



Conservation Advisory Board Meeting Agenda

Thursday, June 13, 2024

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Notice of Meeting Conservation Advisory Board

Thursday, June 13, 2024

4:00 p.m.

**Site Visit at Eramosa Karst Conservation Area,
86 Upper Mount Albion Road, Stoney Creek**

Followed by

**Meeting at Valley Park Recreation Centre,
970 Paramount Drive, Stoney Creek**

This meeting will be held fully in-person, at Eramosa Karst Conservation Area and Valley Park Recreation Centre, Community Room #1

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

Welcome to Eramosa Karst

– Gord Costie

Site Tour – New Wayfinding Signs

– Travis Haws

Travel to Valley Park Recreation Centre, 970 Paramount Dr, Stoney Creek, Community Room # 1

5pm Estimated start time

1. Welcome

– Wayne Terryberry

2. Declaration of Conflict of Interest

– Wayne Terryberry

3. Approval of Agenda

– Wayne Terryberry

4. Delegations

5. Member Briefing

6. Chair's Report on Board of Directors Actions

– Wayne Terryberry

CA 2411 HCA Natural Hazard Infrastructure – Asset Management and Operation Plans

CA 2412 Saltfleet Study Area Master and Management Plans

7. Approval of Minutes of Previous Meeting

7.1. Minutes – Conservation Advisory Board (April 11, 2024) – Wayne Terryberry Page 1

8. Business Arising from the Minutes

9. Staff Reports/Memorandums

Reports for Recommendation

- 9.1 Draft Conservation Area Strategy and Draft Watershed Based Resource Management Strategy – Scott Peck Page 7
- 9.2. Invasive Species Strategy 2024 – Mike Stone/Lesley McDonell Page 73

Memorandums to be Received

- 9.3. Update, Spencer Gorge Reservation Service for 2024 Operations – Gord Costie / Brandon Good Page 101
- 9.4. Natural Areas Inventory (NAI) Project update – Mike Stone Page 105

10. New Business

11. Next Meeting – Thursday, August 8, 2024 at 4:00 p.m.

12. Adjournment

HAMILTON CONSERVATION AUTHORITY

Conservation Advisory Board

MINUTES

Thursday, April 11, 2024

Minutes of the Conservation Advisory Board meeting held on Thursday, April 11, 2024 at 4:00 p.m., at the HCA main office, 838 Mineral Springs Road, in Ancaster, and livestreamed on YouTube.

PRESENT:	Sherry O'Connor – in the Chair Elise Copps Natalie Faught Brian McHattie	Tyler Cunningham Jamie Freeman Haley McRae Noah Stegman
REGRETS:	Cortney Oliver, Wayne Terryberry, Brad Clark (ex-officio), Susan Fielding (ex-officio)	
STAFF PRESENT:	Madolyn Armstrong, Lisa Burnside, Gord Costie, Marlene Ferreira, Scott Fleming, Matt Hall, Scott Peck, Karen Phong, Mike Stone, Jaime Tellier, and Sandra Winninger	
OTHERS:	Media – None	

1. Welcome

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

2. Declaration of Conflict of Interest

The Chair asked members to declare any conflicts under the HCA Administrative By-law. There were none.

3. Approval of Agenda

The Chair requested any additions or deletions to the agenda; there were none.

**CA2408 MOVED BY: Jamie Freeman
 SECONDED BY: Haley McRae**

THAT the agenda be approved.

CARRIED

4. Delegations

There were none.

5. Member Briefing

5.1 HCA 2003 Annual Report

Lisa Burnside provided an overview of the Annual Report and answered members questions.

5.2 Fifty Point Wetland update

Scott Peck reviewed the progress to date on the construction of the wetland at Fifty Point and answered members questions.

**CA 2409 MOVED BY: Tyler Cunningham
 SECONDED BY: Noah Stegman**

THAT the member briefing be received.

CARRIED

6. Chairman's Report on Board of Directors Actions

The following items were approved by the Board of Directors at the March 7, 2024 meeting:

CA 2405 Indigenous Interpretive Signage Proposal

CA 2406 Westfield Accession and Deaccession

CA 2407 Artaban Road and Lower Lions Club Road Parking Areas, with a friendly amendment to the motion, to delete the words "carrying capacity" for "visitor management plan".

7. Approval of Minutes of Previous Meeting**7.1. Minutes – Conservation Advisory Board (February 8, 2024)**

**CA 2410 MOVED BY: Brian McHattie
 SECONDED BY: Noah Stegman**

**THAT the minutes of the February 8, 2024 Conservation
Advisory Board meeting be approved.**

CARRIED

8. Business Arising from the Minutes

There was none.

9. Staff Reports/Memorandums**Reports for Recommendation****9.1. HCA Natural Hazard Infrastructure – Asset Management Plan****9.2. HCA Natural Hazard Infrastructure - Operation Plan**

Karen Phong provided a concurrent overview on both reports. She highlighted the reason for creating the Asset Management Plan: change in Ontario regulations requiring conservation authorities to both develop the Asset Management Plan to inventory the flood and erosion control structures owned by the HCA. Additionally, the same regulation requires the HCA to develop an Operational Plan which summarizes operational tasks that are required for HCA flood and erosion control structures.

Members questions were answered following the presentation.

As both reports were presented together, the motion to approve combined both reports, 9.1 and 9.2.

**CA 2411 MOVED BY: Natalie Faught
 SECONDED BY: Noah Stegman**

**THAT the Conservation Advisory Board recommends to the
Board of Directors of the Hamilton Conservation Authority that
the Hamilton Conservation Authority Natural Hazard**

Infrastructure - Asset Management Plan dated March 2024 be approved; and further,

THAT the Conservation Advisory Board recommends to the Board of Directors of the Hamilton Conservation Authority that the Hamilton Conservation Authority Operational Plan dated March, 2024 be approved.

CARRIED

9.3. Saltfleet Study Area Master and Management Plans

Madolyn Armstrong provided an overview of the Plans as well as the process undertaken to create the master and management plans for the conservation areas, which include: Saltfleet Conservation Area, Winona/Vinemount Conservation Areas and the Dofasco Trail. She noted that the plans will direct the priorities for each area for the next ten years. She also noted that Winona/Vinemount Conservation Areas are fall within the Niagara Escarpment Plan and will need their approval in addition to the Ministry of Natural Resources and Forestry.

Members questions were answered by staff following the presentation.

**CA 2412 MOVED BY: Noah Stegman
 SECONDED BY: Haley McCrae**

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

THAT this report and accompanying Master and Management Plans of March 2024 be received as information for project background and general understanding;

and further

THAT the Saltfleet Conservation Area Master Plan, Dofasco 2000 Trail Management Plan and Winona and Vinemount Conservation Areas Management Plan of 2024 be approved.

and further

THAT the Winona and Vinemount Conservation Areas Management Plan be submitted to the NEC and MNRF for final approval.

CARRIED

10. New Business

There was none.

11. Next Meeting

The next meeting of the CAB is scheduled for Thursday, June 13, 2024 at 4:00 p.m.; location TBD.

12. Adjournment

On motion, the meeting was adjourned.

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Report

TO: Conservation Advisory Board

FROM: Lisa Burnside, Chief Administrative Officer (CAO)

RECOMMENDED & PREPARED BY: T. Scott Peck, MCIP, RPP, Deputy CAO/Director, Watershed Management Services

MEETING DATE: June 13, 2024

RE: HCA Draft Conservation Area Strategy and Draft Watershed-based Resource Management Strategy

STAFF RECOMMENDATION

THAT the Conservation Advisory Board recommends to the Board of Directors of the Hamilton Conservation Authority that staff be directed to undertake public and stakeholder consultation regarding the Draft HCA Conservation Area Strategy and the Draft HCA Watershed-based Resource Management Strategy.

BACKGROUND & PURPOSE

Ontario Regulation 686/21: Mandatory Programs and Services, under the *Conservation Authorities Act* was enacted on October 7, 2021. Section 9 of the regulation requires an authority to prepare a Conservation Area Strategy and Section 12 of the regulation requires an authority to prepare a Watershed-based Resource Management Strategy. Both strategies must be completed on or before December 31, 2024. The regulation also requires, for both strategies, that “the authority shall ensure stakeholders and the public are consulted during the preparation of the strategies in a manner that the authority considers advisable.”

In Spring 2023, the Conservation Advisory Board (CAB) and Board of Directors endorsed an approach to complete all the required strategies.

The purpose of this report is to provide the Draft Conservation Area Strategy and the Draft Watershed-based Resource Management Strategy to CAB and Board for their information and for direction for staff to undertake consultation with stakeholders and the public regarding the draft strategies as required by the regulation.

STAFF COMMENT

HCA staff have completed a draft of both the Conservation Area Strategy and the Watershed-based Resource Management Strategy and they are attached for Conservation Advisory Board and the Board of Directors information. It is proposed that these draft documents be made available to stakeholders and the public for their review and comment. Based on input received through the consultation process, the draft strategies will be revised as appropriate and finalized for review at the October 10, 2024 CAB meeting with proposed final approval of the strategies at the November 7, 2024 Board of Directors meetings.

The development of the strategies and plans has been led by Watershed Management Services with the assistance of a working group for the strategies. The following working groups helped facilitate the development of the strategies:

1. Conservation Area Strategy and Land Inventory - Scott Peck (WMS), Scott Fleming (Finance), Matt Hall (CAPSS), Gord Costie (CAS), Jaime Tellier (CAO's Office) and Lisa Burnside (CAO)
2. Watershed-Based Resource Management Strategy – Scott Peck, Mike Stone and Jonathan Bastien (WMS), Scott Fleming (Finance) and Lisa Burnside (CAO)

Both strategies have been developed based on the completed HCA Inventory of Programs & Services and the Agreement for Services with the City of Hamilton and the Township of Puslinch as well as the direction from the HCA Strategic Plan.

Conservation Area Strategy

The Conservation Area Strategy identifies broad objectives for the Hamilton Conservation Authority's (HCA) Conservation Areas and related programs and services. The strategy meets the requirements as outlined in the Conservation Authorities Act and Ontario Regulation 686/21 and is intended to provide guidance for the management and operation of the HCA's conservation areas.

The Conservation Area Strategy addresses the following subject areas:

1. Introduction/Purpose/Framework
2. Strategic Direction
3. Program and Services Review
4. Conservation Area Assessment
 - a. How HCA lands augment natural heritage
 - b. How HCA lands integrate with provincial and municipal lands
5. Conservation Area Land Use Categories
6. Public Engagement and Public Review
7. Future Considerations

Ontario Regulation 686/21 also requires that an authority complete a land inventory by December 31, 2024. The Conservation Area Strategy and Land Inventory are related as the Land Use Categories identified through the Conservation Area Strategy will be applied, as outlined in the strategy, to the various parcels in the Land Inventory. The Land Inventory is currently being completed and will be finalized for consideration at the October 10, 2024 CAB meeting with endorsement proposed for the November 7, 2024 Board of Directors meeting.

Watershed-based Resource Management Strategy

The Watershed-based Resource Management Strategy has been undertaken to meet requirements as outlined in the Conservation Authorities Act and Ontario Regulation 686/21. The WBRMS will provide HCA with guidance regarding continued programs and projects and the development and implementation of resource management programs on a watershed basis.

The Watershed-based Resource Management Strategy addresses the following subject areas:

1. Introduction/Purpose/Framework
2. Strategic Direction
3. Watershed Characterization
4. Watershed Challenges
5. Program and Services review
6. Future Considerations
7. Public Engagement and Public Review

Stakeholder and Public Consultation

In January 2024, the HCA developed 2 webpages to provide an overview of the purpose and intent of both the Conservation Area Strategy and the Watershed-based Resource Management Plan. These webpages were in addition to the Conservation Talk HCA engage platform. The links for this information are as follows.

<https://conservationhamilton.ca/conservation-area-strategy/>
<https://conservationhamilton.ca/watershed-based-resource-management-strategy/>
<https://conservationtalkhca.ca/>

To obtain comment on the strategies, these webpages will be updated to include the draft strategies. This will be communicated through the HCA website as well as HCA social media. Further, the draft strategies will be provided directly to the City of Hamilton, Township of Puslinch, Six Nations of the Grand River and the Mississaugas of the Credit First Nations.

STRATEGIC PLAN LINKAGE

HCA's Strategic Plan 2019 – 2023 outlines its major strategic priority areas and related initiatives for advancing HCA's Vision to provide a healthy watershed for everyone. HCA implements a wide variety of programs to fulfill this mandate. The completion of the noted strategies and plans will provide information that will assist in the achievement of these program objectives and HCA's Strategic Plan more generally.

AGENCY COMMENTS

N/A

LEGAL/FINANCIAL IMPLICATIONS

Staff time required to develop the strategies and plans has been covered within existing budget allocations and dedicated focus by the Deputy CAO during the first quarter of 2024.

CONCLUSIONS

The development and approval of the noted strategies is a legislated requirement. HCA staff have completed the Draft Conservation Area Strategy and the Draft Watershed-based Resource Management Strategy. These draft documents will be made available to stakeholders and the public for their review and comment. Based on input received through the consultation process, the draft strategies will be revised as appropriate and finalized for review at the October 10, 2024 CAB meeting with proposed final approval of the strategies at the November 7, 2024 Board of Directors meetings.



Hamilton Conservation Authority

Watershed-based Resource Management Strategy

Draft - June 2024



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1.0 Introduction

1.1 Purpose and Regulatory Framework

The Watershed-based Resource Management Strategy (WbRMS) was undertaken by the Hamilton Region Conservation Authority (HCA) to meet requirements as outlined in the [Conservation Authorities Act](#) (CA Act) and [Ontario Regulation 686/21](#) (Regulation). The WbRMS will provide HCA with guidance regarding continued programs and projects and the development and implementation of resource management programs on a watershed basis.

The Regulation, specifically, subsection 12(1), paragraph 3 outlines that all conservation authorities must complete a WbRMS. The main requirements of the WbRMS per Section 12(4) of Ontario Regulation 686/21 are outlined in Figure 1.

-
1. Guiding principles and objectives that inform the design and delivery of the programs and services that the authority is required to provide under section 21.1 of the Act.
 2. A summary of existing technical studies, monitoring programs and other information on the natural resources the authority relies on within its area of jurisdiction or in specific watersheds that directly informs and supports the delivery of programs and services under section 21.1 of the Act.
 3. A review of the authority's programs and services provided under section 21.1 of the Act for the purposes of,
 - i. determining if the programs and services comply with the regulations made under clause 40 (1) (b) of the Act,
 - ii. identifying and analyzing issues and risks that limit the effectiveness of the delivery of these programs and services, and
 - iii. identifying actions to address the issues and mitigate the risks identified by the review, and providing a cost estimate for the implementation of those actions.
 4. A process for the periodic review and updating of the watershed-based resource management strategy by the authority that includes procedures to ensure stakeholders and the public are consulted during the review and update process.

Figure 1 - Main Requirements

1.2 The Hamilton Conservation Authority

The Spencer Creek Conservation Authority, the forerunner of the HCA, was created in 1958. Subsequently, Red Hill Creek, Stoney Creek, Battlefield Creek and the Numbered watercourse in the former City of Stoney Creek and City of Hamilton were added and the Hamilton Region Conservation Authority (HCA) was formed in 1966 pursuant to the CA Act. The HCA is located at

the western end of Lake Ontario and has a watershed area of 479km². The HCA watershed is in the Treaty Lands and Territory of the Mississaugas of the Credit First Nation and traditional territory of the Haudenosaunee. The majority of the HCA's watershed is included within the City of Hamilton with the headwaters of Spencer Creek and Fletcher Creek located in the Township of Puslinch. A small portion of the Town of Grimsby is located at the east end of the HCA's watershed.

The HCA operates under the requirements of the CA Act. Section 0.1 of the CA Act states that:

“The purpose of this 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 Board of Directors of the HCA is comprised of 11 Directors representing 2 municipalities. Seven Councillors and 3 citizen appointees represent the City of Hamilton while 1 appointee represents the Township of Puslinch. The HCA works closely with our municipal partners as well local groups and agencies and both the Federal and Provincial governments.

2.0 Strategic Direction

2.1 HCA's Strategic Plan **Note: The HCA is currently undertaking the development of a Strategic Plan for 2025-2029. This is expected to be completed in the fall of 2024. This section will be updated pending completion of the 2025-2029 Strategic Plan.**

HCA's [Strategic Plan 2019-2023](#) details the HCA's vision, mission, commitment and corporate values as well as our strategic priorities.

HCA's vision, where we want to be is “A healthy watershed for everyone”.

HCA's mission, what we do is “To lead in the conservation of our watershed and connect people to nature.”

The Strategic Plan highlights the HCA's commitment and corporate values as follows:

- Provide excellent customer service and a solution-oriented approach;
- Be accountable, transparent and responsible in the use of resources;
- Embrace new technologies to help develop new ways of doing business and foster innovation;
- Promote teamwork internally and externally to achieve common goals, support existing relationships and build new partnerships;
- Maintain trust, act with integrity and treat others with respect; and

- Value knowledge to continually learn and improve, in an effort to achieve best solutions.

The HCA's Strategic Plan highlighted 5 Strategic Priority Areas.

1. Organizational Excellence
2. Water Management
3. Natural Heritage Conservation
4. Conservation Area Experience
5. Education and Environmental Awareness

For each Strategic Priority Area, several initiatives are included, and these priority areas and associated initiatives guide programs and services and the development of department work plans, budgets and approaches.

2.2 Watershed-based Resource Management Guiding Principles

Section 12(4) of Ontario Regulation 686/21 notes that a WbRMS shall include "Guiding principles and objectives that inform the design and delivery of the programs and services that the authority is required to provide under section 21.1 of the Act".

Through a review of background documentation and input through the consultation process, the following guiding principles have been developed to meet the requirements of the CA Act and Ontario Regulation 686/21 and to inform the design and delivery of HCA's programs and services.

- The conservation, restoration, development, and management of natural resources is best implemented on a watershed basis.
- Water and other natural resources are vital natural assets, which provide critical functions and services such as buffering the impacts of climate change, mitigate natural hazards, filter contaminants, assimilate waste, sustain biodiversity, and provide green spaces for recreation, among other community benefits.
- The management of water and other natural resources is a shared responsibility among Conservation Authorities, Municipalities, government agencies, First Nations, the public and other stakeholders.
- Resource management decisions are integrated and transparent and take into consideration a broad range of community uses, needs, and values, including ecosystem needs.

- Understanding existing and emerging issues by engaging, collaborating and being transparent builds solid relationships and partnerships for strong watershed ideas, actions and outcomes.
- Safe drinking water is expected by our watershed residents.
- Conservation lands are critical for the maintenance of natural heritage features and landscapes and the health of communities. They provide environmental, economic, social, mental and physical health benefits.
- The majority of the HCA's watershed is privately owned. Stewardship of these lands is critical to the health of the watershed now and in the future.

2.3 Watershed-based Resource Management Objectives

The HCA's strategic plan highlights 5 strategic priority areas with associated initiatives. These priority areas and initiatives guide the delivery of programs and services with associated budget allocations.

- Organizational Excellence
- Water Management
- Natural Heritage Conservation
- Conservation Area Experience
- Education and Environmental Awareness

Flowing from this direction and the principles identified above, the following objectives have been developed.

- To avoid, reduce or mitigate potential risk to public health and safety, and to property damage from flooding and other natural hazards and the impacts of a changing climate.
- To work with Conservation Halton and the City of Hamilton to mitigate potential risk to drinking water sources and ensure a sustainable and clean water supply for the watershed community.
- To characterize groundwater and surface water resource systems, aquatic and terrestrial resources, which regulate natural hazard processes, provide drinking water sources and healthy ecosystems, while supporting the hydrological and ecological integrity of the watershed.
- To protect and maintain Conservation Authority owned lands for public safety, natural heritage protection, outdoor recreation, and socio-economic health.

- To identify and understand key resource issues and the primary stressors that cause them.
- To research and identify potential solutions for addressing key resource issues and adapting/developing programs and services as required.
- To educate and engage the watershed community to promote awareness of natural hazards and watershed health, and to encourage the protection and restoration of land and water resources through stewardship action.

The above noted principles and objectives will help guide the implementation of HCA programs and services and the development of policy and plan documents.

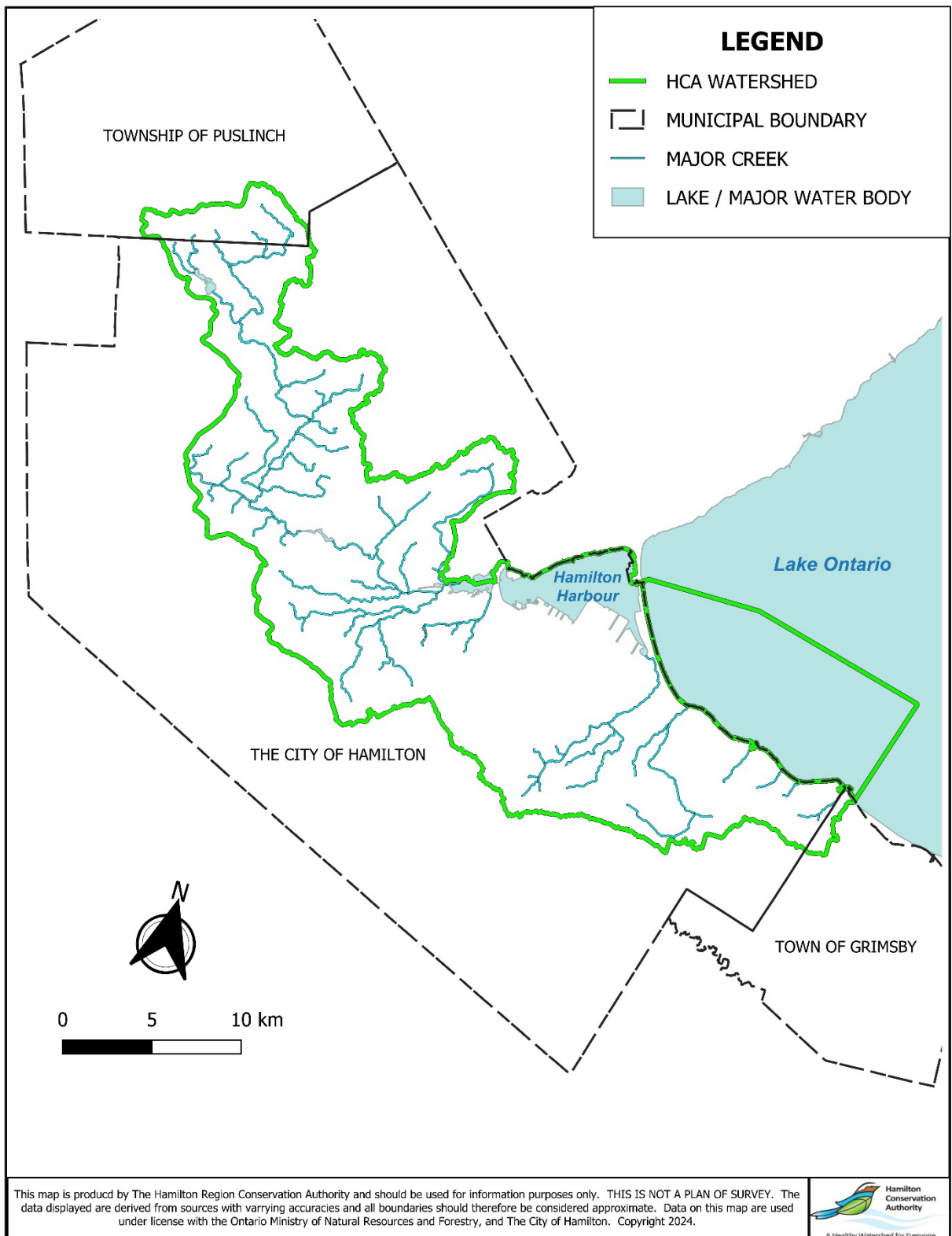
3.0 Watershed Characterization

The HCA 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 has a watershed area of 479km² and reaches 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, 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 (Map 1).

The 1960 Spencer Creek Conservation Report and the 1968 Hamilton Conservation Report describes the HCA's watershed. Further, watershed characterization and assessment work was completed for the Halton-Hamilton Source Water Protection Area which includes the HCA's watershed. The following highlights background information as it relates to the HCA watershed.

3.1 Physical Geography

The present-day 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 the 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.



Map 1 – HCA Watershed

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.

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 re-entrant extends about 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 the Red Hill Valley Parkway. The re-aligned Red Hill Creek currently flows through the valley from waterfalls at the escarpment edge to Windemere Basin adjacent to the Hamilton Harbour.

The Iroquois Plain, extending from the base of the Niagara Escarpment to Hamilton Harbour and Lake Ontario, marks the area of glacial 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.

3.2 Climate

Climate varies significantly within the HCA's watershed. The average annual temperature in the region is 9 degrees Celsius. Climate records indicate a decreasing trend in precipitation as one moves from the northwest to the southeast through the watershed. Annual average precipitation rates range from approximately 950 mm/year in the northwest to 850 mm/year in the southeast (LIO 2008). The topographic change associated with the Niagara Escarpment plays a large role in this trend, with climate stations above the Escarpment receiving significantly higher amounts of precipitation than climate stations located below the Escarpment. Evapotranspiration estimates for Spencer Creek range from 500 to 600 mm/year (MNR 1984), with higher evapotranspiration rates seen in the northern part of the watershed above the Escarpment.

3.3 Surface Water

The HCA's watershed can be divided into two areas.

Four watersheds flow into Cootes Paradise and Hamilton Harbour and ultimately into Lake Ontario:

1. Spencer Creek
2. Chedoke Creek
3. Borer's Creek
4. Red Hill Creek

Three watersheds flow directly into Lake Ontario:

1. Stoney Creek
2. Battlefield Creek
3. Numbered Stoney Creek Watercourses

Lake Ontario and Hamilton Harbour are the largest lakes within the watershed. Cootes Paradise, which drains into Hamilton Harbour, is a large coastal wetland that is fed by Spencer Creek, Chedoke Creek and Borer's Creek. Valens Lake and Christie Lake are reservoirs located on Spencer Creek and have an area of 185 acres and 176 acres respectively for summer storage.

3.4 Groundwater

Within the HCA Watershed, the lowest elevation toward which groundwater is moving is Lake Ontario. The Dundas Valley has a significant influence on groundwater flow direction. As such, northwest of the Dundas Valley, groundwater flow direction is primarily toward the valley to the southeast. The Provincial Groundwater Monitoring Network data indicate stable or increasing groundwater levels since monitoring began in about 2002. It also indicates seasonal fluctuations varying between 0.5 and 2 metres. Seasonal low values typically occur in September. Groundwater flows at a greater rate through the more permeable areas of the dolostone bedrock above the escarpment. The bottom of the upper dolostone formations is at a higher elevation than the bedrock surface below the escarpment. The dolostone is underlain by the Cabot Head aquitard, which limits the vertical movement of groundwater through the rock. Therefore, groundwater moves laterally and seeps from the escarpment face, or water moves through the rock debris at the edge of the escarpment to the base of the slope. Some watercourses are supported by this groundwater discharge. Below the escarpment, water moves through the surface soils and the weathered zone of the underlying shale of the Queenston Formation. The Dundas and Red Hill Valleys influence this flow. Groundwater discharges into the Dundas Valley support cold and cool water fisheries habitat in many reaches. Local impacts on groundwater levels occur in the vicinity of pumping wells, particularly those pumping large volumes of water for many hours each day. These wells include municipal water wells and quarries that are dewatering.

3.5 Flooding and Erosion

Flooding is a natural process that takes place within the HCA watershed, specifically along Spencer Creek in Dundas, Stoney and Battlefield Creeks in Stoney Creek, the Red Hill Creek in Hamilton and sections of the Lake Ontario shoreline. Flooding events and periods of high water can result in increased streambank and shoreline erosion and potential impact to life and property. Floods can occur at any time of the year and are caused by heavy rainfall, rapid melting of snow pack or ice jams, and, in the case of the Lake Ontario, winds and wave action. For the Lake Ontario shoreline, the potential for flooding and erosion is greater in the fall and spring due to high winds from the east. HCA's watercourses experience flooding mainly in the spring from snowmelt and frazil ice formation in lower Spencer Creek.

3.6 Water Control Structures

The water control and erosion control structures that HCA operates are the Christie Lake Dam, Valens Lake Dam, Mineral Springs Detention Reservoir, and Saltfleet Conservation Area Wetlands (BC-1). Christie Lake Dam and Valens lake Dam are located on Spencer Creek, while Mineral Springs Detention Reservoir is located on Sulphur Creek. The Saltfleet Conservation Area Wetlands (BC-1) are located on Battlefield Creek. The primary goal of these water control structures is to provide flood control for the downstream watershed areas. The Christie Lake Dam and Saltfleet Conservation Area Wetlands (BC-1) also provide some benefit for low flow augmentation. In addition to this, Christie Lake Dam, Valens Lake Dam and the Saltfleet Conservation Area Wetlands are within HCA owned conservation areas, and provide natural habitat enhancements and recreational opportunities for the public.

3.7 Drought/Low Flow

Drought conditions in the HCA watershed are weather dependent and are cyclical in nature. Spencer Creek, Red Hill Creek, Stoney and Battlefield Creeks and the Numbered Watercourses in Stoney Creek are more susceptible with occurrences of these watercourses running dry during drought conditions. The Hamilton Low Water Response Team comprises of water users in the watershed, including agricultural representatives, golf courses, nursery operators, quarry operations, industrial users, and provincial and municipal representatives. HCA staff act as co-chair for this team and are responsible for regularly evaluating watershed conditions, which provides evidence to support declaring low water conditions.

3.8 Natural Heritage

The HCA watershed contains a diverse natural heritage system that includes forests, wetlands, prairies, riverine systems, the Niagara Escarpment, Cootes Paradise, Hamilton Harbour and the Lake Ontario shoreline. Over 100 areas within the City of Hamilton have been identified for their environmental significance with a number of these areas being designated as environmentally significant areas in the City of Hamilton and County of Wellington Official Plans. A number of HCA conservation areas such as the Dundas Valley, Niagara Escarpment

lands, Beverly Swamp, Fletcher Creek, Valens Lake, Christie Lake and the Spencer Gorge are located within these environmentally significant lands. The HCA watershed is also located within the Carolinian Canada zone which includes a variety of species found more typically in more southerly areas. These species are in addition to species more broadly found within Ontario.

3.9 Land Use

The HCA's watershed can be divided into two halves, the east area and the west area. The east area would include the Hamilton urban area, Stoney Creek urban area, the Ancaster and Dundas urbans area and Waterdown. Historically and to present day, the bulk of development has occurred in this area and has resulted in a generally continuous urban area. These areas contain predominately residential, commercial and industrial uses. The lands located above the Niagara Escarpment in Stoney Creek and Glanbrook are a mix of residential and agricultural uses. Large natural areas such as the Niagara Escarpment, Cootes Paradise and the Dundas Valley are located within the east area of the watershed.

The west area of the watershed includes Flamborough and the Township of Puslinch. This area is predominately rural in nature with a mix of agricultural and residential uses. There are two quarries in this area. Forests and wetlands occupy a significant portion of the west area with the Beverly Swamp, Hayesland Swamp, Fletcher Creek Swamp Forest and Spencer Creek the main natural areas.

The population of the City of Hamilton in 579,200 (2017 Census) and is projected to be 820,000 by 2051.

There are no First Nations reserves located within the HCA's watershed. However, the Mississaugas of the Credit First Nation and Six Nations of the Grand River First Nation are located west of the HCA watershed area

3.10 Infrastructure

There are 2 municipal drinking water systems within the HCA watershed, one Lake Ontario and one well-based system. The Woodward municipal system draws water from Lake Ontario and supplies water to the urban areas of Hamilton, Dundas, Ancaster, and Waterdown. This lake system also supplies areas of Halton Region and parts of the communities of Caledonia, Cayuga, and York in Haldimand County, which are all located outside of the HCA's watershed. The municipal groundwater system supplies water to a portion of the settlement of Greenville, located just north of Dundas. There are seven non-municipal residential systems, 60 small drinking water systems that operate in the HCA's watershed. The rural areas of the HCA watershed are serviced by private water wells. The urban areas of the watershed are serviced by municipal sewage systems while rural and un-serviced areas rely on private sewage systems.

The east area of the watershed contains several provincial highways that provide connections to areas of southern and central Ontario and the United States, with Highway 5, Highway 6, Highway 403, the Queen Elizabeth Way, Lincoln Alexander Parkway, the Red Hill Expressway and Canadian Pacific and Canadian National Rail lines, 3 in total, crossing the watershed. Additionally, there are numerous regional and local road systems in the HCA watershed.

Hamilton Harbour is a major deep-water port in the Great Lakes system. The harbour supports heavy industry and facilitates the storage and movement of a variety of commodities through water, highway and rail transportation routes.

There are a series of pipelines located in throughout the watershed connecting supplies, storage and refineries across Canada and the United States. The following pipeline companies operate in the HCA watershed - Enbridge – Union Gas, Imperial Oil, Trans-Northern Pipeline, Trans Canada Pipeline and Sun Canadian.

3.11 Protected Areas

The HCA owns or manages 4,732 hectares (11,695 acres) of land which represents over 10% of the HCA's watershed area. These lands are locally, provincially and in some cases, internationally significant and include features such as forests, prairie, wetlands, watercourses, karst, Lake Ontario shoreline and the Niagara Escarpment. Other protected areas within the HCA watershed include lands owned by the City of Hamilton, Royal Botanical Gardens, McMaster University and the Hamilton Naturalists Club. There are no Provincial Parks or federally protected land within the HCA watershed.

4.0 **Watershed Challenges**

Through watershed knowledge and a review of background information, the following watershed challenges were identified that should be considered as part of the HCA's program and services delivery in the coming years.

Continued Development Pressure and Population Growth

A key challenge is current and projected growth and need for housing within the Greater Toronto Hamilton Area. With this growth, there is a priority on increasing housing to accommodate existing housing needs and the projected increase in population. Development within the designated Greenbelt Plan area will be limited. Growth will be focussed to designated urban areas with increase pressure to development in and adjacent to natural hazard and natural heritage lands. Information from the City's Engage Hamilton website notes that "Over the next 25-30 years, the population of Hamilton is expected to grow significantly, from 584,000 in 2021 to at least 820,000 by 2051." This has the potential to impact overall watershed health through loss of natural areas features and functions as well as visitor experience and natural heritage impacts through use of conservation areas.

Climate Change

Climate change is happening and there is a need to work to mitigate and adapt to the effects. This will involve working with the City of Hamilton, Bay Area Climate Change Council and implementing the HCA's Climate Change Strategy.

Invasive Species

Invasive species are a major threat within Ontario and the HCA's watershed. These species outcompete native species and impact our watersheds natural heritage system and features. The HCA has an Invasive Species Strategy (2016) which is currently being updated. The strategy provides guidance regarding management of invasive species.

Species at Risk, Biodiversity and Habitat Loss

The loss of habitat, increased numbers of species at risk and loss of biodiversity presents a major threat to the function and health of watershed natural areas and a healthy ecosystem. The HCA has partnered with the City of Hamilton, Hamilton Naturalists Club and other agencies regarding a natural areas inventory for Hamilton. Further, working with multiple partners, the HCA is part of the City Biodiversity Action Plan.

Water Quality

As detailed, water quality in the HCA watershed is a concern as it relates to urban and rural watercourses. The sources of these impacts vary, however, the impact of development, sewage cross connections, infrastructure, impervious surfaces, agricultural practices and climate change on water quality continues to be at issue.

5.0 Programs and Services

Ontario Regulation 687/21: Transition Plans and Agreements for Programs and Services detail requirements for Transition Plans and Agreements for Programs and Services. As per the CA Act and Ontario Regulation, on March 2, 2023 the HCA's Board of Directors approved the HCA's Inventory of Programs and Services. The approved Inventory of Programs and Services details HCA Mandatory Programs and Services (Category 1), Municipal Programs (Category 2) undertaken by the HCA under agreement with the partner municipality and Other Programs and Services (Category 3) the HCA undertakes. The required agreements for Category 2 and Category 3 Programs and Services was completed with the City of Hamilton and the Township of Puslinch on November 17, 2023. The costs associated for all Category 1, 2 and 3 programs and services are included in the Inventory of Programs and Services.

A summary of the programs and services is provided in the following sections. The final version of the Inventory of Programs and Services is provided at this [link](#).

5.1 Natural Hazard Management

Natural hazard management is a key program area for the HCA. The priority in this regard is the protection of life and property from flooding and erosion hazards. This is a mandatory, watershed wide program that applies to the Lake Ontario and Hamilton Harbour shoreline as well as area flood plains, valley and stream systems, wetlands and hazardous lands such as karst topography.

This program includes:

- Flood forecasting and warning – HCA's flood forecasting and warning program monitors watershed conditions to provide agency and public awareness of flood conditions and to provide an early warning regarding possible flood risks. The HCA provides the City of Hamilton and the Township of Puslinch, other agencies and the public notice of potential flood events and associated issues to allow time to prepare and respond. This program involves collection and interpretation of rain and watercourse flow data, weather forecasts, watershed conditions, snow surveys, frazil ice, wind direction related to Lake Ontario, site conditions, watershed knowledge of susceptible areas, provincial forecasts. This information is utilized to provide safety notices and flood warnings and to liaise with provincial and municipal department and the public.
- Municipal plan input and review and regulation – Municipal Plan Input and Review is a preventative program that aims to ensure that new development will not result in increased risks to public safety or property damage from natural hazards. HCA undertakes the municipal plan input and review program to provide advice to its member municipalities and watershed residents, both through the commenting process under the *Planning Act* and through general inquiries and pre-consultation meetings. This program includes municipal official plan related comments and proponent driven applications such as subdivisions, condominiums, severances, official plan and zoning by-law amendments, minor variances, and site plan control.

The HCA also regulates development under Section 28 of the CA Act and Ontario Regulation 41/24, Prohibited Activities, Exemptions and Permits. The intent of the regulation is to direct new development away from natural hazards to ensure that development is not impacted by flooding and erosion and that new development does not aggravate or create new hazards or create conditions which would jeopardize health and safety of people or result in damage to property. The HCA regulates the Lake Ontario and Hamilton Harbour shorelines, dynamic beaches, watercourses, ravine and stream systems, wetlands and karst features.

- HCA Owned Flood and Erosion Control Infrastructure – HCA operates the Christie Lake Dam, Valens Lake Dam and Mineral Springs detention reservoir, and Saltfleet wetland berms (BC-1).

The Christie Lake Dam is located on Spencer Creek, upstream of Dundas within the Christie Lake Conservation Area. Constructed in 1972, the dam provides flood control and low flow augmentation. In addition, the dam reservoir provides recreational opportunities and fish habitat.

The Valens Lake Dam is located on Spencer Creek, near the community of Valens, Ontario within the Valens Conservation Area. Constructed in 1966, the dam provides recreational opportunities and fish habitat, but does also provide some flood control.

The Mineral Springs detention reservoir is located on Sulphur Creek and created as a result of the crossing at an unpaved section of Martin Road. Unlike the other three infrastructures, the Mineral Springs detention reservoir is designed to overtop Martin Road for storm events near and larger than the 10-year design storm.

The Saltfleet wetland berms (BC-1) are two separate wetland containment berms (East and West) that are located in HCA's Saltfleet Conservation Area at 444 First Road East. The BC-1 East and West wetlands are part of the larger Saltfleet wetlands system, that will include several locations along Battlefield Creek and Stoney Creek. The BC-1 East and West wetlands provide flood and erosion control as well as low flow augmentation to downstream reaches of Battlefield Creek.

- Flood plain mapping – The HCA has undertaken flood plain mapping updates for Lower Spencer Creek, the Numbered watercourses in Stoney Creek, Battlefield Creek and Stoney Creek as well as Red Hill Creek. Further flood plain mapping will be undertaken for the remaining watercourses in the urban areas of the watershed and as required in the rural areas.
- Low water response – The HCA delivers the provincial Low Water Response Program for the HCA watershed. This includes a Low water Response Committee that consists of municipal, agriculture, industry, business, recreation, government representatives and other decision makers from the watershed

5.2 Water Quality and Quantity Monitoring

- The HCA undertakes surface water monitoring throughout the watershed through chemical analysis as part of the Province of Ontario Provincial Surface Water Quality Monitoring Network (PWQMN). The PWQMN water quality monitoring program is a long-standing HCA and Ministry of Environment, Conservation and Parks (MECP) partnership for stream water quality monitoring. The HCA undertakes the field work to gather the water samples at 6 sites. The samples are submitted to the MECP provincial lab for analysis and data management. The results of water sampling are available to the HCA and is used as part of the HCA's watershed report card and overall watershed health monitoring.

- The Provincial Groundwater Monitoring Network (PGMN) is a partnership with the MCEP for groundwater level and water quality monitoring at 7 stations across the HCA watershed. This program is similar for all conservation authorities with HCA costs being data collection, shipping, minor equipment repairs/purchases, data management, and reporting. The MECP funded the installation of the network and continues to fund equipment replacements. The results of water sampling are available to the HCA.
- The HCA undertakes a Water Quality Monitoring Program in partnership with the City of Hamilton. This includes water quality and erosion site monitoring, City of Hamilton Groundwater Monitoring Well Inspections, City of Hamilton Groundwater Monitoring Well Water Quality Sampling, City of Hamilton E. Coli Sampling Program at PWQMN Sites and Greensville Surface Water Monitoring. The data from HCA water monitoring program as well as City programs is shared between the HCA and the City.
- As part of the Hamilton Harbour Remedial Action Plan, the HCA undertakes a water quality monitoring associated with tributaries to Cootes Paradise (Spencer Creek, Chedoke Creek, Ancaster Creek and Borer's Creek). This monitoring programs identifies long term trends related to water quality and watershed health.

5.3 Source Water Protection

- HCA's watershed is within the Halton-Hamilton Source Protection Region. The Halton Region Conservation Authority (HRCA) is designated as the lead; however, the HCA and HRCA manage the program jointly with the HRCA managing the programs budget. Both the HCA and HRCA are identified as source protection authorities in the Clean Water Act, 2006. They coordinate the program and are guided by a source protection committee, and support municipalities and other involved or affected stakeholders in the Region.

5.4 Monitoring and Stewardship Programs

The Hamilton Watershed Stewardship Program is an HCA program that undertakes activities in three key project areas:

- Landowner Outreach – including contact and site with watershed landowners to educate and communicate the benefits of using best management practices for addressing water quality and habitat issues.
- Educational Opportunities – including the development and hosting of educational workshops and information sessions for watershed landowners.
- Water Quality and Habitat Improvement Projects – where HWSP staff work with landowners to develop and implement stewardship projects on-the-ground.

The HCA's Hamilton Watershed Stewardship Program also delivers a well decommissioning program on behalf of the City of Hamilton in HCA's watershed to assist landowners with the cost of decommissioning their abandoned water wells

The HCA undertakes terrestrial and aquatic resource monitoring programs. These are monitoring programs that takes place on HCA lands and as it relates for some sites in the aquatic program, on non-HCA lands. These overall programs are utilized by HCA, City of Hamilton and consultants and helps identify terrestrial and aquatic health on a watershed basis.

5.5 Conservation Area Lands

The Hamilton Conservation Authority own or manages 4,732 ha (11,695 acres) of land within our watershed jurisdiction. This represents over 10% of the HCA's watershed area. There is a total of 147 kilometres of trails located on HCA lands. This includes the Westfield Heritage Village Conservation Area and portions of the Chippawa Rail Trail and TH&B Rail Trail that are located outside of the HCA's watershed.

HCA lands comprise major components of the City of Hamilton's natural heritage system and are integral to the features, function and biodiversity of the natural heritage system. HCA lands play a critical role in the watershed natural heritage system as well as providing passive and active recreation lands within the watershed. HCA lands augment natural heritage features within the HCA's watershed and secure these lands for current and future generations. Further, these lands play a critical role in providing critical habitat in an increasing urban area, provides a natural land area to maintain and increase biodiversity while also mitigating the effects of climate change. Outdoor environmental education and cultural heritage education occurs on the lands, specifically the Dundas Valley Conservation Area and the Westfield Heritage Village Conservation Area.

The HCA has three conservation area classifications that relate to the management and use of these lands. It is highlighted that the overarching intent for management of the lands owned and managed by the HCA is to ensure the conservation of the natural heritage and natural hazard features and functions found on these lands. Other uses should ultimately be complimentary to this overarching purpose and not negatively impact on these features. Active and passive conservation areas generally require payment for access through an automated gate system or admission fee.

1. Conservation Areas (Active Recreation, Accessible to the Public)

This land use category would also include such uses as camping, roofed accommodation, marina, picnic pavilions, active day use areas such as beaches, trails and open space areas. This land use category would apply to the following HCA owned and managed lands – Fifty Point Conservation Area, Confederation Beach Park, Christie Lake Conservation Area, Valens Lake Conservation Area and Westfield Heritage Village Conservation Area. As it relates to Valens Lake and

Christie Lake Conservation Areas, this would include operation and maintenance of the dam structures located on site.

2. Conservation Areas (Passive Recreation, Accessible to the Public)

This land use category would also include such uses as walking, hiking, cycling, nature interpretation. These lands contain significant natural heritage and physical landforms, and in some cases cultural heritage features. The intent with this land use category is to conserve the natural heritage and natural hazard features found on site while connecting people to nature and to instill a conservation ethic in conservation area visitors and the broader public. This land use category would apply to the following HCA owned and managed lands – Devil’s Punch Bowl Conservation Area, Saltfleet Conservation Area, Eramosa Karst Conservation Area, Felker’s Falls Conservation Area, Mount Albion Conservation Area, Iroquoia Heights Conservation Area, Meadowlands Conservation Area, Dundas Valley Conservation Area, Borer’s falls Conservation Area, Spencer Gorge Conservation Area and Crooks Hollow Conservation Area.

3. Conservation Areas (Management Lands)

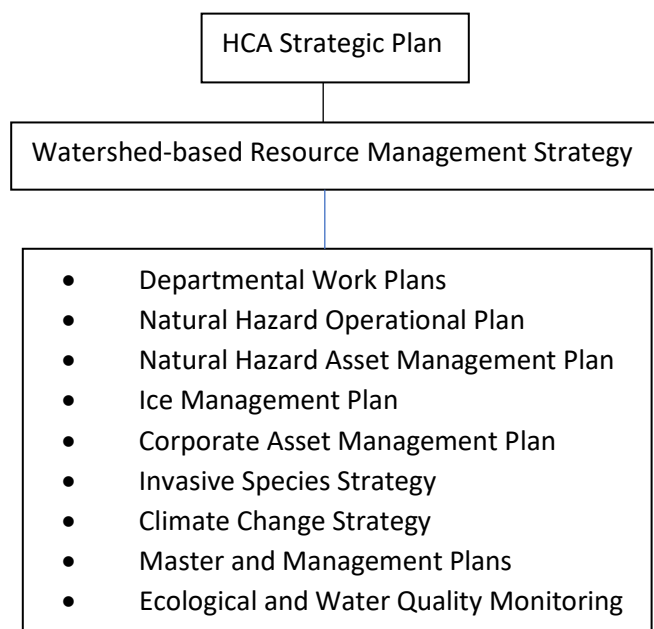
The primary land use on these lands is natural heritage and natural hazard conservation. These lands are larger or more isolated parcels that have limited facilities and access and, in most cases, do not experience large numbers visitation numbers. There may be HCA maintained trails, limited trails or a through trail such as the Bruce Trail that is not part of an existing HCA trail located on these lands. This land use category would apply to the following HCA owned and managed lands – Vinemount Swamp Conservation Area, Winona Conservation Area, Beverly Swamp Conservation Area and Fletcher Creek Ecological Preserve.

6.0 Future Considerations

The HCA is the area’s largest environmental management agency and is dedicated to the conservation and enjoyment of watershed lands and water resources. The HCA undertakes critical work that relates to natural hazard planning and management, watershed monitoring to identify trends and restoration opportunities and conservation area management to protect natural heritage features and connect people to nature.

Through the development and approval of the HCA’s Inventory of Programs and Services, Agreement for Services with the City of Hamilton and Township of Puslinch and the development of WbRMS, issues, costs and risks related to these programs were considered (see Appendix 1). These programs include natural hazard management, conservation areas and lands, drinking water source protection and water quality and quantity monitoring. The HCA’s programs and services comply with regulatory requirements and provide value and experiences for the City of Hamilton, Township of Puslinch, watershed residents and landowners and people from outside the watershed.

Times change, issues evolve, and new issues arise, and these changes will result in pressures related to natural hazards, natural heritage and the watershed community at-large. There will be opportunities as well through increased partnerships with municipalities to enhance subwatershed planning and monitoring programs, as examples. Ultimately, the HCA's Strategic Plan will provide overall guidance regarding programs and services. The WbRMS will provide a finer level of guidance and will be updated based on HCA's overall strategic priorities to address these changes, opportunities and effectiveness of programs as required. Lastly, issue specific strategies and plans will be maintained based on the HCA Strategic Plan and WbRMS to provide a greater level of direction and guidance related to these specific issues. The following highlights the hierarchy of this approach.



HCA's successes since 1958 are the result of diligent Board of Director and staff commitment to conserving and restoring the HCA watershed. These efforts have included effective partnerships with governments and agencies at the federal, provincial and municipal level, local businesses, residents and landowners, conservation area visitors and groups like Friends of Eramosa Karst and Friends of Westfield. Moving forward, these relationships and partnerships will need to continue and be enhanced with a focus on greater consultation and engagement with the Mississauga of the Credit First Nation and Six Nations of the Grand River First Nation.

7.0 Public Engagement

Public engagement for the WbRMS was undertaken in two phases. The first phase involved posting information regarding the development of the strategy and the associated regulatory

requirements of Ontario Regulation 686/21 on the HCA's dedicated website for the WbRMS and the public consultation webpage "Bang the Table". Further, the process and intent of the WbRMS was reviewed at a high level in meetings with the Mississauga of the Credit First Nation and the Six Nations of the Grand River First Nation.

The second phase of the consultation process involved the circulation of the draft WbRMS. At this stage the strategy was reviewed by the HCA's Conservation Advisory Board and the HCA's Board of Directors prior to the strategy being made available for broader consultation. The intent of the circulation of the draft strategy was to provide an overview of the regulatory requirements and how HCA staff had completed the document to incorporate these requirements. At this stage, the document will benefit from a broader review and will incorporate comments received through the consultation to complete a final strategy.

8.0 Periodic Review

Ontario Regulation 686/21 requires a process for the periodic review and updating of the WbRMS including procedures to ensure stakeholders and the public are consulted during the review and update process. In this regard, the WbRMS should be reviewed within a year after the appointment of a new Board of Directors for the HCA. This timing allows for consideration of environmental, social and economic impacts while also aligning with the municipal election cycle in Ontario. A review can also be undertaken within the four-year period noted to address issues if they arise.

Stakeholder and public consultation will be undertaken during the above noted review periods to ensure awareness and transparency regarding the WbRMS.

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Appendix 1 – Summary of Existing Technical Studies, Monitoring Programs and Other Information

Program Area	Description	Category	Supporting Documents
Natural Hazard 1 Section 28.1 Permit Administration and compliance activities	Reviewing and processing permit applications, associated technical reports, site inspections, communication with applicants, agents, and consultants. Legal expenses for regulations and compliance.	1	<ul style="list-style-type: none"> Conservation Authorities Act Ontario Regulation 41/24 Hamilton Conservation Authority Planning & Regulation Policies and Guidelines, 2011 Technical Guide River & Stream System: Flooding Hazard Limit, Ontario, 2002. Lake Ontario Shoreline Management Plan (Draft)
Natural Hazard 2 and 3 Review under Other Legislation and Municipal Plan Input and Review	<p>Input to the review and approval processes under other applicable law, (e.g. Environmental Assessment Act, Drainage Act, Aggregate Resources Act, Niagara Escarpment Planning and Development Act proposals) with comments related to natural hazards, wetlands, watercourses and Sec 28 permit requirements.</p> <p>Technical information and advice to municipalities on circulated municipal land use planning applications (Official Plan and Zoning By-law Amendments, Subdivisions, Consents, Minor Variances). Input to municipal land-use planning documents (OP, Comprehensive ZB, Secondary plans) related to natural hazards, on behalf of MNRF (delegated to CAs in 1983)</p>	1	<ul style="list-style-type: none"> Conservation Authorities Act Environmental Assessment Act, Drainage Act, Aggregate Resources Act, Niagara Escarpment Planning and Development Act, Greenbelt plan Ontario Regulation 41/24 Hamilton Conservation Authority Planning & Regulation Policies and Guidelines, 2011 Technical Guide River & Stream System: Flooding Hazard Limit, Ontario, 2002. Lake Ontario Shoreline Management Plan (Draft)
Natural Hazard 4 & 6 Flood Forecasting and Warning	Daily data collection and monitoring of weather forecasts, provincial & local water level forecasts and watershed conditions. Flood event forecasting. Flood warning and communications. Maintenance of equipment.	1	<ul style="list-style-type: none"> Data on precipitation, watercourse flows, reservoir levels from 6 stream flow gauges, 10 rainfall gauges and 4 snow courses Weather forecasts Surface water Monitoring Centre alerts Watershed observations and knowledge Flood Plain mapping Hydrologic and hydraulic models HCA Infrastructure Operational Plan HCA Infrastructure Asset Management Plan
Natural Hazard 5 Flood and Erosion Control Infrastructure Operation and Management	Water & erosion control infrastructure and low flow augmentation.	1	<ul style="list-style-type: none"> HCA Infrastructure Operational Plan HCA Infrastructure Asset Management Plan

Natural Hazard 6 Flood Plain Mapping	Data collection, analysis and identification of areas susceptible to riverine or coastal flooding to create mapping products to delineate flood-prone areas.	1	<ul style="list-style-type: none"> • Technical Guide River & Stream System: Flooding Hazard Limit, Ontario, 2002.
Natural Hazard 7 Ice Management Services	Frazil ice formation forecasting in Spencer Creek in Dundas, including potential standby equipment.	1	<ul style="list-style-type: none"> • HCA Ice Management Plan
Natural Hazard 8 Low water response	Conditions monitoring/analysis. Technical & administrative support to the Water Response Team representing major water users and decision makers, who recommend drought response actions.	1	<ul style="list-style-type: none"> • Data on precipitation, watercourse flows, reservoir levels from 6 stream flow gauges, 10 rainfall gauges and 4 snow courses • Watershed observations and knowledge • HCA Infrastructure Operational Plan
Natural Hazard 9 Natural Hazards Technical Studies and Information Management	<p>Data collection and study of designs to mitigate natural hazards.</p> <p>Development and use of systems to collect and store data and to provide spatial geographical representations of data.</p>	1	<ul style="list-style-type: none"> • HCA Watershed-based Resource Management Strategy • Technical Guide River & Stream System: Flooding Hazard Limit, Ontario, 2002.
Natural Hazard 10 Natural Hazards Communications, Outreach and Education	Promoting public awareness of natural hazards including flooding, drought, and erosion. Public events, materials. Social media services. Media relations.	1	<ul style="list-style-type: none"> • HCA Marketing and Communications Department
Conservation Lands 1 Section 29 Minister's regulation Rules for Conduct in Conservation Areas	Conservation areas enforcement/compliance Legal expenses for regulation and compliance	1	<ul style="list-style-type: none"> • Ontario Regulation 688/21 Rules of Conduct in Conservation Areas
Conservation Lands 2 Conservation Area Strategy	Guiding principles, objectives, including for an authority's land acquisition and disposition strategy, land use categories on conservation authority owned land, recommended management principles for different land categories, etc.	1	<ul style="list-style-type: none"> • Ontario Regulation 686/21
Conservation Lands 3 Land Inventory	Development of an inventory containing information for every parcel of land owned or controlled by the Authority.	1	<ul style="list-style-type: none"> • HCA Land Inventory
Conservation Lands 4 and 5 Management, operation and Maintenance of CA owned lands	Management and Maintenance of HCA owned lands Includes: Stewardship and restoration, Master and management plans, hazard tree and invasive species management and, Ecological monitoring Programs and services to maintain any facilities, trails or other amenities that support	1, 2 and 3	<ul style="list-style-type: none"> • Ontario Regulation 688/21 Rules of Conduct in Conservation Areas HCA conservation area master plans and management plans • HCA Aquatic Resource Management Program

	<p>public access and recreational activities in conservation areas and that can be provided without the direct support or supervision of staff employed by the authority or by another person or body</p> <p>Management and maintenance of HCA owned lands to connect communities and residents with active outdoor recreation opportunities such as camp sites, marina, pavilions, boat rentals, concessions and other assets that can be provided with the direct support or supervision of staff employed by the authority or by another person or body</p>		<ul style="list-style-type: none"> • HCA Terrestrial Resource Management Program • HCA Invasive Species Strategy
Conservation Lands 6 Outdoor Environmental Education	Program Development and Delivery	3	
Conservation Lands 7 Cultural Heritage Education and Experiences	Program Development and Delivery	2 and 3	
Conservation Lands 8 Land Lease and Agreement Management	Management of land leases and property agreements for agricultural leases and house rentals, as well as temporary third-party agreements on HCA owned or managed property for events, weddings, film shoots, day camps, group picnics, etc.	2 and 3	
Conservation Lands 9 Land Acquisition Program	Acquisition of lands containing important natural heritage features, or natural hazards or strategically aligned with existing HCA lands as identified in the Land acquisition and securement policy.	3	<ul style="list-style-type: none"> • Conservation Authorities Act • HCA Land Securement Strategy • HCA Conservation Area Strategy • HCA land Inventory
Conservation Lands 10 Partnership Building and Volunteer Support	Development and management of mutually beneficial community partnerships, (e.g. “friends of” groups), agreements with First Nations (e.g. deer harvest) volunteer events (e.g. garbage pick-up, plantings, invasive species removal etc.) and collaboration and work with partners on shared goals and objectives (Cootes to Escarpment, Hamilton Burlington Trails Council, Bruce Trail Conservancy etc.).	3	

<p>Drinking Water Source Protection 1 and 2</p> <p>Source protection authority role as set out in the Clean Water Act – supporting Stewardship</p>	<p>Source Protection Area/Region, tech support, SPC support, SPA reports and meetings, activities required by the Clean Water Act and regulations. Assisting in the co-ordination and implementation of the source protection plan that applies to the authority's source protection area. Where the authority considers it advisable, reviewing and commenting on any proposal made under another Act that is circulated to the authority for the purpose of determining, i. whether the proposal relates to a significant drinking water threat that is governed by the plan, or ii. the proposal's potential impact on any drinking water sources protected by the plan.</p> <p>Well decommissioning</p>	1 and 2	<ul style="list-style-type: none"> • Clean Water Act • Assessment Report for the Hamilton Region Source protection Area • Halton-Hamilton Source Protection Plan
<p>Water Quality Quantity 1</p> <p>Provincial Water Quality Monitoring Network (PWQMN)</p>	<p>A long-standing (50+ year) CA/MECP partnership for stream water quality monitoring. CA takes water samples; MECP does lab analysis and data management</p>	1	<ul style="list-style-type: none"> • PWQMN Program Requirements
<p>Water Quality Quantity 2</p> <p>Provincial Groundwater Monitoring Network (PGMN)</p>	<p>A long-standing (20+ year) CA/MECP partnership for groundwater level and quality monitoring. CA maintains equipment, data transfer to MECP, water sampling; MECP provides equipment, standards, data management.</p>	1	<ul style="list-style-type: none"> • PGMN Program Requirements
<p>Water Quality Quantity 3</p> <p>Aquatic Monitoring Program – non-HCA lands</p>	<p>Aquatic monitoring on 3-year cycle basis (OBBN, temperature and fish collection.</p>	2 and 3	<ul style="list-style-type: none"> • HCA Aquatic Resource Management Program
<p>Water Quality Quantity 4</p> <p>Water Quality Monitoring - City</p>	<p>Water quality and erosion site monitoring for City of Hamilton</p> <p>City of Hamilton Groundwater Monitoring Well Inspections</p> <p>City of Hamilton Groundwater Monitoring Well Water Quality Sampling</p> <p>City of Hamilton E. Coli Sampling Program at PWQMN Sites</p> <p>Greensville Surface Water Monitoring</p>	2	<ul style="list-style-type: none"> • Program Agreement and Requirement Outline

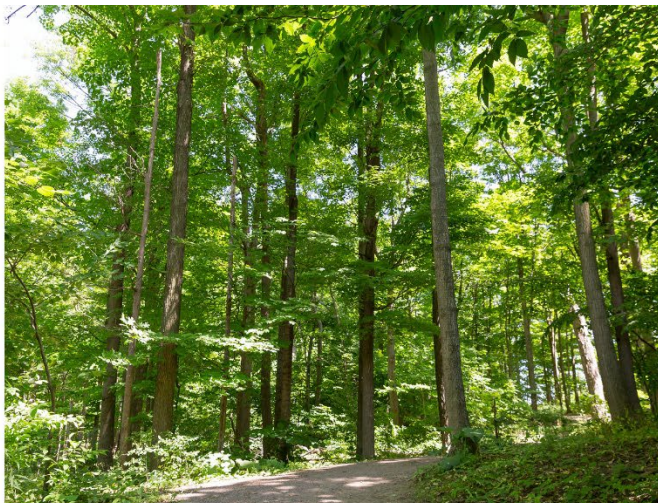
Water Quality Quantity 5 Water Quality Monitoring – COA and HHRAP	Water quality monitoring associated with tributaries to Cootes Paradise as part of COA and HHRAP monitoring	3	<ul style="list-style-type: none"> Program Agreement and Requirement Outline
Core Watershed 1 Watershed-based Resource Management Strategy	Develop guiding principles and objectives that inform the design and delivery of programs and services the CA is required to provide Collate/compile existing resource management plans, watershed plans, studies and data. Strategy development, Implementation & annual reporting A review of programs and services provide for the purposes of compliance with CA Act Develop a process for periodic review including procedures to engage/consult with stakeholders and the public. Strategy development must include a stakeholder and public consultation component The Watershed based resource management strategy must be made public on the CA website.	1	<ul style="list-style-type: none"> Ontario Regulation 686/21
Core Watershed 2 Sub-watershed planning	Partner developed plan which identifies streams, wetlands, forests, groundwater recharge areas, and other natural areas. It includes an inventory of plants, animals, birds, and other species. Information on stream flows, water quality, groundwater movement and other natural features is also included. The plan contains policies and implementation actions to protect, enhance and improve the health of the area.	2 and 3	
Core Watershed 3 Watershed Monitoring program	Planning and undertaking an ecological monitoring program on a watershed basis to support the objectives of both HCA and our two municipal partners. This includes the collection, storage, assessment and distribution of ecological data and information regarding watershed conditions and health and participation on any working groups.	2 and 3	<ul style="list-style-type: none"> HCA conservation area master plans and management plans HCA Aquatic Resource Management Program HCA Terrestrial Resource Management Program HCA Invasive Species Strategy
Core Watershed 4 Watershed Stewardship and	Apply for and manage external funding, promote private land stewardship, outreach, provide advice	2 and 3	<ul style="list-style-type: none"> HCA conservation area master plans and management plans

Restoration (Urban, rural & Agriculture)	and design assistance to property owners. Implementation of watershed plan stewardship recommendations.		<ul style="list-style-type: none"> • HCA Aquatic Resource Management Program • HCA Terrestrial Resource Management Program • HCA Invasive Species Strategy • HCA Stewardship Action Plans
Core Watershed 5 Climate change impact assessment /Planning and Policies	Identification of vulnerability or risk, and the development of mitigation and adaptation polices and corporate climate change initiatives	1, 2 and 3	<ul style="list-style-type: none"> • HCA Climate Change Strategy

Resources

1. Conservation Authorities Act - <https://www.ontario.ca/laws/statute/90c27>
2. Ontario Regulation 686/21 - <https://www.ontario.ca/laws/regulation/210686>
3. HCA Strategic Plan 2019-2023 - https://conservationhamilton.ca/wp-content/uploads/2018/12/HCA_StrategicPlan_Final_LR.pdf
4. 2023 Watershed Report Card - https://conservationhamilton.ca/wp-content/uploads/2023/03/HCA_Watershed-Report-Card-Final.pdf
5. Assessment Report – Hamilton Region Source Protection Area - https://www.protectingwater.ca/wp-content/uploads/sites/2/2023/02/HamiltonARclean_221104.docx.pdf
6. Halton Hamilton Source Protection Plan - https://www.protectingwater.ca/wp-content/uploads/sites/2/2023/02/HHSP-clean_221104.docx.pdf
7. Watershed Plan for the Hamilton Region Conservation Authority, Volume 1 and 2, June 1983.
8. Hamilton Natural Areas Inventory Project 3rd Edition, Site Summaries Document, 2014
9. Spencer Creek Conservation Report, 1960, Department of Commerce and Development, Conservation Branch
10. Hamilton Region Conservation Report, 1968, Department of Energy and Resources Management, Conservation Authorities Branch

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Hamilton Conservation Authority Conservation Area Strategy - DRAFT

June 2024



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1.0 Introduction

1.1 Purpose and Regulatory Framework

The Conservation Area Strategy identifies broad objectives for the Hamilton Conservation Authority's (HCA) Conservation Areas and related programs and services. The strategy was undertaken by the HCA to meet requirements as outlined in the [Conservation Authorities Act](#) (CA Act) and [Ontario Regulation 686/21](#) (Regulation) and is intended to provide guidance for the management and operation of the HCA's conservation areas.

Section 21.1 of the CA Act sets out Mandatory Programs and Services that all conservation authorities must deliver within their watershed, with these requirements outlined in greater detail in the Regulation. Section 21.1.1 of the CA Act details Municipal Programs and Services that conservation authorities are permitted to provide under agreement to their municipal partners while Section 21.1.2 provides direction related to Other Programs and Services conservation authorities may deliver. The Regulation, specifically, subsection 9(1), paragraph 1 outlines that all conservation authorities must complete a Conservation Area Strategy. The main requirements of a Conservation Area Strategy per Section 10 of the Regulation are outlined in Figure 1.

1. Objectives established by the authority that will inform the authority's decision-making related to the lands it owns and controls, including decisions related to policies governing the acquisition and disposition of such lands.
2. Identification of the mandatory and non-mandatory programs and services that are provided on land owned and controlled by the authority, including the sources of financing for these programs and services.
3. Where the authority considers it advisable to achieve the objectives referred to in paragraph 1, an assessment of how the lands owned and controlled by the authority may,
 - i. augment any natural heritage located within the authority's area of jurisdiction, and
 - ii. integrate with other provincially or municipally owned lands or other publicly accessible lands and trails within the authority's area of jurisdiction.
4. The establishment of land use categories for the purpose of classifying lands in the land inventory described in Section 11 based on the types of activities that are engaged in on each parcel of land or other matters of significance related to the parcel.
5. A process for the periodic review and updating of the conservation area strategy by the authority, including procedures to ensure stakeholders and the public are consulted during the review and update process.

Figure 1 – Conservation Area Strategy - Main Requirements

1.2 About the Hamilton Conservation Authority

The Spencer Creek Conservation Authority, the forerunner of the HCA, was created in 1958. Subsequently, Red Hill Creek, Stoney Creek, Battlefield Creek and the Numbered watercourse in the former City of Stoney Creek and City of Hamilton were added and the HCA was formed in 1966 pursuant to the CA Act. The HCA is located at the western end of Lake Ontario and has a watershed area of 479km². The HCA watershed is located in the Treaty Lands and Territory of the Mississaugas of the Credit First Nation and traditional territory of the Haudenosaunee. As shown on Map 1, the majority of the HCA's watershed is included within the City of Hamilton with the headwaters of Spencer Creek and Fletcher Creek located in the Township of Puslinch. A small portion of the Town of Grimsby is located at the east end of the HCA's watershed.

The HCA operates under the requirements of the CA Act. Section 0.1 of the CA Act states that:

“The purpose of this 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 Board of Directors of the HCA is comprised of 11 Directors representing 2 municipalities. Seven Councillors and 3 citizen appointees represent the City of Hamilton while 1 appointee represents the Township of Puslinch. The HCA works closely with our municipal partners as well as local groups and agencies and both the Federal and Provincial governments.

The HCA owns or manages 4,732 ha (11,695 acres) of land within our watershed jurisdiction. This includes the Westfield Heritage Village Conservation Area and portions of the Chippawa Rail Trail and the Toronto Hamilton & Brantford (TH&B) Rail Trail that are located outside of the HCA's watershed.

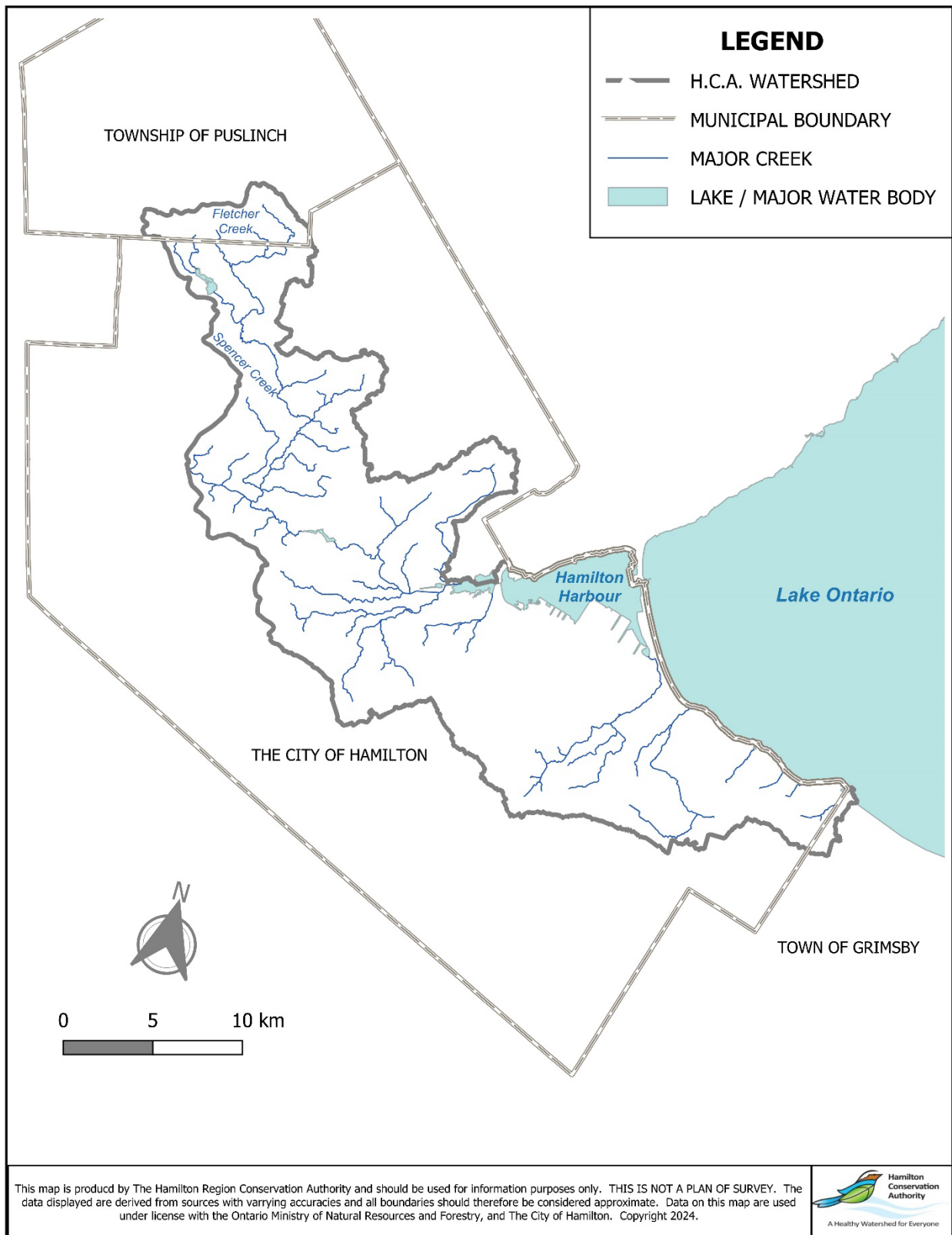
2.0 Strategic Direction

2.1 HCA's Strategic Plan **Note: The HCA is currently undertaking the development of a Strategic Plan for 2025-2029. This is expected to be completed by the end of June 2024. This section will be updated pending completion of the 2025-2029 Strategic Plan.**

HCA's [Strategic Plan 2019-2023](#) details the HCA's vision, mission, commitment and corporate values as well as our strategic priorities.

HCA's vision, where we want to be is “A healthy watershed for everyone”.

HCA's mission, what we do is “To lead in the conservation of our watershed and connect people to nature.”



Map 1 – HCA Watershed

The Strategic Plan highlights the HCA's commitment and corporate values as follows:

- Provide excellent customer service and a solution-oriented approach
- Be accountable, transparent and responsible in the use of resources
- Embrace new technologies to help develop new ways of doing business and foster innovation
- Promote teamwork internally and externally to achieve common goals, support existing relationships and build new partnerships
- Maintain trust, act with integrity and treat others with respect
- Value knowledge to continually learn and improve, in an effort to achieve best solutions

The HCA's Strategic Plan highlighted 5 Strategic Priority Areas.

- Organizational Excellence
- Water Management
- Natural Heritage Conservation
- Conservation Area Experience
- Education and Environmental Awareness

For each Strategic Priority Area, several initiatives are included and these priority areas and associated initiatives guide programs and services and the development of department work plans, budgets and approaches.

2.2 Conservation Area Strategy Objectives

Section 10(1) of Ontario Regulation 686/21 notes that a Conservation Area Strategy shall include "Objectives established by the authority that will inform the authority's decision-making related to the lands it owns and controls, including decisions related to policies governing the acquisition and disposition of such lands". For reference, Section 21.1 of the CA Act states the following:

"An authority shall provide the following programs or services within its area of jurisdiction:

1. Programs or services that meet any of the following descriptions and that have been prescribed by the regulations:
 - i. Programs and services related to the risk of natural hazards.
 - ii. Programs and services related to the conservation and management of lands owned or controlled by the authority, including any interests in land registered on title.
 - iii. Programs and services related to the authority's duties, functions and responsibilities as a source protection authority under the Clean Water Act, 2006.

- iv. Programs and services related to the authority's duties, functions and responsibilities under an Act prescribed by the regulations."

Based on this direction, Section 21.1 ii) of the CA Act, staff input, a review of background documentation and input through the consultation process, the following objectives have been developed to meet the requirements of the CA Act and Ontario Regulation 686/21.

- a. To ensure that all present and future HCA land holdings contribute to the vision and mandate of the HCA, and support an integrated watershed management approach;*
- b. To pursue an active land securement program to increase the size of the HCA conservation lands and linkages to these lands;*
- c. To protect and enhance the ecological integrity of the lands within the HCA's watershed and maintain and enhance a connected natural heritage system*
- d. To undertake research, monitoring and evaluation of the natural heritage system, and organize current information to identify information gaps and strengthen knowledge of the HCA's watershed natural heritage system;*
- e. To provide environmentally sustainable passive and active recreation opportunities, as appropriate, within the HCA's conservation areas;*
- f. To determine the current public uses occurring on these lands, identify user groups and principle uses, and identify actions to meet future needs for these lands;*
- g. To ensure that future management of the CA lands will be informed by stakeholder and public input.*
- h. To maintain, enhance and build new partnerships to enhance connectivity of natural heritage lands and trail networks where possible.*

2.3 HCA Land Securement Strategy

At the December 19, 2019 Board of Directors meeting, the 2020 HCA Land Securement Strategy (LSS) was endorsed. The goal of the Land Securement Strategy is to focus on natural areas, linkages, infilling and creating larger core area conservation areas. Given the vast area of land within the HCA watershed, it is inconceivable that all potential lands would be secured by public agencies or land trusts. With existing funding levels and the ability to locate willing parties, the HCA will approach land acquisition based on a willing buyer-willing seller philosophy. Acquisition will be completed based on available opportunities to acquire targeted properties and will be considered on a case-by-case basis and subject to funding. Land disposition is not envisioned by the HCA. In the unlikely event that a property does not have existing or potential ecological significance, does not meet the noted securement criteria as

detailed in the LSS and has no pre-existing agreement to honour regarding disposal, the parcel may be considered for disposition from which proceeds would be directed towards the HCA's land acquisition account to be used to secure additional lands.

2.4 HCA's Annual Budget

The HCA undertakes an annual budget process with the Board of Directors approving the final budget. The budget is based on the approved HCA Strategic Plan, departmental work plans, master and management plans for HCA conservation areas as well as prioritized action items. To meet the requirements of the CA Act and associated regulations, the budget details programs and services as Mandatory (Category 1), Municipal (Category 2) and Other (Category 3).

3.0 Programs and Services

Section 10 (1) 2. of Ontario Regulation 686/21 outlines that the Conservation Area Strategy shall provide the "Identification of the mandatory and non-mandatory programs and services that are provided on land owned and controlled by the authority, including the sources of financing for these programs and services." The following tables highlight the mandatory and non-mandatory programs and services undertaken on land owned and controlled by the HCA. It is noted that this information has been obtained from the approved HCA Inventory of Programs and Services dated March 2, 2023. The Inventory of Programs and Services was utilized as part of the required municipal agreements with the City of Hamilton and the Township of Puslinch.

Mandatory (Category 1)

Program/Service	Sources of Funding
Section 29 Minister's regulation Rules for Conduct in Conservation Areas (O. Reg. 688/21)	Municipal Levy and Self-Generated
Conservation Area Strategy – As required by O. Reg. 688/21	Municipal Levy
Land Inventory – As required by O. Reg. 688/21	Municipal Levy
Management, operation and Maintenance of CA owned lands – This includes Management and Maintenance of HCA owned lands Includes: Stewardship and restoration, Master and management plans, hazard tree	Municipal Block Funding and Self-Generated

and invasive species management and, Ecological monitoring	
Programs and services to maintain any facilities, trails or other amenities that support public access and recreational activities in conservation areas and that can be provided without the direct support or supervision of staff employed by the authority or by another person or body	

Municipal (Category 2)

Program/Service	Sources of Funding
Dofasco 200 Trail and LaFarge 2000 Trail	Municipal Block Funding and Self-Generated
Cultural Heritage Education and Experiences	Municipal Levy
Land Lease and Agreement Management	Mgmt. fee cost as per agreement with City of Hamilton for Confederation Beach Park

Other (Category 3)

Program/Service	Sources of Funding
Management, operation and maintenance of CA owned lands for active recreation	Self-Generated and Municipal Block Funding
Outdoor Environmental Education	Self-Generated
Land Lease and Agreement Management	Self-Generated
Land Acquisition Program	Self-Generated
Partnership Building and Volunteer Support	Self-Generated

The HCA implements a broad and successful range of programs and services related to the HCA's owned and managed conservation lands. Future considerations flowing from the Conservation Area Strategy is outlined in Section 8 of this strategy.

4.0 Conservation Area Assessment

Ontario Regulation 686/21 outlines that when an authority considers it advisable to achieve the objectives as required under Section 10(1) 1. of the Regulation and further detailed in Section 2.2 of this Conservation Area Strategy, an assessment of how the lands owned and controlled by the authority may be undertaken to show how the authority's lands; i) augment any natural heritage located within the authority's area of jurisdiction, and ; ii) integrate with

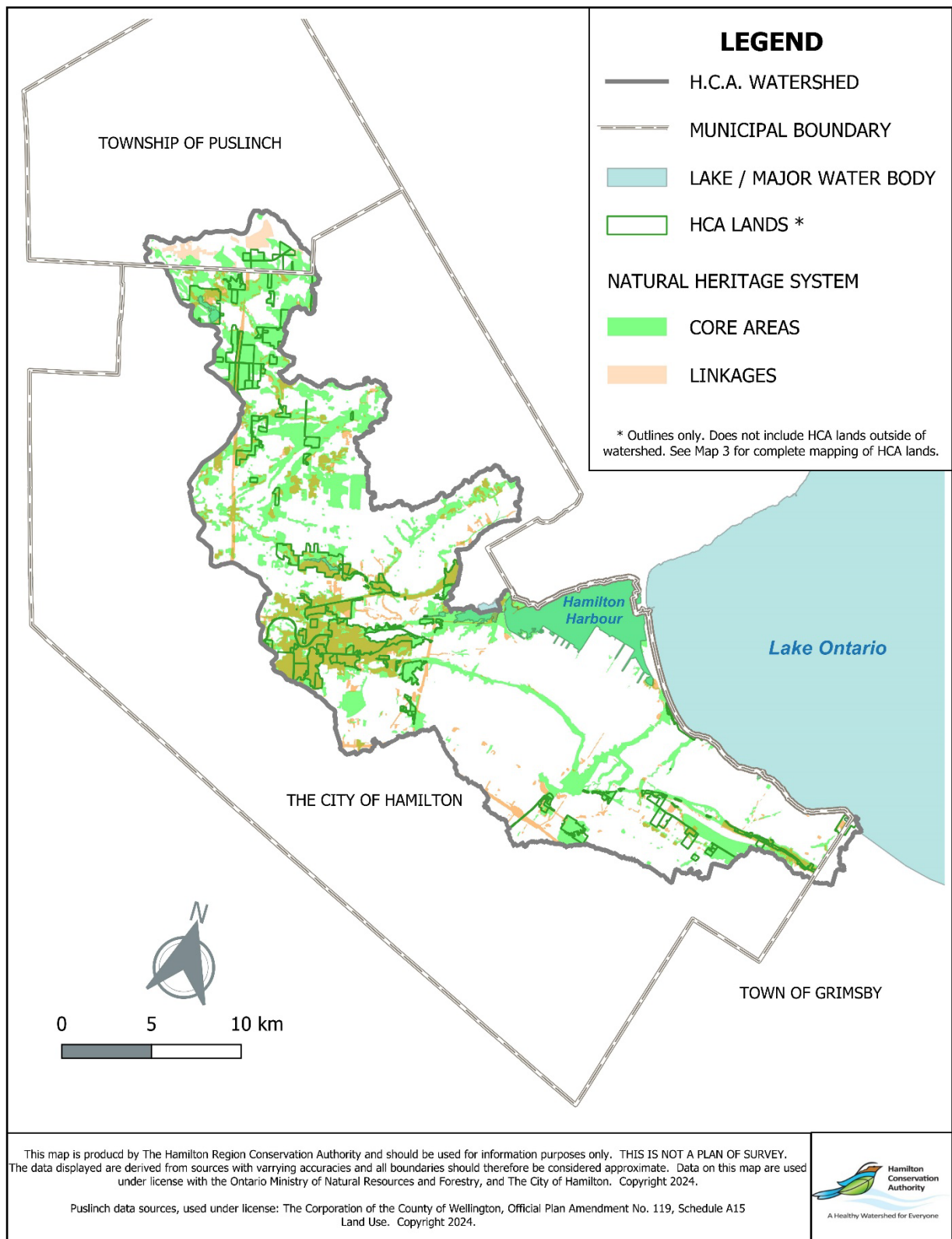
other provincially or municipally owned lands or other publicly accessible lands and trails within the authority's area of jurisdiction. Sections 4.1 and 4.2 outline the role of HCA lands within the watersheds natural heritage system as well as how HCA lands are connected and integrate with provincial and municipal lands and other publicly accessible lands and trails. It is noted that the HCA's watershed and ecological lands and the watersheds natural heritage system connects more broadly with adjoining Conservation Authority watersheds.

4.1 Augment Natural Heritage within HCA Watershed

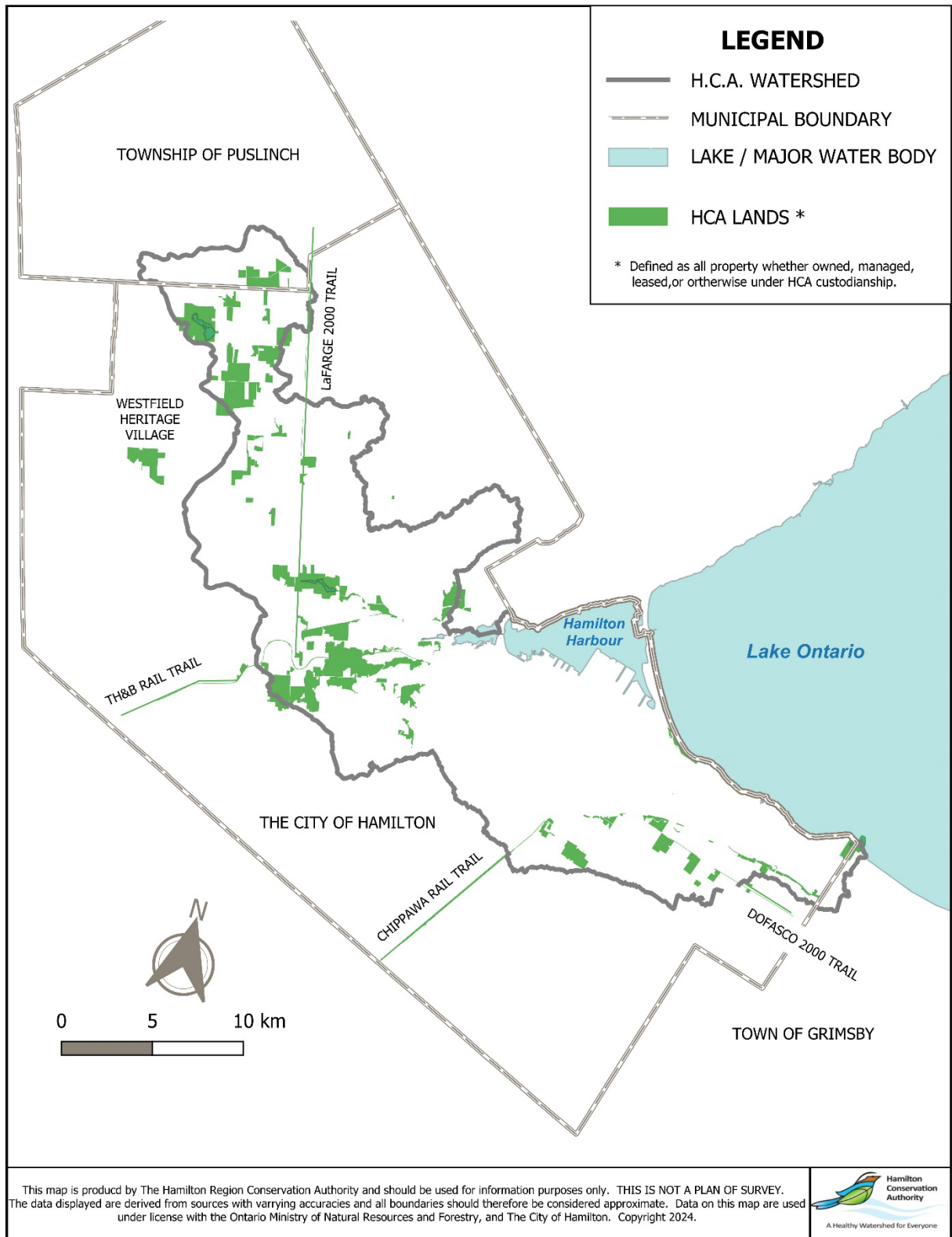
Starting in 1993, the HCA, City of Hamilton, the Hamilton Naturalists and other partners have undertaken a natural areas inventory (NAI) for the area of the City of Hamilton. There have been three editions of the NAI in total with the latest NAI being completed in 2014. The City of Hamilton has used the completed NAI information as part of the development of their Official Plan (Section C.2.0, City of Hamilton Rural Official Plan). Using this data and mapping, the City has designated in their Official Plan Core Areas and Linkages. The Core Areas serve to identify and protect the natural heritage lands identified in the NAI as well as the linkages that serve to connect these core areas. These Core Areas and Linkages serve as the City's identified natural heritage system. Map 2 illustrates the Natural Heritage System for the City of Hamilton and the Township of Puslinch as show in the respective Official Plans

As noted in Section 1.2, the HCA own or manages 4,732 ha (11,695 acres) of land within our watershed jurisdiction. This includes the Westfield Heritage Village Conservation Area and portions of the Chippawa Rail Trail and TH&B Rail Trail that are located outside of the HCA's watershed. HCA lands as noted are illustrated on Map 3.

The vast majority of HCA lands as illustrated in Map 3 comprise major components of the City's natural heritage system and are integral to the features, function and biodiversity of the natural heritage system. When considering the mapping highlighted in this section, it is evident that HCA lands play a critical role in the watershed natural heritage system as well as providing passive and active recreation lands within the watershed. HCA lands certainly augment natural heritage features within the HCA's watershed and secure these lands for current and future generations. Further, these lands play a critical role in providing critical habitat in an increasing urban area, provides a natural land area to maintain and increase biodiversity while also mitigating the effects of climate change.



Map 2 – Natural Heritage System City of Hamilton and County of Wellington

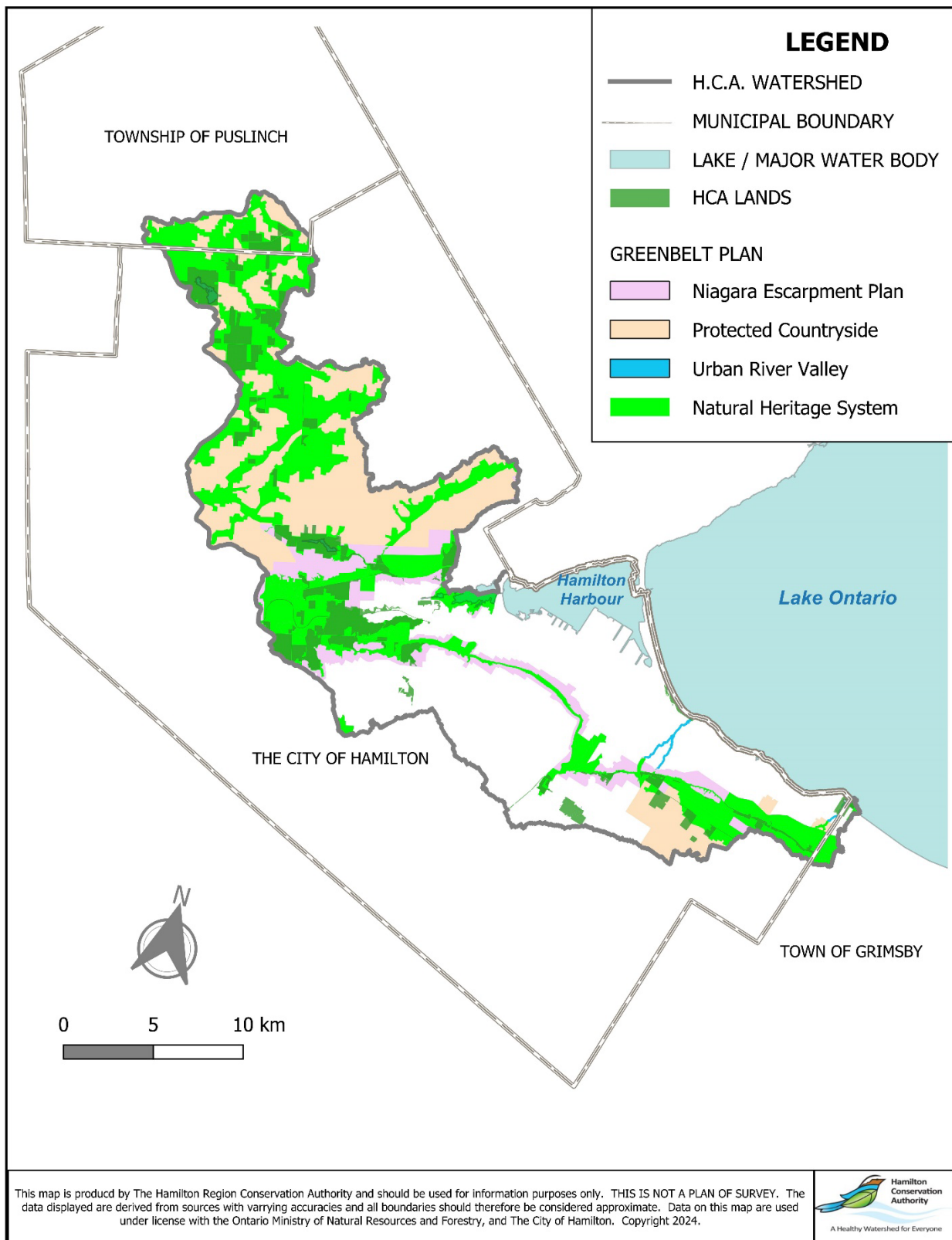


Map 3 – HCA Owned and Managed Lands

The Niagara Escarpment, portions of which are located in the HCA's watershed, is a significant topographic feature that extends from Queenston in the Niagara Region to Tobermory on the Bruce Peninsula. The Niagara Escarpment Plan which was established through the Niagara Escarpment Planning and Development Act "serves as a framework of objectives and policies to strike a balance between development, protection and the enjoyment of this important landform feature and the resources it supports." In addition to the policy framework for the broader Niagara Escarpment Plan area, "The Niagara Escarpment Plan has a system of parks and open spaces which are connected by the Bruce Trail. The system is identified as the Niagara Escarpment Parks and Open Space System (NEPOSS). NEPOSS provides opportunities for recreation, tourism, and play a fundamental role in the protection of cultural heritage resources and the Escarpment's natural heritage. Natural areas in the NEPOSS also help to mitigate and improve resilience to climate change by providing green infrastructure, capturing and storing carbon, recharging aquifers and protecting biodiversity and sensitive areas across the Escarpment." HCA master plans and projects within the NEPOSS system must comply with the requirements of the Niagara Escarpment Plan. The Niagara Escarpment Plan through the NEPOSS policies identifies the following HCA properties as being included in the NEPOSS system. In this regard, these lands augment natural heritage features at the HCA watershed scale as well as at a provincial landscape scale.

1. Spencer Gorge – Webster's Falls Conservation Area
2. Crooks Hollow Conservation Area
3. Christie Lake Conservation Area
4. Summit Bog Muskeg Preserve
5. Dundas Valley Conservation Area (A Nodal park within NEPOSS)
6. Tiffany Falls Conservation Area
7. Iroquoia Heights Conservation Area
8. Mount Albion Conservation Area
9. Felker's Falls Conservation Area
10. Devil's Punch Bowl Conservation Area
11. Vinemount Conservation Area
12. Winona Conservation Area

The Greenbelt Plan is a provincial plan with "an overarching strategy that provides clarity and certainty about urban structure, where and how future growth should be accommodated and what must be protected for current and future generations." "The Greenbelt Plan includes lands within, and builds upon the ecological protections provided by, the Niagara Escarpment Plan (NEP) and the Oak Ridges Moraine Conservation Plan (ORMCP)."

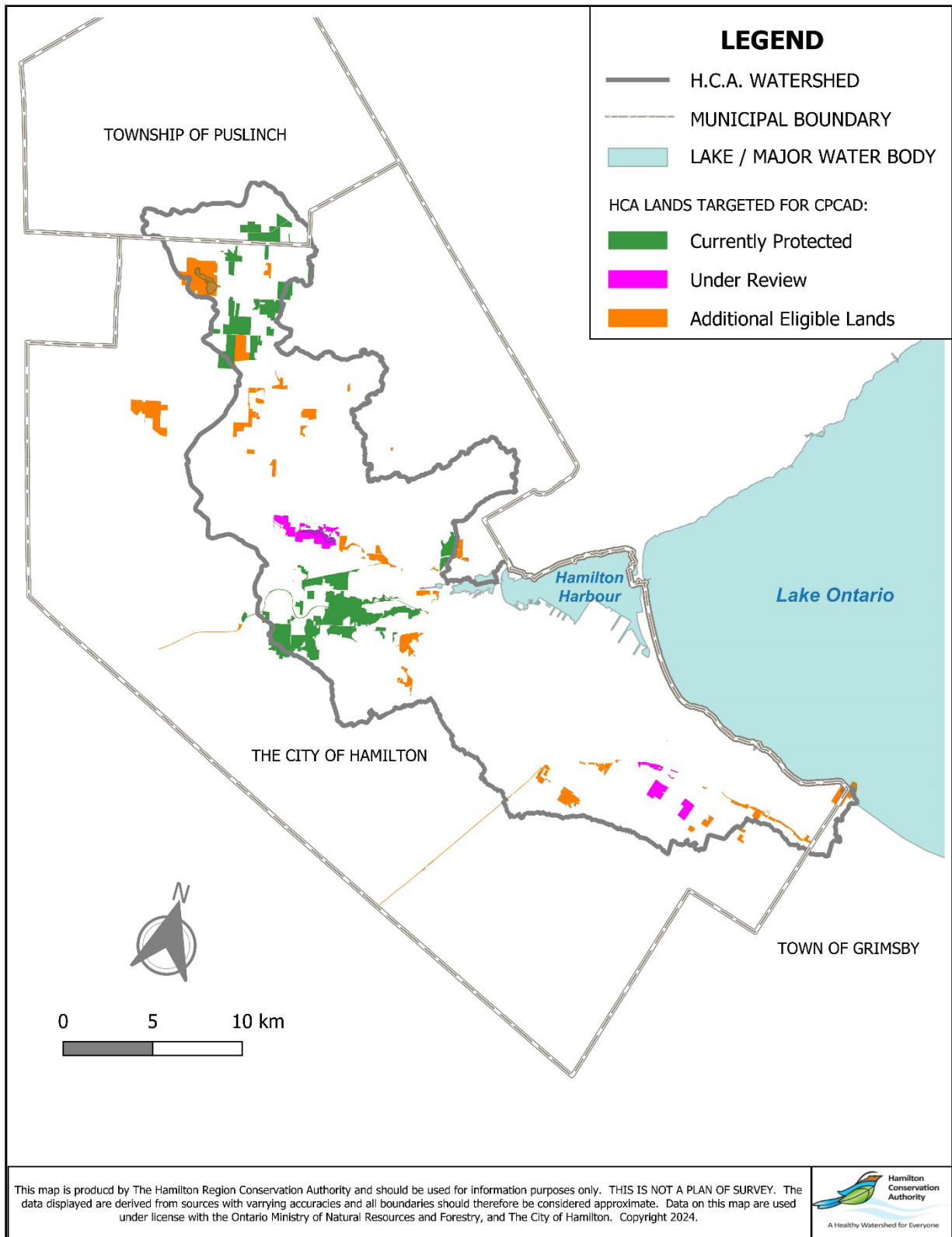


Map 4 – HCA Owned and Managed Lands in context with Niagara Escarpment Plan and Greenbelt Plan

The Greenbelt Plan provides for a Protected Countryside with the purpose to “enhance the spatial extent of agriculturally and environmentally protected lands covered by the NEP and the ORMCP while at the same time improving linkages between these areas and the surrounding major lake systems and watersheds. The Protected Countryside is made up of an Agricultural System and a Natural System, together with a series of settlement areas.” Specific policies are included in the Greenbelt Plan that provide protection for natural heritage in the Greenbelt plan area. Map 4 illustrates the boundaries of the Greenbelt Plan and the Niagara Escarpment Plan in addition to HCA lands within this area. As shown of Map 4, most of the lands owned by the HCA are located within this plan area and augment the Natural System on a Provincial scale.

At the 2022 UN Biodiversity Conference, Target 3 from the Kunming-Montreal Biodiversity Framework outlined “that by 2030 at least 30 per cent of terrestrial, inland water, and of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem functions and services, are effectively conserved and managed.” Canada has committed to meeting this target and through a database maintained by the Federal Department of Environment and Climate Change Canada tracks Canada’s progress to meeting this target. Working with the Ontario Ministry of Environment, Conservation and Parks and Ontario Nature, the HCA has submitted the required documentation and mapping for these lands to count towards meeting this target. Map 5 identifies HCA lands that have met the required criteria for these lands to be counted as protected lands or are under consideration to be counted. This speaks to the importance of these lands from a watershed, provincial, federal and international level as it relates to biodiversity conservation and how HCA lands augment natural heritage.

Historically, the HCA has completed and implemented master plans for the HCA’s conservation lands. These plans date to the 1970’s, 1980’s and 1990’s. More recently, the HCA has commenced a process for updating the conservation area master and management plans to reflect current conditions and guide the development and management of these conservation lands. These plans provide direction regarding both passive and active recreation, development opportunities to enhance the visitors experience as well as management and enhancement of the natural features found on site. The plans also identify opportunities for restoration of land to increase the natural heritage features of the conservation area. In this regard, the Westfield Heritage Village Conservation Area, the Valens Conservation Area, the Fifty Point Conservation Area, Fletcher Creek, Beverly Swamp, Dofasco 2000, Saltfleet, Winona and Vinemount plans have been completed and the recommendations of these plans are being implemented through the HCA’s annual budget and work plan processes. The Devil’s Punch Bowl Conservation Areas Master Plan is nearing completion as of 2024 with the Felker’s Falls, Mount Albion, Eramosa Karst, Chippewa Trail underway. The Dundas Valley Conservation Area and Christie Conservation Area master plans are scheduled to be completed in the next 3 to 4 years.



Map 5 – HCA Owned and Managed Lands – Target 3 Lands

The HCA also undertakes management and restoration work on HCA lands per the completed master plans and management plans, the HCA's Invasive Species Strategy (2016) and invasive species mapping as well as the result of the HCA's natural heritage monitoring program.

The above noted programs support the implementation of the objectives noted in Section 2.2, specifically the following objectives:

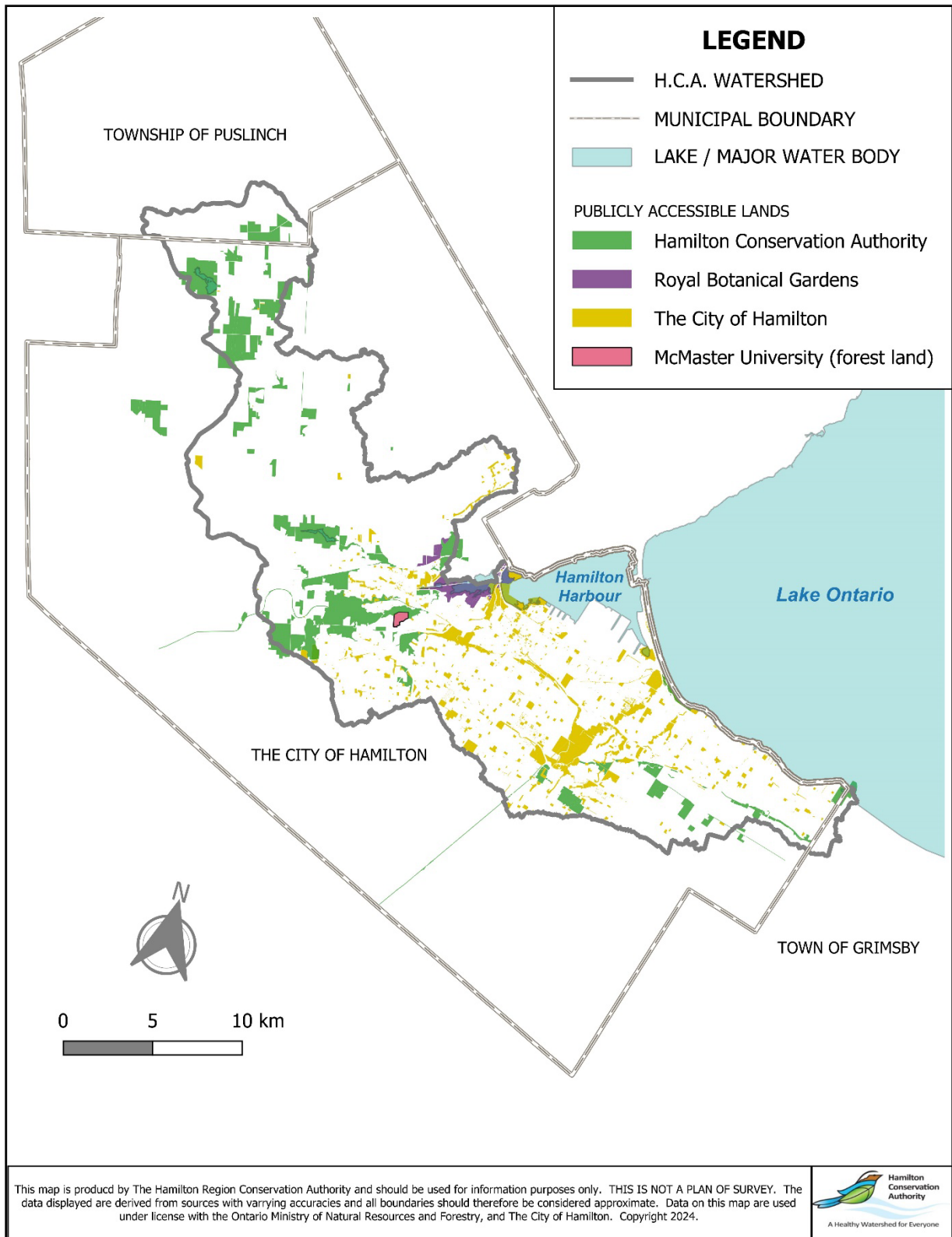
- a. To ensure that all present and future HCA land holdings contribute to the vision and mandate of the HCA, and support an integrated watershed management approach;*
- b. To protect and enhance the ecological integrity of the lands within the HCA's watershed and maintain and enhance a connected natural heritage system*
- c. To undertake research, monitoring and evaluation of the natural heritage system, and organize current information to identify information gaps and strengthen knowledge of the HCA's watershed natural heritage system;*
- d. To provide environmentally sustainable passive and active recreation opportunities, as appropriate, within the HCA's conservation areas;*
- e. To determine the current public uses occurring on these lands, identify user groups and principle uses, and identify actions to meet future needs for these lands*

4.2 Integrate with Provincial and Municipal Lands/Other Publicly accessible Lands and Trails

Map 6 provides an overview of provincial, municipal, and other publicly accessible lands located within the HCA's watershed and how they integrate with HCA lands.

4.2.1 Provincial Lands

Within the HCA's watershed, there are no provincial lands, Provincial Parks or Provincial Conservation Reserves and as such, the Conservation Area Strategy does not take this type of lands into consideration. The Province of Ontario does own the "feeder lands" that form part of the Eramosa Karst Conservation Area. These lands are managed by the HCA through an agreement with the province.



Map 6 – HCA Owned and Managed Lands in Context with City of Hamilton and Royal Botanical Garden Lands

4.2.2 City of Hamilton Lands

The City of Hamilton does own significant lands within the HCA watershed. These lands include local and city-wide parks that serve to provide both passive and recreation opportunities. Generally, these lands do not contain natural heritage features and are not part of the City's natural heritage system, however, they do provide open space for watershed residents and in some cases linkages to the broader parkland and open space system within the City of Hamilton, including HCA lands, and into adjacent communities.

The City of Hamilton does own lands located along the Niagara Escarpment as well as ravine lands within the Red Hill Creek watershed, Battlefield Creek and Stoney Creek as well as the Windermere Basin and Chedoke Creek. These lands do contain natural heritage features and are Core Areas and Linkages as identified in the City of Hamilton's Official Plan. These lands are also part of the City's Natural Heritage System.

4.2.3 Royal Botanical Gardens Lands

Royal Botanical Gardens (RBG) is located on lands around Cootes Paradise and is within both the watershed jurisdictions of the HCA and Conservation Halton. RBG owns and manages 2,700 acres of land including 2,400 acres of nature sanctuaries, 300 acres cultivated gardens and an arboretum. These lands include Cootes Paradise which is a provincially significant coastal wetland, ravine lands and forest. These features are part of the City of Hamilton's Natural Heritage System and are located adjacent to the Dundas Valley Conservation Area and the Borer's Falls Conservation Area with the resulting large natural heritage area which contains trails and passive recreation opportunities. This area is also part

of the Cootes to Escarpment EcoPark System (Section 4.2.6) which is a group of nine land owning agencies that have agreed to establish the EcoPark System as a voluntary collaboration. Collectively, the aim is to effectively manage the lands through restoration and naturalization projects, increasing landholdings and passive use of the area and its trail network.

4.2.4 McMaster Forest

McMaster Forest is a 127-acre parcel of lands owned and maintained by McMaster University. It is located on Lower Lions Club Road and is located immediately adjacent to HCA lands that comprise the Dundas valley Conservation Area. McMaster Forest is an environmental significant area that is used for ecological teaching and research and for recreation purposes. "McMaster Forest Nature Preserve is an incredibly biodiverse area of mixed forests, old growth forests, wetlands, meadows, creeks, and prairie. The proximity to campus, combined with the incredible diversity of animal and plant species thriving on the property, make the McMaster Forest Nature Preserve an ideal research, recreation, and teaching facility. Many undergraduate courses make use of the property as well as undergraduate and graduate

research projects. The public is welcome to explore the area, but is asked to please adhere to posted signage, stay on trail, and not disturb ongoing research.”

4.2.5 Trail System

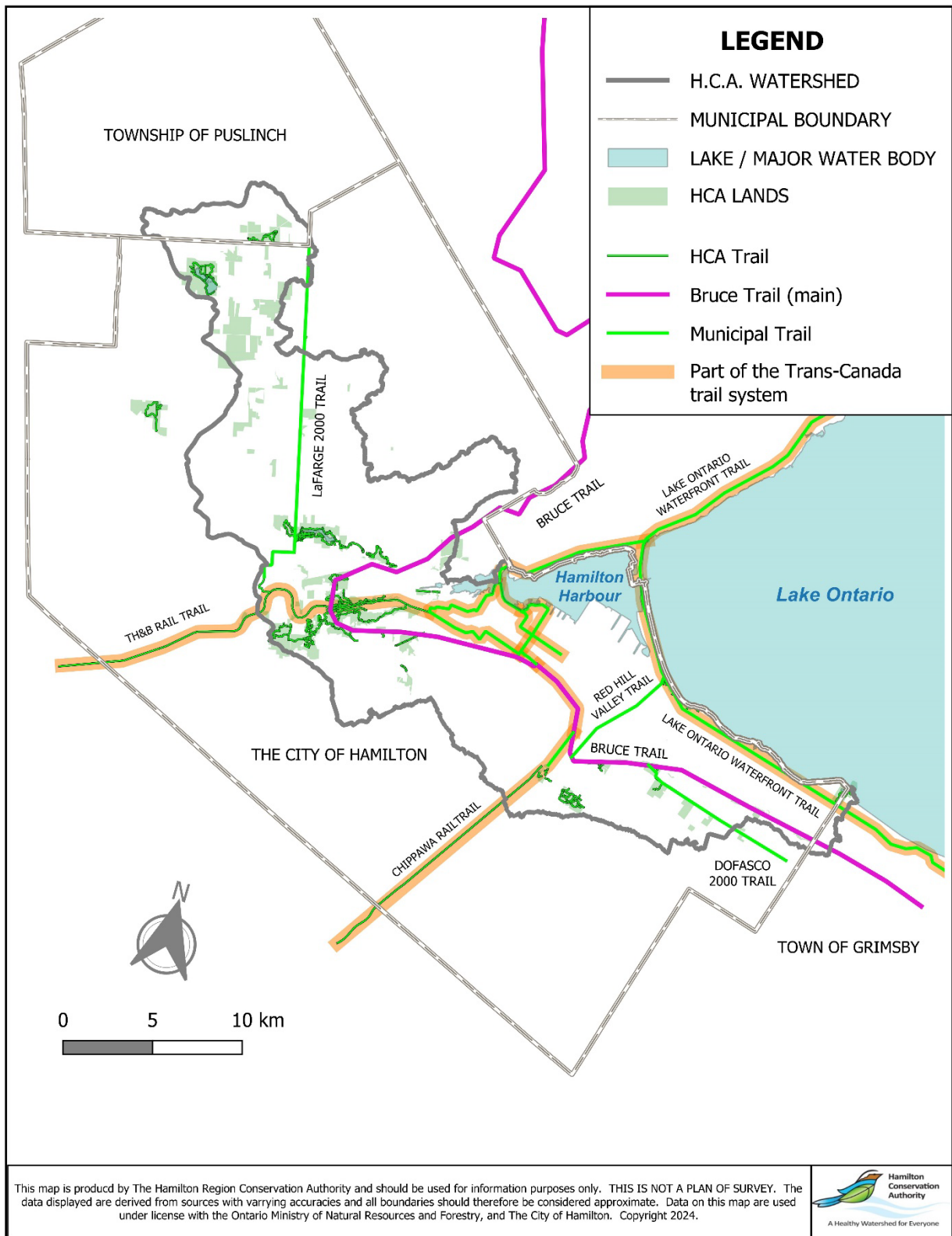
There is a significant trail system within the HCA’s watershed as well as the broader municipal community. At the provincial level, the Bruce Trail, which is administered by the Bruce Trail Conservancy is a 725 km trail that connects Queenston in the Niagara Region to Tobermory on the Bruce Peninsula. The Bruce Trail follows the Niagara Escarpment along its length and in the HCA’s watershed, the trail is located on private and public lands with sections of the trail located on HCA lands. Further, the Bruce Trail does connect via side trails to other trail systems within the HCA’s watershed including HCA trails, specifically in the Dundas Valley Conservation Area.

The Great Lakes Waterfront Trail is a provincial scale trail network that also encompasses portions of the Trans-Canada Trail. The trail system generally follows the shorelines of the St. Lawrence River, Lake Ontario, the Niagara River, Lake Erie, Lake St. Clair, the Detroit River and the St. Clair River, Lake Huron and Georgian Bay. Within the HCA’s watershed, the Great Lakes Waterfront Trail is located along the Lake Ontario Shoreline connecting the Niagara Region to the Greater Toronto Area to the north and east. The trail passes the Fifty Point Conservation Area which is owned by the HCA as well as Confederation Beach Park which is owned by the City of Hamilton and managed by the HCA.

The City of Hamilton owns and maintains an extensive trail system within their boundaries. These trails range from local neighbourhood trails to a more city scale trail network which in certain areas, connects the City’s trail network to the above noted Great Lakes Waterfront Trail and the Bruce Trail. Examples of these trail connections are the Hamilton Harbour Waterfront Trail, the Escarpment Rail Trail and the Red Hill Valley Recreational Trail. The above noted trails also form part of the Greenbelt Route.

4.2.6 Cootes to Escarpment EcoPark System

Cootes to Escarpment EcoPark System (C2E) is a collaborative partnership that works to preserve and enhance the natural lands owned by the partner agencies with a vision to permanently protect lands connecting Cootes Paradise with Hamilton Harbour and the Niagara Escarpment. The C2E mission is “as partners is to collaborate to preserve and enhance the natural lands we own and steward by using sustainable approaches to protect biodiversity, highlight ecosystem services, and enable responsible human connection to nature.” The partners that form C2E are Royal Botanical Gardens, City of Hamilton, Bruce Trail Conservancy, City of Burlington, Halton Region, Conservation Halton, Hamilton Naturalists Club, McMaster University and the HCA.



Map 7 – HCA Watershed Trail System

4.2.7 HCA Trails

The HCA owns and maintains approximately 147 km's of trails. Most of this trail network is located in HCA conservation areas providing opportunities for people to connect with nature and experience the watersheds natural landscapes. The HCA has four linear trails that connect the HCA's conservation areas to the broader City and Provincial trail network. The TH&B Rail Trail connects west Hamilton to Jerseyville through the Dundas Valley Conservation Area. This trail ultimately continues from Jerseyville to Brantford under the ownership of the Grand River Conservation Authority. The Chippawa Rail Trail connects the upper Red Hill Creek Valley to Caledonia. Both the TH&B Rail Trail and the Chippawa Rail Trail are part of the Trans Canada Trail network. Lastly, the LaFarge 2000 Trail and the Dofasco 2000 Trail are located on City of Hamilton road allowances but are managed by the HCA. The LaFarge 2000 Trail connects the Dundas Valley Conservation Area to Puslinch along the Middletown Road right of way while the Dofasco 2000 Trail connects the Devil's Punch Bowl and Saltfleet Conservation Areas to the 11th Road East.

Map 7 provides an overview of the trail system as noted above located within and beyond the HCA's watershed and how they integrate with HCA lands.

The above noted programs support the implementation of the objectives noted in Section 2.2, specifically the following objectives:

- a. To ensure that all present and future HCA land holdings contribute to the vision and mandate of the HCA, and support an integrated watershed management approach;*
- b. To protect and enhance the ecological integrity of the lands within the HCA's watershed and maintain and enhance a connected natural heritage system*
- c. To provide environmentally sustainable passive and active recreation opportunities, as appropriate, within the HCA's conservation areas;*
- d. To maintain, enhance and build new partnerships to enhance connectivity of natural heritage lands and trail networks where possible.*

5.0 Conservation Land Use Categories

Section 10 (1) 4. of Ontario Regulation 686/21 requires "The establishment of land use categories for the purpose of classifying lands in the land inventory described in Section 11 based on the types of activities that are engaged in on each parcel of land or other matters of significance related to the parcel." In this regard, the Conservation Area Strategy will identify land use categories and these categories will be used to classify HCA lands in the Land Inventory as required in Section 11 of Ontario Regulation 686/21.

Through Conservation Ontario's document titled "Guidance on the Conservation Authority Mandatory Conservation Area Strategy", dated January 9, 2022, four high-level land use

categories were proposed for use by all conservation authorities. The guidance document “recognizes that CAs lands may host a variety of activities which warrant different classifications for a single parcel (e.g., a conservation area which hosts passive recreation trails as well as protected management areas).” The guidance document recommends that “CAs are encouraged to apply one of the following four primary land use categories, and where necessary, apply subsequent secondary and/or tertiary categories as appropriate.”

1. Conservation Areas (Active Recreation, Accessible to the Public)
2. Conservation Areas (Passive Recreation, Accessible to the Public)
3. Management Areas (Public Accessibility Varies) (e.g., Natural Heritage Lands, Natural Hazard Lands, Water Management Areas, Forest Management Lands, Environmentally Sensitive Lands, etc.)
4. Conservation Authority Administration Areas

The HCA has considered this recommended approach and the Conservation Area Strategy will implement this land use classification, however, the Conservation Authority Administration Areas classification will not be used as the HCA’s main office area is part of the larger Dundas Valley Conservation Area and the primary use of those lands is conservation. The following provides an overview of the HCA land use classifications and how they will be applied to the Land Inventory.

In implementing the Land Use Categories, it is highlighted that the overarching intent for management of the lands owned and managed by the HCA is to ensure the conservation of the natural heritage and natural hazard features and functions found on these lands. Other uses should ultimately be complimentary to this overarching purpose and not negatively impact on these features.

1. Conservation Areas (Active Recreation, Accessible to the Public)

In addition to the natural heritage and natural hazard features and functions in these areas, this land use category would also include such uses as camping, roofed accommodation, marina, picnic pavilions, active day use areas such as beaches, trails and open space areas. This land use category would apply to the following HCA owned and managed lands – Fifty Point Conservation Area, Confederation Beach Park, Christie Lake Conservation Area, Valens Lake Conservation Area and Westfield Heritage Village Conservation Area. As it relates to Valens Lake and Christie Lake Conservation Areas, this would include operation and maintenance of the dam structures located on site.

2. Conservation Areas (Passive Recreation, Accessible to the Public)

In addition to the natural heritage and natural hazard features and functions in these areas, this land use category would also include such uses as walking, hiking, cycling, nature interpretation and outdoor education and hunting on designated lands per

Provincial Regulations. These lands contain significant natural heritage and physical landforms, and in some cases cultural heritage features. The intent with this land use category is to conserve the natural heritage and natural hazard features found on site while connecting people to nature and to instill a conservation ethic in conservation area visitors and the broader public. This land use category would apply to the following HCA owned and managed lands – Devil’s Punch Bowl Conservation Area, Saltfleet Conservation Area, Eramosa Karst Conservation Area, Felker’s Falls Conservation Area, Mount Albion Conservation Area, Iroquoia Heights Conservation Area, Meadowlands Conservation Area, Dundas Valley Conservation Area, Borer’s falls Conservation Area, Spencer Gorge Conservation Area and Crooks Hollow Conservation Area.

3. Conservation Areas (Management Lands)

The primary land use on these lands is natural heritage and natural hazard conservation. These lands are larger or more isolated parcels that have limited facilities and access and, in most cases, do not experience large visitation numbers. There may be HCA maintained trails, limited trails or a through trail such as the Bruce Trail that is not part of an existing HCA trail located on these lands. This land use category would apply to the following HCA owned and managed lands – Vinemount Swamp Conservation Area, Winona Conservation Area, Beverly Swamp Conservation Area and Fletcher Creek Ecological Preserve.

It is noted that while the above noted land use classifications will be applied to the conservation areas as noted, in some cases, the Conservation Areas (Management Lands) may be applied to certain isolated lands within the conservation areas that have no or limited public access. This would be applicable to certain lands within the Christie Lake Conservation Area, Dundas Valley Conservation Area and the Borer’s Falls Conservation Area.

As noted in Section 4.1, the HCA has historically undertaken master plans for HCA conservation areas. More recently, the HCA has undertaken a program to update conservation area master plans and management plans with Fifty Point Conservation Area, Valens Lake Conservation Area, Westfield Heritage Village Conservation Area, Fletcher Creek, Beverly Swamp, Dofasco 2000, Saltfleet, Winona and Vinemount plans completed. Work on the remaining plans is underway. As part of the development of the plans, the HCA has approached this process with the mind-set that a conservation area in the HCA portfolio requiring Master Plans or updates to Master Plans will follow a consistent methodology. Although not all conservation areas are located within the jurisdiction of the Niagara Escarpment Commission, the policies of the Niagara Escarpment Plan and guidelines of the Niagara Escarpment Parks and Open Space System are utilized in the preparation of master plans and management plans. Through this process, the land uses as envisioned within this Conservation Area Strategy will be further refined using the park zoning approach including permitted uses within each zone. Existing current master plans and management plans can be

viewed [here](#) and opportunities will be available for public and stakeholder engagement as future plans are developed.

6.0 Public Engagement

Public engagement for the Conservation Area Strategy was undertaken in two phases. The first phase involved posting information regarding the development of the strategy and the associated regulatory requirements of Ontario Regulation 686/21 on the HCA's dedicated website for the Conservation Area Strategy and the public consultation webpage "Bang the Table". Further, the process and intent of the Conservation Area Strategy was reviewed at a high level in meetings with the Mississauga of the Credit First Nation and the Six Nations of the Grand River First Nation.

The second phase of the consultation process involved the circulation of the draft Conservation Area Strategy. At this stage the strategy was reviewed by the HCA's Conservation Advisory Board and the HCA's Board of Directors prior to the strategy being made available for broader consultation. The intent of the circulation of the draft strategy was to provide an overview of the regulatory requirements and how HCA staff had completed the document to incorporate these requirements. At this stage, the document will benefit from a broader review and will incorporate comments received through the consultation in order to complete a final strategy.

7.0 Periodic Review

Ontario Regulation 686/21 requires a process for the periodic review and updating of the Conservation Area Strategy including procedures to ensure stakeholders and the public are consulted during the review and update process. In this regard, the Conservation Area Strategy should be reviewed within a year after the appointment of a new Board of Directors for the HCA. This timing allows for consideration of environmental, social and economic impacts while also aligning with the municipal election cycle in Ontario. A review can also be undertaken within the four-year period noted to address significant issues if they arise.

Stakeholder and public consultation will be undertaken during the above noted review periods to ensure awareness and transparency regarding the Conservation Area Strategy.

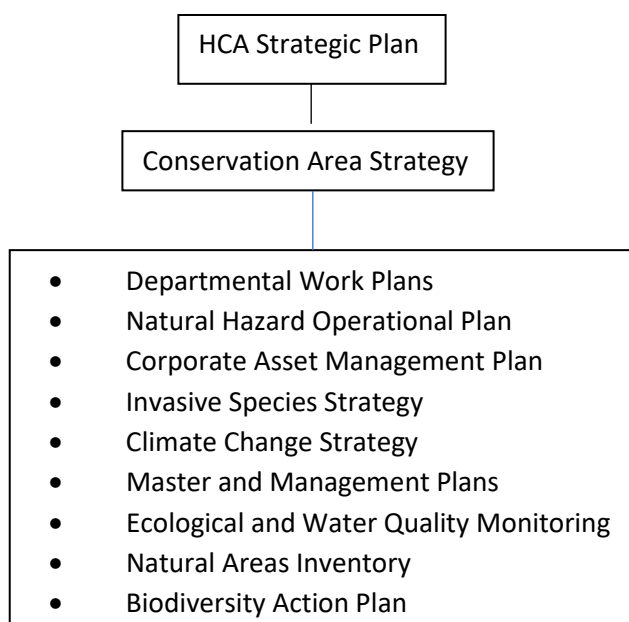
8.0 Future Considerations

The HCA is the area's largest environmental management agency and is dedicated to the conservation and enjoyment of watershed lands and natural resources. The HCA is well known for the lands under its care and stewardship. As noted, the HCA own or manages 4,732 ha (11,695 acres) of land within our watershed jurisdiction. These lands provide critical open

space and habitat for a wide range of species while providing opportunities for people to connect with nature.

Through the development and approval of the HCA's Inventory of Programs and Services, Agreement for Services with the City of Hamilton and Township of Puslinch and the development of Conservation Area Strategy, specific programs and services related to the HCA's conservation lands are highlighted with source of funding noted. The HCA's programs and services and the Conservation Area Strategy comply with regulatory requirements and provide value and experiences for the City of Hamilton, Township of Puslinch, watershed residents and landowners and people from outside the watershed.

Times change, issues evolve, and new issues arise, and these changes will result in pressures related to the HCA's conservation lands as well as broader natural heritage lands. There will be opportunities as well for further land acquisition, restoration and stewardship works to enhance these HCA conservation lands and work with agencies and groups in and outside of the watershed to enhance these features. Ultimately, the HCA's Strategic Plan will provide overall guidance regarding programs and services. The Conservation Area Strategy will provide a finer level of guidance for the management and operation of HCA lands and will be updated based on HCA's overall strategic priorities to address these changes, opportunities and effectiveness of programs as required. Lastly, issue specific strategies and plans will be maintained based on the HCA Strategic Plan and Conservation Area Strategy to provide a greater level of direction and guidance related to these specific issues. The following highlights the hierarchy of this approach.



HCA's successes since 1958 are the result of diligent Board of Director and staff commitment to conserving and restoring the HCA watershed. These efforts have included effective partnerships with governments and agencies at the federal, provincial and municipal level, local businesses, residents and landowners, conservation area visitors and groups like Friends of Eramosa Karst and Friends of Westfield. Moving forward, these relationships and partnerships will need to continue and be enhanced with a focus on greater consultation and engagement with the Mississauga of the Credit First Nation and Six Nations of the Grand River First Nation.

9.0 Resources

Conservation Authorities Act - <https://www.ontario.ca/laws/statute/90c27>

Ontario Regulation 686/21 - <https://www.ontario.ca/laws/regulation/210686>

HCA Strategic Plan 2019-2023 - https://conservationhamilton.ca/wp-content/uploads/2018/12/HCA_StrategicPlan_Final_LR.pdf

HCA Inventory of Programs & Services - https://conservationhamilton.ca/wp-content/uploads/2023/03/HCA-Inventory-of-Programs-and-Services_Board-Approved-Amendment_23Mar2.pdf

Section C.2.0, City of Hamilton Rural Official Plan - <https://www.hamilton.ca/sites/default/files/2022-07/rhop-volume1-chapterc-citywidesystemsanddesignations-nov2021.pdf>

Niagara Escarpment Plan - https://files.ontario.ca/appendix_-_niagara_escarpment_plan_2017_-_oc-10262017.pdf

Greenbelt Plan - <https://files.ontario.ca/greenbelt-plan-2017-en.pdf>

Canadian Protected and Conserved Areas Database - <https://www.canada.ca/en/environment-climate-change/services/national-wildlife-areas/protected-conserved-areas-database.html>

HCA Master and Management Plans - <https://conservationhamilton.ca/hca-master-plans/>

City of Hamilton Trail Listing - <https://www.hamilton.ca/things-do/parks-green-space/parks-trails/trails-listing>

Royal Botanical Gardens - <https://www.rbg.ca/gardens-trails/by-attraction/trails/>

Bruce Trail Conservancy - <https://brucetrail.org/>

Great Lakes Waterfront Trail - <https://waterfronttrail.org/>

Mississauga of the Credit First Nation - <https://mncfn.ca/>

Six Nations of the Grand River First Nation - <https://www.sixnations.ca/>

McMaster Forest - <https://nature.mcmaster.ca/mcmaster-forest/about/>

Cootes to Escarpment EcoPark System - <https://cootestoescarpmentpark.ca/>



Report

TO: Conservation Advisory Board

FROM: Lisa Burnside, Chief Administrative Officer (CAO)

RECOMMENDED BY: T. Scott Peck, MCIP, RPP, Deputy CAO/Director,
Watershed Management Services

PREPARED BY: Mike Stone, MCIP, RPP, Manager, Watershed Planning,
Stewardship & Ecological Services

Lesley McDonell, Terrestrial Ecologist
Bryson McEwen, Invasive Species Technician

MEETING DATE: June 13, 2024

RE: Invasive Species Strategy 2024

STAFF RECOMMENDATION

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

THAT the updated Invasive Species Strategy 2024 be adopted.

BACKGROUND & PURPOSE

In 2016 HCA developed an Invasive Species Strategy ('the Strategy') as a result of the Terrestrial Resources Monitoring Program identifying invasive species as an increasing concern in the watershed. The goal of the Strategy is to ensure a healthy watershed at the ecosystem level, reduce the impacts of invasive species, and provide support to land owners and HCA land managers to monitor and control invasive species.

The completion of the Strategy and Board of Directors approval in October 2016 has led to greater work on invasive plant species on HCA owned and managed lands, as well as on private lands through stewardship programming. Given the Strategy is now seven years old, and considering how the program has evolved, it was identified that a review and update of the Strategy would be beneficial.

The purpose of this report is to provide a summary overview of the key updates to the Strategy. The updated Strategy is appended to this report.

STAFF COMMENT

The update to the Strategy has been informed by staff's review and assessment of the invasive species program over the 2016-2023 period; the update reflects the program's accomplishments and how it has changed since its inception, as well as updates to relevant legislation. Notably, accomplishments and changes have included:

- Better understanding of the extent of existing and emerging invasive species within the watershed, and revisions to the top priority species
- Hiring of two full-time HCA Invasive Species Technicians
- Phragmites, Japanese Knotweed and Dog-strangling Vine, focal invasive species from 2016 onward, have been significantly reduced on HCA owned lands
- Interest has expanded through HCA's stewardship program for invasive species control on private lands
- Creation and utilization of field mapping of invasive species and treatments has provided better tracking of removals and subsequent monitoring
- Multiple other conservation authorities and municipalities creating invasive species strategies, which has promoted greater collaboration
- Invasive species tracking, mapping and removals are no longer restricted to invasive plant species, and now include invasive insects, pests, pathogens and fish

Legislative updates included:

- Expanded prohibited species lists within the Ontario *Invasive Species Act*, notably Japanese Knotweed
- Passing of Ontario Regulation 686/21 under the *Conservation Authorities Act*, which outlines the mandatory services and programs Conservation Authorities are to provide, including programs and services to conserve, rehabilitate, and manage natural heritage located within the lands owned or controlled by the authority

HCA staff also note that a focus session was held with the HCA Conservation Advisory Board (CAB) on April 13, 2023 to discuss an update to the 2016 Invasive Species Strategy. As a result of the feedback received at the focus session the Invasive Species Strategy now better highlights the impacts of climate change on invasive species, and also includes an enhanced communication section and further discussion on monitoring and restoration.

Overall, the main goals, objectives and strategies have remained similar to the 2016 Strategy. There are now six main strategies identified, down from seven within the

original Strategy. This reduction reflects a consolidation of some aspects and strengthening of others. New strategies include restoration and monitoring which recognizes the need to restore habitats once invasive species are removed and monitor for reoccurrence in these areas. Some strategies changed or were incorporated into others, these included the action plans and research and monitoring. The action plan section has been incorporated into the prioritization section, while research has been given its own section in recognition of how important changes in relevant research are to the management of invasive species. Monitoring was combined with restoration, where those two strategies complement each other.

STRATEGIC PLAN LINKAGE

The initiative refers directly to the HCA Strategic Plan 2019 - 2024:

- **Strategic Priority Area – Natural Heritage Conservation**
 - Initiatives – Maintain and enhance the natural heritage features of HCA lands and manage these lands on an environmentally sustainable basis
 - Work with our partners on stewardship initiatives for the Hamilton Watershed Stewardship Program and the Cootes to Escarpment EcoPark System
 - Continue and expand the aquatic and terrestrial monitoring programs

AGENCY COMMENTS

None

LEGAL/FINANCIAL IMPLICATIONS

The Invasive Species Strategy is implemented as part of the Invasive Species Program with an annual budget item within the Watershed Management Services Department Budget. This includes funding for staff costs, materials and supplies.

CONCLUSIONS

Invasive species present a unique issue in the conservation of biodiversity in Ontario; they are now only second to habitat loss as the highest threat to biodiversity. Under the framework of the 2016 Invasive Species Strategy the HCA's invasive species program has made significant accomplishments in the understanding and management of invasive species on HCA lands. Given how the program has evolved, it is prudent that HCA keep its invasive species strategy up to date and that it that mirrors those of the provincial and federal governments, but also incorporates issues and circumstances unique in this watershed. Addressing the Strategies goals and objectives through the six strategies outlined will assist HCA in focusing efforts and resources in regards to invasive species. Continued collaboration with other organizations and volunteers in our watershed will also assist in invasive species detection and management.

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Hamilton Conservation Authority Invasive Species Strategy



2024



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1. Introduction

Invasive species have been a growing concern for ecologists, biologists, and land managers over the last 25 years. 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. They can come from across the country or across the globe.” (Government of Canada, 2014).

The International Union for Conservation of Nature (IUCN, 2014) considers invasive species to be the second highest threat to biodiversity conservation after habitat destruction. This organization has an invasive species specialist group that tracks invasive species and their impacts across the globe. According to the Government of Canada, there are hundreds of invasive species in our country (Government of Canada, 2014). These include, birds, mammals, reptiles, amphibians, crustaceans, aquatic and terrestrial plants, marine and freshwater fish, molluscs, algae, fungi, and other pathogens. The impacts of these species are large and cross all sectors including the economy, environment, and human health.

In Ontario, one of the first documents developed to shed light on invasive species as a growing issue for biodiversity was “Sustaining Biodiversity: A Strategic Plan for Managing Invasive Plant Species in Southern Ontario” (Havinga, Invasive Plant Working Group, 2000). The document outlines eight strategies and related specific actions for addressing invasive species, which were intended to support the efforts of the various organizations and agencies involved in land management and conservation in Ontario and serve as a catalyst for further action and partnerships.

The Government of Canada later developed “An Invasive Alien Species Strategy for Canada” in 2004 (Environment Canada, 2004). The strategy is broad in scope and includes direction on prevention, early detection, rapid response to new invaders, and management of established and spreading invaders. The finalization of a strategy and dedication of federal dollars resulted in the development of the Invasive Alien Species Partnership Program and creation of the Invasive Species Centre. The Partnership Program was terminated in 2012, however the Invasive Species Centre continues to operate and is focused on research, prevention, education and outreach, as well as engaging provincial governments, municipalities, conservation organizations and the general public in dialogue about invasive species.

Ontario has a recently updated biodiversity strategy (Ontario Biodiversity Council, 2023), which identifies invasive species as one of the six major threats to biodiversity in Ontario. It discusses the economic and environmental threat of invasive species and the cumulative impacts they can pose. These include climate change, habitat loss, and

other factors allowing invasive species to become established in an ecosystem faster and easier than before.

The impacts of invasive species are widespread and include the disruption of native ecosystems, loss of biodiversity, and economic impacts to humans. Invasive species have the ability to outcompete native plants and animals. This can cause a cascade effect within the food chain. For example, invasive Zebra mussels filter plankton from the water column, thus reducing this food source for fish and clam species native to the Great Lakes. This may have caused a drop in fish populations since the introduction of Zebra mussels (Government of Ontario, 2006).

The inherent characteristics of invasive species can also result in widespread and rapid ecological changes which have permanent consequences for the local ecosystem. For example, forest pathogens typically target a preferred host species which can result in a precipitous decline of that species' population within an area (Invasive Species Centre, 2022). The imminent threat Oak wilt, a disease caused by the fungus *Bretziella fagacearum*, specifically propagates in oak trees. Oak wilt can result in complete mortality of red oak trees within a single season (Canadian Food Inspection Agency, 2024), which may cause profound changes to infected oak dominant forests in a short time span.

Effects such as this impact not only biodiversity but also the economy. The Government of Ontario has quantified some of the economic impacts of invasive species. Invasive species threaten many sectors of the Ontario economy, including fishing, hunting, agriculture, and tourism. Impacts have included reduced value of commercial and recreational fisheries, effects on crop production, and decreased property values. The Ministry of Natural Resources and Forestry has determined that invasive plants have cost the agricultural and forestry industries approximately \$7.3 billion annually. The impacts from Zebra mussels alone in Ontario have cost \$75-91 million annually (Ontario Ministry of Natural Resources (OMNR), 2012). It is likely that most species established in Ontario are now here to stay. Many of these species are hard to control once established. The issues related to invasive species are complex as is their management.

The Hamilton Conservation Authority (HCA) in cooperation with its partners has completed three Natural Areas Inventories (NAI), over the past thirty years, with the most recent NAI ('Nature Counts 2') completed in 2014. The fourth NAI project was initiated in 2023 and will build on the work of earlier NAIs.

The NAI is a comprehensive study of the natural areas within the watershed, both public and private, although not all parcels are studied in each round of the NAI. This study

provides information on the distribution and types of terrestrial invasive species in the watershed. Although the NAI study boundary encompasses a larger jurisdiction than the HCA watershed, it represents the best summary of invasive plant species available locally. The last NAI identified 63 invasive plant species within the City of Hamilton (NAI, 2014) which represents 4% of total plant species records. There were also an additional 444 non-native plant species, not considered invasive, identified during the NAI. Considering these additional species, 34.6% of all the plants recorded in the City of Hamilton are non-native. The NAI only speaks to terrestrial invasive species in our watershed. Few studies have been completed to catalogue our aquatic invasive species or invasive pathogens.

The percentage of non-native plant species identified (approximately 35%) is not unexpected given some of the watershed's characteristics. Favorable climate, proximity to the Great Lakes port system, and degraded ecosystems have contributed to this percentage. These conditions make Hamilton vulnerable to the introduction of invasive species more so than other areas that are less urbanized and not adjacent to a large port system. Ports contribute to the introduction of invasive species and are often the first point of entry as different species are transported from other countries in shipping containers or in the ballast water of the ships. Urbanization can also escalate the distribution of invasive species through habitat loss and fragmentation. Given these conditions, HCA considers the control and management of invasive species to be the key priority for addressing loss of biodiversity. However, given the highly urbanized nature of Hamilton's watersheds, decisions to manage invasive species can become increasingly complex. Plants living in urban environments must contend with high levels of disturbance, habitat fragmentation, a constant stream of new ecosystem interactions with introduced species, and more. These factors stress native species that are poorly adapted to these conditions and create a more suitable habitat for invasive species which are either able to rapidly adapt or are pre-adapted to this type of environment (Elmqvist et al. 2008).

Within the scientific community there are ongoing discussions about the ecosystem services invasive species can provide in highly urban environments and whether management is appropriate in all situations (Gaertner et al. 2017). These urban invasive species may provide ecosystem services in a novel way which native species cannot. Specifically, regarding plants, desirable ecosystem services include but are not limited to food production, carbon sequestration, cooling amidst urban heat islands, and air quality improvements (Potgieter et al. 2017). Due to the conditions of urban environments stated previously, hardy non-native plants might be able to provide those services where native plants may struggle to survive. This approach in urban areas needs to be balanced with the knowledge that invasives provide many undesirable

ecosystem disservices, which include widespread biodiversity reduction, threats to human health, propagation beyond original planting, and more (Gaertner et al. 2017). These factors are considered in HCA's prioritization of sites for treatment.

HCA will continue to monitor the scientific discourse around this topic and adjust management strategies as supported by accepted best practices. Currently, invasive species management remains a key component of fulfilling HCA's strategic goals and maintaining the watershed's health.

2. Legislation and Policy Framework

There are a variety of laws, regulations, policies and guidelines in place at all levels of government that can assist in preventing the introduction of invasive species and provide direction regarding the management of those species. At the federal level these include *Ballast Water Control and Management Regulations* under the *Canada Shipping Act*, which require ocean-going vessels to flush their tanks with salt water before entering the St. Lawrence Seaway and the Great Lakes (Government of Ontario, 2015). Fisheries and Oceans Canada maintains *Aquatic Invasive Species Regulations* under the *Fisheries Act* with the objective of preventing the introduction of aquatic invasive species into Canadian waters and to provide for the control and management of their establishment and spread, once introduced.

At the provincial level, some of the key relevant legislation includes the *Weed Control Act*, *Public Lands Act* and *Invasive Species Act*. In the recent past, several plant species have been added and removed from the noxious weed list under the *Weed Control Act* (Government of Ontario, 2015). This list is used by weed inspectors to control target plants and minimize their impact on agriculture. In 2014 the *Public Lands Act* was changed to allow the removal of invasive aquatic plants. This change was necessary as the beds of most water bodies in Ontario are crown land and the MNRF manages these lands under the *Public Lands Act* (Government of Ontario, 2015). There are in-water works timing windows and other rules that need to be followed with this legislation. Ontario introduced regulations in 2005 that prohibits the possession, purchase and sale of several live invasive fish, including Round and Tubenose Goby, Rudd, Ruffe, and the Snakehead family, and four Asian carp species (bighead, black, grass, and silver) (Government of Ontario, 2021).

The Government of Ontario has continued to update invasive species legislation and recommendations as new threats have become apparent in the province. The Ontario Invasive Species Strategic Plan was originally released in 2012 and resulted in the creation of the *Invasive Species Act*. This Act came into force on November 3, 2016. It

allows the province to classify the threat level of invasive species, prohibit the import and possession of significant threat species and give the Minister the power to implement restrictions prescribed by the regulation or designated by the Minister. The *Invasive Species Act* has been amended several times to increase the scope of regulatory controls. As of 2022, watercraft operators are now required to take preventative actions to avoid accidental transportation of aquatic invasive species between water bodies. This includes removing drain plugs to release any captured water and ensuring no aquatic life is attached to the watercraft or related equipment before transport. Also, the list of prohibited and restricted species has been expanded to include 45 species as of January 1, 2024 (Government of Ontario, 2023).

Ontario has also recently completed a review of the Ontario Invasive Species Strategic Plan from 2012-2022. The review examines Ontario's progress in achieving the goals set out in the strategic plan and identifies future areas of focus related to those same goals. The report highlights the economic toll of invasive species and discusses their continued threat which is driven by the risk-factors of economic activity and climate change.

In October of 2021, the Government of Ontario released an update to Regulation 686/21 under the Conservation Authorities Act, which now requires mandatory delivery of certain activities. These include, "programs and services to conserve, protect, rehabilitate, establish, and manage natural heritage located within the lands owned or controlled by the authority" (Government of Ontario, 2021, Sec 9.1.2.iv). HCA has interpreted this to mean the invasive species management activities undertaken on HCA lands are included within the description of the mandatory programs and services under this regulation.

HCA supports the adoption of policies and legislation that will prevent the introduction of invasive species and provide tools to manage the threats posed by invasive species already present. HCA will continue to monitor and review changes to relevant legislation and policy pertaining to invasive species to ensure the strategies and actions employed by HCA in addressing invasive species remain current and effective.

3. Goals and Objectives

The "*Hamilton Conservation Authority Invasive Species Strategy*" (the 'Strategy') outlines HCA's goals and objectives in relation to invasive species and the strategies to be employed on HCA owned lands and promoted throughout the watershed to address the threats they pose. It addresses issues related to both terrestrial and aquatic invasive species.

3.1. Goals

In developing and implementing the Strategy, HCA's main goals are to ensure a healthy watershed at the ecosystem level, reduce the ecological and economic impacts of invasive species, and provide support to HCA land managers and private landowners.

3.2. Objectives

In support of the Strategy's goals, the following objectives have been defined and are focused on invasive species detection, prevention, and management:

- To maintain current information on invasive species and their distribution on HCA properties and throughout the watershed through regular monitoring and survey. This will include both surveys by staff as well as regular review of participatory science platforms;
- To identify priority invasive species and geographic areas to be managed within the watershed;
- To prevent the establishment of new populations of known or new invasive species to the extent possible;
- To provide information regarding invasive species and their impacts in support of education and outreach activities; and
- To use ecological restoration within priority sites to increase resilience to re-invasion.

To achieve the above noted goals and objectives HCA has identified six strategies, which are focused on prevention, communication, prioritization, monitoring and restoration, collaboration, and research. Further information regarding each of these strategies and proposed related priority actions under each is provided in more detail below. Strategies and associated actions will be implemented on a priority basis and as resources allow.

4. Strategic Plan Linkage

This invasive species strategy aligns with the following goals in HCA's 2019-2023 Strategic Plan:

- Strategic goal #2 - Natural Heritage Conservation – HCA conserves, restores and enhances watershed natural areas and ecological systems.
- Strategic Goal # 3 – Conservation Area Experience - HCA provides customers high quality, diverse conservation areas to promote outdoor recreation, health

and well-being, strengthening public awareness of the benefits of being in or near our conservation areas.

- Strategic Goal # 4 – Education and Environmental Awareness – HCA provides active outdoor learning experiences for students, teachers and the community, increasing knowledge and awareness of the value of our environment and heritage.

5. Invasive Species Program: 2016-2023

Since the implementation of the 2016 Invasive Species Strategy, HCA has completed many of the action items listed under the seven key strategies in that plan. A clean equipment protocol was developed to educate HCA staff about measures for preventing the spread of invasive species on equipment. Signs were also installed in various Conservation Areas (CAs), informing the public about local invasive species and how to prevent their introduction into new locations.

HCA took action to communicate the importance of invasive species management to the public through the Hamilton Watershed Stewardship Program (HWSP), and supported removal projects through the Water Quality and Habitat Improvement Program (WQHIP). HCA also promoted the use of public reporting tools such as EDDMapS and iNaturalist to utilize participatory science for early detection. Internally, invasive species distribution data was incorporated into Conservation Area Master Plans.

Under the direction of the 2016 Strategy, HCA conducted yearly invasive species research and monitoring activities. The aquatic and terrestrial ecological monitoring programs have integrated invasive species identification into regular field work. This information is used as a primary detection method and followed up by more comprehensive surveys. Additionally, widespread monitoring was conducted throughout HCA lands supporting a variety of activities which include: Conservation Area master planning, prioritization planning, early detection of newly introduced species, and mapping for prompt removal.

Due to the high volume of invasive species within the HCA watershed, prioritization has been a crucial activity to ensure control efforts are impactful. HCA staff have maintained an understanding of the top priority invasive species by attending educational webinars and conferences. Staff have also used existing inventory data to prioritize invasive species control based on the ecological importance of natural areas. More recently, an Invasive Species Prioritization Plan was developed for Valens Lake Conservation Area. These plans outline criteria for prioritizing invasive species management within Conservation Areas, with the goal of effectively coordinating management efforts between WMS and CAS staff.

Using these prioritization techniques, HCA has taken action to manage invasive species populations throughout the watershed. To summarize, staff have manually and chemically controlled a variety of invasive plants, forest pests, and forest pathogens on HCA lands. Through the HWSP, staff have also assisted with manual control of invasive plant species on private lands. This has been accomplished in part by the creation of two Invasive Species Technician positions, which were made permanent full-time positions in January of 2024. Additionally, WMS staff have undergone certification to become licensed pesticide applicators, reducing cost of treatment implementation.

While conducting invasive species management activities, HCA staff have followed best management practices outlined by organizations such as the Ontario Invasive Plant Council. These documents contain information regarding the most current management practices that balance efficacy and environmental safety.

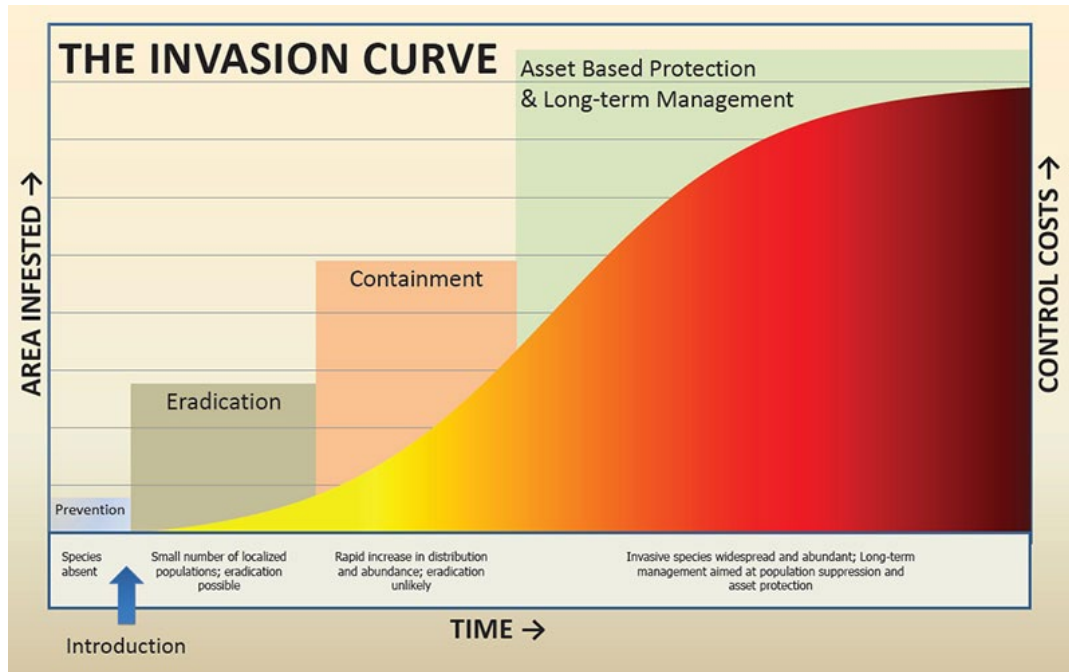
Further, HCA has partnered with organizations like Royal Botanical Gardens and City of Hamilton to combine resources for invasive species removal initiatives. Collaboration has also involved coordinating management efforts and sharing knowledge about best management practices with organizations including McMaster University, City of Hamilton, and Hamilton Naturalist Club.

6. Strategies

6.1. Prevention

Prevention is key with all invasive species, from those that live in the water to the pests which impact forests. Both the federal and provincial governments have developed prevention strategies regarding invasive species (Government of Canada, 2014 and OMNR, 2012). Many of the introduced species (invasive) are hardy species in their native home ranges and thrive in degraded ecosystems. When invasive species are introduced into other landscapes outside of their native range, it is their hardiness and void of natural predators to keep them in check that makes it relatively easy for them to become established. Once established they are difficult to eradicate. This is especially true for aquatic organisms. They can become widespread quickly, can be prolific breeders (i.e. goldfish), and tend to colonize quickly. Eradication efforts can be expensive, time consuming, and in some instances impossible (Asian Carp Regional Coordinating Committee, 2015). This is illustrated by the invasion curve, as seen in Figure 1, which represents the relationship between the level of infestation and the cost of management (United States Department of Agriculture, 2005).

Figure 1. Invasive Species Invasion Curve.



Invasive species can be introduced through several pathways. Within the HCA watershed, some of the main pathways for introduction are garden plants and the nurseries that sell invasive plant species, ballast water from ships, and recreational activities (hiking, fishing, biking and boating). The natural environment within HCA's watershed is also at risk due to the active port and shipping industries. For example, the invasive Spotted Lanternfly has been intercepted in shipments immediately adjacent to Ontario in New York State (Invasive Species Centre, 2024).

HCA proposes to do the following:

- Install boat washing stations at Valens and Christie Lake Conservation Areas and Fifty Point marina to assist in the removal of aquatic plants, animals, and algae from watercraft before overland transport. This removal is a requirement of the Ontario Regulation 546/16 (2023) under the *Ontario Invasive Species Act* (2015). By providing a boat washing station, HCA will make it easier for patrons to comply with the regulation.
- Monitor the implementation of clean equipment protocols to prevent the movement of invasive species from CA to CA.
- Install boot brushes at high-traffic hiking locations with Conservation Areas to mitigate invasive species spread during trail use. Working with area superintendents, this will be piloted at Valens Lake CA between 2024 and 2027.

- Review operational procedures in Watershed Management Services (WMS) to prevent the movement of aquatic invasive species on sampling equipment.
- Monitor Canadian Food Inspection Agency (CFIA) and Ontario Invasive Plant Council (OIPC) websites for information on new invasive species to ensure prevention strategies remain current.
- Attend industry directed workshops on invasive species to stay current on federal and provincial prevention strategies and management techniques.
- Keep investing in educational signage at HCA's active Conservation Areas which describes invasive species, their impact on the natural environment and how to prevent their introduction. At minimum, five educational signs will be installed over the next five years.

6.2. Communication

Communication is very important to the achievement of HCA's goals and objectives for this Strategy. This includes both internal and external communication. Through education on the introduction, spread, and threat of invasive species, Conservation Area users and staff will be better able to prevent new introductions and be better prepared for managing invasions. Part of the communication strategy will be maintaining the list of the top terrestrial and aquatic invasive species and forest pests and pathogens within the watershed (Appendix A). HCA proposes to do the following:

- Develop a communications strategy to bring all these aspects of communication into an organized plan. WMS and Marketing staff will collaborate to achieve this.
- Develop a webpage dedicated to invasive species found in the HCA watershed, including the following activities:
 - Place links on HCA's website to relevant NGO and Government websites that discuss invasive species, their habitats and introduction pathways.
 - Focus this webpage on top invaders, linking the public to best management practices and other resources.
 - This will be completed in conjunction with HCA communications staff by 2030.
- Provide links to web-based applications for the public to report invasive species in our Conservation Areas such as EDD MapS.

- Continue to share information about invasive species best practices with the public through social media channels.
- Conservation Area Master Plans will include a section on invasive species and what occurs in each CA.
- Promote through private landowner stewardship initiatives the importance of the control of invasive species and their impact on biodiversity.
- Coordinate invasive species management between WMS and Conservation Area Services (CAS) staff on HCA property using Invasive Species Prioritization Plans as discussed in section 6.3.

6.3. Prioritization

As noted throughout this plan there are many different invasive species within the watershed that impact terrestrial and aquatic environments. The degree to which these different species affect their surroundings varies based on their method of spread, invasiveness, and the way they interact with other species and the environment. As a result, prioritization must occur for both species and Conservation Authority lands since preserving the biodiversity contained within certain Conservation Areas requires more immediate action than other areas. HCA will continue to research appropriate BMPs for the invasive species in the watershed. This along with site specific work planning will help guide the implementation of this invasive species strategy.

HCA will continue, through the Master Plan and Management Plan process to inventory invasive species on HCA owned properties. This will guide the development of site-specific prioritization plans which will help prioritize actions based on species (threat level) and/or ecosystem type (sensitivity). With prioritization plans in place, HCA can more effectively engage volunteers and staff in the removal of invasive species. These removals will involve Ecology and CAS staff, along with volunteers when appropriate. Species requiring chemical control will be assessed and controlled by HCA staff with pesticide applicator licenses or by certified contractors. The use of chemicals will be evaluated on a case by case, and species by species basis, balancing the need for chemicals, the appropriateness of their use for certain species, and the manual labour required for mechanical removal. This is a long-term commitment and funding will actively be sought to continue with implementation. HCA proposes to complete the following:

- Develop and maintain a priority list of terrestrial and aquatic invasive species and forest pests/pathogens (Appendix A).

- Develop invasive species prioritization plans following the Master Plan or Management Plan for each Conservation Area. These will be used to direct all staff to the priority invasive species on each property for management. These plans will be completed for the majority of Conservation Areas by 2030.
- Develop and maintain a priority list of locations with high ecological value and/or importance for invasive species prevention and management via the property-specific prioritization plans.
- Conduct surveys for aquatic invasive species to develop a better understanding of the range and diversity of species present. Management of aquatic invasive species is a difficult and resource intensive task. Therefore, implementation activities will focus on mapping, monitoring, and small-scale management initiatives in master plans and prioritization plans within HCA's various landholdings.
- Maintain at least 2 HCA staff as Ontario certified pesticide applicators making implementation more cost effective and faster.
- Work collaboratively with partners and organizations, including the City of Hamilton and Royal Botanical Gardens on invasive species removal initiatives. This is an ongoing action.

6.4. Monitoring and Restoration

In order to combat invasive species, monitoring at two stages is necessary: pre-emptive surveys to detect new occurrences, and post-management surveys to track the success of restoration activities.

HCA has both aquatic and terrestrial monitoring programs that are watershed wide. These may be able to detect invasive species as they establish in the watershed. Master/Management plans are also completed on a 10-year cycle within all lands owned by HCA. These can highlight invasion areas that change between creation of the plans. However, some species can establish and begin to have detrimental impacts very quickly. *Bretziella fagacearum*, the fungus which causes oak wilt, has been highlighted in this strategy as an example of such a species. An invasion of this disease could result in a precipitous decrease in the oak population across the watershed. Regular and thorough monitoring is essential to ensure a rapid response to this type of invasion. Therefore, Conservation Area Staff who are also knowledgeable in regard to invasive species are instrumental in on the ground monitoring of emerging invasive

species. It is also important for HCA to regularly check the CFIA website and consult with other organizations like the Ontario Plant Council that are aware of new and incoming invasive species.

Post-management monitoring is required to measure the efficacy of control methods, to detect re-invasion at managed sites, and to observe the success of post-control restoration efforts. Several invasive species strategies from upper tier municipalities and conservation authorities highlight active restoration as a key activity for ensuring the long-term success of invasive species control efforts (City of Mississauga, 2021; Credit Valley Conservation, 2020). HCA engages in active restoration at invasive species management sites on a case-by-case, but staff have encountered challenges that have mitigated the success of some restoration plantings. Predation of newly planted native species, lack of funds for quick replanting, and secondary invasion by other invasive species have been consistent issues at management sites. HCA proposes to complete the following:

- Develop a restoration protocol to determine if a site can be left to passively restore after invasive plant species removal or whether native plant-reintroduction is necessary. To be completed via collaboration between Ecology staff and Invasive Species staff by 2030.
- Work with Forestry staff and develop a yearly review process to determine areas of significant tree removal to facilitate restoration/management before invasive species can establish. To be completed by 2026.
- Create and implement a monitoring schedule for completed invasive species management sites to track efficacy of control efforts. To be completed by 2026.
- Plantation management will be carefully reviewed for the occurrence of invasive species, and the cost benefit of harvest vs possible invasion will be weighed. This will occur when plantation management is scheduled again.

6.5. Collaboration

Collaboration and partnership will play an important role towards the advancement of the actions and efforts proposed within the Strategy to address invasive species. There are many partners in the Hamilton area with which HCA could coordinate efforts on both private and public land. Some of these partners include Royal Botanical Gardens, Hamilton Naturalist Club, Bruce Trail Conservancy, City of Hamilton, and Cootes to Escarpment (C2E). Collaboration can take place in a variety of ways and may include the following:

- Work with the Hamilton Watershed Stewardship Program to support local landowner initiatives in invasive species removal. This is an ongoing initiative.
- Support invasive species removal initiatives through the Cootes to Escarpment Eco-park (within the HCA watershed).
- Continue to support federal and provincial initiatives (e.g. EDD MapS).
- Work with partners to share information in regard to invasive species management, removals, mapping etc., for example the multi-agency Greater Toronto and Hamilton Area Invasive Species Working Group.
- Engage non-government organizations to partner with and work on changing traditional landscape planting programs and lists with our municipal partners to exclude non-native invasive species.
- Partner with Indigenous-led organizations and communities to better understand Indigenous Ecological Knowledge perspectives on invasive species management.

6.6. Research

Invasive species management practices are continually changing as new knowledge and technologies become available. Additionally, new invasive species continue to spread into the watershed despite prevention measures and may each require a different management approach. To ensure HCA's invasive species management efforts are following current best practices and are as effective as possible, it is important for HCA to engage in research and education. The following are proposed actions:

- Attend annual conferences and webinars to stay up to date on current management strategies and BMPs.
- Conduct field tests to assess efficacy of recommended management techniques to optimize HCA's invasive species control methods.
- Compete as appropriate funding applications to allow the use of a wider range of management tools.

7. Conclusion

Invasive species are a persistent and continually evolving threat to biodiversity in the HCA watershed, and throughout Ontario more generally, second only to habitat destruction. Invasive species have many impacts, from large scale biodiversity loss to costly impacts on industry and infrastructure. The Ontario and Canadian governments

both have strategies in place to address the impacts of invasive species, and regulations such as the *Invasive Species Act* provide legislative support by restricting the movement of some key species. However, it is apparent that already-established invasive species will persist in the local ecosystem and that new species will continue to be introduced through a variety of pathways.

This Strategy and the actions outlined within support HCA's Strategic Plan goals of natural heritage conservation, conservation area experience, and education and environmental awareness. HCA has already taken important steps to improve the health of ecosystems within the watershed by completing many of the actions recommended in the 2016 Invasive Species Strategy. By updating and implementing this 2024 Strategy, HCA will continue to support biodiversity and conservation principles, while also addressing the unique management challenges posed by invasive species in the watershed.

8. References

- Asian Carp Regional Coordinating Committee (2015). *Asian carp response in the Midwest*. <http://www.asiancarp.us/faq.htm> [Accessed February 5, 2016].
- Canadian Food Inspection Agency (2024). *Oak wilt*. <https://inspection.canada.ca/plant-health/invasive-species/plant-diseases/oak-wilt/eng/1325624048625/1325624535106> [Accessed February 2, 2024].
- City of Mississauga (2021). *Invasive species management plan & implementation strategy*. <https://www.mississauga.ca/publication/invasive-species-management-plan-and-implementation-strategy/> [Accessed February 2024].
- Credit Valley Conservation (2011). *CVC priority invasive plants*. <http://www.creditvalleyca.ca/wp-content/uploads/2011/07/11-150-priorityinvasives-11-list-web.pdf> [Accessed November 2014].
- Credit Valley Conservation (2020). *Invasive species strategy*. <https://cvc.ca/document/invasive-species-strategy/> Accessed [February 12, 2024].
- Elmqvist, T., Alfsen-Norodom, C., Colding, J. (2008). *Urban systems*. Ecosystems vol. [5] of Encyclopaedia of Ecology / Sven Erik Jørgensen, Brian D. Fath (eds). Elsevier, Oxford, pp 3665–3672.
- Environment Canada (2004). *An invasive alien species strategy for Canada*.
- Gaertner, M., Wilson, J.R.U., Cadotte, M.W., Zenni, R.D., Richardson, D.M., Macivor, J.S. (2017). *Non-native species in urban environments: patterns, processes, impacts and challenges*. *Biological Invasions* 19: 3461–3469.
- Government of Canada (2004). *Invasive alien species strategy for Canada*. http://publications.gc.ca/collections/collection_2014/ec/CW66-394-2004-eng.pdf [Accessed February 11, 2016].
- Government of Canada (2014). *Invasive species in Canada*. http://epe.lac-bac.gc.ca/100/206/301/cfia-acia/invasive_species/www.invasivespecies.gc.ca/english/view.asp@x=1 [Accessed February 20, 2016].
- Government of Ontario (2006). *Zebra mussels invade Ontario waters*. Invading Species Awareness Program.

- Government of Ontario (2015). *How government combats invasive species*.
<https://www.ontario.ca/page/how-government-combats-invasive-species>
[Accessed February 5, 2016].
- Government of Ontario (2015). *Invasive species act*.
<https://www.ontario.ca/laws/statute/15i22> [Accessed February 15, 2024].
- Government of Ontario (2021). *Aquatic invasive species regulations (SOR/2015-121)*.
<https://laws-lois.justice.gc.ca/eng/regulations/SOR-2015-121/page-3.html#docCont> [Accessed April 8, 2024].
- Government of Ontario (2021). *Ontario Regulation 686/21: Mandatory programs and services*. <https://www.ontario.ca/laws/regulation/210686> [Accessed April 9, 2021].
- Government of Ontario (2023). *Ontario regulation 354/16: general*.
<https://www.ontario.ca/laws/regulation/160354> [Accessed March 8, 2024].
- Hamilton Conservation Authority (2014). *Natural areas inventory project, 3rd edition*.
- Hamilton Conservation Authority (2019). *Hamilton Conservation Authority strategic plan, 2019–2023*.
- Havinga, D., Invasive Plant Working Group (2000). *Sustaining biodiversity: A strategic plan for managing invasive plants in southern Ontario*.
<https://www.nvca.on.ca/wp-content/uploads/2023/07/Managing-Invasive-Species-Ont-Society-Eco-Restoration.pdf> [Accessed January 2016].
- Invasive Species Centre (2022). *Invasive pathogens*.
<https://www.invasivespeciescentre.ca/invasive-species/meet-the-species/invasive-pathogens/> [Accessed February 5, 2024].
- Invasive Species Centre (2024). *Spotted lanternfly: A serious threat to Canada's wine and agricultural industries*. <https://www.invasivespeciescentre.ca/spotted-lanternfly-a-serious-threat-to-canadas-wine-and-agricultural-industries/>
[Accessed February 29, 2024].
- IUCN (2014). *Invasive alien species*. International Union for Conservation of Nature
<https://www.iucn.org/our-work/topic/invasive-alien-species> [Accessed February 20, 2014].
- IUCN (2016). *Global invasive species database*. International Union for Conservation of Nature.
<http://www.iucngisd.org/gisd/species.php?sc=304> [Accessed January 2016].

- Ontario Biodiversity Council (2023). *Ontario's biodiversity strategy: 2023-2030*.
<https://ontariobiodiversitycouncil.ca/wp-content/uploads/Ontarios-Biodiversity-Strategy-2023-2030.pdf> [Accessed Feb 6, 2024].
- Ontario Ministry of Natural Resources (2012). *Ontario invasive species strategic plan*.
Toronto Queen' Printer of Ontario. 58 pp.
- Potgieter, L. J., Gaertner, M., Kueffer, C., Larson, B. M., Livingstone, S. W., O'Farrell, P. J., & Richardson, D. M. (2017). *Alien plants as mediators of ecosystem services and disservices in urban systems: a global review*. *Biological Invasions*, 19(12), 3571-3588. <https://doi.org/10.1007/s10530-017-1589-8>.
- United States Department of Agriculture Forest Service (2005). *Invasive plant environmental impact statement*.
- Urban Forest Associates Inc. (2002). *Invasive exotic species ranking for southern Ontario*, <http://serontario.org/pdfs/exotics.pdf> [Accessed November 2014].

Appendix A

Top Terrestrial Invasive Species

Common name	Scientific name	Current Distribution
Dog strangling vine	<i>Vincetoxicum rossicum</i>	Widespread
European buckthorn	<i>Rhamnus cathartica</i>	Widespread
Garlic mustard	<i>Alliaria petiolata</i>	Widespread
Giant Hogweed	<i>Heracleum mantegazzianum</i>	Limited: Lower Spencer Creek
Invasive Honeysuckles	<i>Lonicera sp.</i>	Widespread
Japanese knotweed	<i>Fallopia japonica</i>	Widespread
Oriental bittersweet	<i>Celastrus orbiculatus</i>	Widespread
Phragmites	<i>Phragmites australis</i>	Widespread
Tree of heaven	<i>Ailanthus altissima</i>	Widespread
Wild Parsnip	<i>Pastinaca sativa</i>	Limited: Dundas Valley Conservation Area, Fifty Point Conservation Area

Top Aquatic Invasive Species

Common name	Scientific name	Current Distribution
Asian carp (bighead, black, grass, and silver)	<i>Hypophthalmichthys nobilis</i> and others	Not yet detected in HCA watershed
Common carp	<i>Cyprinus carpio</i>	Widespread
Flowering Rush	<i>Butomus umbellatus</i>	Limited: Lower Spencer creek watershed
Goldfish	<i>Carassius auratus auratus</i>	Widespread
Manna grass	<i>Glyceria maxima</i>	Widespread
Marbled crayfish	<i>Procambarus virginalis</i>	Not yet detected in HCA watershed
Chinese mystery snails	<i>Cipangopaludina chinensis</i>	Limited: Lower Spencer creek watershed and Stoney Creek numbered watercourses
Round goby	<i>Neogobius melanostomus</i>	Limited: Lower Spencer creek and Redhill creek watersheds
Rudd	<i>Scardinius erythrophthalmus</i>	Limited: Lower Spencer creek watershed
Rusty crayfish	<i>Orconectes rusticus</i>	Limited: Lower Spencer creek watershed
VHS and Rana virus	N/A	Widespread
Water Chestnut	<i>Trapa natans</i>	Not yet in HCA watershed
Water Soldier	<i>Stratiotes aloides</i>	Not yet in HCA watershed
White river crayfish	<i>Procambarus acutus</i>	Not yet in HCA Watershed
Zebra mussel	<i>Dreissena polymorpha</i>	Widespread

Top Forest Pests and Pathogens

Common name	Scientific name	Current Distribution
Asian Longhorned Beetle	<i>Anoplophora glabripennis</i>	Formerly present in GTA; has been declared eradicated by CFIA
Beech Bark Disease	Associated with <i>Cryptococcus fagisuga/Neonectria spp.</i> complex	Widespread
Beech Leaf Disease	Associated with <i>Litylenchus crenatae mccannii</i>	Limited: Dundas Valley
Elm Zigzag Sawfly	<i>Aproceros leucopoda</i>	Widespread in Eastern Ontario; invasion possible
Hemlock Woolly Adelgid	<i>Adelges tsugae</i>	Present in Hamilton; invasion imminent
Jumping Worm	<i>Amyntas spp.</i> , <i>Metaphire spp.</i> , <i>Pheretima spp.</i>	Limited: Dundas Valley
LDD (Spongy) Moth	<i>Lymantria dispar</i>	Widespread
Oak Wilt	Associated with <i>Bretziella fagacearum</i>	Present in Ontario; invasion possible
Spotted Lanternfly	<i>Lycorma delicatula</i>	Not yet detected in Ontario



Memorandum

TO: Conservation Advisory Board

FROM: Lisa Burnside, Chief Administrative Officer (CAO)

SUBMITTED BY: Gord Costie, Director, Conservation Area Services

PREPARED BY: Brandon Good, Senior Manager West, Conservation Area Services

MEETING DATE: June 13, 2024

RE: Spencer Gorge Conservation Area 2024 Reservation Service

BACKGROUND & PURPOSE

The reservation service for Webster and Tew Falls parking lots in Spencer Gorge Conservation Area began in 2020 to address high visitation levels affecting the local community. In the past, the area experienced high numbers of visitors and crowding on the trail system and viewing platforms, particularly during the fall colour period. Additionally, there was traffic congestion in the small community surrounding Spencer Gorge Conservation Area causing safety concerns.

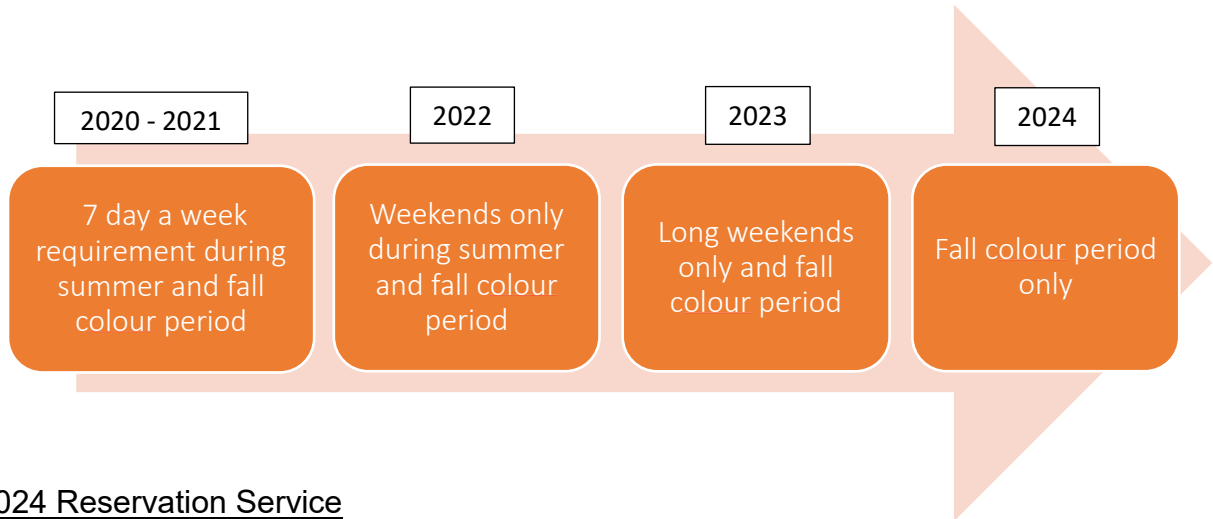
The purpose of this memorandum is to inform CAB that after careful review of parking and visitation data, reservations for 2024 have been further refined to the fall colour period only. This supports visitor management during peak times while increasing access for community members and pass holders from May to September.

STAFF COMMENTS

Spencer Gorge Conservation Area continues to be a spectacular attraction featuring the iconic escarpment features of the Dundas Peak, Tew Falls and Webster Falls. HCA has continued to evolve its visitor management strategy for the conservation area over the past decade, adjusting to its growing popularity.

Reservation Service Evolution

Reservations were initially required seven (7) days a week following the COVID-19 pandemic. The reservation service has evolved since that time as noted in the figure below.



2024 Reservation Service

For the 2024 operating season, reservations for Spencer Gorge Conservation Area will no longer be required for the four long weekends from May to September and additionally, reservations for the fall colour season will start one weekend later. These operational adjustments to the reservation service will open an additional sixteen (16) days in the summer. The reservation requirement will be exclusively during the peak fall colour period, which spans from September 28 to November 10, 2024. Reservations will be required seven (7) days a week during this time.

The changes for 2024 are based on parking and visitation analysis, as well as comments we have received from local residents, visitors, annual membership pass holders and the ward Councillor. The responses highlighted a need for increased open access for community members and pass holders during the summer, while supporting a reservation requirement during peak times to manage visitor experience as well as community impact. The adaptability of the system allows for immediate implementation of the reservation service should visitation management require it.

A single-entry fee is currently under development with our reservation system provider, Camis, that will provide a dual reservation to access to both Webster and Tew Falls parking lots with one parking reservation. This new option will be implemented for the fall of 2024.

Hamilton Conservation Authority (HCA) will implement a comprehensive communication strategy, including information on the HCA website, updates across HCA's social media platforms, clear signage at key locations within the conservation area, and official announcements distributed to local media outlets.

STRATEGIC PLAN LINKAGE

The initiative refers directly to the HCA Strategic Plan 2019 - 2024:

- **Strategic Priority Area – Conservation Area Experience**
 - Initiatives – Develop visitor and parking management strategies to support conservation areas for sustainable recreation, education and tourism.
- **Strategic Priority Area – Conservation Area Experience**
 - Initiatives – Connecting communities and residents with nature by encouraging conservation area use

AGENCY COMMENTS

HCA continues to collaborate with the City of Hamilton to address street parking in the community through parking bylaw enforcement on municipal roadways and special enforcement zones.

LEGAL/FINANCIAL IMPLICATIONS

No financial impacts are anticipated as a result of the 2024 reservation service.

CONCLUSIONS

The 2024 reservation service at Spencer Gorge Conservation Area is designed to provide increased open access for the community from May – September, while supporting controlled visitation during the high-demand fall colour period. The adaptability of the system allows for immediate implementation of the reservation requirement should visitation management require it. This approach is informed by comprehensive data analysis, ensuring a well-considered and effective reservation system.

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Memorandum

TO: Conservation Advisory Board

FROM: Lisa Burnside, Chief Administrative Officer (CAO)

SUBMITTED BY: T. Scott Peck, MCIP, RPP, Deputy CAO/Director,
Watershed Management Services

PREPARED BY: Mike Stone, MCIP, RPP, Manager, Watershed Planning,
Stewardship & Ecological Services

Kasia Zgurzynski, Natural Areas Inventory Coordinator

MEETING DATE: June 13, 2024

RE: City of Hamilton Natural Areas Inventory

BACKGROUND & PURPOSE

The Natural Areas Inventory (NAI) projects have provided an inventory of significant natural areas in the City of Hamilton, so that current information on plant and wildlife species, vegetation communities, and natural area boundaries is available for agencies which are responsible for protecting and enhancing natural features. The first inventory was carried out from 1990 to 1993 by the Hamilton Naturalists' Club and partners, and a second inventory was completed from 2001-2002 with an inventory published in 2003. The Hamilton Conservation Authority, the Hamilton Naturalists' Club, the City of Hamilton and other partners undertook the 3rd edition of the NAI from 2011-2013 with the inventory published in 2014.

Since the completion of the last NAI, the project partners have discussed the method and approach to complete the 4th edition of the NAI. On May 2, 2023, the City of Hamilton Planning Committee, in support of on-going work to develop and advance the Biodiversity Action Plan, passed a motion directing City staff to work with the Hamilton Naturalists' Club and other Biodiversity Action Plan partners to develop the scope and terms of reference to update the NAI. On May 10, 2023 City Council approved the motion, as well as the allocation of \$200,000 from the City's Climate Change Reserve Fund to support the updating of the NAI over the 2023-26 period.

Subsequent to this, a working group comprised of staff from HCA, City of Hamilton and Hamilton Naturalists Club was formed to discuss project management, project requirements, deliverables, staff and budget resources. Based on these discussions, a Collaborative Agreement for the NAI was prepared to provide a framework for the NAI to be carried out, including identification of the project's purpose, activities and deliverables, and partner commitments.

The Collaborative Agreement was endorsed by the HCA Board of Directors at their December 7, 2023 meeting, with the Board directing staff to continue to work with the partners to advance the NAI project. The Board also directed staff to initiate recruitment of a NAI Project Coordinator, and further approved the allocation of \$95,000 to the project from funds held in reserve from the previous NAI.

The purpose of this report is to provide the Conservation Advisory Board with an update on the status of the NAI project.

STAFF COMMENT

The NAI's completed previously have provided an inventory of flora and selected fauna, ecological land classification descriptions, as well as natural area evaluations and recommendations. The NAI has also produced annotated species checklists of vascular plants, fish, breeding birds, mammals, butterflies, reptiles and amphibians based on new occurrence information and historical data and mapping of the core areas, vegetation communities, rare species locations, and rare habitats. As these inventories have been carried out each of the last three decades, the information is a valuable monitoring tool for changes in natural areas and the species that inhabit them over time.

The need for a new NAI project has been identified through partner discussions and related direction from City of Hamilton Council and the HCA Board of Directors to prepare an updated NAI. The next NAI will support and advance the implementation of the Biodiversity Action Plan (BAP), the City's Climate Action Strategy, as well as other partner initiatives and programs for the protection of natural heritage.

The project partners have agreed that the focus of the fourth NAI will differ from the previous inventories. Instead of completing a comprehensive inventory of all natural areas, the NAI will build on earlier work and focus on data/inventory gaps in order to provide a baseline for measuring the state of Hamilton's biodiversity, including the impacts of climate change. The Collaborative Agreement notes that the NAI will be completed under the direction of two steering committees:

1. Project Steering Committee – made up of representatives from the partner organizations, who will oversee the administration of the project and guide project implementation.

2. Technical Steering Committee – made up of experts from the partner organizations, who will guide the detailed technical work being undertaken through the NAI, including refining the scope of the project.

In addition to the three main partners, the Technical Steering Committee (TSC) will include representatives from the three other Conservation Authorities in the City of Hamilton (Grand River Conservation Authority, Conservation Halton, and Niagara Peninsula Conservation Authority) and the Royal Botanical Gardens. It is also notable that, for the first time, the NAI will be undertaken by engaging in Indigenous consultation with the Mississaugas of the Credit First Nation and the Six Nations of the Grand River.

The Collaborative Agreement includes a list of major activities and deliverables for the project which include:

- Complete the update to the existing NAI Natural Heritage Database to improve its function;
- Conduct a background review of previous inventory work and other existing data resources to identify knowledge gaps (e.g. smaller natural areas, species groups such as insects, and habitat types);
- Conduct field work during the 2024 to 2026 field seasons to address the knowledge gaps identified;
- Utilize the results to make recommendations to enhance the protection, management, and restoration of existing natural areas, and to enable the identification of opportunities to dedicate additional land and natural areas for conservation;
- Update the status of species where appropriate based on new occurrence information and other considerations; and
- Explore how to publicize the project and results, including determining whether this can be done as part of the outreach and engagement work that will occur through the Biodiversity Action Plan (BAP) process, and how this might be done using digital methods.

The HCA, HNC and City of Hamilton have all signed the Collaborative Agreement as of May 27, 2024. Under the Agreement, in addition to financial support, HCA will provide overall project management services and in-kind resources, including staff supervision and administrative services (human resources, payroll, and financial).

In this regard, the recruitment and hiring process for the NAI Project Coordinator has been completed, with the Coordinator starting with the HCA on May 21, 2024. The Coordinator's initial focus will be to review existing available background information, and with the support of the TSC to refine the scope of work and develop a project budget.

STRATEGIC PLAN LINKAGE

The initiative refers directly to the HCA Strategic Plan 2019 - 2023:

- **Strategic Priority Area – Natural Heritage Conservation**
 - Initiatives – Promote sustainable development by working with the City of Hamilton on natural heritage issues and undertake the HCA plan input and review program
 - Initiatives – Work with our partners to maintain and enhance the natural heritage inventory

AGENCY COMMENTS

N/A

LEGAL/FINANCIAL IMPLICATIONS

Funding for this project will be required but details on costs are not known at this time. Until the scope of the project is refined, a budget for the project is not available. HCA has held \$95,000 in reserve funding from the 2014 NAI project. In addition, on May 10, 2023, the City of Hamilton Council approved a financial commitment of \$200,000 for the NAI. The project partners will work to raise additional funding for the project as required.

CONCLUSIONS

HCA, HNC, and the City of Hamilton, with support from other project partners, are undertaking an update to the NAI over the 2023-26 period. A Collaborative Agreement has been prepared and signed to provide a framework for completion of the project. The NAI Project Coordinator was recently hired and is now undertaking to review available background data review and to work with the TSC in refining the scope of the project.