Niagara Peninsula Conservation Authority

Four Mile Creek Integrated Watershed Management Plan
Public Engagement Summary Report

LURA
Listen·Understand·Relate·Advance

Niagara Peninsula
CONSERVATION
nature for all

Table of Contents

1 Executive Summary 1
2 Project Overview 2
2.1 Project Description and Engagement Objectives 2
2.2 Public Meeting Format 2
3 What We Heard 4
3.1 Cross-Cutting Themes 4
3.2 Thematic Watershed Topic: Erosion 5
3.2.1 Key Issues 5
3.2.2 Opportunities 5
3.3 Thematic Watershed Topic: Flooding 6
3.3.1 Key Issues 6
3.3.2 Watershed Hydrology and Water Quantity 6
3.4 Thematic Watershed Topic: Natural Infrastructure and Restoration Opportunities 6
3.4.1 Key Issues 7
3.4.2. Opportunities 7
3.5 Additional Feedback 7
4 Presentation Questions & Answers 8
5 Next Steps 10
Appendix A Erosion Map 12
Erosion Chart: 13
Appendix B Flooding Map 14
Flooding Chart: 15
Appendix C Natural Infrastructure and Restoration Opportunities Map 16
Natural Infrastructure and Restoration Opportunities Chart: 17

1 Executive Summary

On June 17th, 2026, the Niagara Peninsula Conservation Authority (NPCA) and the Town of Niagara-on-the-Lake (NOTL) conducted the first community touchpoint as part of the Four Mile Creek Integrated Watershed Management Plan (IWMP). The public meeting introduced the multi-component initiative including the Watershed Characterization Study and Floodplain Mapping Study to the community through an active challenges and opportunities identification exercise. The community feedback gathered will inform the comprehensive background characterization of the Four Mile Creek watershed, and improve understanding of existing challenges, issues, and opportunities to support a healthier, more resilient watershed.

In addition to documenting current watershed conditions, future technical studies will evaluate watershed-scale processes, including hydrologic, hydraulic, ecological, and water resource conditions, and consider how climate variability and future precipitation patterns may influence flooding, erosion, infrastructure performance, and long-term watershed resilience. These studies will provide the technical foundation for identifying and evaluating potential management actions in later phases of the IWMP.

The feedback summarized in this report reflects participant observations, experiences, and perceived issues and knowledge gaps within the watershed. These comments will help inform subsequent technical investigations but should not be interpreted as confirmed watershed management issues or preferred solutions. The IWMP will evaluate watershed-scale causes, risks, and opportunities before identifying and prioritizing management actions.

Outlined below are key feedback comments on each of the thematic watershed topics:

Table 1- Summary of Key Feedback by Thematic Watershed Topic

Thematic Watershed Topic	Feedback
Infrastructure and Restoration	▪ There is an interest in understanding infrastructure maintenance and management of assets such as dams, culverts and drains. ▪ Support for habitat preservation, local ecosystems, and maintaining green spaces through buffers and landowner opportunities for restoration.
Flooding	▪ There is concern over sedimentation, capacity of the system, and its ability to mitigate future flood risk. ▪ Wood debris and dead trees along the creek are an area of concern, with recurring questions regarding removal responsibility and process.
Erosion	▪ There are concerns related to increased erosion, with contributing factors such as fallen trees, channel debris, and re-channelization by residents. ▪ Participants are interested in restoration measures, existing resources for landowners, and stormwater management.
Stewardship, Governance and Communication	▪ Questions regarding ownership, maintenance responsibilities, the Drainage Act, groundwater, dams, culverts, and regulatory approvals demonstrated a need for continued communication and education throughout the project. ▪ Interest was expressed in understanding how future recommendations will be developed and implemented through collaboration between landowners, municipalities, the NPCA, and other partners.

2 Project Overview

2.1 Project Description and Engagement Objectives

NPCA and the Town of NOTL are collaborating on developing an IWMP for the Four Mile Creek watershed to address ongoing concerns pertaining to flooding, erosion and sedimentation while identifying opportunities to support a healthier, more resilient watershed. The IWMP will consider the interconnected needs of the watershed, including ecological health, community interests, agricultural land uses, and irrigation demands that are important components of the Four Mile Creek watershed.

Over the next several years, technical studies, environmental monitoring, and community input will help build a clearer picture of watershed conditions. Together, these efforts will improve our understanding of how water moves through the watershed, how natural systems are functioning, and how changing environmental conditions, growth, agricultural needs, and land use may affect the watershed over time. The findings will help identify opportunities to balance flood resilience, environmental protection, agricultural sustainability, and long-term watershed health.

Project components of the first phase include:

- Watershed Characterization
- Enhanced Water Quality Monitoring
- Geomorphology Studies
- Floodplain Mapping

The completed IWMP will inform future watershed management priorities and guide implementation actions that support the long-term health of Four Mile Creek watershed, its respective ecosystems, and the surrounding community.

2.2 Public Meeting Format

The meeting used a registered attendance model to ensure consistent composition for small group dialogue, logistical event planning, and a productive engagement experience, while also accepting drop-in attendees who did not register in advance.

In total, **46 participants** (including local residents and two elected officials) attended the public meeting on Wednesday, June 17th, 2026, from 6:00 pm to 8:00 pm, alongside staff members from NPCA, NOTL, and GeoProcess Research Associates.

Through a facilitated breakout group format, attendees provided their input regarding community-perceived challenges, issues, and opportunities to inform the background characterization study and guide the implementation phase of the IWMP. A summary of input received is provided in the following sections.

Figure 1 - Image of participants engaging in discussion at the in-person public meeting.

The public meeting began with a presentation from NOTL and NPCA staff to provide attendees with an overview of the Four Mile Creek IWMP.

Following the presentation, participants were guided into structed, small-group discussions. These breakout groups were the core engagement mechanism of the public meeting. Each station was organized around a thematic watershed topic with facilitated discussion guided by prompt questions designed to surface both challenges and opportunities relevant to the IWMP background characterization study. The breakout groups followed a rotational format, with allocated time periods for each group to contribute to the various thematic watershed topic stations.

Breakout group stations were dedicated to each of the following thematic watershed topics:

- Infrastructure and Restoration
- Flooding
- Erosion

Each breakout group station featured the following:

- A large-format watershed map for spatial annotation
- Prompt questions for discussion (challenges and opportunities)
- An NPCA staff facilitator and notetaker

In addition to the breakout group stations, a series of display panels provided contextual information for participants to view upon arrival and between sessions. After breakout group activities, groups were reconvened to debrief and share findings for each thematic topic.

3 What We Heard

This section summarizes the key themes heard throughout the public meeting. Many of the issues raised by participants are interconnected and may reflect cumulative watershed-scale influences rather than isolated site-specific concerns. A key objective of the IWMP is to better understand how factors such as land use, drainage patterns, flooding, erosion, sedimentation, ecological conditions, infrastructure, and climate variability interact across the watershed. This watershed-scale approach will help identify potential opportunities and management actions that consider the broader functioning of the system.

The location-specific comments identified through the mapping exercise are summarized in **Appendices A-C**, while this section focuses on the broader themes and watershed-scale considerations that emerged across the discussions.

3.1 Cross-Cutting Themes

Several themes emerged consistently across the different discussion groups and thematic topics:

- **Stewardship and landowner awareness:**
  - Participants expressed interest in opportunities to support watershed stewardship on private property, including restoration, natural buffers, tree planting, and appropriate management of vegetation and watercourses.
- **Ownership, maintenance, and responsibilities:**
  - Questions regarding who owns, maintains, funds, and regulates different features within the watershed were raised repeatedly. These included questions about culverts, municipal drains, dams, trees and woody debris, watercourses, and natural areas.
- **Watershed hydrology and water quantity:**
  - Participants raised questions regarding groundwater contributions, irrigation demands, external inflows, stormwater, water levels, and the overall movement and balance of water through the watershed.
- **Flooding, erosion, and sedimentation:**
  - Participants identified flooding and erosion concerns at a number of locations and raised questions regarding sediment accumulation, channel capacity, debris, culverts, drainage, and changing conditions over time.
- **Natural assets and restoration:**
  - Participants identified wetlands, forests, riparian areas, stream valleys, natural buffers, and other greenspaces as important watershed assets. Interest was expressed in protecting and enhancing these features for their benefits related to habitat, water quality, erosion control, flood resilience, and overall watershed health.
- **Land use change and development:**
  - Participants identified and shared concerns about existing and future development and land use changes as considerations for watershed function and flood risk.
- **Climate and changing watershed conditions:**
  - Observations regarding changes in flooding, erosion, water levels, and environmental conditions highlight the importance of considering climate variability and future conditions when assessing watershed resilience.

These themes will help inform the technical studies and subsequent phases of the IWMP. Participant comments represent local observations, experiences, concerns, and suggestions and should not be interpreted as confirmed causes of watershed issues or as preferred management solutions. Potential management actions will be identified and evaluated through subsequent technical analysis, including consideration of watershed risk, environmental benefits, feasibility, costs, regulatory requirements, and potential impacts across the watershed.

3.2 Thematic Watershed Topic: Erosion

Participants identified erosion as an ongoing concern across several areas of the watershed, noting changes in creek conditions, fallen trees, channel debris, stormwater, invasive species, beaver activity, and localized changes to the creek channel. Participants also raised concerns regarding areas where erosion may be affecting access, recreation, property, or the stability of the watercourse.

A recurring observation was the relationship between fallen trees, channel conditions, and erosion. Participants described areas where trees or woody debris were perceived to be contributing to changes in the creek, while also recognizing the potential ecological value of woody material within the watercourse. These comments highlight the need to consider both hydraulic and ecological functions when assessing channel conditions.

Participants also identified instances of re-channelization or modification of the creek by residents. This issue was raised in relation to erosion but may have broader implications for flooding, habitat function, channel stability, and downstream conditions.

3.2.1 Key Issues

- Observed increases or localized areas of erosion and channel instability.
- Fallen trees and woody debris perceived to contribute to erosion or changes in channel conditions.
- Potential influence of stormwater and drainage on erosion.
- Invasive species and beaver activity as factors affecting local watershed conditions.
- Concerns regarding localized creek modifications and re-channelization.
- Questions regarding appropriate maintenance, restoration, and management of eroding areas.
- Interest in understanding resources and responsibilities available to landowners experiencing erosion or creek health concerns.

3.2.2 Opportunities

Participants identified interest in restoration and stewardship approaches that could improve creek stability and watershed health. These included landowner support, restoration of degraded areas, natural buffers, and other measures that could reduce erosion while supporting ecological functions.

One participant suggested dredging and increasing capacity at the Virgil reservoir. The feasibility, environmental implications, costs, regulatory requirements, downstream effects, and potential watershed-scale benefits of any such measure would need to be assessed through future technical studies before determining whether it is an appropriate management opportunity.

3.3 Thematic Watershed Topic: Flooding

Flooding was a prominent concern throughout the engagement, with participants identifying locations where flooding has been observed or where they have concerns regarding the capacity and function of the watershed system. Beyond individual locations, participants identified several factors that they perceive may influence flood risk, including development and land use change, blocked or undersized culverts, debris and sediment accumulation, drainage patterns, creek modifications, and reservoir capacity. Participants also raised questions regarding the frequency and severity of flooding and whether conditions may be changing over time.

3.3.1 Key Issues

- Localized flooding and concerns regarding increased frequency or severity of flooding.
- Sediment and debris accumulation and questions regarding their influence on channel capacity.
- Concerns regarding culvert condition, capacity, and maintenance.
- Development and land use change as potential contributors to changing drainage and runoff patterns.
- Questions regarding reservoir capacity and the role of existing infrastructure in managing high flows.
- Localized creek modifications and re-channelization.
- Questions regarding irrigation inputs, groundwater, stormwater, and other contributors to watershed water quantity.

3.3.2 Watershed Hydrology and Water Quantity

Several flooding-related comments also highlighted broader questions regarding the movement and balance of water throughout the Four Mile Creek watershed. Participants raised questions about irrigation demands, groundwater contributions, stormwater inputs, external inflows, and water originating from contributing areas upstream of the study area.

These comments identify watershed hydrology and water quantity as an emerging cross-cutting consideration for the IWMP. Understanding these relationships will be important for assessing flooding, water availability, ecological conditions, irrigation needs, and long-term watershed resilience.

3.4 Thematic Watershed Topic: Natural Infrastructure and Restoration Opportunities

Participants identified a range of natural features as important assets within the Four Mile Creek watershed, including forests, wetlands, stream valleys, riparian areas, natural buffers, greenspaces, and habitat corridors. These features were valued not only for their ecological functions, but also for their potential contribution to flood resilience, erosion control, water quality, recreation, and overall community well-being. The engagement highlighted both concerns regarding the condition of natural assets and opportunities to protect, restore, and expand them.

3.4.1 Key Issues

Participants identified concerns related to:

- Concern about potential declining bird populations and habitat loss.
- Loss or degradation of natural areas and habitat connectivity.
- Fallen and dead trees, including impacts associated with ash tree mortality.
- Removal of trees and vegetation by property owners and questions regarding monitoring and appropriate management.
- Invasive species, including phragmites, Norway Maple, and goutweed.
- Mowing or other land management practices that may reduce natural buffers along watercourses.
- Condition and accessibility of stream valleys, trails, and greenspaces.
- Potential environmental considerations associated with wetland creation and agricultural land uses.
- Concerns regarding water quality and potential pollution sources.

3.4.2. Opportunities

Participants identified opportunities to strengthen the watershed's natural assets and ecological resilience, including:

- Protecting existing forests, wetlands, stream valleys, and natural corridors.
- Expanding habitat connections between existing natural areas.
- Enhancing riparian and natural buffers.
- Strategic tree planting to increase canopy in priority areas.
- Expanding pollinator habitat and community gardens.
- Managing invasive species.
- Supporting collaborative community restoration initiatives.
- Exploring landowner restoration and cost-sharing opportunities.
- Maintaining or strategically incorporating woody material where appropriate to support habitat and natural channel functions.

These opportunities can contribute to multiple watershed outcomes, including improved flood resilience, erosion reduction, water quality protection, habitat connectivity, and climate resilience. Future technical work can help identify where natural asset protection or restoration may provide the greatest watershed-scale benefits.

3.5 Additional Feedback

Participants also identified opportunities to strengthen the community's relationship with Four Mile Creek. These included youth-oriented recreational programming, such as opportunities for kayaking or canoeing, as well as community-based restoration activities.

Overall, the engagement demonstrated strong community interest in the health and function of Four Mile Creek. The feedback provides valuable local knowledge and identifies areas for further investigation, while also highlighting the importance of considering the watershed as an interconnected system. The next phases of the IWMP will build on these observations through

technical studies, environmental assessment, and continued engagement to better understand watershed conditions and identify potential management opportunities.

4 Presentation Questions & Answers

4.1 General Questions

These questions were asked at the end of the presentation.

- **Q.** Who will pay for any recommended restoration or remedial work identified through this project? Will this include work on the municipal drains?
  - **A.** The IWMP will identify recommended management actions to address watershed issues; however, it does not fund or undertake implementation. Responsibility for funding and carrying out recommended work will depend on the type of project, its location, and the responsible landowner or agency. Maintenance of municipal drains is addressed separately through the *Drainage Act* and the applicable municipal drain engineering reports.
- **Q.** Why is a portion of Four Mile Creek designated as a Municipal Drain under the Drainage Act?
  - **A.** A portion of Four Mile Creek (from Line 9 Road to just west of Line 5 Road) was established as a Municipal Drain pursuant to a report dated February 16, 1950, revised March 3, 1997 (current version) to provide a regulated framework for drainage, maintenance, and cost-sharing among benefiting landowners. The designation does not apply to the entire creek.
- **Q.** Can that designation be removed?
  - **A.** The process to revoke a Municipal Drain is known as Abandonment of Drainage Works. To initiate the abandonment of all or part of a Municipal Drain (Drainage Works), at least three-quarters of the owners of land who own at least three-quarters of the area assessed to the Municipal Drain would have to send a request to the Town asking for the abandonment. The Town would have to follow the process prescribed in Section 80 of the Drainage Act.
- **Q.** What about the source water coming into the watershed from Niagara Falls?
  - **A.** Portions of the Four Mile Creek watershed originate within Niagara Falls. All contributing drainage areas and inflows within the watershed boundary, including upstream headwaters, will be considered as part of the watershed characterization and hydrologic modelling completed for the IWMP.
- **Q.** The creek has filled up. Why can't it be cleaned out?
  - **A.** Maintenance of the creek is the responsibility of the property owner where the creek is situated. Some portions of the creek are Municipal Drains, for which the responsibility for maintenance rests with the Town and follows a schedule set out in the Engineering Report for the Drains. Any work done to remove sedimentation or that interferes with the bank of the creek requires approval from the NPCA. The NPCA would review the proposed cleanout work to ensure that it would does not negatively impact upstream or downstream property owners.

- **Q.** There are many fallen trees in the creek. If they are not obstructing flow, can they be removed?
  - **A.** Woody debris provides important ecological functions, including fish and wildlife habitat, and does not necessarily need to be removed if it is not creating a significant obstruction or hazard. Depending on the location and proposed work, regulatory approvals may be required before removing material from a watercourse.
- **Q.** Is there a schedule for cleaning culverts?
  - **A.** Culvert inspection and maintenance are generally the responsibility of the infrastructure owner. Municipal culverts are maintained through municipal inspection and maintenance programs, while private culverts are the responsibility of the property owner.
- **Q.** Who takes care of the dams? When were they last maintained? They are old infrastructure.
  - **A.** The dams were constructed in 1967 for irrigation purposes. They are owned by the NPCA and maintained by the municipality (NOTL) through a Memorandum of Understanding. The dams are regularly inspected and maintained in accordance with industry best practices.
- **Q.** There is significant sediment accumulating upstream of the dams. What happens if the dams fail?
  - **A.** Sedimentation in the reservoirs upstream of the dams is not currently affecting the dams' function. If the dams fail, the NPCA anticipates that damage to downstream homes, infrastructure and the environment could be experienced. The responsibility for operating the dams and maintaining them in good condition rests with the Town pursuant to an agreement between the NPCA and the Town (signed January 2025 and enshrined in the Town's By-law No. 2024-068).
- **Q.** How often are the wood boards on the dam inspected? In my opinion, they seem to be in poor condition.
  - **A.** The flashboards are regularly inspected and replaced as needed. They were last replaced in 2013/14.
- **Q.** Does the main reservoir at Line 2 have sufficient capacity for additional freeboard? Request for commitment to investigate this option for flood storage.
  - **A.** The reservoirs and dams were designed to supply irrigation water, not as flood control structures. As part of the flood study, opportunities to improve flood resilience may be explored, however, any potential modifications to reservoir storage or dam operations would require detailed assessment of engineering feasibility, operational constraints, environmental effects, public safety considerations, and the continued irrigation function of the reservoirs.

4.2 Infrastructure and Restoration

- **Q.** Could old culverts previously approved become insufficient? Who is responsible for replacement?
  - **A.** Culverts may become undersized over time due to changing watershed conditions, updated design standards, or increased flows. Responsibility for

maintenance or replacement depends on ownership and the authority responsible for the infrastructure.

- **Q.** Why are removed trees being piled and left in natural areas? How do we notify NPCA about downed trees?
  - **A.** In some cases, trees removed during restoration or management activities on conservation lands may be left on-site where appropriate to provide ecological benefits, including wildlife habitat and nutrient cycling. For concerns regarding downed trees or vegetation within NPCA conservation areas, participants were advised to contact NPCA directly. Downed trees on private property or other public lands should be reported to the appropriate property owner or managing agency.
- **Q.** Why is the watershed divided on the map at the bottom there? What event dictates that?
  - **A.** Watershed boundaries are defined by the natural topography of the landscape.
- **Q.** What percentage of groundwater comes into the system?
  - **A.** A specific percentage was not available during the meeting. The contribution of groundwater varies throughout the watershed and seasonally. Assessing groundwater contributions and baseflow conditions will form part of the technical studies completed during the next phase of the IWMP and will help inform future water resource management recommendations.
- **Q.** Does this project include greenspace management? How can tree-fall in ravine areas be remediated?
  - **A.** The IWMP is intended to identify watershed-scale management opportunities rather than undertake routine greenspace maintenance. Recommendations related to natural heritage management may be identified through the study, however, responsibility for managing trees and vegetation depends on land ownership and the agency responsible for the property.
- **Q.** Should soil cores be done before dredging to confirm that sediment is not contaminated?
  - **A.** The project team noted that any future dredging proposals would require further technical assessment, including determining whether sediment quality investigations would be appropriate as part of the planning and approvals process.

5 Next Steps

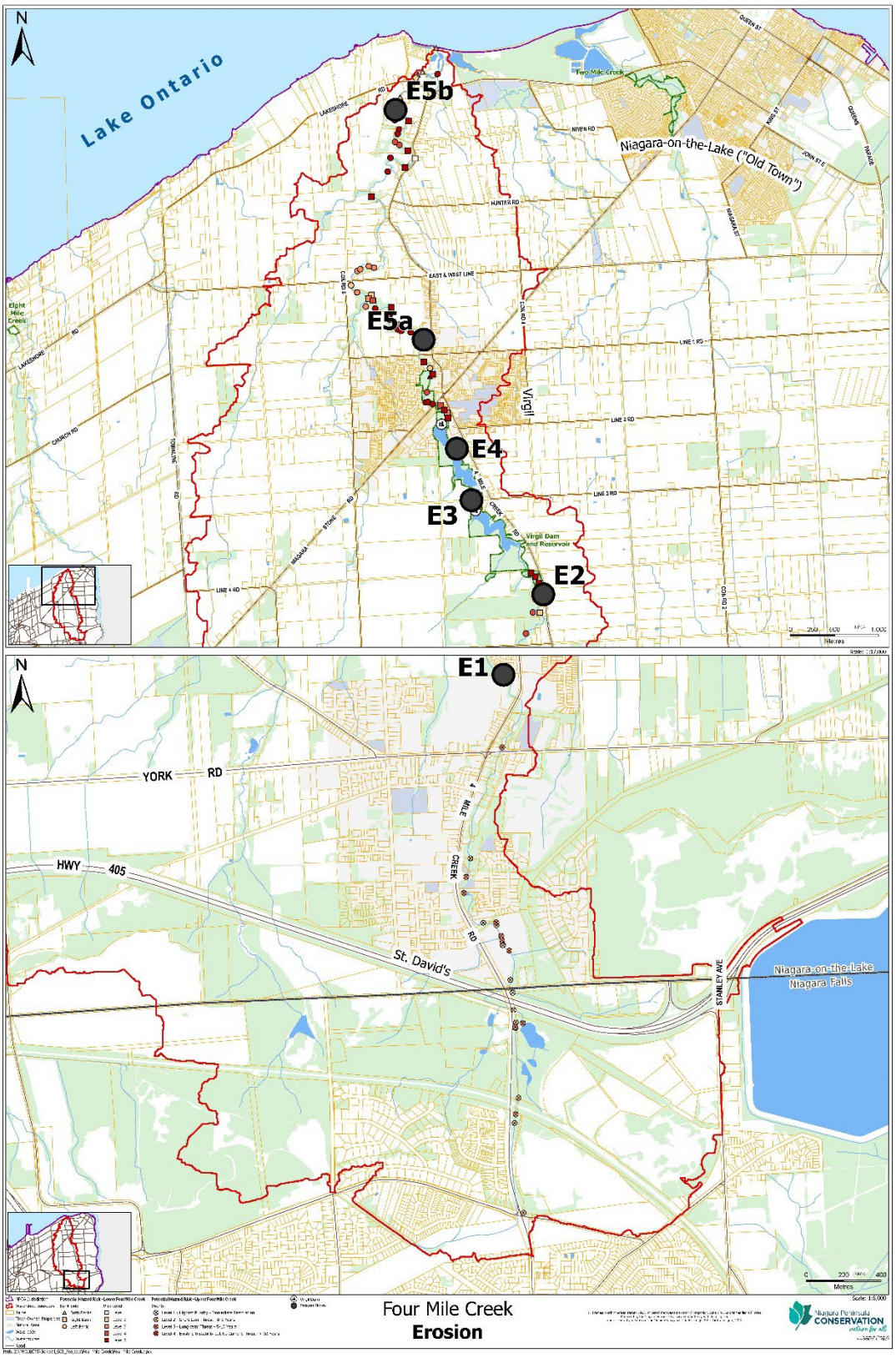
Participants were encouraged to share locations, photos, and video documentation where they've noticed concerns, such as flooding, erosion, tree hazards, or blockages, as well as opportunities to enhance and conserve the Four Mile Creek watershed by visiting the project website at: **https://getinvolved.npca.ca/four-mile-creek-watershed-plan**.

On this site, participants can also view project updates, add information to an interactive map, and submit questions to the project team. Participants were informed that feedback gathered at the June 17th Public Meeting will inform the detailed watershed characterization report, with consideration of the existing conditions, watershed stressors, environmental challenges, and areas requiring additional analysis as identified by meeting participants and further technical studies as part of the IWMP.

Next, the project will focus on completing the technical studies (e.g., hydrologic and hydraulic modelling, water quality monitoring) needed to better understand watershed conditions before identifying and evaluating potential management actions. This work will include watershed-scale assessments to identify the underlying causes of flooding, erosion, water quality, and ecological challenges, helping to ensure that future recommendations are based on a comprehensive understanding of the watershed. The findings from these studies will be used to identify, evaluate, and prioritize potential management opportunities using an adaptive management framework that considers watershed risk, environmental benefits, technical feasibility, cost, and stakeholder input. This process will help inform the development of a preferred set of management actions in subsequent phases of the study.

Implementation of the IWMP will be a collaborative effort involving NPCA, local municipalities, landowners, agricultural stakeholders, community organizations, Indigenous partners, and other interested parties. Continued engagement throughout the study will help ensure that recommended actions are practical, supported by technical evidence, and responsive to community and stakeholder priorities.

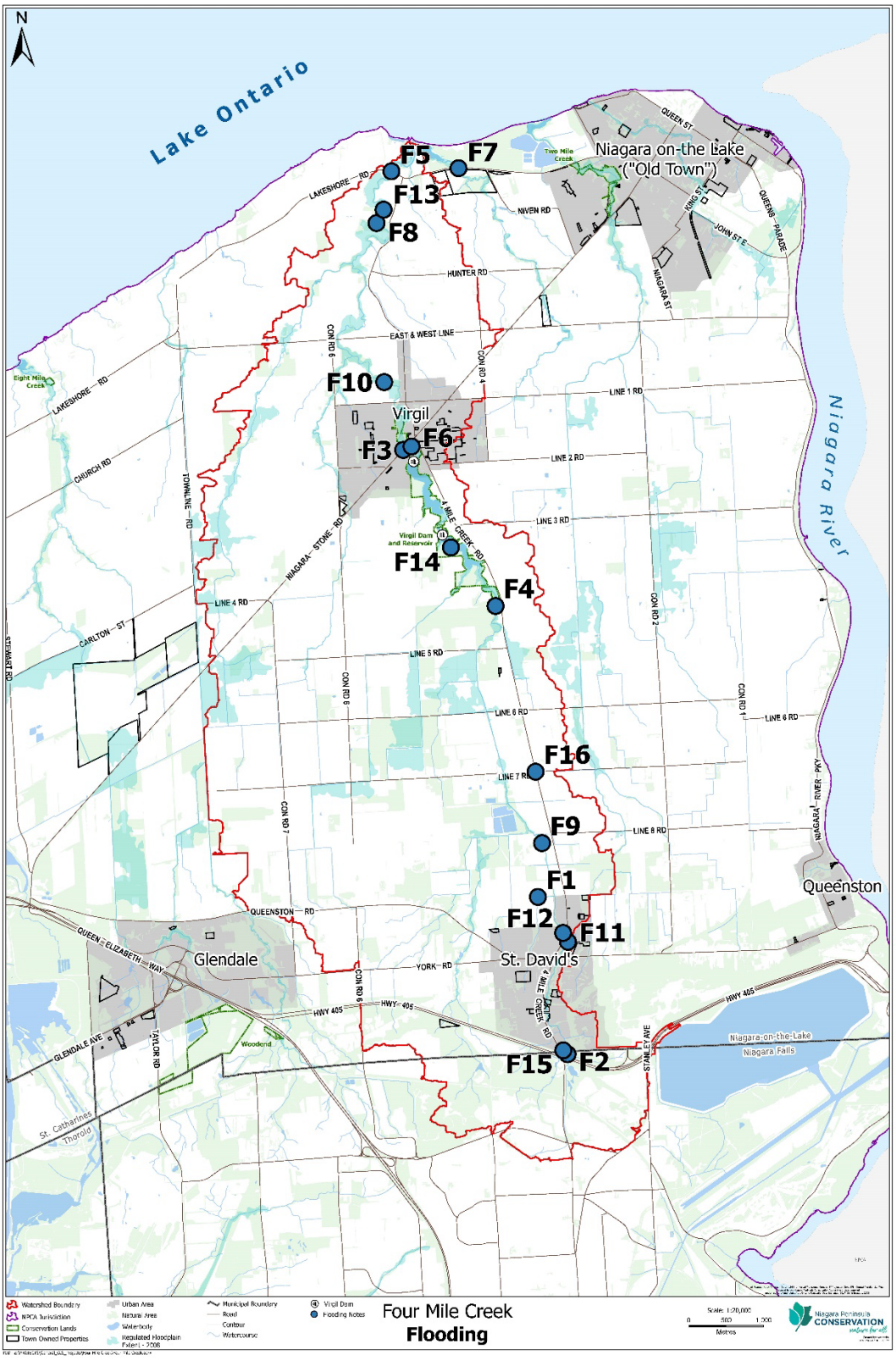
Appendix A – Erosion Map



Erosion Chart:

Site ID	Comment
E1	Four Mile Creek was altered near north of York Road near St. David's Chocolates; currently nothing to keep it stable.
E2	Area starting to oxbow; no erosion and has remained unchanged for ~5 years, in addition downed ash trees in the area.
E3	Line 3: water coming under culvert; landowner considering addition of armor stone.
E4	Erosion concerns specific mention to area between Line 2 and Line 3 with need for restoration where path was previously accessible.
E5a **E5b**	Fallen trees prevent recreational use, with specific mention to Lower Four Mile Creek.

Appendix B – Flooding Map



Flooding Chart:

Site ID	Comment
F1	New site development contributing to flooding.
F2	North of Creekside Seniors new subdivision; area of flooding concern
F3	Flooding is not an issue so far.
F4	Generally flooding is not a problem.
F5	Culvert blocked with various debris
F6	Debris in the watercourse.
F7	Blocked culvert at NPCA monitoring site.
F8	Flooding observed.
F9	Potential re-routing of creek as outlined in previous plan (2008).
F10	Flooding observed.
F11	More frequent and severe flooding observed.
F12	Flooding observed, note that nearby residents have re-channelized the creek.
F13	Pickleball court is disruptive; unrelated to IWMP
F14	Reservoir bank erosion and sediment buildup.
F15	Creek overflow at south end of Creekside Senior's Estates community.
F16	Line 7 culvert

Appendix C – Natural Infrastructure and Restoration Opportunities Map

Natural Infrastructure and Restoration Opportunities Chart:

Site ID	Comment
N1	Importance of Line 5/4 stream valley habitat and greenspace, desire to preserve it.
N2	Newark Park pollinator garden extension at Lakeshore.
N3a **N3b** **N3c**	Fallen trees are a key issue with erosion, with specific mention to Line 1 and 2 forested areas.
N4	St. David's existing water break and concern of pollution.
N5	Need for vegetation north of York Road and under Four Mile Creek Road
N6a **N6b**	Golf courses should have natural buffers, particularly at Lake Ontario
N7	St. Davids golf course buffers (trees)