



Conservation Advisory Board Meeting Agenda

Thursday June 12, 2025

This page intentionally left blank.



Notice of Meeting
Conservation Advisory Board
Thursday, June 12, 2025
4:00 p.m.
Dundas Valley Trail Centre

**This meeting will be held fully in-person at Dundas Valley Trail Centre,
650 Governor's Road, Dundas**

**There will be no live stream of the meeting given its offsite location. It is open to members of
the public to attend in person**

- 1. Welcome** – Wayne Terryberry
- 2. Declaration of Conflict of Interest** – Wayne Terryberry
- 3. Approval of Agenda** – Wayne Terryberry
- 4. Delegations**
- 5. Election of Vice-Chair** – Wayne Terryberry
- 6. Member Briefing**
 - 6.1. The Basadinaa Experience Video – Lindsay Davidson,
Griffin Moore
- 7. Chair's Report on Board of Directors Actions** – Wayne Terryberry
 - 7.1. CA 2504 Westfield Artifact Accessions for 2024
 - 7.2. CA 2505 HCA Open Data Portal

- 7.3. CA 2506 Expansion of the Check out the Great Outdoors Library program: First Nations

8. Approval of Minutes of Previous Meeting

- 8.1. Minutes – Conservation Advisory Board (April 10, 2025) – Wayne Terryberry Page 1

9. Business Arising from the Minutes

- 9.1. Tiffany Falls from Visitor Use Management Plan – Matt Hall Page 3

10. Staff Reports/Memorandums

Reports for Recommendation

- 10.1 HCA's Planning and Regulations Policies Update – Mike Stone Page 65
- 10.2 HCA Conservation Areas Program – Proposed Visitor Engagement Opportunities
– Brandon Good Page 187
- 10.3 Conservation Areas Access and Amenities Review and Proposed Initiatives
– Brandon Good Page 191

11. New Business

12. Next Meeting – Thursday, August 14, 2025 at 4:00 p.m.

13. Adjournment

HAMILTON CONSERVATION AUTHORITY**Conservation Advisory Board****MINUTES****April 10, 2025**

Minutes of the Conservation Advisory Board meeting held on Thursday, April 10, 2025 at 4:00 p.m., Tiffany Falls Conservation Area

PRESENT: Sherry O'Connor – in the Chair
 Craig Cassar Elise Copps
 Tyler Cunningham Jamie Freeman
 Haley McRae Cortney Oliver

REGRETS: Brad Clark, Natalie Faught, Susan Fielding, Brian McHattie, Noah Stegman and Wayne Terryberry

STAFF PRESENT: Lisa Burnside, Gord Costie, Liam Fletcher, Marlene Ferreira, Brandon Good, Rob Gray, Matt Hall, Scott Peck, Mike Stone, Jaime Tellier, and Sandra Winneringer

OTHERS: None

1. Welcome

The Chair called the meeting to order and welcomed everyone present.

2. Approval of Agenda

The Chair requested any additions or deletions to the agenda.

CA2509 **MOVED BY: Jamie Freeman**
SECONDED BY: Cortney Oliver

THAT the agenda be approved.

CARRIED

3. Delegations

There were none.

4. Approval of Minutes of Previous Meeting**4.1. Minutes – Conservation Advisory Board (February 27, 2025)****CA 2509****MOVED BY: Tyler Cunningham****SECONDED BY: Haley McRae**

THAT the minutes of the February 27, 2025 Conservation Advisory Board meeting be approved, as amended.

CARRIED**5. Tour of Tiffany Falls Parking Lot/Trail**

Matt Hall provided an overview of Tiffany Falls, highlighting the history of site and the many modifications that have been made to the parking area in order to improve the lot for visitor use.

The group made its way to the lookout platform where staff provided further information on the conservation area, including describing the ecology of the site and the challenges that need to be addressed: strategies to help keep visitors on the official trail; prevent visitors from using/creating unofficial trails and encouraging visitors to remain on the lookout platform. Gord Costie provided additional information regarding the area and actions that have been tried to ensure visitor safety and improve their experience.

Members were provided with some information regarding the staff report to be brought to the June Conservation Advisory Board meeting, regarding options to help address parking concerns, protection of the natural habitat as well as improving visitor experience.

6. Next Meeting

The next meeting of the CAB is scheduled for Thursday, June 12, 4:00 p.m., at the HCA Main Administration Office – Woodend Auditorium.

7. Adjournment

On motion, the meeting was adjourned.

Report to: Conservation Advisory Board

Approved for Circulation By: Lisa Burnside, CAO

Reviewed By: Matthew Hall, Director, Capital Projects & Strategic Services

Prepared By: Madolyn Armstrong, Landscape Architect

Meeting Date: June 12, 2025

Subject: Tiffany Falls Visitor Use Management Plan

Recommendation:

THAT the Conservation Advisory Board recommends to the Board of Directors;

THAT the Tiffany Falls Visitor Use Management Plan be approved; and further

THAT staff be directed to implement Visitor Use Management Strategy #5 as recommended in Section 9.1 of the Plan as well as it's associated Action Items outlined in Section 9.2.

Executive Summary:

Following a recommendation from the HCA Board of Directors in March 2024, HCA staff developed a Visitor Use Management Plan (VUMP) for the Tiffany Falls Conservation Area. The site faces growing challenges related to visitor access that are affecting the visitor experience, day-to-day management, and its ecological health. The purpose of the VUMP is to evaluate current visitor use trends and pressures, and to recommend strategies to achieve desired conditions.

As a result of this work; HCA staff recommend Strategy #5: Expand the visitor experience to include the property north of Wilson Street, construct a new parking lot on Lower Lion's Club Road, and restrict access to the existing Wilson Street lot.

This strategy is supported by a set of targeted actions to improve visitor use management.

Staff Comment / Discussion:

Project Background

In 2023, HCA staff began conceptual work on two parking areas in the Dundas Valley: expanding the Artaban Road parking lot and creating a new lot on Lower Lion's Club Road. This work aligned with a 2019 Board-approved report, "HCA Conservation Area – Visitor Management & Vehicle Parking Review," which recommended priority actions to address rising visitation and parking demands.

On February 8, 2024, staff recommended completing detailed designs and submitting Development Permit Applications to the Niagara Escarpment Commission. While the Board supported the Artaban Road expansion, it requested further review before proceeding with the Lower Lion's Club Road lot.

As a result, on March 7, 2024, the Board directed staff to complete a Visitor Use Management Plan for Tiffany Falls Conservation Area before advancing further consideration for the Lower Lion's Club Road project.

Developing the Falls Visitor Use Management Plan

In response, HCA staff formed a multidisciplinary internal working group with representatives from Capital Projects & Strategic Services, Watershed Management Services, Conservation Area Services, and Marketing and Communications. The group met monthly from April 2024 to January 2025 in order to develop the VUMP.

The team followed the Visitor Use Management Framework developed by the Interagency Visitor Use Management Council (U.S. federal agencies), which has been widely adopted, including by Parks Canada. The framework consists of 14 steps, organized into four parts:

Part 1 – Build the Foundation (Steps 1–4)

This phase defined the project purpose, documented current conditions, and outlined the planning process. Staff focused on three priority areas affected by visitor use:

- Visitor experience
- Staff management
- Ecological conditions

New data gathered in summer 2024 included:

- Ecological fieldwork: Breeding bird and vegetation surveys conducted by HCA staff; supplemented by a 2022 EIS for the Lower Lion's Club Road site.
- Visitor survey: Conducted from May 27 to August 16 via the Bang the Table platform, promoted through newsletters, social media, and on-site posters. A total of 163 responses were received.
- Trail counter: Installed at the first bridge along the trail, tracking pedestrian visits from July 9, 2024, to March 29, 2025.

Part 2 – Define Visitor Use Management Direction (Steps 5–7)

This phase involved establishing desired future conditions, defining acceptable visitor behaviors, and identifying indicators and thresholds.

Desired conditions were based on:

- Visitor experience: Insights from the public survey and incidental feedback to staff.
- Management needs: Input from operations staff.
- Ecological priorities: Based on recent and historical data collected by ecology staff.

Part 3 – Identify Management Strategies (Steps 8–11)

This phase assessed the gap between existing and desired conditions and identified ways to close it.

Recommended Strategy

Five potential strategies were evaluated (Section 9.1), a summary is below. Only strategy #5 is recommended.

1. Do nothing and let the Conservation Area function as-is - Continue to operate Tiffany Falls in its current state without any significant capital work or management changes.
 - Conclusion: Not recommended. Changes need to be made in order to address safety concerns, visitor satisfaction and impacts to the site.
2. Make improvements to the parking lot and site access to enhance the existing functionality of the Conservation Area.
 - Conclusion: Not recommended. Options to improve existing site access have been exhausted, further action needs to be taken to achieve desired conditions.

3. Close the existing parking lot with the exception of emergency vehicle and maintenance use and create an alternative access system such as a shuttle.
 - Conclusion: Not recommended. Logistics do not match the short trail length, anticipate decreased satisfaction due to long wait times and congestion, cost of implementation is not feasible.
4. Expand the visitor experience to include the property north of Wilson Street and add a second parking lot on Lower Lion's Club Road.
 - Conclusion: Not recommended. Issues associated with the existing parking lot will still be present, moving visitor parking between two lots will complicate trip planning and management.
5. Expand the visitor experience to include the property north of Wilson Street, add a new parking lot on Lower Lion's Club Road and restrict access to the existing Wilson Street lot.
 - Conclusion: Recommended by HCA staff. Of the five strategies examined, this strategy would provide the most opportunity for improvements to the visitor experience, conservation area management and ecological conditions. Visitor parking would be removed from Wilson Street with the exception of accessible spaces, which would greatly reduce visitor and staff safety concerns. The new lot location would allow for enhanced management systems and controlled access. Ecological management and restoration would be implemented on both the Lower Lion's Club and Tiffany Falls properties.

Supporting Actions

Nine actions (Section 9.2) are proposed to support the strategy:

1. Design and Approvals – Finalize design and obtain required approvals for the Lower Lion's Club Road parking lot.
2. Automated Access – Install gate systems to manage entry.
3. Improved Signage – Upgrade interpretive, regulatory, and wayfinding signage.
4. Visitor Guidance – Add planting buffers, barriers, and fencing to protect sensitive areas.
5. Ecological Restoration – Implement habitat protection and restoration work.
6. Visitor Information – Enhance trip planning resources and manage promotional efforts.
7. Alternative Transportation – Encourage use of non-vehicular travel options.
8. Trail Infrastructure – Improve trails to reduce off-trail movement.

9. Trail Ambassador Program – Launch a program to support visitor education and stewardship.

Part 4 – Implement, Monitor, Evaluate and Adjust (Steps 12–14)

This phase will evolve as implementation proceeds. Ongoing monitoring will track progress toward the desired outcomes in visitor experience, site management, and ecological health. Staff will use these findings to evaluate the effectiveness of actions and make adjustments as needed.

Strategic Plan Linkage:

The initiative refers directly to the HCA Strategic Plan 2025 – 2029:

- **Strategic Priority Area – Natural Heritage Conservation**

Initiative – Manage natural areas on HCA lands through monitoring, inventories, strategies and approved master and management plan recommendations to ensure enhancement of natural areas and ecosystems.

- **Strategic Priority Area – Connecting People to Nature**

Initiative – Manage and enhance conservation lands utilising best management practices to support nature appreciation and recreation activities, as communities continue to grow and look to HCA’s conservation areas to spend time in nature.

Initiative – Collaborate with partners to share knowledge and work together to enhance access to conservation areas and trail networks.

Agency Comments:

The implementation of the strategy and associated actions outlined in the Plan will require continued collaboration with partner agencies such as the City of Hamilton and the Bruce Trail Conservancy. Development Permits from the Niagara Escarpment Commission (NEC) will be required for the parking lot and trail addition on the Lower Lion’s Club Road property before commencement of the work.

It is important to note, a public commenting period will be required during the NEC’s development permit review process. During this period of time neighbouring landowners adjacent to the Lower Lion’s Club Road property will be circulated the details of the development permit application for their own comments and feedback. This process can sometimes lead to project proposal delays or outright dismissals by the NEC.

Legal / Financial Implications:

This Visitor Use Management Plan was developed internally by HCA staff, no external consulting services were utilized. Appropriate monies for the identified actions recommended in this VUMP have been allocated through existing operational and capital projects budgets.

Related Reports and Appendices:

Attachment A – Falls Visitor Use Management Plan – Final Draft May 2025

Attachment B – Drawing G01 – Falls Site Plan

Attachment C – Drawing G02 – Falls Existing Parking Lot Plan

Attachment D – Drawing G03 – Falls Proposed Parking Lot Concept

Attachment E – Drawing G04 – Lower Lion's Club Proposed Parking Lot Concept

Attachment A

Tiffany Falls Conservation Area Visitor Use Management Plan

Final Draft – May 2025



Tiffany Falls Conservation Area Visitor Use Management Plan

This plan follows the framework outlined in the Visitor Use Management (VUM) Framework guide developed by the Interagency Visitor Use Management Council in the United States.

Framework Contents

Area Description	1
Visitor Use Management Framework	4
The Sliding Scale of Analysis	4
Part 1 - Build the Foundation.....	5
1. Clarify project purpose and need.....	5
2. Review the area's purpose and applicable legislation, policies and management direction.....	8
3. Assess and summarize existing information and current conditions	11
4. Develop a project action plan	17
Part 2 - Define Visitor Use Management Direction	18
5. Define the desired conditions for the project area	18
6. Define appropriate visitor activities, facilities and services	20
7. Select indicators and establish thresholds.....	21
Part 3 - Identify Management Strategies	22
8. Compare and document the differences between existing and desired conditions, and, for visitor use-related impacts, clarify the specific links to visitor use characteristics	22
9. Identify visitor use management strategies and actions to achieve desired conditions	23
10. Where necessary, identify visitor capacities and additional strategies to manage use levels within capacities.....	32
11. Develop a monitoring strategy	33
Part 4 - Implement, Monitor, Evaluate and Adjust	34
12. Implement management actions.....	34
13. Conduct and document ongoing monitoring, and evaluate the effectiveness of management actions in achieving desired conditions	35
14. Adjust management actions if needed to achieve desired conditions and document rationale ..	35

Area Description

Tiffany Falls Conservation Area is a popular natural area and waterfall viewing destination located in Ancaster, Ontario. The area is owned and managed by the Hamilton Conservation Authority. This small conservation area is closely connected with the larger Dundas Valley Conservation Area and located along the route of the Iroquoia Section of the Bruce Trail. This small conservation area provides an opportunity for visitors to connect with nature in a unique environment that for many, is close to home. There are great opportunities here for the HCA to educate visitors on the significance of this site and the greater ecological system that it is a part of.

Tiffany Falls is made up of two properties on either side of Wilson Street East. The property south of Wilson Street (Tiffany Falls) is 5.24 Ha in size and has a 15-car parking lot, trailhead signage and a trail to a small lookout platform at the base of the waterfall. The property north of Wilson Street (Lower Lion's Club Road property) is 12.55 Ha and has no amenities for visitors. The properties are connected by the Bruce Trail at a pedestrian crossing on Wilson Street.

The Tiffany Falls property south of Wilson Street was acquired by the HCA in 1968. A narrow parcel was purchased on the north side of Wilson Street in 1991, and the larger Lower Lion's Club Road property was acquired by the HCA in 2015. The property south of Wilson Street is entirely within the Tiffany Falls Environmentally Significant Area (ESA) as outlined in the City of Hamilton Rural Official Plan. The Lower Lions Club property is mostly within the ESA, with the exception of an area that historically had been developed and is now a regenerating field. Both properties are entirely within the Niagara Escarpment Plan Area and the Niagara Escarpment Plan Area of Development Control.

Tiffany Falls is a very small conservation area located in an urban area. It has been a well-known waterfall viewing spot for decades. The parking payment machine has recorded an average of 14,217 transactions per year over the past 5 years. This does not include additional visitors with membership passes and non-paying visitors. The area is facing pressures from visitor use as a result of its location and its popularity. The quality of the visitor experience, the management of the area and the ecological conditions are being negatively impacted. The intent of this Visitor Use Management Plan is to develop strategies and actions that can be implemented to better manage visitor use of the site and improve existing conditions.



Photo: Tiffany Falls bridge. Source: HCA staff.

Figure 1. Context Map

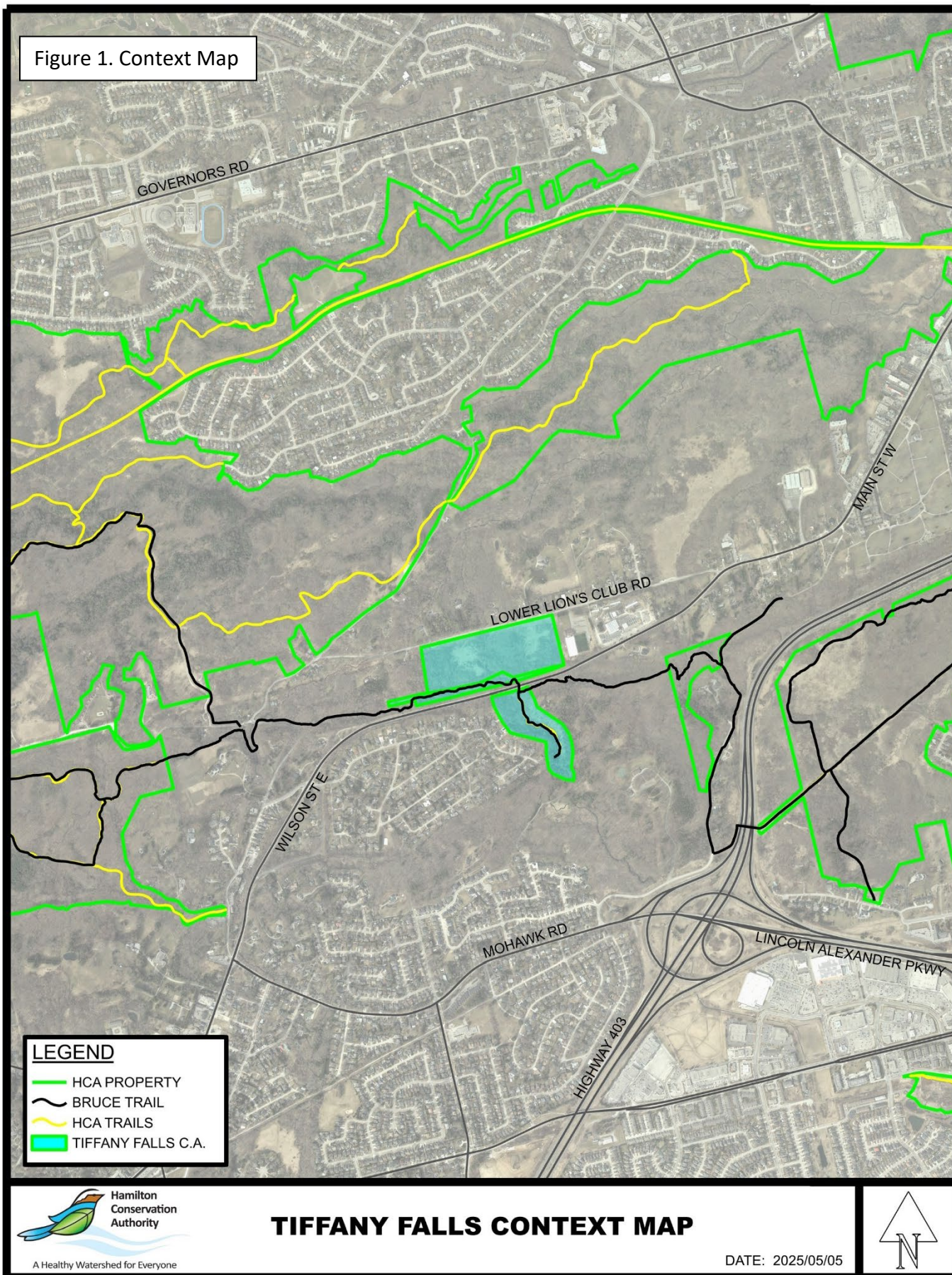
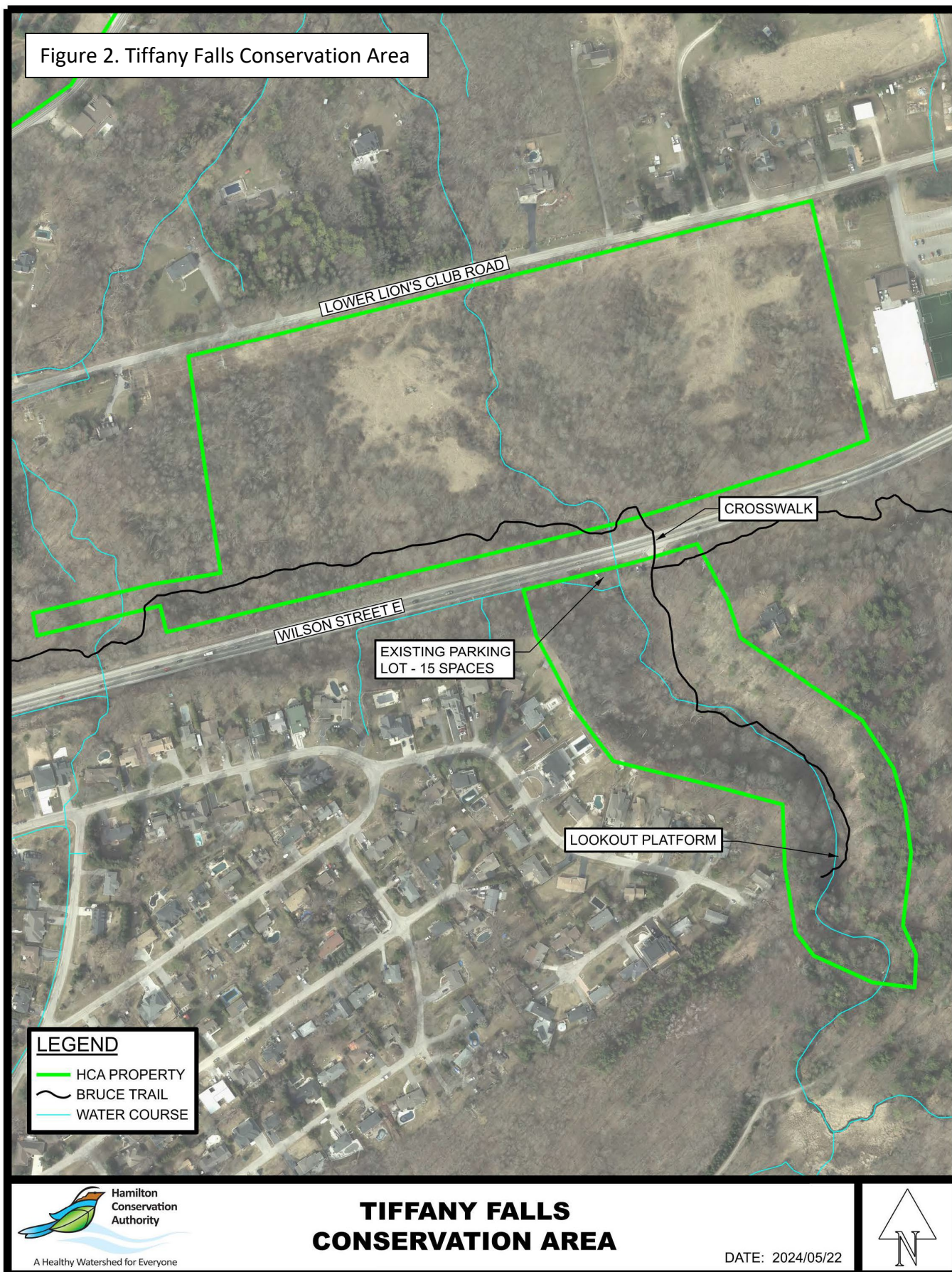


Figure 2. Tiffany Falls Conservation Area



Visitor Use Management Framework

This Visitor Use Management Plan follows the framework established by the Interagency Visitor Use Management Council in 2016. This Council is comprised of United States agencies including the Bureau of Land Management, National Park Service, U.S. Fish and Wildlife Service, U.S. Forest Service, National Oceanic and Atmospheric Administration, and the U.S. Army Corps of Engineers (Visitor Use Management Framework, July 2016). More information on the VUM Framework can be found here: <https://visitorusemanagement.nps.gov/VUM/Framework>. The framework was created to provide guidance for analyzing and managing visitor use and developing a transparent decision-making process. The framework is meant to be adaptable for different agencies' policies and regulations, and scalable for use with a variety of natural areas and projects.

The Sliding Scale of Analysis

The sliding scale of analysis is used to determine the appropriate level of analysis required to adequately address visitor use management issues and opportunities. This allows agencies to determine the appropriate investment of time, money and other resources to match the complexity or significance of the project and the consequences of the decision. The 14-step framework process does not vary with project complexity, all of the framework steps still apply. The framework encourages above all the use of professional judgement in determining the level of analysis and investment. HCA staff internally reviewed this VUM Plan with a sliding scale of analysis in the preliminary stages of the project.

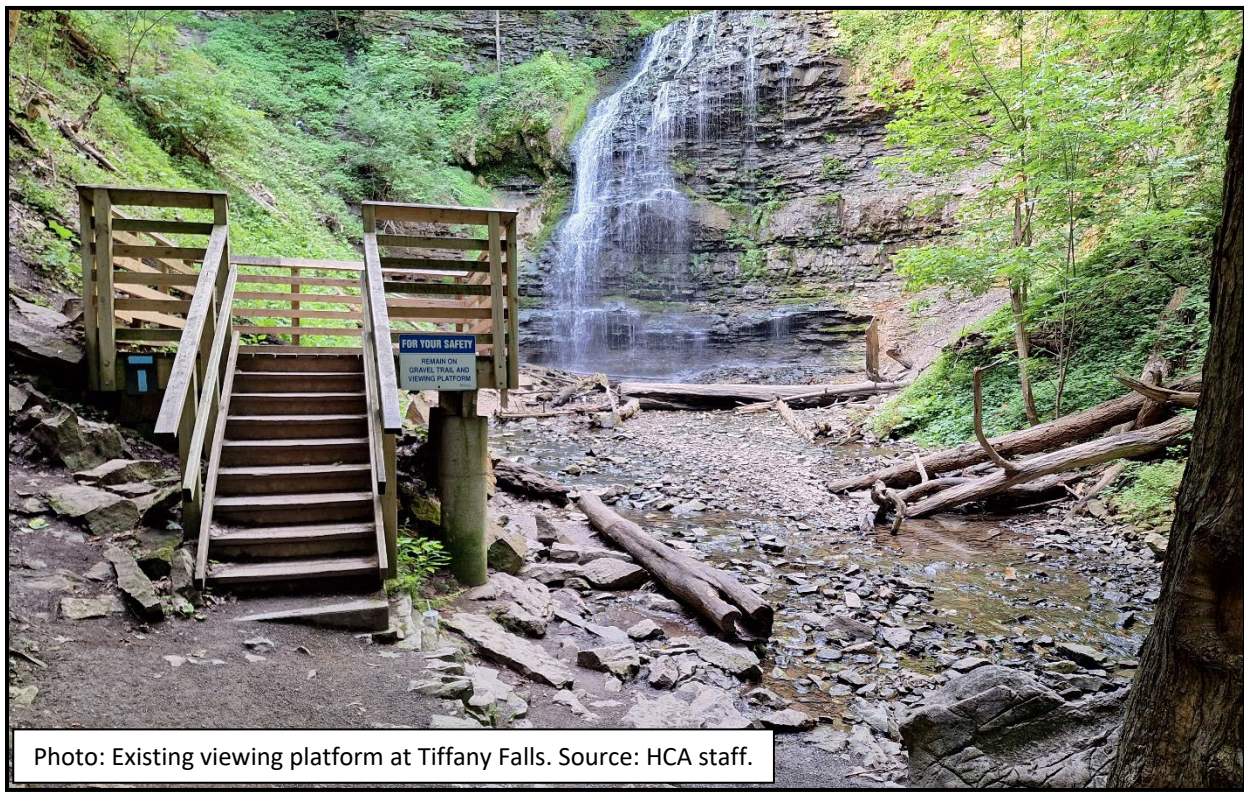


Photo: Existing viewing platform at Tiffany Falls. Source: HCA staff.

Part 1 - Build the Foundation

1. Clarify project purpose and need

The purpose of this plan is to improve visitation management at Tiffany Falls Conservation Area in order to ensure visitor safety, a quality visitor experience, and protection of this natural area. Current visitor use levels and patterns at Tiffany Falls are having a negative impact on the visitor experience, the ability of HCA staff to effectively manage the area, and on the ecology and natural spaces.

Visitor safety is the main concern for the HCA at Tiffany Falls. This is largely due to the layout and location of the parking lot on the busy Wilson Street East, and the entrance and exit having limited sightlines into and out of the lot. Vehicles trying to enter and exit the parking lot disrupt traffic on Wilson Street, especially during busy or peak visitation times.

Vehicles do not always follow the intended parking layout, especially when the lot is very busy. There are 15 designated spaces in the lot. When they are full, visitors try to fit their vehicle into any remaining space, including along the entrance and exit laneways, which leads to traffic congestion on Wilson Street and multi-user conflicts. The parking lot creates concern for emergency vehicle access and for staff maintenance vehicle parking. The tight corners and narrow laneway can become blocked and disrupt emergency vehicle access. Due to physical constraints, there is no way to expand or redesign this existing parking lot.

HCA staff currently have no reasonable way to manage peak visitation periods to Tiffany Falls. One method of regulating visitation that has been very successful for the HCA at other conservation areas is the installation of an automatic gate system. The existing parking lot at Tiffany Falls has a pay and display machine for visitors, but it is not possible for staff to enforce paid parking without being on site at all times. An autogate system helps to promote fairness in paid visits, while helping to manage traffic and pedestrian safety more effectively. Due to the physical constraints on the site, an autogate system cannot be installed at the existing parking lot. The length of the entrance and exit laneways are too short to accommodate the autogate system, and would cause traffic to back up onto Wilson Street.

A parking review was completed by the HCA in 2019 under direction from the HCA Board of Directors. The purpose of the parking review was to assess the parking supply at individual HCA areas and identify capacity gaps, provide potential recommendations for parking strategies that support these HCA areas while conserving the natural features of the area, and building upon the existing parking system. From this report, the following recommendations for Tiffany Falls are provided:

“Tiffany Falls is a highly visited area that is serviced by a small parking lot. It is important that HCA continue to work collaboratively with City bylaw enforcement to control and enforce no parking regulations to address spillover parking along Wilson Street. While there are no options available to physically enlarge the existing parking lot, some measures can be taken on site to optimize the lot to enhance traffic flow and angular parking.

Additional options will need to be explored for this area, bearing in mind the single trail and viewing platform and overall limited space and capacity of the area. Several options for further detailed consideration and investigation have initially been identified to include:

1. Continue with operation of the existing parking area with an increased focus on promoting short stays, increased visitor turnover and off-peak visitation. This would also involve signing the area to advise that picnics are not permitted in this location and reviewing photography permits and parking access for Bruce Trail members.
2. Promote walk-in access through nearby HSR bus stop and Bruce Trail.
3. Potential for the development of a new larger parking lot for this site on HCA lands adjacent to Tiffany Falls located north of Wilson Street with frontage on Lower Lions Club Road. There is additional work to be completed to determine the feasibility of this proposal. This includes:
 - i. Completion of an Environmental Impact Study (EIS) to determine if it is acceptable according to HCA and City of Hamilton requirements to develop a parking lot on the lands as the majority of the area is designated as an Environmentally Significant Area. This work would take approximately 1-year to complete and would require the services of an outside consultant.
 - ii. The subject lands are located within the Niagara Escarpment Plan area, within the Protection Area designation and a Development Permit would be required for the development of a parking lot in this area. The above noted EIS would form part of this application.
 - iii. A review of traffic issues and pedestrian crossing requirements would need to be completed and reviewed with the City of Hamilton. Wilson Street is a major thoroughfare within the City and specifically Ancaster with a 60km/hr speed limit at the Tiffany Falls area”

In 2022, the City of Hamilton completed roadwork along Wilson Street in front of the Tiffany Falls parking lot. This included repaving and linework, adding a bike lane with barriers, and a controlled pedestrian crosswalk with signals at the parking lot. This crosswalk helps Bruce Trail users to safely connect from the trail on the north and south sides of Wilson Street.

A Scoped Environmental Impact Study (EIS) required for the potential development of a new parking lot on Lower Lions Club Road was completed by consultants at Aboud & Associates in 2022. The study concluded that a portion of the property could support a parking area. The EIS includes impact assessments and recommended mitigation measures to be implemented if the parking lot were to be constructed.

Protecting the ecological integrity of Tiffany Falls is of primary importance to the HCA. Under current conditions, there are concerns about the impacts of visitation on the area. These include trampling of vegetation from unauthorized trails and trail widening, an increase in diversity and distribution of invasive species across the property, and impacts on native species that inhabit this area, including rare

breeding birds and vegetation communities. Visitor behaviours including walking in Tiffany Creek and the waterfall basin, climbing the Escarpment slopes and littering are detracting from the health of the environment and also from the enjoyment of other visitors. These behaviours and impacts need to be addressed.

The issues discussed above are all connected to visitation. The purpose of this Visitor Use Management Plan is to identify what can be done to modify visitor use at Tiffany Falls to improve the experience for visitors, enhance management abilities, and protect and restore the natural areas.



Photo: Tiffany Falls parking lot on a weekend in January 2025. Source: HCA staff.

2. Review the area's purpose and applicable legislation, policies and management direction

2.1 Area Purpose and Management Direction

The Hamilton Conservation Authority is guided by the Vision of “A healthy watershed for everyone” and Mission “To lead in the conservation of our watershed and connect people to nature”. The Hamilton Conservation Authority 2025 – 2029 Strategic Plan also provides guidance for the organization as a whole. The four priorities of the five-year strategic plan are as follow:

- **Water Resources Management** - Focused on safeguarding the health of the watershed and protecting people and property from natural hazards.
- **Organizational Excellence** - Focused on our organizational resources to ensure efficient and responsive operations are available to meet the needs of the future.
- **Natural Heritage Conservation** - Focused on the management and conservation of natural areas, which include the forests, wetlands, meadows, and watercourses within the watershed.
- **Connecting People to Nature** - Focused on the conservation of HCA lands and connecting communities to natural areas.

There are several plans providing management direction for Tiffany Falls Conservation Area. The Tiffany Falls property on the south side of Wilson Street was acquired by the HCA in 1968. HCA first created a draft Master Plan for Tiffany Falls Conservation Area in 1979. The goals for the conservation area outlined at the time were “to manage the water resources of Tiffany Creek within the conservation area, to maintain Tiffany Falls as a natural wilderness area, and to provide passive recreational opportunities in a manner that will generate appreciation of all features within the Conservation Area.” The Site Development section of the plan states that “To date, development has been deliberately restricted to a pull off parking area accommodating a maximum of 15 cars, several picnic tables, a small amount of landscaping on the perimeter of the woodlot and construction of 804m of hiking trails leading to the falls.”

A new master plan for Dundas Valley Conservation Area including Tiffany Falls was finalized in 1997. This plan recommended improvements to the existing trails and the addition of boardwalks. While boardwalks were never added, presently there are two bridges crossing the creek. Work on a new management plan for Tiffany Falls is beginning in 2025.

In 2000, the Tiffany Creek Subwatershed Plan was completed. This document provides direction on the management of the subwatershed and includes some information on the Tiffany Falls ESA such as significant species.

In 2009, the Dundas Valley 50 Year Vision & Strategy report was completed. The scope of the plan includes Tiffany Falls. The 50-Year Vision Statement developed in this report states “In 2058, Dundas Valley continues as a diverse, sustainable and essential Niagara Escarpment ecosystem. The Area's forests, streams, meadows, farmlands and neighbourhoods connect people living in vibrant urban and

rural Hamilton communities with their natural and cultural heritage.” The report includes 11 goals for Dundas Valley including “Protect and enhance the Valley’s Ecology and Natural Areas”, “Ensure conservation area facilities are accessible and convenient” and “promote sustainable tourism in the Valley”.

2.2 Applicable Legislation and Policies

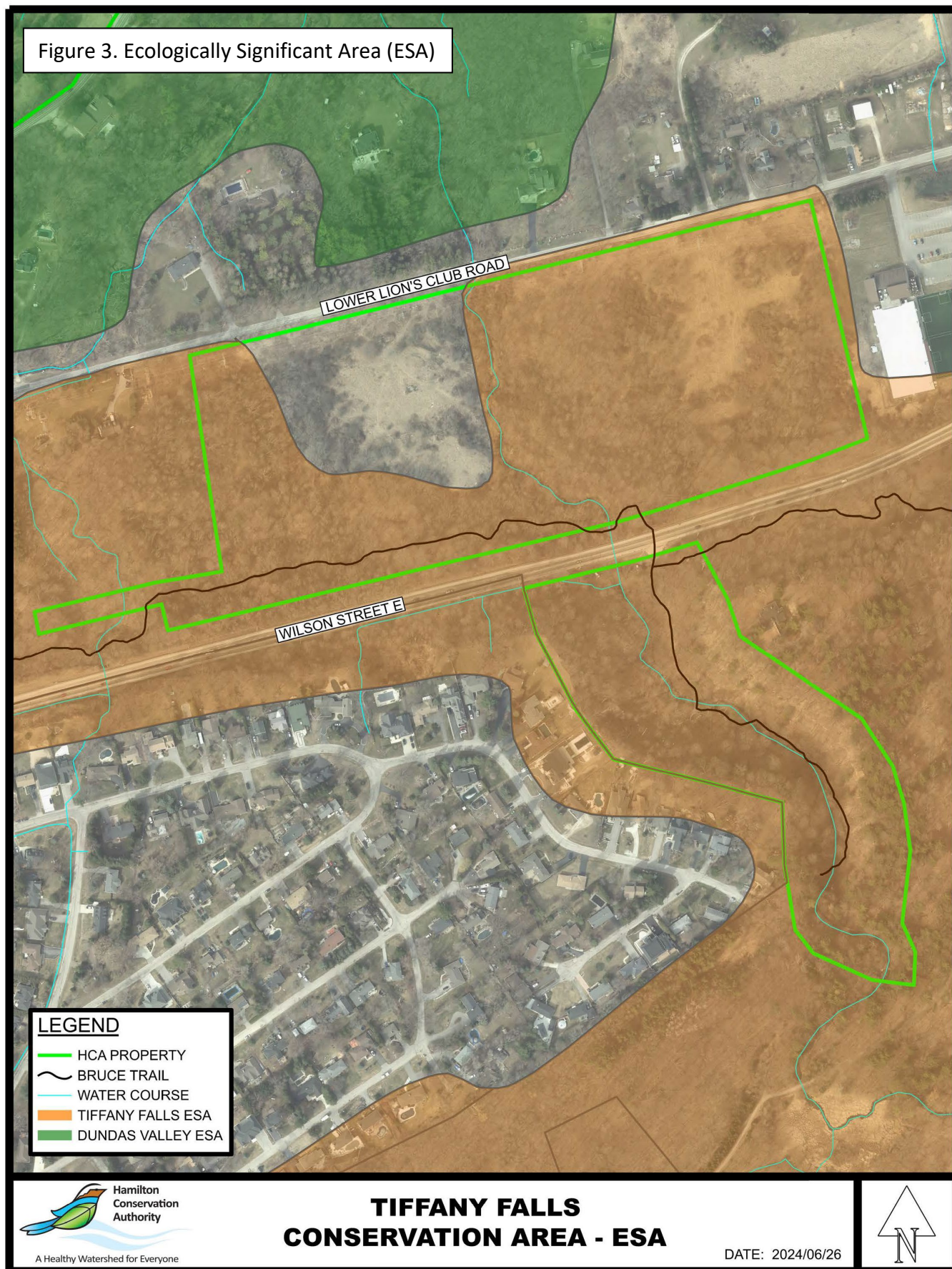
Tiffany Falls Conservation Area is regulated under the Conservation Authorities Act. The properties are also regulated under Ontario Regulation 41/24 given the presence of Tiffany Creek and the associated flooding and erosion hazards. They are within the Niagara Escarpment Plan (NEP) Area and Niagara Escarpment Commission (NEC) Area of Development Control. The property south of Wilson Street is designated in the NEP as Escarpment Natural Area. The property north of Wilson Street includes Escarpment Natural Area and Escarpment Protection Area Designations. Tiffany Falls is classified as an Escarpment Access park in the Niagara Escarpment Parks and Open Space System (NEPOSS). From the October 2024 consolidation of the NEP, “These areas may provide modest facilities to support day use activities at points of interest (e.g., trailheads, picnic sites, scenic areas, fishing areas, beaches)”.

Within the City of Hamilton’s Rural Hamilton Official Plan (RHOP), the property is designated as Open Space, and part of the City’s Natural Heritage System. The property south of Wilson Street is entirely within the Tiffany Falls Environmentally Significant Area (ESA). The property north of Wilson Street is mostly within the ESA, with the exception of an area that historically had been developed and is now a regenerating field (see Figure 3). The majority of the south and north sections are also identified as Significant Woodland. The south property contains the Tiffany Falls Regionally Significant Earth Science Area of Natural and Scientific Interest (ANSI), which is identified as a locally significant natural area in the RHOP. This area is designated as an ANSI because of its unique bedrock exposures. The RHOP also identifies Linkages on the property. ESA, Significant Woodlands and Earth Science ANSI are considered Core Areas, and together with Linkages, form the key components of the City’s Natural Heritage System.



Photo: Tiffany Falls and talus slopes. Source: HCA staff.

Figure 3. Ecologically Significant Area (ESA)



3. Assess and summarize existing information and current conditions

3.1 Current Visitor Experience Conditions

Current visitor experience conditions describe the experience that visitors are having at Tiffany Falls based on information gathered from a visitor survey and general feedback received by staff over the years.

A visitor survey was conducted over three months in the summer of 2024 to learn more about the experience that visitors are currently having at Tiffany Falls. The survey was completed by 163 respondents. The survey was promoted through HCA social media, HCA monthly subscriber newsletters, and physically on site at Tiffany Falls with a flyer and QR code linking to the website. A summary of the survey results is included as an appendix to this document.

There are some trends in survey responses to be considered when interpreting the results. The majority of respondents were visiting from close by. Out of 163 respondents, 70 identified as visiting from Hamilton, 23 from Ancaster, and 15 from Dundas. The results showed that many of the respondents were regular visitors to the area. Out of 163 respondents, 98 said that they had visited four or more times in the past, 45 said they had visited 1-3 times, and 20 said this was their first visit. Therefore, the majority of survey responses are from local and regular visitors.

The following are some of the key takeaways from the survey responses about the experience that visitors are having at Tiffany Falls.

- The survey results indicate that most visitors arrive at Tiffany Falls in their own vehicle (**83.4%** of respondents). The remaining responses include arriving by walking, biking, public transport, or taxi service.
- When asked what made them want to visit Tiffany Falls, **73%** of responses included viewing the waterfall. For most, this is the main attraction of the site.
- **31.3%** of respondents answered yes when asked if they had trouble finding parking on their visit.
- When asked if they paid for parking or had an HCA membership pass, **62%** of respondents said that they have an HCA membership pass, **20.2%** said that they paid for parking on site, and **17.8%** responded “other”.
- When asked if Tiffany Falls was crowded during their visit, **37.4%** of respondents said yes.

The parking payment machine located in the Tiffany Falls lot provides an idea of the volume of vehicle traffic to the conservation area. It must be noted that these counts are based only on transactions recorded at the pay-and-display machine. This does not include visitors with HCA membership passes and non-paying visitors, meaning that the numbers below are a low estimate of actual visitation.

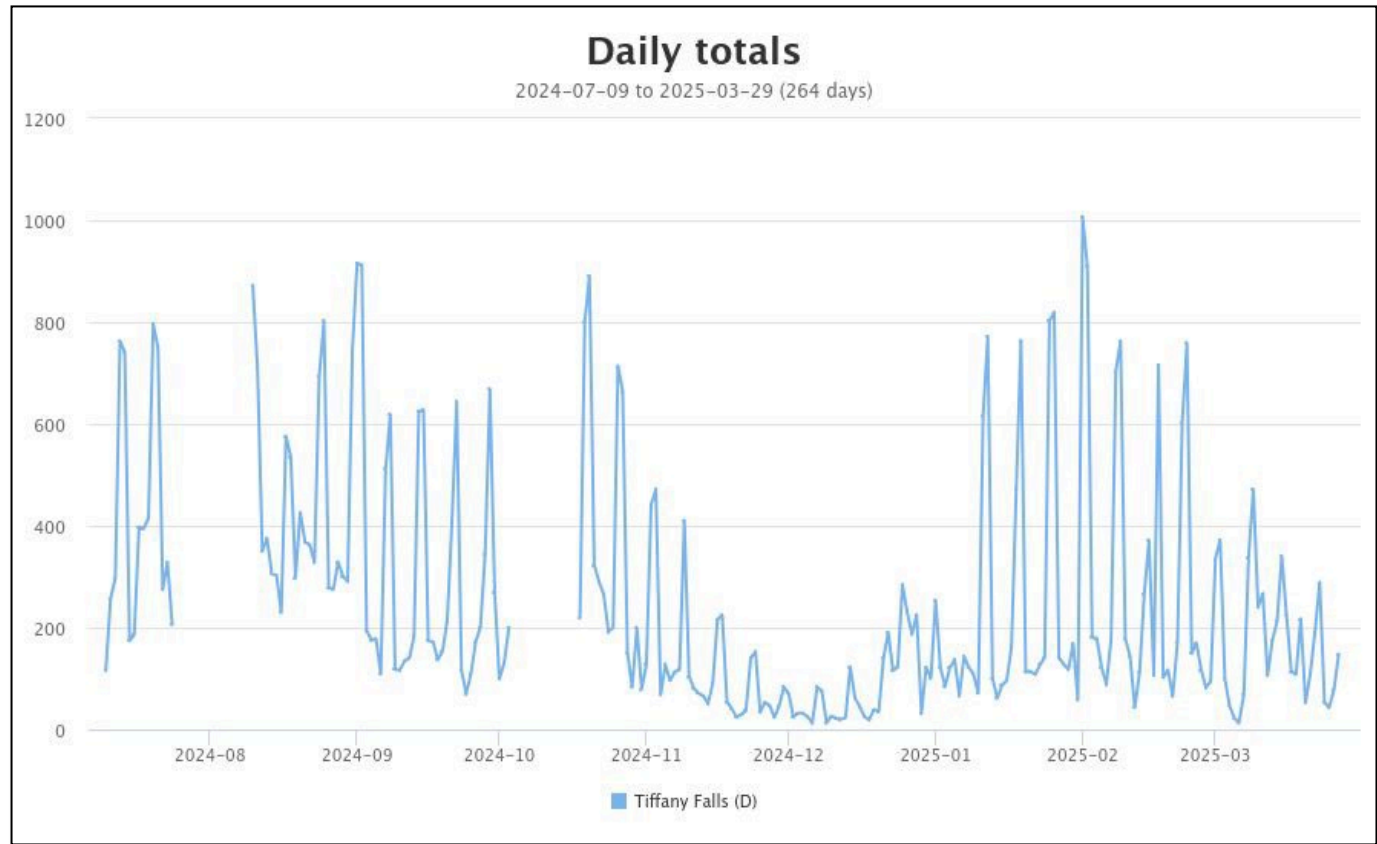
Annual Visitation Numbers from Tiffany Falls Parking Lot Pay-and-Display Machine						
Numbers do not include vehicles with a membership pass and non-paying visitors.						
2019	2020	2021	2022	2023	2024	5-year Avg.*
13,426 cars	14,326 cars	19,131 cars	13,381 cars	15,493 cars	14,461 cars	14,217 cars

**Year 2021 removed from 5-year average number as visitation levels changed substantially during Covid-19 pandemic period lockdown.*

An infrared trail counter has been active at Tiffany Falls from July 2024 to March 2025 to help provide more insight into visitation trends. The counter is located along the trail between the parking lot and the waterfall lookout platform. All counts shown below have been divided by two to account for people walking past the counter twice, once going out to the falls and once coming back to the parking lot.

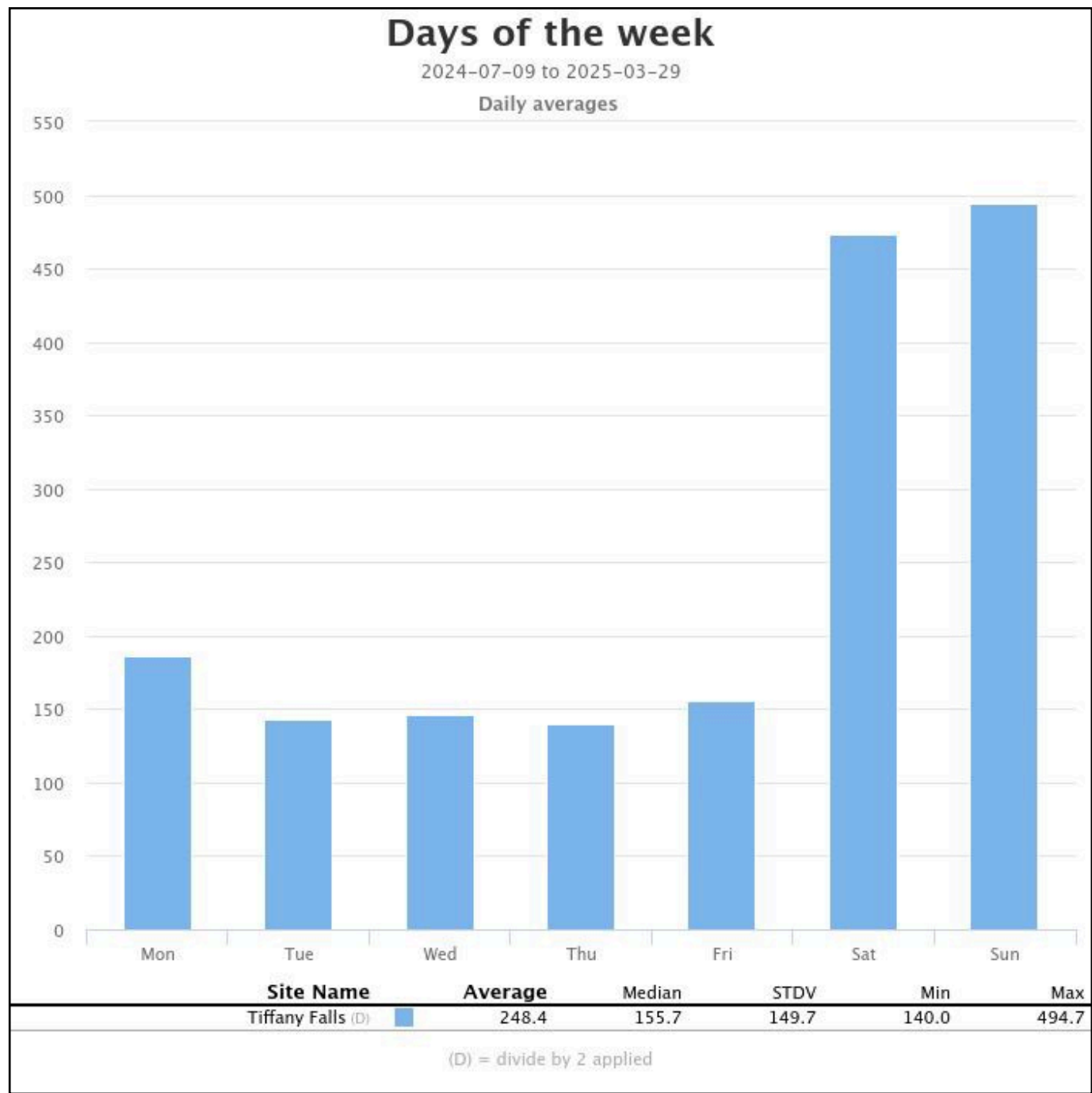
Graph #1 – Daily Totals

This graph plots the total daily counts from July 9th, 2024 to March 29th, 2025. Overall, visitation was higher July - October, peaking just over 900 visitors per day on the Labour Day weekend. Visitation slowed November through January, and was very high again in late January through March when the falls were frozen. Seeing such high visitation at an HCA conservation area in the winter is unique to Tiffany Falls.



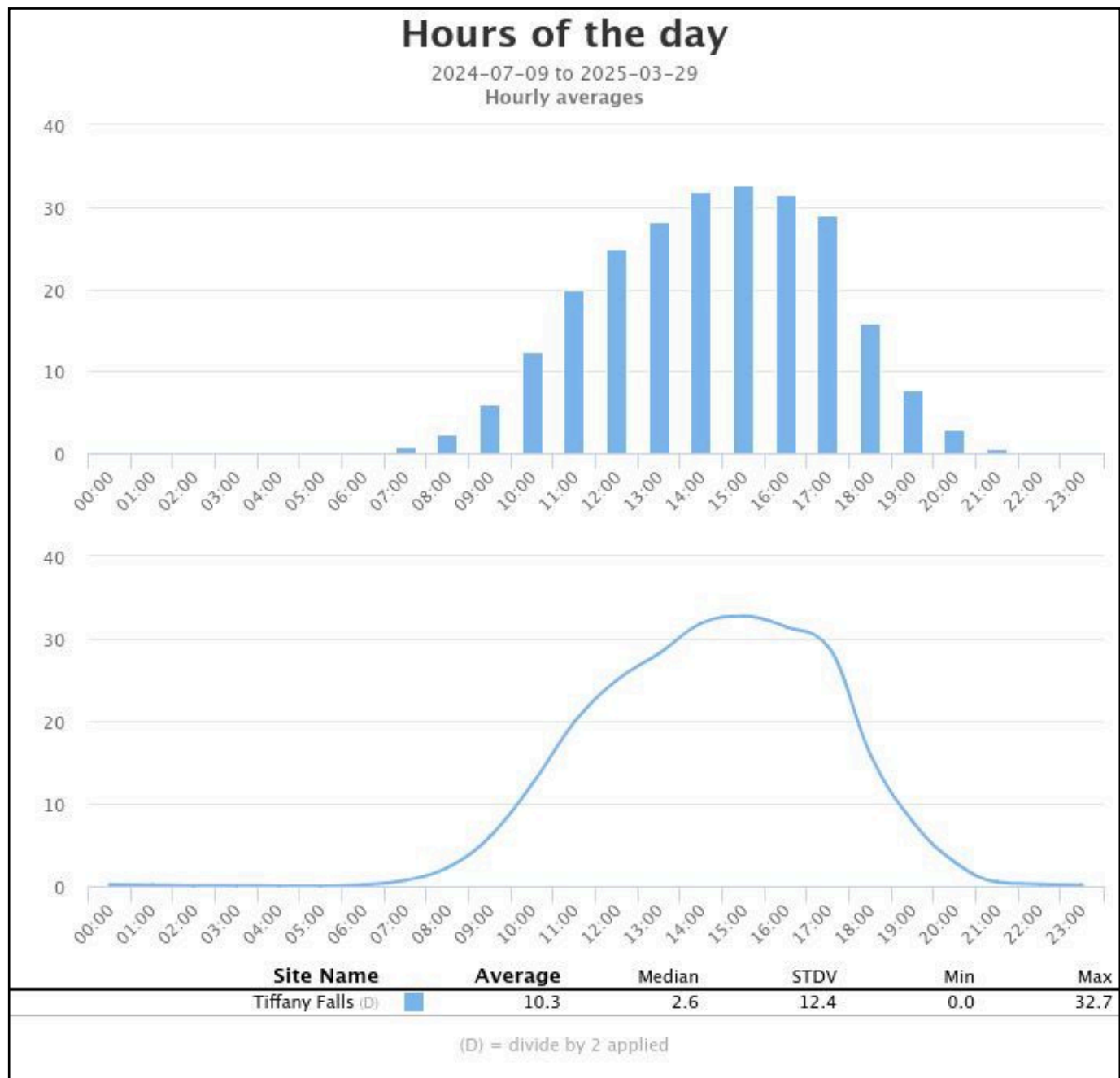
Graph #2 – Days of the Week

This graph shows the average daily counts for the seven days of the week. A large increase in visitation is seen on weekends with three times the number of visitors passing by the trail counter on their way to see the waterfall.



Graph #3 – Hours of the Day

This graph shows how visitation trends throughout the average day. On average, visitation peaks in the afternoon between 2pm and 4pm. Morning and evening hours are less busy. Tiffany Falls is posted as open from dawn to dusk, which is standard for many HCA conservation areas.



3.2 Current Management Conditions

Current management conditions describe the experience that HCA staff are having when maintaining and monitoring the property. Tiffany Falls is managed on a regular basis by Dundas Valley Conservation Area (DVCA) staff as part of the HCA's Conservation Area Services (CAS) department. While Tiffany Falls only comprises a small portion of the properties under their care, staff currently face a number of challenges in managing this property.

Managing Safety

Limited parking at the Wilson Street parking lot often causes a backup of vehicles that can extend into Ancaster, creating a public safety concern. Visitors stop on the roadway to drop off passengers when the parking lot is full, causing additional congestion and exposing pedestrians to fast moving traffic. Additionally, a bike lane runs along the entrance and exit points of the parking lot, which includes a blind uphill corner, posing further risks to cyclists and drivers.

The parking lot itself has entrance and exit points leading onto a busy roadway with limited visibility, raising safety concerns for both the public and staff. During winter, snow removal becomes particularly challenging due to the size of the parking lot and its access points, adding to staff safety concerns. Another significant issue is controlling public access to the waterfall basin, as unrestricted access poses multiple safety hazards.

Managing Parking and Fair Payment

The absence of marked parking spaces leads to improper parking, which reduces the overall capacity of the lot. This results in vehicles parking in bike lanes, blocking entrances, parking in designated no-parking areas, and causing difficulties with traffic flow. Additionally, ensuring fair revenue collection remains a challenge, particularly in determining whether a pay-and-display system or an automated gate system would be the most effective solution. When the parking lot is full, visitors are parking on private property of local businesses and walking up the roadway to Tiffany Falls where there is no sidewalk on either side of Wilson Street raising significant pedestrian safety concerns. This also unfairly occupies local business parking and reduces revenue for the HCA.

Managing the Natural Areas

Visitation at Tiffany Falls is influenced by social media in all seasons. Promotion of this area from sources outside of HCA result in greater visitor volumes. The high volume of visitors has contributed to severe erosion along the trail, boardwalk, and bridges. Litter accumulation along the trail is also a persistent issue. Similar to the parking lot concerns, controlling public access to the waterfall basin remains a priority due to safety risks. Unofficial trails have formed along embankments, which can lead to further environmental degradation. The current viewing platform feels somewhat detached and does not provide a clear endpoint for visitors, which raises the question of whether fencing should be installed. Additionally, many visitors enter the creek and walk to the waterfall basin, which can contribute to both safety hazards and environmental impact. During winter, freezing mist from the waterfall and seeps

along the Escarpment cause ice buildup on the trail, creating hazardous walking conditions for visitors. Trails are not typically maintained in the winter at any HCA Conservation Areas.

3.3 Current Ecological Conditions

This study area encompasses a north to north-west facing segment of the Niagara Escarpment at the south-east corner of the Dundas Valley, a major east-west trending re-entrant in the Niagara Escarpment. The central feature of this study area is a two-step waterfall formed by Tiffany Creek as it descends the Escarpment. The creek occupies a broad valley above the Escarpment, and a V-shaped ravine below the Escarpment. Tiffany Falls is located within a V-shaped ravine containing steep talus slopes crowned by an open carbonate cliff rim community. The cliffs (CLO1-5) are mainly comprised of non-vegetated exposed bedrock topped by mature trees rooted in the talus slopes. Moist open seepage cliffs occur closer to Tiffany Falls.

Black maple (*Acer saccharum* ssp. *nigrum*) and sugar maple (*Acer saccharum* ssp. *saccharum*) dominate the talus slopes and form about half of the canopy with Eastern hemlock (*Tsuga canadensis*). Wild ginger (*Asarum canadense*), spotted jewel-weed (*Impatiens capensis*), herb Robert (*Geranium robertianum*), zig-zag goldenrod (*Solidago flexicaulis*), and blue cohosh (*Caulophyllum thalictroides*) are some of the wildflowers that are abundant in this community. Within Ontario, this vegetation type is considered very rare. Tiffany Falls is bordered on three sides by carbonate cliff rim, which is also provincially very rare.

Also located between the Escarpment cliff and Wilson Street are steep talus slopes composed of exposed rock and thin soils. Sugar maple is the dominant species on the upper slope, whereas black maple becomes more prominent from mid-slope to the road in the deeper soils. Associates are white ash (*Fraxinus americana*) and ironwood (*Ostrya virginiana*). Alternate-leaved dogwood (*Cornus alternifolia*), red-berried elderberry (*Sambucus racemosa* ssp. *pubens*) and mountain maple (*Acer spicatum*) form the light understory layer. Wild ginger, garlic mustard (*Alliaria petiolata*), herb Robert and bulblet fern (*Cystopteris bulbifera*) are common in the herbaceous layer. This community and the cliff rim are intermittent on the steep slopes north-west of Wilson Street. At the foot of this intermittent talus community, sugar maple and black maple dominate the extensive bottomland forest along Ancaster Creek.

Breeding bird surveys were conducted on this property in June of 2024. Twenty-eight species of birds were recorded on this property. An additional 46 bird species have been recorded within eBird over the past 10 years, including the provincially and federally listed rusty blackbird (special concern). The provincially threatened Louisiana waterthrush and provincially special concern Eastern wood-pewee have also been recorded on this property occasionally over the years.

Ecological surveys were conducted in 2001 at this property and repeated again in 2024. There has been an overall increase in the presence of non-native species growing, from 10 plant species in 2001 to 21 plant species in 2024. This is partly reflective of an overall increase in non-native species presence across the province of Ontario in the last 20 years, but also likely a reflection of increased visitation. One main

pathway for spread of invasive species is on the bottom of shoes and clothing. Plant species are easily moved from one location to another when hikers are not cleaning their shoes between locations.

Erosion has also been noted within the conservation area and caused by a number of factors. Erosion of the banks of Tiffany Creek occurs where hikers enter the water to either get a closer look or walk up to the waterfall. In addition, extensive erosion has been observed near the waterfall past the viewing platform where hikers are climbing the escarpment to the top of the waterfall. Finally, erosion also happens in winter when seeps freeze on the trail surface and create difficult walking conditions and force hikers off trail around the frozen surface. These impacts and the subsequent erosion cause degradation in water quality, trampled vegetation, and loss of habitat for birds, aquatic insects and fish.

4. Develop a project action plan

This Visitor Use Management Plan is being developed to guide the management of visitation at Tiffany Falls. From reviewing the existing conditions for the area, it is apparent that most visitor use issues stem from site access and parking conditions, and from improper visitor behaviour within the conservation area. Strategies and actions to address these issues will be developed in this plan.

A working group involving HCA staff from different departments including Capital Projects and Strategic Services, Conservation Area Services, Watershed Management Services and Marketing and Communications has been established to create this plan. Beginning in April 2024, the working group has been meeting monthly to develop this document. This working group was created to provide perspectives on Tiffany Falls from staff with different backgrounds and experiences. This is to ensure that all aspects affected by visitation are considered including the visitor experience, the management needs, and the ecology of the area.

Throughout the summer of 2024, new information about Tiffany Falls was gathered to support this plan. Ecology staff performed field surveys on the properties. A visitor feedback survey was held from May 27th to August 16th to provide insight into the visitor experience, and a trail counter was installed on site to collect data. This information has been used to inform the recommended actions outline later in this plan.



Photo: Crosswalk on Wilson Street. Source: HCA staff.

Part 2 - Define Visitor Use Management Direction

5. Define the desired conditions for the project area

The desired conditions describe the conditions to be achieved and maintained, which may be different than the current conditions. Desired visitor experience, management and ecological conditions for Tiffany Falls area are outlined below.

5.1 Desired Visitor Experience Conditions

Desired visitor experience conditions describe the experience that visitors to Tiffany Falls are looking to have under ideal conditions. Themes on desired conditions for visitor experience have been drawn from the results of the public survey that was held in the summer of 2024, as well as from general feedback received by HCA staff over the years. The survey included the question “what improvements would you like to see to this conservation area?” The responses to this question highlight what is important to visitors and what can be improved to create the desired experience. A summary of the survey results is included as an appendix to this document.

The following desired conditions statements have been developed regarding the visitor experience at Tiffany Falls:

- Tiffany Falls is a place where visitors can experience a unique and beautiful natural area close to home and experience benefits their physical and mental well-being.
- Visitors feel safe and confident when accessing the site and using the parking lot maintained by HCA.
- The level of service provided by HCA at Tiffany Falls is consistent with other popular HCA day use areas and support the core of experience of viewing the waterfall.
- Education is provided for visitors on site to enhance awareness of appropriate visitor behaviour and the importance of protecting this natural area.
- The site is managed in a way that allows the number of visitors on site concurrently to be moderated and reduces feelings of overcrowding.
- Improvements for accessibility are made where feasible.
- Litter is not seen on the ground within this natural area.

5.2 Desired Management Conditions

Desired management conditions describe how Tiffany Falls Conservation Area would be operated and cared for by HCA staff under ideal conditions. The desired management conditions for the area have been identified by HCA staff with guidance from the visitor survey results.

The following desired conditions statements have been developed regarding the management of Tiffany Falls:

- HCA staff have the ability to control time-of-day access and fair-payment practices at Tiffany Falls Conservation Area.
- Safe and reliable access to the site is maintained at all times for emergency services vehicles.
- Safe and reliable access to the site is maintained at all times for HCA staff.
- Safe and reliable access to the site is maintained at all times for visitors with accessibility needs.
- Multi-use conflict between visitor vehicles, on-road cyclists, pedestrians within roadways and parking areas, and public traffic along adjacent streets is minimal.
- The Bruce Trail is supported and promoted.
- Litter is managed on the property following the “pack it in, pack it out” philosophy, meaning that anything visitors bring with them to the site is taken with them when they leave.
- Visitors respect and follow signage posted on site regarding proper use of the area in order to protect themselves and the natural areas.

5.3 Desired Ecological Conditions

The conservation and enhancement of natural areas at Tiffany Falls is an integral component of this Visitor Use Management Plan. The desired ecological conditions of the site have been identified by HCA staff after completing an ecological inventory of the property and reviewing existing ecological information. This conservation area is small and located close to urban developments. It is considered an Escarpment Access Park in the Niagara Parks and Open Space System (NEPOSS) meaning these areas provide for public access to experience the Niagara Escarpment. Tiffany Falls has well vegetated slopes that are mainly composed of native plant species. Visitors have an opportunity to connect with nature in an easily accessible manner with a short walk. Desired ecological conditions are being achieved on portions of the trail where the ground is flat or on a bridge. Impacts occur when visitors trample vegetation to access the Escarpment slopes, the waterfall or to by-pass ice and other visitors on the trail. In addition, there is a high level of invasive species along the trail and along unauthorized trails, this has caused an impact to the desired ecological condition.

Ecological restoration and improvements will be identified and undertaken with the implementation of this VUM Plan. Further ecological reviews and recommendations will be a core component of the upcoming Tiffany Falls Management Plan.

The following desired conditions statements have been developed regarding the ecological conditions of Tiffany Falls:

- Trail width remains consistent and the trails do not widen into the natural habitats.

- The talus around the falls is vegetated as much as possible. The talus slopes around the waterfall remain vegetated with native vegetation.
- Unauthorized trails up the side of the gorge and near the waterfall are closed.
- Access for visitors into Tiffany Creek is restricted.
- Native plant and bird species remain diverse and abundant within the conservation area.
- Invasive species diversity and abundance is reduced within the conservation area.

6. Define appropriate visitor activities, facilities and services

Tiffany Falls Conservation Area is managed to balance visitor experience, environmental conservation, and public safety. HCA staff have identified key facilities, appropriate visitor activities, and prohibited behaviors to ensure responsible use of the site while maintaining its ecological integrity.

The following facilities and services have been defined as appropriate by HCA staff for Tiffany Falls:

- Parking lot with paid parking
- Trail system with bridges over Tiffany Creek.
- Lookout platform near the base of the waterfall
- Trailhead, wayfinding, interpretive and regulatory signage
- Boot scraping station
- Fencing where needed
- Public rest areas & garbage facilities

The following have been identified by HCA staff as appropriate visitor activities at Tiffany Falls:

- Walking, running, hiking on the HCA and Bruce Trail maintained trails
- Passing through the area on the Bruce Trail
- Visitors arriving by bike and walking along the trail to the waterfall
- Viewing the waterfall from the trail or the existing lookout platform at the base

The following activities have been deemed as inappropriate for Tiffany Falls by HCA staff:

- Walking or hiking off of the HCA and Bruce Trail maintained trails
- Walking in the creek or waterfall basin
- Climbing the slopes or the waterfall
- Cycling on the Bruce Trail as per Bruce Trail Conservancy policy
- Parking outside of the designated parking spots & along roadways

These guidelines will support operational efficiency, visitor safety, and environmental preservation. Compliance with these area rules will help maintain Tiffany Falls Conservation Area as a sustainable and accessible destination for all users.

7. Select indicators and establish thresholds

Indicators and thresholds are important for tracking the impacts of visitation on an area and keeping impacts within an acceptable range. Indicators are measurable attributes that can be tracked over time to indicate any changes in conditions on site. Thresholds are the minimally acceptable levels at which conditions should be maintained above. Indicators and thresholds have been identified to track changes across the visitor experience, management and ecological conditions of Tiffany Falls.

- Indicator: Trail width of designated trails remains consistent – Threshold: trampling and erosion along the creek bank no longer occurs. Photo monitoring will be used to document existing conditions and changes over time.
- Indicator: Talus around the falls is vegetated and Native species are abundant and diverse – Threshold: Establish baseline floristic quality index (FQI) and mean coefficient of conservatism (mCC) for talus slope vegetation. Monitor the vegetation and track changes over time.
- Indicator: Unauthorized trails are closed – Threshold: No new unauthorized side trails are created. In order to monitor this, current unauthorized trails should be mapped. Physical barriers and/or signage may be required to prevent unauthorized trails.
- Indicator: Invasive species diversity and abundance is reduced - Threshold: A baseline occurrence can be established and monitored for change over time percent increase or decrease in invasive species. This can be done on the existing trail. Invasive species prioritization plan is created – a plan is created for the removal of invasive species and restoration of areas where removals occur.
- Indicator: Native species are abundant and diverse – Threshold: bird species diversity remains consistent in year over year breeding bird surveys
- Indicator: Feedback from visitors and the community is an indicator of the quality of the visitor experience. This feedback could be gathered through a survey. Survey questions from the previous survey should be asked again so that comparisons can be made. – Threshold: Responses to survey questions should indicate that the visitor experience has improved and not worsened.
- Indicator: Visitor counts collected on trail counters. Trail counters can be used to monitor the number of visitors on an hourly, daily, weekly and monthly basis. – Threshold: Trail and vehicle counters should be used to track any changes in visitation levels after the recommended strategy and actions are implemented. Trends in visitation will also guide further visitor management efforts.
- Indicator: Visitor feelings of crowding and congestion based on the number of people at key viewpoints at peak times. – Threshold: Visitor feedback about feeling overcrowded exceeds 15% of the survey responses received. During site visits by HCA staff, more than 20 people are frequently observed at the waterfall viewing platform at one time.

Part 3 - Identify Management Strategies

8. Compare and document the differences between existing and desired conditions, and, for visitor use-related impacts, clarify the specific links to visitor use characteristics

A comparison of the existing conditions in Section 3 and the desired conditions in Section 5 shows that there are existing visitor experience, management and ecological conditions at Tiffany Falls that are falling short of the desired conditions for the area. When reviewing information gathered about the site, there are common topics where a difference between existing and desired conditions can be highlighted. These topics are summarized below. In many cases, the impacts of these topics are common across visitor experience, management and ecological conditions.

Visitor use characteristics are factors related to how visitors are using the site. These characteristics of visitor use may result in desired conditions not being met. Visitor use characteristics include types of activity, visitor behaviour, visitor attitudes and expectations, timing of use, location of use, site durability, spatial distribution, and amount of use.

Vehicle Traffic Management

The current management of vehicle traffic in and around the site is not meeting the desired visitor experience or management conditions. Heavy traffic flow detracts from the overall visitor experience, making the site feel congested and less enjoyable. Additionally, managing traffic and parking challenges requires significant HCA staff, hired private security and city resources.

Safety

The safety of both visitors and staff at the site could be improved in several ways to meet the desired conditions. Enhancing traffic flow and improving entry and exit points in the parking lot would reduce congestion and safety risks. Ensuring clear and reliable emergency vehicle access is also a priority to facilitate rapid response when needed. Additionally, improved signage encouraging visitors to stay on designated trails would help promote safety while preserving the natural environment.

Visitor Behaviour

Certain visitor behaviors are negatively impacting the site's visitor experience, management, and ecological conditions. Walking off designated trails, entering the water, and climbing slopes contribute to erosion and environmental degradation. Littering remains an ongoing issue, affecting both the site's aesthetics and ecosystem health. Addressing these behaviors through education, enforcement, and improved site management is necessary to maintain the integrity of the area.

Site Maintenance

Ongoing site maintenance is essential to providing a high-quality visitor experience and protecting the natural landscape. Issues such as littering and improper visitor behavior require regular garbage collection efforts to keep the area clean. Maintaining the quality of trails through repairs and upkeep

ensures safe and enjoyable access for all users. Snow removal during winter months presents additional challenges that require effective management. Additionally, a well-managed site supports revenue generation, which can help fund ongoing maintenance efforts.

Ecology

The desired conditions for trail width to remain consistent and unauthorized trails to be closed do not match the existing condition. Trail width and side trails are an issue as the public move around ice patches in the winter and other visitors at all time of the year on the trails. Unauthorized trails still remain up to the talus slopes and into Tiffany Creek. Signage should be used in conjunction with targeted plantings to identify appropriate visitor behaviours and spaces, and to minimize the use of fences. Fencing could be considered to prevent users from climbing the talus slope at the falls or along the creek corridor to prevent access to the creek if other management actions are not successful.

The desired condition to reduce invasive species diversity and abundance does not reflect the existing condition with a 47% increase in the documentation of invasive species over a 20-year period. In addition, the mean coefficient of conservatism, which is a measure of ecological health, has decreased since 2001 from 4.8 to 4.7 over 20 years. These conditions need to be amended in order to bring them in line with desired conditions for the area.

9. Identify visitor use management strategies and actions to achieve desired conditions

9.1 Visitor Use Management Strategies

Five strategies for managing visitor use at Tiffany Falls that the HCA could pursue have been explored by HCA staff. The goal is to develop a strategy that will achieve the desired conditions for the area outlined in Section 3 of this plan. Only one of the five strategies below will be recommended by the HCA.

The VUM Framework document outlines strategies for managing visitor use. They include modifying the type of use, visitor behaviour, attitudes and expectations, the timing of use, the location of use, the sites ability to handle use, the spatial distribution of use by reducing use or increasing capacity.

Many of the factors impacting the visitor experience, management and environmental conditions at Tiffany Falls are centred around the parking lot and access to the site. It is the opinion of HCA staff that a strategy to improve the parking and site access conditions will be key to managing visitor use at this site in combination with a range of other actions.

The five strategies explored are detailed in the table below, along with recommendations as to why they should or should not be implemented. The subsequent Section 9.2 outlines further actions that should be taken to support the main strategy.

Strategy 1 – Do nothing and let the Conservation Area function as-is.

Description: This strategy would involve continuing to operate Tiffany Falls in its current state without any significant capital work or management changes. The way that Tiffany Falls currently functions has not been working effectively and creates a variety of problems for visitors and staff as discussed throughout this plan. HCA staff view the existing conditions at Tiffany Falls as unsustainable. Visitor, staff and emergency service access are of significant concern. Changes need to be made in order to address safety concerns and visitor satisfaction. As well, this approach will not decrease the trampling, unauthorized trails or invasive species that are impacting the ecology of the conservation area.

Conclusion: HCA staff do not recommend this strategy for managing visitation.

Strategy 2 – Make improvements to the parking lot and site access to enhance the existing functionality of the Conservation Area.

Description: This strategy would involve making changes to improve the existing parking lot and site access. As discussed above, several visitor use challenges are the result of access and parking. Improvements are limited due to the physical constraints on site. The parking lot is bound by Escarpment topography, Tiffany Creek, and Wilson Street. Improvements have been made by HCA over the past few years to address the challenges with site access, but success has been minimal.

In 2022, the City of Hamilton installed the pedestrian crosswalk as part of their improvements to Wilson Street. At the same time, HCA reconfigured the parking lot to create a one-way traffic system, expanded the lot towards the road, demarcated parking spaces along one side of the lot, and added new line painting and signage to direct visitors. These changes were minimally effective in improving the parking situation. In 2023, the lot was reconfigured to reverse the one-way traffic direction and move parking along the other side of the lot. This improved the sight lines to the road when exiting the lot.

These improvements have not had a significant impact on site access because other factors that are out of the HCAs control still remain. The volume of traffic on Wilson Street, the physical constraints on the parking lot, and the overwhelming popularity of the location create pressure that cannot be alleviated through improvements to the existing lot alone.

Through this strategy, other enhancements to existing conditions could be implemented, such as enhanced signage, trail improvements, fencing or buffering and trip-planning and promotion initiatives. While these actions would be helpful, they will not address some of the larger public safety issues related to site access.

Conclusion: It is the opinion of HCA staff that options to improve existing site access have been exhausted and further action needs to be taken in order to achieve the desired management, visitor experience and ecological conditions.

Strategy 3 – Close the existing parking lot with the exception of emergency vehicle and maintenance use and create an alternative access system such as a shuttle.

Description: This strategy would involve eliminating visitor parking at the existing Tiffany Falls lot and require visitors to arrive by shuttle. HCA staff have had negative experiences with similar systems at other conservation areas that have more infrastructure and access controls than Tiffany Falls, indicating that this approach would likely be even more problematic here. This approach presents significant challenges and does not effectively resolve the issues related to visitation, access, or site management.

In order to reserve the parking area for shuttles only, staff would need to be on site to manually open and close gates to prevent visitors in vehicles from entering the lot. This would require staff working exclusively at Tiffany Falls all year round, which is outside the staffing capacity of the HCA.

Shuttle systems inevitably result in long wait times, particularly during peak visitation hours. Visitors would be required to wait for the shuttle both upon arrival and departure, significantly increasing the overall time commitment for a short trail experience. This creates frustration and inefficiency, particularly for those who might otherwise spend no more than 15 - 30 minutes at the site.

The main trail to Tiffany Falls is relatively short, meaning visitors typically complete their visit quickly. However, the shuttle system would take longer to bring passengers to Tiffany Falls, leading to long wait times for those ready to leave. Visitors would have no control over their departure time and could be forced to wait longer for a return shuttle than they actually spent on the trail itself leading to a bottleneck for departing visitors and visitor frustration leading to overall decrease in visitor satisfaction.

Shuttles bring large groups of visitors at once, all of whom would begin the trail at the same time. Given that there is only one, one-way trail to access the waterfall, this would lead to crowding and congestion along the path and at the waterfall itself. The small viewing area cannot accommodate large waves of visitors at once, leading to an overcrowded, rushed experience rather than a peaceful and enjoyable nature visit. Since all visitors would be forced into the same schedule, the experience would feel less personal, less immersive, and less enjoyable compared to the current system, where visitors arrive at their own pace.

The current entrance fee of \$11.50 per vehicle is not sufficient to support the cost of contracting a shuttle bus system. To cover the expense, entrance fees would have to be significantly increased, leading to reduced visitor satisfaction and attendance—especially given the short length of the trail and limited time spent on-site.

Conclusion: HCA staff do not recommend implementing a shuttle bus system at Tiffany Falls because it will not improve the visitor experience and will likely decrease satisfaction due to long wait times and congestion. The logistics do not match the short trail length, leading to frustration as visitors spend more time waiting than hiking. The cost of implementation is not feasible and would require increased fees that are disproportionate to the experience offered.

Strategy 4 – Expand the visitor experience to include the property north of Wilson Street and add a second parking lot on Lower Lion’s Club Road.

Description: This strategy would involve constructing a new parking lot on the parcel fronting on Lower Lion’s Club Road with a trail connection up to the crosswalk at Wilson Street. This trail connection would utilize an existing portion of the Bruce Trail.

Both the existing lot and new lot would be used for visitor parking. The lots could be operated with a hybrid approach where one or both lots are opened periodically based on demand and ongoing monitoring. Exceptions would be made for accessible parking, staff and emergency services. This approach would allow staff to address the safety concerns with the Wilson Street parking lot during peak times when the issues are exacerbated.

A new parking lot on Lower Lion’s Club Road would allow for added controls such as autogates that would limit the capacity of the lot and enforce fair payment. The extended walk from the new parking lot to Tiffany Falls would add value for visitors paying to visit the site. Having visitors more spread out through the area could reduce feelings of overcrowding and improve the visitor experience.

Managing communication with the public around which lots are open at which times would be a challenge for staff and likely frustrating for visitors. This would also not entirely eliminate the safety concerns around visitors entering and exiting the existing Wilson Street lot.

Other enhancements to improve visitor experience, management and ecological conditions could be implemented with this strategy. Adding fences or strategic planting buffers would be possible, along with different types of signage and boot brush stations. Trail condition improvements to keep visitors on the designated trails and enhancements to online resources such as trip planning and educational material are also recommended.

Conclusion: HCA staff do not recommend this strategy because it will not achieve all of the desired management and experiential conditions set out in this plan. Moving visitor parking between two lots will complicate trip planning for visitors and management for staff. The issues associated with the existing parking lot will still be present if that lot continues to be accessed by the public.

Strategy 5 – Expand the visitor experience to include the property north of Wilson Street, add a new parking lot on Lower Lion’s Club Road and restrict access to the existing Wilson Street lot.

Description: This strategy would involve constructing a new parking lot on the parcel fronting on Lower Lion’s Club Road with a trail connection up to the crosswalk at Wilson Street. This trail connection would utilize an existing portion of the Bruce Trail.

All visitor parking would be relocated to the new parking lot with the exception of select designated accessible parking spaces. Access to the existing lot must be maintained for visitors with accessibility requirements, HCA staff access, and emergency vehicle access. This would greatly reduce safety and traffic concerns on Wilson Street.

The new lot would enhance parking capacity and move to a road that would not be as heavily impacted by traffic entering and exiting the lot. This concept provides an opportunity to have a longer

laneway which would prevent vehicles from having to wait on the road for a parking space and impede traffic.

This location would allow for added controls such as autogates that would limit the capacity of the lot and enforce fair payment. This strategy would also modify the spatial distribution of use at Tiffany Falls, the extended walk from the new parking lot to Tiffany Falls would add value for visitors paying to visit the site. Having visitors more spread out through the area would reduce feelings of overcrowding and improve the visitor experience.

Other enhancements to improve visitor experience, management and ecological conditions would also be implemented with this strategy. Physical barriers such as planting buffers, along with different types of signage can be added to direct visitors and keep them in appropriate areas. Trail condition improvements to keep visitors on the designated trails and enhancements to online resources such as trip planning and educational material are also recommended. Ecological improvements to enhance habitat in the area and mitigate impacts of visitation would be implemented as well.

Conclusion: HCA staff involved in the Visitor Use Management Working Group support this Strategy because it has the potential to improve the existing visitor experience, management and ecological conditions. This concept was originally identified in the HCA parking review completed in 2019, which is discussed in Section 1 of this Plan. Actions to support this strategy are detailed in the following Section 9.2.

9.2 Actions Supporting Visitor Use Management Strategy

Actions are methods of implementing a visitor use strategy. The actions below have been proposed to support Strategy 5 identified in Section 9.1. These actions are based on the information gathered about Tiffany Falls through the visitor survey, trail counter and ecological fieldwork, and the extensive management experience and professional judgement of HCA staff.

Action 1 – Obtain all necessary approvals and complete detailed design of the Lower Lion’s Club Road parking lot.

Rationale

The creation of a new parking lot on Lower Lion’s Club Road will require thorough planning and design. Approvals and consultation are needed from a few agencies before detailed design can be completed.

- Consultation is needed with Hydro-One to develop the land within the hydro corridor that runs parallel to Lower Lion’s Club Road.
- The City of Hamilton will need to be consulted on the change of use of the crosswalk to make sure that it will function as intended for pedestrians and vehicle traffic.
- The Bruce Trail Commission will need to be consulted on the proposed increased use of their trail and necessary improvements to the stairs bringing visitors up to the crosswalk. The Bruce

Trail has previously expressed their support for this project to the HCA via a letter, and this commitment of support will be confirmed and renewed.

- The property is within the Niagara Escarpment Area. A Development Permit will be needed from the Niagara Escarpment Commission (NEC) for the proposed parking and staircase improvements.
- A Site Plan Approval might be needed from the City of Hamilton for this project.

Following consultation with these agencies, the detailed design of the new parking lot can be completed. The design will be guided by the recommendations in the EIS that was completed by consultants in 2022.

Action 2 – Implement an automatic gate system.

Rationale

Creating a new parking lot on Lower Lions Club Road would allow an automatic gate system to be added to the parking lot. This cannot be done at the existing lot due to physical constraints.

An automatic gate system would benefit Tiffany Falls in a few ways. It would ensure a fair payment system where all visitors arriving by vehicle know that everyone has paid equally to visit the site.

An automatic gate system would help to reduce lost revenue from visitors parking without paying, which is happening in the existing parking lot. This is important for HCA because the funds generated from parking are put back into maintaining the conservation areas.

An automatic gate system would help to control time-of-day access. Tiffany Falls is open only during daytime hours.

Having an automatic gate system would also allow a reservation system to be implemented if staff ever felt that it was needed in the future.

It is possible that visitors will try to park on Lower Lion's Club Road and walk into the conservation area. The HCA will need to work with City of Hamilton Bylaw to enforce street parking in this area.

Action 3 – Enhance interpretive, regulatory and wayfinding signage on site.

Rationale

The purpose of new signage on site will be to modify visitor behaviour, attitudes and expectations at Tiffany Falls. It has been identified that many visitors are not using the site as intended and not respecting the natural areas.

Interpretive signage - There is a need for visitors to be more aware of the significance of Tiffany Falls in order to understand why certain rules and regulations for visitors are in place. Signage would educate visitors about topics such as Tiffany Creek, watersheds, species at risk and why invasive species are harmful to biodiversity. Boot brush stations can also be incorporated to decrease introduction of invasive species.

Regulatory signage – Improved regulatory signage is needed to clearly state what appropriate behaviour and activities include for visitors. Rules such as pack-in and pack-out, staying on the main trail, and staying out of the creek should be very clear and prominent.

Wayfinding signage – New wayfinding signage following HCA standards should be implemented through the area with a trailhead at the new parking lot. This will help to guide visitors on the new, longer hike and set expectations for trail lengths, hike times and obstacles, such as stairs. Wayfinding signage along the roadway to direct visitors to the new parking lot location should also be considered.

Action 4 – Add strategic planting buffers, natural barriers and fencing to protect sensitive areas and keep visitors in appropriate areas.

Rationale

Physical barriers such as fences and dense plantings should be added to keep visitors in designated areas and enforce appropriate behaviour.

Clearly delineating where visitors should and should not be will be very important for the Lower Lion's Club Road property. The EIS that was completed recommends including planted buffers around the new parking lot to keep visitors out of natural areas. Appropriate fencing could be added around the lot to keep vehicles and people inside the designated area.

Strategic plantings, natural barriers such as boulders and brush, and signage should be used to discourage visitors from accessing the talus slopes or creek bed around the waterfall. This will help to reduce trampling of vegetation, damage to the talus slopes and protect Tiffany Creek. Fencing could be used strategically around the trails, creek and waterfall if other measures are not successful, however this is not the preferred approach of HCA staff. Too much fencing would detract from the immersive experience in this small conservation area and require intrusive construction work. Fencing along the trail corridors will only be considered if all other reasonable management actions fail to produce more desirable visitor behavior.

Action 5 – Plan and undertake work to protect, enhance and restore the natural areas and ecology at Tiffany Falls.

Rationale

There are opportunities for ecological improvements, restoration work and monitoring on both properties at Tiffany Falls that can be implemented with this VUM Plan. Ecological reviews and recommendations will be explored in more detail in the upcoming Tiffany Falls Management Plan.

The Lower Lion's Club Road property has not been a primary focus for HCA staff since it was acquired. As such, there are opportunities for restoration work here that would coincide with the creation of the new parking lot. There are also recommendations in the EIS that was completed for this property for restoration work and protection of natural heritage during any construction work. Opportunities include cleaning up debris around the site left from occupation prior to HCA ownership, enhancing the riparian buffer around Tiffany Creek, and enhancing the meadow habitats with native plantings.

An invasive species prioritization plan should be developed for this area with recommendations for managing invasive species and restoring affected areas. Boot brushes should be installed at trailheads with signage to inform visitors about the importance of cleaning their shoes before walking on the trails.

Action 6 – Enhance pre-trip planning for visitors and promote visits to Tiffany Falls strategically.

Rationale

This action would be undertaken to modify visitor behaviour, attitudes and expectations and educate visitors before they arrive on site. Clarity of expectations for visitor behaviour can be set online when visitors are planning their trip, as well as on site once they arrive.

The trail counter data collected provided trends in visitation that can be used to inform trip planning. Potential visitors should be encouraged to visit the site during non-peak times, such as weekdays and mornings, to reduce the possibility of overcrowding during peak times on weekends, holidays and peak afternoon hours.

The promotion of Tiffany Falls as a place to visit should be done strategically to help manage the popularity of the site. Potential visitors could be encouraged to explore larger HCA conservation areas that are better suited to handle the volume of visitors instead. Visitors could also be encouraged to park elsewhere and hike connecting trails over to Tiffany Falls.

The transition to a new parking lot will need to be communicated clearly through HCA channels to new and returning visitors. This will be important in managing the expectations of visitors and maintaining a positive visitor experience.

Action 7 – Facilitate and promote alternative forms of transportation.

Rationale

Reducing the number of visitors travelling to Tiffany Falls with personal vehicles would be beneficial to the function of the site and be better for the environment.

Bike racks should be added to both the existing and new parking lots to encourage guests to arrive to the site by bicycle. It should be noted that cycling is not allowed on the trails within Tiffany Falls as they are part of the Bruce Trail system.

The possibility of having a public transit stop located closer to the existing or new parking lot should be explored. The current bus stops on Wilson Street are not convenient or safe for accessing this site.

Trail connections via the Bruce Trail and HCA trails to other natural areas should be highlighted to show visitors that they can hike to Tiffany Falls from nearby areas and extend their experience.

Action 8 – Improve trail conditions and infrastructure to dissuade people from going off the trail.

Rationale

This Action is intended to enhance the visitor experience and reduce ecological impacts from visitors. Maintaining trails that have an appropriate width and have a stable surface could help reduce the number of visitors who walk off trail to avoid icy or wet areas and other visitors.

The existing trail to the waterfall should be reviewed for any areas of water pooling and ice accumulation and have these issues addressed. The new trail connection from the proposed parking lot up to the Bruce Trail should be designed and built with this Action in mind. The existing Bruce Trail that will form part of the trail connection should also be reviewed and improved as needed to accommodate increased use. The existing Bruce Trail steps leading to the Wilson St. crosswalk will need to be upgraded to adequately handle the increased number of visitors accessing it.

Barriers as discussed in Action 4 could be considered along select sections of the trail leading to the lookout platform. In an effort to keep more people within the authorized viewing areas only, the size and functionality of the viewing platform at the base of the waterfall should be reviewed. The viewing platform was designed in 2006, and use and visitation levels at Tiffany Falls have changed over time.

Action 9 – Implement an HCA trail ambassador program.

Rationale

Implementing an HCA trail ambassador position would place an HCA representative on site in conservation areas, including or limited to Tiffany Falls. This would be an opportunity to educate visitors about the area, encourage appropriate behaviour, and introduce ongoing monitoring of the use of the site to identify and remediate issues.

Trail ambassadors have been introduced in other agencies including the Bruce Trail to represent the organization out on the trails and interact with visitors. A trail ambassador would improve the quality of the visitor experience by answering questions and providing information, with the goal of protecting and advocating for the natural areas at Tiffany Falls.

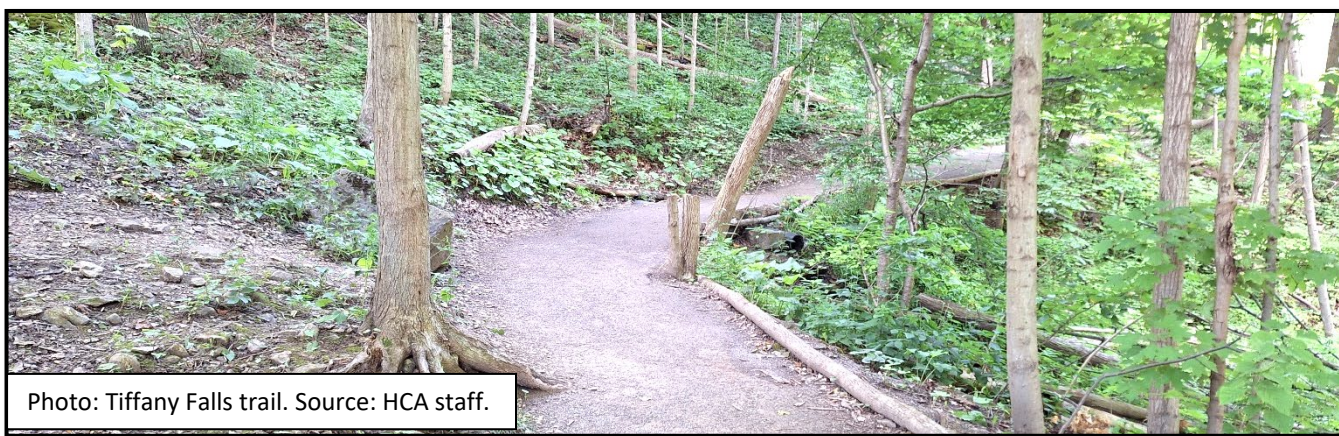


Photo: Tiffany Falls trail. Source: HCA staff.

10. Where necessary, identify visitor capacities and additional strategies to manage use levels within capacities

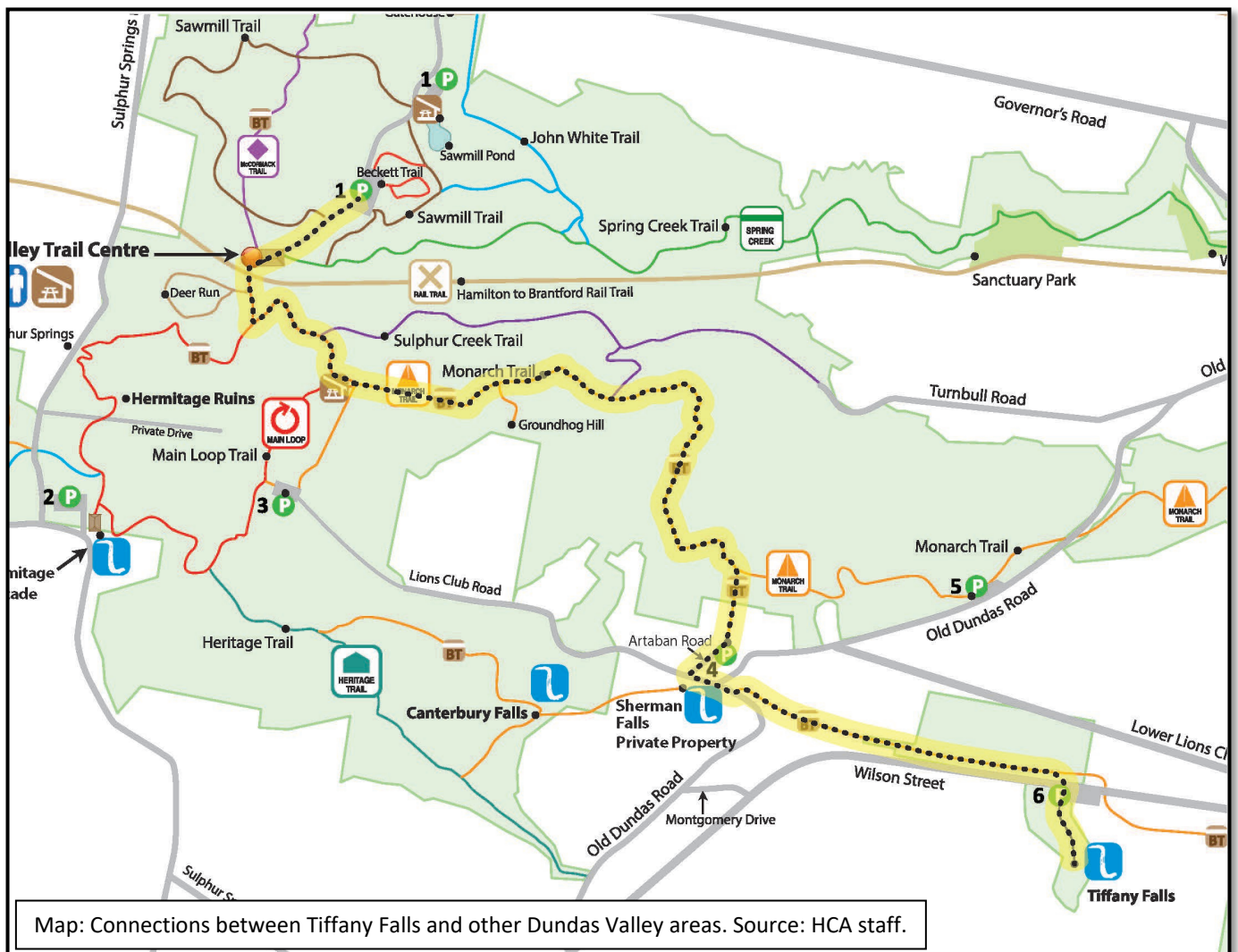
Impacts to the natural areas from visitation at Tiffany Falls stem largely from visitor behaviour issues. Impacts are mainly caused by visitors walking off of the designated trail, into the watercourse and up the escarpment. There are Actions included in Section 9.2 above to help manage and correct visitor behaviour in order to reduce the impacts of visitation on the natural areas.

Visitor capacity does have impacts on visitor experience, safety and behaviour. Visitor capacity at Tiffany Falls is dictated mainly by the relationship between the size of the parking lot and the length of the trail system. The existing parking lot has 15 designated parking spaces, but as noted previously, more cars will park in unauthorized areas outside of these designated spots. Responses in the public survey indicate that this capacity has caused feelings of overcrowding during peak times on the trail section from the parking lot to the viewing platform. This feeling of overcrowding negatively impacts the visitor experience. Moving the parking area further away and extending the trail while maintaining a similar number of parking spots could reduce feelings of overcrowding in the area and improve the visitor experience.

The trail from the existing parking lot to the lookout platform is approximately 360 meters long. This is a fairly short trail that only takes about 7 minutes to walk from the parking lot to the viewing platform. On average, each visiting car brings 2.5 people to the site. If 15 cars are in the lot, that would be an average of 38 visitors in the area during peak times. The length of the proposed trail connection from a parking lot on Lower Lion's Club Road would be approximately 350m long, roughly doubling the trail experience in the Conservation Area. To maintain the same visitor capacity level on the trails, the new parking lot should have no more than 30 parking spaces to allow an average of 76 visitors at one time. This would increase the capacity of the Conservation Area.

Considering the above points, HCA staff believe having approximately 30 parking spaces in the new lot would be well suited to this site. An increase in parking spaces is also proposed with the thought that the new parking lot would serve more than just Tiffany Falls. It would provide more direct access to the Bruce Trail and support other areas of the Dundas Valley. Promotion of these other connections would add to the visitor experience by giving visitors more to explore. Promotion and awareness of the Bruce Trail is also important to both HCA staff and the Bruce Trail Conservancy.

The size of the existing viewing platform also places limitations on the capacity of the area. The existing platform is 118 square feet (10.96 m²) in size. From the Ontario Building Code (3.1.17.1), occupant load for standing space based on floor area is 0.40 m² per person. Based on this, the maximum occupant load for the lookout platform is 27 people. To maintain personal space, it is unlikely that this many people would be on the platform at one time. If the platform is full, it is more likely that visitors will walk into the creek to have an unobstructed view of the falls. The platform should be reviewed for any potential improvements that could help keep visitors within this designated area.



11. Develop a monitoring strategy

Monitoring Implementation of Actions:

The implementation of the chosen strategy and actions above will be monitored through an updated Conservation Area Management Plan for Tiffany Falls. Work on this Management Plan will begin in 2025. All actions recommended in this VUM Plan will be identified in the Management Plan.

Monitoring Effectiveness of Actions:

After the chosen strategy from Section 9.1 is implemented, a visitor survey should be created to learn about the altered visitor experience. Some questions from the previous survey should be repeated so that the responses can be compared. New questions to gather feedback on the changes that have been made should also be included. The results of this survey would guide ongoing improvements.

Trail and vehicle counters can continue to be used to monitor trends in visitation. This will be helpful for identifying if actions to change the timing of use are effective, such as promoting visitation at non-peak times. Counters will also provide insight into whether the implemented actions have had an effect on visitation numbers. This information can also be learned from the parking payment and/or autogate machines.

Ongoing ecological monitoring will be very important for Tiffany Falls to ensure that the proposed actions are having the desired effect. A monitoring plan will be developed in order to track changes to the natural areas as a result of implementing the strategy and actions from this Plan. Changes observed will inform ongoing restoration work and next steps needed to reach desired conditions.

Part 4 - Implement, Monitor, Evaluate and Adjust

12. Implement management actions

Steps 12, 13 and 14 are intended to be living sections of the VUM Plan that are built on as selected strategies and actions are put into practice. The implementation of the management actions will begin once the strategy and actions recommended in Section 9 are endorsed by the HCA Conservation Advisory Board and approved by the HCA Board of Directors. Once the Visitor Use Management Plan is approved, the following are the key steps will be taken as the HCA works towards implementing the strategies and actions.

- Proceed with the detailed design work for the new parking lot along Lower Lion's Club Road, the enhanced trail connection and the staircase, and restoration of Lower Lion's Club and Wilson Street lot areas.
 - Includes discussions with outside agencies for other related improvement aspects (ie: Wilson Street staircase & crosswalk, hydro corridor construction & maintenance, HSR bus route & stop locations, etc.) as outlined in Action 1 in Section 9.2.
- Implement new Marketing and Communications strategy to prepare the public for upcoming changes prior to official public opening of new lot and trail system.
- Obtain agency approvals necessary for construction work.
- Review trail and restoration improvement opportunities through site visits.
- Map unsanctioned trails that have been created by visitors.
- Implement the HCA Trail Ambassador Program.
- Enhance marketing and communications program to promote other HCA Conservation Areas nearby as alternative destinations during peak visitation times.
- Continue ecological and visitation monitoring programs to aid with future planning.
- Review viewing platform improvement options during upcoming Management Plan review.

13. Conduct and document ongoing monitoring, and evaluate the effectiveness of management actions in achieving desired conditions

Once management actions outlined in this Plan are implemented, ongoing trail and ecological monitoring will be conducted to determine if additional measures need to be considered. This is an important step in determining whether the desired conditions for the area are being achieved or if actions should be adjusted.

14. Adjust management actions if needed to achieve desired conditions and document rationale

The need to adjust management actions will be determined upon completion of work and ongoing monitoring efforts by HCA staff along with public feedback on the implemented actions.

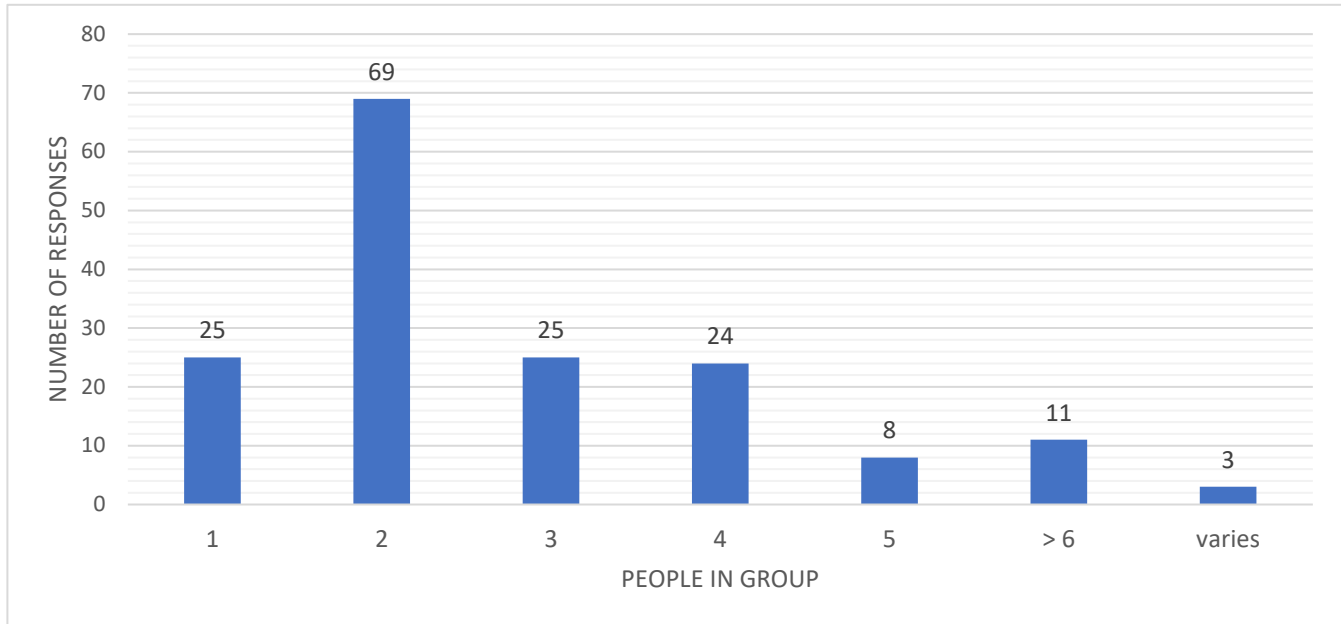


Photo: Tiffany Falls in winter. Source: HCA staff.

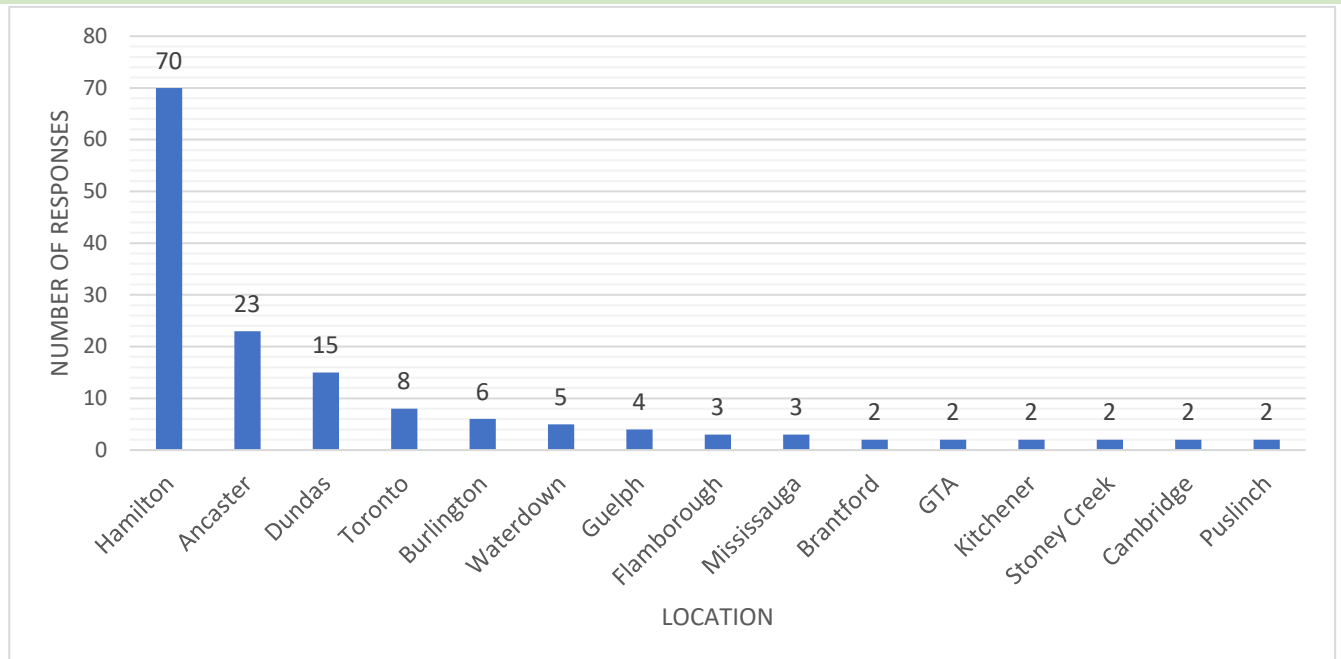
Appendix 1 - Tiffany Falls Visitor Use Survey Summary

This document summarizes the responses to a public survey about Tiffany Falls Conservation Area that ran from May 27th to August 16th 2024. The survey had 163 respondents.

1. How many people were in your group?



2. Where are you visiting from?



Additional one-time responses:

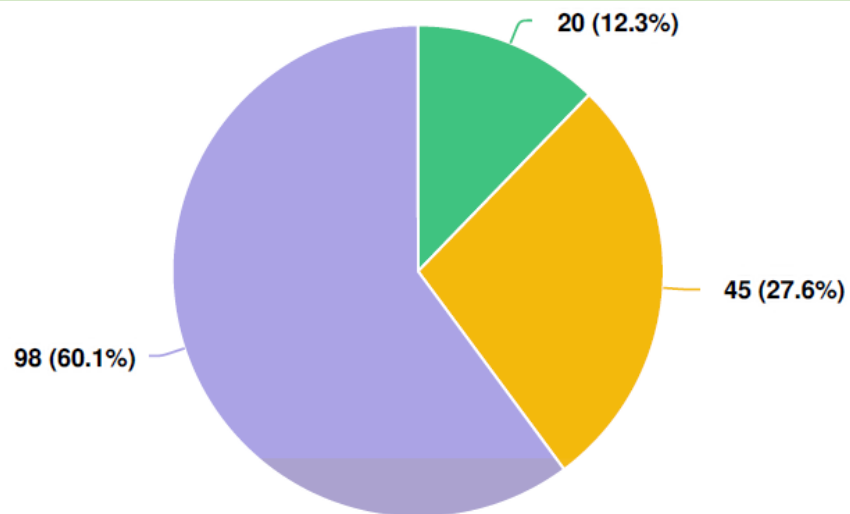
Rockwood	Grimsby	Lynden	Brampton	Sault Ste. Marie	Milton	Oakville
Waterloo	Huntsville	China	Fonthill	Bolton	Mississauga	Hampshire, UK
Durham	Oakville	Montréal	Freelton	Scarborough	Woodstock	Germany
Spain						

3. How did you find out about Tiffany Falls?

Themes in Responses	Number of Occurrences	Summary
Local Knowledge and Long-term Visitors	80	Many respondents indicated that they are local to the Hamilton or Ancaster area and have been visiting Tiffany Falls for years, some mentioning they have been visiting since childhood. A large number of respondents discovered Tiffany Falls simply by driving past it during their commutes.
Internet Searches and Social Media	25	Many respondents found Tiffany Falls through online searches, Google Maps, websites, or social media when looking for places to visit.
HCA Membership and Resources	22	Several respondents mentioned their Hamilton Conservation Authority (HCA) membership, the HCA website, HCA social media channels, and other resources as a reason for discovering the conservation area.
Word of Mouth and Personal Recommendations	21	Word of mouth was a frequent method of discovering Tiffany Falls, with many respondents mentioning they learned about it through friends, family, or colleagues.
Familiarity with the Bruce Trail	8	Some visitors highlighted that the Bruce Trail was a significant factor in their awareness of the site. Some specified that the trail either led them to Tiffany Falls or they saw it on Bruce Trail maps.



4. Is this your first time visiting?



Question options

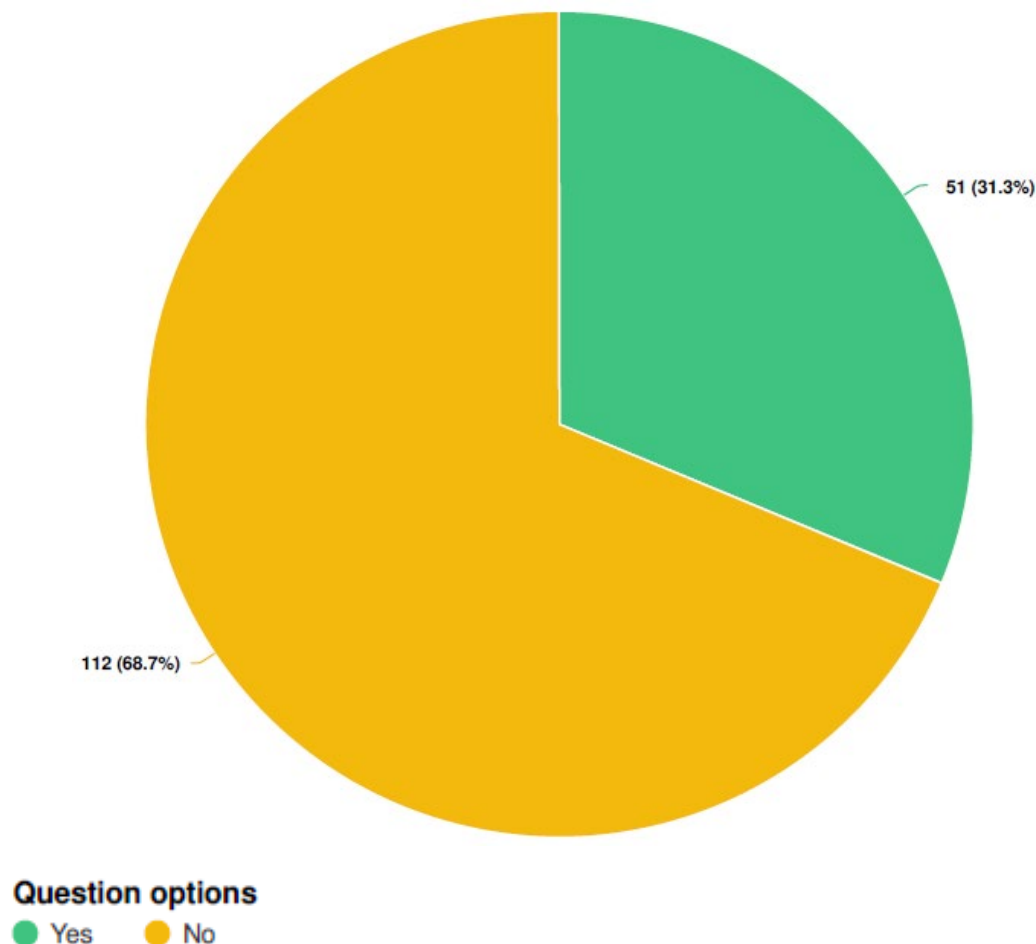
● Yes
 ● No, I have visited 1-3 times before
 ● No, I have visited 4+ times

5. What made you want to visit Tiffany Falls? (e.g., waterfall, nature appreciation, trail)

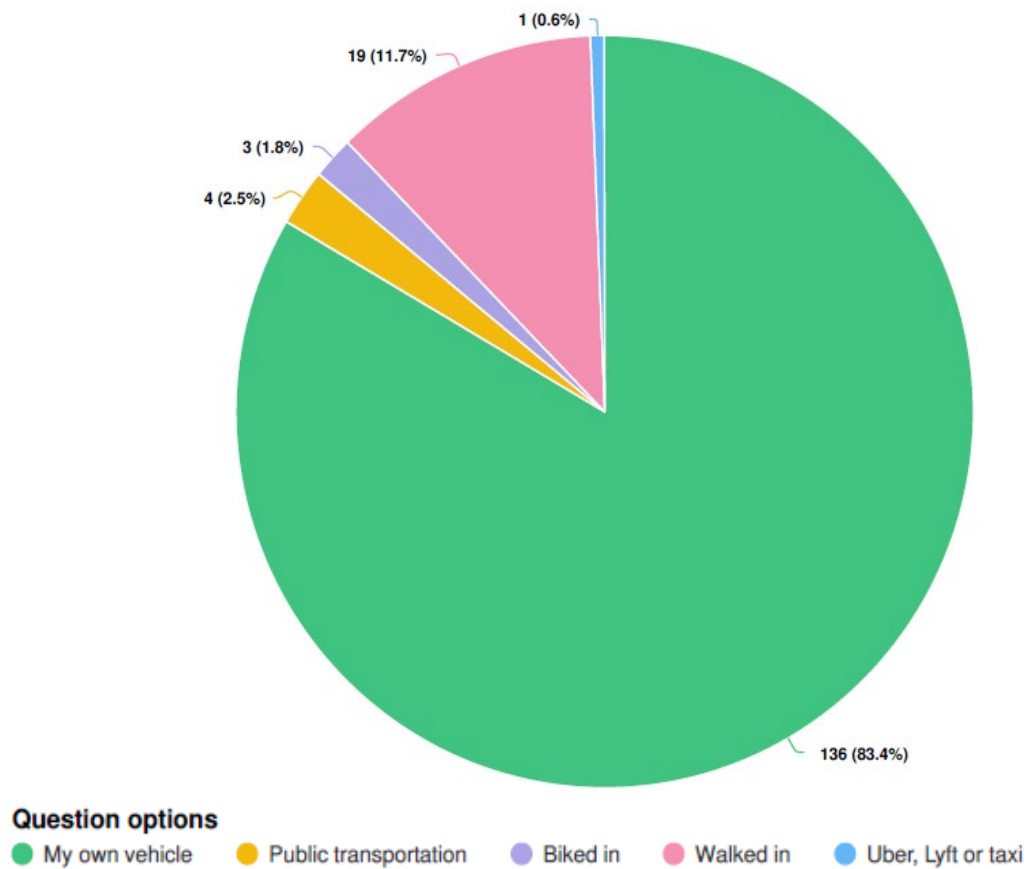
Common Themes in Responses	Number of Occurrences	Summary
Waterfall and Nature Appreciation	119	The central attraction for most respondents is the waterfall itself. Visitors value the natural beauty surrounding the falls. This includes both the tranquility of the setting and the opportunity to escape the urban environment for a brief time.
Hiking and Trails	42	The falls are often visited with hiking activities and exercise, and respondents appreciate the nearby network of trails, particularly the Bruce Trail.
Family-friendly and Accessible Destination	26	Many respondents visit the conservation area with family, including children and elders, and appreciate its suitability for short hikes and accessibility for all ages. The short length and relative flatness of the trail were mentioned in responses.
Proximity and Convenient Location	14	The falls are often praised for being easy to access and close to the city. Locals appreciate its convenient location and its role as a quick getaway into nature.
Tourism and Showing to Visitors	6	Many respondents mentioned bringing visitors or tourists to the falls, highlighting the falls' importance as a local landmark to show off to friends and family from out of town.

Common Themes in “Other” Responses	Number of Occurrences	Summary
Did Not Search for Information	31	Respondents specifically mentioned that they did not do any online research before visiting.
Have Existing Knowledge of the Area	14	A significant number of respondents indicated that they did not check any information before visiting Tiffany Falls because they are familiar with the area from past visits or local knowledge, and they don't feel the need to research beforehand.
Other Online Resources	9	A few respondents mentioned using online resources, such as the AllTrails app, Google Maps, and Facebook groups related to waterfalls or hiking.
Bruce Trail as a Resource	5	The Bruce Trail guide, maps, or app are common resources. The trail is well-known and frequently referenced as a way to access Tiffany Falls.
Word of Mouth	1	Word of mouth plays a role in how respondents learn about Tiffany Falls or gather information before their visits.

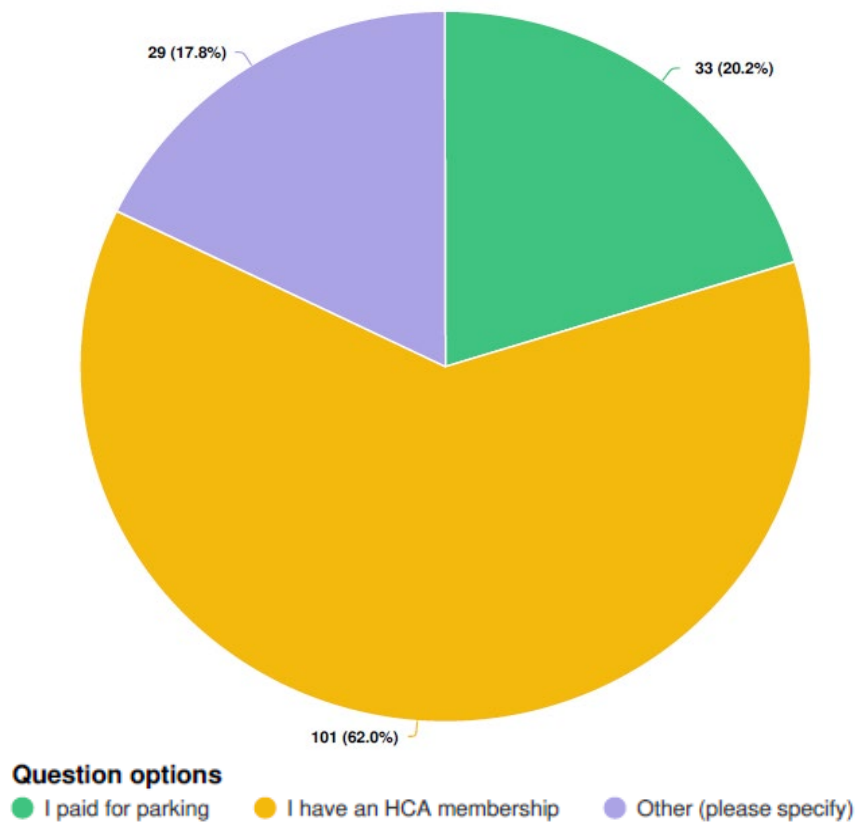
7. Did you have trouble finding parking?



8. How did you get to Tiffany Falls?

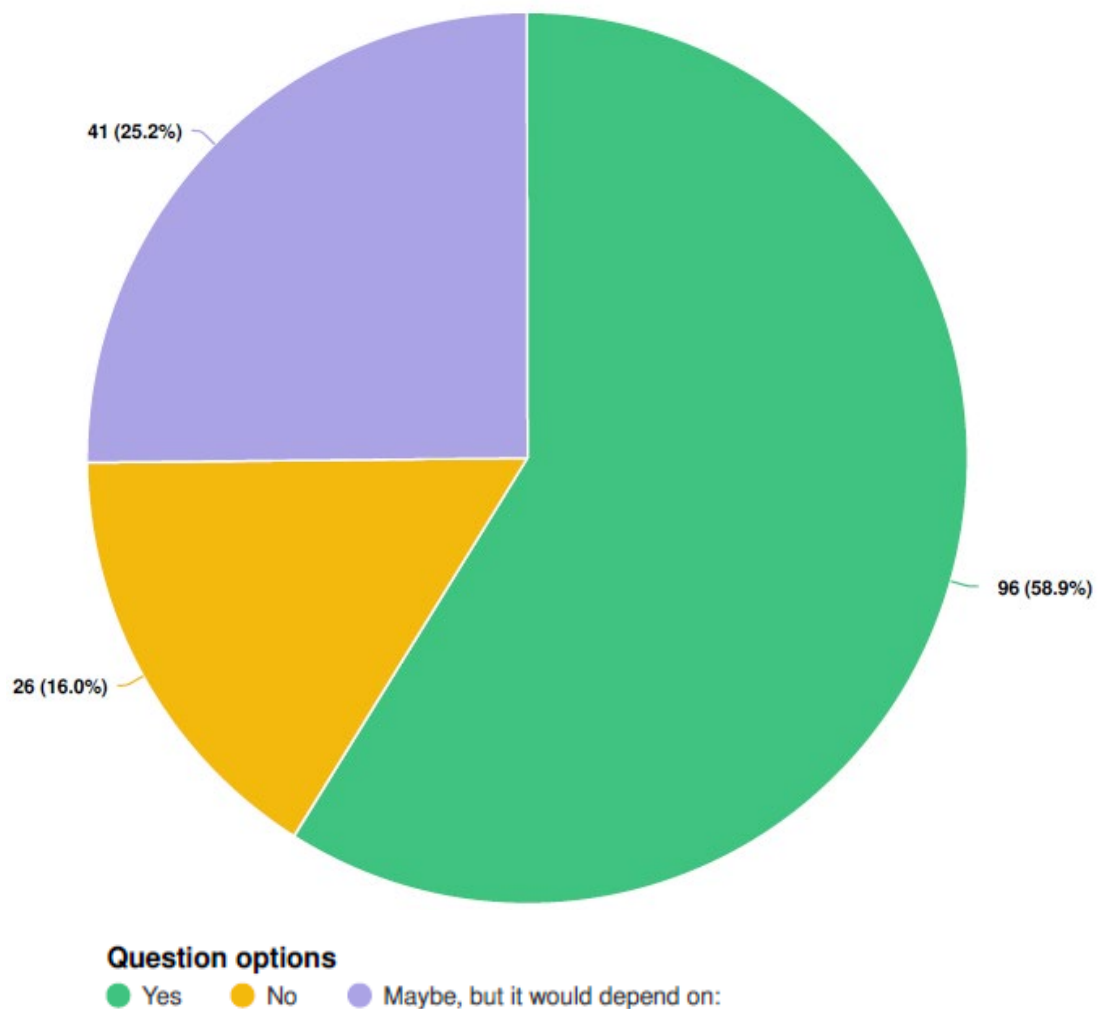


9. Did you pay for parking or have an HCA membership?

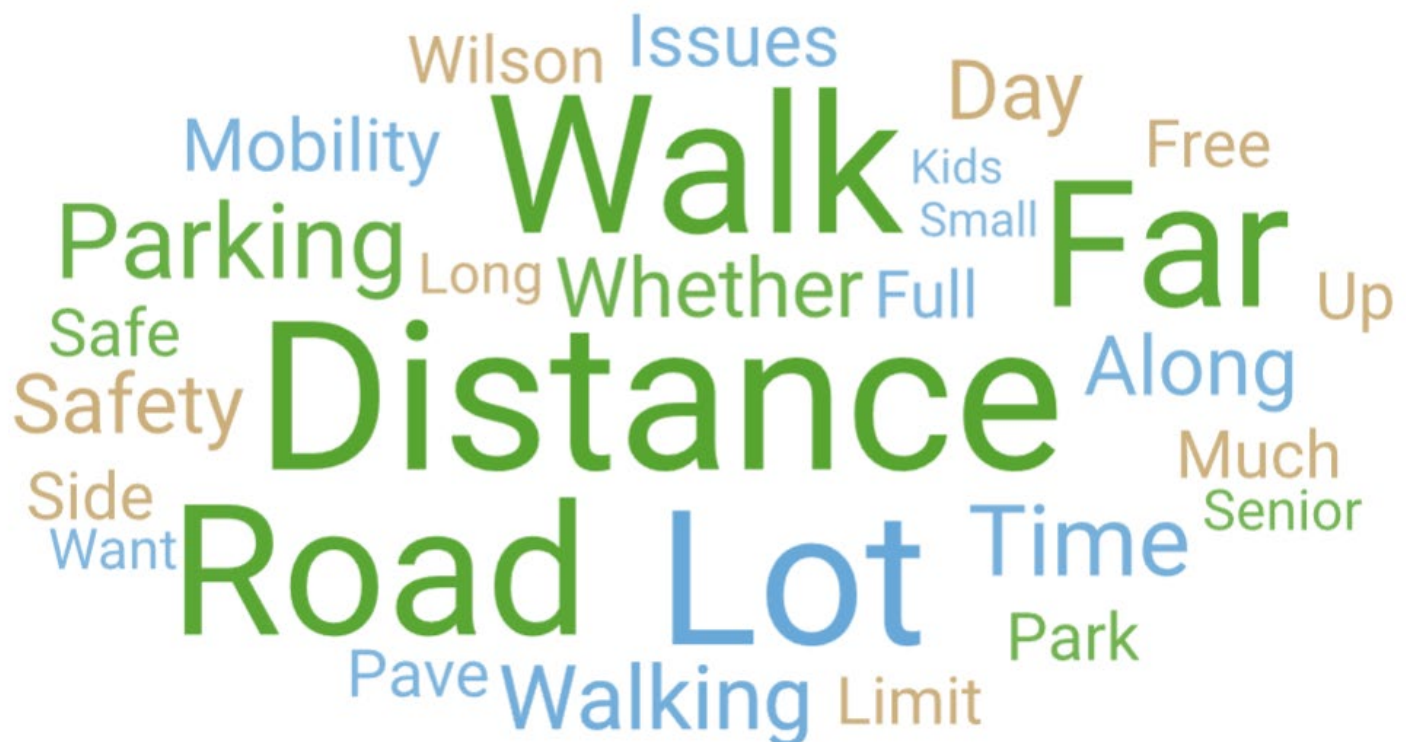


Common Themes in “Other” Responses	Number of Occurrences	Summary
Parked off Site and Hiked/Walked/Ran	12	Several respondents chose to hike or run to the falls, either from free parking spots or other starting points, avoiding parking at the official lot.
Parked and Did Not Pay	5	Respondents parked in the lot and either chose not to pay or couldn’t pay. Some expressed dissatisfaction with the parking fees, either due to the cost or feeling that the fees do not contribute to proper maintenance.
Public Transportation	3	A few respondents opted for public transportation as a way to reach Tiffany Falls.
Being Dropped Off	3	A few respondents mentioned being dropped off by friends or family members, avoiding the need for parking altogether.

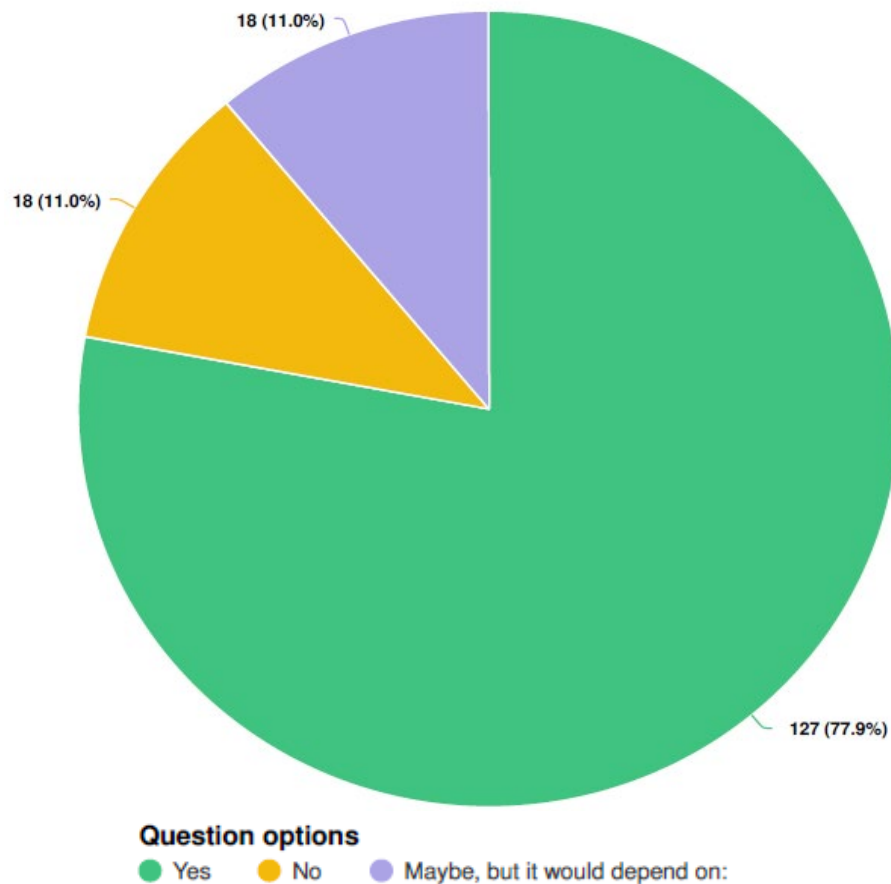
10. Would you use another parking lot if one was available but had a longer walk?



Common Themes in “Maybe” Responses	Number of Occurrences	Summary
Length of the Walk	25	One of the most frequently mentioned concerns is the distance between the parking area and the falls. Many respondents indicated that the distance would affect their decision to visit, especially for those with accessibility concerns, mobility issues or for families with small children.
Safety Along Wilson Street	8	Safety concerns about walking along Wilson Street were a recurring theme. Respondents expressed worries about pedestrian safety, particularly for children and seniors. The need for a safe pedestrian access is highlighted.
Weather and Timing Considerations	7	Weather conditions, as well as the time of day and how much time respondents have available, were also noted as factors that would influence their decision to visit Tiffany Falls.
Cost and Availability of Parking	5	Several respondents mentioned the cost of parking and whether it would be free or paid. They are concerned about the price and the availability of parking spaces.
Environmental Impact	3	Some respondents raised concerns about the environmental impact of creating new parking lots or paving natural areas, suggesting that parking should not come at the expense of the environment.

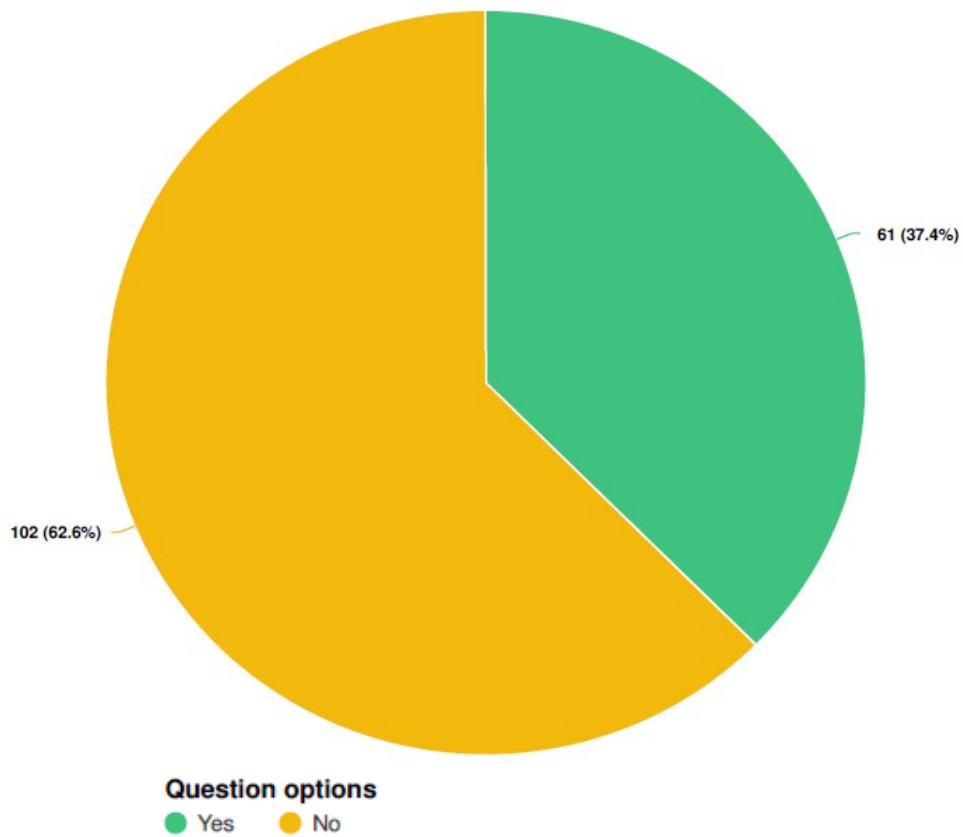


11. Would you plan your visit around less busy times if you knew them?

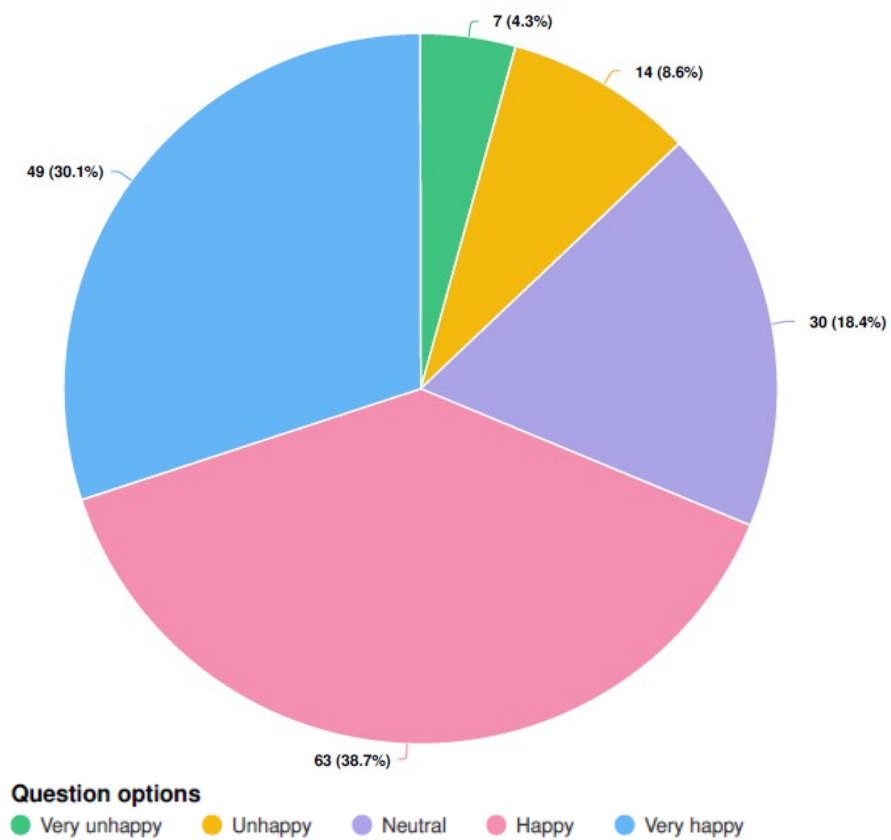


Common Themes in “Maybe” Responses	Number of Occurrences	Summary
Personal Schedule	8	A common theme is that the ability to visit depends heavily on personal schedules, work, and availability, with many indicating that weekends are the only time they can visit, even though weekends may be busier. Some may prefer to be spontaneous.
External Factors	4	Visitors’ timing decisions are influenced by external factors such as weather conditions and the schedules of others in their group. These factors often dictate whether they choose to visit at a particular time.
Unpredictability of Crowds and Events	3	Some respondents noted the unpredictability of crowds, indicating that the area fluctuates in busyness depending on various factors, including the season, time of day, or even specific events happening at the falls such as ice climbing.

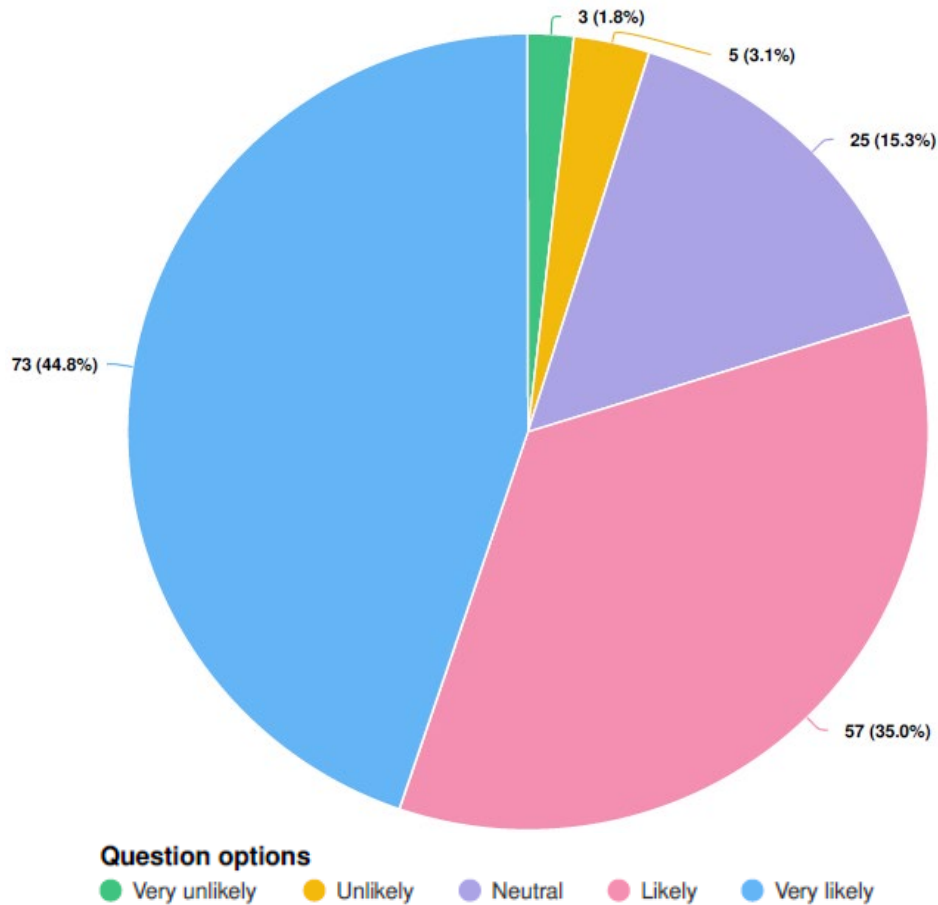
12. Was Tiffany Falls crowded during your visit?



13. How satisfied are you with your visit today?



14. How likely are you to come back?



15. What improvements would you like to see to this conservation area?

Common Themes in Responses	Number of Occurrences	Summary
Improvements to Parking and Traffic Issues	53	<p>One of the most common concerns was the lack of sufficient parking spaces. Some respondents also mention unsafe or chaotic parking arrangements that lead to traffic issues and concerns about pedestrian and traffic safety.</p> <p>Some respondents proposed solutions to manage traffic better, such as parking attendants and fines for illegal parking.</p> <p>Several respondents requested cheaper or free parking.</p>
Improvements to Trails, Infrastructure and Amenities	41	<p>Several respondents highlighted issues on the trails, particularly with narrow or slippery sections. Some requested extensions to the trail system.</p> <p>Many visitors suggested improvements to infrastructure, including larger viewing platforms, better trail and safety signage, and the addition of washrooms and water fountains.</p>

		Many respondents requested garbage cans be added to the area to help reduce littering.
No Improvements Needed	27	Respondents stated that they were satisfied with Tiffany Falls as it is and/or had no recommended improvements.
Improvements to Visitor Behaviour and Respect for the Environment	22	<p>A significant concern was the behavior of visitors who go off-trail, climb the falls, litter, and disrespect the area. Many suggested more strict enforcement of rules.</p> <p>Respondents expressed concern about the environmental impact of visitor activities, such as off-trail hiking, moving rocks, and damaging vegetation around the falls. Some advocated for more education on the importance of respecting nature.</p> <p>Garbage and litter left behind by visitors were frequently mentioned, with many calling for additional bins, garbage cleanup, and enforcement of no-littering policies.</p>
Improvements to Visitation and Overcrowding	10	<p>Many respondents expressed frustration over the large number of visitors, particularly on weekends. Some mentioned that big groups detract from the peaceful experience.</p> <p>Some respondents proposed solutions to manage crowds better, such as time slots for visitors.</p>
Accessibility Improvements	3	Some respondents expressed the need for better accessibility for people with mobility challenges, such as leveling trails or providing access for wheelchairs.



16. What information would have helped before your visit?

Common Themes in Responses	Number of Occurrences	Summary
No Information Needed, Unsure, Not Applicable	72	A notable number of respondents indicated that they found the current information sufficient or they could not think of anything to suggest.
Parking Availability and Limits	40	<p>Many respondents expressed a need for more information on parking availability, including the total number of spots and options for alternate parking areas. Some requested real-time parking updates or live feeds to check availability before arriving.</p> <p>Some requested more information on parking for membership pass holders and how much parking would cost.</p>
Crowds and Peak Times	24	Many respondents requested information on peak times and suggested that knowing when fewer people visit would help plan trips better. They suggested apps or live tools to track crowds in real-time.
Information about the Conservation Area	22	<p>Several respondents suggested providing information such as trail maps, updates on conditions and closures, and listing other nearby areas to visit. Information on trail accessibility rating and ease of access for people with mobility issues was also mentioned.</p> <p>Other information that could be helpful when planning a visit such as what to bring, trail rules, available amenities and seasonal information.</p>

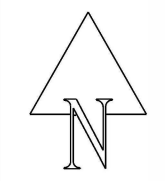


17. Any other comments? (87 Responses)

Common Themes in Responses	Number of Occurrences	Summary
Positive Feedback and Appreciation	26	Many respondents praised the natural beauty of the falls, the improvements made by the Hamilton Conservation Authority, and their efforts in maintaining the area. Several visitors mentioned their personal connection to the falls and plan to return in the future.
Parking Concerns	20	Parking availability and management are frequent concerns, with many respondents suggesting improvements to parking, including more spaces, better organization, and enforcement. Several respondents commented on parking fees being too high or unfair, and on not having a time limit for parking.
Visitor Behaviour and Environmental Impact	15	Several respondents commented on the behavior of other visitors, including walking off trail, noise levels, blocking trails, and littering. There are recurring worries about the environmental impact of visitor behavior, such as leaving garbage, going off-trail, and disturbing the natural landscape. Many suggested more education and signage to encourage visitors to respect nature, keep the area clean, and maintain peace and quiet in natural areas.
Suggestions for Conservation Area Improvements	10	Aside from parking improvements, a number of respondents suggested specific improvements such as more garbage cans, a loop trail, clear signage, and consideration for accessibility. Some visitors expressed concerns about further development or commercialization of the area, with a preference for keeping Tiffany Falls as natural and undeveloped as possible.
Overcrowding and Visitor Management	8	Some respondents expressed concerns about overcrowding, particularly with large groups and out-of-town visitors. There is a sense that the influx of visitors is negatively affecting the natural beauty and serenity of the area.



This page intentionally left blank.



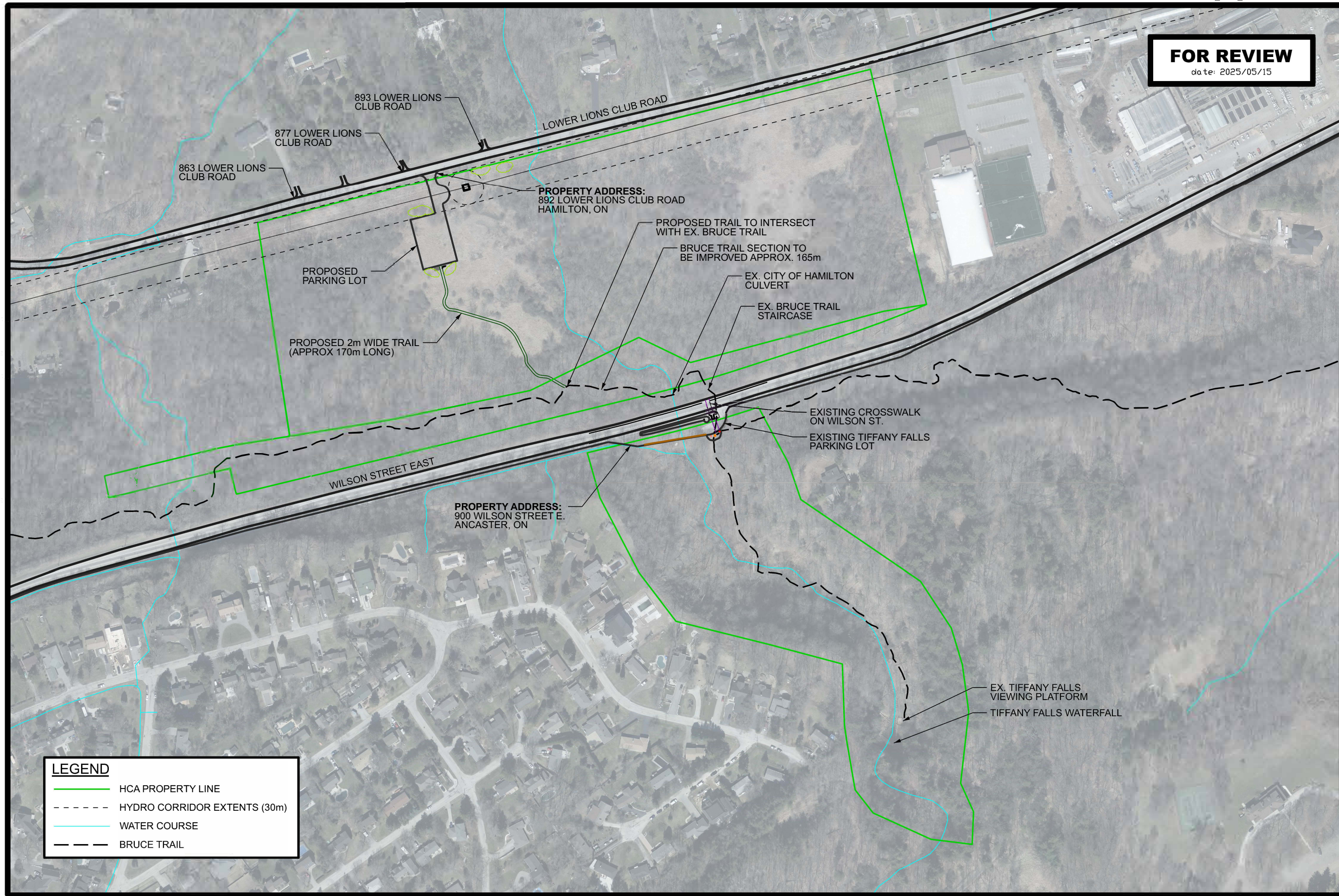
FOR REVIEW
date: 2025/05/15

Tiffany Falls Site Plan
Tiffany Falls Conservation Area

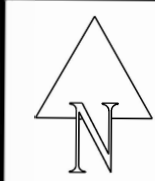


LEGEND

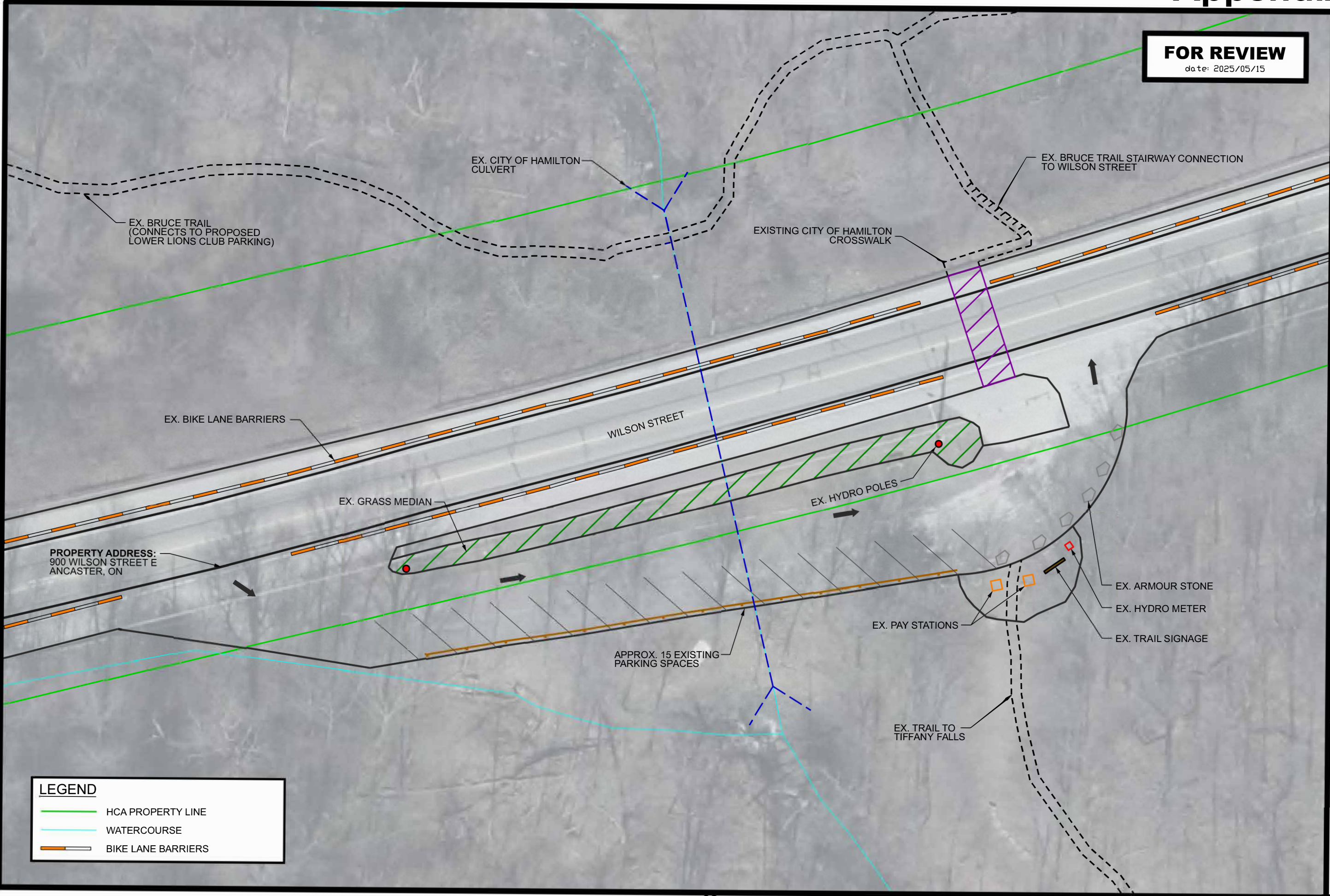
- HCA PROPERTY LINE
- - - HYDRO CORRIDOR EXTENTS (30m)
- WATER COURSE
- BRUCE TRAIL

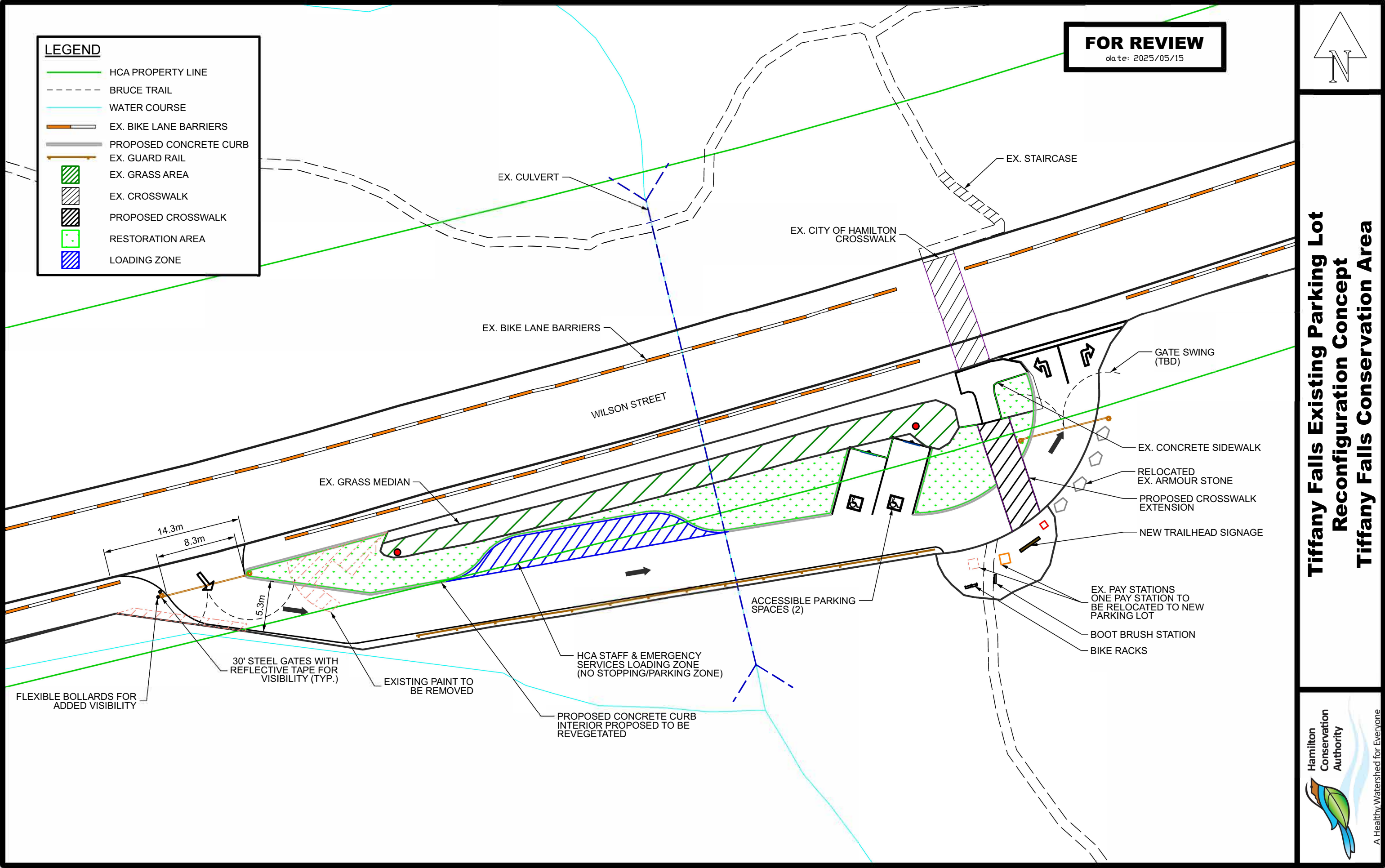


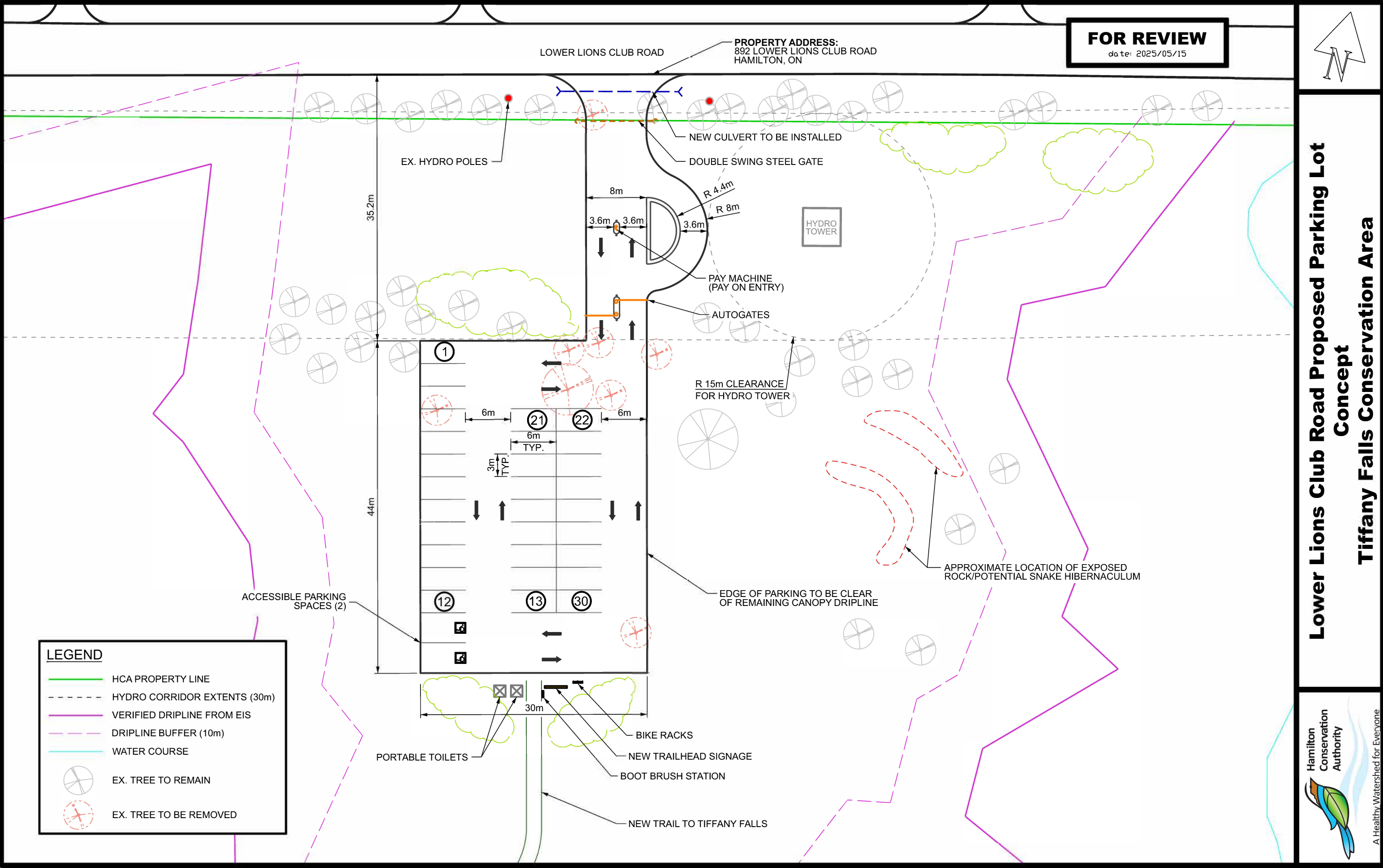
FOR REVIEW
date: 2025/05/15



**Tiffany Falls Existing Parking Lot Conditions
Tiffany Falls Conservation Area**







**Lower Lions Club Road Proposed Parking Lot
Concept
Tiffany Falls Conservation Area**



Report to: Conservation Advisory Board

Approved for Circulation By: Lisa Burnside, CAO

Reviewed By: T. Scott Peck, MCIP, RPP, Deputy CAO/Director, Watershed Management Services

Prepared By: Mike Stone, MCIP, RPP, Senior Manager, Watershed Planning, Stewardship & Ecological Services

Meeting Date: June 12, 2025

Subject: HCA's Planning and Regulations Policies Update

Recommendation:

THAT the Conservation Advisory Board recommends to the Board of Directors;

THAT the *Policies for Land Use Planning & Regulation in the Watersheds of the Hamilton Conservation Authority (Draft, June 2025)* be received as information;

THAT staff be directed to make the Draft policy document available for public and stakeholder review and comment; and further

THAT the final version of the policy document based on the public input received then be returned to the Board for adoption.

Executive Summary:

A review and update of HCA's *Planning & Regulation Policies and Guidelines* (October 2011) is being completed to address legislative and regulatory changes to the *Conservation Authorities Act* that came into effect on April 1, 2024. Updates to HCA's policies are also required to support the implementation of HCA's new Shoreline Management Plan. Ensuring HCA's policies are kept up to date is critical to the successful implementation of HCA's planning and regulations programs.

A draft update of HCA's planning and regulations policies has been prepared. HCA staff are seeking direction to circulate the draft document for public and stakeholder review and comment.

Staff Comment / Discussion:

HCA's Planning & Regulation Policies and Guidelines

The Hamilton Conservation Authority's (HCA) *Planning & Regulation Policies and Guidelines* were developed to support and guide the implementation of HCA's planning and regulation programs. The policy document provides HCA staff with direction when reviewing and commenting on land use planning and regulatory matters, including the following:

- Permit applications under the *Conservation Authorities Act*;
- Applications for land use change and development under the *Planning Act*;
- Development permit applications under the *Niagara Escarpment Planning and Development Act*; and
- Studies carried out under the *Environmental Assessment Act*.

The *Planning & Regulation Policies and Guidelines* document provides direction to staff on a variety of matters, including:

- The determination of natural hazard limits (i.e. flooding hazard, erosion hazard, etc.);
- Types of developments that may be permitted or prohibited in and adjacent to areas affected by natural hazards; and
- The protection of natural heritage features.

The HCA first developed planning policies in 1978. These policies have been revised and updated periodically to promote consistency with current legislation, regulations, plans, policies and guidelines. The most recent comprehensive update of the *Planning & Regulation Policies and Guidelines* was completed in 2011 (approved by the Board of Directors October 6, 2011).

Staff experience in reviewing development proposals and implementing the policies since 2011 has periodically identified areas where policy revisions or clarifications were needed. As a result, there have been updates to the policy manual since 2011 to address specific issues. This has included:

- Minor updates to the wetland policies in 2014 to address permissions for swimming pools;
- Review and update of policies for the placement and movement of soil and other fill materials in 2016; and

- Minor amendments to the natural heritage policies in 2021 to address the use of offsetting and compensation in the case of a Minister's Zoning Order or environmental assessment study that would result in the loss of natural heritage features.

Legislative and Regulatory Changes

Aside from periodic specific policy updates, as described above, the need for a more comprehensive review and update of the policy document was identified in 2014. Around this same time, the provincial government initiated a review of the legislative and regulatory framework within which land use planning occurs. This review has included numerous amendments to the *Planning Act* and updates to the Provincial Policy Statement and provincial plans, as well as changes to the *Conservation Authorities Act* and regulations. As a result, work on a comprehensive update to the HCA policy document has been delayed in anticipation of completion of legislative and regulatory updates.

On April 1, 2024, a number of significant changes and amendments to the *Conservation Authorities Act* took effect governing how conservation authorities regulate and permit development activities. Some of the changes included:

- Revoking all individual conservation authority development regulations, including *Ontario Regulation 161/06, HCA's Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses*;
- A new regulation, *Ontario Regulation 41/24, Prohibited Activities, Exemptions and Permits*, to govern development regulation and permitting for all conservation authorities;
- Changes to regulation limits for certain features, including a reduction in the regulated area associated with wetlands from 120 m to 30 m; and
- Removal of natural heritage considerations from permitting decisions.

A report regarding these changes was presented to the Board of Directors at their March 7, 2024 meeting, where the Board supported a recommendation that staff be directed to produce or update existing HCA documents, policies and procedures as may be required to ensure compliance with the new regulations and legislative changes, and to report to the Board periodically on these matters. An update of HCA's *Planning & Regulation Policies and Guidelines* is required to comply with and implement the legislative and regulatory framework.

Shoreline Management Plan

Staff also note that a new Shoreline Management Plan (SMP) for the HCA was completed over the 2021 – 2025 period. The new SMP was approved by the Board of Directors at their February 6, 2025 meeting. The SMP provides the HCA with updated coastal hazard mapping of its shoreline based on the latest technical information and data, and makes management recommendations on a reach specific

basis to assist the HCA in administering its regulation of development on the shoreline.

Some of the key findings and recommendations from the SMP included:

- The Lake Ontario shoreline within the HCA watershed is highly erosive, especially on the lake bottom at the toe of existing shoreline protection structures. Maintenance or upgrading of existing shoreline protection structures will be a long-term commitment to protect existing residential development. Over time, the erosion and flooding hazards may become too severe to support ongoing residential development.
- A long-term average annual erosion rate of 0.5 m/yr has been recommended for the Lake Ontario shoreline in the delineation of the erosion hazard. The new 100-year flood level has been identified as 76.2 metres International Great Lakes Datum (IGLD'85).
- The implementation of nature-based solutions to increase the resilience of the Hamilton Beach are encouraged, such as dune restoration and beach nourishment, and hard armouring of the shoreline should be avoided where possible.
- The shoreline in the harbour port lands and recreational amenities in the harbour are all heavily armoured. These shoreline protection structures should be monitored regularly with maintenance completed in a timely manner. Where possible, habitat enhancement projects, such as rock shoals and islands, should be incorporated into future shoreline protection and maintenance projects.

The findings and recommendations from the SMP were to be further reviewed by HCA staff to determine what regulatory mapping and policy updates may be required to support the implementation of the SMP.

Summary of Key Proposed Policy Changes

Given the above, staff have been working to update HCA's planning and regulations policies document. A draft of the updated policies is included as Attachment A.

Notwithstanding recent legislative and regulatory changes to the *Conservation Authorities Act*, conservation authorities continue to regulate development activities in watercourses, wetlands and hazard prone areas such as river valleys and shorelines, and permits continue to be required for development activities in such areas in most cases. As a result, many of the HCA's existing policies regarding development in regulated areas remain unchanged, or have received only minor or administrative updates.

Key policy updates and changes to the document that are being proposed include:

General Updates and Changes

- New document title and general restructuring
- Updated summary of the legislative and policy framework that guides land use planning and regulation of development
- Addition of a summary description of the major HCA watersheds
- Separation of land use planning policies (Section 4) and regulatory policies (Section 5)
- Removal of all references to *Ontario Regulation 161/06, HCA's Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses*
- Removal of numerous appendices that are no longer relevant or necessary

Land Use Planning Policies

- Expanded policy direction for land use planning to support HCA's involvement in municipal plan input and municipal plan review matters
- Policy direction reflects current Provincial Planning Statement (2024)
- Provide for consideration of water resource systems and natural heritage systems and features where they support the control, management or mitigation of natural hazards
- Allow consideration of stormwater management facilities to control Regional storm event flows

Regulatory Policies

- Updated description of regulated areas, regulated activities and permit considerations ('tests') based on the new regulations
- General policy updates to address new permit tests which require that:
 - (a) the activity is not likely to affect the control of flooding, erosion, dynamic beaches or unstable soil or bedrock; or
 - (b) the activity is not likely to create conditions or circumstances that, in the event of a natural hazard, might jeopardize the health or safety of persons or result in the damage or destruction of property.
- Removal of policies that provide for the consideration of natural heritage features, except where they may support the control, management or mitigation of natural hazards
- Update shoreline policies to reflect a new 100-year flood level and erosion rate based on the Shoreline Management Plan
- Greater flexibility for minor additions, replacement structures and accessory structures where existing development is affected by hazards
- Additional policy direction regarding criteria to be met to achieve safe access
- Additional policy direction regarding floodplain spill areas
- Revised policy direction for wetlands based on loss of natural heritage considerations

Public Consultation

HCA staff are seeking direction to make the draft policy document available for public and stakeholder review and comment. This would include making the document available on HCA's web-based public engagement platform and direct circulation to key stakeholders such as the City of Hamilton, County of Wellington, Conservation Ontario and neighbouring conservation authorities. HCA staff note that *Ontario Regulation 41/24, Prohibited Activities, Exemptions and Permits*, requires a conservation authority to develop policy and procedure documents with respect to permit applications and reviews, including policies for the purpose of administering the issuance of permits and procedures for consulting with stakeholders and the public during policy review and update processes, as a conservation authority considers advisable.

HCA will update the draft policy document based on public input received, and return to the Board of Directors for final approval for the end of 2025.

Strategic Plan Linkage:

The initiative refers directly to the HCA Strategic Plan 2025 – 2029:

- **Strategic Priority Area – Water Resources Management**
 - Initiative – Update planning and regulatory policy based on the recommendations of the 2024 Shoreline Management Plan, and amendments to the Conservation Authorities Act and associated regulatory changes.

Agency Comments:

Not Applicable

Legal / Financial Implications:

Updates to HCA's *Planning & Regulation Policies and Guidelines* are required to comply with and implement the legislative and regulatory changes to the *Conservation Authorities Act* that came into effect on April 1, 2024.

Related Reports and Appendices:

Attachment A – *Policies for Land Use Planning & Regulation in the Watersheds of the Hamilton Conservation Authority (Draft, June 2025)*

Healthy Watersheds, Healthy Communities

Policies for Land Use Planning & Regulation in the Watersheds of the Hamilton Conservation Authority

Draft
June 2025

TABLE OF CONTENTS

1 INTRODUCTION.....	6
2 THE HAMILTON CONSERVATION AUTHORITY AND THE HCA WATERSHEDS	8
3 LEGISLATIVE AND POLICY FRAMEWORK	24
4 POLICIES FOR LAND USE PLANNING	38
5 POLICIES FOR THE REGULATION OF DEVELOPMENT	50
6 DEFINITIONS	106

TABLE OF CONTENTS

1 INTRODUCTION

- 1.1 How to Read this Document
- 1.2 Approval and Amendments

2 THE HAMILTON CONSERVATION AUTHORITY AND THE HCA WATERSHED

- 2.1 A Brief History of the HCA
- 2.2 Overview of the HCA Watersheds
 - 2.2.1 Physiography
 - 2.2.2 Geology
 - 2.2.3 Hydrology
 - 2.2.4 Natural Heritage
 - 2.2.5 Major Watersheds
 - 2.2.6 Watershed Threats, Impacts and Challenges

3 LEGISLATIVE AND POLICY FRAMEWORK

- 3.1 Conservation Authorities Act
 - 3.1.1 Conservation Authority Regulation of Development
- 3.2 Planning Act
 - 3.2.1 Provincial Planning Statement
- 3.3 Greenbelt Act
- 3.4 Niagara Escarpment Planning and Development Act
 - 3.4.1 NEC Development Permit Applications
- 3.5 Environmental Assessment Acts
 - 3.5.1 The Impact Assessment Act
 - 3.5.2 The Ontario Environmental Assessment Act
- 3.6 Drainage Act
- 3.7 Aggregate Resources Act
- 3.8 Municipal Official Plans
- 3.9 Hamilton Harbour Remedial Action Plan
- 3.10 Description of Hamilton Conservation Authority Roles and Responsibilities

4 POLICIES FOR LAND USE PLANNING

- 4.1 Land Use Planning Review Process (Plan Input/Review)
 - 4.1.1 General Policies for Plan Input and Plan Review
- 4.2 Watershed Planning Approach
 - 4.2.1 Policies for Watershed and Subwatershed Planning
- 4.3 Natural Hazard Management
 - 4.3.1 Policies of Natural Hazard Management and Development
- 4.4 Water Resource Systems
 - 4.4.1 Policies for Water Resource Systems
- 4.5 Stormwater Management
 - 4.5.1 Policies for Stormwater Management

5 POLICIES FOR REGULATION OF DEVELOPMENT

5.1 Regulation of Development and Permitting

- 5.1.1 Regulated areas
- 5.1.2 Regulated activities
- 5.1.3 Permits and Regulation Tests
- 5.1.4 Relationship to Land Use Planning Policies

5.2 General Policies

5.3 Lake Ontario Shoreline

- 5.3.1 Defining Shoreline Regulation Limits
- 5.3.2 Lake Ontario Shoreline Hazards
 - 5.3.2.1 Identifying the Shoreline Flooding Hazard
 - 5.3.2.2 Identifying the Shoreline Erosion Hazard
 - 5.3.2.3 Identifying the Shoreline Dynamic Beach Hazard
- 5.3.3 Policies for Development on the Lake Ontario Shoreline
 - 5.3.3.1 General Policies
 - 5.3.3.2 Shoreline Protection Works (Protection Works Standard)
 - 5.3.3.3 New Development
 - 5.3.3.4 Existing Development
 - 5.3.3.5 Policies for Development in the Regulated Allowance

5.4 River and Stream Valley Systems

- 5.4.1 Defining River and Stream Valley Regulation Limits
- 5.4.2 River and Stream Valleys – Erosion Hazards
 - 5.4.2.1 Identifying the Erosion Hazard
 - 5.4.2.1.1 Erosion Hazard Limit for Confined Systems
 - 5.4.2.1.2 Erosion Hazard Limit for Unconfined Systems
- 5.4.3 Policies for Development in the Erosion Hazard
 - 5.4.3.1 General Policies
 - 5.4.3.2 New Development
 - 5.4.3.3 Existing Development
 - 5.4.3.4 Policies for Development Within the Regulated Allowance
- 5.4.4 River and Stream Valleys – Flooding Hazards
 - 5.4.4.1 Identifying the Flooding Hazard
 - 5.4.4.1.1 One Zone Areas
 - 5.4.4.1.2 Two Zone Areas
 - 5.4.4.1.3 Special Policy Areas
 - 5.4.4.1.4 Floodplain Spill Areas
- 5.4.5 Policies for Development in the Flooding Hazard
 - 5.4.5.1 General Policies
 - 5.4.5.2 New Development
 - 5.4.5.3 Existing Development
 - 5.4.5.4 Policies for Development Within the Regulated Allowance
 - 5.4.5.5 Policies for Cut and Fill
 - 5.4.5.6 Policies for Floodplain Spill Areas
 - 5.4.5.7 Policies for the Dundas Special Policy Areas

5.5 Watercourses

- 5.5.1 Defining Watercourse Regulation Limits
- 5.5.2 Policies for Interference with Watercourses

5.6 Wetlands

- 5.6.1 Defining Wetland Regulation Limits
- 5.6.2 Policies for Development and Interference with Wetlands
 - 5.6.2.1 General Policies
 - 5.6.2.2 Development and Interference within Wetlands
 - 5.6.2.3 Development within 30 m of a Wetland

5.7 Hazardous Lands

- 5.7.1 Defining Hazardous Lands Regulation Limits
- 5.7.2 Identifying Hazardous Lands
- 5.7.3 Policies for Development Within Hazardous Lands
 - 5.7.3.1 General Policies
 - 5.7.3.2 New Development
 - 5.7.3.3 Unstable Bedrock (Karst) Specific Policies

5.8 Floodproofing Standards

- 5.8.1 General Policies
- 5.8.2 Additions and Replacement Structures
- 5.8.3 Dry Floodproofing
- 5.8.4 Wet Floodproofing

5.9 Access Standards

- 5.9.1 Safe Access for New Development
- 5.9.2 Safe Access for Existing Development
- 5.9.3 Access Allowances

5.10 Fill Placement and Site Grading

- 5.10.1 General Policies
- 5.10.2 Large-Scale Fill Placement

5.11 Development Exemptions

6 DEFINITIONS

1 INTRODUCTION

The Hamilton Conservation Authority (HCA) is a watershed-based organization established under the provisions of the *Conservation Authorities Act*. Since 1958 the HCA has dedicated itself to the conservation and management of watershed lands and water resources for the benefit of people, communities and the environment.

The HCA undertakes programs on a watershed basis to further the conservation and management of natural resources. This includes programs to protect people and property from risks associated with natural hazards, manage water resources, monitor and conserve the natural environment, and provide recreational and educational opportunities. The HCA works collaboratively with a variety of agencies and groups in implementing its programs, and in support of its vision for a healthy watershed.

HCA's *Policies for Land Use Planning and Regulation* outline the policies that will be used to guide the HCA in administering and implementing its programs and services related to municipal land use planning and regulation of development.

1.1 How to Read this Document

The HCA may become involved in land use planning matters, regulation of development, and natural hazard management in a number of different roles and capacities. Therefore, not all of the policies contained in the document will be applicable in all cases. However, the policies should not be read in isolation of one another. Rather, they should be reviewed and considered in their entirety, and the appropriate range of policies should be applied to each situation. The policies are intended to be complimentary in nature, and there are clear linkages across policy areas and sections in the document. While specific policies sometimes refer to other policies for ease of use, these cross-references do not take away from the need to read the document as a whole. There is no implied priority in the order in which the policies appear.

This document consists of the following major sections:

Section 1 provides a general introduction and outlines the purpose of the document, and explains how to read and interpret the policies it contains.

Section 2 provides some background and characterization of the HCA watersheds, including summary descriptions of its major subwatersheds.

Section 3 summarizes the legislative and regulatory framework within which HCA operates and administers its various programs and services related to land use planning, regulation of development and management of natural hazards.

Section 4 outlines policies to guide HCA's involvement in municipal plan input and municipal plan review matters under the *Planning Act* and other legislation where HCA may comment on land use planning matters.

Section 5 defines the policies HCA will apply to its administration of the development regulations outlined in the *Conservation Authorities Act* (CA Act) and *Ontario Regulation 41/24*. These policies will be applied to the review of development permit applications received under the CA Act and regulations.

Section 6 provides a glossary of defined terms. Italicized terms in the document have a corresponding definition included in the glossary. Other terms should be interpreted based on normal use and definition or meaning of the word.

The document also includes a number of Figures and Appendices to support the content included in Sections 1 to 6.

1.2 Approval and Amendments

Amendments to the policies contained in this document will require HCA Board of Directors approval, and may require public consultation depending on the scope of changes. Minor editorial and other housekeeping amendments to this document that do not impact overall policy direction or objectives will not require Board approval or public consultation. Technical guidelines that may be developed to clarify and support implementation of the policies outlined in this document will require Board approval.

2 THE HAMILTON CONSERVATION AUTHORITY AND THE HCA WATERSHEDS

2.1 A Brief History of the HCA

The origins of the conservation movement and conservation authorities in Ontario dates back to the early 1900s. It was during this period that some individuals, clubs and organizations began to take notice of deteriorating environmental conditions, including pollution, deforestation, flooding and soil erosion. These conditions were the result of over a hundred years of settlement in Ontario and an associated legacy of poor land and natural resource management practices in some regions. The conservation movement that began during this period would eventually lead to a number of important conservation milestones in Ontario, including the passing of the *Conservation Authorities Act* in 1946.

Growth and development in the Townships of Puslinch, East and West Flamborough, Beverly, Ancaster and Dundas in the 1950s eventually led to concern among residents regarding conservation issues, including summer creek flows, flooding, reforestation and recreation. These communities petitioned the province under the *Conservation Authorities Act* to establish a watershed unit charged with the management of water resources. That request was approved, and the Spencer Creek Conservation Authority was founded on May 8, 1958, and held its first meeting on June 20, 1958. The Spencer Creek watershed included an area of approximately 25,000 ha extending from the Township of Puslinch to Hamilton Harbour.

In an effort to temper growth with some greater consideration for the environment, the City of Hamilton and parts of the surrounding communities of Stoney Creek, Saltfleet, Binbrook, and Glanford decided to join the Spencer Creek Conservation Authority in 1966, which resulted in the creation of the Hamilton Region Conservation Authority. In 2000, with the amalgamation of municipalities in the Hamilton region, the name of the Conservation Authority was changed to the Hamilton Conservation Authority (HCA) for administrative purposes, but remains Hamilton Region Conservation Authority for legal purposes.

Today, the HCA watersheds cover approximately 57,000 ha (140,000 acres or 570 sq km) of land and water, and reach from Fifty Point and the west limit of the Town of Grimsby, across the City of Hamilton, to the Township of Puslinch in Wellington County. HCA's jurisdictional area includes the major watersheds of Spencer Creek, Bors Creek, Chedoke Creek, Redhill Creek, Stoney Creek, Battlefield Creek and the Stoney Creek Number Watercourses, as well as portions of the Hamilton Harbour and Lake Ontario shoreline.

Within the watersheds under its jurisdiction, HCA administers programs and services to further the conservation and management of natural resources. This includes programs to manage water resources, protect people and property from natural hazards, monitor and conserve the natural environment, and provide recreational and educational opportunities. The HCA works collaboratively with a variety of agencies and groups in

implementing its programs and services, and in support of its vision for a healthy watershed for everyone.

In support of its mandate, the HCA owns and manages approximately 4,700 ha of land. This includes large areas of conservation land that support important natural heritage features and ecosystem functions, and which provide for passive recreational use. The HCA also operates a number of Conservation Areas with facilities and infrastructure that provide for a wide range of recreational uses, educational programming and events.

The HCA is governed by a Board of Directors, which consists of 10 members appointed by the City of Hamilton, 7 elected officials and 3 citizen appointments, and 1 member from the Township of Puslinch. Funding for HCA's programs comes primarily from municipal levy and revenues that are self-generated.

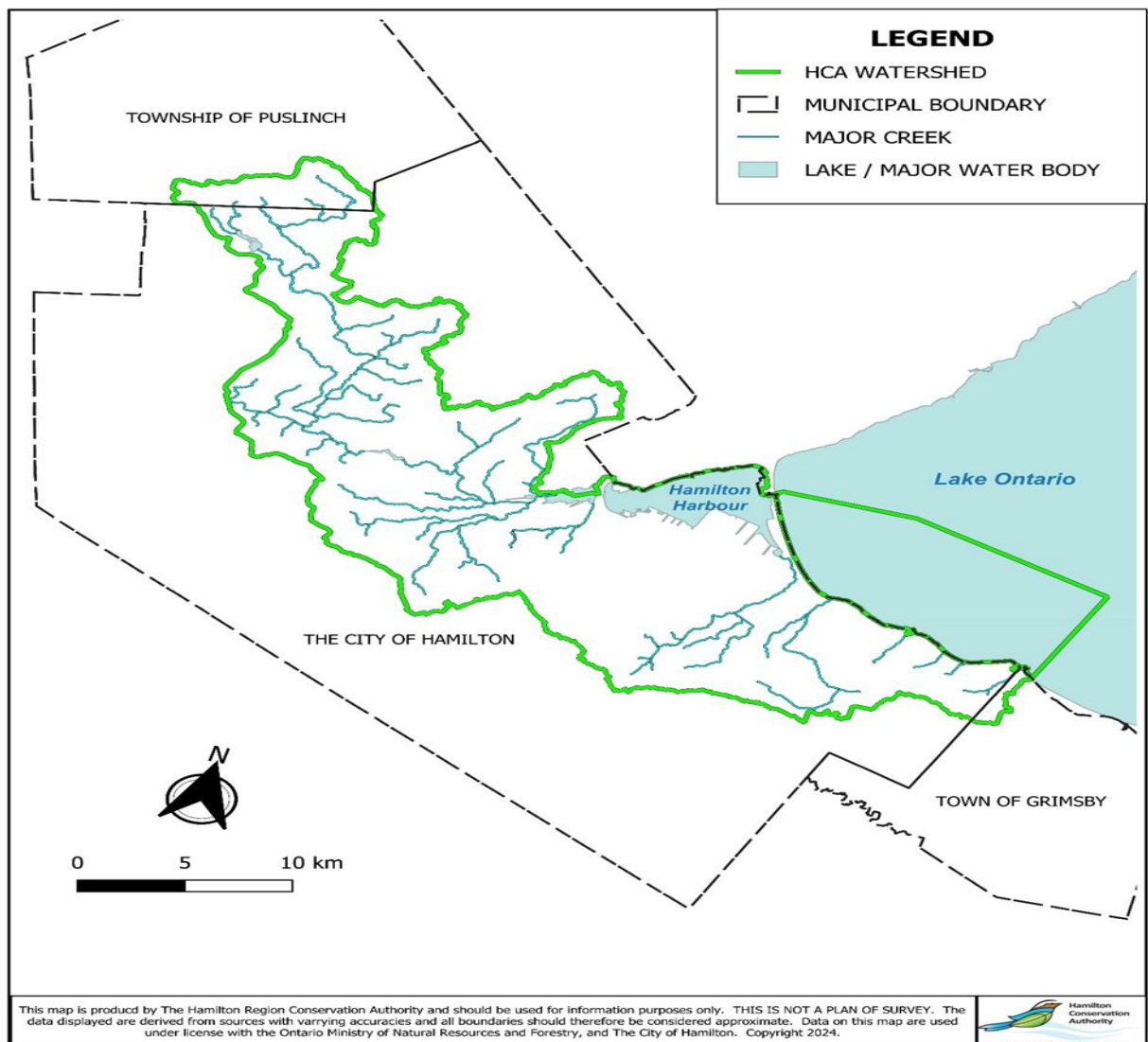


Figure 1: The HCA Watershed

2.2 Overview of the HCA Watersheds

The Hamilton Conservation Authority (*HCA*) watershed is located at the western end of Lake Ontario within the Treaty Lands and Territory of the Mississaugas of the Credit First Nation and traditional territory of the Haudenosaunee.

The HCA's jurisdictional area covers approximately 57,000 ha (570 km²) encompassing the majority of the City of Hamilton and portions of the Town of Grimsby and Township of Puslinch, with a watershed population of over 600,000 residents. The major watercourse systems within the watershed drain from above the Niagara Escarpment, through southern Puslinch Township and the former municipalities of Flamborough, Dundas, Ancaster, Glanbrook, Stoney Creek and Hamilton, and ultimately to Hamilton Harbour and Lake Ontario. The watershed is comprised of urban, rural and agricultural lands, and contains a number of significant natural areas which support a rich biodiversity.

The following sections provide a summary overview of the physical and biological setting and features of the watershed. A characterization of the watershed is helpful towards understanding the present-day landscape within which land use planning and development regulation occurs.

The information that is presented in the following sections is based on a review of a number of reports and studies that contain additional and more detailed information regarding watershed characteristics and resources. Information sources are referenced where appropriate and may be consulted for further information.

2.2.1 Physiography

The physical landscape of the HCA watershed and surrounding Great Lakes region is primarily the result of glacial activity that took place in the Late Wisconsinan period, which ended about 10,000 years ago. The advancement and retreat of major ice sheets during this period has helped to shape the landscape that exists today. Glacier advancement resulted in erosion of underlying bedrock, and the movement and mixing of eroded rock and soil (known as till). Further scouring and smoothing of bedrock surfaces occurred during deglaciation, leaving behind large amounts of rock, sand, silt, and clay debris that was carried in the ice. Glacial meltwater flowed through channels, eroding the underlying bedrock, also depositing significant amounts of sand and gravel on the landscape, and filling depressions in the surface to form ponds. This period of activity resulted in the formation of a number of distinct physiographic regions and features in southern Ontario, a number of which are represented in the watershed today. This includes escarpment, moraines, beaches, and sand, clay shale and limestone plains.

The Niagara Escarpment is the most prominent physiographic feature in the watershed, running throughout the east and central portions of the watershed, generally paralleling the Lake Ontario shoreline. The escarpment has formed over millions of years, and is the result of differential erosion, where softer, older, rock has eroded away, leaving

behind a ridge of more erosion resistant harder dolostone rock. This process has resulted in the exposed vertical cliff faces and outcrops that are characteristic of the escarpment, with faces reaching heights of over 40m in some places within the watershed.

The Dundas Valley and Red Hill Valley are two other prominent landscape features within the watershed. These ancient river valleys, also referred to as re-entrant valleys, formed prior to the last glaciation, when flowing water cut channels through the escarpment bedrock and into the lower softer shale formations below. The Dundas Valley is thought to have formed part of a larger pre-glacial drainage system that extended to Lake Huron, with its eastern end now located deep beneath Cootes Paradise and Hamilton Harbour. During the last glacial period the valley was further eroded and infilled with sediment, and today extends from Copetown to Cootes Paradise, and is up to 4km wide in places.

The Red Hill Valley extends approximately eight kilometres between the Niagara Escarpment and Lake Ontario. Portions of the valley below the escarpment have been completely filled with sediment deposited from glacial activity. The valley today is comprised of a natural corridor and Red Hill Creek, which was re-aligned to accommodate the Red Hill Valley Parkway. Red Hill Creek flows through the valley from the escarpment to Windemere Basin adjacent to Hamilton Harbour.

The Iroquois Plain, extending from the base of the Niagara Escarpment to Hamilton Harbour and Lake Ontario, marks the area of former Lake Iroquois and is comprised of fine silty sands that occupied the former lake bottom. Former beaches of Lake Iroquois now form barrier bars, including the Burlington Barrier Bar (commonly referred to today as the Beach Strip) which separates Hamilton Harbour from Lake Ontario and the Hamilton Barrier Bar which separates Cootes Paradise from Hamilton Harbour.

Above the escarpment, in the south and east portion of the watershed, extending towards Niagara Region and Lake Erie, sits the Haldimand Clay Plain. This area is characterized by clay and silt that was deposited at the bottom of former Lake Whittlesey, which occupied an area larger than present day Lake Erie. The Norfolk Sand Plain, located above the Dundas Valley, consists of silts and sands which formed part of a delta associated with former Lakes Whittlesey and Warren. Extending through the upper part of the watershed is the Flamborough Plain. This area is characterized by shallow soils over bedrock, and the presence of frequent bedrock outcrops and scattered drumlins. Drainage in this area is poor in many places, which has resulted in large areas of wetland, ponded water and the formation of organic soils.

A number of moraines, which are areas of accumulated rock and/or sediment that has been deposited in association with glacial activity, are found throughout the watershed. These vary in type, size and formation, and have a significant influence on drainage patterns in the watershed. The southern extent of the Galt Moraine is located at the very upper end of the watershed, which forms part of the Horseshoe Moraines physiographic region and represents the watershed surface drainage divide. To the north of the Dundas Valley are a series of moraines that form part of the Waterdown Moraines

group. To the south of the Dundas Valley, sits the Vinemount moraine which runs parallel to the escarpment brow, and below this further south, the Niagara Falls moraine, which represents part of the surface drainage divide between the Hamilton and Niagara regions.

2.2.2 Geology

The bedrock geology in the watershed consists of Paleozoic sedimentary rocks of the Ordovician and Silurian periods, which are approximately 460 to 420 million years old. The sediments that make up these rocks were originally deposited in horizontal layers in shallow, inland seas, which hardened over time under the weight of new layers of sediment being deposited. This pattern of development makes the uppermost rock layers the youngest. The composition of each rock layer varies based on the environmental conditions at the time of deposition and formation.

In general terms, the surficial bedrock of the watershed above the Niagara Escarpment is comprised primarily of the Guelph and Eramosa formations of the Lockport group. Below the Escarpment, in the Dundas Valley and along the Hamilton Harbour and Lake Ontario shoreline, the Queenston formation makes up the underlying bedrock. Formations from the Clinton and Cataract Groups are exposed in bands along the base of the Escarpment.

The Queenston formation, which lies below the Niagara Escarpment is comprised of easily weathered red shales with siltstone. This formation, from the older Ordovician period, is upward of 140 metres thick in places within the watershed, and outcrops in places between the Escarpment base and Lake Ontario. At the base of the Escarpment, the formation is exposed in places and has a distinct reddish-brown colouring. Glacial activity over hundreds of thousands of years eroded the formation, leaving an irregular bedrock surface under the City of Hamilton core and underlying the eroded Dundas Valley.

The remaining bedrock formations in the watershed are from the younger Silurian age, and were deposited on top of the eroded surface of the Queenston shale. There are a number of rock formations from the Silurian period, comprised primarily of sandstones, dolostones, limestones and shales. These bedrock formations are varyingly exposed along the face of the Escarpment.

The Eramosa Member in upper Stoney Creek was eroded back from the Escarpment by glacier ice flow, to form a low subsidiary scarp situated approximately 2km south of the Escarpment. This small erosional escarpment, known as the Eramosa Escarpment, generally has relief of 10m or less.

The Guelph Formation represents the upper-most and youngest bedrock unit in the watershed, covering most of the northern portion of the watershed above the Dundas Valley, as well as smaller areas along the southern boundary of the watershed in Ancaster and Glanbrook. The rocks of this formation consist of brown to greyish-brown dolostone. The formation outcrops extensively through Flamborough, forming an

exposed bedrock plain (the Flamborough Plain). The Guelph Formation has valued chemical qualities, and has been actively mined at quarries located within Flamborough.

Karst topography is associated with the Lockport formations in the watershed, primarily above the Escarpment in upper Stoney Creek and Glanbrook, with some features also present in the Greensville/Spencer Gorge and Waterdown areas. Karst features form through the dissolution of soluble bedrock by acidic surface and ground waters over thousands of years, and appear as solution widened joints, bedding planes, fault planes, solution or collapse *p*, and subsurface caverns.

Some of the best known and most significant karst features in Ontario are associated with the Goat Island Formation and Eramosa Member above the Niagara Escarpment in Stoney Creek. This includes the Eramosa Karst Area of Natural and Scientific Interest (ANSI), which incorporates provincially significant examples of karst features such as caves, sinking streams, springs, and dry valleys.

The bedrock and surficial geology of the watershed has a significant influence on water resources, including groundwater storage, movement, recharge and discharge, maintenance of stream baseflow, surface water drainage patterns, as well as the aquatic and terrestrial ecosystems found within the watershed.

2.2.3 Hydrology

Hydrology refers to the study of water and how it moves through the environment, both above and below the earth's surface. Water supply to a watershed or subwatershed comes from precipitation, watercourse flow and groundwater discharge.

Many factors influence the movement of water through the environment, including geology, physiography, and climate. The Hamilton watersheds are located in the temperate Great Lakes – St. Lawrence climate zone (SP AR), which generally sees the coolest and driest conditions occurring in winter, and the hottest and wettest conditions in summer. Although total average annual precipitation amounts are fairly consistent across the watershed at approximately 900mm per year, precipitation in areas near Lake Ontario are typically somewhat lower in comparison to areas above the Escarpment. Lake Ontario has a significant moderating effect on watershed climate conditions.

HCA's jurisdictional area includes the major watersheds of Spencer Creek, Borers Creek, Chedoke Creek, Redhill Creek, Stoney Creek, Battlefield Creek and the Stoney Creek Number Watercourses, as well as portions of the Hamilton Harbour and Lake Ontario shoreline. The headwaters of most of these systems originate in the upper reaches of the watershed, above the Niagara Escarpment, and are typically associated with till moraine deposits. These major creek systems and their related tributaries flow through the southern portion of the Township of Puslinch, and the former municipalities of Flamborough, Dundas, Ancaster, Glanbrook, Stoney Creek and Hamilton before reaching Cootes Paradise, Hamilton Harbour and ultimately Lake Ontario. Waterfalls and gorges have developed in some places where these streams cross the Niagara

Escarpment (Heagy, 1995). The surface hydrology of the Spencer Creek system is influenced by the presence of two major dams and reservoirs at Valens Lake Conservation Area and Christie Lake Conservation Area.

Although groundwater flow patterns do not necessarily align with surface drainage areas, the overall regional pattern of subsurface water movement in the watershed is also generally towards the Escarpment and Lake Ontario. Groundwater flow patterns and rates are influenced by bedrock geology, and the permeability of rock formations and sediments and soils in particular. More permeable and fractured formations generally allow for the movement and storage of greater volumes of water. Those formations that store and transmit more significant amounts of water are known as aquifers; these may occur both in the shallow overburden and in deeper rock formations. Conversely, rock formations that restrict water movement are identified as aquitards.

Below the Niagara Escarpment, groundwater supplies are limited given generally thin soil cover, the presence of extensive areas of clayey-silt tills, and the underlying shales of the Queenston Formation which is characterized as a regionally significant aquitard. The most significant groundwater supplies in the watershed are found above the escarpment within the dolostone rocks of the Lockport Group, and the Gasport and Guelph rock formations in particular which contain areas of highly fractured rock. Most private water supply wells in the watershed, in addition to the Greensville municipal well, are constructed in these formations.

Background characterization work completed in support of the Hamilton Region Source Protection Plan indicates the groundwater table in the region generally lies at a depth of about 3m, either within shallow bedrock or above where soils are thicker. Data collected through the Provincial Groundwater Monitoring Network between 2001 and 2014 demonstrates that groundwater levels overall in the watershed are relatively stable, with seasonal fluctuations in water table elevations of between 0.5 m and 2 m.

Depending on local conditions, groundwater and surface water may interact in various ways. Surface water bodies such as wetlands and streams may contribute water to the underlying water table and recharge aquifers. Conversely, groundwater discharge to the surface can emerge as springs and seeps, provide baseflow to streams, and help to support wetlands.

Recharge and discharge capacity and rates vary across the watershed, based on geology, topography and soils. In general terms, the areas located above the Escarpment where coarser/sandier soils and shallow/fractured rock units are more common, are identified as recharge areas. Large areas of Flamborough have been identified through source protection planning as Significant Groundwater Recharge Areas. Most wetland areas in the watershed are located in recharge areas, where water stored in wetlands helps to augment and maintain flow in streams during drier periods and to recharge the water table.

Groundwater discharge occurs at the base of the Escarpment in places, including several locations in the Dundas Valley associated with springs and creeks. Such discharge supplies the headwater tributaries of a number of creeks in the watershed and plays an important role in regulating stream temperatures and supporting cold and cool water habitat for more sensitive fish species. For example, the headwater areas of Upper Spencer Creek and Fletcher Creek subwatersheds, and areas of the Dundas Valley support cold water stream conditions as a result of groundwater discharge. Warmer water stream conditions are generally found in the eastern end of the watershed and below the Escarpment.

2.2.4 Natural Heritage

The physical landscape of the HCA watershed is diverse. The watershed has varied geologic conditions and physiographic features, including clay, sand and limestone plains, exposed bedrock, moraines, cliff faces, talus slopes, beaches and shoreline. Prominent landform features include the Niagara Escarpment, Dundas Valley and Red Hill Valley systems, as well as Cootes Paradise Marsh, Hamilton Harbour and Lake Ontario. This varied landscape provides for an equally diverse natural heritage.

From an ecological perspective, the watershed sits within the Mixedwood Plains Ecozone (Crins et al., 2009) the smallest of Canada's Ecozones and encompasses southern Ontario and parts of southern Quebec. Ecozones are further divided into Ecoregions within which the watershed sits in two. The upper portion of the watershed is located within the Lake Simcoe – Rideau Ecoregion (Ecoregion 6E), while the central and lower portions of the watershed are within the Lake Erie – Lake Ontario Ecoregion (Ecoregion 7E). The watershed also encompasses two forest regions, the upper portion as the Great Lakes-St. Lawrence Forest region and the central and lower portions as the deciduous forest region or the Carolinian forest.

Ecoregion 6E is characterized in the HCA watershed by drumlins, poorly drained organic soils, till and limestone plains. This geology results in a varied landcover that includes large organic coniferous swamps, fens, shrub thickets and deciduous forests. The most prominent features within this ecoregion and the HCA watershed are the Beverly and Fletcher Creek swamps. The Beverly swamp encompasses 2484 ha and is one of the largest remaining tracts of lowland swamp forest in southern Ontario. While Fletcher creek swamp helps maintain permanent flow, high water quality, and coldwater conditions in Fletcher Creek, a headwater tributary of the Spencer Creek system. Most of Ontario's alvars are found in Ecoregion 6E (Crins et al, 2009); alvars are limestone bedrock communities with sparse vegetation, typically dominated by shrubs and herbaceous plants. In the HCA watershed, a small number of alvar communities are found within Flamborough, on the Flamborough Plain.

While Ecoregion 7E is characterized by till moraines, clay and sand plains and the Niagara Escarpment. The landcover includes prairies, deciduous forests, beaches and cliff and talus communities. The most prominent ecological features in this ecoregion within HCA's watershed is the Dundas Valley, Cootes Paradise marsh and the Niagara Escarpment. The Dundas Valley is the largest deciduous forest located in the

watershed, and it is connected through narrow corridors to Cootes Paradise marsh. These two areas support nationally significant bird communities and are home to a large variety of rare plants. Cootes Paradise is the largest coastal wetland in western Lake Ontario. While the Niagara Escarpment forms a ribbon of green throughout the City of Hamilton and supports rare vegetation communities such as talus and cliffs.

Forest cover within the HCA watershed as a whole is approximately 19% while coverage for wetlands is 8%, although this varies considerably on a subwatershed by subwatershed basis. In areas of the watershed where agricultural and urban land uses dominate, smaller, more disturbed areas of woodlot, plantation, and old field habitats are widespread (Heagy, 1993).

The Natural Areas Inventory (Schwetz, 2014) provides more detailed information and descriptions for the major natural areas, ecosystem types and species identified within the watershed. The following provides a summary description of the major natural heritage features in the watershed including the Dundas Valley, Cootes Paradise Marsh, Niagara Escarpment and Beverly swamp wetlands.

Dundas Valley

The Dundas Valley encompasses an extensive natural area located in the western end of the major re-entrant valley in the Niagara Escarpment at the head of Lake Ontario. This area consists of varied broadleaf and mixed upland woods. The periphery consists of a patchwork of natural areas, active and abandoned agricultural fields, and rural residential estates. The extensive forests and old fields provide habitat for numerous rare and uncommon species of wildlife, including many nationally, provincially and locally significant plant and animal species.

Cootes Paradise Marsh

This large natural area is centered on Cootes Paradise, a shallow flooded basin of open water and marsh habitat created behind the Hamilton Bar landform. The surrounding terrestrial habitat, consisting of rolling hills and ravines covered with woods and successional communities (Heagy, 1993). The Cootes Paradise wetland is the largest remaining Great Lakes shoreline marsh at the western end of Lake Ontario (Gould, 1989). Numerous nationally and provincially significant plant and animal species occur here. Many of the plant species present in this area have not been reported elsewhere in the City of Hamilton (Heagy, 1993). This large wetland lies between the significant terrestrial habitats of Dundas Valley and the significant aquatic habitats of Hamilton Harbour.

Lake Ontario Shoreline and Hamilton Harbour

The HCA watershed contains 42 km of Lake Ontario shoreline (Zuzek, 2025). Much of this shoreline is developed and armoured with few natural features. The northern section of this shoreline is composed of a dynamic beach which supports a natural beach with some foredunes (Zuzek, 2025). This area, along with Fifty Point Conservation Area are the only areas in the watershed with this type of natural feature. Areas with low dunes have been frequently disturbed by human activities but pockets of natural dune vegetation have persisted and sustain this component of the beach

environment (Schewtz, 2014). Within Hamilton Harbour the protected waters of the outer bay have been developed as a major deep-water industrial port. Canals cut through the sand bars to accommodate boat traffic have replaced the natural outlet channels of both Cootes Paradise and Hamilton Harbour. Dredging and landfilling operations have significantly changed the internal configuration of the bay, with the southern and eastern shorelines consisting almost entirely of fill (Heagy 1993). Hamilton Harbour contains the only large deep water and littoral aquatic system in the watershed. Although these communities are degraded, they are, nonetheless, at least locally significant. The only remaining natural shoreline in the Harbour is at the western end.

Niagara Escarpment

The Niagara Escarpment runs 725 km in Ontario from St. Catharines in the south to Manitoulin Island in the north (NEBN, 2025). It passes through the urban portions of the HCA watershed in an east-west direction and supports important natural areas (Schwetz, 2014). Within Dundas and parts of Waterdown there are south facing slopes that support rare plant species such as the Red Mulberry. Cliff and talus communities are also common along the Niagara Escarpment. These communities support a variety of ferns and mosses.

Beverly Swamp Wetlands

This swamp is one of the largest remaining tracts of intact, lowland swamp forest in Southern Ontario (Klinkenberg, R. 1984) and is the best example of swamp forest within the Ontario Carolinian Zone (NCC, et. al 1985). Because of its size and uniqueness, the Beverly Swamp serves many important functions for the City of Hamilton. The Beverly Swamp functions as the headwaters for three major creek systems in the area, including systems that support other watersheds. Bronte Creek flows east from the swamp, then south to Lake Ontario, Spencer Creek flows south into Cootes Paradise, and Fairchild Creek flows west then south and eventually joins the Grand River (Ecologistics, 1976). Not only does the Beverly Swamp help to stabilize flow of these creeks by acting as a storage reservoir for precipitation, but it also improves water quality by absorbing nitrogen, phosphorus, and sediments (MacDonald, 1976). There are also many important plant communities within the area. Many of these communities no longer exist in the surrounding areas due to development and other changes to the natural landscape, the Beverly Swamp serves as a botanical reserve. These plant communities also help to maintain significant faunal populations of mammals, birds, reptiles, and amphibians (Glooschenko, et al 1988).

These regions in southern Ontario, and the Carolinian zone in particular, are considered among the most biologically diverse regions in Ontario and Canada (Henson et al, 2005, Crins et al 2009). As noted these natural areas along with other portions of the natural heritage of the watershed support a wide variety of ecosystem types and a rich biodiversity, including many rare species and species that are at or near the northern or southern limits of their range (Heagy, 1993).

The Natural Areas Inventory (Schwetz, 2014) has recorded 1469 plant species presently known to occur in the City of Hamilton. Of this total, 962 taxa (65.4%) are considered native to Hamilton. Of the many provincially rare species occurring in the Hamilton area many are either Carolinian or southern species near the northern limit of their range in southern Ontario and/or have strong affinities to specialized habitats such as prairies, savannas and dry oak woodlands.

The Birds of Hamilton (Curry, 2006) notes that there are 386 bird species that have been recorded within the Hamilton Study Area, an area larger than HCA's watershed. This includes migrants, breeding birds and winter residents. Many species fly through the watershed and stay a short time in the spring and fall, like the Blackburnian Warbler. They are moving to and from their breeding grounds. Others are only here in the wintertime, like Dark-eyed Juncos. The wide variety of habitats throughout the watershed supports a wide variety of bird species.

There are also several insects and animals that make the HCA watershed their home. The Ontario butterfly atlas notes there are 106 species of butterfly recorded within the City of Hamilton (Toronto Entomologists Association, 2025) while the Ontario moth atlas noted 116 species of moths within the City of Hamilton (Toronto Entomologists Association, 2025). These areas are larger than the watershed but give a general idea of diversity of species in this area. While mammals are difficult to survey the Atlas of the Mammals of Hamilton (Vlasman, 2005) notes there are 46 common species. This include species such as white-tailed deer, red fox, coyote, northern raccoon, striped skunk, beaver, eastern gray squirrel. The Natural Areas Inventory (Schwetz, 2014) notes that the current list amphibians and reptiles stands at 30 native species, including spring peepers, snapping turtles and yellow spotted salamanders.

2.2.5 Major Watersheds

HCA's jurisdictional area includes the major watersheds of Spencer Creek, Bors Creek, Chedoke Creek, Redhill Creek, Stoney Creek, Battlefield Creek and the Stoney Creek Number Watercourses, as well as portions of the Hamilton Harbour and Lake Ontario shoreline

Spencer Creek

The Spencer Creek watershed is the largest watershed within the jurisdiction of the HCA at 23,700 ha (237 km²), representing close to half of HCA's entire jurisdictional area. The Spencer Creek watershed outlets directly into Cootes Paradise Marsh, and is comprised of a number of subwatersheds, including Ancaster Creek, Flamborough Creek, Fletcher Creek, Logie's Creek, Lower Spencer Creek, Middle Spencer Creek, Spring Creek, Sulphur Creek, Sydenham Creek, Tiffany Creek, Upper Spencer Creek, West Spencer Creek, and Westover Creek.

In the upper part of the Spencer Creek watershed, the Upper Spencer Creek and Fletcher Creek subwatersheds form their headwaters in the rural lands and wetlands in the Township of Puslinch and the City of Hamilton. The Beverly Swamp and Fletcher

Creek Swamp wetland complexes comprise a significant portion of the Upper Spencer Creek subwatershed.

Moving south from the upper watershed, the Flamborough Creek, Westover Creek and West Spencer Creek subwatersheds occupy predominantly rural and agricultural lands above the Niagara Escarpment. The Ancaster, Tiffany, Spring, Sulphur, Logie's, Sydenham and Middle Spencer Creek subwatersheds also have their headwaters in rural areas draining from above the Niagara Escarpment through a glacial valley and into the Lower Spencer Creek subwatershed and urbanized areas below the escarpment.

Portions of this glacial valley are part of the Dundas Valley, an important natural area which supports Carolinian forests, meadows, significant geological formations and a diversity of rare plants, birds and wildlife. These watersheds and their associated riparian provide important ecological linkages between the terrestrial habitats of the Dundas Valley and the aquatic habitats of Cootes Paradise, which is the largest remaining shoreline marsh in the western end of Lake Ontario.

Significant aggregate resources are found within the Spencer Creek watershed, with quarries operating within both the Middle Spencer and Logie's Creek subwatersheds.

There are two large dams located in the Spencer Creek watershed, Christie Dam located at Christie Lake Conservation Area and Valens Dam at Valens Lake Conservation Area. Both of these dams are managed by the Hamilton Conservation Authority to help regulate water flows and mitigate the potential for flooding within the Spencer Creek system.

Borer's Creek

Borer's Creek is the smallest watershed at 1950 ha (19.5 km²), or close to 4% of HCA's jurisdictional area. The Borer's Creek watershed headwaters originate in the Parkside Drive Wetland Environmentally Significant Area (ESA) then flow west from the community of Waterdown in the City of Hamilton through commercial, industrial, rural and agricultural lands, before flowing over the Niagara Escarpment and outletting directly to Cootes Paradise Marsh south of York Road in the Town of Dundas.

The Borer's Creek watershed houses five municipally designated Environmentally Significant Areas (ESA), including the Parkside Drive Wetland, Millgrove South Woodlot, Waterdown North Wetlands, Borer's Falls – Rock Chapel, and Cootes Paradise. The wetlands, woodlots and successional areas contained in these ESA's support a diversity of flora and fauna, and provide riparian corridors and connections to the Cootes Paradise wetland below the Escarpment - the largest remaining shoreline marsh in the western end of Lake Ontario.

Chedoke Creek

The Chedoke Creek watershed is 2440 ha (24.4 km²), or 4% of the HCA jurisdictional area. This watershed drains from an urban area of Hamilton located above the Niagara Escarpment at the western end of the Lincoln M. Alexander Parkway. The headwaters of the Chedoke Creek watershed are mainly enclosed within the City of Hamilton stormwater and sewer system, except for tributaries of Chedoke Creek that occur within the Iroquoia Heights Conservation Area Environmentally Significant Area (ESA).

Watercourses are open as they spill over the Niagara Escarpment, and then re-enter the piped system located in the urban areas of Hamilton below the escarpment. Chedoke Creek flows in an open concrete-lined channel along Highway 403, before outletting to the south shore of Cootes Paradise Marsh.

This area has been intensively developed, and thus the majority of this warm water system is a direct result of stormwater input. Observable channels are present in the three municipally designated Environmentally Significant Areas within the watershed, including Iroquoia Heights Conservation Area, Hamilton Escarpment, and Cootes Paradise.

Red Hill

The Red Hill Creek watershed is the second largest watershed within the jurisdiction of the HCA at 6800 ha (68 km²), or 12% of the HCA watershed. It is comprised of 8 subwatersheds, including Hannon, Lower Davis, Lower Greenhill, Montgomery Creek, Red Hill Valley, Upper Davis Creek, Upper Greenhill and Upper Ottawa.

The Lincoln M. Alexander Parkway, Red Hill Valley Parkway and Queen Elizabeth Way are major transportation corridors within this watershed. The Niagara Escarpment and its associated valley lands, such as the Felker's Falls Escarpment Valley Environmentally Significant Area (ESA), as well as successional meadows found throughout, form the majority of natural areas within the watershed.

The Eramosa Karst is located within the Upper Davis Creek subwatershed, and features significant karst geological features. It is considered to be the best example of karst topography found in Ontario, and is designated as a provincially significant Earth Science Area of Natural and Scientific Interest (ANSI).

The Red Hill Creek watershed is predominantly urbanized, with some agricultural, commercial and industrial land use in the Hannon subwatershed. All of the subwatersheds originate above the Niagara Escarpment. Flow from the Escarpment is funneled into the Red Hill Valley subwatershed and associated Red Hill Creek Escarpment Valley ESA corridor, flowing into Windermere Basin and outletting to the east end of the Hamilton Harbour.

Stoney Creek and Battlefield Creek

The Stoney-Battlefield Creek watershed is 2730 ha (27.3 km²) or 5% of the HCA jurisdictional area. As its name suggests, it is comprised of two subwatersheds, Stoney Creek and Battlefield Creek, with both creek systems having their headwaters originating in rural agricultural lands above the Niagara Escarpment in the east end of the City of Hamilton. The two subwatersheds converge just south of Barton Street East within the Stoney Creek Ravine Environmentally Significant Area (ESA), in the former Town of Stoney Creek.

Land use within the watershed below the Niagara Escarpment has long been urban and industrial. With early urbanization resulting in channelization, poor stormwater infrastructure, and development within floodplain areas in this watershed, it has been prone to flooding and erosion and the stability and function of the watercourses has been impacted over time.

Three ESA's occur in the watershed, including Stoney Creek Ravine, the Felker's Falls Escarpment Valley, and the Devil's Punchbowl Escarpment, all of which are associated with the Escarpment and its associated valleys. The Devil's Punchbowl is a large gorge cut from the last ice age where visitors can view over 40 million years of geological history on the gorge walls.

In 2022, the HCA completed two of a planned four constructed wetlands in the new Saltfleet Conservation Area to both help alleviate flash flooding in the Battlefield Creek subwatershed and to restore and enhance natural area along the Niagara Escarpment.

Stoney Creek Numbered Watercourses

The Stoney Creek Numbered Watercourses watershed is 3900 ha (39 km²) in area, representing 7% of the HCA jurisdictional area, and is comprised of numerous subwatersheds that outlet to the southwestern shore of Lake Ontario in the community of Stoney Creek, in the City of Hamilton. The subwatersheds are identified by watercourse (WC) number (i.e. WC 1, 2, 2.1, etc.)

The Stoney Creek Numbered Watercourses watershed headwaters begin in the predominantly rural concessions that traverse the top of the Niagara Escarpment south of the Stoney Creek community. At the toe of the Escarpment, agricultural lands still persist and many of the watercourses were channelized and moved to roadsides to promote agricultural drainage. Residential development has steadily encroached along Highway 8 and Barton Street as they cross through Stoney Creek, where a number of watercourses have been enclosed in the City of Hamilton piped system. The numbered watercourses flow through commercial and industrial lands to the north of Barton Street, before crossing the Queen Elizabeth Way (QEW) and through urban areas associated with the Lake Ontario shoreline. All of the subwatersheds outlet to Lake Ontario.

This watershed has two remnant natural areas that have been recognized as Environmentally Significant Areas, the Fifty Creek Valley ESA, which occurs along the

riparian corridor of WC 12 north of the QEW and within Fifty Point Conservation Area. The Devil's Punchbowl Escarpment ESA is a ribbon of natural area along the Niagara Escarpment that runs through the majority of this watershed which is home to remnant natural communities.

Urban Hamilton

The Urban Hamilton watershed is the third largest watershed at 5880 ha (58.8 km²) representing 10% (including Hamilton Harbour in its entirety). As its name implies, it houses the urban core of the City of Hamilton and the industrial lands lining the shoreline of Hamilton Harbour.

This watershed is comprised of three subwatersheds. The Urban Core subwatershed drains the urban core of Hamilton and a small portion of the Niagara Escarpment along the Claremont and Sherman Access Roads. The Beach Strip subwatershed, which drains the peninsula of land that occurs south of the Burlington Canal, and the Hamilton Harbour subwatershed, which traces the Hamilton Harbour shoreline, extending to encircle the Woodland Cemetery and the Royal Botanical Garden's Rock Garden.

This watershed contains a portion of the Hamilton Escarpment Environmentally Significant Area (ESA), and lands surrounding the Hamilton Harbour are part of the Cootes Paradise and Hamilton Harbour ESA's. Cootes Paradise wetland is the largest remaining shoreline marsh in the western end of Lake Ontario, and while the Urban Hamilton watershed is highly urban, these ESA's are important ecological linkages connecting Cootes Paradise to upland terrestrial habitats.

2.2.6 Watershed Threats, Impacts and Challenges

The terrestrial environment throughout many of the major watersheds is dominated by agricultural and urban land uses. Vegetation is diverse, despite the conversion of most forested land and wetlands to urban and suburban areas, road networks, and agriculture. However, threats still exist to the remaining natural areas, including habitat loss, invasive species, pollution and climate change.

Habitat loss is the biggest threat to the natural heritage of HCA's watersheds. This loss is related primarily due to continuing growth and development pressures. This can be exemplified by wetland loss, in Ontario there has been an overall reduction of approximately 1.4 million hectares of wetlands, representing a loss of 72% of pre-settlement wetlands; the Hamilton-Wentworth region has lost 78% of its wetlands since pre-settlement (Ducks Unlimited, 2010). The rate of wetland loss is still occurring across Ontario with 7,303 Ha of wetland lost between 2011-2015, compared to 6,152 Ha from 2000-2011. (Ontario biodiversity Council 2021).

Invasive species are plants, animals, aquatic life, and micro-organisms that outcompete native species when introduced outside of their natural environment and threaten Canada's ecosystems, economy, and society (Government of Canada, 2014). These

include terrestrial and aquatic plants, insects, fish, fungi and mussels. They can out compete native species for resources and can be difficult to control. The impact of invasive species in the HCA watersheds includes the creation of monocultures as habitats dominated by one invasive species, loss of forest canopy and declining forest health, lack of wetland establishment due to invasive fish species.

Pollution can have a variety of impacts on natural systems including creating toxic environments that can decrease biodiversity. Road salt is one pollutant that washes into local waterways and can result in high levels of chlorides which are toxic to fish, amphibians and macroinvertebrates (Watersheds Canada 2025). Finally, climate change is increasingly disrupting natural habitats, impacting the ability of various plants and animals to adapt to changing conditions (Government of Canada, 2022).

3 LEGISLATIVE AND POLICY FRAMEWORK

The legislative and policy framework for conservation, natural resource management and land use planning in Ontario is complex. There are numerous statutes, regulations, policies and plans that guide activities within these disciplines. There are also many agencies and organizations that play a role in land use planning, the management of natural resources and the conservation of the environment. This includes federal, provincial and municipal governments, as well as a diverse range of conservation, business and industry organizations, and private landowners.

This section provides an overview of the *Conservation Authorities Act* and its associated enabling provisions and regulations that provide the authority for the programs and services administered by the HCA. This section also looks at other selected important laws, policies and plans from provincial and municipal jurisdictions that are applicable to conservation, resource management and land use planning. The section concludes with a summary overview of the various roles and responsibilities that HCA (and other conservation authorities) play related to the implementation of this provincial legislative and policy framework.

Having a general understanding of some of the statutes, regulations, plans and policies that govern land use planning and natural resource management provides useful context for HCA's role in land use planning and regulation of development.

3.1 Conservation Authorities Act

The *Conservation Authorities Act* (CA Act) was first passed in 1946. The CA Act was developed in response to growing concerns over deteriorating environmental conditions across Ontario, including severe flooding and erosion problems. The CA Act sought to provide a basis for a provincial program of conservation, restoration and the wise use and management of Ontario's natural resources, including water, soils, forests and wildlife.

Today, the CA Act continues to provide the legislative basis for the formation of a conservation authority and determination of its jurisdiction and objects. It includes provisions to identify a conservation authority's membership and governance, to define its powers and authorities, to allow for the passing of regulations related to its authorities, and to provide certain enforcement powers.

Conservation authorities are corporate bodies established by the province at the request of two or more municipalities within a shared watershed in accordance with the requirements of the CA Act. A conservation authority is governed by the CA Act and by a Board of Directors whose members are appointed by participating municipalities based on representation criteria that are defined in the CA Act.

The purpose of the CA Act is to provide for the organization and delivery of programs and services that further the conservation, restoration, development and management of natural resources in watersheds in Ontario. The CA Act further describes the objects

of a conservation authority, which are to provide, in the area over which it has jurisdiction, a variety of mandatory programs and services as defined in the act and associated regulations. This includes, programs and services to manage risks related to natural hazards, monitor water resources, and conserve and manage lands owned or controlled by the authority; an Authority shall also fulfill any duties and responsibilities as a source protection authority under the *Clean Water Act*.

The CA Act also provides that a conservation authority may enter into agreements to provide additional programs and services on behalf of a municipality situated within its area of jurisdiction, or to provide any other program or service it may deem advisable to further the purposes of the Act.

The CA Act enables conservation authorities with broad powers for the purpose of accomplishing their objects. This includes the ability to study and investigate the watershed to assist in developing programs and services, to acquire and dispose of land, to develop and use lands acquired for purposes not inconsistent with its objects, to collaborate and enter into agreements, and to create reservoirs, construct dams and control the flow of surface waters in order to prevent or reduce the adverse effects of flooding.

Section 21.1 of the CA Act requires conservation authorities to provide programs and services related to the risk of natural hazards, the conservation and management of lands owned or controlled by the authority, the authority's responsibilities as a source protection authority under the *Clean Water Act*, and other programs and services as prescribed by regulations created under the CA Act.

Ontario Regulation 686/21, Mandatory Programs and Services, (O. Reg. 686/21) under the CA Act further details the responsibilities of conservation authorities to manage risks related to natural hazards. This includes responsibilities related to reviewing and providing comments for plans of development under the *Planning Act*, *Aggregate Resources Act*, *Drainage Act*, *Environmental Assessment Act* and *Niagara Escarpment Planning and Development Act*, as well as responsibilities for administering and enforcing the regulations of the CA Act.

Section 21.1.1 further enables conservation authorities to enter into agreements with municipalities within their jurisdiction to provide municipal programs and services under a memorandum of agreement. Section 21.1.2 provides that a conservation authority may provide any program or service that it determines are advisable to further the purposes of the CA Act.

In accordance with these powers and the provisions of the CA Act more generally, conservation authorities have been given a broad mandate to work at the watershed level to conserve, restore and responsibly manage Ontario's water, land, and natural resources.

3.1.1 Conservation Authority Regulation of Development

The CA Act first empowered conservation authorities to establish development control regulations in 1956, for the purpose of prohibiting filling in floodplains. The regulations were broadened in 1960 to regulate the placing or dumping of fill in defined areas where, in the opinion of a conservation authority, the control of flooding, pollution or the conservation of land may be affected. Further amendments to the CA Act in 1968 expanded the regulations to prohibit or control construction and alteration to waterways, in addition to filling.

In 1998, the *Conservation Authorities Act* was amended to ensure that regulations under the CA Act were consistent across the province, and complementary to the current provincial environmental and natural hazard policies of the time. These changes led to the replacement of the earlier “Fill, Construction and Alteration to Waterways” Regulation, with the “Development, Interference with Wetlands and Alterations to Shorelines and Watercourses” Regulation (*Ontario Regulation 97/04*), which was passed in 2004.

Ontario Regulation 97/04 outlined the content that each conservation authority’s “Development, Interference with Wetlands and Alterations to Shorelines and Watercourses” Regulation must contain. The regulation required all conservation authorities to regulate Great Lakes shorelines, interconnecting channels, inland lakes and wetlands, in addition to the areas and features each conservation authority historically regulated. In 2006, individual regulations were passed for each Conservation Authority to be consistent with *Ontario Regulation 97/04*, including *Ontario Regulation 161/06*, HCA’s *Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses*.

Between 2017 and 2024, amendments were made to the CA Act, including amendments impacting the regulation of development. The changes made by the government during this time were intended to streamline regulatory requirements to focus on natural hazards and public safety. Changes that came into effect on April 1, 2024 revoked *Ontario Regulation 161/06* and individual conservation authority development regulations. These regulations were replaced by *Ontario Regulation 41/24, Prohibited Activities, Exemptions and Permits (O. Reg. 41/24)*, a single regulation to address matters related to CA regulation of development.

Earlier amendments to sections 28 and 30.1 of the CA Act addressing regulation of development activities, permitting and enforcement also came into effect on April 1, 2024. The CA Act and *O. Reg. 41/24* must be reviewed in conjunction to understand how conservation authorities administer the regulation of development activities.

The changes implemented April 1, 2024 removed the consideration of natural heritage matters (previous ‘conservation of land’ and ‘pollution’ tests under *Ontario Regulation 97/04*) from permitting decisions. However, the CA Act continues to provide for the regulation of development activities in and adjacent to watercourses, wetlands and

hazard prone areas such as river valleys and shorelines, and permits continue to be required for development activities in such areas in most cases.

Under section 28.1 of the CA Act, a conservation authority may grant permission for development and other activities in a regulated area where it is of the opinion the activity is not likely to affect the control of flooding, erosion, dynamic beaches or unstable soil or bedrock, or create conditions that in the event of a natural hazard might jeopardize the health or safety of persons, or result in the damage or destruction of property.

The Minister of Natural Resources and Forestry has certain powers under the *Conservation Authorities Act* that may at times supersede the power granted to conservation authorities. Where a conservation authority refuses a permit or attaches conditions to a permit that an applicant objects to, the applicant may request a review of the decision by the Minister. The Minister may also issue orders to make a permitting decision in place of a conservation authority. The circumstances under which the Minister may issue an order to make a permitting decision in place of a conservation authority or undertake a review of a conservation authority permitting decision are more specifically described in *Ontario Regulation 474/24, Minister's Reviews under Sections 28.1, 28.1.2 of the Act and Minister's Orders under Section 28.1.1 of the Act*.

The Minister may also authorize development projects through section 47 of the *Planning Act*, which enables the Minister to issue zoning orders. When a conservation authority receives a permit application for a project authorized through a zoning order, Section 28.1.2 of the CA Act generally requires that the permit be granted if the project is not to be carried out in a Greenbelt Area.

The provisions of the CA Act and regulations that provide for the regulation of certain development activities are intended to help in the achievement of the broad goals and objectives of the conservation authorities, including in particular those related to the protection of people and property from natural hazards.

3.2 Planning Act

The *Planning Act* is the principal statute that guides Ontario's land use planning system, setting out the rules for land use planning and decision making. The key purposes of the Act are to promote sustainable economic development in a healthy natural environment, to integrate matters of provincial interest into municipal planning decisions, to recognize the decision-making authority and accountability of municipal councils in planning, and to provide for open, accessible, timely and efficient planning processes.

The *Planning Act* provides for a land use planning system led by provincial policy, but assigns municipalities the principal role in make local land use planning decisions to guide the development of communities. Municipalities are required by the Act to prepare planning documents, such as an official plan and a zoning bylaw, to define local planning goals, policies, and regulations to guide land use and development. The Act provides municipalities with a variety of tools for facilitating land use planning and

development, including the ability to pass bylaws to restrict the use of land for specific purposes (zoning), and to control site development and design (site plan control), provisions for the division of land (consent and subdivision), and for the conveyance of land to the municipality for parks and recreational purposes. The Act also sets out requirements for public notification regarding planning matters and provisions for the appeal of land use planning decisions. The Act requires that municipalities notify public agencies, including conservation authorities with jurisdiction in the area, of planning proposals so these agencies can offer relevant comments.

The province plays a significant role in the land use planning system. The Ministry of Municipal Affairs and Housing (MMAH) administers the *Planning Act*, and provides a variety of planning services to municipalities and advice to the public more generally on land use planning issues. MMAH continues to administer local planning controls and make planning decisions under the Act in some cases. The province may prepare provincial plans to inform land use planning, such as the Greenbelt Plan and Niagara Escarpment Plan. The province also issues policy statements under the *Planning Act*, which provides the basis for defining a policy-led planning system for Ontario.

3.2.1 Provincial Planning Statement

The Provincial Planning Statement, 2024 (PPS) was created under Section 3 of the *Planning Act* to provide direction to municipalities regarding land use planning policies in areas of provincial interest. It replaces both the Provincial Policy Statement, 2020 and A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2019. All decisions affecting land use planning matters must be consistent with the PPS.

The PPS recognizes that Ontario's communities, and the challenges they face, are diverse. The province's vision for the land use planning system is to support the long-term prosperity and social well-being of Ontario, through planning that promotes sustainable and resilient communities and a healthy environment. To achieve these ends, the PPS defines policies which provide for appropriate and efficient development while also protecting resources of provincial interest, public health and safety, and the quality of the natural and built environment. Recognizing there are complex interrelationships between economic, social and environmental considerations in land use planning, the PPS supports an integrated, balanced and long-term approach to planning.

Conservation authorities play an important role in supporting the provincial policy-led land use planning system, and in implementing the policies of the PPS as they relate to natural hazards and watershed planning. Conservation authorities review and comment on development applications under the *Planning Act* to help ensure that decisions made under the Act are consistent with the natural hazard policies of the PPS.

The PPS also directs municipalities to collaborate with conservation authorities to identify *hazardous lands* and *hazardous sites*, and to manage development in these areas. The PPS encourages all municipalities to undertake watershed planning, but in the case of "large and fast-growing municipalities", the PPS mandates watershed

planning. Municipalities are encouraged to collaborate with conservation authorities in their jurisdiction as they undertake watershed planning.

3.3 Greenbelt Act

Ontario enacted the Greenbelt Act in 2005 to protect natural heritage and water resource systems, preserve agricultural land as a source of food and employment, and to control urbanization in Southern Ontario. The Act enabled the Province to identify a Greenbelt Area and to establish a Greenbelt Plan which sets out policies with respect to lands within the Greenbelt Area. The Greenbelt Area encompasses 2 million acres of protected land, and includes the Oak Ridges Moraine Area, Niagara Escarpment Plan Area, the Parkway Belt West Plan Area, lands designated as Urban River Valley and lands designated as Protected Countryside. In 2024, an amendment was announced to the Greenbelt Act which prohibits the removal of land from the Greenbelt Area without legislation.

The Greenbelt Act requires that planning decisions, including decisions under the Planning Act, must conform to the Greenbelt Plan, which was first enacted in 2005. The plan has been subsequently amended four times, most recently in 2024. The Plan sets various goals and policies for the different land use designations within the Greenbelt area. Within the lands designated as Protected Countryside, the Plan further identifies three land use designations with different geographic-specific policies: Agricultural System, Natural System, and settlement areas.

The Greenbelt Plan is primarily implemented through municipal official plans. The Greenbelt Plan policies must also be read in conjunction with other provincial plans and municipal official plans, as well as other land use planning and resource management related legislation, regulations and standards. It compliments and builds upon the policies identified in the PPS by providing additional, more specific policies for the geographic areas covered by the Greenbelt Plan. In the case of conflict over other legislation, the Greenbelt Plan prevails over the PPS, Official Plans, and Zoning By-laws. However, in the case that there is a conflict between the Greenbelt Plan and either the Oak Ridges Moraine Plan or the Niagara Escarpment plan, the Oak Ridges Moraine Plan or the Niagara Escarpment Plan prevails over the Greenbelt Plan.

Conservation authorities play an important role in progressing the goals of the Greenbelt Plan. The Plan mandates that key natural heritage features and key hydrologic features must be shown in Official Plans, and that the delineation of these features can be undertaken by municipalities and conservation authorities. The Province can add land to the Protected Countryside of the Greenbelt, and may work with municipalities, conservation authorities, and other stakeholders to identify potentially suitable areas for inclusion.

3.4 Niagara Escarpment Planning and Development Act

The Niagara Escarpment spans over 725 km through Southern Ontario and includes geological and ecological features not found elsewhere in Canada. The *Niagara Escarpment Planning and Development Act* (NEPDA) was enacted to maintain the

Niagara Escarpment and land in its vicinity substantially as a continuous natural environment, and to ensure only such development occurs as is compatible with that natural environment.

The Niagara Escarpment Plan (NEP) is established under the NEPDA and serves as a framework of objectives and policies to strike a balance between development, preservation and the enjoyment of the Niagara Escarpment and its resources. The NEP delineates the escarpment and adjacent lands into seven land use designations and acts as a resource management document which contains specific direction for land use decisions in each of the land use designation areas.

Overall administration of the NEP is the responsibility of the Niagara Escarpment Commission (NEC). Members of the NEC are appointed by Order-in-Council, and represent the public and the specific municipalities that exist within the Escarpment area. The NEC reports to the Government of Ontario through the Ministry of Natural Resources.

Several areas within the NEP are owned by the Hamilton Conservation Authority, as many of HCA's Conservation Areas are located partially or wholly within NEP areas and the Niagara Escarpment Parks and Open Space System (NEPOSS). The NEP takes precedence over all by-laws passed by a municipality that are in force, to the extent of any conflict.

3.4.1 NEC Development Permit Applications

The NEPDA allows the Minister to make regulations designating any area or areas of land within the Niagara Escarpment Planning Area as an area of development control. No person shall undertake development in an area of development control unless such development is exempt under the regulations of the NEPDA or the development complies with a development permit issued under the NEPDA.

Conservation authorities support the NEC development permit application review and approval process. A conservation authority may review development permit applications for the purpose of commenting on risks related to natural hazards.

The NEPDA provides that no other approval or permit required by another Act may be issued until such time as a development permit has been issued or the activity has been deemed to be exempt under the NEPDA. This includes permits that may be required under the *Conservation Authorities Act*. A conservation authority may not issue any permit under the CA Act until any required development permit has been issued by the NEC.

3.5 Environmental Assessment Acts

Within Ontario environmental assessments are governed by two Acts: Canada's *Impact Assessment Act* and the Ontario *Environmental Assessment Act*. Federally initiated projects fall under the mandate of the *Impact Assessment Act*, while all others are

administered and addressed according to the Ontario *Environmental Assessment Act*. However, these two Acts can apply to the same project and in this case the proponent must meet the requirements of both Acts.

Although Conservation Authorities are more commonly involved with assessments that fall under the provincial legislation, an awareness of the general principles of the federal legislation and process provides useful context for how an Authority may become involved in an environmental assessment process.

3.5.1 The Impact Assessment Act

The *Impact Assessment Act* governs federal environmental assessments in Canada. Its scope is nationwide and applies to activities listed in the Physical Activities Regulations created under the *Impact Assessment Act* (examples of designated projects include the construction, operation, decommissioning and abandonment of mines, renewable energy facilities, hazardous waste facilities, etc.). The Act also applies to projects undertaken on federal land and projects undertaken outside Canada which require the assessment of Canadian authorities.

The *Impact Assessment Act* defines the impact assessment process and timelines for regulated projects. The Act outlines the factors that should be considered during assessment, provides tools for coordination between jurisdictions, supports participant engagement through funding programs, requires transparency, and identifies the methods and authorities for compliance. Prior to the enactment of the *Impact Assessment Act* in 2019, environmental assessments were governed federally by the *Canadian Environmental Assessment Act*. Changes introduced through the *Impact Assessment Act* include the focus on both the positive and negative impacts of projects, rather than just the adverse impacts, and an increased focus on socio-economic effects in addition to biophysical effects.

3.5.2 The Ontario Environmental Assessment Act

The *Environmental Assessment Act*, passed by the Ontario government in 1975, sets up a process for reviewing the environmental impact of proposed activities prior to their implementation. The stated purpose of the Act is “the betterment of the people of the whole or any part of Ontario by providing for the protection, conservation and wise management in Ontario of the environment”. The concept of ‘environment’ in this regard is fairly broad, and includes biophysical, socio-economic, and cultural factors. The Act applies to government ministries and agencies, Conservation Authorities and municipalities, and some private sector undertakings. Proponents of projects subject to the Act must demonstrate that alternatives to the undertaking and alternative methods of implementing the undertaking have been considered, and that the chosen approach is environmentally preferable and needed.

Since its enactment, the Act has been amended several times by the Province. In 2024, a regulation was made under the *Environmental Assessment Act* that introduced a project list approach for comprehensive environmental assessments. Under the Ontario

Environmental Assessment Act, there are two types of environmental planning and approvals process: comprehensive and streamlined. The recently introduced project list outlines the types of projects that require comprehensive assessments. Both types of environmental assessments (EAs) not only mitigate environmental impacts but also provide opportunities for enhancement.

Comprehensive EAs are required for projects that are identified in *O. Reg. 50/24: Part II.3 Projects – Designations and Exemptions* under the *Environmental Assessment Act*. These include significant waste projects, significant electricity generation facilities and large waterfront projects. Comprehensive EAs require that Terms of Reference (TOR) be developed and submitted to the Ministry of the Environment. Once approved, the EA project is then completed according to the details of the TOR. This process generally includes reports to relevant authorities at key decision points, and an extensive public consultation process.

Streamlined EAs are undertaken for types of projects that are carried out on a routine basis, and whose environmental impacts can be largely predicted and mitigated. Proponents of these projects are required to follow a self-assessment and decision-making process. The streamlined process is used for both 'Class EAs' and types of projects exempt from comprehensive EAs under *O. Reg. 50/24*.

Class EAs sets out a standardized planning process for certain classes or groups of activities. Class EA documents may establish different project category types based on considerations such as activity scale, cost, potential impact, etc., with assessment and consultation requirements varying depending on the project category. There are currently ten Class EAs in Ontario. These cover activities such as municipal road, sewage and water infrastructure, highway construction and maintenance, transit projects, and other public sector activities identified. There is also a Class EA for remedial flood and erosion control projects that may be carried out by a conservation authority.

Ontario Regulation 686/21 made under the *Conservation Authorities Act* provides that a Conservation Authority shall provide programs and services to enable the review of proposals subject to the *Environmental Assessment Act* for the purpose of commenting on any risks related to natural hazards that may arise from a proposal. In this regard, a conservation authority may become engaged in the review of various project proposals circulated by the proponent of a project covered by a Class EA. Most commonly, this would include the review of municipal infrastructure projects under the Municipal Class Environmental Assessment and provincial infrastructure projects under the Class Environmental Assessment for Provincial Transportation Facilities and Municipal Expressways.

3.6 Drainage Act

Statute law for land drainage dates back almost 150 years in Ontario. In 1894, the original *Municipal Drainage Act* was passed and provided for the first orderly, equitable mechanisms through which agricultural drainage issues could be handled. The

legislation has evolved since then, and in 1976 the newly named *Drainage Act* was established. The Act continues to be in use today and to provide a process for one or more landowners to obtain a legal drainage outlet for an 'area requiring drainage'. The establishment of a municipal drain is a communal project, benefiting and paid for by those property owners whose lands are served by the drain. Local municipalities administer the provisions of the Act; while the Ministry of Agriculture, Food and Agribusiness provides policy and program implementation assistance to them.

The Drainage Act and Section 28 Conservation Authorities Regulations Team (DART) was established in 2008 by the Ministry of Natural Resources and the Ministry of Agriculture, Food and Rural Affairs to propose solutions to issues shared by municipalities and conservation authorities arising from conflicting provisions of the *Drainage Act* and *Conservation Authorities Act*. A protocol was developed (DART protocol) to establish a means for municipalities and CAs to fulfill their responsibilities without compromising the intent of either statute.

The protocol was updated in 2024 to reflect changes to the *Conservation Authorities Act* and passing of *Ontario Regulation 41/24, Prohibited Activities, Exemptions and Permits*. The protocol continues to outline Standard Compliance Requirements (SCRs) for certain repair and maintenance activities to fulfill permission requirements under Section 28 of the *Conservation Authorities Act*. The SCRs allow permission to be granted efficiently based on requirements that are more activity-specific than the general permitting process. The protocol still recommends that some activities, including cleanouts within regulated wetland limits, require full permits. The DART protocol facilitates conservation authorities mandate to review proposals subject to the *Drainage Act* for the purpose of commenting on any risks related to natural hazards that may arise from a proposal.

3.7 Aggregate Resources Act

The *Aggregate Resources Act* (ARA) was enacted in 1990 to govern the management of aggregate resources in Ontario. This includes provisions for the government to control and regulate aggregate operations on designated private and Crown lands, to minimize adverse impacts on the environment, and to require the rehabilitation of land after the excavation of aggregate resources.

The ARA requires proponents to acquire a license or permit from the Ministry of Natural Resources to be approved for excavating aggregate resources. Prior to obtaining a license, proponents are required to submit a detailed site plan and supporting technical studies to provide details regarding site conditions, proposed operations, potential impacts to natural heritage, water, agricultural and cultural features and resources, as well as plans for rehabilitation. Requirements for a licence or permit application are outlined in *Ontario Regulation 244/97* under the ARA, and in supporting *provincial standards* for the preparation of site plans and technical reports. When a license is approved, the ARA empowers the MNR to monitor aggregate operations and enforce compliance, including for the required rehabilitation of the site.

Ontario Regulation 686/21 made under the *Conservation Authorities Act* enables a Conservation Authority to review proposals subject to the *Aggregate Resources Act* for the purpose of commenting on any risks related to natural hazards that may arise from a proposal. In this regard, a conservation authority may become engaged in the review of applications for aggregate operations. In some cases, a proposed aggregate operation may also require an application for land use designation or zoning change under the *Planning Act*, and a conservation authority may also be engaged in the review of the proposal through the land use planning process.

3.8 Municipal Official Plans

Official Plans (OPs) are policy documents created by municipalities that inform land use planning and development within their communities. When a municipality develops an OP, they must consult the public and with Indigenous communities. OPs must conform to the Provincial Planning Statement and other provincial plans, and may require approval from the Province to take effect. Once an OP is enacted by a municipality, all municipal services, bylaws, and secondary plans must conform to it. Communities are expected to update and amend their OPs over time to ensure that the policies are aligned with direction from the Province and reflect the current planning needs of the community.

Within HCA's watershed, the City of Hamilton and Township of Puslinch both have OPs that affect land use planning in their respective jurisdictions. In the case of the City of Hamilton, there are two Official Plans: one for the City's urban area and another for the rural area. Key features for each of the OPs relevant to HCA's watershed and their relevance to Conservation Authorities are summarized below.

City of Hamilton

City of Hamilton has two Official Plans that apply to different areas within Hamilton, but the plans are complementary and both are designed to serve the City's vision of being a strong, vibrant, healthy, and diverse community. The Urban Hamilton Official Plan (UHOP) applies to areas within City of Hamilton's Urban Boundary. UHOP defines the City's urban boundary, and guides land use planning and development within it. The Rural Hamilton Official Plan (RHOP) apply to the rural areas in the City. RHOP generally directs non-farm and non-resource-based growth to rural settlement areas with boundaries that are not to be expected. In conjunction, the two plans encourage residential intensification and generally directs growth towards the City's existing built-up area.

Both plans direct hazard lands to be placed in a separate zoning classification under the Zoning By-law. With some exceptions, the UHOP prohibits development and site alteration within hazards lands, which include both hazardous lands and hazardous sites as identified and mapped by conservation authorities within the City. The plans require that development proposals within conservation authority regulated areas are only approved by the City if they are permitted by the applicable conservation authority.

The Official Plans also include Special Policy Areas (SPAs), Area Specific Policies (ASPs), and Site Specific Policies (SSPs). SPAs are areas spanning multiple parcels of land where additional studies are required to determine land uses. ASPs are policies that apply to specific areas where unique consideration is needed. They include policies specific to the Dundas Two Zone Floodplain Area. Whereas a one-zone system is used to identify and manage floodplain areas for the rest of the City, the two-zone system for the Dundas Two Zone Floodplain Area categorizes portions of the floodplain into a floodway and a flood fringe. Through these policies, some development activities that would be prohibited in the floodway can be permitted in the flood fringe. SSPs are policies that apply to specific parcels of land. Some SSPs require additional clearance of activities from conservation authorities (e.g. drainage diversion between creeks in two watersheds).

Township of Puslinch

The Township of Puslinch is a lower-tier municipality in the County of Wellington. For lower-tier municipalities, the adoption of their own Official Plans is discretionary and not mandated by the *Planning Act*. In the case of Puslinch, the Township has not adopted its own OP, and relies on the policies set out in the County of Wellington OP. In addition to the general policies of the County OP, it also provides local area specific policies for the Township of Puslinch in order to provide direction regarding what types of developments should be permitted in different areas of Puslinch.

3.9 Hamilton Harbour Remedial Action Plan

Hamilton Harbour is located at the western end of Lake Ontario, bounded by the City of Burlington to the north and City of Hamilton to the south. It supports Ontario's largest port, the Port of Hamilton, and significant commercial and industrial land use, as well as municipal parkland and recreational uses. Cootes Paradise Marsh, the largest coastal wetland on the Great Lakes system, is located at the western end of the harbour. A number of major watersheds drain to Hamilton Harbour, including Red Hill Creek, Spencer Creek and Grindstone Creek.

Hamilton Harbour is identified as an Area of Concern (AOC) under the Great Lakes Water Quality Agreement (GLWQA). AOC are locations on the Great Lakes system where water quality and ecosystem health have been degraded as a result of human activities. Conditions in Hamilton Harbour have been impacted by a 150-year history of industrial and urban development, and related discharges of industrial and municipal waste water and stormwater.

The GLWQA provides for the establishment of Remedial Action Plans (RAP) for AOCs. RAPs are developed locally under a partnership framework in order to guide restoration efforts. The Hamilton Harbour Remedial Action Plan (HHRAP) was developed between 1987 and 1992, and identifies the environmental concerns and impacts (impairments) to the harbour and their causes, goals and criteria for restoring beneficial use impairments (BUI), remedial actions to be taken and the agencies/authorities responsible for implementing them, and a monitoring and evaluation plan for tracking progress.

The federal and provincial governments, through the Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem (COA), share responsibility for implementing the HHRAP. Implementation is also supported by municipal government, non-governmental organizations, business and industry, academia, Indigenous communities and the public. These groups work through the Bay Area Implementation Team (BAIT) and various technical committees to oversee implementation of the HHRAP and track progress. HCA participates in the collaborative governance structure of the HHRAP, and supports its implementation through various programs and activities, such as its watershed ecological and water quality monitoring programs.

3.10 Description of Hamilton Conservation Authority Roles and Responsibilities

The purpose of the *Conservation Authorities Act* (CA Act) is to provide for the organization and delivery of programs and services that further the conservation, restoration, development and management of natural resources Ontario. The Act provides for the establishment of individual conservation authorities to undertake programs and services to meet these purposes on a watershed basis. The fundamental role for conservation authorities focuses on natural hazard management. In this capacity, a conservation authority may undertake a variety of roles and activities related to land use planning and regulation of development activities, including the following:

- i. Resource Management Agencies – The CA Act provides conservation authorities with a broad mandate to undertake a variety of programs and services on a watershed basis to further the conservation and management of natural resources within their areas of jurisdiction. A conservation authority develops its programs and services to reflect local resource management needs within their jurisdiction, which are approved by the CA Board of Directors and may be funded from a variety of sources including municipal levies, fees for services, provincial and/or federal grants and self-generated revenue.
- ii. Regulatory Authorities – Part VI of the CA Act and *O. Reg. 41/24* made under the Act provide for the regulation of certain types of activities in and adjacent to river and stream valleys, wetlands, shorelines of inland lakes and the Great Lakes-St. Lawrence River System and other hazardous lands. A conservation authority may issue permits for prohibited activities where it is of the opinion certain criteria, as laid out in the CA Act, are satisfied. *O. Reg. 686/21* made under the Act requires that a conservation authority provide programs and services to ensure its regulatory duties and responsibilities to administer Part VI of the Act are met.
- iii. Delegated ‘Provincial Interest’ in Plan Review – As outlined in the Conservation Ontario/Ministry of Natural Resources (*MNR*)/Ministry of Municipal Affairs and Housing (*MMAH*) Memorandum of Understanding (*MOU*) on CA Delegated Responsibilities, conservation authorities have been delegated responsibilities to represent the provincial interest in natural hazards in land use planning matters. Under *O. Reg. 686/21*, section 7, a conservation authority, whether acting on behalf of the MNR or in its capacity as a public body under the *Planning Act*,

shall provide programs and services for the purposes of helping to ensure that the decisions made under the *Planning Act* are consistent with the natural hazard policies of any policy statements issued under that Act.

- iv. Public Bodies – Pursuant to the *Planning Act*, conservation authorities are considered as ‘public bodies’, and as such are to be notified of certain municipal policy documents and planning applications. Conservation authorities may comment as per their Board approved policies as local resource management agencies to the municipality or planning approval authority on these documents and applications, and retain certain appeal rights for decisions made under the *Planning Act*.
- v. Service Providers – Individual conservation authorities may enter into agreements with ministries and agencies of government, as well as municipal councils, local boards and other organizations and individuals to further the objects of conservation authority and the purposes of the CA Act.
- vi. Landowners – Many conservation authorities are landowners, and as such, may become involved in land use planning and development processes under the *Planning Act*, either as an adjacent landowner or as a proponent. Under *O. Reg. 686*, section 9(1) a conservation authority shall provide programs and services to enable the authority, in its capacity as an owner of land, to make applications or comment on matters under the *Planning Act*.

4 POLICIES FOR LAND USE PLANNING

Land use planning is the process by which decisions are made on how land is to be used and resources allocated within a region or community. Land use planning typically seeks to balance community growth and development with social objectives, management of natural resources, and conservation of the environment.

Ontario has a policy-led land use planning system, governed by the *Planning Act* and policy statements issued under the Act. The *Provincial Planning Statement* (PPS) defines policies which provide for growth and development while also protecting resources of provincial interest, public health and safety, and the quality of the natural and built environment. The PPS supports an integrated, balanced and long-term approach to planning to achieve its economic, social and environmental objectives.

Municipal planning authorities are responsible for undertaking land use planning that implements the provincial policy framework. Conservation Authorities play an important role supporting municipalities in the implementation of the policy-led land use planning system. This includes collaborating on watershed planning and managing risks to public health and safety that may result from natural hazards.

4.1 Land Use Planning Review (Plan Input and Plan Review)

Historically, most land use planning decisions were made by the province. However, in the 1990s, in an effort to promote greater local decision making the province began transferring approval authority for certain planning matters to municipalities. At this time, the province also delegated responsibility to conservation authorities to represent the provincial interest in natural hazard policy matters. While the province retains a significant role in land use planning through the development of the policy-led framework, most land use planning decisions are now made by local municipal planning authorities.

Through the enactment of *Ontario Regulation 686/21* under the *Conservation Authorities Act*, the province identified the programs and services that are mandatory for a conservation authority to provide. This includes a range of programs and services related to managing risks associated with natural hazards, confirming that conservation authorities continue to have delegated responsibility for addressing the provincial interest in natural hazard matters and for ensuring that decisions under the *Planning Act* are consistent with the natural hazard policies of the PPS and conform with any natural hazards policies included in any applicable provincial plan.

In this regard, the HCA continues to support its local planning authorities and municipal land use planning processes through programs and services that provide mapping and information related to the identification of natural hazards, input to municipal official plans on natural hazard policy development, and technical review and advisory comments on natural hazard matters for development applications submitted under the *Planning Act*.

HCA also provides a similar review and commenting function regarding risks from natural hazards that may arise from proposals made under other legislation, including the *Aggregate Resources Act*, *Environmental Assessment Act*, and *Niagara Escarpment Planning and Development Act*.

In carrying out its land use planning review functions and responsibilities HCA has the following objectives:

- Provide information and mapping to identify areas of natural hazards
- Promote appropriate land use designation and zoning of hazardous lands and wetlands
- Collaborate on the development and implementation of watershed planning
- Support the development of policies and guidelines that provide for the management of risks and impacts associated with natural hazards, and which protect hydrological and ecological features and functions (watercourses, wetlands, etc.) that play a role in regulating and mitigating natural hazards
- Promote the consideration of watershed-scale impacts and watershed health in land use planning decisions
- Ensure that land use planning decisions provide for the protection of public health and safety and property from natural hazards

The policies established in Section 4 will be applied to inform any requirements, comments and recommendations made by HCA through its land use planning input and review programs and services.

4.1.1 General Policies for Plan Input and Plan Review

HCA may review and comment on land use planning matters in a number of different capacities, including as the delegated authority for representing the provincial interest in natural hazards for applications and other matters under the *Planning Act*. HCA may also review and comment on natural hazard matters for proposals made under the *Aggregate Resources Act*, *Environmental Assessment Act*, and *Niagara Escarpment Planning and Development Act*. The following general policies will be applied to HCA's consideration and comments on planning applications and other proposals, and must be considered in conjunction with the policies of Sections 4.2 to 4.5.

- a) HCA will work collaboratively with municipalities and other agencies and ministries, as required, to implement its legislated responsibilities to provide land use planning input and review comments on natural hazard matters for proposals submitted under the *Planning Act*, *Aggregate Resources Act*, *Environmental Assessment Act* and *Niagara Escarpment Planning and Development Act*.
- b) HCA will work cooperatively with municipalities, ministries, agencies and applicants, as applicable, on land use planning matters to ensure efficient review processes and to promote coordination of review processes and requirements where multiple statutory or regulatory approvals may be required.

- c) HCA supports and will provide input to the development and maintenance of land use planning policy documents, plans and guidelines that are based on the most current information available regarding natural hazards and best practices for their management and mitigation of associated risks.
- d) HCA supports and will promote land use planning processes whereby proposals for *development* and other activities are first evaluated under the applicable policy documents and plans in order to establish the principal of the proposed land use and appropriateness of the activity, prior to making an application for any required regulatory approval or permit that would implement the proposal.
- e) HCA will encourage and participate in pre-consultation on proposals for *development* and other activities in order to identify HCA's interests and requirements.
- f) Comments and recommendations provided by HCA will consider and be consistent with the *Provincial Planning Statement* or any other provincial policy statements issued under the *Planning Act*, and conform with provincial plans where applicable.
- g) When commenting on a planning application HCA will include comments regarding the applicability and requirements of any applicable development regulations under the *Conservation Authorities Act*.
- h) HCA may recommend the completion of technical studies and plans (subwatershed study, hydrogeological study, floodplain impact assessment, karst assessment, etc.) to support a proposal for *development* or other activity in order to be able to assess its consistency with applicable policies. Study requirements are to be confirmed and scoped in consultation with the HCA and other applicable authorities, and must be completed in accordance with accepted standards, practices and guidelines.
- i) HCA may reference existing available studies, including watershed plans, subwatershed plans, environmental assessments and other *comprehensive studies*, to help guide and inform its plan input and plan review comments.
- j) *Development* or any other activity which would be susceptible to natural hazards, or would cause or aggravate natural hazards, will generally not be supported unless natural hazards have been addressed in accordance with the policies of Section 4 and Section 5, as may be applicable.
- k) HCA comments on land use planning matters will recognize and consider, where appropriate, the interconnections between natural hazards, *water resource systems*, and *natural heritage systems*, and where such systems and their constituent features and functions may play a role in the control or mitigation of natural hazards.
- l) HCA comments on land use planning matters will recognize and consider, where appropriate, the potential *impacts of a changing climate* on the risks associated with natural hazards.

- m) HCA comments on land use planning matters will recognize and consider, where appropriate, the cumulative impacts of development on natural hazards at a watershed scale.
- n) HCA may support the transfer or dedication of *hazardous lands* or *hazardous sites* to public ownership through land use planning processes where deemed practical and to be of public benefit. Hazardous lands and sites will only be accepted by HCA through dedication in accordance with HCA's Land Securement Strategy.
- o) Where HCA is requested by a municipal planning authority or the province to support an appeal of a planning application under the *Planning Act* at the Ontario Land Tribunal, HCA will work to support the appeal as may be required and within its mandate, and subject to receiving authorization from the HCA Board of Directors.
- p) HCA may undertake an appeal to the Ontario Land Tribunal of a decision under the *Planning Act* as a public body in accordance with that Act, if it relates to a natural hazard matter and subject to receiving authorization from the HCA Board of Directors.

4.2 Watershed Planning Approach

Watershed planning provides a comprehensive and integrated framework for the characterization and assessment of watershed conditions and health. It takes an ecosystem-based approach to identifying hydrological and ecological systems, features and functions, and their interconnections, and establishes direction for the protection, enhancement, and restoration of water and other natural resources within a watershed.

The Provincial Planning Statement (PPS) recognizes the watershed as the ecologically meaningful scale for integrated and long-term planning, and as a foundation for considering cumulative impacts of development. The PPS supports municipalities undertaking watershed planning in collaboration with conservation authorities.

Planning authorities involved in watershed planning may develop watershed and subwatershed plans, which may address similar issues but differ in scope and objectives. Where a watershed plan provides direction for the management of water and other natural resources at the watershed scale, a subwatershed plan pertains to a smaller area within the larger watershed, and provides a greater level of detail related to the local context. Watershed planning may inform subwatershed planning, with resulting subwatershed plans refining the objectives and assessments of a watershed plan and tailoring direction to address local conditions and issues. Both watershed and subwatershed plans may address a variety of matters, including but not limited to:

- Water quality and quantity assessments and management;
- Identification of water resource and natural heritage features and systems;
- Development, servicing and infrastructure needs and objectives;
- Evaluation of growth and development scenarios;
- Establishment of targets and objectives for restoration and enhancement; and
- Define implementation strategies and monitoring requirements.

Watershed planning, used in conjunction with subwatershed planning and other land use planning processes and studies, can provide an effective means for supporting the achievement of local development, resource management and conservation goals and objectives, including the mitigation of risks to public health and safety associated with natural hazards.

4.2.1 Policies for Watershed and Subwatershed Planning

- a) HCA will promote using the *watershed* as the ecologically meaningful scale for integrated and long-term planning, and for providing a foundation for the consideration of cumulative impacts of *development*.
- b) HCA supports the development of watershed and subwatershed plans and related studies to help guide land use and infrastructure planning, the protection of *water resource systems*, and the identification of natural hazards and approaches to managing and mitigating associated risks to public health and safety.

- c) HCA will work collaboratively with municipalities in the development of a watershed and subwatershed planning work program, and in the completion of related studies and plans.
- d) HCA will support watershed and subwatershed planning through the provision of water resource and natural hazard information and data that has been collected or is available from existing HCA programs and resources.
- e) HCA will recommend the completion or update of watershed or subwatershed plans, as appropriate, prior to or in conjunction with any proposed urban boundary expansion application.
- f) Where undertaking watershed and subwatershed planning, HCA will support the evaluation of cumulative impacts resulting from development and consideration of the *impacts of a changing climate, on water resource systems, hazardous lands and hazardous sites*.
- g) In providing comments and recommendations on land use planning matters HCA may reference and rely on any applicable watershed plan, subwatershed plan, or related study or plan.

4.3 Natural Hazard Management

Ontario has a long history of settlement in areas prone to natural hazards, including areas adjacent to rivers, streams, valleys and shorelines of the Great Lakes. As a result of development in such areas, Ontario has experienced significant property damage, economic impacts, social disruption, and even loss of life, due to natural hazard occurrences. Development within areas affected by flooding and erosion, and other natural hazards, increases risks to people, property and public health and safety.

The Ministry of Natural Resources (MNR) is the provincial lead for natural hazard management in Ontario. However, other levels of government and agencies, including municipalities and conservation authorities, play a central role in managing hazards and mitigating their associated risks and impacts. While the MNR is responsible for the development of the overall provincial natural hazard management program, establishing policies, standards and guidelines, and coordinating responses to emergencies resulting from natural hazards, municipalities and conservation authorities are responsible for implementing many aspects of hazard management, including the identification of areas affected by natural hazards within their jurisdiction, and the development of local land use planning and regulatory policies to limit hazard-related risks and impacts.

The province's current approach to managing flooding and other natural hazards adopts elements of both hazards-based and risk-based approaches. A hazards-based approach focuses on determining where hazards exist and then taking steps to prevent activities from occurring in those areas, such as limiting new development. A risk-based approach focuses on determining the risks posed by natural hazards, and then taking steps to reduce those risks to acceptable levels, such as the use of floodproofing or Special Policy Areas to address risks associated with development located in flood-prone areas (Special Policy Advisor, 2019).

The core components, strategies and measures applied to the management of natural hazards generally fall into the following categories – prevention, protection and other mitigation measures, and emergency preparedness, response and recovery. While a broad range of strategies have been important to Ontario's overall approach to managing natural hazards, prevention measures have generally been viewed as the preferred approach and most cost-effective means of reducing risks and impacts, and protecting public health and safety.

Land use planning and the regulation of development in areas prone to natural hazards is a key component of a preventative approach. A central tenant of provincial natural hazard policy is that development shall generally be directed to areas outside of *hazardous lands* and *hazardous sites*. Planning authorities, through the land use planning tools and processes available under the *Planning Act*, can help to reduce the exposure of people and property to hazards by prohibiting or restricting development in areas affected by natural hazards.

4.3.1 Policies for Natural Hazard Management and Development

- a) HCA will work collaboratively with municipalities to identify *hazardous lands* and *hazardous sites*, and to ensure that these lands are designated and zoned appropriately in municipal planning documents.
- b) The limit and extent of *hazardous lands* and *hazardous sites* will be determined in accordance with applicable *provincial standards* and guidelines, as may be amended from time to time, and as generally outlined in Section 5.
- c) HCA will provide input to the development of municipal planning documents and policies, and other land use plans and policy documents as may be appropriate, to address the management of natural hazards and mitigation of their associated risks.
- d) HCA will work with municipalities to prepare for the *impacts of a changing climate* and consider how this may increase risks associated with natural hazards, affect the management of natural hazards, and impact land use planning and development.
- e) HCA will endeavour to ensure its comments on land use planning matters and *development* proposals are consistent with the natural hazard policies of the PPS, or any other policy statements issued under the *Planning Act*, and any other applicable provincial plans.
- f) In commenting on land use planning matters and *development* proposals, HCA will reference the PPS, provincial plans, municipal official plans, and the policies of Section 4 and Section 5, as may be applicable.
- g) HCA will generally seek to direct *development* away from areas potentially impacted by *hazardous lands* and *hazardous sites* wherever possible.
- h) HCA will not support *development* in *hazardous lands* and *hazardous sites* where the proposed use is:
 - i. an institutional use including hospitals, long-term care homes, retirement homes, preschools, school nurseries, day cares and schools;
 - ii. an essential emergency service such as that provided by fire, police, and ambulance stations and electrical substations; or
 - iii. uses associated with the disposal, manufacture, treatment or storage of hazardous substances.
- i) HCA will not support *development* within:
 - i. the *dynamic beach hazard*; or
 - ii. areas that would be rendered inaccessible to people and vehicles during times of *flooding hazards*, *erosion hazards* and/or *dynamic beach hazards*, unless it has been demonstrated that the site has *safe access* appropriate for the nature of the *development* and the natural hazard.

- j) Except as prohibited in policy 4.3.1(h) and 4.3.1(i), HCA may support limited development in areas affected by natural hazards in accordance with the policies of the PPS and Section 4 and Section 5, as may be applicable.
- k) HCA will support development proposals within a *Special Policy Area (SPA)* in accordance with the policies of the SPA.
- l) HCA will work collaboratively with municipal planning authorities and the province in the development of SPA, as may be required, and to periodically review and update existing SPA in accordance with applicable *provincial standards* and guidelines.
- m) HCA recognizes that certain uses, such as public *infrastructure*, *conservation projects* and passive recreational uses, by their nature may be required at times to be located within *hazardous lands* and *hazardous sites*. HCA may support such uses where they have been reviewed and approved through a subwatershed study, *environmental assessment*, or similar *comprehensive study* that has been supported by HCA.
- n) HCA may support *site alteration* or other modifications to *hazardous lands* and *hazardous sites* for the purpose of facilitating development where:
 - i. the activity will result in the mitigation or *remediation* of hazardous conditions, reduce risks to existing development, and improve public safety;
 - ii. the activity has been considered and approved through a subwatershed plan, *environmental assessment*, or similar *comprehensive study* that has been supported by the HCA; and
 - iii. all other applicable policies in Section 4 and Section 5 have been satisfied.
- o) Where *development* or *site alteration* may be considered in *hazardous lands* and *hazardous sites* HCA will recommend the following be demonstrated:
 - i. risks to public health and safety are minor and can be mitigated in accordance with *provincial standards*, including *floodproofing standards*, *protection works standards* and *access standards*;
 - ii. *safe access* for people and vehicles would be available during a natural hazard emergency; and
 - iii. new hazards are not created and existing hazards are not aggravated.
- p) Further to policy 4.3.1(o), HCA will consider the regulatory policies of Section 5.3, and requirements of policy 5.3(d) in particular, when reviewing proposals for development in areas affected by natural hazards and in assessing risks to public health and safety and the potential for impacts.
- q) HCA comments on land use planning matters and *development* proposals will consider and recognize that the hydrological and ecological features and functions that comprise *water resource systems* and *natural heritage systems* may contribute to the control, management or mitigation of *hazardous lands* and *hazardous sites*. HCA will recommend that *water resource systems* and *natural heritage systems* and their constituent features and functions be protected where it would support the management of risks and impacts associated with natural hazards.

4.4 Water Resource Systems

Water resource systems consist of the *ground water features* and areas, *surface water features* (including shoreline areas), *natural heritage features and areas*, and *hydrologic functions*, which are necessary for the ecological and hydrological integrity of the *watershed* (PPS, 2024). *Water resource systems* are an integral part of broader *natural heritage systems*.

Watercourses and their associated valleys and riparian lands, headwater drainage features, wetlands, and Lake Ontario and its shoreline are key components of the *water resource system* within the watersheds of the HCA. These features play an important water management function, allowing for the movement, storage and release of water through the watersheds, and in supporting the functioning of natural processes such as flooding, erosion.

Hazardous lands and *hazardous sites* that may be associated with watercourses, valley systems, wetlands and shorelines should be recognized as part of water resource and natural heritage systems. The protection of these systems contributes to the management of natural hazards and mitigation of associated risks and impacts.

4.4.1 Policies for Water Resource Systems

- a) HCA recognizes the critical function that *water resource systems* play in the control, management and mitigation of *hazardous lands* and *hazardous sites*, and in the maintenance of watershed health.
- b) HCA will work with municipalities to identify, protect and restore *water resource systems* through the completion of watershed plans, subwatershed plans or other land use planning exercises as may be appropriate.
- c) HCA comments on land use planning matters and *development* proposals will recommend the protection of *water resource systems*, including *watercourses*, *valleylands*, and *wetlands*, where they contribute to the management of natural hazards or mitigation of associated risks and impacts.
- d) The stormwater management policies of Section 4.5 will also be considered when providing comments on *development* proposals and the potential for impacts on *water resource systems* and natural hazards.

4.5 Stormwater Management

Development can have a significant impact on the movement of water through the watershed, and on water resource and natural heritage systems and their associated features and hydrological and ecological functions. Land use change may result in increases in impervious surfaces (roads, sidewalks, buildings, rooftops, driveways, etc.) and volumes of surface runoff, and a corresponding decrease in the ability of the ground to absorb water (infiltration) and release water (evapotranspiration). These changes to the cycling and storage of water through the watershed can impact water quality and lead to increased potential for flooding and erosion.

Stormwater management is the process of controlling the quantity and quality of water runoff from impervious surfaces, from its source to its ultimate outlet. Stormwater management aims to minimize and mitigate the impacts of stormwater runoff to the greatest extent possible. When done effectively, it can contribute to the conservation of *water resource systems*, control of flooding and erosion, protection of property and public health and safety, and the development of resilient communities.

4.5.1 Policies for Stormwater Management

- a) HCA supports the use of stormwater management as part of land use planning and development processes to minimize impacts on *water resource systems*, mitigate the potential for increases in flooding or erosion, and protect public health and safety and property.
- b) HCA supports planning for stormwater management facilities and infrastructure in a coordinated and integrated manner with other land use planning and growth management exercises, and through the completion of a subwatershed study, *environmental assessment* process, or similar *comprehensive study*.
- c) HCA will provide information and input to municipal stormwater management planning exercises regarding watershed conditions and natural hazards, as may be required, and will recommend approaches that will:
 - i. prevent or minimize increases in stormwater volumes and erosion rates;
 - ii. protect *water resource systems* and water balance;
 - iii. mitigate risks from natural hazards, and protect public health and safety and property;
 - iv. address climate change considerations; and
 - v. consider cumulative impacts of stormwater from development at the *watershed* scale.
- d) HCA may support the development of stormwater management facilities that control Regional storm event flows, where such facilities have been:
 - i. considered and assessed through a subwatershed study, *environmental assessment* process, or similar *comprehensive study* that has been supported by HCA; and

- ii. designed in accordance with accepted engineering standards and practices to ensure public safety and mitigate risk associated with the potential for failure.
- e) HCA will work with municipalities, and other agencies as may be required, in the review of *development* proposals to ensure that stormwater management measures that are appropriate for the nature and scale of the development and watershed conditions are implemented.
- f) HCA comments on *development* proposals will consider the potential impacts to *water resource systems*, natural hazards, and public health and safety, and how stormwater management may be implemented to avoid, minimize or mitigate impacts.
- g) HCA comments on *development* proposals will seek to prevent increases in flooding and erosion resulting from stormwater.
- h) HCA comments regarding stormwater management will consider and reflect criteria, standards, guidelines and best management practices established by the province, municipality or conservation authorities, as may be applicable.
- i) HCA comments regarding stormwater management will seek to ensure conformity with criteria and targets established in any applicable watershed plan, subwatershed plan or other *comprehensive study*.
- j) HCA supports and will recommend the use of *low impact development* (LID) measures, *green infrastructure*, conveyance controls, and other sustainable technologies in a treatment train approach, as may be appropriate, to meet stormwater management criteria, promote protection of *water resource systems*, and mitigate potential impacts on natural hazards.
- k) HCA will generally not support stormwater management ponds, facilities or other infrastructure that are proposed to be located in *hazardous* lands or *hazardous* sites, on-line with a *watercourse*, or in or near *sensitive surface water features* or *sensitive groundwater features*.
- l) HCA may recommend the completion of studies, such as a hydrogeological study, water balance assessment, or floodplain impact assessment, to evaluate the potential impacts of a development and proposed stormwater management measures.
- m) When reviewing stormwater management plans, HCA will generally recommend to maintain pre-development conditions as part of site development (i.e. pre- to post-), including flows from the 2-year storm event up to the 100-year storm event.

5 POLICIES FOR THE REGULATION OF DEVELOPMENT

In support of their mandate to protect people and property from risks associated with natural hazards, conservation authorities are empowered to regulate certain activities in hazard-prone areas. Part VI of the *Conservation Authorities Act* (CA Act) and *Ontario Regulation 41/24* set out the areas where certain activities are prohibited, and the conditions under which a conservation authority may issue a permit for a prohibited activity.

Section 21.1 of the CA Act and related *Ontario Regulation 686/21* requires that an Authority shall provide programs and services to manage risks related to natural hazards and to ensure that a conservation authority satisfies its duties, functions and responsibilities to administer and enforce the provisions of Parts VI and VII of the Act, and any regulations made under those parts as they relate to the regulation of development and other activities and ensuring compliance with the Act and regulations.

The development regulations under the CA Act are intended to help in the achievement of the broad goals and objectives of the conservation authorities and the provincial government as they relate to the protection of people and property from natural hazards. Conservation authority regulation of development is a key component of the province's prevention-first approach to natural hazard management. The regulation of development activity also provides for the protection and functioning of *water resource systems* and *natural heritage systems* and their constituent features and functions where they may support natural processes related to flooding and erosion and the management of natural hazards more generally.

5.1 Regulation of Development and Permitting

The policies outlined in Section 5 will guide HCA's administration of the development regulations of Part VI of the CA Act and associated *O. Reg. 41/24*, and establish the criteria and conditions to be satisfied in order for HCA to issue a permit for *development activity* or other activities that would change or interfere with a watercourse or wetland. The policies must be read and considered in their entirety to determine the full range of policies that may be applicable to a proposed development activity or interference.

In carrying out its regulatory functions and responsibilities under the *Conservation Authorities Act* HCA has the following objectives:

- Protect people and property from risks associated with natural hazards;
- Raise awareness regarding natural hazards and their associated risks;
- Manage natural hazards on a watershed basis, and in accordance with *provincial standards* and accepted best practices;
- Direct *development activity* to areas outside of *hazardous lands* wherever possible
- Prevent *interference* with *watercourses* and *wetlands* to protect their *hydrologic functions* and contributions to management of flooding and erosion;

- Protect *water resource systems* and *natural heritage systems* where they contribute to the control, management or mitigation of risks and impacts associated with natural hazards

5.1.1 Regulated Areas

The areas over which conservation authorities have jurisdiction to prohibit certain activities and the conditions under which a permit may be issued for a prohibited activity are set out in Part VI of the CA Act. *O. Reg. 41/24* further defines the areas regulated by a conservation authority, permit application requirements, and identifies certain activities which are to be exempt from requiring a permit.

Under the CA Act and its regulations, HCA regulates *wetlands*, *watercourses*, river and stream valleys, the Lake Ontario shoreline, as well as other *hazardous lands* such as karst. More specifically, Section 28(1) of the CA Act establishes:

28 (1) No person shall carry on the following activities, or permit another person to carry on the following activities, in the area of jurisdiction of an authority:

1. Activities to straighten, change, divert or interfere in any way with the existing channel of a river, creek, stream or watercourse or to change or interfere in any way with a wetland.
2. Development activities in areas that are within the authority's area of jurisdiction and are,
 - i. hazardous lands,
 - ii. wetlands,
 - iii. river or stream valleys the limits of which shall be determined in accordance with the regulations,
 - iv. areas that are adjacent or close to the shoreline of the Great Lakes-St. Lawrence River System or to an inland lake and that may be affected by flooding, erosion or dynamic beach hazards, such areas to be further determined or specified in accordance with the regulations, or
 - v. other areas in which development should be prohibited or regulated, as may be determined by the regulations.

The extent of regulated areas identified above is in some cases further defined in *O. Reg. 41/24*. While the CA Act and *O. Reg. 41/24* provide direction on regulated areas, they do not define how natural hazard limits that may be associated with regulated features and areas are to be determined. Direction for the identification of hazards, such as flooding and erosion, is provided in a series of technical guides developed by the MNR in the late 1990s and early 2000s. Sections 5.3 to 5.7 describe how the regulated

area is determined for each feature type identified in the CA Act and *O. Reg. 41/24*, and also describes how associated natural hazard limits are to be identified.

Associated with some regulated features are additional regulated areas, or ‘allowances’, that extend beyond the regulated feature or hazard limit. *Allowances* are identified in *O. Reg. 41/24*, and are measured from the outer boundary or limit of a regulated feature or hazard. In the case of river and stream valleys and the Lake Ontario shoreline, an allowance of 15 m is included in the regulated area beyond the identified flood or erosion hazard limits. Figures included throughout Section 5 identify how natural hazard limits and associated regulated areas and allowances are defined.

Allowances provide for the regulation of development adjacent to erosion and flooding hazards, which can protect against unforeseen circumstances or conditions that could have an adverse effect on natural processes and hazards. *Allowances* are also intended to account for variability in how hazard limits may be defined at a site-specific scale. They further provide opportunity to ensure that appropriate access to hazard-prone areas is maintained for emergency purposes and to allow for long-term maintenance.

HCA maintains maps to identify regulated areas. Mapping is reviewed annually, or more frequently where significant changes are required as a result of new information. Mapping is available publicly. While the mapping is intended to provide a useful reference for identifying regulated areas, the description of the areas to be regulated included in the CA Act and *O. Reg. 41/24* prevails in the event of any mapping discrepancy or absence of mapping.

5.1.2 Regulated Activities

Section 28(1) of the CA Act establishes that certain activities are prohibited in areas regulated by a conservation authority. This includes development activities, which are defined in *O. Reg. 41/24* to include:

- (a) the construction, reconstruction, erection or placing of a building or structure of any kind,
- (b) any change to a building or structure that would have the effect of altering the use or potential use of the building or structure, increasing the size of the building or structure or increasing the number of dwelling units in the building or structure,
- (c) site grading, or
- (d) the temporary or permanent placing, dumping or removal of any material, originating on the site or elsewhere.

Section 28(1) also prohibits activities that would straighten, change, divert or interfere in any way with the existing channel of a river, creek, stream or watercourse or to change or interfere in any way with a wetland. While neither the CA Act or *O. Reg. 41/24* define

‘interfere in any way’, the Ministry of Natural Resources and Conservation Ontario provided an interpretation in the 2008 *Draft Guidelines to Support Conservation Authority Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation*, where *interference*, or ‘interfere in any way’, may be considered as:

“any anthropogenic act or instance which hinders, disrupts, degrades or impedes in any way the natural features or hydrologic functions of a wetland or watercourse”

For the purposes of this policy document, the terms *development activity* and *interference* will be defined as outlined above and will be used to refer to prohibited activities.

5.1.3 Permits and Regulation Tests

Under Section 28.1 of the CA Act, a conservation authority may issue a permit to engage in activity that would otherwise be prohibited where it is of the opinion:

- (a) the activity is not likely to affect the control of flooding, erosion, dynamic beaches or unstable soil or bedrock; or
- (b) the activity is not likely to create conditions or circumstances that, in the event of a natural hazard, might jeopardize the health or safety of persons or result in the damage or destruction of property.

These criteria, which are sometimes referred to as ‘tests’, must be satisfied in order for a permit to be issued.

What constitutes the control of flooding, erosion, dynamic beaches or unstable soil or bedrock is not defined in the legislation or regulations. The policies defined in this section consider this to ‘test’ to broadly include any direct, indirect or cumulative impact or change resulting from a *development activity* or *interference* that would have the effect of creating or altering hazardous conditions, increasing risks related to or resulting from any natural hazard, or hindering the ability to manage or mitigate risks associated with any natural hazard.

The CA Act also provides for health, safety and property considerations in determining if a permit may be issued. These tests allow for the broad consideration of the potential for direct, indirect and cumulative impacts on individual and public health, social disruption, personal injury, loss of life and damage to property as a result of a *development activity* or *interference*. Factors such as age and mobility of persons, the proposed land use or activity, as well as the type, use and occupancy of a structure, will influence the determination of potential impacts and risks.

Access (ingress and egress) considerations are also important towards determining if a *development activity* or *interference* may impact the control of hazards, health and safety of persons, or the potential for property damage. The ability for property owners,

building occupants and public and emergency services to safely access (enter and exit) a site during an emergency is a central consideration in determining if a permit for a *development activity* or *interference* may be issued. Access is also an important consideration to allow for the long-term maintenance and repair of features and structures that may be impacted by hazards. HCA's policies for providing access are outline in Section 5.9

Both the control of hazards and health and safety tests must also consider the ability to meet protection works standards, floodproofing standards and access standards, as discussed further in Section 5.3, 5.8 and 5.9.

Finally, *water resource systems* and *natural heritage systems* and their constituent features provide important hydrological and ecological functions that may contribute to the control of flooding, erosion, dynamic beaches and unstable soil or bedrock, and/or help to mitigate related hazards. For example, wetlands may provide a critical water attenuation function at both site specific and subwatershed scales. As a result, the policies outlined in this chapter provide for the consideration of water resource and natural heritage features, areas and systems and their related functions, where appropriate, in the determination of whether or not an activity may affect the control of flooding, erosion, dynamic beaches or unstable soil or bedrock.

5.1.4 Relationship to Land Use Planning Policies

As reviewed in Section 3.2 and Section 4, the province has a policy-led land use planning system under the *Planning Act* and PPS. Land use planning processes establish appropriate land use designations and zoning, and play a critical function in implementing the province's prevention-first approach to natural hazard management whereby development is generally to be directed to areas away from *hazardous lands* and *hazardous sites*.

Conservation authorities play an important role in supporting the land use planning system, and in implementing the policies of the PPS as they relate to natural hazards. The CA Act and regulations mandate conservation authorities to provide a land use planning review function in order to provide municipal planning authorities with information, comments and technical support to help ensure planning decisions are consistent with the natural hazard policies of the PPS and provincial plans. Conservation authorities play a similar role in providing natural hazard comments on proposals under other legislation, such as the *Environmental Assessment Act* and *Niagara Escarpment Planning and Development Act*. The policies set out in Section 4 direct HCA's input to land use planning matters.

Regulation of development under the CA Act is intended to complement the *Planning Act* and PPS, as well as other legislation, and support the implementation of the province's natural hazard program. While land use planning establishes the principle of development, permits issued under the CA Act are an implementation instrument used to confirm the appropriateness of a proposed development or other activity from a natural hazard perspective and to identify any site-specific requirements prior to an

activity taking place. The policies set out in Section 5 direct HCA's input to the review of permit applications under the CA Act.

When commenting on a municipal land use planning application or application under other legislative review processes, HCA will include comments regarding the applicability and requirements of the development regulations under the CA Act. In some cases, a regulatory permit application may proceed in conjunction with the plan review process; in other cases, a permit application may not be received for months or years after a planning approval. In any case, it is important that development applicants understand regulatory requirements during the land use planning process in order to ensure these requirements can be reasonably met at the time of a CA Act permit application, and to allow for efficient coordination of applications where appropriate.

Past planning decisions that may have been made without plan review input from HCA, or that were based on dated or incomplete technical information regarding natural hazards, will not bind a conservation authority to issue a permit. In such situations, HCA will work with the municipality, or other approval agency, and the development applicant to review the proposed activity in relation to current information, policies and standards, to determine if alternative approaches may be available to address site constraints and meet current regulatory requirements.

It is important to note that a municipal planning authority may not issue a building permit for development in an area regulated by a Conservation Authority, until a permit has been issued, where required, under the CA Act. Conversely, in the case of development permit application reviews under the *Niagara Escarpment Planning and Development Act*, a conservation authority may not issue a permit within an area of NEC development control unless a development permit has been issued by the NEC or the activity is exempt under the *Niagara Escarpment Planning and Development Act*.

5.2 General Policies

The following policies will be applied to any proposed *development activity, interference* or other prohibited activity within the areas of jurisdiction of the HCA. These policies must be considered in conjunction with the policies contained in Sections 5.3 to 5.9, which may contain more specific policy direction applicable to the proposed *development activity or interference*.

- a) *Development activities and interference* within regulated areas are prohibited except in accordance with the policies of Sections 5.2 to 5.9, and the policies of Section 4 as may be applicable.
- b) *Development activities and interference* may be permitted in regulated areas where the activity is not likely to affect control of flooding, erosion, dynamic beaches or unstable soil or bedrock, or create conditions or circumstances that, in the event of a natural hazard, might jeopardize the health or safety of persons or result in the damage or destruction of property.
- c) Further to 5.2(b), in considering if an activity is not likely to affect the control of hazards, or create conditions that would jeopardize health, safety or property, the following must be demonstrated:
 - i. no changes to the limits or extent of existing *hazardous lands*, and no new hazards are created;
 - ii. susceptibility to natural hazards is not increased for any existing or proposed development;
 - iii. no *adverse hydraulic and fluvial impacts*;
 - iv. no changes to the frequency, duration or extent of flooding or erosion;
 - v. flood conveyance and flood storage conditions are maintained;
 - vi. risks to the health and safety of persons or the public are not increased;
 - vii. potential for property damage is not increased;
 - viii. *safe access* is provided for vehicles, pedestrians and emergency services, and for the maintenance of protection works and repair of property;
 - ix. no adverse impacts to natural coastal processes associated with the Lake Ontario shoreline;
 - x. no adverse impacts to the *hydrologic functions*, fluvial processes or hydraulics of *watercourses*;
 - xi. no adverse impacts to the *hydrologic functions* or conditions of *wetlands*;
 - xii. no *negative impacts* to *water resource systems*;
 - xiii. no *negative impacts* to *natural heritage features and areas* that contribute to the control, regulation or mitigation of natural hazards;
 - xiv. *development activities and interference* are carried out in accordance with provincial *floodproofing standards, protection works standards* and *access standards*;
 - xv. *development activities and interference* are carried out in accordance with accepted engineering, design and construction best practices and standards; and
 - xvi. mitigation measures and restoration work appropriate for the scale of the *development activity or interference* and site conditions will be implemented;

- d) *Safe access* must be provided for any development within a regulated area. *Safe access* must be in accordance with provincial *access standards*, and meet the following requirements and requirements of Section 5.9:
- i. vehicles, pedestrians and emergency services have access to (ingress) and from (egress) a site that is safe from risks associated with natural hazards;
 - ii. ingress and egress meets the flood depth, velocity and any other applicable criteria established in *provincial standards* and as established in Section 5.9;
 - iii. an *access allowance* is available for the construction, maintenance and repair of protection works and property; and
 - iv. the level of ingress and egress and size of an *access allowance* are appropriate for the nature of the development, site conditions and potential hazards.
- e) Where the policies of Sections 5.2 – 5.9 require that the feasibility of locating *development activity* beyond the hazard be examined, and that the development be located beyond regulated features and hazards to the greatest extent possible, and otherwise locate in the area of least hazard susceptibility and risk. HCA will consider the following in applying these requirements:
- i. availability of land or areas for the proposed *development activity* that are located outside of *hazardous lands*;
 - ii. ability to locate the *development activity* beyond all hazard limits;
 - iii. if the proposal maximizes use of property depth and width to avoid locating within *hazardous lands*;
 - iv. if reasonable changes to the size, scale and/or design of a building or structure could be made to avoid or minimize encroachment on *hazardous lands*;
 - v. if minor variances would allow for the development to locate outside of *hazardous lands*;
 - vi. the severity of hazardous conditions, including flood depths and susceptibility to erosion hazards;
 - vii. ability to incorporate protection works or *floodproofing* measures; and
 - viii. availability of *safe access*.
- f) *Development activity* and *interference* shall generally not be permitted within regulated areas for the purpose of creating a new building lot, establishing additional developable area or facilitating new development.
- g) Notwithstanding policy 5.2(f), such activities may be considered where the following are demonstrated:
- i. the activity will result in the mitigation or *remediation* of hazardous conditions, reduce risks to existing development, and improve public safety;
 - ii. the activity has been considered and approved through a subwatershed plan, *environmental assessment* or similar *comprehensive study*, or technical report that has been supported by the HCA; and
 - iii. all other applicable policies in Section 4 and Section 5 have been satisfied.

- h) The completion of technical studies and plans (geotechnical assessment, hydraulic modelling, floodplain impact assessment, erosion and sediment control plan, etc.), monitoring programs and/or site visits may be required to support a proposal for *development activity* or *interference* in order to identify features, determine natural hazard limits, evaluate potential impacts, or to identify appropriate design, mitigation or remedial measures. Study and monitoring requirements are to be determined and scoped in consultation with the HCA and must be completed in accordance with accepted standards, practices and guidelines to the satisfaction of the HCA.
- i) HCA may require peer review of any technical study or plan completed in support of a proposal for *development activity* or *interference* in order to confirm that appropriate study methods, assessments, findings and recommendations have been provided.
- j) As-built drawings and surveys may be required as a condition of a permit to ensure that any building, structure, or other *development activity* is constructed and completed in accordance with plans approved through the permit. As-built drawings and surveys will be prepared by a qualified professional.
- k) Activities identified in O. Reg 41/24, Section 5, Exceptions, will not require a permit.
- l) HCA will not permit *development activity* or *interference*, as may be permitted by the policies of Sections 5.2 – 5.9, where an associated existing building or structure was established illegally or without all required approvals and permits.
- m) HCA may attach conditions to a permit to be issued where it is of the opinion the conditions are required to:
 - i. assist in preventing or mitigating any effects on the control of flooding, erosion, dynamic beaches or unstable soil or bedrock;
 - ii. assist in preventing or mitigating any effects on human health or safety or any damage or destruction of property in the event of a natural hazard; or
 - iii. support the administration or implementation of the permit, including conditions related to reporting, notification, monitoring and compliance with the permit.
- n) In the instance of a Ministerial Zoning Order (MZO) being issued by the Province of Ontario or a provincially or municipally led *environmental assessment* that requires the removal or partial removal of a designated or regulated natural heritage feature, offsetting/compensation can be utilized to provide for “net gain” or at a minimum, “no net loss”.

5.3 Lake Ontario Shoreline

The Lake Ontario shoreline is a dynamic area, subject to constant change as a result of naturally occurring processes and forces of erosion, sediment transport and deposition, wind, waves, and water level fluctuations. As a result of these conditions, areas that lie along the Lake Ontario shoreline, including Hamilton Harbour, may be subject to hazardous conditions resulting from flooding, erosion and dynamic beaches.

The northern half of the Lake Ontario shoreline within the HCA watershed consists of a continuous stretch of dynamic beach. This area is largely in public ownership, and is composed of parkland connected by a trail system. The southern half of the shoreline, along with the Hamilton Harbour shoreline, is predominantly privately owned and developed. The shoreline in these areas has also largely been hardened, with a wide variety of erosion protection structures in place. Interest in property re-development and infilling along sections of the shoreline has created challenges and resulted in increased risks to public safety and property damage, aggravation of hazardous conditions, and impacts to coastal processes and shoreline ecosystems.

The provincial legislative and regulatory framework recognizes there are significant risks associated with development in shoreline areas. As a result, the overall objective of both provincial and HCA policy is focused on prevention, and to generally direct development to areas outside of shoreline hazard areas. In considering proposals for *development activity* on the shoreline, it is necessary to consider and account for the combined landward limits of the flooding, erosion and dynamic beach hazards in order to mitigate, to the greatest extent possible, the potential effects of these hazards on property and public safety, to ensure existing hazardous conditions are not aggravated, and to provide for the maintenance of coastal processes and conservation of sensitive ecosystems.

The hazards associated with Lake Ontario shoreline are discussed further in the following sections, including how regulation limits for the shoreline are defined, how the related hazards are identified, and the policies to be applied for managing development and other activities in these areas.

5.3.1 Defining Shoreline Regulation Limits

Under *O. Reg. 41/24*, the regulated limits of Great Lakes shorelines are defined as follows:

2. (2) For the purposes of subparagraph 2 iv of subsection 28 (1) of the Act, areas adjacent or close to the shoreline of the Great Lakes-St. Lawrence River System or to inland lakes that may be affected by flooding, erosion or dynamic beaches include,

(a) the area starting from the furthest offshore extent of the Authority's boundary to the furthest of the following distances:

(i) the 100-year flood level, plus the appropriate allowance for wave uprush, and, if necessary, for other water-related hazards, including ship generated waves, ice piling and ice jamming;

(ii) the predicted long-term stable slope projected from the existing stable toe of the slope or from the predicted location of the toe of the slope as that location may have shifted as a result of shoreline erosion over a 100-year period; and

(iii) where a dynamic beach is associated with the waterfront lands, an allowance of 30 metres inland to accommodate dynamic beach movement; and

(b) the area that is an additional 15 metres allowance inland from the area described in clause (a).

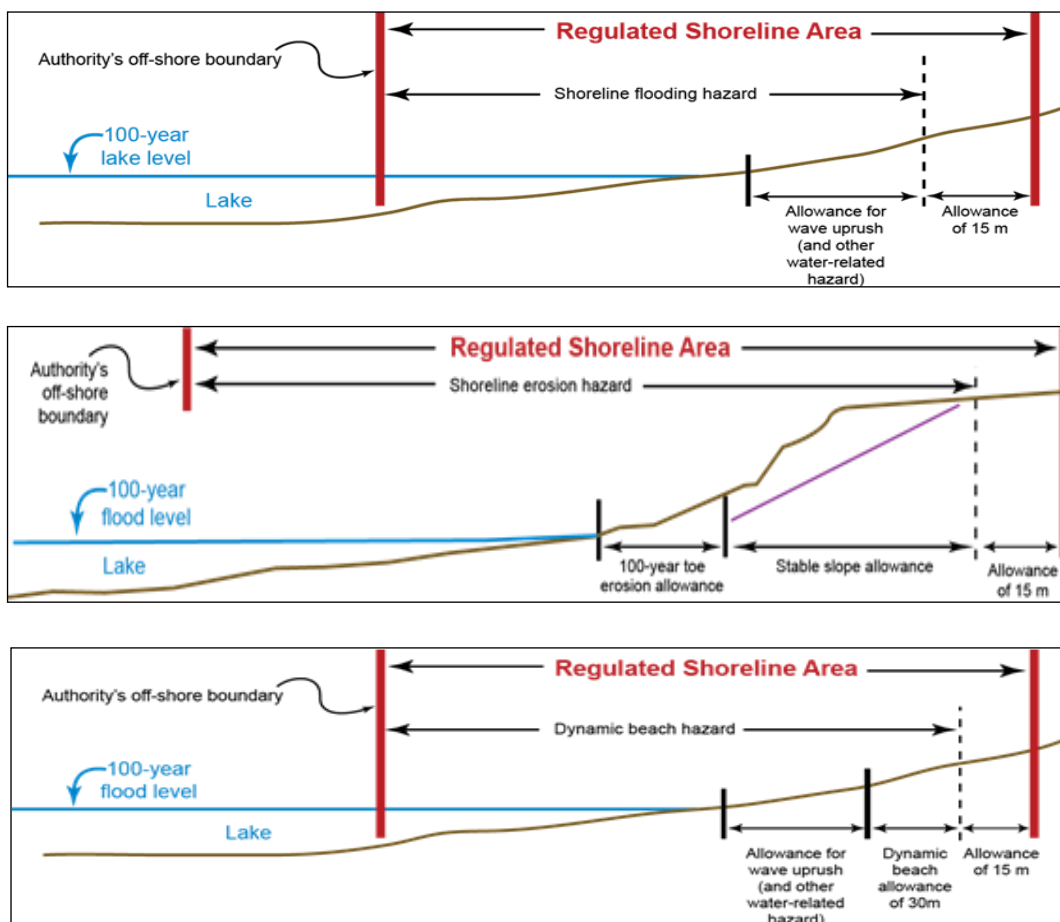


Figure 2: Lake Ontario Shoreline Regulation Limits

Based on the above, the regulation limit associated with the Lake Ontario Shoreline is the furthest landward extent of the aggregate of the *flooding hazard*, *erosion hazard*, and *dynamic beach hazard*, plus an additional allowance of 15 m. Flooding, erosion and dynamic beach hazard limits associated with regulated shoreline areas are delineated

based on standards and criteria established by the Ministry of Natural Resources in *Understanding Natural Hazards* (2001) and in the *Great Lakes-St. Lawrence River System Technical Guide* (2001). How each of these components is determined is described more specifically in the following sections.

5.3.2 Lake Ontario Shoreline Hazards

HCA completed a *Shoreline Management Plan* (SMP) in 2025, which identifies shoreline hazard limits for the Lake Ontario shoreline within the HCA watershed. Hazard determination and mapping was based on standards and criteria established in the provincial technical guidelines, and in consideration of current data, information and assessment undertaken through the shoreline study. This included technical assessment to establish long-term recession (erosion) rates and to update statistical analysis of lake levels. Numerical modelling tools were used to evaluate spatial variability in storm surge and nearshore wave conditions in the lake and harbour. Based on the outputs from the data collection and technical analysis, updated mapping was produced for the flooding, erosion, and dynamic beach hazards.

5.3.2.1 Identifying the Shoreline Flooding Hazard

The Lake Ontario shoreline is subject to water level fluctuations as a result of both human intervention and natural processes. As part of the *Great Lakes-St. Lawrence River system*, lake levels in Lake Ontario are subject to regulation under the *Lake Ontario – St. Lawrence River Plan 2014* (Plan 2014, IJC, 2014), with outflow from Lake Ontario being influenced by the operation of the Moses-Saunders Power Dam in Cornwall. However, water levels in Lake Ontario are primarily influenced by natural factors like rainfall, snowmelt, evaporation, wind, waves and storms. These factors influence both seasonal and shorter-term changes in water levels.

Storms, wind and waves can have a short-term, temporary, but significant impact on shoreline flooding, pushing water farther inland than under normal water level conditions. Along irregular shorelines, or where there are shoreline protection structures, groynes, or other structures, the effect of waves hitting vertical surfaces and sending spray inland and the potential for strong waves to overtop breakwalls, bluffs and other shoreline structures may also occur.

As a result, the Lake Ontario *flooding hazard* considers the *100-year flood level*, as well as *wave effects* and *other water-related hazards*, such as wave uprush, ship generated waves and ice, that may magnify flooding conditions.

The *flooding hazard* limit for Lake Ontario is therefore based on the combined influence of the following, as conceptually shown in Figure 3 and described in more detail below:

- i. The *100-year flood level*;
- ii. The extent of *wave uprush*; and
- iii. The extent of *other water-related hazards*.

The *100-year flood level* is defined as the water level reached through a combination of static lake level and local storm surge, that has a combined probability of occurrence of 1% in any given year. Historically, the identification of 100-year flood levels for most Great Lakes shorelines was based on work completed by the Ministry of Natural Resources in the 1980's, and published in a report titled *Great Lakes System Flood Levels and Water Related Hazards* (MNR, 1989).

HCA's *Shoreline Management Plan* (2025) reviewed and updated this earlier work, including an analysis of mean monthly lake levels between 1900 and 2021 and measured storm surge events from 1971 to 2021. Based on this assessment, the SMP identifies the *100-year flood level* for Lake Ontario and Hamilton Harbour as 76.2m (International Great Lakes Datum (IGLD) '85).

To identify the extent of *wave uprush*, or the horizontal distance landward from the waterline that may be impacted by waves and other water related hazards, HCA's SMP undertook an analysis and modelling of nearshore wave conditions. Based on this assessment, the SMP identifies wave uprush as a horizontal distance, which varies based on conditions across different sections (reaches) of the shoreline, and ranges from 10m to 30m.

The SMP identifies and maps the *floodings hazard limit* for the shoreline based on the *100-year flood level* contour of 76.2m plus an additional horizontal distance of 10-30m measured landward from this contour line to account for *wave uprush* and *other water-related hazards*.

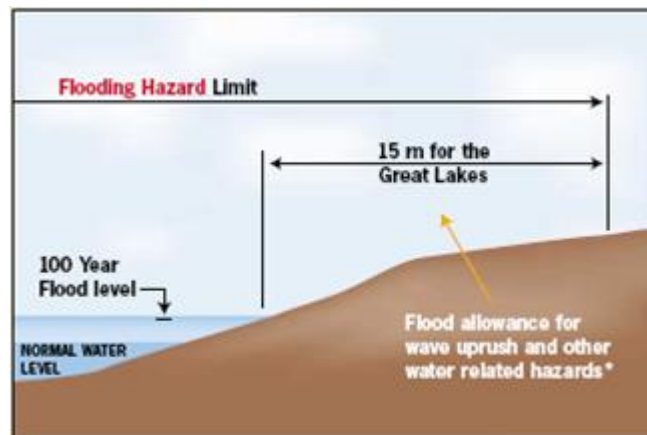


Figure 3: Lake Ontario Shoreline Flooding Hazard Limit

5.3.2.2 Identifying the Shoreline Erosion Hazard

Water level fluctuations, waves, wind and ice exert erosive forces on the shoreline, and result in shoreline recession over time. The erodibility of the shoreline is influenced by a number factors, including geology, soils, vegetation cover, shoreline orientation and the presence or absence of shoreline protection structures. Erosion of the shoreline

generally occurs slowly over the long-term, but may also result from significant storm events that can result in large losses of land over a very short period.

The Lake Ontario shoreline within the HCA watershed includes areas of natural shoreline, beach and bluffs, but is otherwise largely developed with hardened shoreline protection measures in place. The shoreline within HCA's watershed is generally considered to be highly erosive, especially on the lake bottom at the toe of existing shoreline protection structures (SMP, 2025).

The *erosion hazard* limit for the shoreline is based on the combined influence of the following, as shown in Figure 4:

- i. *Stable slope allowance*; and
- ii. 100-year erosion allowance (100 times the average annual recession rate) or 30m erosion allowance, whichever is greater.

HCA's SMP examined long-term shoreline change to identify average annual recession rates. This included assessment of orthophotographs, historical recession measurements, and consideration of recession rates from adjacent Lake Ontario shoreline areas beyond the HCA watershed. Based on this work, the SMP identifies a long-term average annual recession rate of 0.5 m/yr. Within the Hamilton Harbour, a rate of 0.1 m/yr is identified. Recession rates at the dynamic beach areas identified between Confederation Beach Park and the navigation channel, Newport Yacht Club and Fifty Point were generally considered to be dynamically stable.

The SMP applied a stable slope allowance of 3:1. A site specific assessment of the shoreline slope by a qualified geotechnical engineer may allow for a reduction in the stable slope allowance.

The SMP identifies and maps the *erosion hazard limit* for the shoreline based on a 3:1 *stable slope allowance* and 100-year erosion allowance of 50 m for most of the Lake Ontario shoreline (0.5 m/yr x 100 years) and 10 m for the Hamilton Harbour shoreline (0.1m/yr x 100 years).

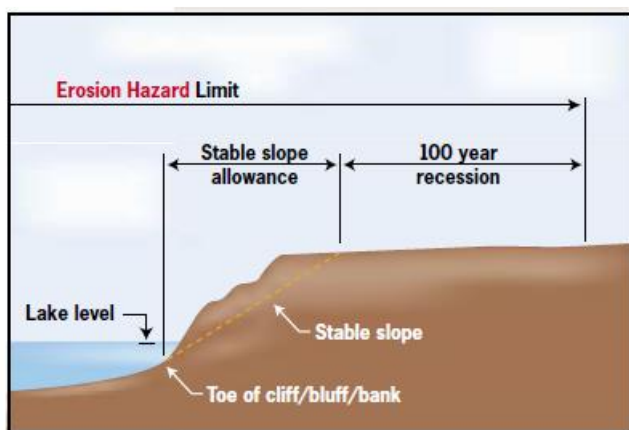


Figure 4: Lake Ontario Shoreline Erosion Hazard Limit

5.3.2.3 Identifying the Shoreline Dynamic Beach Hazard

A beach is an area of accumulation of eroded material (sediment, sand, gravel, cobble, rock, etc.) that has been transported from elsewhere and deposited by currents and waves on the shoreline. Beaches that are unstable and subject to continuous change as a result of erosion and accretion from wind, waves and water level changes are sometimes referred to as dynamic beaches. In dynamic beach areas, elevations can change dramatically due to build up or loss of beach materials. Changes may occur over a range of time scales, from hours or days, to years and decades. When beach elevations change, so does the location of the *flooding hazard* limit. This is an important consideration in determining the dynamic beach hazard limit. In times of low lake levels, near shore areas that are submerged under normal or high lake levels may become exposed, making it seem that the landward extent of the dynamic beach has changed, and thereby introducing potential for *development activity*. Historic information about the farthest landward extent of flooding will be an important consideration for the long-term management of *dynamic beach hazards* (MNR, 2001).

The *dynamic beach hazard* limit is determined in accordance with the following, as shown in Figure 5:

- i. The *flooding hazard* limit (100-year flood level plus an allowance for wave uprush and other water-related hazards); and
- ii. A 30 m *dynamic beach* allowance.

HCA's SMP examined changes in shoreline and beach positions at Hamilton Beach, Fifty Point Beach and Newport Yacht Club Beach using historical orthophotographs. Based on this assessment, each of these areas is identified as a dynamic beach, but with recession rates considered dynamically stable in recent years.

The SMP identifies and maps the *dynamic beach hazard limit* for these areas based on a 30 m setback from the *flooding hazard limit*, unless the beach material extent was less than 30 m due to an engineered walkway, road or a transition to non-beach material (e.g. residential backyard, parking lot). In these cases, the dynamic beach allowance was mapped as the lakeward edge of the engineered structure or transition area.

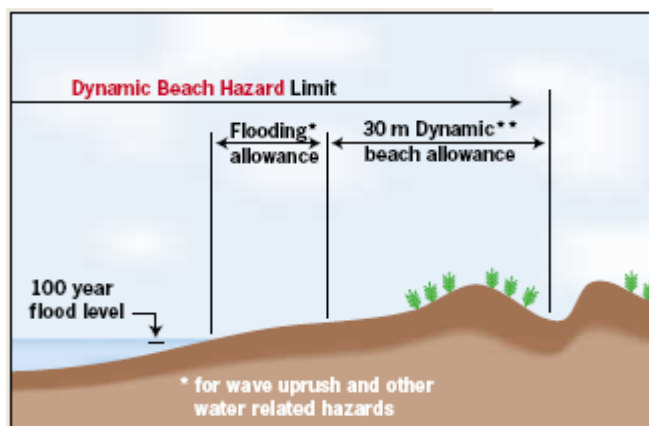


Figure 5: Lake Ontario Shoreline Dynamic Beach Hazard Limit

5.3.3 Policies for Development on the Lake Ontario Shoreline

5.3.3.1 General Policies

- a) *Development activities* within the shoreline *erosion hazard*, *flooding hazard* or *dynamic beach hazard*, or the associated regulated *allowance*, are prohibited, except in accordance with the policies of Sections 5.3.3.1 to 5.3.3.5, and the general policies of Section 5.2.
- b) Erosion, flooding and dynamic beach hazard limits must be identified as part of any proposal for development along the shoreline.
- c) The HCA will reference and rely on the HCA *Shoreline Management Plan (2025)* to identify hazard limits. The completion of additional studies such as a coastal hazard assessment or geotechnical assessment may be required to confirm or refine shoreline hazard limits, or to evaluate the potential impacts of any proposed development. Study requirements are to be determined and scoped in consultation with the HCA.
- d) HCA requires that a 5 m *access allowance* be provided as part of any proposed *development activity* to ensure that people and vehicles have *safe access* during an emergency as a result of flooding or erosion hazards, and to provide access to the shoreline for equipment and machinery for the purpose of maintaining shoreline protection works and/or to repair property that may be affected by hazards. This must include a minimum 5 m wide side yard access from a roadway, along one side of a property, to a minimum 5 m wide access along the stable top of lake bank. A reduced *access allowance* of no less than 4 m for the side yard may be considered where an existing lot is constrained by existing development, property grade and/or limited lot width. Side yard access may be shared between adjacent landowners provided that the shared access is registered on property title as an easement.
- e) HCA will work cooperatively with watershed municipalities and other agencies as appropriate, where opportunities or needs arise, to develop comprehensive shoreline management plans, strategies and policies to manage shoreline related hazards, to mitigate associated risks, and to promote the protection and restoration of *water resource systems* and associated natural coastal process.

5.3.3.2 Shoreline Protection Works (Protection Works Standard)

Protection works include both structural and non-structural works, as well as landform modifications, that are designed and constructed to address the impacts of flooding and other water related hazards, to slow the landward retreat of shorelines subject to erosion, and/or to address dynamic beach hazards. While protection works cannot provide total protection from shoreline hazards, where designed and constructed in accordance with accepted engineering standards and in an environmentally sound manner, they can be effective in reducing risks and lessening the potential for damages from shoreline hazards.

The *Great Lakes-St. Lawrence River System Technical Guide* (2001) provides guidance on *protection works standards*, and how such structures may be applied in the consideration of development limits in areas affected by shoreline hazards. More specifically, the 100-year erosion allowance component of the *erosion hazard* may be reduced by the presence of shoreline protection works. A reduction in the erosion allowance does not change the extent of the *erosion hazard* limit, but rather identifies the area within the *erosion hazard* where it may be deemed safe for some types of development to be permitted. For the purposes of the shoreline policies, the area of reduced erosion allowance as a result of shoreline protection works is referred to as the *mitigated erosion hazard*.

HCA's SMP documented significant use of structural protection measures along most reaches of the shoreline. The SMP notes that rates of damage and failure of shoreline structures on the Great Lakes are high given harsh conditions and lack of regular maintenance. In the case of the Lake Ontario shoreline through the HCA watershed, ongoing lakebed downcutting (vertical erosion) at the shoreline is also a significant factor in considering the life expectancy of protection structures. The SMP recommends structural protection measures only be considered where required to protect existing developments that are at high risk, where non-structural or nature-based solutions are not feasible, and where environmental and downdrift impacts have been appropriately addressed and incorporated into the design of the protection works.

In considering the effective design life of shore protection structures, the SMP notes that based on provincial technical guidelines, shorelines with moderate recession rates (i.e. 0.3 m/yr to 0.7 m/yr) should apply a maximum design life of 15 to 25 years. Given the recession rate for the HCA shoreline is identified as 0.5 m/yr, the SMP recommends that a maximum design life of 25 years be accepted for new or existing shoreline protection structures, provided the structure has been designed or inspected and assessed by a qualified coastal engineer in accordance with accepted industry standards and in consideration of site conditions and exposure.

In consideration of the above, the following policies will apply to the use of shoreline protection structures.

- a) Shoreline protection works may be proposed to conserve areas of natural shoreline, to protect existing development, and to facilitate new development. Protection works may include both structural and non-structural measures, and may involve the construction of a new protection structure or the maintenance or repair of an existing structure.
- b) Where protection of the shoreline is required, first priority should be given to the consideration of non-structural and nature-based structures and measures. Such measures may be appropriate where there is limited development, where natural areas are present, and/or where there is relatively low exposure to wind and waves.

- c) Structural approaches to shoreline protection will generally only be considered where such actions are required to protect existing development that is at high risk, where non-structural or nature-based solutions are not feasible, and where adverse impacts on shoreline coastal processes can be appropriately addressed through the design of the protection works.
- d) Where shoreline protection works are proposed they must meet the following requirements:
- i. the purpose of the proposed works must be clearly defined;
 - ii. ownership of the land where the protection works are proposed, must be clearly established by the applicant;
 - iii. be designed by a qualified coastal engineer, according to accepted coastal engineering principles and standards;
 - iv. be designed to address applicable shoreline hazards, based on conditions commensurate with a 100-year design event;
 - v. have a professional geotechnical engineer assess slope stability where a stable slope allowance greater than 3:1 is proposed;
 - vi. be designed in consideration of and to be integrated with adjacent shoreline properties and conditions;
 - vii. not aggravate existing hazards or create new hazards for the subject property or adjacent properties, or have an adverse impact natural shoreline coastal processes;
 - viii. be designed to incorporate a minimum 5 m *access allowance* along the stable top of lake bank to allow for regular maintenance and repair of the structure over the long-term; and
 - ix. the general policies of Section 5.3 are met.
- e) The construction of shoreline protection works must be supervised by a qualified coast engineer. Upon completion of the protection works, the applicant must provide an as-built survey of the constructed structure and a corresponding letter or report from the supervising coastal engineer confirming if the shoreline protection works have been constructed in accordance with the approved design and noting any deviations.
- f) Where *development activity* is proposed within shoreline hazard limits, a reduction in the 100-year erosion allowance may be considered where shoreline protection works are in place. The amount that the erosion allowance may be reduced will be based on the determined design life of the shoreline protection works. Design life must be evaluated by a coastal engineer, based on the design, condition and age of the structure, and in consideration of site conditions and hazards.
- g) The maximum design life that will be accepted for shoreline protection works is 25 years, and in no case will a reduction in the erosion allowance greater than 12.5m be accepted.

- h) HCA will encourage shoreline property owners to consult the Ministry of Natural Resources for all shoreline protection works to determine if there are Crown interests and if any permits are required.

5.3.3.3 New Development

- a) *Development activity* will not be permitted within the *dynamic beach hazard*.
- b) *Development activity* will not be permitted within the *stable slope allowance*, with the following exceptions:
 - i. shoreline protection works;
 - ii. patios, staircases and boat ramps that are integrated with shoreline protection works designed by a coastal engineer and approved by HCA; and
 - iii. landscaping that does not include the construction of structures.
- c) Public *infrastructure*, *conservation projects* and passive recreational uses that have been reviewed and approved through a subwatershed study, *environmental assessment* process, or similar *comprehensive study* that has been supported by HCA, may be permitted within the shoreline *erosion hazard*, *floodings hazard* or *dynamic beach hazard* where it has been demonstrated:
 - i. the feasibility of locating the development beyond the shoreline hazards has been examined and no alternative exists;
 - ii. the development is located beyond the shoreline hazards to the greatest extent possible, and otherwise located in the area of least hazard susceptibility and risk; and
 - iii. the general policies of Section 5.3 are met.
- d) Except as prohibited in 5.3.3.3(a) and (b), *development activity* within the shoreline *floodings hazard* or *erosion hazard* may be permitted subject to the following:
 - i. the development is located beyond hazard limits to the greatest extent possible, and otherwise located in the area of least hazard susceptibility and risk;
 - ii. the hazards can be addressed in accordance with the shoreline *protection work standards* policies of Section 5.3.3.2;
 - iii. the development is located beyond the *mitigated erosion hazard*;
 - iv. the development is floodproofed in accordance with the *floodproofing standards* of Section 5.8;
 - v. *safe access* is available;
 - vi. a maintenance *access allowance* is provided in accordance with 5.3.3.1(d);
 - vii. the general policies of Section 5.3 are met.

5.3.3.4 Existing Development

- a) Where an existing building or structure is wholly or partially within the shoreline *flooding hazard* or *erosion hazard*, *minor additions* may be permitted subject to the following:
- i. no additional *dwelling units* are created;
 - ii. the *minor addition* is located beyond hazard limits to the greatest extent possible, and otherwise located in the area of least hazard susceptibility and risk;
 - iii. the *minor addition* is not at risk from the erosion hazard for 25 years or a minimum setback of 7.5m, whichever is greater, as measured from the stable slope crest;
 - iv. *floodproofing* measures are incorporated to the extent and level possible, based on site-specific conditions, in accordance with the floodproofing policies of Section 5.8;
 - v. the *minor addition* shall not be more flood vulnerable than the existing structure, in that no openings on the *minor addition* are to be below the elevation of existing openings, nor shall the flood vulnerability of the existing building or structure be increased as the result of the addition;
 - vi. no basement is proposed, and any crawl space is designed to be non-habitable;
 - vii. *safe access* is available;
 - viii. the existing maintenance *access allowance* is not diminished, and is improved where possible; and
 - ix. subsequent requests for additions which will result in the cumulative exceedance of the maximum permitted allowance, as based on the original ground floor area, shall not be permitted.
- b) The *replacement* of an existing building or structure located wholly or partially within the shoreline *flooding hazard* or *erosion hazard*, other than those destroyed by flooding or erosion, may be permitted subject to the following:
- i. the *replacement structure* is located beyond hazard limits to the greatest extent possible, and otherwise located in the area of least hazard susceptibility and risk;
 - ii. The *replacement structure* does not encroach any further into the hazards than the existing structure;
 - iii. the *replacement structure* is not located within the *stable slope allowance*;
 - iv. *floodproofing* measures are incorporated to the extent and level possible, based on site-specific conditions, in accordance with the floodproofing policies of Section 5.8;
 - v. the *replacement structure* shall not be more flood vulnerable than the existing structure;
 - vi. *safe access* is available; and
 - vii. the existing maintenance *access allowance* is not diminished, and is improved where possible.

- c) Both the *replacement* of an existing building or structure and a *minor addition* to the same building may be permitted where the policies of both 5.3.3.4(a) and (b) are met.
- d) *Accessory structures* less than 15 m² (160 sq. ft.) will not require approval from the HCA.
- e) *Accessory structures* greater than 15 m² (160 sq. ft.) but less than 46 m² (500 sq. ft.) in size, may be permitted within the shoreline *flooding hazard* or *erosion hazard* subject to the following:
 - i. that the *accessory structure* cannot reasonably be located elsewhere on the property;
 - ii. *floodproofing* measures are incorporated to the extent and level possible, based on site-specific conditions, in accordance with the floodproofing policies of Section 5.8;
 - iii. the *accessory structure* is not at risk from the erosion hazard for 25 years or a minimum setback of 7.5m, whichever is greater, as measured from the stable slope crest; and
 - iv. the existing maintenance *access allowance* is not diminished, and is improved where possible.
- f) Repairs, maintenance and renovations to an existing building or structure that do not alter the use or potential use, do not increase the size, do not increase the number of *dwelling units*, or increase risks associated with shoreline hazards may be permitted.

5.3.3.5 Policies for Development Within the Regulated Allowance

Development activity that is within the regulated *allowance* associated with the shoreline may be permitted where it is confirmed the development activity is located outside of the *flooding hazard*, *erosion hazard* and *dynamic beach hazard*, and the general policies of Section 5.3 are met.

5.4 River and Stream Valleys

River and stream valleys are dynamic systems, shaped by natural processes that include flooding and erosion. The degree and frequency with which physical change occurs in these systems depends on the interaction of a number of factors and system characteristics including watercourse channel configuration, flows and sediment transport and deposition, water recharge and discharge, as well as bedrock and soil types, vegetation communities, and the stability of watercourse banks and adjacent valley slopes.

River and stream valley systems provide important hydrological and ecological functions at local and broader landscape level scales, and are critical to supporting the health of our watersheds. However, the constant shaping and re-shaping of river and stream systems can also create hazardous conditions which may pose risks to human health and safety, or cause property damage.

The flooding and erosion hazards associated with river and stream valley systems are discussed further in the following sections, including how regulation limits for valley systems are defined, how their related hazards are identified, and the policies to be applied for managing development and other activities in these areas.

5.4.1 Defining River and Stream Valley Regulation Limits

Under *O. Reg. 41/24*, the regulated limits of river and stream valleys are defined as follows:

2. (1) For the purposes of subparagraph 2 iii of subsection 28 (1) of the Act, river or stream valleys include river or stream valleys that have depressional features associated with a river or stream, whether or not they contain a watercourse, the limits of which are determined as follows:

1. Where the river or stream valley is apparent and has stable slopes, the valley extends from the stable top of the bank, plus 15 metres, to a similar point on the opposite side.
2. Where the river or stream valley is apparent and has unstable slopes, the valley extends from the predicted long-term stable slope projected from the existing stable slope or, if the toe of the slope is unstable, from the predicted location of the toe of the slope as a result of stream erosion over a projected 100-year period, plus 15 metres, to a similar point on the opposite side.
3. Where the river or stream valley is not apparent, the valley extends,
 - (i) to the furthest of the following distances:

A. the distance from a point outside the edge of the maximum extent of the flood plain under the applicable flood event standard to a similar point on the opposite side, and

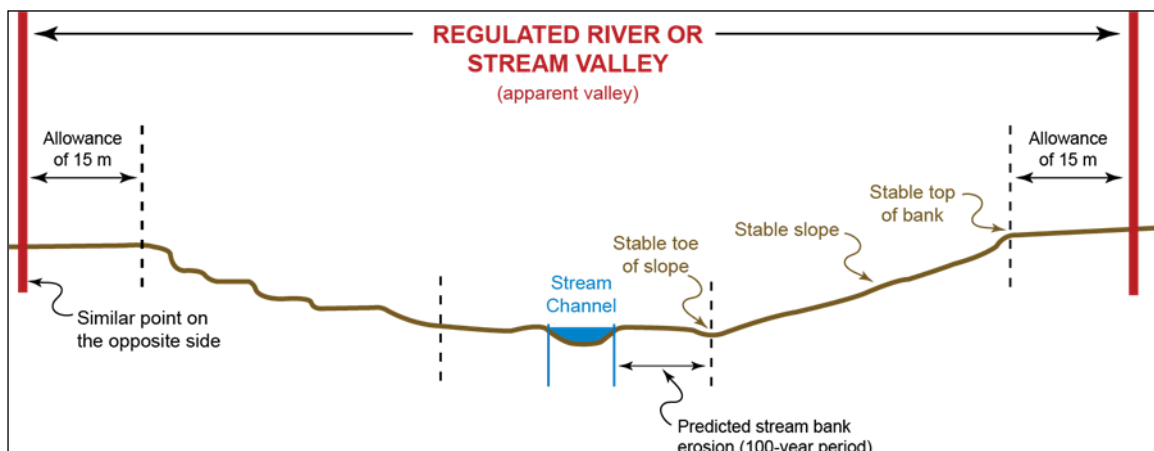
B. the distance from the predicted meander belt of a watercourse, expanded as required to convey the flood flows under the applicable flood event standard to a similar point on the opposite side, and

(ii) an additional 15-metre allowance on each side

The application of the regulation limit for rivers and stream systems is based on two simplified landforms, as explained in the *Technical Guides for River and Stream Systems* (MNR, 2002):

Apparent river and stream valleys (*confined systems*) are valleys in which the physical presence of a valley corridor containing a river or stream channel, which may or may not contain flowing water, is visibly discernible (i.e., valley walls are clearly definable) from the surrounding landscape by either field investigations, aerial photography and/or map interpretation. The location of the river or stream channel may be located at the base of the valley slope, in close proximity to the toe of the valley slope (i.e., within 15 metres), or removed from the toe of the valley slope (i.e., greater than 15 metres).

Not Apparent river and stream valleys (*unconfined systems*) are valleys in which a river or stream is present but there is no discernible valley slope or bank that can be detected from the surrounding landscape. For the most part, unconfined systems are found in fairly flat or gently rolling landscapes and may be located within the headwater areas of drainage basins. The river or stream channels contain either perennial (i.e., year-round) or ephemeral (i.e., seasonal or intermittent) flow and range in channel configuration from seepage and natural channels to detectable channels.



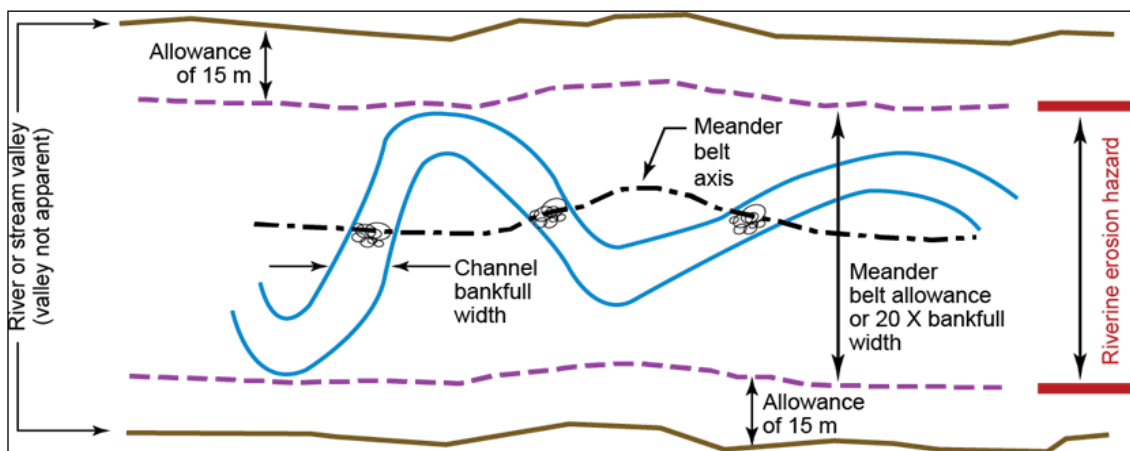
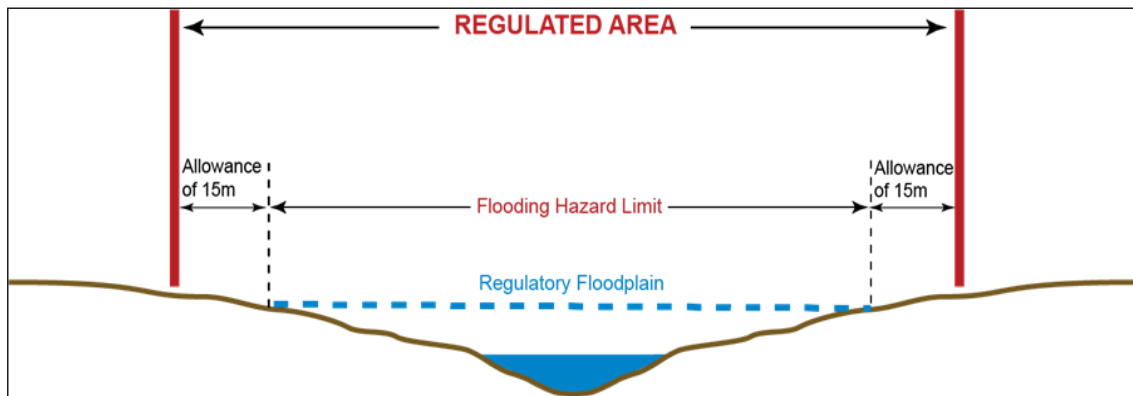
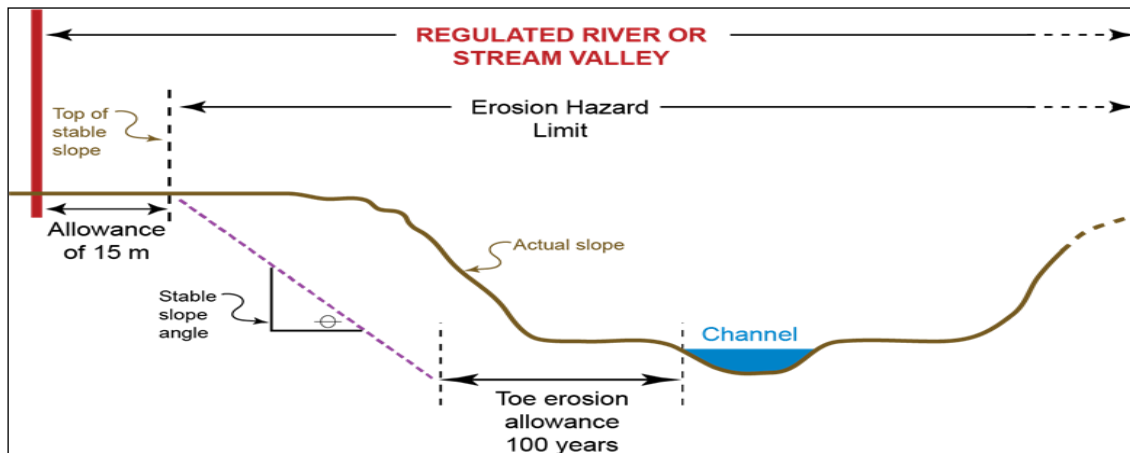


Figure 6: River and Stream Valley Regulation Limits

5.4.2 River and Stream Valleys – Erosion Hazards

Erosion involves the removal and transport of the earth's surface materials (rock and soil) by natural forces such as water, wind and ice. The flow of water over land and through river and stream valley systems can cause erosion of the ground surface, valley slopes, and of stream channels and banks. The rate and magnitude of erosion can vary considerably over time, and is dependent on a variety of factors, including flow volumes and velocities. Large storm events, heavy rainfall, ice movement and rapid snowmelt can increase the potential for erosion (MNR, 2001).

Erosion is a natural process, but can result in hazardous conditions where human activity or development comes into contact with erosional forces. Erosion can also be caused or aggravated by human activities, for example, by altering drainage patterns, developing on valley slopes or tablelands, and removing slope or riparian vegetation. *Erosion hazards* are defined as the loss of land, due to human or natural processes, that pose a threat to life and property. This can include the movement or failure of valley slopes, and the movement, scouring or undercutting of the banks of a watercourse.

5.4.2.1 Identifying the Erosion Hazard

The *erosion hazard* component of river and stream systems is intended to address both erosion potential of the banks of a watercourse, as well as erosion or potential slope stability issues or failure of valley walls associated with watercourses. The *erosion hazard* limit for river and stream systems is determined by using the 100-year erosion rate (the average annual rate of recession extended over a hundred-year time span), and allowances for slope stability and access during emergencies.

Determination of the *erosion hazard* depends on the type of system present. In order to identify the *erosion hazard* limit, the following components must be taken into consideration. The specific components that would be utilized vary depending on whether the stream system is *confined* (apparent) or *unconfined* (not apparent), as described more specifically below.

- a) A ***toe erosion allowance*** is the setback that helps to ensure safety if the toe (i.e. base) of the slope adjacent to a watercourse erodes, increasing the risk of slumping. River banks and valley slopes located in proximity to the outside of meanders or bends of a river or stream are particularly susceptible to erosion. A *toe erosion allowance* is generally only applied where *watercourses* are located within 15m of the *toe of slope*. The *toe erosion allowance* is determined using one of the following methods:
 - i. Using the values in Table 1, which details the minimum *toe erosion allowances* for specific soil types. If valid studies indicate that allowances should be greater than those indicated within the table, the greater of the two will be utilized; or
 - ii. The average annual recession rate, based on 25 years worth of accumulated erosion data, over a 100-year planning horizon; or

- iii. A 15m *toe erosion allowance* measured inland horizontally and perpendicular to the toe of the *watercourse* slope, where the soil type is not known; or
- iv. As determined by a valid study, which is based on 25 years worth of accumulated erosion data.

Type of material Native Soil Structure	Evidence of active erosion or where the bankfull flow velocity is greater than competent flow velocity	No evidence of active erosion		
		bankfull width		
		<5m	5-30m	>30m
Hard rock (e.g. granite)	0-2m	0m	0m	1m
Soft rock (shale, limestone), cobbles, boulders	2-5m	0m	1m	2m
Clays, clay-silt, gravels	5-8m	1m	2m	4m
Sand, silt	8-15m	1-2m	5m	7m

Table 1: Minimum toe erosion allowance - where river is within 15 m of slope toe

- b) A ***stable slope allowance*** is the setback that helps to ensure safety if slope failure or slumping occurs. The stability of slopes can be affected by a variety of factors, including soil composition, slope steepness, increases in loading (weight) from the placement of buildings, changes in drainage patterns, presence of groundwater, loss of vegetation, and erosion of the *toe of slope*. Signs that a slope may be unstable can include the presence of bare slopes, outward tilting of trees, toe erosion at the base of the slope, the presence of fill material, an easily erodible soil type, slumping, gullying or other visible erosion processes, or an angle greater than 3(H):1(V). The *stable slope allowance* identifies the *stable top of slope*, and is determined according to the following:
 - i. A horizontal allowance measured landward from the *toe of slope* (or *toe erosion allowance* where applicable) equivalent to three times the height of the slope (i.e. 3:1); or
 - ii. As determined by a valid study, using accepted geotechnical principles.
- c) A ***meander belt allowance*** is the setback that helps to ensure safety where river and stream meandering (movement) may occur. Rivers and streams are dynamic systems, and may change form over time as a result of the changes in flow, the movement of sediment, etc. The *meander belt allowance* identifies the maximum extent that the channel of a watercourse is expected to migrate (move) over time, and the area required to allow the natural processes of a river or stream (flow, flooding, erosion) to continue unimpeded over time. The *meander belt allowance* is determined based on one of the following:
 - i. Analyzing the bankfull channel width of the largest amplitude meander. The *meander belt allowance* is then defined as 20 times the bankfull channel width of the reach, centred on the meander belt axis. When determining the meander belt

- for relatively straight reaches, the meander belt should be centred on the mid-line of the channel; or
 - ii. As determined by a valid study, using accepted geotechnical principles.
- d) An **erosion access allowance** (or *access allowance*) is the setback that helps to ensure that people and vehicles have safe ingress and egress (entry and exit) during an emergency as a result of an erosion hazard (e.g. slope failure), and to provide access for machinery and equipment for the maintenance and repair of areas affected by erosion hazards. The *erosion access allowance* is based on the following:
- i. A minimum 6 m *erosion access allowance*, where possible, and as described further in policy 5.4.3.1(d); or
 - ii. As determined by a valid study, based on accepted scientific, geotechnical and engineering principles.

5.4.2.1.1 Erosion Hazard Limit for Confined Systems

Confined systems are those where the *watercourse* is located within a valley corridor, either with or without a *flood plain*, and is confined by valley walls. The *watercourse* may be located at the toe of the *valley slope*, in close proximity to the toe of the *valley slope* (less than 15 m) or removed from the toe of the *valley slope* (more than 15 m). The *watercourse* can contain perennial, intermittent or ephemeral flows and may range in channel configuration, from seepage and natural springs to detectable channels (MNR, 2001). Within the HCA's watershed, all valleys greater than or equal to 3 m in height are considered confined systems. As shown in Figures 7 and 8, the *erosion hazard* limit for *confined systems* shall be the combined influence of:

- i. a *toe erosion allowance*;
- ii. a *stable slope allowance*; and
- iii. an *erosion access allowance*. Or
- iv. as determined by a valid study which takes into consideration all of the above criteria.

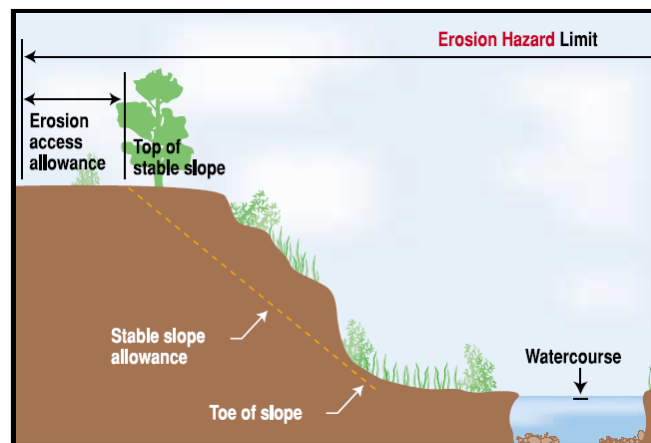


Figure 7: Erosion Hazard Limit for a Confined System
(where toe of slope is more than 15 m from watercourse)

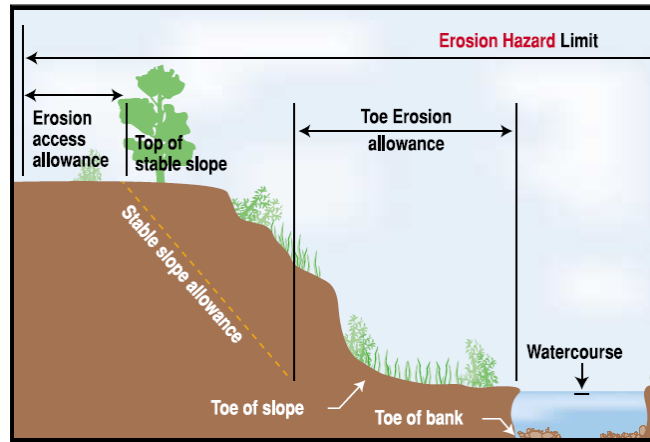


Figure 8: Erosion Hazard Limit for a Confined System
(where toe of slope is less than 15 m from watercourse)

5.4.2.1.2 Erosion Hazard Limit for Unconfined Systems

Unconfined systems are those systems where the *watercourse* is not located within a valley corridor with discernable slopes, but relatively flat to gently rolling plains and is not confined by valley walls. The *watercourse* can contain perennial, intermittent or ephemeral flows and may range in channel configuration, from seepage and natural springs to detectable channels. As shown in Figures 9 and 10, the *erosion hazard* limit for *unconfined river and stream* systems shall be the combined influence of:

- i. the *floodings hazard* limit;
- ii. the *meander belt allowance*; and
- iii. an *erosion access allowance*. Or
- v. as determined by a valid study which takes into consideration all of the above criteria.

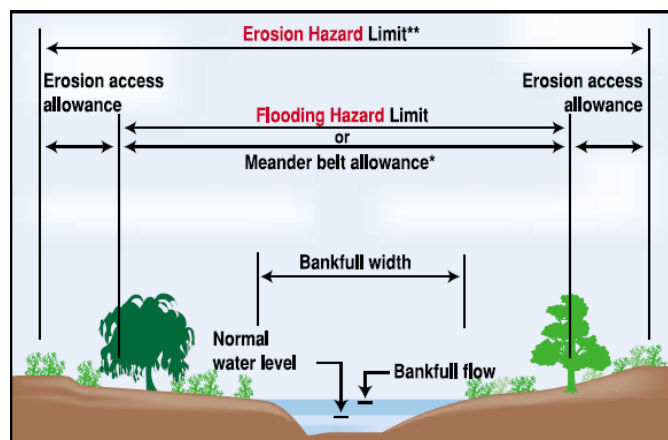


Figure 9: Erosion Hazard Limit for an Unconfined System

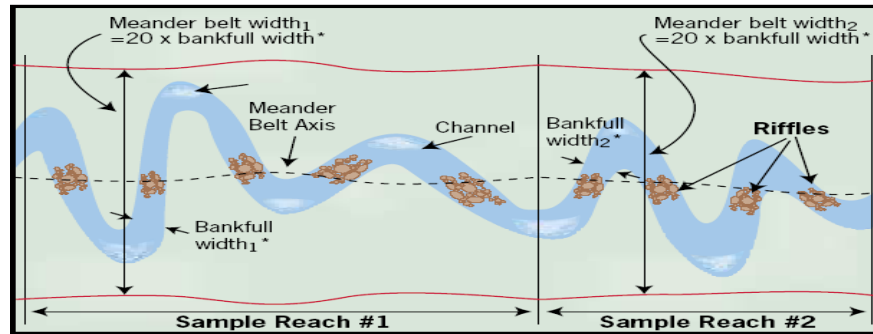


Figure 10: Meander Belt delineation

5.4.3 Policies for Development Within the Erosion Hazard

The HCA watershed contains numerous river and stream (*watercourse*) valley systems. Historic and on-going development pressures in some of these areas require that erosion hazard limits be appropriately identified and considered. The provincial policy framework directs development away from areas of natural hazards where there is an unacceptable risk to public health or safety or of property damage, and so as to not create new or aggravate existing hazards, or to cause negative impacts to natural river valley systems. Generally, development is to be directed away from lands affected by erosion hazards, as described more specifically in the policies included in this section.

5.4.3.1 General Policies

- a) *Development activities* within the *erosion hazard* or associated regulated *allowance* of a river or stream valley are prohibited, except in accordance with the policies of sections 5.4.3.1 to 5.4.3.4, and the general policies of Section 5.2.
- b) The *erosion hazard* limit must be identified as part of any proposal *development activity* within or adjacent to a river or stream valley. Where a site-specific study is not completed to identify the *erosion hazard*, HCA will apply the following, as may be applicable:
 - i. 3:1 *stable slope allowance*;
 - ii. 15 m *toe erosion allowance*;
 - iii. 20x bankfull width *meander belt allowance*; and
 - iv. 6 m *erosion access allowance*.
- c) HCA may require that the physical *top of slope* and/or *stable top of slope* be confirmed in the field and surveyed in support of any proposal for *development activity* within or adjacent to a *confined system*. HCA staff may require a site visit for this purpose. When identifying river or stream valley limits, HCA will evaluate *disconnected features* on a case by case.

- d) A 6 m *access allowance* shall be provided as part of any *development activity* to ensure that people and vehicles have *safe access* during an emergency as a result of erosion or flooding hazards, and to provide access to the valley and/or *watercourse* for equipment and machinery for the purpose of maintaining and repairing property that may be affected by hazards. The *access allowance* provided must include access from a municipal road, along one side yard of the property, to and along the valley *top of stable slope*, *toe of slope*, or *meander belt allowance*, as applicable. A reduction in the 6 m *access allowance* may be considered where it is demonstrated:
 - i. the reduction would not constrain access over the long-term;
 - ii. that access is appropriate for site conditions and hazards, and equipment that may be required to repair property or structures damaged by hazards; and
 - iii. a minimum 3 m access is maintained.
- e) *Access allowances* may be shared between adjacent landowners provided that the shared access is registered as an easement on property title.

5.4.3.2 New Development

- a) Public *infrastructure*, *conservation projects* and passive recreational uses that have been reviewed and approved through a subwatershed study, *environmental assessment* process, or similar *comprehensive study* that has been supported by HCA, may be permitted within the *erosion hazard* where it has been demonstrated:
 - i. the feasibility of locating the development beyond the *erosion hazard* has been examined and no alternative exists;
 - ii. the development is located beyond the *erosion hazard* to the greatest extent possible, and otherwise located in the area of least hazard susceptibility and risk; and
 - iii. the general policies of Section 5.2 are met.
- b) Stream bank, slope stabilization and erosion control works to protect existing development may be permitted subject to the *watercourse* policies of Section 5.5, and the general policies of Section 5.2.
- c) Limited *development activity* may be permitted within an *erosion access allowance* where it is demonstrated:
 - i. there will be no adverse impacts on the valley slope and associated *erosion hazard*;
 - ii. the overall function of the access allowance is maintained over the long-term in accordance with 5.4.3.1(d); and
 - iii. the general policies of Section 5.2 are met.
- d) Where regulated river or stream valleys contain lands that are not subject to erosion or flooding hazards, such isolated plateaus or tablelands within a valley, *development activity* may be permitted where it is demonstrated:

- i. the *development activity* is located outside of *hazardous lands* and there will be no adverse impacts on natural hazards;
- ii. *safe access* is available; and
- iii. the general policies of Section 5.2 are met.

5.4.3.3 Existing Development

- k) A *minor addition* to an existing building or structure within the *erosion hazard* may be permitted subject to the following:
 - i. the *minor addition* does not establish additional *dwelling units*;
 - ii. the *minor addition* is located beyond the *erosion hazard* to the greatest extent possible, and otherwise located in the area of least hazard susceptibility and risk;
 - iii. the *minor addition* does not encroach any further into the *erosion hazard* than the existing structure;
 - iv. the existing building or structure or *minor addition* is not located on an unstable slope or bank;
 - v. there will be no adverse impact on slope or bank stability;
 - vi. erosion control or stabilization works are not required to support the *minor addition*;
 - vii. appropriate engineering design and structural measures for site conditions are incorporated into the design and construction of the *minor addition*;
 - viii. an *erosion access allowance* is maintained in accordance with 5.4.3.1(d); and
 - ix. subsequent requests for *additions* which will result in the cumulative exceedance of the maximum permitted allowance, as based on the *original ground floor area*, shall not be permitted.
- l) The *replacement* of an existing building or structure within the *erosion hazard*, other than those destroyed by flooding or erosion, may be permitted subject to the following:
 - i. the *replacement structure* is located beyond the *erosion hazard* to the greatest extent possible, and otherwise located in the area of least hazard susceptibility and risk;
 - ii. the *replacement structure* does not encroach any further into the *erosion hazard* than the existing building or structure;
 - iii. the *replacement structure* is not located on an unstable slope or bank;
 - iv. there will be no adverse impact on slope or bank stability;
 - v. erosion control or stabilization works are not required to support the *replacement structure*;
 - vi. appropriate engineering design and structural measures for site conditions are incorporated into the design and construction of the building; and
 - vii. an *erosion access allowance* is maintained in accordance with 5.4.3.1(d)
- m) Both the *replacement* of an existing building or structure and a *minor addition* to the same building or structure may be permitted where the policies of both (k) and (l) are met.

- n) *Accessory structures* less than 15 m² (160 sq. ft.) will not require approval from the HCA.
- o) *Accessory structures* greater than 15 m² (160 sq. ft.) but less than 46 m² (500 sq. ft.) in size, may be permitted within the *erosion hazard* subject to the following:
 - i. that the *accessory structure* cannot reasonably be located elsewhere on the property;
 - ii. the *accessory structure* is not located on an unstable slope or bank;
 - iii. there will be no adverse impact on slope or bank stability;
 - iv. erosion control or stabilization works are not required to support the *accessory structure*;
 - v. appropriate engineering design and structural measures for site conditions are incorporated into the design and construction of the *accessory structure*; and
 - vi. an *erosion access allowance* is maintained in accordance with 5.4.3.1(d)
- p) Repairs, maintenance and renovations to any building or structure that do not alter the use or potential use, do not increase the size, do not increase the number of *dwelling units*, or increase risks associated with *erosion hazards* may be permitted.

5.4.3.4 Policies for Development Within the Regulated Allowance

- a) *Development activity* that is within the regulated allowance of a river or stream valley may be permitted where it is confirmed the *development activity* is located outside of the *erosion hazard* and the general policies of Section 5.2 are met.

5.4.4 River and Stream Valleys – Flooding Hazards

Flooding is the inundation or submergence of normally dry land under water as a result of a waterbody overflowing its limits. Flooding of river and stream systems is a natural occurrence, and may occur during the spring freshet or as a result of storm events. Flooding is often naturally contained within river and stream valley corridors, and provides important hydrological and ecological functions such as nutrient transport and soil enhancement, habitat creation and groundwater recharge.

Historically, development has occurred in flood prone areas because of the availability of water for power, transportation, waste assimilation, and domestic and industrial consumption. Flooding in developed areas has the potential to create hazardous conditions, and can cause significant property damage and risk to public health and safety. The potential for flooding to occur may be aggravated by human activities and development, for example, as a result of increases in impervious area and greater overland runoff which results in more water reaching river and stream systems more quickly.

The *flooding hazard* limit, or *floodplain*, for a river or stream is defined as the area adjacent to the watercourse which would be inundated by the flood resulting from a specified flood event standard. In Ontario, either storm centred events, observed events, or a flood frequency-based event may be used to determine the extent of the *flooding hazard* limit.

Development is generally to be directed to areas outside of the flooding hazards. The principal objective of the flooding hazard policies outlined in this section is to prevent and minimize the potential for property damage and risk to public health and safety as a result of flooding.

5.4.4.1 Identifying the Flooding Hazard

The *flooding hazard* limit (or '*regulatory floodplain*') for watercourses within the HCA watershed is defined based on the *Hurricane Hazel* flood event standard (the *Regional Storm*), with the exception of the numbered watercourses in Stoney Creek where the 100-year flood frequency event is used to determine the floodplain. The applicable flood event standard may be referred to as the *regulatory storm*.

Within Ontario there are three main policy approaches to floodplain management, the One Zone Concept, Two Zone Concept and Special Policy Area Concept. Each of these are described in more detail below. The HCA manages *regulatory floodplain* lands in the watershed under the *one zone* concept, with the exception of the Dundas *Special Policy Areas* (SPAs), which utilize the *floodway* and *flood fringe* management approach, and are treated as *two zone* areas. The HCA watersheds also contain a number of *floodplain spill areas*, which are managed differently than one zone areas.

5.4.4.1.1 One Zone Areas

Under the *one zone concept*, the *floodplain* is defined as a single zone based on the adopted flood event standard (or *regulatory flood*). Where the *one zone concept* is applied, the entire *floodplain* or the entire *flooding hazard* limit defines the *floodway* (Figure 11). New development within one zone areas is generally prohibited or significantly restricted. The one zone approach is the most effective way of minimizing threats to public health and safety and property damage. The *one zone concept* is the preferred approach for the management of *flooding hazards* within river and stream systems as it provides the most cost-effective means of minimizing potential threats to life and risks of property damage and social disruption.

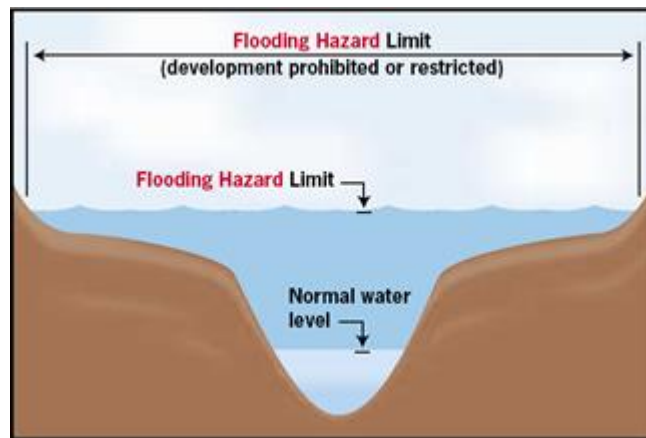


Figure 11: Flooding Hazard Limit for One Zone Concept

5.4.4.1.2 Two Zone Areas

Where a municipality and conservation authority, in consultation with the Province, determine and demonstrate that a one zone approach is too restrictive for an existing urban or built-up area, selective application of the *two zone concept* may be considered. The *two zone concept* divides the *floodplain* into two areas, the *floodway* and *flood fringe* (Figure 12). The *floodway* refers to the inner portion of the *floodplain* where the majority of the flow is conveyed. The *floodway* represents the area required for the safe passage of flood flows and/or the area where flood depths and/or velocities are considered to pose a threat to public health and safety and property damage. The *flood fringe* is the portion of the *floodplain* where development may be permitted subject to certain policies and procedures, including meeting floodproofing and access standards. Some factors taken into account when determining the more hazardous areas of *floodplains* include depth of water, velocity of flow, combined depth and velocity, vehicle access and structural integrity (MNR & Watershed Science Centre, 2001).

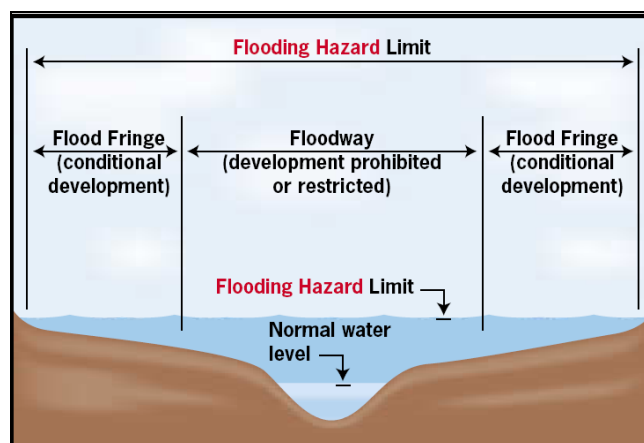


Figure 12: Flooding Hazard Limit for Two Zone Concept

5.4.4.1.3 Special Policy Areas

The *Special Policy Area* (SPA) concept may be applied in exceptional circumstances where One Zone or Two Zone approaches have been demonstrated to be too stringent, and would likely cause significant social and economic hardships to a community. The SPA approach has generally been limited to those communities or neighbourhoods that were historically built within flood prone areas prior to provincial floodplain policies being in effect. The SPA approach is intended to provide for the continued viability of existing land uses in such communities, while also ensuring sufficient protection against hazards. A SPA is generally not intended to allow for new or intensified development if a community has feasible opportunities for growth outside the floodplain.

Where a SPA is applied, the municipality, conservation authority, and the Province of Ontario (MNR and MMAH) must agree to relax provincial floodproofing and technical standards and accept a higher level of risk. The suitability of applying the SPA approach would be reviewed on the basis of technical criteria and procedures established by the Province.

5.4.4.1.4 Floodplain Spill Areas

Floodplain spill areas are locations where flood waters may leave the normal floodplain of a watercourse and “spill” into surrounding lands, rejoining the watercourse and its floodplain at a distance downstream. In some cases, a spill area may flow to another watershed. *Floodplain spill areas* may occur naturally, or as a result of barriers to the passage of flood flows through a watercourse system, such as bridges and culverts.

Given these characteristics, the limit and depth of floodplain spill areas is often difficult to determine. Regulatory floodplain maps may highlight spill areas using general notation or directional arrows to indicate the approximate location and direction of a spill. With new and emerging modelling and mapping tools and technologies, it is possible to more accurately define spill areas in some cases.

Floodplain spill areas are considered hazardous lands and part of the flooding hazard. These areas may be regulated by conservation authorities, and require regulatory approval where development is proposed.

5.4.5 Policies for Development Within the Flooding Hazard

5.4.5.1 General Policies

- a) *Floodplains* within the HCA watershed will be managed under the *one zone concept*, with the exception of floodplain lands in portions of the Town of Dundas which are identified as a *Special Policy Area* and *floodplain spill areas*.
- b) *Development activities* within the *flooding hazard* or associated regulated *allowance* of a river or stream valley are prohibited, except in accordance with the policies of Sections 5.4.5.1 to 5.4.5.7, and the general policies of Section 5.2.

- c) The *flooding hazard* limit must be identified as part of any development proposal within or adjacent to a river or stream valley or *watercourse*.
- d) Where the *flooding hazard* limit has not been identified, or existing available information regarding the extent of the *flooding hazard* limit is insufficient, HCA may require an applicant for *development activity* to undertake an assessment to identify or confirm the *flooding hazard*.

5.4.5.2 New Development

- a) Public *infrastructure*, *conservation projects* and passive recreational uses that have been reviewed and approved through a subwatershed study, *environmental assessment*, or similar *comprehensive study* that has been supported by HCA, may be permitted within the *flooding hazard* where it has been demonstrated:
 - i. the feasibility of locating the development beyond the *flooding hazard* has been examined and no alternative exists;
 - ii. the development is located beyond the *flooding hazard* to the greatest extent possible, and otherwise located in the area of least hazard susceptibility and risk; and
 - iii. the general policies of Section 5.2 are met.
- b) *Agricultural uses* may be permitted provided they met the general policies of Section 5.2.
- c) Stream bank, slope stabilization and erosion control works, and *floodproofing* measures to protect existing development may be permitted subject to the *watercourse* policies of Section 5.5, *floodproofing* policies of Section 5.8, and the general policies of Section 5.2.
- d) Where the *regulatory floodplain* contains isolated high points or areas of land above the *flooding hazard*, such locations will be considered as part of the *regulatory floodplain* and *development activity* shall not be permitted.
- e) Construction of a driveway or access through the *regulatory floodplain* in order to provide access to lands outside of the *regulatory floodplain* may be permitted where it has been demonstrated:
 - i. *safe access* can be achieved;
 - ii. the applicable policies addressing *interference* with a *watercourse* or *wetland* have been satisfied; and
 - iii. the general policies of Section 5.2 are met.
- f) Above ground parking lots may be permitted where the general policies of Section 5.2 are met.

5.4.5.3 Existing Development

- a) A *minor addition* to an existing building or structure in the *floodplain* may be permitted subject to the following:
- i. the *minor addition* does not establish additional *dwelling units*;
 - ii. the *minor addition* is located beyond the *flooding hazard* to the greatest extent possible, and otherwise located in the area of least hazard susceptibility and risk;
 - iii. *minor additions* must incorporate *floodproofing* measures to the extent and level possible, based on site-specific conditions, in accordance with the floodproofing policies of Section 5.8;
 - iv. *minor additions* shall not be more flood vulnerable than the existing structure, in that no openings on the addition are to be below the elevation of existing openings, nor shall the flood vulnerability of the existing building or structure be increased as the result of the addition;
 - v. no basement is proposed, and any crawl space is designed to be non-habitable;
 - vi. *safe access* is available; and
 - vii. subsequent requests for *additions* which will result in the cumulative exceedance of the maximum permitted allowance, as based on the *original ground floor area*, shall not be permitted.
- b) The *replacement* of an existing building or structure within the *flooding hazard*, other than those destroyed by flooding or erosion, may be permitted subject to the following:
- i. the *replacement structure* is beyond the *flooding hazard* to the greatest extent possible, and otherwise located in the area of least hazard susceptibility and risk;
 - ii. *replacement structures* must incorporate *floodproofing* measures to the extent and level possible in accordance with the *floodproofing* policies of Section 5.8;
 - iii. *replacement structures* shall not be more flood vulnerable than the existing structure; and
 - iv. *safe access* is available.
- c) Both the *replacement* of an existing building or structure and a *minor addition* to the same building or structure may be permitted where the policies of both (a) and (b) are met.
- d) *Accessory structures* less than 15 m² (160 sq. ft.) will not require approval from the HCA.
- e) *Accessory structures* greater than 15 m² (160 sq. ft.) but less than 46 m² (500 sq. ft.) in size, may be permitted within the *flooding hazard* subject to the following:
- i. the *accessory structure* cannot reasonably be located elsewhere on the property;

- ii. the *regulatory floodplain* elevation is not increased and the existing stage/storage characteristics are maintained;
 - iii. there are no *adverse hydraulic and fluvial impacts*; and
 - iv. *accessory structures* are floodproofed to the level of the *regulatory floodplain* in accordance with the *floodproofing* policies of Section 5.8.
- f) Repairs, maintenance and renovations to any building or structure that do not alter the use or potential use, do not increase the size, do not increase the number of *dwelling units*, or increase risks associated with *flooding hazards* may be permitted.

5.4.5.4 Policies for Development Within the Regulated Allowance

- a) *Development activity* that is within the regulation allowance of a river or stream valley may be permitted where it is confirmed the development activity is located outside of the *flooding hazard* and the general policies of section 5.3 are met.

5.4.5.5 Policies for Cut and Fill

Cut and fill is a technique that is used to balance flood storage losses resulting from the placement of *fill* within a *floodplain*. This is achieved by removing (cutting) a volume of earth at the appropriate elevation and location to offset areas within the *floodplain* to be filled. The suitability of cut and fill operations is extremely site-specific.

It should be recognized that in conducting a cut and fill, additional flood free lands are not obtained. A cut and fill will only serve to transfer floodwaters from one area to another as a result of the manipulation of the land's contours. HCA generally does not encourage cut and fill operations as it may alter the existing contours of the *floodplain* which can lead to potential safety risks for people and property. Any proposals for cut and fill operations within the *flooding hazard* must be in accordance with the following policies and general policies of Section 5.2.

- a) The amount of *fill* removed (cut) must be equal to or greater than the volume of *fill* proposed for placement within the *floodplain*.
- b) All excess *fill* material removed (cut) shall be required to be moved to an area that is outside of the *floodplain*.
- c) Cut and *fill* must be balanced in 0.3 m (1 foot) increments.
- d) It is demonstrated there will be no *adverse hydraulic and fluvial impacts*, or adverse impacts to the *hydrologic functions* or conditions of *wetlands*.
- e) Depending on the location of the proposed works a geotechnical evaluation may be required in order to ensure the long-term stability of the works.

5.4.5.6 Policies for Floodplain Spill Areas

Development activity may be permitted in *floodplain spill areas* subject to the following policies.

- a) Where there is a land use planning process associated with a proposed *development activity*, opportunities for *remediation* of the *floodplain spill area* must be examined and implemented to the extent feasible in accordance with policy 4.3.1(n).
- b) Where a *floodplain spill area* is not completely remediated, or there is no land use planning process, the following must be demonstrated before a *development activity* may be permitted:
 - i. the *development activity* is not prohibited by the policies of Section 4 or Section 5;
 - ii. the depth and velocity of the *floodplain spill area* has been determined or can be reasonably estimated based on existing available information;
 - iii. the *development activity* does not impede flood conveyance or storage, or increase flood depths or velocities;
 - iv. the *development activity* incorporates *floodproofing* measures to the extent and level possible, based on site-specific conditions, in accordance with the *floodproofing* policies of Section 5.8; and
 - v. *safe access* is available.

5.4.5.7 Policies for the Dundas Special Policy Areas

Due to historical development in flood prone areas associated with Spencer, Sydenham and Ann Creeks in the (former) Town of Dundas, the HCA and the Town underwent a technical assessment and Official Plan consolidation in October of 2000. This had the effect of creating four designated *Special Policy Areas* (SPA) within the former Town of Dundas which are managed as two zone areas.

A new Urban Hamilton Official Plan (UHOP) came into effect in 2013. The policies for the Dundas SPAs are included in Volume 3 of the UHOP, in Chapter B, Dundas Area Specific Policies, sections UD-1 to UD-3 for the Dundas Two Zone Floodplain Area. Where HCA receives an application for *development activity* within the Dundas SPAs, the following policies will be applied:

- a) When considering *development activity* within the Dundas SPAs, HCA will refer to, and require conformity with, the Dundas Two Zone Floodplain Area policies of the Urban Hamilton Official Plan, or any amendments, updates, or revisions thereto.
- b) Where the Dundas SPAs refer to the policies of the Hamilton Conservation Authority, HCA will rely on the policies of this plan as may be applicable, including the policies of Section 5.8 and 5.9 where *floodproofing* and *safe access* are required by the SPA.

5.5 Watercourses

Watercourses are vital to the health of watersheds. Rivers, streams, creeks and headwater drainage features provide important functions and benefits that support healthy ecosystems and communities, including habitat for a diversity of aquatic and terrestrial species, groundwater recharge, clean drinking water, irrigation for agriculture, electricity generation and recreation. Watercourses also play a critical role in the conveyance of water through watersheds and in protecting communities from flooding.

The structure and function of watercourses are influenced by channel morphology, sediment characteristics, soil types, bedrock conditions, as well as the nature and extent of vegetation in a watercourse and along its banks. Changes in these conditions can have a significant influence on other parts of the system. Similarly, changes in the volume, peaks and timing of flows can significantly impact watercourse morphology, sediment transport and riparian vegetation. The dynamic nature of watercourses may create hazardous conditions resulting from flooding and erosion.

5.5.1 Defining Watercourse Regulation Limits

For the purposes of Section 28 of the *Conservation Authorities Act* and the prohibition of certain activities in watercourses, *O. Reg. 41/24* defines a *watercourse* as a channel, having a bed and banks or sides, in which a flow of water regularly or continuously occurs.

The regulated area associated with a *watercourse* is defined based on the extent of its apparent valley limits, or in the case of a valley that is not apparent, the extent of its *flooding hazard* (floodplain) or *erosion hazard* (meander belt), plus an additional 15 m allowance, as described in more detail in Section 5.4.

5.5.2 Policies for Interference with Watercourses

- a) *Interference* in any way with the existing channel of a river, creek, stream or *watercourse* is prohibited, except in accordance with the policies of Section 5.5.2, and the general policies of Section 5.2.
- b) HCA may require a site visit and/or technical studies to confirm the presence, status or extent of a *watercourse* as part of any proposed *development activity* or *interference*.
- c) *Interference* with a *watercourse* for public *infrastructure*, *conservation projects* and passive recreational uses that have been reviewed and approved through a subwatershed study, *environmental assessment*, or similar *comprehensive study* that has been supported by HCA, may be permitted where the general policies of Section 5.2 are met.

- d) Minor works and activities that may result in *interference* with a *watercourse*, such as ditch maintenance, culvert cleanouts, etc., may be permitted where the general policies of Section 5.2 are addressed.
- e) *Interference* with a *watercourse*, including realignment, channelization, or enclosure, for the purpose of creating a new building lot, establishing additional developable area, or facilitating new development may be permitted where the following are demonstrated:
 - i. the activity has been considered and approved through a subwatershed plan, *environmental assessment*, or similar *comprehensive study*, that has been supported by the HCA;
 - ii. alternatives have been considered that could reasonably maintain the *watercourse* in its current location and condition;
 - iii. the activity will result in mitigation or *remediation* of hazardous conditions, reduce risks to existing development, and improve public safety;
 - iv. there will be no *adverse hydraulic and fluvial impacts*;
 - v. there will be no adverse impacts on *water resource systems* or the *hydrologic functions* or conditions of *wetlands*;
 - vi. slope and bank stability issues are addressed; and
 - vii. natural channel design principles are considered and utilized to the maximum extent possible.
- f) *Watercourse* crossings may be permitted subject to the following:
 - i. crossings are designed (i.e. type, location, size, alignment, etc.) to be compatible with site conditions and *watercourse* characteristics, and to minimize adverse impacts;
 - ii. crossings should generally be perpendicular to the *watercourse*;
 - iii. low flow conditions are maintained within the crossing;
 - iv. culverts have an open bottom where feasible, and where not feasible culverts are appropriately embedded into the *watercourse*;
 - v. there will be no *adverse hydraulic and fluvial impacts*;
 - vi. there will be no adverse impacts on *water resource systems* or the *hydrologic functions* or conditions of *wetlands*;
 - vii. slope and bank stability issues are addressed;
 - viii. mitigation measures and restoration work appropriate for the scale of the *interference* and site conditions are implemented; and
 - ix. low-level crossings for agricultural uses are designed and implemented in accordance with best practices.

5.6 Wetlands

Wetlands are among the most productive and biologically diverse habitats on earth. They provide critical ecological and *hydrologic functions*, ecosystem services, and socio-economic benefits. *Wetlands* retain water during periods of high-water levels or peak flows (i.e. spring freshet and storm events), allowing the water to be slowly released into watercourses, infiltrate into the ground, and evaporate. This process provides natural flood attenuation and reduces the energy associated with flood waters, reducing the impacts of flooding and erosion. *Wetlands* also release water during times of drought to maintain base flows in streams and creeks. Improvement of water quality, provision of habitat for a wide variety of plant and animal species, climate change mitigation and the provision of recreational opportunities are further benefits that *wetlands* support. The areas adjacent to *wetlands* also play an important role in supporting and maintaining the function of *wetlands*.

Development and other activities that may occur within or adjacent to *wetlands* have the potential to impact the condition and *hydrologic functions* of *wetlands*, and result in adverse impacts to flooding and erosion hazards. The policies set out in this section are intended to protect, maintain and restore wetlands within the watershed.

5.6.1 Defining Wetland Regulation Limits

For the purposes of Section 28 of the *Conservation Authorities Act* and the prohibition of certain activities in wetlands or areas adjacent to wetlands, O. Reg. 41/24 defines a *wetland* as land that:

- a) is seasonally or permanently covered by shallow water or has a water table close to or at its surface,
- b) directly contributes to the hydrological function of a watershed through connection with a surface watercourse,
- c) has hydric soils, the formation of which has been caused by the presence of abundant water, and
- d) has vegetation dominated by hydrophytic plants or water tolerant plants, the dominance of which has been favoured by the presence of abundant water.

The definition of *wetland* does not include periodically soaked or wet land used for agricultural purposes which no longer exhibits a wetland characteristic referred to in clause (c) or (d) of that definition.

The areas adjacent to *wetlands* are considered to be all lands within 30 m of *wetlands* and are referred to as *other areas* under the *Conservation Authorities Act* and O. Reg. 41/24:

2. (3) For the purposes of subparagraph 28(1) 2.v. of the Act, no person shall carry out development activities in areas that are within an authority's area of jurisdiction and are within 30 metres of a wetland.

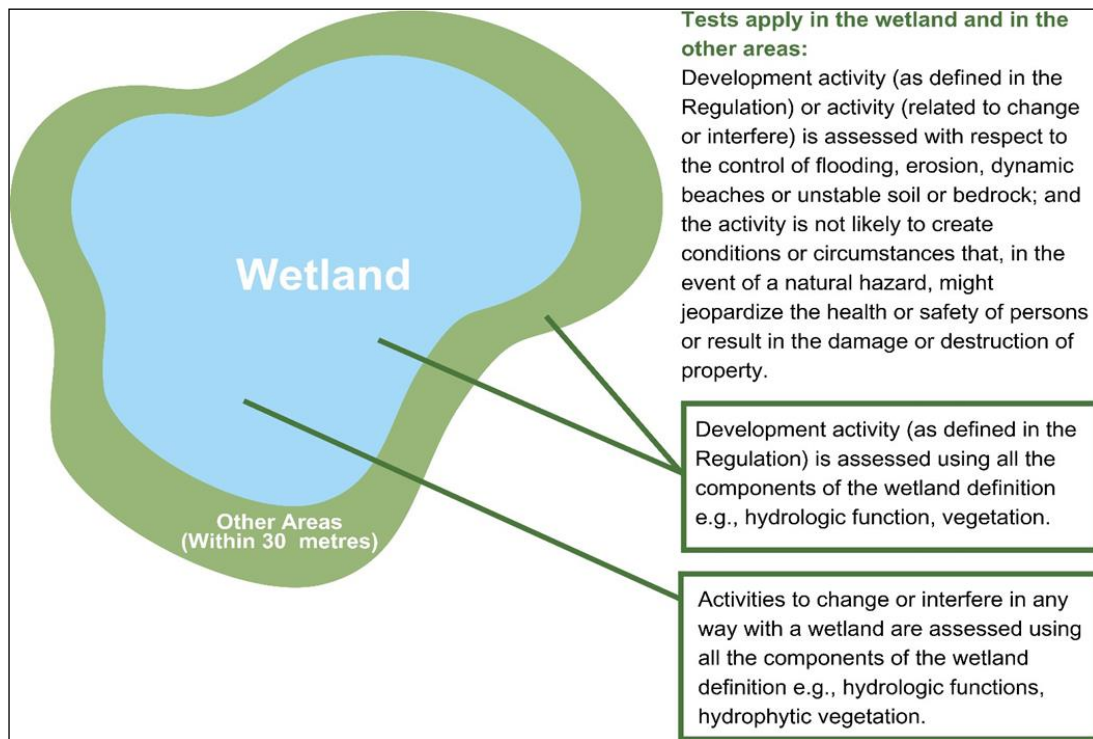


Figure 13: Regulation Limits of Wetlands and Other Areas

5.6.2 Policies for Development and Interference with Wetlands

5.6.2.1 General Policies

- a) *Development activity* within *wetlands* and within 30 m of *wetlands*, and *interference* within *wetlands* is prohibited, except in accordance with the policies of 5.7.2.1 to 5.7.2.3, and the general policies of Section 5.2.
- b) *Wetland* boundaries must be confirmed as part of any proposal for *development activity* or *interference* within a *wetland* or *development activity* within 30 m of a *wetland*, in consultation with the HCA. A site visit with HCA staff at a seasonally appropriate time, technical studies or assessments, and/or a survey may be required to confirm *wetland* boundaries.
- c) HCA may require the completion of studies such as a Hydrological Study or Water Balance Assessment to evaluate the potential impacts of any proposed *development activity* or *interference* within a *wetland* or *development activity* within 30 m of a *wetland*. Study requirements are to be determined in consultation with HCA, and must be completed by a qualified professional.

5.6.2.2 Development and Interference within Wetlands

- a) *Development activity* and *interference* within *wetlands* may be permitted where it has been demonstrated that:
- i. the *wetland* is not located within the Greenbelt Plan area;
 - ii. the *development activity* or *interference* is not located within a floodplain;
 - iii. the feasibility of locating the *development activity* or *interference* outside the *wetland* has been examined and no reasonable alternative exists;
 - iv. the *hydrologic functions* and features of the *wetland* have been assessed, and there would be no adverse impacts on functions or features that support the control or mitigation of flooding or erosion hazards;
 - v. hazards related to unstable soils (organic soils) or bedrock are addressed;
 - vi. there would be no increase in hazard related risks to public health and safety or property;
 - vii. mitigation measures will be implemented to minimize impacts on the *wetland's hydrologic functions*, and to restore or replace *hydrologic functions* to the greatest extent possible; and
 - viii. the general policies of Section 5.2 are addressed.
- b) Notwithstanding 5.7.2.2(a), peat extraction within a *wetland* will not be permitted.
- c) Public *infrastructure*, *conservation projects* and passive recreational uses that have been reviewed and approved through a subwatershed study, *environmental assessment* or similar *comprehensive study* that has been supported by HCA, may be permitted within *wetlands* where it has been demonstrated that:
- i. the feasibility of locating the development outside the *wetland* has been examined and no reasonable alternative exists;
 - ii. hazards related to unstable soils (organic soils) or bedrock are addressed; and
 - iii. the general policies of Section 5.2 are met.
- d) The *replacement* of existing buildings and structures within *wetlands* may be permitted where it has been demonstrated that:
- i. the feasibility of locating the building or structure outside of the *wetland* has been examined and no reasonable alternative exists;
 - ii. the building or structure is replaced within the existing disturbed area;
 - iii. there will be no adverse impacts on flooding and erosion hazards, or increase in hazard related risks to public health and safety or property;
 - iv. hazards related to unstable soils (organic soils) or bedrock are addressed; and
 - v. mitigation measures will be implemented to minimize impacts on the *wetland's hydrologic functions*, and to restore or replace *hydrologic functions* to the greatest extent possible.
- e) *Interference* with a *wetland* by selective tree harvesting employing food forestry practices may be permitted where it is demonstrated there will be no adverse impacts on the *hydrologic functions* of the *wetland*.

5.6.2.3 Development within 30 m of a Wetland

- a) *Development activity* within 30 m of a *wetland* may be permitted where it has been demonstrated that:
- i. the *wetland* is not located within the Greenbelt Plan area;
 - ii. the feasibility of locating the *development activity* greater than 30 m from the *wetland* has been examined and no reasonable alternative exists;
 - iii. there will be no adverse impacts on flooding and erosion hazards, or increase in hazard related risks to public health and safety or property;
 - iv. the *floodplain* policies of Section 5.4.5 are addressed as required; and
 - v. the *development activity* maintains as much setback from the *wetland* as feasible; and
 - vi. mitigation measures will be implemented to minimize impacts on the wetland's *hydrologic functions*.

5.7 Hazardous Lands

Areas of land and water that are affected by naturally occurring processes or features associated with flooding and erosion, or unstable soils or bedrock may be considered *hazardous lands*. Development in such areas is generally considered unsafe, as it has the potential to put property and people at risk. While Sections 5.3 to 5.6 have covered flooding, erosion and dynamic beach hazards in detail, the focus of this section is on lands affected by unstable soils and bedrock.

Karst formations include features such as sinking streams, *sinkholes*, fissures, grikes, caves and springs. These features are created by water flowing over and through limestone, dolomite or other soluble rock. Karst formations have unique drainage patterns, where significant portions of the drainage network may be located beneath the surface. Within the HCA watershed, karst formations are found in areas along and above the Niagara Escarpment, including the Eramosa Karst Area of Natural and Scientific Interest (ANSI) located in Stoney Creek.

Unstable soils include organic soils, which are comprised primarily of organic matter and have a high moisture content. Organic soils form by humification, which is the decomposition of vegetative and organic materials into humus. A wide variety of soils may be characterized as organic, with peat being one of the most common types. Peat is found within the watershed, typically occurring in association with wetlands.

Both karst formations and organic soils are considered *hazardous lands*. Karst formations may be subject to subsidence, collapse, erosion and flooding. Organic soils generally lack structure, and are therefore susceptible to erosion and compression, and unable to support structures. The decomposition of such soils can also create combustible methane gas. Due to the specific nature of unstable soil and bedrock it is often difficult to identify these hazards. The presence of unstable soils or bedrock may not be immediately obvious through surface inspection of a site.

When considering *development activity in hazardous lands* it is important to account for the full limits of such hazards in order to understand the potential impacts, and to be able to mitigate, to the greatest extent possible, associated risks to property and public health and safety. Further, the influence of *development activity* on the natural processes involved in the formation and maintenance of karst features and organic soils must also be considered.

5.7.1 Defining Hazardous Lands Regulation Limits

For the purposes of Section 28 of the *Conservation Authorities Act* and the prohibition of *development activity in hazardous lands*, O. Reg. 41/24 defines *hazardous lands* as land that could be unsafe for development because of naturally occurring processes associated with flooding, erosion, dynamic beaches or unstable soil or bedrock.

The regulated area associated with karst features or organic soils will be based on site specific studies undertaken to determine the full extent of features and their associated *hazardous lands*. In cases where existing available information regarding the extent of potentially hazardous features such as karst or organic soils is limited, the regulated area will be based on reasonable inferences of the potential for *hazardous lands* that may be associated with these features. In the case of the Eramosa Karst Area of Natural and Scientific Interest (ANSI) located in Stoney Creek, the regulated area has been identified as the ANSI boundary.

5.7.2 Identifying Hazardous Lands

Unlike river and stream systems or the Lake Ontario shoreline, *hazardous lands* do not have a single methodology or standard for identifying the hazard. As a result, the hazards associated with features such as karst and organic soils must be identified on a site-specific basis, in accordance with accepted best practices and approaches for investigation and assessment, including those recommended in the *Hazardous Sites Technical Guide* (MNR, 1996).

Within the HCA watersheds, there are known areas of karst that have been identified, including most significantly the Eramosa Karst ANSI. The Eramosa Karst ANSI is located above the escarpment in Stoney Creek, in the area of Upper Mount Albion Road and Rymal Road. This site contains provincially significant karst features, which were extensively studied and documented between 1999-2003 (Buck et al., 2003). Karst features have also been documented in the broader area surrounding the ANSI, including within the Upper Davis Creek and Upper Hannon Creek subwatersheds.

Organic peat soils are also present in the watershed. These typically occur in association with wetlands, with the extensive area of the Beverly Swamp specifically known to contain organic peat soils.

Given that organic soils and karst features are not always evident at the surface, site-specific studies may be required to confirm conditions and extent of the *hazardous lands* where *development* is proposed in an area that is known or suspected to contain unstable soil or bedrock.

5.7.3 Policies for Development Within Hazardous Lands

5.7.3.1 General Policies

- a) *Development activity* within *hazardous lands* will generally be prohibited, except in accordance with the policies of Section 5.7.3.1 to 5.7.3.3, and the general policies of Section 5.2.
- b) The limit of *hazardous lands* must be confirmed prior to any *development activity* within or adjacent to areas that are known or suspected to contain *hazardous lands*, such as karst or organic soils.

- c) The limit of the any *hazardous lands* will be established through the completion of site-specific studies, as may be required by HCA, and/or site inspections completed by a qualified professional in consultation with HCA staff.
- d) The HCA may require the completion of studies such as a karst assessment, geotechnical investigation or soil survey to determine the extent of *hazardous lands*, potential impacts of any proposed *development activity* on the hazards, and to identify appropriate mitigation measures. Study requirements are to be determined in consultation with the HCA and must be completed by qualified professionals based on accepted best practices, approaches and standards.
- e) When considering karst features, *hazardous lands* will include any identified or inferred karst features, the connections between them and, in the absence of a site-specific study to identify the full extent of *hazardous lands*, the additional lands within 50 m of any identified or inferred karst features.
- f) When considering organic soils, *hazardous lands* will include any identified areas which contain organic soils, have the potential to contain organic soils, and *wetlands*.

5.7.3.2 New Development

- a) *Development activity* may be permitted within *hazardous lands* where the following have been demonstrated:
 - i. the feasibility of locating the *development activity* outside the *hazardous lands* has been examined and no alternative exists;
 - ii. the *development activity* is located outside the *hazardous lands* to the greatest extent possible, and otherwise located in the area of least hazard susceptibility and risk;
 - iii. the hazards can be appropriately mitigated in accordance with *provincial standards* or other accepted best practices and approaches;
 - iv. there will be no adverse impacts on *hydrologic functions*, *water resource systems* or natural or physical processes associated with the maintenance and functioning of karst and organic soils; and
 - v. the general policies of Section 5.2 are met.

5.7.3.3 Unstable Bedrock (Karst) Specific Policies

In addition to the policies of Sections 5.7.3.1 and 5.7.3.2, the following policies apply to *hazardous lands* containing unstable bedrock (karst).

- a) *Development activity* will only be considered within *hazardous lands* containing unstable bedrock if the following are appropriately addressed in accordance with best practices and standards:

- i. site grading and drainage;
 - ii. stormwater management;
 - iii. utilities installation
 - iv. building design; and
 - v. protection of *water resource systems*.
- b) Surface water run-off shall not directly enter a *sinkhole* or closed depression unless that is the natural drainage pattern. Drainage plans shall be designed to route surface water run-off through vegetative filters or other filtration measures before it enters such features.
- c) Stormwater management facilities and other water retaining structures shall not be located within depressions or areas containing karst. Stormwater management facilities and other water retaining structures shall be designed with impervious materials to prevent groundwater infiltration where appropriate.
- d) Utility installations and building foundations shall be designed in accordance with best practices and standards to prevent potential subsidence and/or karst-forming processes.
- e) HCA may require that construction or other work associated with *development activity* be supervised by a qualified professional to ensure that measures and recommendations for the mitigation of karst-related hazards are implemented in accordance with approved studies and plans.
- f) In reviewing proposals for *development activity* within or adjacent to the Eramosa Karst ANSI, HCA shall consider the recommendations contained within the *Earth Science Inventory and Evaluation of the Eramosa Karst Areas of Natural and Scientific Interest* (MNR, 2003).

5.8 Floodproofing Standards

The term *floodproofing* is used to describe the combination of measures that are incorporated into the design, construction and/or alteration of buildings, structures or properties to reduce the risks associated with *flooding hazards*. *Floodproofing* helps to alleviate the potential for damages to buildings and structures as a result of flooding, and to reduce risks to public safety and property.

Where *development activity* may be permitted in areas affected by *flooding hazards*, in accordance with the policies of Section 5, the following policies will be applied to ensure that *floodproofing* that is appropriate for the nature of the development and site characteristics is provided.

5.8.1 General Policies

- a) The following criteria may be taken into consideration when determining *floodproofing* requirements on a site-specific basis:
 - i. the type of *development activity* proposed;
 - ii. the depth, velocity and combination of depth and velocity of flood waters;
 - iii. the duration of the flood;
 - iv. the rate of rise and fall of the flood waters; and
 - v. the type of flood warning system in place.
- b) In general, *dry passive floodproofing* is the preferred approach to *floodproofing* and should be applied wherever possible. *Dry passive floodproofing* will be required for any development that includes residential or habitable space.
- c) Unless otherwise stated, any proposed *development activity* will require *floodproofing* to the level of the *regulatory flood*, plus 0.3 m of freeboard.
- d) All mechanical and electrical systems must be designed and installed so that the heating, lighting, ventilation, air conditioning and other systems are not vulnerable to flood damage during the flood standard. Where flooding could interrupt key power supplies, it may be necessary to provide stand-by or backup systems, with power and controls located above the level of the flood standard.
- e) *Floodproofing* measures must be designed and approved by a qualified engineer based on site conditions and in consideration of the potential effects of applicable flood forces on the building or structure.

5.8.2 Additions and Replacement Structures

- a) *Replacement* residential/habitable structures will require *dry passive floodproofing* to the level of the *regulatory flood* plus a freeboard of 0.3 m (1 ft) wherever possible.

- b) *Minor additions* to an existing building or structure are the only developments that shall be permitted to be *floodproofed* to less than the *regulatory flood* level. In all instances they should incorporate *floodproofing* measures to the extent and level possible, based on site-specific conditions. At a minimum, the *minor addition* should not be more flood vulnerable than the existing structure, in that no openings on the *minor addition* are to be below the elevation of existing openings.

5.8.3 Dry Floodproofing

- a) Wherever possible, *dry floodproofing* measures should be passive rather than active.
- b) The use of *dry active floodproofing* measures will only be accepted in instances where it is not possible or practical to utilize *dry passive* approaches.
- c) *Dry passive floodproofing* designs shall ensure that *fill*, columns or design modifications are used to the greatest extent possible in order to ensure that openings in buildings or structures will be elevated above the level of the *regulatory flood*, plus a freeboard of 0.3 m (1 foot), where possible.
- d) Other *dry passive floodproofing* measures may be considered where the use of fill is not possible, and where such measures can be installed to be permanent and not require any further action to put the flood protection into effect. Such measures may include waterproof seals, berms, floodwalls, etc., and which are designed and installed to ensure the development remains dry.
- e) Where *Authority* staff determine that it is not viable or practical to use *dry passive floodproofing* measures, *dry active floodproofing* measures may be considered and utilized.

5.8.4 Wet Floodproofing

- a) *Wet floodproofing* shall only be considered for structures that are non-residential or non-habitable.
- b) *Wet floodproofing* shall be to the level of the *regulatory flood* plus a freeboard of 0.3 m. (1 foot), where possible.
- c) *Wet floodproofing* measures must make use of materials, methods and design measures to ensure that structural integrity is maintained in the event of a flood, and that water damage will be minimized to the greatest extent possible.
- d) *Wet floodproofing* measures shall incorporate two openings below the level of the *regulatory flood* in order that water is able to freely enter and exit the structure.

5.9 Access Standards

The ability of people, vehicles and emergency services (police, firefighters, ambulance, emergency response teams, etc.) to safely enter (ingress) and exit (egress) a site during or in response to an emergency, such as a flooding or erosion event, is an important factor when considering development activities. Provincial *access standards* require that methods or procedures be available to ensure safe vehicular and pedestrian movement, and access for the maintenance and repair of protection works, during times of flooding and erosion hazards.

Where the policies of Sections 4 and 5 require that *safe access* and/or an *access allowance* be provided for a development or other activity affected by flooding or erosion, the following will be required.

5.9.1 Safe Access for New Development

- a) Access for pedestrians will generally be considered safe where the following are achieved at the subject property and along an access route that allows pedestrians to safely exit the area(s) affected by flooding or erosion:
 - i. flood depths do not exceed 0.8 m;
 - ii. flood velocities do not exceed 1.7 m/s;
 - iii. flood depth/velocity products do not exceed 0.4 m²/s; and
 - iv. access through areas susceptible to erosion hazards is not required.
- b) Further to 5.9.1(a), acceptable access routes may include a public roadway or sidewalk, private driveway or laneway, or other route acceptable to the HCA.
- c) Access for private and emergency vehicles will generally be considered safe where the following are achieved along a public roadway, private driveway or laneway, and any other access route that may be required to reach the subject property or site:
 - i. flood depths do not exceed 0.3 m;
 - ii. flood velocities do not exceed 4.5 m/s; and
 - iii. access through areas susceptible to erosion hazards is not required.
- d) Further to 5.9.1(c), HCA may consider alternative criteria to demonstrate *safe access* where an applicant provides confirmation from municipal emergency services that access is available that is appropriate for the nature of the development, site conditions and hazards present, and that emergency services would be able to access the subject site during a hazard emergency.
- e) *Safe access* will generally not be required for public *infrastructure*, *conservation projects*, passive recreational uses or *accessory structures* that are approved in accordance with the policies of Section 5.

5.9.2 Safe Access for Existing Development

- a) Where there is existing development and the policies of Section 5 allow for *minor additions* and *replacement structures*, the following must be demonstrated to confirm *safe access* is available:
 - i. where the criteria outlined in 5.9.1(a) – (c) are not met, opportunities to improve the existing access or establish an alternate access must be examined and implemented to the extent possible; and
 - ii. in no case shall access conditions for the *minor addition* or *replacement structure* be worse than existing conditions.

5.9.3 Access Allowances

A key component of the provincial *access standard* is that where development is proposed in areas affected by flooding and erosion hazards, that *safe access* be available for vehicles, machinery and equipment for the purpose of constructing, maintaining or repairing protection works, structures and property that may be damaged or affected by hazards. Where the policies of Section 4 and 5 require an *access allowance* or *erosion access allowance*, the following will apply:

- a) On the Lake Ontario shoreline, a 5 m *access allowance* shall be provided as part of any proposed *development activity* to ensure that people and vehicles have *safe access* during an emergency as a result of flooding or erosion hazards, and to provide access to the shoreline for equipment and machinery for the purpose of maintaining shoreline protection works and/or to repair property that may be affected by hazards. This must include a minimum 5 m wide side yard access from a roadway, along one side of a property, to a minimum 5 m wide access along the stable top of lake bank. A reduced *access allowance* of no less than 4 m for the side yard may be considered where an existing lot is constrained by existing development, property grade and/or limited lot width.
- b) On river and valley systems, a 6 m *access allowance* shall be provided as part of any *development activity* to ensure that people and vehicles have *safe access* during an emergency as a result of erosion or flooding hazards, and to provide access to the valley and/or *watercourse* for equipment and machinery for the purpose of maintaining and repairing property that may be affected by hazards. The *access allowance* provided must include access from a municipal road, along one side yard of the property, to and along the valley *top of stable slope, toe of slope, or meander belt allowance*, as applicable. A reduction in the 6 m *access allowance* may be considered where it is demonstrated:
 - i. the reduction would not constrain access over the long-term;
 - ii. that access is appropriate for site conditions and hazards, and equipment that may be required to repair property or structures damaged by hazards; and
 - iii. a minimum 3 m access is maintained.
- c) *Access allowances* may be shared between adjacent property owners provided that the shared access is registered as an easement on property title.

5.10 Fill Placement and Site Grading

As defined under the *Conservation Authorities Act* and *Ontario Regulation 41/24, Prohibited Activities, Exemptions and Permits*, *development activity* includes the temporary or permanent placing, dumping, or removal of any material, originating on the site or elsewhere.

HCA supports soil conservation and the reuse of excess soil in an environmentally sustainable manner. However, the movement of *soil* and other materials, or *fill*, to or from a site requires careful review due to the potentially harmful impacts on *hazardous lands* and water resource and natural heritage systems and features that may contribute to the management of natural hazards.

Fill placement within the jurisdiction of the HCA must be in accordance with the following policies.

5.10.1 General Policies

- a) *Fill placement* shall not be permitted within any *wetlands* or within 30 m of any *wetlands*.
- b) *Fill placement* shall not be permitted within *hazardous lands*, with the following exceptions:
 - i. where *fill* is required in order to ensure the long-term stability of a slope to protect existing development and no new developable lands are created;
 - ii. as part of cut and fill operations, in accordance with the policies of Section 5.4.5.5;
 - iii. within the Dundas *Special Policy Areas* (SPA), in accordance with the policies of Section 5.4.5.7; or
 - iv. importation of *soil* for the purposes of agricultural soil enrichment in accordance with *normal farm practices*.
- c) Except as prohibited in policies 5.10.1(a) and (b), *fill placement* may be permitted in regulated areas where the general policies of Section 5.2 are met.
- d) HCA may require the submission of information, plans and studies to assess the potential impacts of a proposal for *fill placement*. *Fill placement* will only be permitted where the following have been demonstrated:
 - i. the fill material contains no *contaminants* and is appropriate for the site in consideration of existing site conditions, proposed land use and soil quality standards established under the *Environmental Protection Act*;
 - ii. the site will be appropriately stabilized and restored once all fill and grading activities are completed; and
 - iii. the general policies of Section 5.2 are met.

- e) *Fill placement* in a regulated area will require a permit. The information, plans and studies that are required to be submitted in support of a permit application will be scoped based on the specifics of the proposal, including fill source and receiving site conditions. Application requirements will be identified on the *HCA Application Checklist for Fill Application Submissions*.
- f) Where proposed *fill placement* site locations are regulated jointly by both HCA and a municipal fill or site alteration by-law, and/or the Niagara Escarpment Commission, to the extent practical the proponent shall prepare comprehensive plans and reports for submission to all agencies. Joint pre-consultation with all applicable agencies will be encouraged.

5.10.2 Large-Scale Fill Placement

In addition to the policies of Section 5.10.1, the following policies will be applied when reviewing large-scale *fill placement* proposals within the jurisdiction of the HCA. For the purpose of these policies, large-scale fill applications are those defined as involving the placement, dumping or removal of 500 m³ or more of *fill*. Where site conditions warrant, HCA at its discretion may also apply the following policies to fill proposals of less than 500 m³.

- a) In addition to those studies required to address policies 5.10.1(d) and (e), applicants for large-scale fill proposals will also be required to complete a comprehensive Fill Management Plan. The information required for the completion of a Fill Management Plan is detailed in the *HCA Application Checklist for Fill Application Submissions*.
- b) Written permission from the HCA for a large-scale *fill placement* operation for the purposes of the temporary stockpiling of fill will only be granted to a maximum of 1 year. Within this period, the *fill* must either be used on-site or elsewhere under a separate permit where applicable, or a new application will be required for continued fill stockpiling. The new application will be subject to the requirements of these policies and the applicable fees.
- c) A final site inspection and review of permit conditions shall be required for all large-scale *fill placement* operations. It will be the responsibility of the property owner or authorized agent to ensure that a final inspection with HCA enforcement staff is coordinated once all work has been completed and prior to the permit expiration date.
- d) The submission of a final post-development ('as-built') topographic survey to confirm elevations on the property will be required for all large-scale *fill placement* activities.

5.11 Development Exemptions

This section outlines minor development or other activities that may be exempt from requiring a permit from HCA under the *Conservation Authorities Act* and *Ontario Regulation 41/24, Prohibited Activities, Exemptions and Permits*. While these activities may meet the definition of *development activity* or *interference*, any impacts associated with the activities are typically very minor, well understood and/or easily mitigated such that a permit may not be necessary.

The exemptions provided must be considered in conjunction with all other policies in Section 5, and in the case where more than one policy applies to the activity, the more restrictive policy will apply.

At HCA's discretion, the following activities may be exempt from requiring a permit.

- a) Any activity identified in Section 5, Exceptions, of *Ontario Regulation 41/24, Prohibited Activities, Exemptions and Permits*.
- b) *Accessory structures* less than 10 m² (108 sq. ft.).
- c) Fencing projects.
- d) Site alteration and grading that involves:
 - i. a one-time placement of *fill* less than or equal to 10 m³ within or adjacent to a river or stream valley or within the *regulatory floodplain*, provided that there is a minimum 6 m *erosion access allowance*, where possible, from the *top of slope* or the *toe of slope* and/or a 15 m setback from the channel bank of any *watercourse* is maintained, the filled and re-graded area is immediately stabilized, and that the *fill* does not have an effect on *Regulatory Flood* elevations;
 - ii. provided (i) above is met, top dressing of existing lawns or gardens with organic material such as topsoil (50 mm depth); and
 - iii. resurfacing of existing driveways and parking lots, where the final grade is generally the same as the existing grade.

6 DEFINITIONS

100-year flood (One-hundred-year flood): for river, stream and small inland lake systems, means that flood, based on an analysis of precipitation, snow melt, or a combination thereof, having a return period of 100 years on average, or having a 1% chance of occurring or being exceeded in any given year.

100-year flood level (One-hundred year flood level): for the shorelines of the Great Lakes, the peak instantaneous stillwater level, resulting from combinations of mean monthly lake levels and wind setups, which has a 1% chance of being equalled or exceeded in any given year.

Access allowance (erosion access allowance): the area or setback needed to ensure there is a large enough safety zone for people and vehicles to enter and exit an area during or in response to an emergency, such as a slope failure or flooding, and to provide sufficient area to access and maintain protection works and property along river and stream valleys, *watercourses*, and the Lake Ontario shoreline.

Access standards: means methods or procedures to ensure safe vehicular and pedestrian movement, and access for the maintenance and repair of protection works, during times of *flooding hazards*, *erosion hazards* and/or *other water-related hazards*.

Accessory structure: a secondary, freestanding, non-habitable building or structure on the same lot as the main building to which it is subordinate, devoted exclusively to a use naturally and normally incidental to the main use of the premises. Examples of such structures include detached decks, sheds, pools, pool houses, and gazebos.

Adverse hydraulic and fluvial impacts: any increase in flood elevation or impedance of flood and ice flows and/or an increase in the risk of flooding and erosion on adjacent upstream and/or downstream properties.

Allowance (regulation allowance): the distance from a hazard or regulated feature prescribed in *Ontario Regulation 41/24* to delineate the *regulated area*.

Comprehensive study: means a study or plan undertaken by or under the direction of a public agency at a landscape scale, such as a watershed plan, subwatershed plan, *environmental assessment*, master plan, environmental implementation reports, or similar documents, that have been prepared to consider and document various alternatives and which may be part of a joint or harmonized planning process.

Confined system: means a system wherein the *watercourse* is located within a valley corridor, either with or without a *flood plain*, and is confined by valley walls. The *watercourse* can be located at the toe of the *valley slope*, in close proximity to the toe of the *valley slope* (less than 15 m), or removed from the toe of the *valley slope* (more than 15 m). The *watercourse* can contain perennial, intermittent or ephemeral flows and may range in channel configuration, from seepage and natural springs to detectable channels.

Conservation projects: activities, buildings or structures for conservation or hazard management purposes, such as, but not limited to, flood and erosion control works, habitat creation and enhancement, tree and shrub planting, trails and low intensity recreation activities, cultural heritage and archaeological preservation and interpretation.

Contaminant: means any solid, liquid, gas, odour, heat, sound, vibration, radiation or combination of any of them resulting directly or indirectly from human activities that causes or may cause an adverse effect, as defined in the *Environmental Protection Act*.

Development: means the creation of a new lot, a change in land use, or the construction of buildings and structures requiring approval under the *Planning Act*, but does not include:

- a) activities that create or maintain infrastructure authorized under an environmental assessment process or identified in provincial standards; or
- b) works subject to the *Drainage Act*.

Development activity: means,

- a) the construction, reconstruction, erection or placing of a building or structure of any kind;
- b) any change to a building or structure that would have the effect of altering the use or potential use of the building or structure, increasing the size of the building or structure or increasing the number of dwelling units in the building or structure;
- c) site grading; or
- d) the temporary or permanent placing, dumping or removal of any material, originating on the site or elsewhere.

Disconnected features: means those features that have, as a result of development or natural processes, become disconnected from the feature with which they were originally associated. An example of a disconnected feature is a section of *valley slope* that has been disconnected from the primary slope as a result of road construction.

Dry floodproofing: means *floodproofing* where the objective is to keep a development or structure and its contents completely dry during a flood event. There are two basic techniques to dry floodproofing:

- a. Dry passive *floodproofing* includes the use of fill, columns or design modifications to elevate openings in the structure at or above the level of the *regulatory flood*. These measures do not require flood warning or any other action to put the flood protection into effect.
- b. Dry active *floodproofing* utilizes techniques such as water tight doors or other barriers that must be manually installed to prevent water from entering openings below the level of the *regulatory flood*. Advance flood warning is almost always required in order to make the flood protection operational (i.e. closing of water tight doors, installation of waterproof protective coverings over windows, etc.).

Dwelling unit: means one or more habitable rooms, occupied or capable of being occupied as an independent and separate housekeeping establishment, in which separate kitchen and sanitary facilities are provided for the exclusive use of the occupants.

Dynamic beach hazard: means areas of inherently unstable accumulations of shoreline sediments along the *Great Lakes-St. Lawrence River System* and *large inland lakes*, as identified by provincial standards, as amended from time to time. The *dynamic beach hazard* limit consists of the *flooding hazard* limit plus a *dynamic beach allowance*. [PPS]

Ecological function: means the natural processes, products or services that living and non-living environments provide or perform within or between species, ecosystems and landscapes. These may include biological, physical and socio-economic interactions. [PPS]

Environmental assessment: a study that is completed by a proponent to assess the potential environmental effects (positive or negative) of a project, pursuant to the *Environmental Assessment Act*.

Erosion access allowance: see *access allowance*.

Erosion hazard: means the loss of land, due to human or natural processes, that poses a threat to life and property. The *erosion hazard* limit is determined using considerations that include the 100-year erosion rate (the average annual rate of recession extended over a hundred-year time span), an allowance for slope stability and an *erosion access allowance*.

Fill: means *soil*, earth, sand, gravel, rubble, garbage or any other material whether similar to or different from any of the aforementioned materials, whether originating on the site or elsewhere, used or capable of being used to raise, lower or in any way affect the existing contours of the ground.

Fill placement: includes the temporary or permanent placing, dumping, or removal of any material on or from a site, as well as any associated site alteration and grading works, and where the *fill placement* is the primary activity

Flooding hazard: means the inundation, under the conditions specified below, of areas adjacent to a shoreline or a *river or stream system* and not ordinarily covered by water:

- a. Along the shorelines of the *Great Lakes-St. Lawrence River System* and *large inland lakes*, the flooding hazard limit is based on the *100-year flood level* plus an allowance for *wave action* and *other water-related hazards*.
- b. Along river, stream and small inland lake systems, the flooding hazard limit is the greater of:
 - i. The flood resulting from the rainfall actually experienced during a major storm such as the *Hurricane Hazel* Storm (1954), transposed over a specific *watershed* and combined with the local conditions, where

evidence suggests that the storm event could have potentially occurred over *watershed* in the general area;

- ii. The *100-year flood*; or
- iii. A flood which is greater than (i) or (ii) which was actually experienced in a particular *watershed* or portion thereof as a result of ice jams and which has been approved as the standard for that specific area by the Minister of Natural Resources,

Except where the use of the *100-year flood* or the actually experienced event has been approved by the Minister of Natural Resources as the standard for a specific *watershed* (where the history of past flooding supports the lowering of the standard). [PPS]

Floodplain spill area: portions of the floodplain where flood waters are not physically contained within the river valley or stream corridor and exit to surrounding lands. As a consequence, the limit and depth of flooding are difficult to determine. Flood spill areas occur naturally, or can occur as a result of downstream barriers to the passage of flood flows, such as undersized bridges or culverts.

Floodproofing: measures taken to reduce flood damage to buildings and their contents.

Floodproofing standard: means the combination of measures incorporated into the basic design and/or construction of buildings, structures, or properties to reduce or eliminate *flooding hazards*, *wave effects* and *other water-related hazards* along the shorelines of the *Great Lakes - St. Lawrence River System* and large inland lakes, and *flooding hazards* along river, stream and small inland lake systems.

Flood fringe: means the outer portion of the *floodplain* between the *floodway* and the *flooding hazard* limit. Depths and velocities of flooding are generally less severe in the flood fringe than those experienced in the floodway. [PPS]

Floodplain: means the area, usually low lands adjoining a *watercourse*, which has been or may be subject to *flooding hazards*. [PPS]

Floodway: means the portion of the floodplain where development and site alteration would cause a danger to public health and safety or property damage. [PPS]

Great Lakes-St. Lawrence River System: means the major water system consisting of Lakes Superior, Huron, St. Clair, Erie and Ontario and their connecting channels, and the St. Lawrence River within the boundaries of the Province of Ontario. [PPS]

Ground water feature: refers to water-related features in the earth's subsurface, including recharge/discharge areas, water tables, aquifers and unsaturated zones that can be defined by surface and subsurface hydrogeologic investigations. [PPS]

Hazardous lands: means land that could be unsafe for development because of naturally occurring processes associated with flooding, erosion, dynamic beaches or unstable soil or bedrock. [O. Reg. 41/24]

Hazardous sites: means property or lands that could be unsafe for *development* and *site alteration* due to naturally occurring hazards. These may include unstable soils (sensitive marine clays [leda], organic soils) or unstable bedrock (karst topography). [PPS]

Hazardous substance: means substances which, individually, or in combination with other substances, are normally considered to pose a danger to public health, safety and the environment. These substances generally include a wide array of materials that are toxic, ignitable, corrosive, reactive, radioactive or pathological. [PPS]

Hurricane Hazel: means a storm occurring in October 1954 in Southern Ontario, whose quantity and distribution is defined in *Ontario Regulation 41/24*, and which is used as the riverine flood event standard for all *watersheds* in the jurisdiction of the HCA with the exception of the numbered *watercourses* in the former City of Stoney Creek.

Hydrologic function: means the functions of the hydrological cycle that include the occurrence, circulation, distribution and chemical and physical properties of water on the surface of the land, in the soil and underlying rocks, and in the atmosphere, and water's interaction with the environment including its relation to living things. [PPS]

Impacts of a changing climate: means the present and future consequences from changes in weather patterns at local and regional levels including extreme weather events and increased climate variability. [PPS]

Infrastructure: means physical structures (facilities and corridors) that form the foundation for development. Infrastructure includes: sewage and water systems, septage treatment systems, stormwater management systems, waste management systems, electricity generation facilities, electricity transmission and distribution systems, communications/telecommunications including broadband, transit and transportation corridors and facilities, active transportation systems, oil and gas pipelines and associated facilities. [PPS]

Interference: any anthropogenic act or instance which hinders, disrupts, degrades or impedes in any way the natural features or hydrologic and ecologic functions of a *wetland* or *watercourse*.

Mitigated erosion hazard: the reduction in the erosion allowance component of the *erosion hazard* that is provided as a result of the installation of protection works that are designed and installed in accordance with the *protection works standard*, and represents the area within the *erosion hazard* limit where it is deemed safe for some forms of development to occur.

Meander belt allowance: means the setback that keeps *development* from being affected by river and stream meandering (this includes allowance for the 100-year erosion rate). [MNR, 2001]

Minor addition: means any construction occurring on an existing building or structure that increases the total area of that building or structure by less than 50% of the *original ground floor area* of the existing structure, and which does not increase the number of *dwelling units*, as existed on October 6, 2005.

Natural heritage features or areas: means features and areas, including significant wetlands, significant coastal wetlands, fish habitat, significant woodlands, significant valleylands, significant habitat of endangered species and threatened species, significant wildlife habitat, and significant Areas of Natural and Scientific Interest, which are important for their environmental and social values as a legacy of the natural landscape of an area. [PPS]

Natural heritage system: means a system made up of *natural heritage features and areas*, linked by natural corridors which are necessary to maintain biological and geological diversity, natural functions, viable populations of indigenous species and ecosystems. These systems can include lands that have been restored and areas with the potential to be restored to a natural state. [PPS]

Negative impacts: means

- a. In regard to water, the degradation to the *quality and quantity of water*, *sensitive surface water features* and *sensitive ground water features*, and their related *hydrologic functions*, due to single, multiple or successive *development* or *site alteration* activities; and
- b. In regard to other *natural heritage features and areas*, the degradation that threatens the health and integrity of the natural features or *ecological functions* for which an area is identified due to single, multiple or successive *development* or *site alteration* activities. [PPS]

Normal farm practices: means a practice, as defined in the *Farming and Food Production Protection Act*, 1998, that is conducted in a manner consistent with proper and acceptable customs and standards as established and followed by similar agricultural operations under similar circumstances; or makes use of innovative technology in a manner consistent with proper advanced farm management practices. Normal farm practices shall be consistent with the *Nutrient Management Act*, 2002 and regulations made under that Act.

One zone concept: means the approach whereby the entire *floodplain*, as defined by the *regulatory flood*, is treated as one unit (the *floodway*) and all development is prohibited or restricted.

Original ground floor area: means the total habitable main floor area of a building (excluding decks, patios, garages and other *accessory structures*) as existed at the time of the original construction date of the building.

Other water-related hazard: means water-associated phenomena other than *flooding hazards* and *wave effects* which act on shorelines. This includes, but is not limited to ship-generated waves, ice piling and ice jamming. [PPS]

Protection works standards: means the combination of non-structural or structural works and allowances for slope stability and flooding/erosion to reduce the damage caused by *flooding hazards*, *erosion hazards* and *other water-related hazards*, and to allow access for their maintenance and repair. [PPS]

Provincial standards: the most recently approved legislation, regulations, policies, manuals and technical guidelines administered or prepared by the province.

Regulated area: the areas over which a conservation authority has jurisdiction to prohibit certain activities, as described in the *Conservation Authorities Act* and *Ontario Regulation 41/24*.

Regulation allowance: see *allowance*.

Regional storm: means the rainfall event and soil conditions existing during *Hurricane Hazel*, transposed over a specific *watershed* and combined with local conditions.

Regulatory flood: means the resulting flood from the applicable storm event standard; the greater of the *Regional storm* or 100-year storm utilized for a particular area

Regulatory floodplain: the area adjacent to a *watercourse* that would be inundated by a flood resulting from the most severe of the *Hurricane Hazel* flood event standard (*Regional Storm*) or the *100-year flood* event standard, whichever is greater.

Regulatory storm – means the applicable flood or storm standard utilized to determine the maximum susceptibility to flooding of lands or areas within the *watershed*.

Remediation – the construction or modification of *infrastructure* or land for the purpose of reducing or eliminating risk due to natural hazards.

Replacement (Replacement structure): means the restoration, repair or reconstruction of a building or structure to its original form (i.e. same dimensions, square footage, building footprint and use), but does not include reconstruction on remnant foundations or of derelict or abandoned buildings or structures.

Safe access (Safe ingress/egress): vehicular and pedestrian access to (ingress) and from (egress) a site is safe from the risks due to flooding or erosion hazards, in consideration of the nature of the development and based on *provincial standards*.

Sensitive: in regard to *surface water features* and *ground water features*, means features that are particularly susceptible to impacts from activities or events including, but not limited to, water withdrawals, and additions of pollutants. [PPS]

Sinkhole: means a topographically closed depression, commonly circular or oval in plain view; commonly referred to as dolines.

Site Alteration: means activities, such as grading, excavation and the placement of *fill* that would change the landform and natural vegetative characteristics of a site. [PPS]

Soil: means unconsolidated naturally occurring mineral particles and other naturally occurring material resulting from the natural breakdown of rock or organic matter by physical, chemical or biological processes that are smaller than 2 millimetres in size or that pass the US #10 sieve (O. Reg. 153/04)

Special Policy Area (SPA): means an area within a community that has historically existed in the *flood plain* and where site-specific policies, approved by both the Ministers of Natural Resources and Municipal Affairs and Housing, are intended to provide for the continued viability of existing uses (which are generally on a small scale) and address the significant social and economic hardships to the community that would result from strict adherence to provincial policies concerning *development*. The criteria and procedures for approval are established by the Province. A Special Policy Area is not intended to allow for new or intensified *development* and *site alteration*, if a community has viable opportunities for *development* outside the *flood plain*. [PPS]

Stable slope allowance: means the setback that ensures safety if slumping or slope failure occur. Refers to the suggested angle of stability for a slope is 3:1 (horizontal: vertical) or approximately 18 degrees. The stable slope allowance is a horizontal allowance measured landward from the *toe of slope* that is relative to the height of the slope. [MNR, 2001]

Stable toe of slope: means,

- a) the physical *toe of slope* where the existing toe is stable and not impacted by erosion; or
- b) the landward limit of the *toe erosion allowance* where the existing slope is unstable and/or impacted by erosion.

Stable top of slope/bank (long term stable slope): means,

- a) the physical *top of slope* where the existing slope is stable and not impacted by toe erosion; or
- b) the landward limit of the *toe erosion allowance* plus the *stable slope allowance* where the existing slope is unstable and/or impacted by erosion.

Surface water feature: refers to water-related features on the earth's surface, including headwaters, rivers, stream channels, inland lakes, seepage areas, recharge/discharge areas, springs, *wetlands*, *sinkholes*, and associated riparian lands that can be defined by their soil moisture, soil type, vegetation or topographic characteristics. [PPS]

Toe erosion allowance: means the setback that ensures safety if the *toe of slope* adjacent to the river or stream erodes and weakens the bank, increasing the risk of slumping. (*MNR*, 2001)

Toe of slope (a.k.a. base of slope): means the point of the slope where the downward inclination of the land levels off or the upward inclination of the land begins.

Top of slope (a.k.a. crest of slope, top of bank): means the point of the slope where the downward inclination of the land begins or the upward inclination of the land levels off.

Two zone concept: means the approach whereby certain areas of the *floodplain* are considered to be less hazardous than others such that development potentially could safely occur. The *flood fringe* defines that portion of the *floodplain* where development may be permitted, subject to appropriate *floodproofing*. The *floodway* defines that portion of the *floodplain* wherein development is prohibited or restricted.

Unconfined system: means a system wherein the *watercourse* is not located within a valley corridor with discernible slopes, but relatively flat to gently rolling plains and is not confined by valley walls. The *watercourse* can contain perennial, intermittent or ephemeral flows and may range in channel configuration, from seepage and natural springs to detectable channels.

Valley slope: refers to the area between *top of slope* and *toe of slope*.

Valleylands: means 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. [*PPS*]

Watercourse: means a defined channel, having a bed and banks or sides, in which a flow of water regularly or continuously occurs. [*O. Reg. 41/24*]

Watershed: means an area that is drained by a river and its tributaries. [*PPS*]

Water resource systems: means a system consisting of ground water features and areas, surface water features (including shoreline areas), natural heritage features and areas, and hydrologic functions, which are necessary for the ecological and hydrological integrity of the watershed. [*PPS*]

Wave effects: means the movement of water up onto a shoreline or structure following the breaking of a wave, including *wave uprush*, *wave setup* and water overtopping or spray; the limit of wave effects is the point of furthest landward horizontal movement of water onto the shoreline. [*PPS*]

Wave overtopping: essentially occurs when the height of the natural shoreline, or of the protection work, above the stillwater level is less than the limit of uprush. As a result, waves overtopping the protection work can cause flooding of the onshore and can threaten the structural stability of protection works. [*MNR*, 2001]

Wave setup: means the mean increase in water level caused by the onshore transport of water due to waves breaking at the shoreline. [MNR, 2001]

Wave uprush: means the rush of water up onto a shoreline or structure following the breaking of a wave; the limit of wave uprush is the point of furthest landward rush of water onto the shoreline. [MNR, 2001]

Wet floodproofing: means *floodproofing* that involves designing a structure using materials, methods and design measures that maintain structural integrity by avoiding external unbalanced forces from acting on buildings during and after a flood, to reduce flood damage to contents, and to reduce the cost of post flood clean up. Buildings or structures are designed so as to intentionally allow flood waters to enter and exit. These *floodproofing* measures require that the interior space below the level of the *regulatory flood* remain unfinished, be non-habitable, and be free of service units and panels. [Flood Plain Planning Policy Statement]

Wetlands: means lands that,

- a) Is seasonally or permanently covered by shallow water or has a water table close to or at its surface;
- b) directly contributes to the hydrological function of a *watershed* through connection with a surface *watercourse*;
- c) has hydric soils, the formation of which has been caused by the presence of abundant water; and
- d) has vegetation dominated by hydrophytic plants or water tolerant plants, the dominance of which has been favoured by the presence of abundant water,

But does not include periodically soaked or wet land that is used for agricultural purposes and no longer exhibits a wetland characteristic referred to in clause (c) or (d). [O. Reg. 41/24]

This page intentionally left blank.



Report to: Conservation Advisory Board

Approved for Circulation By: Lisa Burnside, CAO

Reviewed By: Gord Costie, Director, Conservation Area Services

Prepared By: Brandon Good, Senior Manager, Conservation Area Services

Meeting Date: June 12, 2025

Subject: HCA Conservation Areas Program – Proposed Visitor Engagement Opportunities

Recommendation:

THAT the Conservation Advisory Board recommends to the Board of Directors;

THAT the HCA Conservation Area Program – Visitor Engagement Opportunities report be received for information; and further

THAT HCA implement the Year 1 (2025) and Year 2 (2026) proposed new offerings as detailed in the report.

Executive Summary:

As a Year 1 priority of HCA's new strategic plan (2025 – 2029), staff developed a multi-year Conservation Area Program to identify and plan for the implementation of new visitor engagement opportunities (VEO).

The VEO program will be introduced through a phased schedule over five (5) years to manage staff capacity and ensure consistent, high-quality delivery. Visitor participation will be monitored and reviewed annually to support future planning.

Currently, staff are bringing forward proposed new offerings recommended for implementation in Years 1 (2025) and 2 (2026) of the Program. Staff will continue to

bring forward new proposed offerings for consideration for the duration of the strategic plan.

This program will expand community engagement, connect people to nature, and advance HCA's strategic goals.

Staff Comment / Discussion:

HCA is committed to providing its visitors with new experiences to learn about nature and participate in healthy recreational activities. In efforts to advance strategic plan initiatives, staff from across the organization met to review current offerings and assess capacity, expertise, and available resources for potential new initiatives. This internal review also considered lessons learned from past offerings, including successes and challenges, public feedback specific to previously held programs at conservation areas, and insights from marketing staff on participation trends and interests. Staff developed a multi-year Conservation Area Program that outlines proposed new programs that can be initiated over the next five (5) years to provide HCA's visitors with new and engaging experiences. The program centres on providing visitors with experiences to learn about nature and participate in healthy recreational activities.

The Proposed New Offerings for 2025 and 2026 are:

Year 1 - 2025

- Launch of Trail Ambassador Program to provide on-site education and nature interpretation at Conservation Areas
- Stand-Up Paddle boarding at Christie Lake and Valens Lake Conservation Areas
- Films in the Forest at Fifty Point and Dundas Valley Conservation Areas
- Launch of the mobile trail application, with guided pictorial and audio trail interpretation at 5 Conservation Areas:
 - Valens Lake Conservation Area
 - Eramosa Karst Conservation Area
 - Westfield Heritage Village
 - Spencer Gorge Conservation Area (Dundas Peak & Webster Falls)
 - Christie Lake Conservation Area
- Continue Mindfulness Walks in Dundas Valley Conservation Area and expand to Westfield Heritage Village
- Installation of Selfie Stations at key locations: Devil's Punchbowl and Christie Lake Vista
- Ministry of Natural Resources-lead Learn to Fish events at Christie Lake, Valens Lake, and Fifty Point Conservation Areas

Year 2 - 2026

- Guided Owl Prowls in Dundas Valley Conservation Area
- Expansion of the mobile trail app to include new experiences showcasing additional Conservation Areas and HCA natural heritage features and cultural heritage sites.
- Staff-lead guided hikes of HCA's land acquisition, ecological and engineering projects
- Native Plant Gardening and Invasive Species Management Workshops
- Yoga in the Park at Christie Lake Conservation Area

Implementation

Consideration was given to minimizing the need for additional resources by prioritizing new offerings that existing staff have expressed interest in and currently have capacity to deliver, and through the use of third-party contractors, as much as possible.

Care was given to limit the number of new offerings at each area in any given year. In addition, new offerings have been staggered over a multi-year period. Implementation of new program offerings in each year may be dependent on third-party availability or to manage visitation levels.

This phased approach ensures that visitors from across the watershed, and beyond, have opportunities to participate in new offerings at various Conservation Areas.

Comprehensive marketing and communications strategies will support each offering, including digital media, website content, newsletters, and direct communication with membership holders.

Visitor participation in all new offerings will be monitored and evaluated to inform future decision making.

Strategic Plan Linkage:

- **Strategic Priority Area – Connecting People to Nature**
 - Expand visitor engagement opportunities through the development of an HCA Conservation Area Program to grow guided hikes and other related experiences

Agency Comments:

N/A

Legal / Financial Implications:

Costs associated with the proposed Year 1 offerings can be accommodated in the current 2025 operating budget. Any resources required for the proposed Year 2 offerings will be incorporated into the 2026 annual operating budget.

User fees for proposed new offerings will be brought forward for approval in HCA's 2026 Fee Schedule.

Related Reports and Appendices:

N/A

Report to: Conservation Advisory Board

Approved for Circulation By: Lisa Burnside, CAO

Reviewed By: Gord Cosite, Director, Conservation Area Services

Prepared By: Brandon Good, Senior Manager, Conservation Area Services

Meeting Date: June 12, 2025

Subject: HCA Conservation Areas Program - Access and Amenities Review and proposed initiatives

Recommendation:

THAT the Conservation Advisory Board recommends to the Board of Directors;

THAT the Conservation Areas Access and Amenities Review report be received for information; and further

THAT HCA adopt the following two initiatives:

- 1. Expand participation in the Easter Seals Canada Access 2 Program to include all HCA Conservation Areas, promoting free entry for support persons of individuals with disabilities; and**
- 2. Partner with the Parks Prescription (PaRx) program for a one-year pilot, providing patients with a 30-day membership pass to HCA Conservation Areas, with a \$10 administrative fee for processing through the HCA membership system.**

Executive Summary:

As a Year 1 priority of HCA's new Strategic Plan (2025 – 2029), staff committed to undertake a review of amenities and access to our Conservation Areas to welcome visitors and enhance inclusivity.

To this end, HCA recently completed a review of access and amenities at its Areas. By identifying and removing physical, cultural, and informational barriers, the goal is to create

environments where all individuals can enjoy the benefits of nature, recreation, and community engagement.

Based on the findings, staff recommend two initial initiatives:

- Expanding the Access 2 program to all areas;
- Joining the PaRx initiative to connect community health with nature access.

These actions align with HCA's commitment to inclusive, accessible, and welcoming spaces.

Staff Comment / Discussion:

In efforts to advance strategic plan initiatives, staff from multiple divisions met to review actions HCA had previously undertaken toward improving access to our areas, programs and services, and to provide amenities that enhance inclusivity. The actions are generally categorized under Access, Inclusivity, and Communications. Staff then developed a listing of initiatives to continue our efforts in these areas. The Access and Amenities Review is attached as **Appendix A**.

At this time, staff are seeking endorsement for two recommendations from the review to implement in 2026: to expand HCA's participation in the Access 2 program, and to initiate participation in Parks Prescription (PaRx).

Expansion of Access 2 to All HCA Conservation Areas

In early 2025, staff brought forward a memorandum advising that HCA would join the Easter Seals of Canada Access 2 program for the 2025 season at Wild Waterworks. This initiative was based on an internal staff review to clarify and streamline access protocols for support persons for persons with disabilities attending Wild Waterworks.

The Access 2 program helps to ensure that entertainment, cultural and recreational opportunities are more available and accessible to all. The Access 2 program has over 500 participating partners and venues and is a program that has grown to reach over 100,000 Canadians living with disabilities.

Following the completion of the Access and Amenities review, it was recommended that HCA build on our commitment to join the Access 2 program at Wild Waterworks and expand our participation to include all other HCA Conservation Areas.

It is already the policy of HCA to grant free entry to support persons for those with disabilities. Participation in Access 2 will assist HCA in promoting this policy more broadly and directly to the accessibility community.

This partnership provides a cost-effective solution for persons with permanent disability and their support persons to access all of HCA's Conservation Areas. Persons with disabilities will be charged the correct fee as stated in HCA's approved fee schedule,

however, a support person or a member of the Access 2 program accompanying a person with a disability will enter free of charge.

HCA Participation in Parks Prescription

Launched in November of 2020 by the BC Parks foundation, PaRx is helping health professionals improve patients' health by connecting them to nature. In nearly five (5) years, more than 15,000 Healthcare professionals from across the country have registered to prescribe nature with PaRx, and more than 100 health and parks organizations have formally endorsed the program, including the Canadian Medical Association.

HCA staff attended an information webinar on PaRx for Conservation Authority land management and communications staff, hosted by Conservation Ontario with the BC Parks Foundation. Following the webinar, senior leadership considered the following:

- Value of the program to the community
- Parameters for the discounted offering
- Number of Park Prescriptions
- Term of the partnership
- Administrative costs
- Operational logistics to ensure access to all HCA areas

Participants in the PaRx program will receive an HCA membership pass valid for 30 days. An administration fee of \$10 dollars per prescription will be applied to this program.

Initially, staff will set aside 100 membership passes for the PaRx program. Should demand for participation near the that amount, staff will revisit the capacity of the program.

The PaRx program will be administered through the existing HCA Membership Pass program. This will allow HCA to track and monitor participation in the PaRx program. Integration of the PaRx program with the HCA membership program allows participants to gain access to all HCA Conservation Areas, including those with automated gates.

HCA will join a number of other organizations currently enrolled in the program, including:

- Parks Canada
- Ontario Parks
- Toronto and Region Conservation Authority
- Lake Simcoe Region Conservation Authority
- Conservation Halton

- Kawartha Conservation

This innovative approach has demonstrated significant health benefits and presents an excellent opportunity for (HCA) to play a crucial role in promoting community wellbeing and encouraging people to spend time outdoors and in Conservation Areas.

Operational Initiatives in Departmental Workplans

Other initiatives identified in appendix A are operational in nature and will be implemented through departmental workplans and will be completed in within the current five-year strategic plan timeframe.

Strategic Plan Linkage:

- **Strategic Priority Area – Connecting People to Nature**
 - Identify and support an inclusive and accessible range of programs in our conservation areas and managed lands to welcome visitors and enhance inclusivity
 - Collaborate with partners to share knowledge and work together to enhance access to conservation areas and trail networks

Agency Comments:

Conservation Ontario has stated that by participating in the PaRx program, Conservation Authorities can play a vital role in enhancing public health while advancing environmental conservation goals. This partnership represents a win-win opportunity for both the community well-being and sustainable land management.

Legal / Financial Implications:

While there are no fees to partner or participate with Easter Seals Canada or the Park Prescription program, any operating costs associated with the proposed two programs will be accommodated in the 2026 operating budget. User fees for the Park Prescription will be incorporated into the HCA 2026 Fee Schedule.

Funding support for all current and future initiatives identified in appendix A may also be sought through partnerships, Hamilton Conservation Foundation and other grant opportunities where available.

Related Reports and Appendices:

Appendix A – HCA Conservation Areas Access and Amenities Review

Introduction

To implement the goals and objectives of HCA’s new strategic plan (2025-2029), under the strategic priority area of Connecting People to Nature, staff committed to “undertake a review of amenities and access to our conservation areas to welcome visitors and enhance inclusivity”.

The intention behind this review is to ensure that our conservation areas are inclusive and welcoming for everyone. By identifying and removing physical, cultural, and informational barriers, the goal is to create environments where all individuals can enjoy the benefits of nature, recreation, and community engagement.

Existing Initiatives

HCA has undertaken a number of actions toward improving access to our areas, programs and services, and to provide amenities that enhance inclusivity. The actions generally fall under the categories of Access, Inclusivity, and Communications:

Access to Public Spaces

- Completion of a Visitor Use Management Plan for Tiffany Falls Conservation Area
- Designation and signage for accessible parking spaces at the HCA main office and all Conservation Areas
- Accessible beach path and Mobi-Mat at Christie Lake Conservation Area
- Accessible picnic tables
- Accessible Peter Street Trail at Felker’s Falls Conservation Area
- Accessibility improvements at Spencer Gorge Conservation Area at Webster Falls and Tew Falls Accessible Lookout
- Accessible fishing bridge and docks at Valens Lake Conservation Area
- Accessible cabins at Valens Lake Conservation Area
- Accessible ramp and doors at Main Administration Office
- Accessible showers at Valens Lake and Fifty Point Conservation Areas
- Accessible multi-use waterfront trail at Confederation Beach Park
- Discounted admission fees for persons with disabilities, and free entry for support persons



- Enrollment in the Access 2 Program for WWW to promote free entry for support persons
- Reduced barrier trails at Westfield Heritage Village
- Remote Virtual 360° Tours of Westfield Heritage Village

Inclusivity for Public Spaces

- Established a Diversity, Equity, Inclusion, and Belonging Working Group to develop a DEI policy and program
- Established an Indigenous Engagement Working Group to develop an Indigenous Engagement guideline
- Foot washing stations at Confederation Beach Park for religious practices
- Gender-neutral bathroom at HCA Main Administration Office
- Check Out the Great Outdoors Library Pass program
- Expansion of the Check Out the Great Outdoors Library Pass program to Indigenous community centres
- Trail Application – including remote access and audible experiences
- Basadinaa Experience – Indigenous interpretive panels at Dundas Valley Conservation Area

Information and Communications

- Location of Accessible Parking Spaces on Conservation Area webpages
- Addition of summer seasonal Trail Ambassador positions to engage in public outreach
- AODA compliant corporate communications and documents
- Trail difficulty ratings on trail and wayfinding signage at Eramosa Karst Conservation Area with Trail and Wayfinding Signs coming to 4 Conservation Areas in 2025:
 - Christie Lake
 - Spencer Gorge
 - Westfield Heritage Village
 - Valens Lake
- Customizable accessibility settings plug-in on all websites
- Amenities icons / symbols on conservation area parking lot signs

- Amenities icons / symbols on websites.

Collaborating with the Hamilton Council on Aging (HCoA) to promote access to HCA facilities for seniors through an updated brochure.

Access to Public Spaces

- Completion of accessible lookout tower at Valens Lake Conservation Area
- Completion of accessible fishing platform at Fifty Point Conservation Area

2026 Initiatives for Endorsement:

- Participation in PaRx: A Prescription for Nature Program
- Expanded participation in the Access 2 Program to include all HCA Conservation Areas to promote free entry for support persons

Operation Initiatives to Implement 2025 – 2029 in Departmental Workplans

Access to Public Spaces

- Accessible beach path enhancement and Mobi-Mat at Valens Lake Conservation Area
- Participation in Doors Open Hamilton
- Continue to convert bathrooms to gender neutral at various locations

Inclusivity for Public Spaces

- Expand Basadinaa to the Trail App and sharing of select panels at other Conservation Areas
- Review participation in the Park Bus ride share transportation program as a destination for their Toronto hub
- Installation of a Wind Phone for mental health support
- Continue to evaluate and expand the Check Out the Great Outdoors Program

Information & Communications

- Accessibility at HCA resource page
- Train the trainer program for AODA compliant document creation
- QR codes on signage linking to HCA website with customizable accessibility settings

- QR codes on signage linking to HCA website which can be translated to multiple languages through standard web browsers
- Expansion of communications highlighting conservation area access points on public transit routes, where service exists

Implementation

The access and amenities initiatives will be included in departmental work plans and will be completed in within the current five-year strategic plan timeframe.

Marketing & Communications Support

A comprehensive marketing and communications strategy will be developed and executed to support the successful implementation of the proposed new initiatives.

The communications strategy will include, as appropriate:

- Targeted social media content and graphics or project photos when each project is completed and opened to the public (with the option for paid promotion)
- Website content development, including news items, project-specific pages and updates to the relevant conservation area pages
- Conservation Area brochure and map updates as projects are completed
- Creation of an Accessibility at HCA page with information on all accessible features across the watershed
- On-site promotional materials (e.g., posters, signage)
- Inclusion in HCA newsletters
- Communications to HCA Membership Pass Holders

Each campaign will be tailored to reflect the specific improvements and access enhancements introduced at individual conservation areas, emphasizing three core outcomes: increasing public awareness, supporting inclusive access for all visitors, and fostering a welcoming environment that encourages return visits.

This communications approach ensures that all improvements resulting from the Access and Amenities Review are effectively conveyed to the public, contributing to broader organizational goals related to visitor engagement, accessibility, and community connection to nature.

Metrics and Evaluation

Initiation and effectiveness of HCA's additional accessible infrastructure and enhanced access programs and services will be monitored and evaluated to inform additional and/or alternate enhancements and future decision making.

This page intentionally left blank.