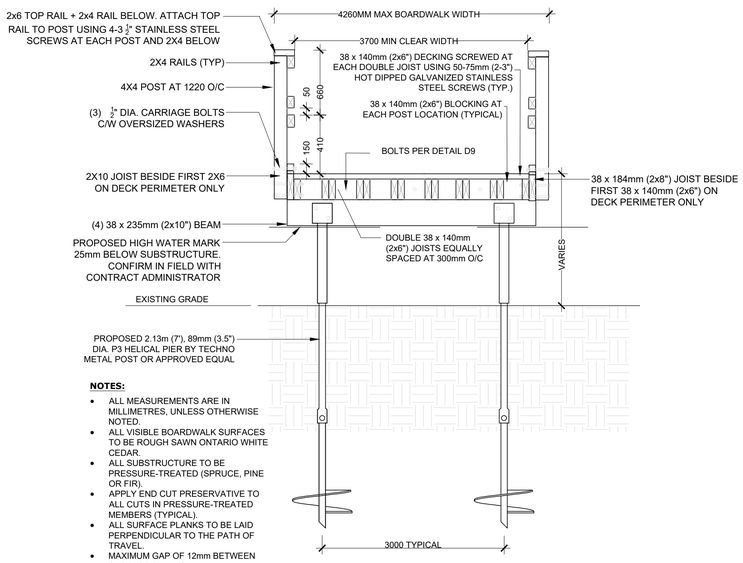


TYPICAL BAY PLAN–SPAN 3000mm



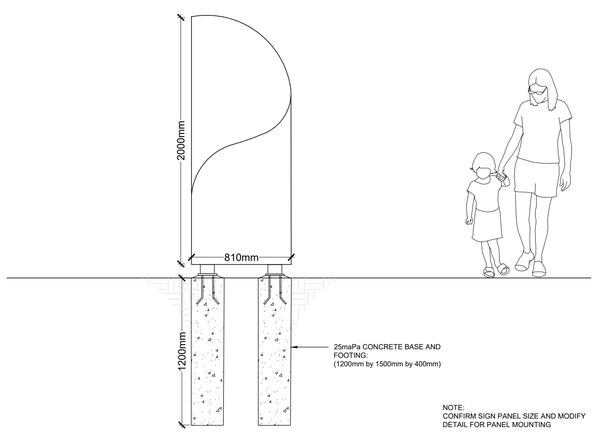
TYPICAL TRANSVERSE SECTION

3 L-503 METAL BOARDWALK - ALTERNATE DETAIL
Scale: N.T.S.



NOTES:
- ALL MEASUREMENTS ARE IN MILLIMETRES, UNLESS OTHERWISE NOTED.
- ALL VISIBLE BOARDWALK SURFACES TO BE ROUGH SAWN ONTARIO WHITE CEDAR.
- ALL SUBSTRUCTURE TO BE PRESSURE-TREATED (SPRUCE, PINE OR FIR).
- APPLY END CUT PRESERVATIVE TO ALL CUTS IN PRESSURE-TREATED MEMBERS (TYPICAL).
- ALL SURFACE PLANKS TO BE LAID PERPENDICULAR TO THE PATH OF TRAVEL.
- MAXIMUM GAP OF 12mm BETWEEN SURFACE PLANKS.

5 L-503 RAISED WOODEN BOARDWALK WITH EDGE PROTECTION - SECTION
Scale: N.T.S.



NOTE:
CONFIRM SIGN PANEL SIZE AND MODIFY DETAIL FOR PANEL MOUNTING

4 L-503 MAJOR WAYFINDING DETAIL
Scale: N.T.S.

KEY MAP

LEGEND

BENCHMARK INFORMATION

ELEVATIONS ARE IN METRES AND ARE DERIVED FROM BENCHMARK No. XXXXXXXXXX, ELEVATION = XXX.XX

SURVEY - DRAWING REF #: XXX-XXX-XX-XXX

BY: DATE:

NO	DATE	REVISION/ISSUED	BY	APPD

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2141 Major MacKenzie Dr W, Maple, ON L6A 1T1

PROJECT TITLE:
BARTLEY SMITH GREENWAY TRAIL
TRAIL ALIGNMENT

SITE ADDRESS:
MCNAUGHTON RD. & MAJOR MACKENZIE DR.

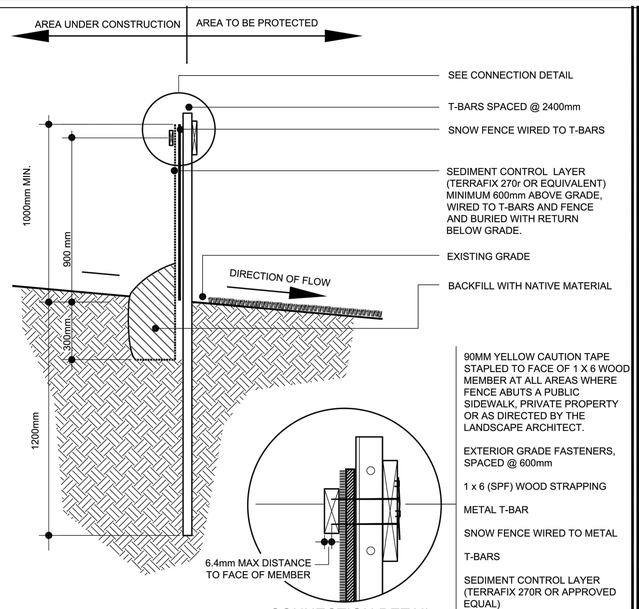
DRAWING TITLE:
DETAILS

STAMP: NOT FOR CONSTRUCTION

STAMP

DESIGNED	DRAWN	CHECKED
WL	WL	BV

SCALE: NA
DATE: DEC 10 2021
PROJECT NUMBER: 211-07301-00
DWG. NUMBER: L-503



CONNECTION DETAIL

NOTES:

1. SEDIMENT CONTROL FABRIC TO HAVE HORIZONTAL OVERLAP OF 1000mm @ ALL JOINTS

2. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR THE RESTORATION AND COST OF REPLACING ALL AREAS AND MATERIAL AFFECTED BY THE EXCAVATION FOR THE SEDIMENT CONTROL FENCE.

3. ALL FASTENERS ARE TO BE FLUSH WITH FACE OF MEMBERS. THE GENERAL CONTRACTOR IS RESPONSIBLE TO GRIND OR REMOVE ALL FASTENERS THAT PROJECT THROUGH FACE OF MEMBERS

4. ALL DIMENSIONS SHOWN IN MILLIMETERS

VAUGHAN
DEVELOPMENT PLANNING DEPT.
URBAN DESIGN DIVISION

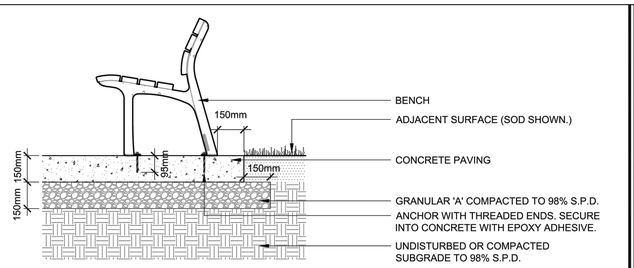
SEDIMENT CONTROL
CONSTRUCTION FENCING DETAIL

NOTE: THIS TYPICAL DETAIL IS INTENDED TO PROVIDE DESIGN DIRECTION AND IS FOR REFERENCE ONLY. IT MAY BE USED AS PART OF THE CONSTRUCTION PACKAGE OR SITE PLAN APPLICATION PROVIDED THE DETAIL IS CERTIFIED BY A REGISTERED LANDSCAPE ARCHITECT OR PROFESSIONAL ENGINEER AS APPLICABLE.

DRAWN & DESIGNED: URBAN DESIGN
NOT TO SCALE DATE: 03 / 01 / 2011
STD. DWG. NO. ULA 111

1 L-504 SEDIMENT CONTROL CONSTRUCTION FENCING DETAIL

Scale: NTS



NOTES:
1. THIS TYPICAL DETAIL IS INTENDED TO CONVEY INTENT AND IS FOR REFERENCE ONLY. IT SHALL NOT BE USED AS PART OF THE CONSTRUCTION DRAWING PACKAGE OR SITE PLAN APPLICATION.
2. BENCH: NEOLIVIANO BY LANDSCAPE FORMS. ALUMINUM FINISH WITH JARAH WOOD OR APPROVED EQUIVALENT.
3. INSTALLATION PER MANUFACTURER'S WRITTEN INSTRUCTIONS

VAUGHAN
DEVELOPMENT PLANNING DEPT.
URBAN DESIGN DIVISION

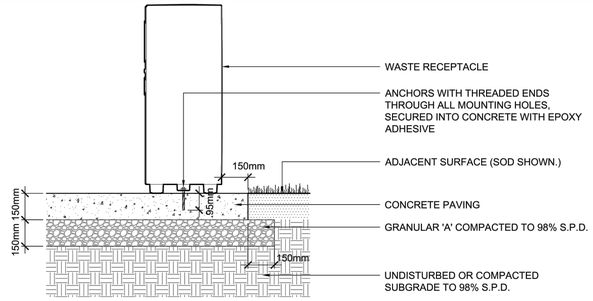
FURNISHING - BENCH

NOTE: THIS TYPICAL DETAIL IS INTENDED TO PROVIDE DESIGN DIRECTION AND IS FOR REFERENCE ONLY. IT MAY BE USED AS PART OF THE CONSTRUCTION PACKAGE OR SITE PLAN APPLICATION PROVIDED THE DETAIL IS CERTIFIED BY A REGISTERED LANDSCAPE ARCHITECT OR PROFESSIONAL ENGINEER AS APPLICABLE.

DRAWN & DESIGNED:
NOT TO SCALE DATE:
STD. DWG. NO. ULA 016

2 L-504 FURNISHING - BENCH

Scale: NTS



NOTES:
1. THIS TYPICAL DETAIL IS INTENDED TO CONVEY INTENT AND IS FOR REFERENCE ONLY. IT SHALL NOT BE USED AS PART OF THE CONSTRUCTION DRAWING PACKAGE OR SITE PLAN APPLICATION.
2. WASTE RECEPTACLE: SELECT LITTER RECEPTACLE BY LANDSCAPE FORMS, TRIPLE UNIT, SOLID BODY, PERFORATED DOORS. COLOURS - POWDERCOATED SILVER, BLACK FOR TRIM RING AND SIGNAGE PLATE, OR APPROVED EQUIVALENT.
3. INSTALLATION PER MANUFACTURER'S WRITTEN INSTRUCTIONS
4. DETAIL NOT TO BE USED UNLESS REVIEWED, STAMPED AND CERTIFIED BY REGISTERED LANDSCAPE ARCHITECT.

VAUGHAN
DEVELOPMENT PLANNING DEPT.
URBAN DESIGN DIVISION

FURNISHING - WASTE RECEPTACLE

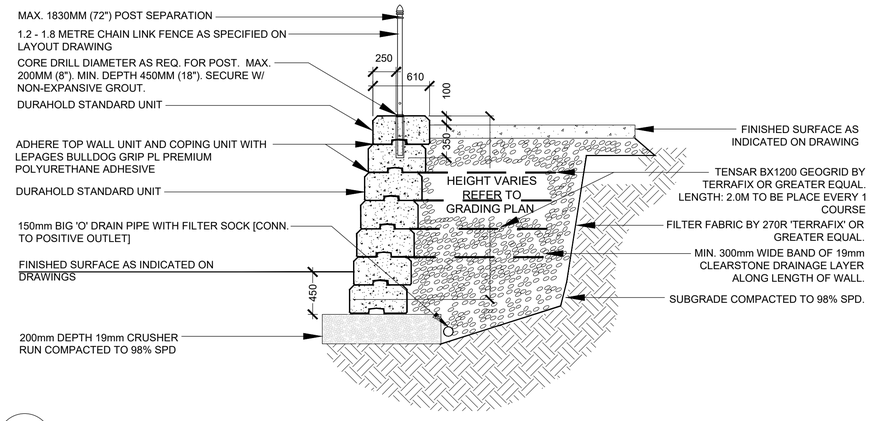
NOTE: THIS TYPICAL DETAIL IS INTENDED TO PROVIDE DESIGN DIRECTION AND IS FOR REFERENCE ONLY. IT MAY BE USED AS PART OF THE CONSTRUCTION PACKAGE OR SITE PLAN APPLICATION PROVIDED THE DETAIL IS CERTIFIED BY A REGISTERED LANDSCAPE ARCHITECT OR PROFESSIONAL ENGINEER AS APPLICABLE.

DRAWN & DESIGNED:
NOT TO SCALE DATE:
STD. DWG. NO. ULA 020

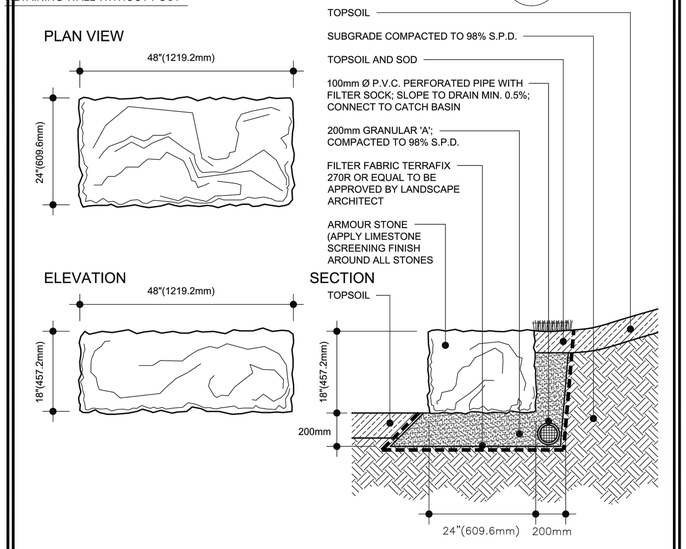
3 L-504 FURNISHING - WASTE RECEPTACLE

Scale: NTS

RETAINING WALL WITH POST



RETAINING WALL WITHOUT POST



NOTES:
1. All stones to be approved by Landscape Architect prior to installation.
2. All quarry stone to have split or naturally weathered faces; no exposed drill markings.

VAUGHAN
DEVELOPMENT PLANNING DEPT.
URBAN DESIGN DIVISION

ARMOUR STONE
RETAINING WALL DETAIL

NOTE: THIS TYPICAL DETAIL IS INTENDED TO PROVIDE DESIGN DIRECTION AND IS FOR REFERENCE ONLY. IT MAY BE USED AS PART OF THE CONSTRUCTION PACKAGE OR SITE PLAN APPLICATION PROVIDED THE DETAIL IS CERTIFIED BY A REGISTERED LANDSCAPE ARCHITECT OR PROFESSIONAL ENGINEER AS APPLICABLE.

DRAWN & DESIGNED: URBAN DESIGN
NOT TO SCALE DATE: 03 / 01 / 2011
STD. DWG. NO. ULA 310

NOTE: PREFABRICATED WALL OPTIONS IE: REDI WALL CAN BE EXPLORED FURTHER IN DETAILED DESIGN

4 L-504 RETAINING WALL OPTIONS

Scale: NTS

KEY MAP

LEGEND

BENCHMARK INFORMATION

ELEVATIONS ARE IN METRES AND ARE DERIVED FROM BENCHMARK No. XXXXXXXXXX, ELEVATION = XXX.XX

SURVEY - DRAWING REF #: XXX-XXX-XX-XXX

BY: DATE:

NO	DATE	REVISION/ISSUED	BY	APPD

wsp
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Kitchener, ON N2K 1M3
t. 519-743-8777
www.wsp.com

CLIENT:
CITY OF VAUGHAN
2141 Major MacKenzie Dr W, Maple, ON L6A 1T1

PROJECT TITLE:
BARTLEY SMITH GREENWAY TRAIL
TRAIL ALIGNMENT

SITE ADDRESS:
MCNAUGHTON RD. & MAJOR MACKENZIE DR.

DRAWING TITLE:
DETAILS

STAMP
NOT FOR CONSTRUCTION

STAMP

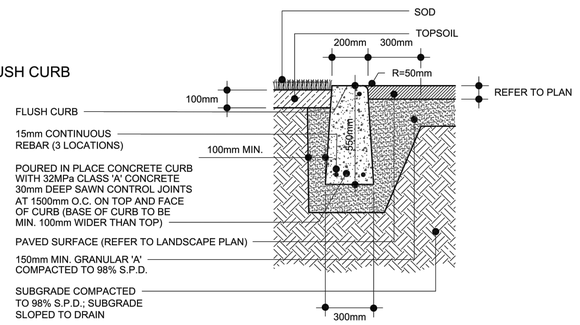
DESIGNED	DRAWN	CHECKED
WL	WL	BV

SCALE NA
DATE DEC 10 2021

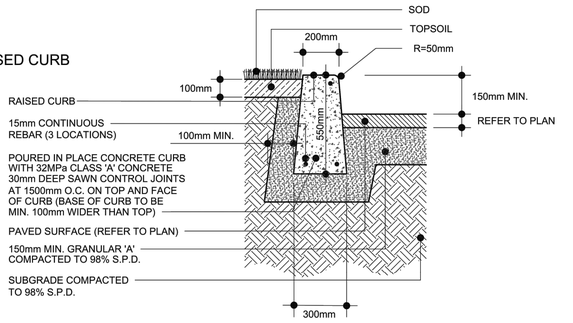
PROJECT NUMBER
211-07301-00

DWG. NUMBER
L-504

FLUSH CURB



RAISED CURB



NOTES:

1. All dimensions in millimetres.
2. Asphalt and granular base dimensions shown are minimum after compaction.
3. Slope subgrade parallel to finished grade.
4. Raised curb; drainage of paved surface to be accommodated (ie. area drain or swale).

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URBAN DESIGN DIVISION

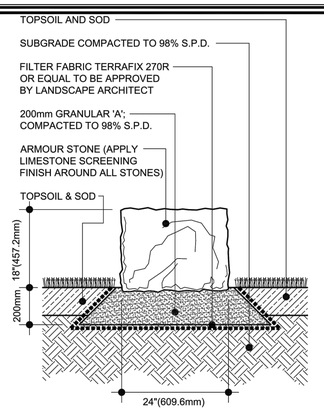
POURED-IN-PLACE CONCRETE CURB (RAISED AND FLUSH) DETAIL

NOTE: THIS TYPICAL DETAIL IS INTENDED TO PROVIDE DESIGN DIRECTION AND IS FOR REFERENCE ONLY. IT MAY BE USED AS PART OF THE CONSTRUCTION PACKAGE OR SITE PLAN APPLICATION PROVIDED THE DETAIL IS CERTIFIED BY A REGISTERED LANDSCAPE ARCHITECT OR PROFESSIONAL ENGINEER AS APPLICABLE

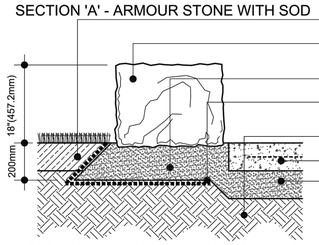
DRAWN & DESIGNED: URBAN DESIGN	STD. DWG. NO.
NOT TO SCALE DATE: 03 / 01 / 2011	ULA 306

1 L-505 POURED-IN-PLACE CONCRETE CURB (RAISED AND FLUSH) DETAIL

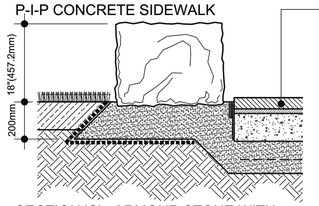
Scale: NTS



SECTION 'A' - ARMOUR STONE WITH SOD



SECTION 'B' - ARMOUR STONE WITH P-I-P CONCRETE SIDEWALK

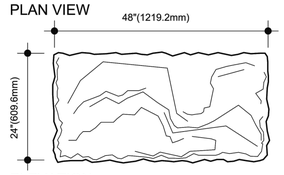


SECTION 'C' - ARMOUR STONE WITH PRECAST CONCRETE UNIT PAVING

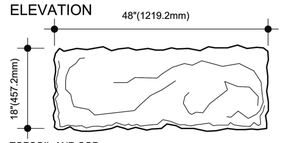
NOTES:

1. All stones to be approved by Landscape Architect prior to installation.
2. All quarry stone to have split or naturally weathered faces; no exposed drill markings.

PLAN VIEW



ELEVATION



VAUGHAN
DEVELOPMENT PLANNING DEPT.
URBAN DESIGN DIVISION

ARMOUR STONE DETAIL

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DRAWN & DESIGNED: URBAN DESIGN	STD. DWG. NO.
NOT TO SCALE DATE: 03 / 01 / 2011	ULA 309

2 L-505 ARMOUR STONE DETAIL

Scale: NTS

KEY MAP

LEGEND

BENCHMARK INFORMATION

ELEVATIONS ARE IN METRES AND ARE DERIVED FROM BENCHMARK No. XXXXXXXXXX, ELEVATION = XXX.XX

SURVEY - DRAWING REF #: XXX-XXX-XX-XXX

BY: DATE:

NO	DATE	REVISION/ISSUED	BY	APPD

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Landscape Architecture
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t. 519-743-8777
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CLIENT:
CITY OF VAUGHAN
2141 Major MacKenzie Dr W, Maple, ON L6A 1T1

PROJECT TITLE:
BARTLEY SMITH GREENWAY TRAIL
TRAIL ALIGNMENT

SITE ADDRESS:
MCNAUGHTON RD. & MAJOR MACKENZIE DR.

DRAWING TITLE:
DETAILS

STAMP: NOT FOR CONSTRUCTION

STAMP

DESIGNED	DRAWN	CHECKED
WL	WL	BV

SCALE NA DATE DEC 10 2021

PROJECT NUMBER 211-07301-00

DWG. NUMBER L-505

PART 1 - SCOPE

TerraSeeding is the process involving the use of composted topsoil that is injected with seed into a pneumatic blower truck then subsequently blown onto areas designated for the establishment of turf.

PART 2 - MATERIALS

2.1 Seed:

Seed is to be Canada No.1 seed or higher quality

2.2 Seed Mix:

2.2.1 Type 'A' - Custom Meadow Mix:

To be used in all stormpond and valley areas outside 5 year flood line.

Big Blue Stem (Andropogon Gerardii)	25%
Little Blue Stem (Schizachyrum Scoparius)	25%
Fox Sedge (Carex Vulpinoidea)	15%
Canadian Wild Rye (Elymus Canadensis)	25%
Poverty Oat Grass (Danthonia Spicata)	10%

Application seed rate:

200kg / ha

Supplied by:

Ontario Seed Company // tel: 519-886-0557

(or approved equal to be approved by Landscape Architect)

2.2.2 Type 'B' - Custom Wet Meadow Mix:

To be used in all stormpond and valley areas inside 5 year flood line.

Joe Pye Weed (Eupatorium Malculatum)	10%
Canada Bluejoint (Calamagrostis Canadensis)	15%
Fox Sedge (Carex Vulpinoidea)	25%
Soft Rush (Juncus Effusus)	15%
Jointed Rush (Juncus Articulatus)	10%
Porcupine Sedge (Carex Hystericina)	15%
Blue Vervain (Verbena Hastata)	10%

Application seed rate:

200kg / ha

Supplied by:

Ontario Seed Company // tel: 519-886-0557

(or approved equal to be approved by Landscape Architect)

2.3 Annual Nurse Crop Seed

Nurse crop seed shall be a cereal grain such as Fall Rye Grain or Winter Wheat Grain unless otherwise approved by the Contract Administrator.

2.4 Fertilizer

Fertilizer shall comply with the provisions of the Canada Fertilizers Act and Fertilizer Regulations. Fertilizer shall be supplied in original bags bearing the manufacturer's original label indicating mass and analysis. All fertilizer shall be in granular form, dry, free flowing and free from lumps and with an analysis as specified in Table 1 (Page 6).

2.5 Composted Topsoil

Composted topsoil shall be pre-mixed and shall consist of a minimum 60% compost material. The composted topsoil may be amended by the addition of concrete sand and peat loam. Concrete sand shall be added to improve aeration and soil structure. Peat loam shall be added to adjust the pH of the compost and to make the composted topsoil lighter and easier to blow. Both amendments shall be added at the discretion of the Contractor to ensure that the composted topsoil meets the material specification and is suited for distribution by a pneumatic blower.

Once mixed, composted topsoil material shall consist of particles where 100% of the material is able to pass through a 25 mm sieve.

2.6 Compost

Compost shall be derived from well-composted green organic waste matter. All compost material shall meet the Ontario Ministry of the Environment's Interim Guidelines for the Production and Use of Aerobic Compost in Ontario definition for Type A compost and shall be supplied from composting sites certified to meet the Ontario Ministry of the Environment's Compost Regulation 101.

2.7 Concrete Sand

Concrete sand shall have a pH range from 7.7 to 8.0 with a mid-range of 7.8 and shall meet gradation requirements for concrete sand as described in OPSS.

2.8 Peat Loam

Peat loam shall consist of a minimum 50% organic matter and equal parts sand, silt and clay. Peat loam shall be suitable for horticultural purposes. Shredded particles shall not exceed 16 mm in size.

2.9 Water

Water shall be free of any contaminants or impurities that would adversely affect the germination and growth of vegetation.

PART 3 - EQUIPMENT

3.1 Pneumatic Blower Truck

The pneumatic blower truck shall be a custom manufactured, fully integrated, truck-mounted unit. The blower truck shall be equipped with a computer-calibrated seed injection system and shall be capable of uniformly applying composted topsoil and seed at a rate greater than 0.25 cubic meters of material per minute. The blower truck shall also be equipped with an application hose capable of extended 90 meters from the blower truck unit.

VAUGHAN

DEVELOPMENT PLANNING DEPT.
URBAN DESIGN DIVISION

TERRASEEDING DETAIL
GENERAL NOTES (1 of 2)

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DRAWN & DESIGNED: URBAN DESIGN
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STD. DWG. NO. ULA 211

1 L-506 TERRASEEDING DETAIL GENERAL NOTES (1)

Scale: NTS

PART 4 - CONSTRUCTION

4.1 Operational Constraints

The composted topsoil and seeding operation shall not commence until a legible, valid Seed Analysis Certificate and a legible, valid signed declaration from the compost supplier have been provided to the Contract Administrator.

The composted topsoil and seeding operation shall not commence until the Contract Administrator has approved the surface preparation and the layout of permanent seed mixes.

The composted topsoil and seeding application and/or re-application shall not be carried out under adverse field conditions such as high wind, frozen soil or soil covered with snow, ice or in areas of standing water or a concentrated flow of water.

The Contractor shall maintain the site and control erosion until conditions permit application or re-application of seed and composted topsoil.

The surface to be seeded shall be prepared not more than 7 calendar days before the seeding operation.

No seeding or composted topsoil application shall come in contact with the foliage of any trees, shrubs, or other vegetation.. No seed or composted topsoil application shall come in contact with waterbodies.

4.2 Surface Preparation for Composted Topsoil and Seeding

At the time of seeding, all surface areas designated for seeding shall be free of erosion and shall have a fine graded uniform surface. The surface shall be uniformly cultivated with agricultural implements to a minimum depth of 50 mm and shall not have surface stones greater than 50 mm in diameter, weeds or other unwanted vegetation. Soil to be loose, friable and suitable as a seed bed to germinate seed.

4.3 Layout

The location of the seed mix and composted topsoil shall be staked out on the ground surface in accordance with the contract drawings. Stakes shall be used to indicate the limits of the seed mix.

4.4 Composted Topsoil and Seeding

4.4.1 Application Rates for Composted Topsoil

Depending on slope gradation, depth of composted soil, seed shall be as follows:

0-5% slope: 10-15 mm. depth
5-10% slope: 15-20 mm. Depth
10-25% slope: (4:1) 20-25 mm. depth
25-35% slope: (3:1) 25-40 mm. depth
35-45% slope: 40-50 mm. depth

4.4.2 Composted Topsoil and Seed Application

Prior to the application of the composted topsoil and seeding, the Contractor shall ensure that the pneumatic blower has been properly calibrated to provide the specified amounts of seed and that the blower can adequately uniformly apply composted topsoil and seed at a rate greater than o.25 cubic meters of material per minute.

Once the blower has been calibrated, the Contractor shall apply composted topsoil and seeding uniformly at specified depths to all areas identified for cover in the contract drawings or as directed by the Contract Administrator.

Composted topsoil and seed shall overlap the adjoining ground cover by 300 mm.

4.4.3 Clean-up

At the completion of the seeding and cover operation, materials applied to areas or objects other than those designated to grow grass shall be removed. Clean water shall be used to immediately wash seed or cover materials that have been applied to the foliage of trees, shrubs or other susceptible plant growth.

PART 5 - QUALITY ASSURANCE

5.1 Performance Measure

All composted topsoil and seeded areas will be inspected by the Contract Administrator to ensure compliance with this specification at thirty, sixty and ninety day periods following the composted topsoil and seeding operation.

At the thirty day inspection within the seeded earth area;

- the composted topsoil shall be visually intact and shall form a uniform cohesive mat;
- germination of the nurse crop shall be visually evident.

At the sixty day inspection within the seeded earth area;

- the nurse crop shall be evident at mature height in an evenly dispersed, uniform cover;
- germination of the specified, permanent seed species shall be visually evident in an evenly dispersed uniform cover;
- there shall not be any significant bare areas, both in terms of quantity and size;
- non-seeded, non-specified vegetation shall not exceed 20% of the seeded earth area.

At the ninety day inspection within the seeded earth area;

- the permanent seed species shall be at an average height of 50mm in an evenly dispersed, uniform cover; representative of the specified, permanent seed mixes;
- there shall not be any significant bare areas, both in terms of quantity and size;
- non-seeded, non-specified vegetation shall not exceed 20% of the seeded earth area.

No inspections will be held during the winter dormant period or when site conditions prohibit a visual field inspection. The timing intervals between inspections will be suspended during the winter dormant period.

5.2 Failure to Meet Performance Measure

If the completed work does not meet the Performance Measure after the thirty-day inspection, the Contract Administrator shall document the failure areas, notify the Contractor of those areas, and re-inspect at the sixty day inspection.

If the completed work does not meet the Performance Measure after the sixty or ninety day inspection, the Contract Administrator shall notify the Contractor in writing and the Contractor shall re-apply the specified materials in accordance with this specification within 14 calendar days of receiving the notification.

The Contractor shall maintain the site and control erosion until conditions permit application or re-application of and composted topsoil seed.

All replaced composted topsoil and seed shall be subject to the Quality Assurance section of this specification.

5.3 Measurement and Payment Procedures

Measurement: Measurement shall be based on a lump sum basis.

Payment: Payment shall be based on the lump sum price in the tender.

The tendered price shall constitute full compensation for furnishing and preparation of all materials and equipment as required to complete the work as specified in the Contract Drawings. In addition, the price is to include the cost of all labour as required to complete the above-noted work.

VAUGHAN

DEVELOPMENT PLANNING DEPT.
URBAN DESIGN DIVISION

TERRASEEDING DETAIL
GENERAL NOTES (2 of 2)

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NOT TO SCALE DATE: 03 / 01 / 2011
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2 L-506 TERRASEEDING DETAIL GENERAL NOTES (2)

Scale: NTS

KEY MAP

LEGEND

BENCHMARK INFORMATION

ELEVATIONS ARE IN METRES AND ARE DERIVED FROM
BENCHMARK No. XXXXXXXXXX,
ELEVATION = XXX.XX

SURVEY - DRAWING REF #: XXX-XXX-XX-XXX

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