



NIAGARA PENINSULA CONSERVATION AUTHORITY

Board of Directors Meeting

October 18, 2024

Carolinian Hall

3350 Merrittville Highway, Thorold ON

ADDENDUM

9. DISCUSSION ITEMS

9.1. Report No. FA-50-24, Appendix 3: [2025 Budget Book](#)

[Link](#)

9.2. Report No. FA-52-24, Appendix 1: Draft Watershed-based Resource Management Strategy

Page 1

9.3. Report No. FA-51-24, Appendix 1: Draft Conservation Area Strategy

Page 49

13. NEW BUSINESS

13.2. 2025 Meeting Schedule – Feedback Request

Page 105



WATERSHED-BASED RESOURCE MANAGEMENT STRATEGY

DRAFT

October 18, 2024

Land Acknowledgement

The Niagara Peninsula watershed is situated within the traditional territory of the Haudenosaunee, Attiwonderonk (Neutral), and the Anishinaabeg, including the Mississaugas of the Credit—many of whom continue to live and work here today.

The territory is covered by the Upper Canada Treaties (No. 3,4, and 381) and is within the land protected by the Dish with One Spoon Wampum agreement. Today, the watershed is home to many First Nations peoples, Métis citizens, and Inuit.

Through this Watershed Strategy, the NPCA reconfirms its commitment to shared stewardship of natural resources and a deep appreciation of Indigenous culture and history in the watershed.

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TABLE OF CONTENTS

1.0 Introduction.....	5
1.1 About Niagara Peninsula Conservation Authority	5
1.2 Watershed Characterization	7
1.3 Integrated Watershed Management	12
1.4 Purpose and Regulatory Framework	12
2.0 Strategic Direction	15
2.1 NPCA Strategic Plan: Nature for All.....	15
2.2 Watershed-based Resource Management Guiding Principles.....	15
2.3 Watershed-based Resource Management Guiding Goals and Actions	16
3.0 Mandatory Programs And Services	20
3.1 Natural Hazard Management	21
3.2 Watershed Resource Management and Climate Change, and Other Programs	21
3.3 Conservation Authority Lands and Conservation Areas	22
3.4 Enabling Services	22
4.0 Watershed Issues And Challenges	23
4.1 Issues and Challenges.....	23
4.2 Actions to Mitigate Issues and Challenges	27
5.0 Implementation And Review	29
6.0 Public Engagement.....	30

6.1 Survey and Results 31

6.2 Indigenous Engagement..... 33

6.3 Public Information Centre 33

6.4 Draft Watershed Strategy 34

Appendix 1: Category 1 Mandatory Programs And Services 35

Appendix 2: 2024 NPCA Budget – Inventory Of Programs And Services Format 47

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1.0 INTRODUCTION

1.1 About Niagara Peninsula Conservation Authority

The Niagara Peninsula Conservation Authority (NPCA) is a community-based natural resource management agency that protects, enhances, and sustains healthy watersheds that was established in 1959 pursuant to the *CA Act*. With 65 years of experience, NPCA offers watershed programs and services that focus on flood and hazard management, source water protection, species protection, ecosystem restoration, community stewardship, and land management.

A watershed is the land that drains into a particular watercourse such as a stream, river, lake. Gravity and the land's topography (the high and low areas) move water, rain, and snowmelt across the landscape from one area to another. Figure 1 below provides a simple illustration showing the different elements within a watershed.

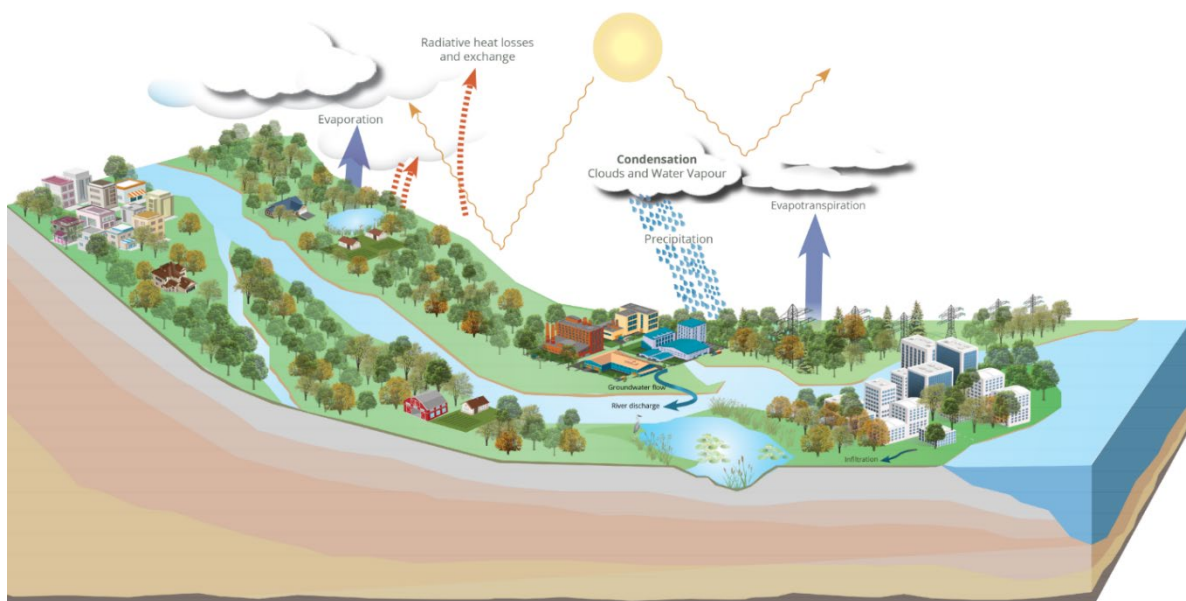


Figure 1 – Watershed Diagram

NPCA’s watershed area encompasses 2,424 km², and includes the regional municipality of Niagara, portions of the City of Hamilton (21%), and Haldimand County (25%). Since time immemorial, this area has been the home to Indigenous peoples—a place for sharing, trading, hunting, gathering, stewardship, and friendship. Currently, the watershed supports a population of approximately 520,000 people. Figure 2 shows the limits of the Niagara Peninsula watershed.



Figure 2 – NPCA Watershed

The watershed is uniquely situated between two Great Lakes, with the Niagara River as a boundary shared with the United States of America. As a result, the watershed area includes several notable natural features such as the Niagara Escarpment Biosphere Reserve, the Niagara Falls, Wainfleet Bog, Ball's Falls, Willoughby Marsh, and other significant landforms such as the Fonthill Kame ice contact-delta complex. The unique microclimate created by the Niagara Escarpment and rich soils supports one of Ontario's most productive agriculture systems, including vineyards, tender fruit orchards, livestock, and various specialty crops (greenhouses for flowers, vegetables, sod farms, and mushroom farms). These important watershed features provide life-sustaining benefits for all and many opportunities to discover nature and culture.

1.2 Watershed Characterization

1.2.1 Topography

The Niagara Peninsula watershed is a unique geographic region situated between Lake Ontario to the north, Lake Erie to the south and the Niagara River forming the eastern boundary, flowing from Lake Erie to Lake Ontario. The topography is defined by rolling hills, flat lands toward the lake shores and the dramatic Niagara Escarpment, the most prominent feature, which extends east-west across the peninsula. The escarpment creates cliffs and ridges, most famously forming the backdrop for Niagara Falls where the Niagara River plunges over the edge of the escarpment.

1.2.2 Physiography

The Niagara Peninsula watershed contains several key physiographic areas, including the Iroquois Plain, Haldimand Clay Plain and the aforementioned Niagara Escarpment.

The Iroquois Plain is located between the Niagara Escarpment and Lake Ontario, and consists of lacustrine deposits of sand, silt, and clay associated with the glacial Lake Iroquois. The Iroquois Plain deposits overlie Halton Till.

The Niagara Escarpment contains a relatively hard dolostone bedrock cap, which is underlain by softer shales and sandstones of the Clinton, Cataract and Queenston bedrock groups. The escarpment was formed by erosion of the softer bedrock materials below the dolostone cap.

The relatively flat lands of the Haldimand Clay Plain extend from the Niagara Escarpment to Lake Erie. The Haldimand Clay Plain was submerged by glacial Lake Warren and much of it is covered by lacustrine clay deposits. Key physiographic features located in the Haldimand Clay Plain include the Dunnville Sand Plain, Onondaga Escarpment, Fonthill Kame-Delta Complex, and several moraines.

The Dunnville Sand Plain is a flat, sandy area formed by glacial outwash located in the southwestern region of the peninsula and is characterized by well-drained, sandy soils. The terrain is relatively flat, with few elevation changes, and its porous soil helps with groundwater recharge.

The east-west trending Onondaga Escarpment is of relatively low topographical relief just north of Lake Erie and rises only a few meters above the surrounding lands. Overburden soils overlie portions of the Onondaga Escarpment near NPCA's western boundary.

The steep-sided Fonthill Kame-Delta Complex was formed when sediment was deposited by melting glaciers, leaving behind a prominent hill that rises roughly 80 metres above the surrounding land and

covers an area approximately 6 kilometres in diameter. Groundwater from the Fonthill Kame-Delta Complex discharges to the north into Twelve Mile Creek, to produce the only cold-water stream and cold-water fish habitat in the Niagara Peninsula watershed.

Other landforms and physiographic features found within the watershed include moraines, eskers, and drumlins.

1.2.3 Geology and Groundwater System

The Niagara Peninsula watershed is unique with respect to an abundance of water resource availability being situated between two Great Lakes, having two bedrock escarpments and three overburden deposits. All the municipal drinking water within NPCA's jurisdiction is derived from surface water sources with groundwater mainly making up rural agricultural, commercial and private residential uses.

When it comes to groundwater in the Niagara Peninsula watershed, there are four main aquifer types that are typically drawn from, these include the surficial overburden, the Guelph/Lockport formations, the Onondaga/Bois Blanc formations, and the "Contact-Zone" aquifer.

The surficial overburden aquifers consist of coarse-grained deposits of sediments classified as unconfined aquifers and are known as the Fonthill Kame-Delta Complex, the Dunnville Sand Plain and the Iroquois Sand Plain.

The Guelph/Lockport formations refer to the bedrock formations consisting mainly of dolostone with some limestone that form the prominent features of the Niagara Escarpment, running the width of the northern portion of the Niagara Peninsula. These formations can be heavily fractured/weathered and can be considered unconfined/confined depending on the abundance of overlying material.

The Onondaga/Bois Blanc formations refer to the bedrock formations consisting mainly of dolostone and limestone that form the prominent features of the Onondaga Escarpment, running the width of the southern portion of the Niagara Peninsula. These formations can also be heavily fractured/weathered and can be considered unconfined/confined depending on the abundance of overlying material.

The "Contact-Zone" aquifer is an overburden/bedrock aquifer that covers over 60 per cent of the NPCA jurisdiction. The term "Contact-Zone" refers to the bedrock-overburden contact where granular overburden material is overlying fractured bedrock. This aquifer is usually overlain by thick deposits of clay from the Haldimand Clay Plain and is generally considered confined.

With respect to groundwater movement across the NPCA, generally groundwater movement is from the west to the east interior and then to either of the Great Lakes, the Niagara River or the Welland River, with

localized areas of groundwater discharge along the escarpments and wetlands. There is also large-scale permanent dewatering activities associated with the Welland Canal tunnels that have an impact on the movement of groundwater within the NPCA.

1.2.4 Surface Water System

Nearly 5,000 km of watercourses in NPCA's watershed jurisdiction encompasses a rich variety of surface water features that are part of three major drainage basins: Lake Ontario, Lake Erie, and the Niagara River. Numerous streams, rivers, and creeks, such as 12 Mile Creek and 20 Mile Creek, flow into Lake Ontario, while the Welland River and other tributaries drain into the Niagara River, a critical waterway connecting the two Great Lakes. The Lake Erie basin includes the southern portion of the watershed, with its own network of smaller streams and wetlands. These surface water features, including significant wetlands, play a key role in maintaining and supporting biodiversity, mitigating flooding, and providing water resources for both human use and natural habitats. Together, these interconnected water systems form the hydrological foundation of the NPCA's jurisdiction.

1.2.5 Natural Heritage System

The Niagara Peninsula is located within the northern most range of the deciduous forest region in North America, also referred to as the Carolinian Life Zone. It has the warmest average annual temperatures, the longest frost-free growing season and the mildest winters in Canada. This zone represents 1% of Canada's land area and it has more species of plants and animals than any other ecosystem in Canada (Carolinian Canada website).

The Niagara Peninsula watershed includes nearly 68,000 hectares of natural features such as wetlands, forests and meadows covering almost 30% of its land base, providing habitats for over 2,200 species of plants and animals highlighting its ecological diversity; unfortunately, nearly 10% of these species are considered to be rare or at risk due to habitat loss, urban sprawl, invasive species competition, pollution, and climate change.

The Niagara Escarpment, a UNESCO World Biosphere Reserve, features dramatic cliffs, forests, and rare species while offering stunning views and geological formations. The Niagara Glen Nature Reserve along the Niagara River is a lush, forested area with deep ravines, limestone outcrops, and unique Carolinian forests.

Other key areas include the Wainfleet Bog, one of the largest remaining bogs in southern Ontario, and Short Hills Provincial Park, which preserves forested valleys and rolling hills. These areas are vital for supporting conservation efforts while providing habitats for species at risk and offering recreational

opportunities like hiking and wildlife observation, enhancing Niagara's appeal as a destination for nature enthusiasts.

1.2.6 NPCA Conservation Area System

NPCA owns nearly 3,000 hectares of land within our watershed across forty-one (41) conservation areas held in public trust for recreation, heritage preservation, conservation, and education. These areas represent a wide range of ecosystem types and protect some of the most significant ecological features in the watershed. NPCA stewards important sections of shoreline along Lake Erie and Lake Ontario, migratory bird habitat, provincially significant wetlands (PSW), Areas of Natural and Scientific Interest (ANSI), important cultural heritage sites, and large sections of the Niagara Escarpment, a UNESCO Biosphere Reserve. Together these conservation areas represent an essential part of the natural treasures and significant ecosystems in the Carolinian Life Zone. In southern Ontario, and especially in the Niagara Peninsula watershed, growing pressures on the landscape are due to increased urbanization, land use changes, and changing climatic conditions. In addition, there is a well-documented increasing demand for access to greenspace for the health and well-being of the growing population. NPCA conservation areas support and enhance local communities, agriculture, recreation, health, tourism, and natural heritage, and are indispensable outdoor recreation areas for over half a million people in the watershed, and our visitors.

1.2.7 Climate

The climate of the Niagara Peninsula is influenced heavily by its proximity to Lake Ontario and Lake Erie, resulting in a moderate humid continental climate. The lakes act as natural temperature buffers, making winters milder and summers cooler than more inland regions creating a longer growing season, crucial for the region's renowned vineyards and orchards. Precipitation is evenly distributed throughout the year, with moderate rainfall and occasional lake-effect snow in the winter. The Niagara Escarpment and the Great Lakes contribute to microclimates that vary across the peninsula, supporting diverse agricultural activities, including the production of tender fruits and wine.

The Niagara peninsula is projected to experience significant warming over the next 30 years, with average air temperatures rising by 2°C. Winter and fall will see the largest increases in daily mean temperatures (2.4°C and 2.2°C), while summer and spring will rise by 2°C and 1.6°C respectively. Winter minimum temperatures are expected to rise from -7.1°C to around -5°C, reducing the number of days below 0°C from 125 to 105.7 days annually. Warmer winters will likely shift precipitation from snow to rain, increasing flood risks and impacting winter tourism.

Heat-related impacts are also expected, with the number of days above 30°C projected to more than double from 10.4 to 23.9 days annually. Days exceeding 25°C will increase by 24.2, and tropical nights (minimum temperatures above 20°C) will rise dramatically from 9.4 to 46.2 days, increasing cooling demands. Conversely, extreme cold days (below -20°C and -15°C) will decrease.

Total annual precipitation is projected to rise by 5%, with the largest seasonal increases in winter and spring. Extreme precipitation events, such as heavy one-day rainfall, are also expected to increase. However, there is variability in model projections, highlighting the need for adaptive strategies. Freeze-thaw cycles will decrease, reflecting milder winters, while dry conditions remain stable.

The growing season is expected to lengthen by eight days on average, due to earlier growing season start days and later end dates, though temperature fluctuations may affect crop hardiness. Warmer conditions will support both plant growth and the lifecycle of pests.

1.2.8 Land Use

Land use on the Niagara Peninsula watershed is diverse, shaped by its fertile soils, unique microclimate, its proximity to the Great Lakes, and its strategic position as an industrial centre and border region, leads to the demands of competing land uses. The Welland Canal, which connects Lake Ontario and Lake Erie, is a major infrastructure feature in the watershed, facilitating shipping and influencing land use along its route.

The combination of climate, physiography, soils and location make the area one of the most productive agricultural areas in Canada. The physical distinctiveness of the region is what has enabled a unique agricultural industry to develop. The wine industry is particularly prominent, with many vineyards and wineries scattered throughout the watershed.

Urban development on the Niagara Peninsula is ongoing with key cities such as City of Hamilton, St. Catharines, Niagara Falls, and Welland, where residential, commercial, and industrial growth is ongoing. These urban centers have expanded significantly due to their strategic location near the U.S. border, the Great Lakes, and major transportation routes like the Queen Elizabeth Way (QEW) highway and the Welland Canal. Smaller, but substantially growing urban areas of Binbrook, Smithville, Grimsby, Thorold, Port Colborne, Fort Erie and Niagara-on-the-Lake residential, commercial, and industrial developments continue to expand. Suburban expansion is also growing as population increases and demands for housing rise.

Efforts to balance agricultural productivity, urban growth, and environmental protection are key in managing land use within the Niagara Peninsula watershed. This balance is critical to protecting water

resources, preserving biodiversity, and ensuring the long-term sustainability of the region's terrestrial and aquatic systems.

1.3 Integrated Watershed Management

The NPCA has adopted an Integrated Watershed Management (IWM) approach to watershed planning. The IWM approach recognizes that water is a valuable resource which should be managed in a sustainable manner in perspective with the balance of natural resources (fisheries, wildlife and lands).

IWM is the process of managing human activities and natural resources in an area defined by watershed boundaries. It is an evolving and continuous process through which decisions are made for the sustainable use, development, restoration and protection of ecosystem features, functions and linkages. IWM serves to assess watershed functions and the potential impacts from change to ensure sustainability. Through adaptive management practices the watershed unit provides ideal context with which we can understand how impacts are felt and how they can accumulate.

For the NPCA, this means adopting the IWM lens when carrying out its programs and services. IWM helps us to focus on priorities and link strategies and actions leading to smarter, science-based decisions that ensure a long and healthy future.

1.4 Purpose and Regulatory Framework

1.4.1 Purpose of the Watershed Strategy

The purpose of the Watershed Strategy is to assist NPCA with evolving or enhancing the delivery of our programs and services and improve efficiency and their effectiveness in supporting mandatory Category 1 programs.

Figure 3 illustrates the framework that has been utilized for developing the Watershed Strategy. As part of this Strategy, the NPCA will integrate guiding principles and objectives from the 10-year Strategic Plan that inform the design of our programs and services, summarize information the NPCA relies on to directly inform and support program and service delivery, and identify any issues and risks which may limit effective delivery of Category 1 programs and services, including actions to address such risks. It provides a mechanism to update the NPCA's programs and services inventory and will help identify where opportunities exist for improving and/or maintaining watershed health.

The NPCA's Watershed Strategy has been developed in accordance with the NPCA's Inventory of Programs and Services for consistent language/program descriptions.

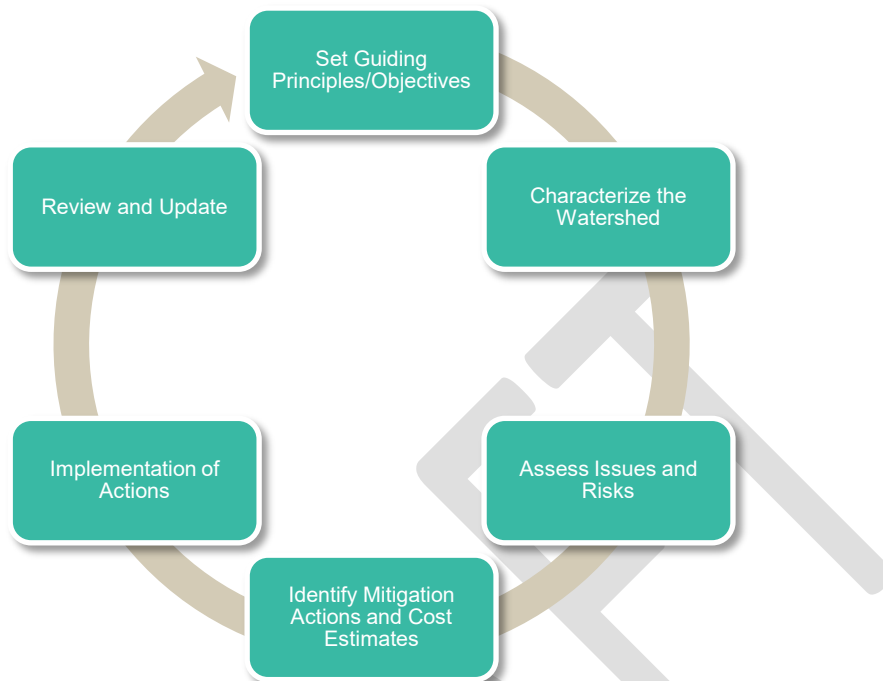


Figure 3 – Watershed-based Resource Management Strategy Framework

1.4.2 Legislative Context

Ontario Regulation. (O. Reg.) 686/21: Mandatory Programs and Services, is a regulation made under s. 21.1(1)2 of the Conservation Authorities Act that prescribes programs and services that a Conservation Authority must provide within its area of jurisdiction.

Conservation Authorities are required to prepare an Inventory of Programs and Services to identify:

- **Category 1:** Mandatory Programs and Services, such as natural hazard management;
- **Category 2:** Municipal Programs and Services at the request of a Municipality, such as tree planting services, and technical research to help inform decision-making; and
- **Category 3:** Other Programs and Services determined by the Conservation Authority to further the purposes of the *Conservation Authorities Act*, such as restoration and stewardship, and watershed monitoring.

NPCA’s programs and services are funded either through municipal levies, municipal cost apportionments requiring agreements for service, service fees, or external funding such as grants.

Table 1: Conservation Authorities Act Funding Mechanisms for NPCA’s Programs and Services

Category 1 Mandatory Programs and Services (O.Reg.686/21)	Category 2 Municipal Programs and Services	Category 3 Other Programs and Services
<ul style="list-style-type: none"> • Programs and services which all CAs must provide in their jurisdiction • Eligible for costs to be apportioned to participating municipalities (levy) without an agreement • Funded through municipal levy, user fees, and/or grants 	<ul style="list-style-type: none"> • Programs and services which a CAs agrees to provide on behalf of municipality • Eligible for costs to be apportioned to participating municipalities if there is an MOU or other agreement • Funded through municipal levy, user fees, and/or grants; MOU/service agreement 	<ul style="list-style-type: none"> • Programs and services which a CA determines are advisable to further the purpose of the Act • Eligible to be apportioned wholly or partially to municipalities through a cost apportioning agreement • Funded through municipal levy, user fees, and/or grants; MOU/service agreement required for use of municipal funding

O. Reg. 686/21: Mandatory Programs and Services also requires Conservation Authorities to prepare a “Watershed-based Resource Management Strategy”.

The Watershed-based Resource Management Strategy must include the following components:

- Guiding principles and objectives that inform the design and delivery of the programs and services that the Conservation Authority is required to provide under section 21.1 of the Conservation Authorities Act (i.e. mandatory programs and services).
- 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.
- A review of the Authority’s programs and services provided under section 21.1 of the Act for the purposes of:

- Determining if the programs and services comply with the regulations made under clause 40 (1) (b) of the Act (e.g. mandatory programs and services, and review of applications under prescribed Acts);
 - Identifying and analyzing issues and risks that limit the effectiveness of the delivery of these programs and services; and
 - 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.
- 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.

2.0 STRATEGIC DIRECTION

2.1 NPCA Strategic Plan: Nature for All

The 2021-2031 NPCA Strategic Plan: Nature for All, is a guiding document that reaffirms our commitment to the mandate of conservation authorities and charts the course for the next generation of work to address the evolving issues of climate change, growth, and the need for green infrastructure. The Strategic Plan is guided by principles based on a conservation-first and ecosystem philosophy, collaboration ethics, and an importance of innovation rooted in science

VISION: Nature for all

We envision a healthy and vibrant environment with shared greenspace and clean water that sustains life for future generations.

MISSION

To create common ground for conservation-inspired action and accountability to nature.

2.2 Watershed-based Resource Management Guiding Principles

The NPCA Strategic Plan: Nature for All, establishes four Guiding Principles that guide the delivery of NPCA's programs and services.

2.2.1 Watersheds transcend municipal boundaries

We are committed to working with the watershed community to support and create climate-resilient and connected natural systems. Integrated watershed management is our approach to managing local natural resources in partnership with our member municipalities.

2.2.2 Natural green infrastructure is critical to life

Our day-to-day work conserves and restores our communities' integral ecological, socio-economic, public safety, and health services. Watershed resources are green infrastructure and natural assets.

2.2.3 Diverse experiences and ideas lead to better and stronger collective impact and outcomes

We seek to exemplify inclusion and equity through meaningful engagement and collaboration.

2.2.4 Innovation requires learning from each other and the past

As a result, we are progressive, resilient, adaptable, and strive for continuous improvement to remain a trusted and valued partner.

2.3 Watershed-based Resource Management Guiding Goals and Actions

Collectively, the **Strategic Priorities** identified in the NPCA Strategic Plan: Nature for All, guide our actions toward a vision of the Niagara Peninsula watershed with robust nature, thriving agriculture, and resilient urban areas vital to the health and well-being of our residents. Each Strategic Priority includes specific goals and actions for the NPCA to undertake with its partners and communities to achieve a thriving environment that sustains life for future generations. The Strategic Priorities, and the specific goals and actions taken from the NPCA's 10-year Strategic Plan that guide the design and delivery of NPCA's Category 1 Mandatory Programs and Services provided under s. 21.1 of the *Conservation Authorities Act* are summarized below. The Goal numbering shown below is as listed in the Strategic Plan

2.3.1 Healthy and Climate Resilient Watersheds

Improving nature for the betterment of all life across the watershed.

- Goal 1.1 Support evidence-based decision-making for climate-resilient watersheds and shorelines
 - Expand and enhance monitoring and associated tools to fill information gaps and research needs

- Lead water quality (e.g., surface and groundwater) and quantity monitoring throughout the NPCA jurisdiction
- Support municipal partners with watershed data collection and analysis to understand cumulative impacts
- Develop a solid understanding of climate impacts and risks on NPCA watersheds
- Implement the Source Protection Program as mandated by the *Conservation Authorities Act* and *Clean Water Act*
- Goal 1.2 Protect people and properties from natural hazards and climate impacts
 - Implement permitting and regulations under section 28 of the *Conservation Authorities Act*
 - Deliver accurate, real-time information for flood forecasting, messaging, and warning using state-of-the-art technology and communication tools
 - Complete and maintain updated floodplain and regulation mapping within the watershed
 - Develop a watershed-based resource management strategy as mandated by the *Conservation Authorities Act*.
 - Update shoreline management plans with a climate resilience lens
- Goal 1.4 Manage NPCA lands to increase biodiversity, habitat connectivity, and natural cover
 - Develop and update management plans for NPCA properties
 - Develop plans to manage invasive species and enhance biodiversity at NPCA properties (e.g., forest management plan)
 - Complete and implement the NPCA land acquisition strategy
 - Implement regulations under section 29 of the *Conservation Authorities Act*

2.3.2 Supporting Sustainable Growth

Helping to create resilient communities through land-use planning and the use of sustainable technologies to prepare for a changing climate and related environmental challenges.

- Goal 2.1 Maintain a high standard of client services, tools, and procedures for planning review and permits
 - Continuously improve implementing NPCA Client Services Standard for Plan and Permit Review protocol to support streamlining, efficiency, and transparency
 - Refine decision-support tools for efficient application management and review
 - Enhance customer service feedback mechanisms to support performance evaluation and reporting
 - Communicate the role and responsibilities of NPCA in plan review and permitting

- Goal 2.2 Lead an integrated watershed management approach to support planning and policy for protecting and enhancing watersheds
 - Implement a proactive sub-watershed work program to complement and inform the quaternary and sub-watershed planning for growth areas within the NPCA jurisdiction within Niagara Region
 - Lead a proactive research agenda to determine cumulative watershed impacts and applied solutions from extreme weather and land-use changes
- Goal 2.3 Lead the implementation of sustainable technologies and green infrastructure best practices for climate resilience and sustainability
 - Advance the implementation of green infrastructure best practices in future development proposals and through NPCA's demonstration projects to minimize impacts to the watershed
 - Engage municipalities, the development community, and other private landowners in implementing green infrastructure and sustainability best practices and actions
 - Identify opportunities for brownfields to enhance green infrastructure or innovative planning for in-fill development
 - Develop education materials/programs to inform the public about sustainable best practices

2.3.3 Connecting People to Nature

Creating equitable access to greenspace for the health and well-being of people.

- Goal 3.1 Create equitable access to greenspace for the health and well-being of people
 - Identify and remove socio-economic barriers to accessing NPCA properties and programs
 - Proactively seek opportunities to enhance trail connections with active transportation routes
 - Highlight and promote recreation (e.g., cycling, hiking, walking, birdwatching) opportunities at NPCA properties
 - Improve services and visitor experiences at NPCA properties (e.g., buildings, trail maps, wayfinding, and accessibility, where possible)
- Goal 3.3 Improve cultural connections and heritage appreciation
 - Maintain and honour heritage buildings at NPCA properties, including St. John's, Cave Springs, Ball's Falls, and Rockway Conservation Areas
 - Examine opportunities to expand cultural connections and heritage programming at all conservation areas

- Work with municipalities on heritage listing and designation of NPCA buildings and properties

2.3.4 Partner of Choice

Strengthening our relationships with stakeholders, partners, the watershed community, and Indigenous peoples.

- Goal 4.1 Strengthen government relations toward collective outcomes and impact
 - Develop a government relations strategy
 - Execute Memorandums of Understanding (MOUs) and Service-Level Agreements (SLAs) with Niagara's lower-tier municipalities
 - Establish the NPCA as an environmental service provider to municipals partners with co-management and delivery of programs and projects of mutual interest
 - Partner with government agencies to advance mutual goals
- Goal 4.2 Foster relationships with the community, non-government organizations, businesses, agriculture, industry, and academic institutions for collective outcomes and impact
 - Provide technical expertise to support our partners and their work through agreements

2.3.5 Organizational Excellence

Striving for excellence through high service delivery standards and accountability to the environment and its people.

- Goal 5.1 Attract, retain, and invest in high caliber, diverse talent to deliver superior outcomes
 - Ensure adequate staff capacity and resources required to deliver on superior outcomes
 - Implement health and safety and corporate wellness programs for staff well-being
 - Modernize human resource policies and practices to encourage a healthy work environment
- Goal 5.2 Improve internal operations and processes
 - Enhance tools and procedures for program and project management, planning, reporting
 - Modernize and invest in digital technology to enhance internal processes (e.g., administrative record management, customer relationship management system)
 - Deploy tools for efficient internal and external information sharing (e.g., online open data hub)
 - Provide staff training on new technologies as they are deployed
- Goal 5.3 Provide high standards of customer service

- Develop customer service guidelines and improve customer service feedback mechanisms
- Implement a client management system that facilitates overall governance and relevant information sharing
- Provide equitable access to information (e.g., AODA standards)
- Utilize various communication tools & tactics to facilitate engagement

2.3.6 Financial Sustainability

Ensuring a financially stable and sustainable organization and continued service-delivery through innovative business models, diverse funding sources, and best practices.

- Goal 6.1 Ensure responsible, sustainable, and sound fiscal practices
 - Consistently review and update fee schedules to retain accurate cost of services
 - Demonstrate the value of NPCA programs and services to stakeholders and municipal partners
- Goal 6.2 Optimize self-generating revenue using innovative approaches
 - Broaden opportunities for potential revenue streams at conservation parks taking a balanced approach
 - Explore varied funding sources and innovative partnerships to diversify funding

3.0 MANDATORY PROGRAMS AND SERVICES

As required by O. Reg. 687/21: Transition Plans and Agreements for Programs and Services under Section 21.1.2 of the Act, the NPCA has prepared an Inventory of Programs and Services that lists all the programs and services provides that it provides under each category (i.e., Category 1, 2, and 3)

The NPCA Inventory of Programs and Services identifies five Key Service Areas:

- Natural Hazard Management
- Watershed Resource Management and Climate Change
- Other Watershed-Related Programs
- Conservation Authority Lands and Conservation Areas
- Enabling Services

3.1 Natural Hazard Management

NPCA provides programs and services that protect people and properties from flood, erosion, and other natural hazards. Ontario's long-term prosperity, environmental health and social well-being depend on reducing the potential for public cost or risk to Ontario's residents from natural hazards. Natural hazards include dynamic beach hazard, erosion hazard, flooding hazard, hazardous lands, hazardous sites and low water or drought conditions. The NPCA provides mandatory natural hazard management programs and services to develop an awareness of the areas that are important for the management of natural hazards, such as wetlands and river valleys, understand the risks related to natural hazards and how these risks may be affected by climate change, manage risks including preventing or mitigating those risks, and promote public awareness of the risks related to natural hazards.

Natural Hazard Management Programs and Services include:

- Flood and Erosion Management
- Flood Forecast and Warning
- Water Resources Engineering
- Shoreline Hazard Management
- Environmental Planning and Policy
- Planning and Permitting
- Compliance and Enforcement
- Planning Ecology

3.2 Watershed Resource Management and Climate Change, and Other Programs

The NPCA provides programs and services that applies research and science to understand the current watershed conditions, cumulative impacts, and risks to watershed. This evidence-based science is used for developing strategies and measures to protect, enhance, and restore watersheds toward creating healthy and climate-resilient watersheds.

Watershed Resource Management and Climate Change Programs and Services include:

- Integrated Watershed Monitoring and Reporting (Water and Terrestrial Monitoring)
- Community Engagement and Ecological Restoration
- Technical Studies to inform Regulatory Mapping Updates

- Natural Asset Management
- Special Projects (e.g., groundwater monitoring)
- Climate Change Resilience
- Watershed and Sub-watershed Resources Planning
- Other Watershed Related Programs (e.g., Drinking Source Water Protection, and the Niagara River Remedial Action Plan)
- Other Projects/Programs (supported by partnerships and external funding)

3.3 Conservation Authority Lands and Conservation Areas

The NPCA is responsible for the management of approximately 3,000 hectares of land, including 41 conservation areas essential to watershed management, environmental protection, cultural heritage and recreation.

Conservation Authority Lands and Conservation Areas Programs and Services include:

- Land Acquisition and Disposition
- Land Management Planning
- Active Recreation Programs
- Camping
- Weddings, Facility Rentals and Special Events
- Education Programs
- Day Camps
- Nature School
- Heritage Programs
- Education Events
- Land Care Program (management of conservation areas)
- Section 29 Enforcement and Compliance
- Land Lease and Agreement Management

3.4 Enabling Services

Various Enabling Services are critical for supporting NPCA programs, the Board of Directors, member municipalities, and the public to enable NPCA to operate in an accountable, transparent, efficient and effective manner.

Enabling Services include:

- Corporate Services (e.g., Finance and Accounting, Facilities' Management, Risk Management and Administrative Support)
- Financial Services (e.g., Capital Budgeting, Capital Asset Management, Financing Planning and Forecasting, Reporting and Analysis)
- People and Performance (e.g., Talent Acquisition, Employee and Labour Relations, Training and Development, Health and Safety)
- Information Management and Technology and GIS
- Communications, Marketing and Public Relations
- Corporate Administration and Governance
- Corporate Support (e.g., Procurement, Contract Management)
- Asset Management, Capital Projects and Land Asset Coordinator
- Vehicles and Equipment

Appendix 1 includes a summary of technical studies, monitoring programs and other information on the natural resources of the NPCA relies on within its area of jurisdiction or in specific watersheds that directly informs and supports the delivery of Category 1 Mandatory Programs and Services under s. 21.1 of the *Conservation Authorities Act*.

4.0 WATERSHED ISSUES AND CHALLENGES

4.1 Issues and Challenges

A component of assessing the effectiveness of the delivery of Category 1 Programs and Services requires the NPCA to identify issues/risks/gaps that limit the effectiveness of program delivery. Issues and risks can be assessed both at the watershed and program scales. This assessment provides an opportunity for the NPCA to evaluate the need for additional actions and/or support to strengthen the delivery of Category 1 Programs and Services.

4.1.1 Climate Variability and Change

Climate change refers to changes in long-term weather patterns caused by natural phenomena and human activities that alter the chemical composition of the atmosphere through the build-up of greenhouse gases which trap heat and reflect it back to the earth's surface. Climate change impacts have the potential to be wide-reaching, affecting ecosystems, agriculture, infrastructure, water supply,

energy, transportation systems, tourism and recreation, human health and well-being, and ultimately the economy.

Adaptation efforts minimize the level of damage, hazard and risks associated with climate change, while also recognizing new opportunities presented with our changing climate. Such adaptation efforts include: flood management programs, ecosystem enhancements, water quality and quantity, municipal plan review/input, local climate change monitoring and modelling, information management, and green infrastructure/stormwater management.

Mitigation efforts are focused on reducing greenhouse gas emissions and other causes that adversely and rapidly influence weather patterns and climatic conditions. They include: green building technologies and retrofits (e.g., LEED), energy conservation, renewable energy, reforestation, carbon sequestration (e.g., wetlands), and low impact development.

A number of the NPCA's current policies and programs help to mitigate the impacts of climate change and assist with adaptation. The NPCA will continue to undertake programs and initiatives which assist with adaptation and mitigation, and participate, coordinate and collaborate with municipal partners and other agencies in addressing the impacts of climate change

4.1.2 Increasing Growth Pressures on Watersheds

As communities grow and change, and as the need for housing increases, more and more marginal land may be considered for development. Areas susceptible to erosion and/or flooding may be identified to accommodate innovative forms of infill development and face greater development pressure. NPCA has an important role to play not only in supporting its watershed municipalities to uphold key provincial interests but will have a vital role in assessing plan review and permit applications for development in areas that are subject to natural hazards and hazardous lands. Maintaining up-to-date and accessible planning and permitting policies and regulation mapping will also assist municipalities and development proponents in understanding where development may be prohibited or limited, and therefore, direct development away from those areas.

4.1.3 Loss of biodiversity, Species at Risk, Habitat and Natural Cover

Watershed residents understand conservation as the intentional preservation of sufficient flora and fauna to ensure the longevity of our environmental systems and associated services. The loss of habitat, increased numbers of species at risk and ongoing decrease in biodiversity remains a major threat to the function and health of Niagara Watershed natural areas and a healthy local ecosystem.

Forests and wetlands in the watershed help to clean the air and water, store and release water, and provide habitat for a wide variety of plants and animals. However, the watershed has changed dramatically over the past 200 years and most of the forests and wetlands have been cleared. Forest cover in the Niagara Peninsula watershed as evident by the current watershed report card (2023) is generally poor, especially in urban areas and productive farmlands. Many wetlands and woodlots are small and isolated but remain important for wildlife, water storage, and nutrient removal. Smaller natural areas may be more vulnerable to adjacent land practices and development pressure. Habitat loss and fragmentation prevents the movement of animals and plants, which become less abundant and more geographically restricted.

The Niagara Watershed is highly representative of the Carolinian Life Zone, the most biodiverse and threatened ecoregion in all of Canada. Research has suggested to at least double the existing natural infrastructure in this landscape through the restoration of natural cover and increased protection of land through securement to guard over 40% of Canada's species and stabilize over 150 species at risk. The NPCA's jurisdiction contains globally significant ecosystems.

The NPCA has a legacy of applying systematic conservation planning and assessment techniques as part of its Integrated Watershed Management approach that determined the Niagara Watershed contributes only 56% percent towards what science and conservation literature recommend at minimum to be considered a somewhat healthy and sustainable landscape. The NPCA has partnered in the past with Niagara Region, City of Hamilton and Haldimand County to conduct a Natural Areas Inventory; however, it is aging and needs to be updated from a temporal perspective but also from a technology perspective in terms of data structure and accessibility. Most concerning, the identification of a reserve system to objectively orient and coordinate protection, restoration and enhancement resource management tools, has yet to be envisioned for the Niagara Peninsula and those that share responsibility in managing this landscape.

Much work has yet to be considered with respect to fine scale habitat considerations for multiple species, whether at risk or not, throughout the watershed as well. There is no better demonstration of this need than the example of the Brook Trout in peril within the declining cold water reaches of the upper Twelve Mile Creek Subwatershed.

NPCA strives to strengthen its role as a trusted science broker role through the ongoing transformation of its programs and services to meet its current Strategic Plan goals associated with healthy and climate resilient watersheds and being a partner of choice. Watershed- based resource management recommendations that are readily available for the Niagara Watershed determined through robust inventory and assessment cycles (adaptive integrate watershed management) should be proactively

available to support partners who have specific management responsibilities (i.e. natural heritage protection, stormwater management) with highly credible scientific environmental data, analysis and strategies to inform tool development (i.e. environmental policy, stormwater specifications) and updates.

4.1.4 Invasive Species

Invasive species are a major threat within Ontario and the NPCA's watershed as they become more abundant and widespread. These species outcompete native species and impact our watershed's existing natural heritage system and features. Devastation of local woodlots and forest patches from the emerald ash borer are readily evident throughout the NPCA jurisdiction. Phragmites invade the Niagara Watershed as well, while many other invasive species are present in our natural areas, and new invasive species are reported ever more frequently.

The NPCA watershed currently does not have an Invasive Species Strategy despite regularly encountering invasive species issues. A strategy would provide guidance regarding management of invasive species within the context of managing watershed-based resources holistically through adaptive integrated watershed management. The identification and validation of service gaps to address invasive species systematically and identify cross-functional dependencies and capacity opportunities within existing NPCA programs and services, and partner initiatives, would be a key outcome and recommendations of an Invasive Species Strategy and programming.

4.1.5 Impacts on Water Quality

There is an adage that proclaims what we do on the land is reflected in the water. Watershed health is strongly influenced overall by water quality indicators. Impacts are well known in the Niagara Watershed as documents through NPCA's ambient Water Quality Monitoring Program. Annual Results continue to indicate that many of the NPCA's watersheds have marginal to poor water quality. Agricultural non-point sources continue to be the predominant cause of impairment, however, point sources related to urban stormwater management contribute increasingly as well. These are compounding in that nutrients and chlorides can concentrate through capture and temporary containment in facilities, but so can their outflow rates under poor designs and increasingly intense weather conditions that can harmfully impact the flow regimes of surface water systems in turn creating increased erosion and suspended solids in our local creeks.

Groundwater quality regularly exceeds aesthetic objectives within the Ontario Drinking Water Standards. Aquifer vulnerabilities due to land-based activities, including urban development, and management practices do persist in parts of the watershed as well.

NPCA's inherent Integrated Watershed Management (IWM) approach to conservation, managing human activities and natural resources within watershed boundaries through adaptive practices, lends itself ideally to addressing water quality issues. Many of the NPCA's current programs and services such as the Enhanced Watershed Monitoring and Reporting Program and Enhanced Watershed Restoration and Stewardship services are being objectively redesigned through the current Strategic Plan implementation to proactively and increasingly in effect, mitigate water quality impacts. The NPCA will continue to undertake programs and initiatives that focus specifically on systematically addressing the persistent water quality concerns within the Niagara Watershed until improvements are realized.

4.2 Actions to Mitigate Issues and Challenges

Through NPCA's Integrated Watershed Management approach, our foundational watershed management activities readily support our mandatory programs and services and those complementary to them. Significant investment in this approach is the primary vehicle with which to mitigate issues and challenges faced by the Niagara Watershed.

These management activities fundamentally include:

- Watershed scale monitoring, data collection and management as well as modelling;
- Watershed scale studies, plans, assessments and/or strategies;
- And watershed wide actions including stewardship, communication, outreach and education.

Watershed management also plays a crucial role in addressing the impacts of climate change, and NPCA is committed to integrating climate action into its approach. A key strategy is flood mitigation, where NPCA uses natural infrastructure, such as wetlands, to absorb stormwater and reduce the risk of flooding. Carbon sequestration is a critical focus, with efforts centered on protecting and restoring forests that capture and store carbon, thereby mitigating greenhouse gas emissions. Enhancing ecosystem resilience is a priority; by improving habitat connectivity and biodiversity, NPCA helps natural systems adapt to the variability brought by changing climate conditions.

Being able to continue to advance NPCA's programs and services forward will require the Authority to continue to broaden the sources of financial support to mitigate the risks associated with reliance on the municipal levy. NPCA continues to find success in seeking external funding sources to support the

implementation of the Strategic Plan and programs and services. While opportunities to contend for available government grants are plentiful at present, the NPCA continues to nurture a diversity of funding strategies that includes working closely with the Niagara Peninsula Conservation Foundation (NPCF) to empower its abilities to draw donations in support of Authority programs and services. Other strategies include revenue generating corporate stewardship programming, conservation impact bonds, or participating in the emergence of bioregional funding ecosystems such as that for the Greater Toronto Bioregion wherein NPCA finds itself.

Enhancement of existing programs and services to assist with delivery of the Watershed Strategy has already begun through implementation of the preceding Strategic Plan. Restoration and Stewardship, Monitoring and Reporting, Education and Outreach are all transitioning towards a refreshed suite of emerging programming strongly steeped in Integrated Watershed Management principles and practices in support of, and complementary to mandatory programs and services. Rebooting formal watershed Planning programming is of utmost importance to officially facilitate the adaptive management cycle on the watershed scale and recurrently derive and track progress towards specific watershed and sub watershed management recommendations.

Restoration programming is being reoriented to be more objective instead of a broad-brush approach to proactively address known issues systematically through the adaptive management process. A target of planting 1 million trees by 2031 has been set to aggressively restore forested habitat, increase canopy cover, enhance water quality, improve biodiversity and build climate resilience across the watershed. Re-emphasis on specific restoration strategies and solutions for the Twelve Mile Creek and Four Mile Creek watershed demonstrate prioritizing sensitive watersheds with varying resource management concerns and ideally these would eventually flow from needs identified in the actions recommended in updated watershed plans. NPCA remains committed to reintroducing cost sharing services and partnerships to assist the agricultural community to put nature back on marginal and environmentally sensitive arable lands. Addressing invasive species, as well as addressing species at risk and other specific habitat requirements are also future program considerations under the intentional approach of the modern and Enhanced NPCA Watershed Restoration and Stewardship services.

The NPCA will actively pursue new and strengthen existing partnerships within the communities that we serve to ensure the preservation, maintenance, sustainability, restoration, and enhancement of the natural environment. These partnerships include those with the Federal and Provincial governments, municipalities, conservation clubs, service groups, private property owners, conservation area neighbours, adjacent Conservation Authorities, the Niagara Peninsula Conservation Foundation, as well

as the NPCA Board of Directors, our staff, and Indigenous communities and individuals. We will develop new approaches to improve conservation efforts and streamline program delivery with these partners.

In the past partnerships such as the one between NPCA, the Niagara Region and provincial Ministry of the Environment behind the former Niagara Water Strategy (initially known as the Niagara Waters Quality Protection Strategy) that was born locally in response to the Walkerton tragedy tremendously advanced the integrated watershed management approach within the Niagara Watershed.

As required by O. Reg. 686/21, costs related to NPCA's enhanced restoration and stewardship, enhanced integrated watershed monitoring, watershed planning and studies, and education and outreach that compliment and support our natural hazard management mandate, as identified through the 2024 NPCA budget are shown in Appendix II. Prioritization of operating and capital costs to continue to support these programs and services are determined through annual budget processes.

5.0 IMPLEMENTATION AND REVIEW

Under O. Reg. 686/21: Mandatory Programs and Services, the NPCA is required to identify a process for the periodic review and updating of the Watershed Strategy, including procedures to ensure stakeholders and the public are consulted during the review and update process. Given the integrated nature of the Watershed Strategy with the Strategic Plan, the Watershed Strategy should be updated within one year of the update to the Strategic Plan. Should there be an exceptional circumstance that would warrant an earlier update to the Watershed Strategy (e.g., legislation changes), then staff could initiative an update outside of the Strategic Plan update cycle and should seek direction from the Board of Directors.

An Engagement Plan will be developed for each update to the Watershed Strategy to ensure NPCA's watershed partners, communities, indigenous communities and interested parties are appropriately consulted. Further, a Workplan identifying key tasks and general timelines will be presented to the NPCA Board upon initiation of an update to the Watershed Strategy.

6.0 PUBLIC ENGAGEMENT

A comprehensive communications and engagement strategy was developed in the early stages of the project, outlining a multi-channel approach and combination of traditional and digital tools and methods for informing and engaging a wide range of internal and external audiences.

NPCA sought to engage Indigenous partners and peoples, partner municipalities, residents, local interest groups, environmental groups and NGOs, technical experts like engineers and consultants, members of the agriculture, environment, planning, development, tourism, and education sectors, and the public within the Niagara Region, Haldimand County, and the City of Hamilton.

Communication and engagement tactics were tailored to these audiences and for each of the three phases of the Watershed Strategy project:

- Phase One (September): Initiate Process & Collect Feedback
- Phase Two (October-November): Check-in & Validate
- Phase Three (December): Launch & Release

Guided by the 2021-2031 Strategic Plan, NPCA staff collaborated on a discussion paper outlining the vision for the continued protection of natural systems and mitigation of natural hazards in the communities we serve, as well as the process for drafting the strategy. The discussion paper was shared on the Get Involved NPCA portal, which served as the central hub offering supporting materials and resources available for review and download, and several online engagement tools.

- Survey Tool: A 10-minute survey was designed to gather input on how the community benefits from NPCA's programs and services, and what risks they perceive may affect their effectiveness.
- FAQ Tool: Identified nine questions and provided clear and concise answers to these common inquiries and concerns from the community.
- Questions: This tool provided a space for community members to ask questions for staff response.

Key outreach efforts included a Public Information Centre (PIC), stakeholder meetings, direct emails, and targeted social media campaigns. The use of both in-person and online engagement opportunities helped ensure accessibility for diverse audiences and broad participation.

A strong focus was also placed on proactive communication, using media releases, social media, and print advertising to keep the public informed of the many opportunities for engagement. NPCA was

successful in obtaining earned media exposure from key media partners such as Niagara Dailies, Village Media, and YourTV Niagara.

Key Tools & Tactics	Results (Ongoing until November 1)
Get Involved NPCA – online engagement portal	793 web visits
On-line Survey	18 responses
Hybrid Public Information Centre + video	27 registrations 6 attended virtually 4 attended in-person 42 video views

NPCA staff, the Board of Directors, and the Public Advisory Committee (PAC) played an essential role in shaping the Watershed Strategy. Staff, as the experts on the ground, had opportunities to share their insights and feedback through virtual meetings, emails, and discussions. Their daily experience and expertise served as a vital sounding board for the project. The Board and PAC were updated regularly, and they provided valuable input, with PAC members also helping to share information and encourage feedback within their communities and networks.

6.1 Survey and Results

The survey launched on September 6 to encourage the public, partners, staff, and any other interested parties to provide feedback and comments on the Watershed Strategy. The main goal of the survey was to obtain feedback on how the community benefits from NPCA’s programs and services, and what issues or risks they perceive may affect their effectiveness. This process provided a mechanism to update NPCA’s programs and services inventory and identify where opportunities exist for improving or maintaining watershed health.

Survey results show participant’s strong familiarity with NPCA programs and services, with most respondents having engaged with flood and erosion management programs, followed by natural asset management, camping, facility rentals and special events.

Participants were provided with 10 issues or risks that could impact the effectiveness of NPCA's program and service delivery as identified by staff experts. They were asked to select the level of impact that each could have—high impact, moderate impact, slight impact, or no impact.

High Impact

- Increased growth pressures on the watersheds
- Securing additional funding sources
- Impacts on water quality
- Loss of natural vegetation cover
- Potential changes to legislation affecting Conservation Authorities
- Climate variability and change

Moderate Impact

- Invasive species
- Increasing use of NPCA conservation areas
- Public accessibility to NPCA conservation areas

Slight Impact

- Increasing demand for environmental education

While some respondents selected 'no impact' for certain risks, they were outweighed by most participants selecting that they would in fact highly impact the delivery of NPCA's programs and services.

Survey participants offered additional input pertaining to other issues or risks that NPCA should consider. Upon analysis of this feedback, most of them had already been identified, however this served as confirmation that NPCA's Watershed Strategy will align with the needs of the community it serves.

- **Biodiversity Loss and Misuse of Natural Areas:** Respondents expressed concerns about the overuse of natural areas by new users, including overfishing, unsustainable foraging (e.g., mushrooms), and the loss of protected wetlands due to policy changes and landowner actions.
- **Legislative and Policy Concerns:** Respondents suggested stricter laws to protect creeks, waterways, and natural forests, as well as measures to limit industrial access to rural lands and ensure that new developments prioritize green spaces, trees, and natural ecosystems.
- **Development Pressures:** The expansion of buildings and development in response to community growth was raised as a concern, particularly regarding its impact on natural habitats and agricultural land.

Lastly, participants provided positive and constructive feedback on how NPCA programs and services could be enhanced. These are summarized in the following reoccurring themes:

- **NPCA Leadership and Collaboration:** Several respondents praised the improvements in NPCA's programs and services, citing strong leadership, collaboration with municipalities, and the positive working relationships fostered by NPCA's senior management.
- **Conservation and Land Protection:** Many emphasized the need for NPCA to prioritize acquiring and protecting vulnerable lands, particularly wetlands and biodiversity-rich areas within urban boundaries. Some also raised concerns about the impact of quarry developments on creeks, streams, and the surrounding ecosystems.
- **Addressing Local Environmental Issues:** Some respondents highlighted specific areas of concern, such as Two-Mile Creek in Niagara-on-the-Lake and Beaverdams Creek in Niagara Falls, encouraging a focus on these as well as increased restoration efforts, and recognition of these areas as important environmental assets.

6.2 Indigenous Engagement

Information about the Watershed Strategy was shared with local First Nations, Indigenous partners and community through email. The list of contacts included local First Nations whose Traditional Territory and/or Treaty Lands are within the NPCA watershed jurisdiction, as well as the Niagara Region Métis Council, Friendship Centres, Indigenous representatives on NPCA's Public Advisory Committee, and local Indigenous businesses and organizations.

6.3 Public Information Centre

NPCA hosted a hybrid Public Information Centre (PIC) on September 24, which was live-streamed and shared on the YouTube channel for individuals who were not able to attend. A presentation on the Watershed Strategy was delivered focused on the process, requirements from the *Conservation Authorities Act*, timelines, and a breakdown of programs and services. A question-and-answer period followed, and in-person and online attendees posed questions to NPCA staff. Attendees were encouraged to visit the Get Involved NPCA portal to fill out the survey and provide additional feedback after the meeting. A total of 27 people registered for the PIC, with four people attending in person and six attending online. The YouTube live stream received 42 views to date.

6.4 Draft Watershed Strategy

Moving forward into Phase Three, the plan emphasizes a consistent feedback loop, with opportunities for a 3-week commenting period for the draft strategy, as well as involvement from NPCA's board and staff. The timeline culminates in a final strategy release, ensuring the community has been engaged and informed at each stage of the project.

Following the initial round of public engagement, NPCA analyzed and incorporated community feedback received through the survey, PAC member comments, and the PIC to refine key areas of most concern and proceed to developing a draft. The draft Watershed Strategy will be posted online for a 3-week commenting period. Additionally, the draft Watershed Strategy will be presented to the NPCA Board of Directors meeting in October for feedback from board members.

[This section to be completed after the draft Strategy has been posted and comments received]

DRAFT

APPENDIX 1: CATEGORY 1 MANDATORY PROGRAMS AND SERVICES

A summary of existing technical studies, monitoring programs and other Information that guide NPCA’s Mandatory Programs and Services

Category 1 Program or Service	Description	Program Guidance	Strategic Plan Goals
Natural Hazard Management			
Protecting people and properties from flood, erosion, and other natural hazards.			
Flood Forecast and Warning	<p>Delivery of accurate, real-time information for flood forecasting, warning, and messaging. Issue flood warnings.</p> <p>Water quantity monitoring specific to flood forecasting and warning: Collect and maintain data from dams, streamflow gauges, rainfall gauges, and snow courses, as well as collect weather forecasts from various sources.</p> <p>Climate Monitoring</p>	<ul style="list-style-type: none"> • Data on precipitation, river flows, reservoir, and Great Lake water levels taken from 21 rain gauge stations, 15 stream gauge stations, 3 Great Lakes gauge stations, and 7 snow course stations. • Observed flood elevations and data gathered in the field. • Flood messages issued by the Alertable mobile app system. 	1.2, 2.2, 2.3, 4.2
Flood and Erosion Management	<p>Management and monitoring of riverine erosion across the watershed jurisdiction.</p> <p>Ice management</p> <p>Floodplain mapping</p> <p>Flood and erosion risk and mitigation studies</p> <p>Operation and maintenance of NPCA flood and erosion control</p>	<ul style="list-style-type: none"> • Digital elevation models and other geospatial data. • Watercourse floodplain mapping. • Hydrologic and hydraulic models. • Ontario Ministry of Natural Resources Flooding Hazard Technical Guidelines • Natural Hazard Infrastructure Operational Plans. • Natural Hazard Infrastructure Asset Management Plans. 	1.2, 2.2, 2.3, 4.2

Category 1 Program or Service	Description	Program Guidance	Strategic Plan Goals
	<p>Infrastructures</p> <p>Flood and erosion hazard mitigation projects</p>		
Shoreline Hazard Management	<p>Shoreline management plans</p> <p>Integration of natural hazard management with overall shoreline climate resiliency and watershed resource management to respond to climate change risk and vulnerability</p> <p>Flood and erosion hazard mitigation projects</p>	<ul style="list-style-type: none"> • NPCA Lake Erie and Lake Ontario Shoreline Management Plans • Digital elevation models and other geospatial data. • Ontario Ministry of Natural Resources Great Lakes Hazards Technical Guidelines 	1.2, 2.2
Environmental Planning and Policy	<p>Review and commenting on proposals, applications, or other matters under the Federal and Provincial Environmental Assessment Acts related to s. 28 and natural hazards</p> <p>Review and process s. 28 permit applications related to public infrastructure (e.g. Hydro One, Enbridge, Bell, municipal, DART protocol)</p> <p>Review and comment on municipal Official Plan Reviews and Updates as</p>	<ul style="list-style-type: none"> • Conservation Authorities Act and related regulations, including O. Reg. 41/24 • Ontario Environmental Assessment Act • Municipal Class Environmental Assessment • Drainage Act; DART Protocol • 2021 MOU between Conservation Ontario and Hydro One Networks Inc. • Planning Act • NPCA Policy Document: Policies for Planning and Development in the Watershed of the NPCA 	1.2, 2.1, 5.3

Category 1 Program or Service	Description	Program Guidance	Strategic Plan Goals
	well as supporting technical studies relating to natural hazards	<ul style="list-style-type: none"> • NPCA Procedural Manual • Mapping of natural hazards (e.g., watercourses, wetlands, unstable soil or bedrock, shoreline areas affected by flooding, erosion of dynamic beach hazards) and regulated areas and other geospatial data • Various MNR Technical Guidelines for Natural Hazards e.g. Erosion and Flooding • Recent and historical orthoimagery 	
Planning and Permitting	<p>Review and commenting on proposals, applications, or other matters under the Planning Act, Niagara Escarpment Act, and Aggregates Resources Act related to s. 28 and natural hazards</p> <p>Review and process s. 28 permits (not related to public infrastructure)</p>	<ul style="list-style-type: none"> • Conservation Authorities Act • Ontario Regulation 41/24 • Niagara Escarpment Planning and Development Act • The Planning Act • NPCA Policy Document: Policies for Planning and Development in the Watershed of the NPCA • NPCA Planning and Procedural Manual • Shoreline Management Plans for Lake Erie and Lake Ontario • Twelve Mile Creek Slope Stability Study • MNRF Technical Guide-River and Streams Systems: Erosion Hazard Limit and Flood Hazard Limit 	1.2, 2.1, 5.3

Category 1 Program or Service	Description	Program Guidance	Strategic Plan Goals
		<ul style="list-style-type: none"> • Mapping of natural hazards (e.g., watercourses, wetlands, unstable soil or bedrock, shoreline areas affected by flooding, erosion of dynamic beach hazards) and regulated areas and other geospatial data • Recent and historical orthoimagery 	
Section 28 Compliance and Enforcement	<ul style="list-style-type: none"> • Investigate complaints and contraventions of Section 28 of the CA Act. • Conduct compliance inspections of issued NPCA Section 28 permits • Gain compliance with the CA Act and associated regulations for contraventions and violations • Initiate and support court proceedings where compliance is unsuccessful • Enforce court orders and settlements as required. • Provide client and public education on compliance and enforcement role of the NPCA 	<ul style="list-style-type: none"> • Conservation Authorities Act • Ontario Regulation 41/24 • Provincial Offences Act and associated Regulations • NPCA Section 28 Compliance and Enforcement Procedural Manual, 2022 • Conservation Ontario/NPCA Section 28 Enforcement Guidelines, 2011 • NPCA Internal Standard Operating Procedures for Compliance and Enforcement • NPCA Policies for Planning and Development in the Watershed, 2022 • NPCA Planning and Permitting Procedure Manual, 2022 • Digital elevation models and other geospatial data • Recent and historical orthoimagery 	1.2, 2.1, 2.2, 4.1, 5.2, 5.3

Category 1 Program or Service	Description	Program Guidance	Strategic Plan Goals
Watershed Management and Climate Change			
Watershed-based Resource Management Strategy	Implementation, review and update to the strategy, including compiling existing resource, management, plans, watershed plans, studies and data	<ul style="list-style-type: none"> Digital elevation models and other geospatial data Recent and historical orthoimagery 	1.1, 1.2, 2.2, 4.1, 4.2
Watershed and Sub-watershed Planning	<p>Updates to NPCA watershed plans</p> <p>Sub-watershed-level assessments and analyses (e.g., water budgets, catchment assessment, non-point source modelling, groundwater modelling, and systematic conservation monitoring)</p> <p>Determine the cumulative watershed impacts from natural resource inventory and resource assessment studies</p> <p>Develop and maintain recommendations and guidelines to assist in the management of watershed natural resources</p>	<ul style="list-style-type: none"> O. Reg 686/21 Data collected under the Provincial Water Quality Monitoring Network and the Provincial Groundwater Monitoring Network and associated reporting Planning applications SWAT non-point source modelling for the Welland River watershed Source Water Protection Assessment and related reports Natural Areas Inventory geospatial data and reports NPCA Watershed Natural Asset Analysis and Valuation study Floodplain Mapping and hydrologic modelling output and associated reports Geospatial data such as Natural Areas Inventory, Hydrography, etc. Digital elevation models, recent and historical orthoimagery 	1.1, 2.2, 4.1

Category 1 Program or Service	Description	Program Guidance	Strategic Plan Goals
Water Monitoring (surface and groundwater)	Complete field sampling and maintenance of program infrastructure in support of the Provincial Water Quality Monitoring Network (PWQMN) and Provincial Groundwater Monitoring Network (PGMN).	<ul style="list-style-type: none"> Ontario Regulation 686/21- Other Program and Services PWQMN and the PGMN Watershed-based Resource Management Strategy NPCA Enhanced Integrated Watershed Monitoring Program 	1.1, 1.4, 2.2
Ecological Monitoring	Ecological monitoring on NPCA-owned lands in support of land management plans	<ul style="list-style-type: none"> Conservation Areas Strategy NPCA Enhanced Integrated Watershed Monitoring Program 	1.1, 1.4, 2.2
Ecological Restoration	<p>Internal restoration services related to conservation area land management plans</p> <p>Internal restoration services to support NPCA programs and services (e.g. review of s. 28 permit applications and compliance and enforcement, informing land securement strategy implementation)</p>	<ul style="list-style-type: none"> Natural Areas Inventory geospatial data and reports NPCA Watershed Natural Asset Analysis and Valuation study Floodplain Mapping and hydrologic modelling output and associated reports Geospatial data such as Natural Areas Inventory, Hydrography, etc. Digital elevation models, recent and historical orthoimagery Various MNR Technical Guidelines for Natural Hazards e.g. Erosion and Flooding 	1.3, 1.4, 4.1, 4.2
Section 28 Regulatory Mapping Technical Studies	Technical studies to support NPCA hazard management functions (e.g. Ecological land classification mapping; S.28 regulation mapping of wetlands,	<ul style="list-style-type: none"> Various MNR Technical Guidelines for Natural Hazards e.g. Erosion and Flooding Conservation Ontario/MNR Guidelines for Developing 	1.1, 1.2, 1.3, 2.2, 5.2

Category 1 Program or Service	Description	Program Guidance	Strategic Plan Goals
	watercourses, and karst; Digital terrain elevation model)	<p>Schedules of Regulated Areas (October 2005)</p> <ul style="list-style-type: none"> • Conservation Ontario Procedure for Updating Section 28 Mapping (2018) • MNR Ecological Land Classification for Southern Ontario (Lee et al. 1998) • Geospatial data, DEM, and orthoimagery 	
Climate Change Resilience	Climate change research to support climate change forecasting, watershed vulnerability and risk assessments, and watershed impact assessment and mitigation strategies	<ul style="list-style-type: none"> • Climate Projections for Niagara Region (TRCA, December 2021) • Niagara Peninsula Watershed Natural Asset Analysis and Valuation Report (Green Analytics, 2024) 	1.1, 1.2, 2.3
Drinking Water Source Protection	<p>Acts as the local watershed-level agency, known as the legislated role of Source Protection Authority (SPA) under the Clean Water Act, 2006, and are required to:</p> <ul style="list-style-type: none"> • Establish and maintain the Source Protection Committee (SPC) • Provide program, administrative, technical, and scientific support to the SPC 	<ul style="list-style-type: none"> • Clean Water Act, 2006 and associated regulations • Safe Drinking Water Act, 2002 and associated regulations • 2021 technical rules under the Clean Water Act, 2006 • Niagara Peninsula Assessment Report • Niagara Peninsula Source Protection Plan • Niagara Peninsula Explanatory Document 	1.1, 4.1

Category 1 Program or Service	Description	Program Guidance	Strategic Plan Goals
	<ul style="list-style-type: none"> Carry out locally initiated amendments to the Assessment Report and Source Protection Plan for the inclusion of new or changing municipal residential drinking water systems Maintain and make accessible source protection program data to inform local decision making Monitor Source Protection Plan implementation Prepare annual progress reports to report on local progress. Support municipalities and local implementors in fulfilling their Source Protection Plan implementation responsibilities 	<ul style="list-style-type: none"> Geospatial Data, DEM, and orthoimagery 	
<p>Conservation Authority Lands and Conservation Areas Manage 2,982 ha of lands, including 41 conservation areas essential to watershed management, environmental protection, cultural heritage, and recreation.</p>			
<p>Section 29 Compliance and Enforcement</p>	<ul style="list-style-type: none"> Conduct compliance inspections for issued NPCA Section 29 permits and/or associated works Investigate complaints and contraventions of Section 29 of the CA Act Conduct routine enforcement inspections of NPCA owned 	<ul style="list-style-type: none"> Conservation Authorities Act Ontario Regulation 688/21 Provincial Offences Act and associated Regulations NPCA Internal Standard Operating Procedures for Compliance and Enforcement Geospatial Data, DEM, and orthoimagery 	<p>1.2, 1.4, 2.1, 5.2, 5.3</p>

Category 1 Program or Service	Description	Program Guidance	Strategic Plan Goals
	<p>properties for unauthorized use, hunting, trespass and/or encroachment</p> <ul style="list-style-type: none"> • Initiate and support enforcements actions (notices and tickets), and court proceedings where compliance is unsuccessful • Enforce court orders and settlements as required • Provide client and public education on compliance and enforcement role on CA owned lands 		
<p>Land Care Program (conservation areas)</p>	<p>Management and maintenance of conservation areas (e.g., gates, fencing, signage, landscaping, pedestrian bridges, trails, parking lots, and roadways)</p> <p>Passive recreation</p> <p>Risk Management</p> <p>Hazard tree management</p> <p>Maintenance of heritage buildings</p> <p>Forest Management</p>	<ul style="list-style-type: none"> • Conservation Areas Strategy • NPCA management and master plans • NPCA Internal Standard Operating Procedure • Geospatial Data, DEM, and orthoimagery 	<p>1.4, 3.1, 3.3</p>

Category 1 Program or Service	Description	Program Guidance	Strategic Plan Goals
Land Acquisition and Disposition	Strategic acquisition of properties related to mitigating the risk of natural hazards in accordance with NPCA Land Securement Strategy	<ul style="list-style-type: none"> Geospatial Data, DEM, and orthoimagery 	1.4, 3.1
Land Management Planning	Conservation Area Land Inventory and Conservation Area Strategy Conservation Area Management Planning	<ul style="list-style-type: none"> Geospatial Data, DEM, and orthoimagery 	1.4
Enabling Services Support for all CA departments, the Board of Directors, member municipalities and the general public enables NPCA to operate in an accountable, transparent, efficient and effective manner.			
Corporate Services	Administrative support Human resources (incl health and safety) Property taxes and occupancy costs Oversight of programs and policies Operating costs not directly related to any specific program or service (e.g., overhead) Records management Grant management	<ul style="list-style-type: none"> CPA Canada Standards and Guidance Collection CPA Canada Standards and Guidance Collection CPA Canada Standards and Guidance Collection 	5.1, 5.2, 5.3, 6.1, 6.2

Category 1 Program or Service	Description	Program Guidance	Strategic Plan Goals
Financial Services	Annual budget Accounts payable and receivable Procurement Payroll Financial analytics and reporting Audit Administration of reserves and investments	<ul style="list-style-type: none"> • Budget Assumptions & Timetable • CPA Canada Standards and Guidance Collection • Employment Standards Act • Collective Agreement - OPSEU L212 • CPA Canada Standards and Guidance Collection • NPCA – Reserves Policy • NPCA – Investment Policy 	5.2, 5.3, 6.1, 6.2
Information Management and Technology	Digital technology, licensing fees, data/voice services Management and integration of data for geographic information system (GIS) Support open data portal and science Mapping and GIS support for watershed resources planning and natural hazards management Support development and implementation of watershed-based resource management strategy	<ul style="list-style-type: none"> • GO-ITS 43 Web Metadata Standard • GO-ITS 46 Common Metadata Elements Standard • Data Capture Specifications for Medium-Scale Hydrographic Features • NPCA’s Digital Transformation Strategy • Bill 194 - Enhancing Digital Security and Trust Act • CA Act • Clean Water Act 	1.1, 1.2, 1.3, 2.2, 5.2, 5.3

Category 1 Program or Service	Description	Program Guidance	Strategic Plan Goals
Governance and Corporate Administration	Support to governance and corporate administration Board governance Public Advisory Committee and ad-hoc committees Strategic planning/ reporting and CAO oversight	<ul style="list-style-type: none"> • Conservation Authorities Act • Municipal Conflict of Interest Act • Municipal Freedom of Information and Protection of Privacy Act and R.R.O 1990, Regulation 823 under the Act • NPCA 2021-31 Strategic Plan 	5.2, 5.3
Asset Management	Capital costs for flood infrastructure Capital costs for conservation land infrastructure	<ul style="list-style-type: none"> • CPA Canada Standards and Guidance Collection • NPCA – TCA Policy • CPA Canada Standards and Guidance Collection • NPCA – TCA Policy 	1.2, 1.4, 6.3

APPENDIX 2: 2024 NPCA BUDGET – INVENTORY OF PROGRAMS AND SERVICES FORMAT

Niagara Peninsula Conservation Authority										
2024 Budgets and Municipal Levies (Budget by Programs and Services)										
Appendix 4 - Report No. FA-41-23			Levy				Non-Levy			TOTAL
Dept	Description	Category	Niagara	Hamilton	Haldimand	Total Levy	Provincial	Federal	Self-Generated	BUDGET
General Levy - Category 1 and 2										
Natural Hazard Management										
301	Flood Forecasting and Warning	1	177,431	48,729	4,378	230,538	31,000			261,538
157	Flood and Erosion Management	1	43,554	11,961	1,075	56,590	5,200			61,790
323	Water Resources	1	79,522	21,840	1,962	103,324				103,324
329	Shoreline Hazard Management	1	18,772	5,155	463	24,390				24,390
345	Environmental Planning and Policy	1 & 2	210,237	57,738	5,187	273,162			153,000	426,162
361	Planning and Permitting	1 & 2	262,711	72,149	6,482	341,342	38,600		576,000	955,942
371	Compliance and Enforcement	1	450,929	123,841	11,126	585,895			40,800	626,695
391	Planning Ecology	1 & 2	80,852	22,205	1,995	105,052				105,052
TOTAL			1,324,008	363,618	32,667	1,720,293	74,800	-	769,800	2,564,893
Watershed Resource Management and Climate Change										
New	Watershed-based Resource Management Strategy	1	-	-	-	-	-	-	-	-
265	Watershed Monitoring and Reporting	1	251,576	69,091	6,207	326,874			12,000	338,874
217	Special Projects (groundwater sampling)	1	12,699	3,488	313	16,500				16,500
125	Regulatory Mapping Technical Studies	1	43,820	12,035	1,081	56,936				56,936
303	Climate Change Resilience	1	94,555	25,968	2,333	122,856		29,323		152,179
TOTAL			402,650	110,582	9,934	523,166	-	29,323	12,000	564,489
Other Watershed Related Programs										
205	Drinking Source Water Protection	1					155,909			155,909
TOTAL			-	-	-	-	155,909	-	-	155,909
Conservation Authority Lands and Conservation Areas										
489	Section 29 Enforcement and Compliance	1	52,418	14,396	1,293	68,107				68,107
427	Land Care Program	1	98,333	27,006	2,426	127,765			862,306	990,071
357	Land Management Planning	1	205,205	56,356	5,063	266,624			85,000	351,624
119	Ecology	1	108,058	29,676	2,666	140,400				140,400
TOTAL			464,013	127,434	11,448	602,896	-	-	947,306	1,550,202
Enabling Services										
101/107/127	Corporate Services (incl HR, Corp Sup, AM)	1	820,734	225,402	20,250	1,066,386	27,646	25,000	665,144	1,784,176
105	Financial Services	1	243,464	66,864	6,007	316,334				316,334
109/131	Information Management and Technology	1	584,157	160,430	14,413	758,999	9,900			768,899
103/150	Governance and Corporate Administration	1	412,284	113,228	10,172	535,684	32,377			568,061
111	Communications, Marketing and Public Relations	1	265,876	73,019	6,560	345,455				345,455
801	Vehicles and Equipment	1	201,338	55,294	4,968	261,600				261,600
153/155	Asset Management	1	15,544	4,269	384	20,197			189,966	210,163
TOTAL			2,543,398	698,505	62,752	3,304,655	69,923	25,000	855,110	4,254,688
TOTAL GENERAL LEVY			4,734,069	1,300,139	116,802	6,151,010	300,632	54,323	2,584,216	9,090,181

Niagara Peninsula Conservation Authority										
2024 Budgets and Municipal Levies (Budget by Programs and Services)										
Appendix 4 - Report No. FA-41-23			Levy				Non-Levy			TOTAL
Dept	Description	Category	Niagara	Hamilton	Haldimand	Total Levy	Provincial	Federal	Self-Generated	BUDGET
General Levy - Category 3 - Cost Apportionment MOU										
Watershed Resource Management and Climate Change										
227	Restoration	3	258,495	70,992	6,378	335,864			202,553	538,417
123	Community Engagement and Stewardship	3	224,042	61,530	5,528	291,100				291,100
343	Integrated Watershed Planning	3	202,348	55,572	4,992	262,912				262,912
TOTAL			684,885	188,093	16,898	889,876	-	-	202,553	1,092,429
TOTAL GENERAL LEVY - CATEGORY 3			684,885	188,093	16,898	889,876	-	-	202,553	1,092,429
Special Levy										
TDB	Capital and Special Projects	1	1,601,271	263,309	14,679	1,879,259			425,952	2,305,211
TDB	Land Securement	2	250,000	148,039	13,252	411,291				411,291
TOTAL SPECIAL LEVY			1,851,271	411,348	27,931	2,290,550	-	-	425,952	2,716,502
Fee for Service - Schedule A										
265	Watershed Monitoring and Reporting								178,500	178,500
TOTAL FEE FOR SERVICE - SCHEDULE A			-	-	-	-	-	-	178,500	178,500
Provincial, Federal, Authority Generated										
Other Watershed Related Programs										
241	Niagara River Remedial Action Plan	3					240,028	158,000		398,028
TBD	Other (new projects/programs - i.e. 2BT)	3					-	-		-
TOTAL							240,028	158,000	-	398,028
Conservation Authority Lands and Conservation Areas										
395/401/403/405	Active Recreation Programs	3							2,104,031	2,104,031
407/411										
413	Educational Programming	3							440,000	440,000
New	Land Management, Other Agencies	3								
TOTAL							-	-	2,544,031	2,544,031
TOTAL PROVINCIAL, FEDERAL, AUTHORITY GENERATED							240,028	158,000	2,544,031	2,942,059
GRAND TOTAL			7,270,226	1,899,580	161,630	9,331,436	540,660	212,323	5,935,252	16,019,671

SUMMARY									
Operating	5,418,955	1,488,232	133,699	7,040,886	540,660	212,323	5,509,300	13,303,169	
Capital	1,601,271	263,309	14,679	1,879,259	-	-	425,952	2,305,211	
Land Securement	250,000	148,039	13,252	411,291	-	-	-	411,291	
TOTAL	7,270,226	1,899,580	161,630	9,331,436	540,660	212,323	5,935,252	16,019,671	



CONSERVATION AREA STRATEGY

DRAFT

October 18, 2024



Niagara Peninsula
CONSERVATION
nature for all

getinvolved.npca.ca/ca-strategy

Addendum
Page 49 of 106

October 18, 2024

Land Acknowledgement

The Niagara Peninsula watershed is situated within the traditional territory of the Haudenosaunee, Attiwonderonk (Neutral), and the Anishinaabeg, including the Mississaugas of the Credit—many of whom continue to live and work here today.

The territory is covered by the Upper Canada Treaties (No. 3,4, and 381) and is within the land protected by the Dish with One Spoon Wampum agreement. Today, the watershed is home to many First Nations peoples, Métis citizens, and Inuit.

Through this Conservation Area Strategy, the NPCA reconfirms its commitment to shared stewardship of natural resources and a deep appreciation of Indigenous culture and history in the watershed.

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Table of Contents

1.0 Introduction	5
1.1 About Niagara Peninsula Conservation Authority	5
1.2 Conservation Area System	5
1.3 Purpose and Regulatory Framework	7
2.0 Guiding Principles and Goals	9
2.1 Strategic Plan	10
2.2 Goals and Objectives	11
2.3 Land Securement Strategy	13
2.4 Inventory of Programs and Services	14
3.0 Conservation Areas	16
3.1 Service Areas and Programs	16
3.1.1 Conservation Area Operations and Programming	17
3.1.2 Land Acquisition and Securement	18
3.1.3 Land Planning & Management	18
4.0 Conservation Area Assessment	19
4.1 Augmenting Natural Heritage	19
4.1.1 Greenbelt and Niagara Escarpment	20
4.1.2 Wetlands	24
4.1.3 Watercourses	26
4.1.4 Great Lakes Shoreline	27
4.1.5 Carolinian life zone	28
4.1.6 Federal 30x30 target	29

4.2 Making Connections	30
4.2.1 Municipal Lands.....	30
4.2.2 Provincial Lands.....	31
4.2.3 Federal Lands	34
4.2.4 Land Trusts	34
4.2.5 Trail Systems.....	35
4.2.6 NPCA Trails.....	36
5.0 Conservation Area Land Use Categories	38
6.0 Public Engagement.....	40
7.0 Periodic Review.....	43
8.0 Future Considerations	43
9.0 Resources	46

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1.0 INTRODUCTION

1.1 About Niagara Peninsula Conservation Authority

The Niagara Peninsula Conservation Authority (NPCA) is a community-based natural resource management agency that protects, enhances, and sustains healthy watersheds that was established in 1959 pursuant to the *CA Act*. With 65 years of experience, NPCA offers watershed programs and services that focus on flood and hazard management, source water protection, species protection, ecosystem restoration, community stewardship, and land management.

NPCA’s watershed area encompasses 2,424 km², and includes the regional municipality of Niagara, portions of the City of Hamilton (21%), and Haldimand County (25%) (Map 1). Since time immemorial, this area has been the home to Indigenous peoples—a place for sharing, trading, hunting, gathering, stewardship, and friendship. Currently, the watershed supports a population of approximately 520,000 people.

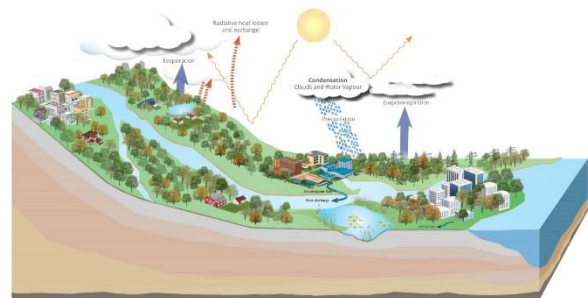


Figure 1: Watershed diagram

A watershed is the land that drains into a particular watercourse such as a stream, river, or lake. Gravity and the land’s topography (the high and low areas) move water, rain, and snowmelt across the landscape from one area to another.

Situated between two Great Lakes, with the Niagara River as a boundary shared with the United States of America, the Niagara Peninsula watershed is a natural treasure of distinct cultural, geological, hydrological, and biological aspects not found elsewhere in North America. It is part of the Carolinian life zone—Canada’s most biodiverse and threatened ecoregion. The Niagara Peninsula watershed boasts approximately 30 per cent natural cover that provides critical habitat such as forested woodlots, slough forests, alvars, and coastal wetlands that support rich biodiversity, including rare plants and animals. The watershed also includes several other notable natural features such as the Niagara Escarpment Biosphere Reserve, Niagara Falls, the Wainfleet Bog, Ball’s Falls, Willoughby Marsh, and landforms such as the Fonthill Kame ice-contact delta complex.

1.2 Conservation Area System

NPCA owns over 3,000 hectares of land within its watershed across 41 conservation areas held in public trust for recreation, heritage preservation, conservation, and education. These areas represent a wide range of ecosystem types and protect some of the most significant ecological features in the watershed.

Map 1: NPCA watershed jurisdiction



NPCA stewards important sections of shoreline along Lake Erie and Lake Ontario, migratory bird habitat, Provincially Significant Wetlands (PSW), Areas of Natural and Scientific Interest (ANSI), important cultural heritage sites, and large sections of the Niagara Escarpment, a UNESCO Biosphere Reserve. Together these conservation areas represent an essential part of the natural treasures and significant ecosystems in the Carolinian Life Zone. In southern Ontario, and especially in the Niagara Peninsula watershed, growing pressures on the landscape are due to increased urbanization, land use changes, and changing climatic conditions. In addition, there is a well-documented increasing demand for access to greenspace for the health and well-being of the growing population. NPCA conservation areas support and enhance local communities, agriculture, recreation, health, tourism, and natural heritage, and are indispensable outdoor recreation areas for more than half a million people in the watershed and its visitors.

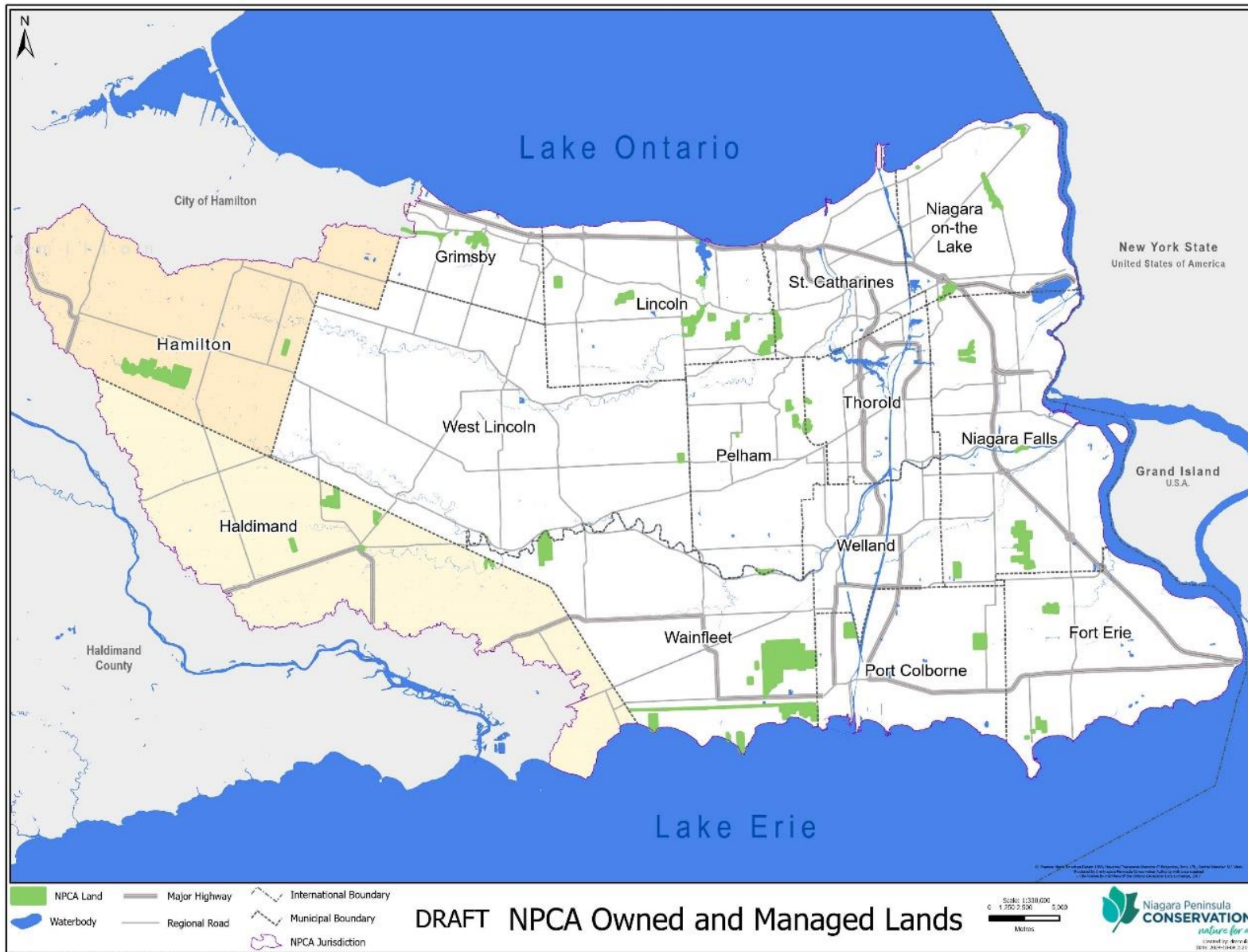
In 2023, NPCA saw a 45 per cent increase in visitors at its four most popular conservation areas, Ball's Falls, Binbrook, Chippawa, and Long Beach, with 160,000 paid day-use visitors, and more than 500,000 visitors to the other 37 conservation areas. The increase in visitation aligns with similar increases seen at other conservation areas in the Greater Golden Horseshoe area. NPCA also attracted 30,000 visitors to its signature events, hosted 32 seasonal campers, and engaged 11,300 students in outdoor education camps and programming. While the increase in paid use supports programs and services as self-generated revenue, they are not without consequences. Consequences of increased use on sensitive environments, trails, and other infrastructure include compaction of soil, erosion susceptibility, increased invasive species, destruction of areas outside of trails, non-permitted uses, littering and dumping, and impacts on native species and biodiversity. Careful consideration through a management plan process can help ensure that proper programs, maintenance, infrastructure, and signage are in place to reduce or mitigate negative impacts as a result of increased use.

1.3 Purpose and Regulatory Framework

NPCA is developing a Conservation Area Strategy (CA Strategy) to outline broad objectives for conservation areas and related programs and services as outlined in the *Conservation Authorities Act (CA Act)* and Ontario Regulation 686/21: *Mandatory Programs and Services* (O. Reg. 686/21). The CA Strategy will guide the management and operation of NPCA's conservation areas. The Regulation requires that the CA Strategy contain the following:

1. Objectives established by the Conservation 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 Conservation Authority, including the sources of financing for these programs and services.

Map 2: NPCA conservation areas



3. Where the Conservation Authority considers it advisable to achieve the objectives referred to in paragraph 1 above, an assessment of how the lands owned and controlled by the Authority may:
 - i. Augment any natural heritage located within the Conservation 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 NPCA's land inventory based on the types of activities 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 CA Strategy by the Authority, including procedures to ensure stakeholders and the public are consulted during the review and update.

In addition to these provincial requirements, it is important to note that while the CA Strategy is an overarching and guiding document applicable to *all* conservation areas owned by NPCA, plans and details that are specific to any one conservation area will not be of focus. Property-specific directions or watershed-level details and priorities will be developed through other strategies, actions, and/or management plans that represent the importance of specific conservation areas or watershed priorities of NPCA, member municipalities, partners, and interested parties. Examples of items that will **not** be represented in the CA Strategy include:

- Invasive species management plan
- Permitted uses for individual conservation areas
- Programs and services for individual conservation areas
- Access points, gates, parking lots
- Restoration plans
- Climate action plan
- Trail management/standards plan
- Wayfinding/signage plan

2.0 GUIDING PRINCIPLES AND GOALS

A CA Strategy is developed within the context of NPCA's Strategic Plan which sets the overall vision, mission, and goals for the Authority from 2021-2031. Nested underneath is, or will be, several supporting strategies and plans developed to help achieve the Strategic Plan and a thriving environment that will sustain life within the watershed for future generations. A CA Strategy will build on NPCA's overall vision

and mission to establish goals, objectives and actions designed to deliver the programs and services our residents and visitors expect from conservation areas.

2.1 Strategic Plan

The 2021-2031 NPCA Strategic Plan: Nature for All, is a guiding document that reaffirms NPCA's commitment to the mandate of conservation authorities and charts the course for the next generation of conservation work to address the evolving issues of climate change, growth, and the need for green infrastructure. This plan is guided by principles based on a conservation-first and ecosystem philosophy, collaboration ethics, and the importance of innovation rooted in science. NPCA consulted broadly with its Board of Directors, Public Advisory Committee, staff, Indigenous groups, partners, members of the public, and other local stakeholders to develop the strategic plan. Collectively, the six overarching priorities outlined below guide our actions toward a vision of the Niagara Peninsula watershed with robust nature, thriving agriculture, and resilient urban areas vital to the health and well-being of those who call it home or visit.

VISION: Nature for all

We envision a healthy and vibrant environment with shared greenspace and clean water that sustains life for future generations.

MISSION

To create common ground for conservation-inspired action and accountability to nature.

NPCA Strategic Priorities:

- 1. Healthy and Climate Resilient Watersheds:** Improving nature for the betterment of all life across the watershed.
- 2. Supporting Sustainable Growth:** Helping to create resilient communities through land-use planning and the use of sustainable technologies to prepare for a changing climate and related environmental challenges.
- 3. Connecting People to Nature:** Creating equitable access to greenspace for the health and well-being of people.
- 4. Partner of Choice:** Strengthening our relationships with stakeholders, partners, the watershed community, and Indigenous peoples.
- 5. Organizational Excellence:** Striving for excellence through high service delivery standards and accountability to the environment and its people.

6. Financial Sustainability: Ensuring a financially stable and sustainable organization and continued service-delivery through innovative business models, diverse funding sources, and best practices.

Core Values: Integrity, Respect, Customer Service, and Conservation Leadership



Figure 2: Strategy Priorities, NPCA Strategic Plan 2021-2031

2.2 Goals and Objectives

The goals and objectives proposed for the CA Strategy are consistent with NPCA’s mandate as defined in the CA Act, the Strategic Plan (Figure 3), and Land Securement Strategy. They inform land acquisition, land planning and management, as well as programs and services offered at NPCA conservation areas. Further, more detailed implementation plans to support these goals and objectives will be developed for property-specific management plans or watershed-based initiatives.

Goal #1: Protection & Management

Examples of objectives that support, and when implemented through specific, measurable actions, will help achieve this goal:

- Steward conservation areas to enhance biodiversity, habitat connectivity, and natural cover, ensuring the watershed’s long-term health and sustainability.
- Increase protected greenspace through land acquisition and securement.
- Develop management plans that prioritize accountability to the environment and future generations.
- Enforce conservation area rules to safeguard these spaces from non-permitted uses that threaten safety and sustainability.

Goal #2: Greenspace Access & Connectivity

Examples of objectives that support, and when implemented through specific, measurable actions, will help achieve this goal:

- Improve accessibility at conservation areas to ensure all individuals can experience the mental, spiritual, and physical benefits of nature.
- Ensure conservation areas are safe, accessible, and welcoming, preserving natural and cultural features.
- Collaborate with partners to enhance connectivity between publicly accessible greenspaces, transportation routes, and trail systems.
- Implement innovative land management approaches to improve access and inclusivity.

Goal #3: Sustainability & Enhancement

Examples of objectives that support, and when implemented through specific, measurable actions, will help achieve this goal:

- Increase restoration and enhancement projects to boost biodiversity, improve water quality, and support native species.
- Use sustainable technologies, infrastructure design, and practices to ensure the safety and sustainability of conservation areas.
- Enhance visitor safety with wayfinding systems, signage, and accessibility information.
- Lead in demonstrating green infrastructure and sustainable technologies in conservation area planning.
- Seek new and innovative opportunities to improve financial sustainability and be more cost-effective.

Goal #4: Climate Change Adaptation & Mitigation

Examples of objectives that support, and when implemented through specific, measurable actions, will help achieve this goal:

- Adapt conservation area programs, services, and asset management to address changing climate conditions.
- Identify and improve climate resilience and adaptation measures in conservation areas.
- Pursue opportunities to mitigate climate change impacts through strategic land acquisition, restoration, and planning.

Goal #5: Engagement & Collaboration

Examples of objectives that support, and when implemented through specific, measurable actions, will help achieve this goal:

- Collaborate with community groups on outreach and environmental initiatives to foster stewardship and create conservation champions.
- Deliver experiential education programs that connect future conservation leaders to nature and promote responsible engagement.
- Expand Indigenous programming, place-making, and recognition of Indigenous heritage.

2.3 Land Securement Strategy

Natural heritage and natural green infrastructure such as forests, wetlands, rain gardens, bioswales, provide critical services and benefits that sustain life for people and wildlife—clean air and water, protection from flooding and erosion, and a source of food and habitats for wildlife species. In the Niagara Peninsula watershed, there are growing pressures on the landscape due to increased urbanization, land use changes, and changing climatic conditions that continue to threaten and impact the integrity of these natural features. In addition, there is an increasing demand for access to green space for the health and well-being of people. NPCA’s Natural Areas Inventory and Nature for Niagara’s Future projects found that the Niagara Peninsula watershed achieves 56 per cent of what science suggests is needed on the landscape for healthy and sustainable watersheds and habitats. Together, these issues have highlighted the critical need to secure more natural areas to improve the environment, mitigate the impacts of climate change, and provide more opportunities for people to enjoy the outdoors.

NPCA has an increasingly important role in land securement for conservation and restoration of natural areas. The CA Act provides guidance on the governance and purpose of conservation authorities, including

the powers to “acquire by purchase, lease or otherwise any land that it may require, and, subject to subsection (2), to sell, lease or otherwise dispose of land so acquired” (Sec. 21 (1)(c)). As part of the CA Act Regulation O. Reg 686/21, there are only certain types of mandatory programs and services that can be provided in relation to the conservation and management of lands including (but not limited to) the development of one or more policies governing land acquisitions and land dispositions (Sec. 9 (2)(vi)).

As noted in Section 2.1, NPCA’s Strategic Plan aims to achieve its vision of ‘Nature for all’ to ensure a healthy and vibrant environment with shared greenspace and clean water that sustains life for future generations. Notably, the plan called for the development and implementation of a land acquisition strategy to achieve Goal 1.4: “*Manage lands to increase biodiversity, habitat connectivity, and natural cover.*” Implementing the land securement strategy will also directly support achieving Goal 3.1 “*Create equitable access to greenspace for the health and well-being of people*” as well as several other NPCA strategic goals and performance measures related to natural hazard protection, ecosystem improvements, and building relationships with partners, stakeholders, and Indigenous peoples.

With the changes to the CA Act and a new strategic plan, updates to NPCA’s land securement efforts were necessary. NPCA undertook a comprehensive process that resulted in the 2022-2032 Land Securement Strategy. This document would guide the securement of lands within the Niagara Peninsula watershed for environmental, natural hazard protection, and societal (recreation, culture, health) benefits.

To achieve NPCA’s strategic goals, the Land Securement Strategy focuses on the following objectives:

- Secure public greenspace in the NPCA watershed using clear and concise decision-making;
- Collaborate with municipal partners, land trusts, stakeholders, and Indigenous communities on mutual land securement goals;
- Implement sustainable and innovative financial models that support land securement and stewardship

2.4 Inventory of Programs and Services

Conservation Authorities are required by regulation to prepare an Inventory of Programs and Services to identify:

- **Category 1:** Mandatory Programs and Services, such as natural hazard management;
- **Category 2:** Municipal Programs and Services at the request of a Municipality, such as tree planting services, and technical research to help inform decision-making; and

- **Category 3:** Other Programs and Services determined by the Conservation Authority to further the purposes of the *Conservation Authorities Act*, such as restoration and stewardship, and watershed monitoring.

NPCA’s programs and services are funded either through municipal levies, municipal cost apportionments requiring agreements for service, service fees, or external funding such as grants.

Table 1: Conservation Authorities Act Funding Mechanisms for NPCA’s Programs and Services

Category 1 Mandatory Programs and Services (O.Reg.686/21)	Category 2 Municipal Programs and Services	Category 3 Other Programs and Services
<ul style="list-style-type: none"> • Programs and services which all CAs must provide in their jurisdiction • Eligible for costs to be apportioned to participating municipalities (levy) without an agreement • Funded through municipal levy, user fees, and/or grants 	<ul style="list-style-type: none"> • Programs and services which a CAs agrees to provide on behalf of municipality • Eligible for costs to be apportioned to participating municipalities if there is an MOU or other agreement • Funded through municipal levy, user fees, and/or grants; MOU/service agreement 	<ul style="list-style-type: none"> • Programs and services which a CA determines are advisable to further the purpose of the Act • Eligible to be apportioned wholly or partially to municipalities through a cost apportioning agreement • Funded through municipal levy, user fees, and/or grants; MOU/service agreement required for use of municipal funding

The NPCA has prepared an Inventory of Programs and Services that lists all the programs and services that it provides under each category (i.e., Category 1, 2, and 3). Drawing from the Inventory of Programs and Services, NPCA must also provide the identification of 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 Section 3.1 provides a more focused description of program areas and services related to NPCA conservation areas.

3.0 CONSERVATION AREAS

3.1 Service Areas and Programs

NPCA conservation areas encompass a diverse range of ecosystem types and protect some of the most critical ecological features within the Niagara Peninsula watershed. These areas include important shoreline properties along Lake Erie and Lake Ontario (e.g., Morgan’s Point, Long Beach, Lakewood), migratory bird habitats (e.g., Point Abino, Jordan Harbour, Beamer), PSWs such as Willoughby Marsh, Wainfleet Bog, and Humberstone Marsh, and ANSIs like Ruigrok, and Eight Mile Creek. NPCA also manages sites of significant cultural heritage (e.g., Ball’s Falls, St. John’s Centre) and large parcels of the Niagara Escarpment (e.g., Rockway, Woodend, Louth, Cave Springs, Mountainview).

Together, these conservation areas capture the unique natural treasures and ecosystems characteristic of the Carolinian life zone found in the Niagara Peninsula. They play a vital role in supporting local communities, agriculture, recreation, health, tourism, and natural heritage. With more than a half million residents and visitors in the watershed, these areas provide vital opportunities to connect with nature and a wide range of ecosystem services that benefit everyone.

Conservation area programs and services are primarily categorized as mandatory (Category 1 services), with some activities such as education and recreation programs classified under Category 2 or 3 services. These programs are integral to NPCA’s operations and align with its strategic goals. Table 2 shows the NPCA program areas related to conservation areas and their respective CA Act categories.

Table 2: NPCA Conservation area programs and services with funding CA Act funding category.

Program or Service	Description	Category
Section 29 Enforcement and Compliance	Conservation areas regulations enforcement and compliance	1
Active recreation programs (conservation areas)	Day use and other services (wedding, event, facility rentals)	3
Education programs	Education programs and camps, heritage programs	2,3
Land Management—other agencies	Land and facilities management, maintenance, and operations for other agencies (Fed, Prov, Region, local)	2,3
Land Care Program (conservation areas)	Management and maintenance of NPCA conservation area—passive recreation, heritage buildings, tree management, hazard, and risk management	1
Land acquisition and disposition	Acquisition to mitigate natural hazard risk	1

	Acquisition cost-shared with municipal partners or agencies	2
	Acquisition in accordance with NPCA land securement strategy	3
Land Management Planning	Conservation Area Land Inventory	1
	Conservation Area Strategy	1
	Conservation Area Management Planning	1

3.1.1 Conservation Area Operations and Programming

The NPCA manages 41 conservation areas, with active recreation services currently offered at four sites: Ball’s Falls, Binbrook, Chippawa Creek, and Long Beach. Active recreation services vary by location and include:

- Camping - Both seasonal and transient options.
- Weddings, Facility Rentals, and Special Events - Available at pavilions, picnic areas, and indoor and outdoor spaces.
- Education Programs - Field trips and overnight programs designed to engage students and visitors.
- Heritage Programs - Featuring field trips, special events, and demonstration days that celebrate cultural heritage.
- Nature School - A BSID-designated (Board School Identification Database) part-time school program focusing on outdoor education.
- Day Camps - Outdoor adventure camps tailored for youth.
- Volunteering – opportunities available for people of all ages to support the delivery of heritage, education, events, and day camps.

All conservation areas are maintained by NPCA’s Land Care Program, which focuses on preserving, enhancing, and sustaining the natural beauty, recreational opportunities, and overall usability of these sites. Maintenance activities include:

- Horticulture, forestry, and grass cutting.
- Trail maintenance and hazard removal.
- Inspection and repair of park amenities.
- Signage installation and maintenance of washroom facilities and heritage buildings.

In addition to ongoing maintenance, NPCA enforces regulations under Section 29 of the CA Act to ensure environmental protection and visitor safety. Key areas of focus include:

- Enforcement of open fire rules.
- Regulation of access times.
- Prohibition of non-permitted uses, such as ATV activities.
- Enforcement against littering and improper waste disposal.

3.1.2 Land Acquisition and Securement

NPCA plays a crucial role in acquiring and securing land to protect and restore natural areas and greenspaces for future generations. Since the late 1950s, NPCA has acquired 41 properties encompassing more than 3,000 hectares. These lands contribute to natural heritage conservation and provide essential services, such as access to greenspace, clean air and water, and protection from natural hazards like flooding and erosion. NPCA's Land Securement Strategy sets a target to secure 180 hectares of land by 2031, and to date NPCA has achieved 30% of this target.

3.1.3 Land Planning & Management

NPCA's 41 conservation areas are made up of diverse ecosystem and vegetative community types, including forests, PSWs, ANSIs, recreational lands, cultural sites, and areas designated for flood and erosion control. Each property requires a tailored management plan to guide permitted uses, access levels, enhancements, programs, services, and risk management to ensure visitor safety.

Land planning directs the overall design of each conservation area, while land management focuses on the sustainable use and enjoyment of these areas by the public. All NPCA current and future management plans are guided by the CA Strategy, which establishes goals and objectives that align with NPCA's vision, mission, and priorities for the conservation area system that are consistent with the Strategic Plan. Conservation area management plans will aim to increase access to greenspace where appropriate, connect people to nature, and ensure the long-term sustainability of the watershed.

The NPCA's land planning program collaborates with other NPCA programs and departments, including planning and development, land care, restoration, and capital projects, through coordinated internal working groups and teams, enhancing overall program effectiveness and alignment.

For properties located within the Niagara Escarpment Plan Area, the NPCA consults with the Niagara Escarpment Commission. The Niagara Escarpment Planning and Development Act (NEPDA) provides for

the maintenance and protection of the Niagara Escarpment and ensures all development that occurs is compatible with the environment. The NEPDA also provides the Niagara Escarpment Parks and Open Space System Planning (NEPOSS) framework, which outlines the process for developing management or master plans as well as guidelines for Escarpment properties.

4.0 CONSERVATION AREA ASSESSMENT

O. Reg. 686/21 notes that a conservation authority may include within their Conservation Area Strategy an assessment of how the lands owned and controlled by the authority:

- i. may augment any natural heritage located within the authority's area of jurisdiction;
- ii. integrate with other provincially or municipally owned lands or other publicly accessible lands and trails within the authority's area of jurisdiction.

Section 4.1 below outlines how NPCA conservation areas augment natural heritage within the watershed context while Section 4.2 outlines how the lands are integrated with other provincially, municipally owned lands or other publicly accessible lands and trails within the Niagara peninsula watershed.

4.1 Augmenting Natural Heritage

The Niagara Peninsula watershed is a natural treasure of distinct cultural, geological, hydrological, and biological aspects not found elsewhere in North America. It boasts approximately 30 per cent natural cover that provides critical habitat such as forested woodlots, slough forests, alvars, and coastal wetlands that support rich biodiversity, including rare plants and animals. The watershed is uniquely situated between two Great Lakes, with the Niagara River as a boundary shared with the United States of America. The landscape in the Niagara peninsula watershed today “is the result of numerous depositional and erosional events and processes spanning over 500 million years, resting on a foundation established much, much earlier” (Niagara Geology, Niagara Geopark). As a result of these processes, the watershed includes several notable natural features including the Niagara Escarpment, Horseshoe Falls and Niagara Glen, Wainfleet Bog, Ball's Falls, Willoughby Marsh, and other significant landforms such as the Fonthill Delta-Kame complex, large parcels of slough forest, and PSWs. Unique microclimates created by the Niagara Escarpment and rich soils support one of Ontario's most productive agriculture systems, including vineyards, tender fruit orchards, livestock, and various specialty crops. The geology of this area includes a sequence of shales, sandstones, limestones, and dolostones. These important features provide life-sustaining benefits for all and many opportunities to discover nature and culture.

Over a decade ago, NPCA worked with several municipal and community partners to undertake the Natural Areas Inventory (NAI) project. The purpose of this project was to identify, classify, and map natural areas in the Niagara Peninsula watershed. The goal of the project was to use industry standard, scientifically defensible protocols to inventory the natural areas in the jurisdiction. Following the work of the NAI, the Nature for Niagara's Future (NFNF) study assessed the natural features identified during the NAI and their contributions towards a healthy and sustainable system. This study found the watershed's natural cover is approximately 30 per cent, two thirds of which is mature forest, with nearly half of the forests being swamp-type wetland communities. Additionally, the NFNF study found that the Niagara Peninsula watershed currently achieves only 56 per cent of what science suggests is needed on the landscape for healthy and sustainable ecosystem functions, habitats and natural resilience. Planning for natural heritage is necessary for the maintenance and enhancement of biodiversity, protection of species at risk, mitigation of climate change, protection and improvement of water quality, and the fulfillment of public values. A healthy natural environment is important for a thriving economy and rich cultural heritage. NPCA used a consolidated layer of the Niagara Region Natural Environment System and Provincial Natural Heritage System (NHS) layers from the Greenbelt and Growth plans to assess how NPCA conservation areas augment or enhance the natural heritage in our watershed. For Haldimand and Hamilton, a similar consolidated layer was used based on the most recent information available.

Map 3 shows NPCA's conservation areas and how these lands fit within the natural heritage features and areas in the watershed. Nearly all NPCA's conservation areas are located within natural heritage system boundaries and represent significant parcels of land that enhance the ecosystem services, biodiversity, and overall connectivity of a variety of habitat types thus playing a critical role in creating a healthy natural environment landscape in the Niagara Peninsula watershed. Even the few conservation areas partially or wholly outside natural heritage features augment the system simply by virtual of being protected greenspace and offering opportunities to improve features through restoration and enhancement.

4.1.1 Greenbelt and Niagara Escarpment

Within the Niagara Peninsula watershed, 11 conservation areas can be found along the Niagara Escarpment, which holds local and international significance as a United Nations Education, Scientific and Cultural Organization (UNESCO) designated Biosphere Reserve. The Niagara Escarpment extends from Queenston, a small hamlet in the Town of Niagara-on-the-Lake, to Tobermory in the Bruce Peninsula and represents the largest continuous forested area in south-central Ontario. All conservation areas and parks within the Niagara Escarpment are connected by the Niagara Escarpment Parks and Open Space System (NEPOSS), and the Bruce Trail, a natural hiking trail managed and stewarded by the Bruce Trail Conservancy. As required in Part 3 of the Niagara Escarpment Plan (NEP), each conservation area within

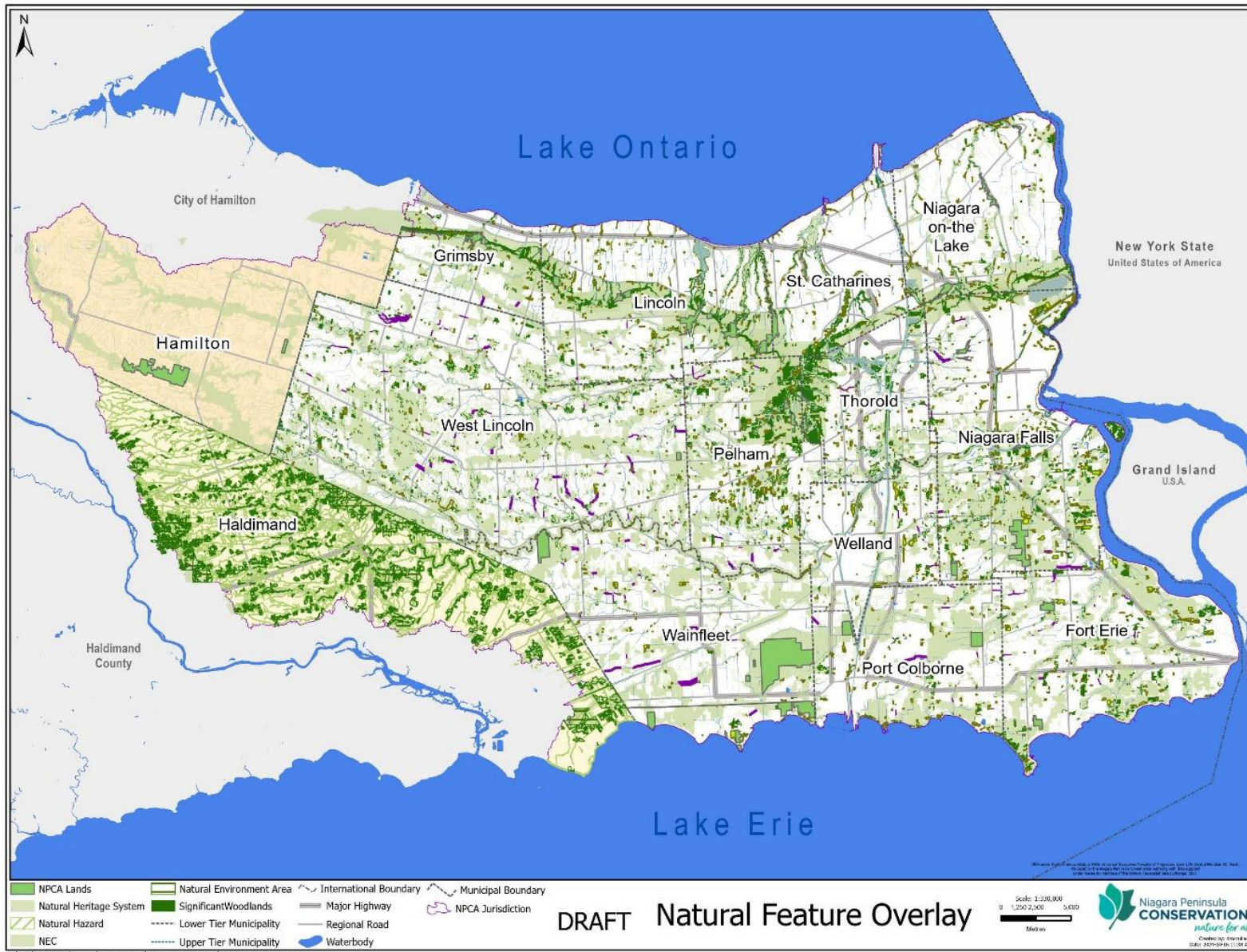
the NEPOSS must create a management plan to guide permitted activities and identify “zones” within the conservation area using the NEPOSS classification system, underlying NEP land use designations, and identifying the cultural, natural, and recreational features of the site. NPCA will develop management plans for all conservation areas within the NEPOSS and seek approval and endorsement from the NEC and the Ministry of Natural Resources and Forestry (MNR) to ensure compatibility and collaborative protection of this important natural heritage area.

The 11 conservation areas in NEPOSS (Map 4) augment and enhance the network of protected areas along the Niagara Escarpment owned by other conservation authorities, municipalities, Bruce Trail Conservancy, Escarpment Biosphere Conservancy, land trusts, and private landowners. This connected fabric of protected lands helps to mitigate and improve resilience to climate change, support green infrastructure, capture and store carbon, recharge aquifers, and protect biodiversity and sensitive areas to achieve the shared goal of beautiful, sustainable, and healthy landscapes in Ontario. NPCA conservation areas not only offer endless environmental benefits, but they also support culture, recreation, and tourism goals of the Greenbelt Plan.

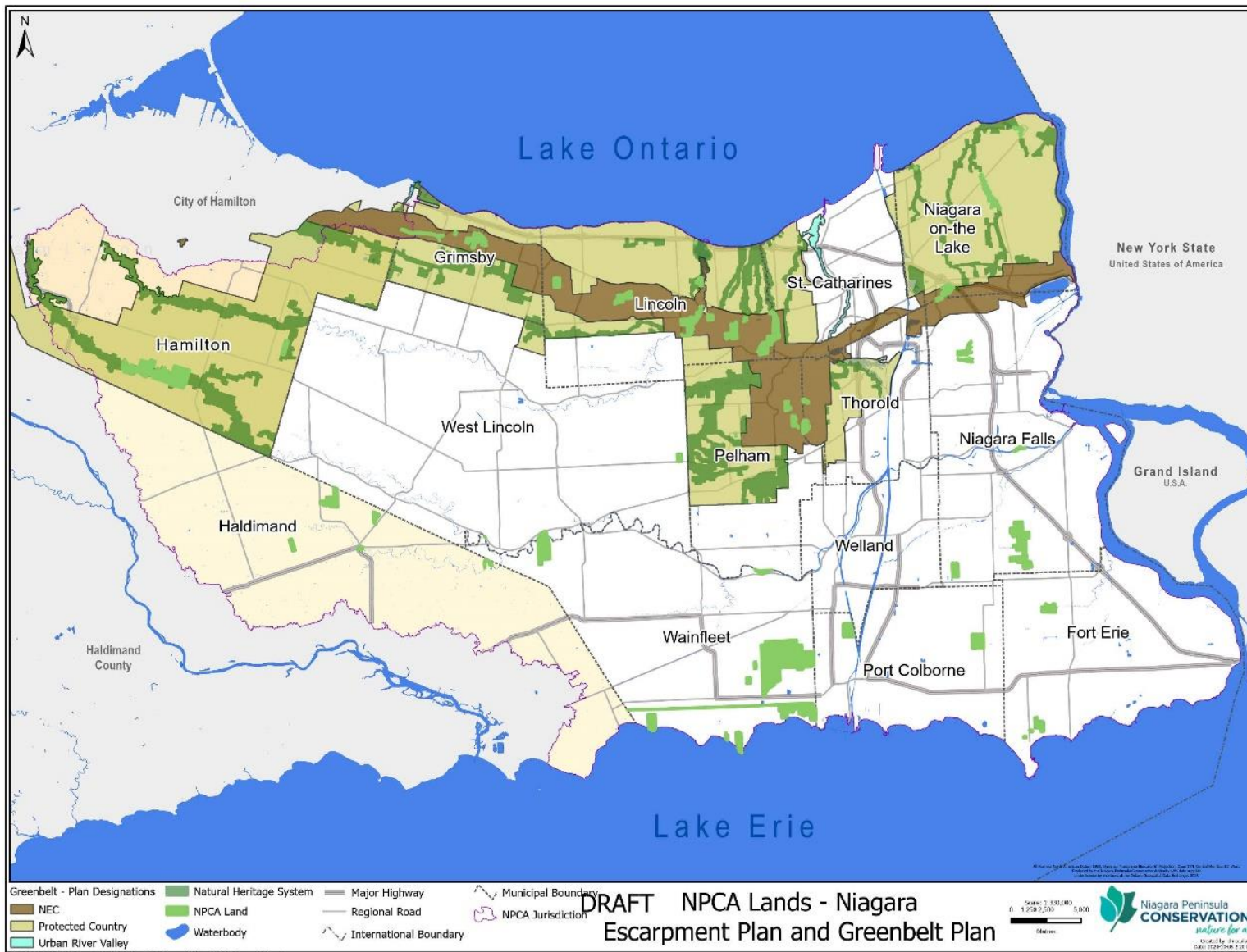
All NPCA conservation areas within the NEPOSS support the culture, recreation, tourism, climate change, natural resources, and environmental protection goals of the Greenbelt Plan, NEPOSS council, and the Niagara Escarpment Biosphere Network. They include:

1. Ball’s Falls
2. Beamer Memorial
3. Cave Springs
4. Lathrop
5. Louth
6. Mountainview
7. Rockway
8. St. John’s Centre
9. St. John’s
10. Woodend
11. Woolverton

Map 3: NPCA conservation areas and the natural heritage of the watershed



Map 4: NPCA conservation areas in the context of the Greenbelt Plan natural heritage system



4.1.1.1 Niagara (Aspiring UNESCO Global) Geopark

Cultural and heritage connections are strengthened through collaboration and partnerships with multiple organizations and levels of government. NPCA is a partner of the Niagara Geopark, and a member of their Board of Directors. The Niagara Geopark is an organization that aims to achieve the UNESCO Global Geopark designation for the entire Niagara Region using a sustainable tourism-oriented model and building on the rich geological foundation of more than 500 million years. Most recently, Plenty Canada, an Indigenous non-government organization devoted to the protection of Mother Earth, partnered with the Niagara Escarpment Biosphere Network (NEBN) and the Niagara Geopark to support the integration of Indigenous linguistic, artistic, cultural, and historical elements within the Niagara Geopark Trail Network and Plenty Canada's Great Niagara Escarpment Indigenous Cultural Map, further demonstrating that NPCA conservation areas support culture, recreation, Indigenous leadership, and tourism in addition to environmental protection. The Niagara Geopark Geosite Map highlights at least 11 NPCA conservation areas that contribute to this designation due to their significance as both cultural and natural heritage locations:

1. Ball's Falls
2. Beamer Memorial
3. Cave Springs
4. Louth
5. Morgan's Point
6. Mountainview
7. Rockway
8. St. John's
9. Wainfleet Bog
10. Wainfleet Wetlands
11. Woodend

4.1.2 Wetlands

Wetland ecosystems are a very important part of the natural landscape and historically dominated a significant percentage of the Niagara Peninsula watershed, particularly in the southern portion. This once dominant ecosystem type is evident when studying local geology, hydrogeology, soils, and aerial photography where remnants of these wetlands can still be seen in present-day agricultural fields as darker sinuous lines representing the former sloughs. Less than 30 per cent of the original wetlands remain in Ontario, in the Niagara Peninsula watershed that number may be as low as 10 per cent. The creation of a series of Welland Shipping Canals beginning in the mid-19th century significantly altered the drainage patterns of the landscape, lowering the water table in some areas and draining some of these wetland ecosystems in the process. Other wetlands were drained to support development and the creation of a fabric of agricultural lands in this area.

A large portion of the forest cover in the Niagara Peninsula watershed is mature swamp forest, sometimes called slough forest which is a swamp, or tree-dominated wetland, with rolling topography that features linear shallow channels and narrow upland ridges between them. Sloughs are easily seen in air photos as darker features between more upland sections of the swamp. The channels, or sloughs, will have water seasonally (ephemeral) and will be dry during the summer months, thus this area contains both upland and wetland species. Slough forests are unique and diverse landscapes that are part of a healthy ecosystem, typically home to high biodiversity and unique species. They are very important for food, shelter, and habitat for various wildlife and the general hydrologic function of the surrounding ecosystem. The sloughs can hold and slowly release water during rain events, an important feature of wetlands, especially in urban areas which typically have a large amount of hard or impervious surfaces where water cannot seep into the ground. Even small isolated seasonal pools which contain standing water for only a short period in the spring and summer can provide vital habitat for rare and specialized species such as frogs, toads and salamanders which rely on fish-free sources of water to survive and are not typically found in other wetland types. NPCA conservation areas that are dominated by swamp slough forest include Willoughby Marsh, Humberstone Marsh, Point Abino, and Smith Ness Forest.

The Niagara Peninsula watershed includes a lesser-known escarpment feature, the Onondaga Escarpment, one of the most noticeable geologic features in the southern portion of the watershed that forms a discontinuous ridge a few metres in height from Fort Erie to beyond Dunnville. In the area immediately north of the Onondaga Escarpment, the remnants of glacial retreat became an extensive bog ecosystem now known as the Wainfleet Bog and Humberstone Marsh, large sections of which are owned by NPCA, the Nature Conservancy of Canada and the Province of Ontario, in addition to many sections that are still privately owned. The Wainfleet Bog conservation area is federally, provincially, regionally, and locally significant as the largest remaining bog in southern Ontario, and the only bog in the Niagara Peninsula watershed. It has been identified as a Key Biodiversity Area (KBA) by Birds Canada, recognizing it as one of the most important remaining places for biodiversity. The Wainfleet Bog is one of the six Landowner Outreach Areas (LOA) established in the Land Securement Strategy for more concentrated effort in the next 10 years to expand the conservation area and protect additional lands in that community.

Of the 41 NPCA conservation areas, 30 represent one of the three different wetland types found in the Niagara Peninsula watershed—swamp, marsh, bog—making these areas significantly important to the natural heritage, the flood storage capacity, groundwater recharge and watercourse baseflows in the watershed. While a few have small pockets or pieces that are wetland, many have significant sections of the conservation area in swamp, marsh, or bog.

The following are examples of NPCA conservation areas dominated by wetlands:

1. Baird Estate
2. Chippawa Creek
3. E.C. Brown
4. Eight Mile Creek
5. Gainsborough
6. Hedley Forest
7. Humberstone Marsh
8. Lathrop
9. Long Beach
10. OPG
11. Oswego Creek
12. Point Abino
13. Ruigrok Tract
14. Shriners Creek
15. Smith-Ness Forest
16. Two Mile Creek
17. Wainfleet Bog
18. Wainfleet Wetlands
19. Willoughby Marsh

4.1.3 Watercourses

There are several significant water courses in the Niagara Peninsula watershed, including the bi-national Niagara River, the Welland River, and Twelve Mile Creek—the only cold-water stream in the watershed. Niagara Parks owns and maintains over 1300 hectares of parkland along the entire length of the Niagara River from Fort Erie to Niagara-on-the-Lake, including lands along the Horseshoe Falls and the Niagara Gorge, therefore the NPCA does not own any lands on this important stretch of land. NPCA owns parcels along the Welland River, Black Creek, Twenty Mile Creek, Four Mile Creek, Twelve Mile Creek, and many other watercourses which help to conserve the floodplain functions, reduce erosion, improve water quality, mitigate flooding, protect headwaters, and contribute to habitat for local species. Twelve Mile Creek is the only cold-water stream in the Niagara Peninsula watershed and the only one capable of supporting a population of native Brook Trout. Conservation areas that contain or are adjacent to and supporting the function of local watercourses include:

1. Ball's Falls
2. Canborough
3. Chippawa Creek
4. E.C Brown

5. Eight Mile Creek
6. Jordan Harbour
7. Lathrop
8. Louth
9. Oswego Creek
10. Port Davidson
11. Rockway
12. St. John's Centre
13. St. John's
14. Stevensville
15. Two Mile Creek
16. Virgil Dam and Reservoir

4.1.4 Great Lakes Shoreline

The shorelines along Lake Ontario and Lake Erie are dynamic places, as they are in a state of constant flux. Shoreline areas are made up of an accumulation of detritus material such as sediment that is continually being transported and deposited by wave action, currents and wind. The composition of sediments varies from clay and silt to sand and gravel, to cobbles or even boulders. As a result, shorelines are constantly being shaped and re-shaped. These changes can range from a period of a few hours to days or even years and decades in response to the changes in waves, winds, water levels currents and the movement and accumulation of ice.

The Lake Erie and Lake Ontario shorelines are both important linkages to the Great Lakes watershed, invaluable as the source of drinking water for millions of people and home to a large variety of wildlife, plants, and insects. NPCA owns multiple conservation areas along the north shore of Lake Erie, and one along the south shore of Lake Ontario. Conservation areas along the Great Lakes include important ecosystem types that are regionally and provincially rare—including sand dunes, beach/bar, alvar, and tallgrass prairie, each of these home to significant flora and fauna species. Most of the Lake Ontario shoreline in the NPCA's watershed has been identified as a Key Biodiversity Area (KBA) by Birds Canada, further establishing the importance of this area to local biodiversity and vulnerable species. Several NPCA conservation areas have Great Lakes shorelines in their boundaries and further support and enhance these sensitive ecosystems. These include:

1. Jordan Harbour (Lake Ontario)
2. Lakewood (Lake Erie)
3. Long Beach (Lake Erie)
4. Morgan's Point (Lake Erie)

Further, NPCA conservation areas within 2 kilometres of Great Lakes shorelines include:

1. Baird Estate (Lake Erie)
2. Beamer Memorial (Lake Ontario)
3. Eight Mile Creek (Lake Ontario)
4. Point Abino (Lake Erie)
5. Two Mile Creek (Lake Ontario)
6. Wainfleet Bog (Lake Erie)
7. Wainfleet Wetlands (Lake Erie)

4.1.5 Carolinian life zone

The far south portion of Ontario is known as the Carolinian life zone, stretching from Toronto to Windsor and widely believed to be one of the most biodiverse and threatened ecosystems in Canada. The entire Niagara Peninsula watershed is within this zone. According to Carolinian Canada Coalition, this zone is home to one-quarter of Canadians but represents only 0.25 per cent of the landmass.

Due to the increasing growth pressures in the zone, it also has more rare and endangered wildlife than any other life zone in Canada. Starting in 1984 and culminating in 2005 with the Carolinian Canada Signature Sites guide, Carolinian Canada worked with leading ecologists in Ontario as well as local organizations, landowners, and community groups to identify the most critical unprotected natural areas in the Carolinian life zone. Today, many of the 38 Signature Sites identified are protected, or partially protected. NPCA owns 11 conservation areas that help protect all six Carolinian Canada Signature Sites found within our watershed (name of signature site is in brackets):

1. Baird Estate (Point Abino Peninsula Sandland Forest)
2. Ball's Falls (Jordan Escarpment Valley)
3. Beamer Memorial (Grimsby-Winona Escarpment and Beamer Valley)
4. Canborough (Caistor Canborough Slough Forest)
5. Jordan Harbour (Jordan Escarpment Valley)
6. Lathrop (Fonthill Sandhill Valley)
7. Point Abino (Point Abino Peninsula Sandland Forest)
8. Ruigrok Tract (Caistor Canborough Slough Forest)
9. St. John's Centre (Fonthill Sandhill Valley)
10. St. Johns (Fonthill Sandhill Valley)
11. Willoughby Marsh (Willoughby Clay Plain)

4.1.6 Federal 30x30 target

In 2022, the Federal government set the goal of conserving 30 per cent of Canada’s land and water by 2030 to tackle biodiversity loss and climate change, alongside more than 190 countries at the United Nations Conference of the Parties (COP15) to the Convention on Biological Diversity becoming a target of the Kunming-Montreal Global Biodiversity Framework and marking the biggest international conservation commitment to date. The Federal Department of Environment and Climate Change Canada has been tracking progress to meet this target and in July 2024 they released Canada’s 2030 Nature Strategy to “establish a shared vision and roadmap for halting and reversing biodiversity loss in Canada” to meet the goals and targets established by the Kunming-Montreal Global Biodiversity Framework.

The third target (T3) within this strategy—Canadian Protected and Conserved Lands 30 x 30—specifically outlines the status and next steps to achieve the 30 per cent protection goal, noting that this will be tracked by the Canadian Protected and Conserved Areas Database (CPCAD) and submitted to the World Database of Protected Areas annually. They note that the Federal government only manages about six per cent of the lands and freshwater in the country. Canada acknowledges that to meet T3, they will need to collaborate with many organizations and levels of government. To date, 12 NPCA conservation areas have met the required criteria to be counted towards T3 for a total of 1,622 hectares, and 16 additional conservation areas have been assessed and submitted for consideration. The 12 approved properties, evaluated in partnership with Ontario Nature, are all accessible to the public, except for Lathrop, and were assessed for their unique ecological characteristics and diverse ecosystems and determined to meet the strict national standards for biodiversity protection, qualifying them as Protected Areas. Not only do these areas contribute to local and provincial natural heritage and biodiversity conservation, but they are recognized as federally important for climate change mitigation and protection of species, habitats, ecosystem services, and people. Internationally, these lands also represent a collective effort towards global biodiversity conservation and a shared goal to combat the impacts of climate change.

As seen through the unique landscape in the Niagara Peninsula watershed—its important natural and cultural heritage areas, the Niagara and Onondaga Escarpments, several watercourses, wetlands, the bi-national Niagara River, and the shorelines for two Great Lakes— that NPCA conservation areas augment and protect natural heritage within the Niagara Peninsula watershed jurisdiction while contributing to provincial, federal and international conservation goals and targets.

4.2 Making Connections

NPCA is committed to making connections and integrating conservation areas with provincial, municipal, and other publicly accessible lands located within the Niagara Peninsula watershed. Map 5 provides an overview of lands owned by the province, local municipalities, and all publicly accessible lands within NPCA's jurisdiction to demonstrate how NPCA lands integrate and connect with these areas to support conservation and trail systems. It should be noted that the St. Lawrence Seaway lands (Federally owned), as well as Ontario Power Generation lands (Provincially owned) are not mapped for security and safety reasons though they are included in the write-up below because they are often connected natural corridors or contribute to natural heritage but not to public access.

4.2.1 Municipal Lands

There are 2 single-tier, 1 upper-tier and 12 lower-tier municipalities in the Niagara Peninsula watershed that own or manage publicly accessible lands. Most city-owned lands are open park areas with fewer natural features compared to NPCA Conservation areas but provide accessible greenspace for residents and sometimes act as linkages between natural areas and active transportation routes.

Some notable lands owned by local municipalities in the Niagara Peninsula watershed include Decew Falls and Morningstar Mill, Malcolmson Eco-Park, Fireman's Park, Fairview Cemetery, Port Robinson Eco-Park, Burgoyne Woods, and many more. Burgoyne Woods is an example of a larger municipal park, approximately 50 hectares, that includes both open space for picnics and activities, natural forested areas with walking trails, and a leash-free dog park.

In recent years, NPCA has launched the Trees for All program aimed at increasing the canopy cover in the Niagara Peninsula watershed through tree planting efforts with local municipalities and private landowners. Through this program, NPCA has collaborated with interested municipalities to identify significant sections of their lands that have the potential for restoration and naturalization efforts to work towards collective efforts and shared goals for increasing biodiversity, mitigating the impacts of climate change, reducing urban heat island effects, increasing natural cover, and overall improving the health of the watershed. This program exemplifies NPCA's commitment to working with other levels of government for the shared stewardship of the watershed ecosystem.

Based on the information in NPCA's Land Securement Strategy, the above-noted programs, and the map of municipal lands in the Niagara Peninsula watershed jurisdiction, there is a clear desire for municipal

partners and NPCA to work together to secure and protect additional lands that support the area's natural heritage system.

4.2.2 Provincial Lands

Within NPCA's jurisdiction, there are two provincially protected properties—Short Hills Provincial Park and Wainfleet Bog Conservation Reserve—in addition to lands owned by Ontario Power Generation and Niagara Parks. The Ontario Heritage Trust (OHT) has conserved several natural heritage properties within the Niagara Peninsula watershed.

4.2.2.1 Short Hills Provincial Park

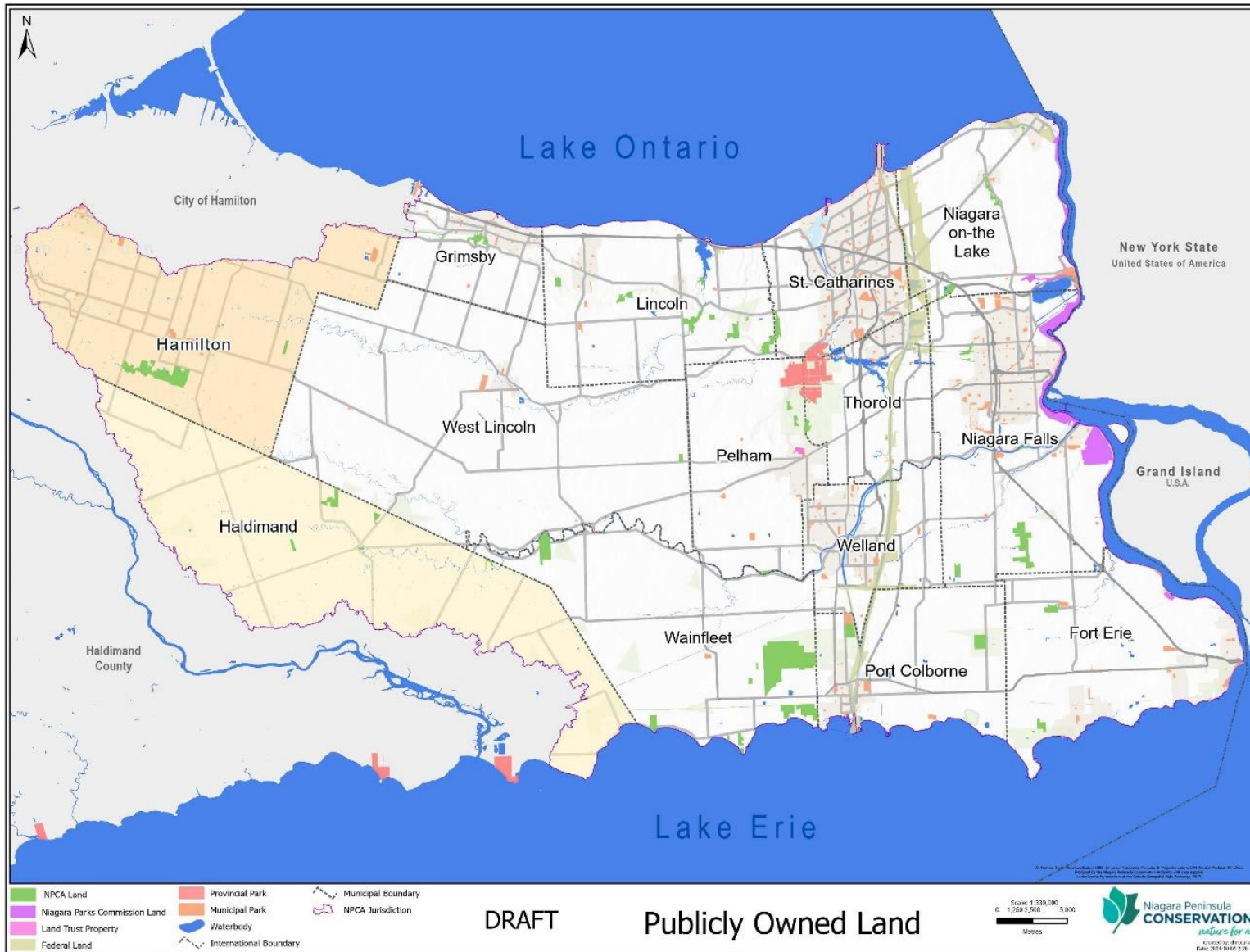
Short Hills Provincial Park is a 688-hectare natural environment class park on the southwest edge of St. Catharines, in the Regional Municipality of Niagara. The park provides protection for provincially significant life science and earth science features, notably Niagara Escarpment features and Carolinian forests. Short Hills is a Nodal Park in the NEPOSS. Nodal parks are intended to serve as key staging areas, interpretive centres for each section of the escarpment and major starting places for exploring other nearby parks.

Short Hills currently provides five scenic nature trails that are accessible to the public for the enjoyment of this park. It is designated as a non-operating park due to the limited amenities available to visitors. Short Hills is directly adjacent to the 34-hectare Camp Wetaskiwin which is owned and operated by Scouts Canada, and near another 20-hectare parcel owned by Hamilton Naturalists' Club known as the Short Hills Nature Sanctuary. It is further augmented by NPCA's St. John's Centre and connected through forested natural features to Lathrop and St. John's conservation area. NPCA conservation areas augments this Provincial Park by increasing the amount of protected area, widening the buffer and interior habitats, preserving important headwaters of Twelve Mile Creek, and maintaining forest cover to prevent erosion in this unique cold-water sub-watershed.

4.2.2.2 Wainfleet Bog Conservation Reserve

The Wainfleet Bog Conservation Reserve is a 230-hectare property that makes up part of the larger Wainfleet Bog PSW complex, the largest peatland area remaining within the Carolinian region of Ontario. "The ANSI portion of the reserve provides habitat for approximately 283 species of vascular plants. A total of 52 species of birds have been observed recently within the reserve or in the immediate vicinity, of which 30 species are believed to be breeding. Among the vascular plants, 11 species are provincially significant.

Map 5: Map of publicly-owned lands



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It is also habitat for three provincially significant species of reptiles (eastern massasauga rattlesnake, spotted turtle, and black rat snake) and five provincially significant birds (yellow-breasted chat, least bittern, tufted titmouse, short-eared owl, and white-eyed vireo).” (Ontario website: <https://www.ontario.ca/page/wainfleet-bog-conservation-reserve-management-statement>)

The Wainfleet Bog Conservation Reserve is an integral part of the larger Wainfleet bog protected area owned and managed by the NPCA and the Nature Conservancy of Canada. Together these lands protect and manage a very important natural feature that holds provincial, federal and local significance and supports the international biodiversity and climate change goals agreed to at COP15.

4.2.2.3 Niagara Parks

Niagara Parks (formerly known as Niagara Parks Commission) is a self-financed agency of the Provincial Ministry of Tourism, Culture, and Gaming. They own a total of 1325 hectares of land along an important stretch of the Niagara River, including the Niagara Gorge, the Horseshoe Falls, and Dufferin Islands, for 56 kilometres between Lake Erie and Lake Ontario with at least one third maintained and managed as natural area. In recent years, Niagara Parks has committed to increasing the native shoreline vegetation from 35 per cent cover to over 75 per cent cover and setting a goal to increase canopy cover to 35 per cent to further protect the shoreline and improve biodiversity on their lands. The Niagara River area has been identified as an Important Bird Biodiversity Area by Birds Canada, and represents important migratory, seasonal, and permanent habitat for many native species. The NPCA has worked in collaboration with Niagara Parks for many years to improve habitat and shoreline ecosystems along the Niagara River as part of the Niagara River Remedial Action Plan. The efforts by Niagara Parks and their partners, including NPCA, are complimentary to the restoration and management efforts for the Niagara River through the Remedial Action Plan, a bi-national agreement between Canada and the United States. Creating linkages or enhancing existing ones between NPCA and Niagara Parks greenspace, especially through opportunities like the Niagara Geopark, are excellent examples of the benefits of connecting public greenspace.

4.2.2.4 Ontario Power Generation

Ontario Power Generation (OPG) is wholly owned by the Province of Ontario. OPG lands are important natural areas, often along watercourses or canals, and OPG has worked with NPCA and other partners to restore and manage some sections for habitat and biodiversity improvements though most are not accessible to the public for safety and security reasons. One property is adjacent to Decew Falls—Morningstar Mill which is owned by the City of St. Catharines and adjacent to Short Hills Provincial Park. OPG lands, though they do not typically augment public access to natural areas, may offer opportunities for land transfers or management agreements that enhance greenspace access managed by NPCA. Even those completely inaccessible spaces still contribute to the natural cover, habitat value, and biodiversity goals of other organizations and agencies.

4.2.3 Federal Lands

There are a few parcels of federally owned land in NPCA's jurisdiction, most notable from a natural heritage perspective are lands known as Lakeshore properties or Niagara Shores, along the shoreline of Lake Ontario east of Four Mile Pond, in the Town of Niagara-on-the-Lake administered by Parks Canada. This area is accessible to the public for natural and heritage appreciation and is designated a National Historic Site. There are small parcels of land that are federally owned in the watershed, mostly historic heritage sites related to the War of 1812 (e.g. Fort George National Historic Site). Additionally, there are federal lands owned by the St. Lawrence Seaway Authority that are contributing to natural heritage, biodiversity, and habitat locally, but most are not publicly accessible for safety and security reasons with the exception of sanctioned trails and walking paths. Federal sites also present opportunities for joint management or cooperative efforts to generate greater access to greenspace. Some sites may also present opportunities to augment natural heritage features through management or restoration of critical shoreline habitats like bluffs and Carolinian forests.

4.2.4 Land Trusts

The Nature Conservancy of Canada (NCC) owns one parcel of land called the Lathrop Nature Preserve, located in the Town of Pelham at the headwaters of Twelve Mile Creek, the only cold-water stream in the Niagara Peninsula watershed, and home to the only self-sustaining population of Brook Trout in Niagara. More than 100 years ago, a railway bisected the property creating a dam in Twelve Mile Creek and creating two artificial ponds on the property. Today, the former railway berm is a publicly accessible trail connecting the Lathrop property to Marlene Stewart Streit Park (municipally owned by the Town of Pelham), and the downtown core of Fonthill. The NCC Lathrop property is less than two kilometres from NPCA's St. John's Conservation Area and one of the two parcels that make up NPCA's Lathrop Conservation Area. There are many opportunities in this area to connect and create linkages between the NCC Lathrop property, NPCA's Lathrop parcels, Short Hills Provincial Park, and two other NPCA conservation areas—St. John's and St. John's Valley Centre.

Most land trusts are primarily focused on securing natural heritage lands to protect significant ecological features; therefore, it is important for NPCA to continue collaboration with land trusts to further its conservation goals through land securement. Several land trusts operate within the watershed jurisdiction of the NPCA including the Bruce Trail Conservancy (BTC), Niagara Land Trust (NLT), NCC, Ontario Heritage Trust (OHT), Head-of-the-Lake Land Trust (HLLT), managed by Hamilton Naturalists' Club, and Ontario Nature. Other land trusts that NPCA could work with to further augment protected areas in the watershed include Ducks Unlimited Canada, Niagara Escarpment Biosphere Conservancy, and Ontario Farmland

Trust. To date, land trusts have secured more than 240 hectares in NPCA's jurisdiction. This number is expected to rise but most land trusts are not actively securing more land in the watershed.

4.2.5 Trail Systems

Trails have been a defining feature of the Niagara Peninsula landscape since time immemorial and there is a significant network of trails throughout NPCA's jurisdiction that are owned and managed by municipalities, regional government, Bruce Trail Conservancy, or other organizations and agencies. National trends overwhelmingly indicate a growing demand for trails and in addition to the large network of sanctioned trails, there is likely a sizeable network of unsanctioned and unmanaged trails made by people who want additional opportunities to walk, hike, or bike in their community or neighbourhood.

The Bruce Trail is more than 890 kilometres long, with an additional 400 kilometres of side trails, that runs along the Niagara Escarpment from the Niagara River to Tobermory, managed and protected by the Bruce Trail Conservancy (BTC). There are two sections of their extensive trail network in the Niagara Peninsula watershed - the Niagara Section and the Iroquoia Section. The very first blaze of what was to become the Bruce Trail was placed on the farm of Derby Bucknall by members of the Niagara Escarpment Trail Council in 1962, which is now part of NPCA's Cave Springs Conservation Area. Many sections of the Bruce Trail run through NPCA conservation areas, or connect to NPCA hiking trails, while others are on private land or part of other protected areas like Short Hills Provincial Park. Since 2017, Plenty Canada, along with a network of allies, has been working on the Great Niagara Escarpment Indigenous Cultural Map to document, celebrate, and safeguard important Indigenous heritage resources along the Bruce Trail, and on the Greenbelt Indigenous Botanical Survey which both include NPCA conservation areas within the Niagara Escarpment.

Other significant trails in the Niagara Peninsula watershed include the Niagara River Recreational Trail owned and managed by Niagara Parks, the Great Lakes Waterfront Trail (Waterfront Trail), Trans Canada Trail, Welland Canals Parkway, the Friendship Trail, the Greenbelt Loop, Laura Secord Legacy Trail, Upper Canada Heritage Trail, and the Short Hills Provincial Park trail system. The Chippawa Trail—part of Trans Canada Trail, connects Niagara to Haldimand, Hamilton, and beyond.

The Welland Canals Parkway is an important connecting route between the south and north ends of the Niagara Peninsula running between Port Colborne and St. Catharines, with the Friendship Trail connecting the Welland Canals Trail to the Niagara River Recreational Trail.

Several important local trails are managed and maintained by local municipalities and provide important recreational opportunities for local community members and visitors to enjoy. Some are shorter local trails

while others are important arteries to larger trail networks like Bruce Trail or the Waterfront Trail or can be connections between neighbouring municipalities like the Friendship Trail between Fort Erie and Port Colborne, or the Steve Bauer Trail between Welland and Pelham.

Based on the assessment, and as demonstrated in Map 6 it is evident that there is an extensive network of trails in the Niagara Peninsula watershed, with potential for additional connections and linkages that could be supported by NPCA's Land Securement Strategy, Strategic Plan, CA Strategy goals, and partnerships with local municipalities, land trusts, conservation groups, and the Bruce Trail Conservancy. There is interest from several parties, including the Niagara Geopark, in establishing one map or source of information for all the trails in the Niagara Peninsula watershed and looking for opportunities to enhance and create connectivity.

4.2.6 NPCA Trails

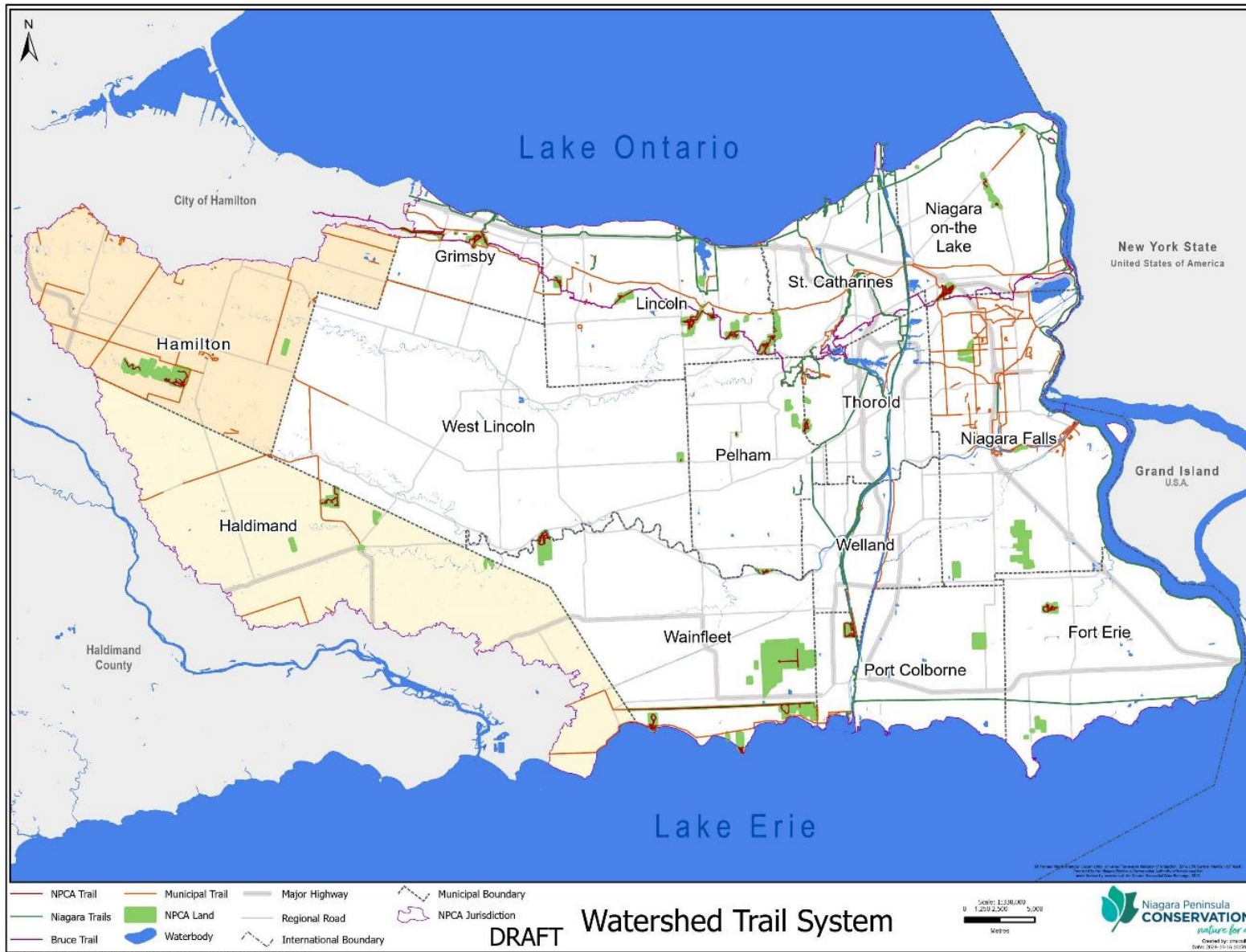
TNPCA owns and manages more than 200 kilometres of trails on 24 properties. These trails are one of the most important ways NPCA connects the community to natural and cultural heritage—providing opportunities for recreation, active transportation, healthy living, education, community science, and nature appreciation.

Some of NPCA's conservation areas provide direct connections to other existing trail networks in the watershed. For example, the Trans Canada Trail includes a section of NPCA's Gord Harry Trail which connects to Wainfleet Wetlands Conservation Area, and overlaps with the Laura Secord Legacy Trail, Friendship Trail, and the Niagara River Recreational Trail. The Waterfront Trail section in NPCA's jurisdiction runs along the north shore of Lake Erie, up the Niagara River via the Niagara River Recreational Trail, and across the southern shore of Lake Ontario including a loop through Jordan Harbour and Ball's Falls conservation areas. The Waterfront Trail maps note important NPCA conservation areas that are near or along the trail including Wainfleet Wetlands, Morgan's Point, Gord Harry Trail, Long Beach, and the Wainfleet Bog.

Additionally, the Bruce Trail links several NPCA trails along the Niagara Escarpment and connects NPCA conservation areas to other notable trails in Short Hills Provincial Park, as well as Decew Falls—Morningstar Mill, and Mel Swart Park in Thorold.

From the CA Strategy trail connection and potential linkages assessment, it is clear that there are many opportunities for further connections between NPCA conservation areas and local trails and parks and these opportunities are supported by the goals and objectives of the CA Strategy, the Land Securement Strategy, and NPCA's Strategic Plan.

Map 6: Trail network in NPCA watershed



Path: Z:\PROJECTS\General_GIS_Projects\CA Strategy Mapping\CA Strategy Mapping.aprx

5.0 CONSERVATION AREA LAND USE CATEGORIES

Section 10 (1) 4. Of O. Reg 686/21 requires all Conservation Authorities to establish land use categories to classify lands in the land inventory based on the types of activities that are engaged in on each parcel of land or other matters of significance related to the lands.

To guide the management and use of all conservation areas, NPCA has adopted four land use categories for the CA Strategy, developed with guidance from Conservation Ontario and the Conservation Authorities Act. A primary land use category has been applied to each NPCA conservation area, and where necessary, subsequent secondary or tertiary categories will be added through management plans. It should be noted that while there are different land use categories, the overall goal for all NPCA conservation areas is protection and management, other uses such as active or passive recreation should be considered complementary to this overarching purpose and should not negatively impact that natural functions, biodiversity, or protection of these areas.

1. Conservation Area – Active Recreation

These conservation areas may contain facilities, infrastructure, specialized equipment, and staff support for activities and programs available to the public.

2. Conservation Area – Passive Recreation

These conservation areas may contain facilities and infrastructure that support passive recreation activities for an individual or group that only require minimal equipment and do not require staff support.

3. Natural Heritage

The primary land use is natural heritage protection or natural hazard conservation. These are conservation areas with limited facilities and access but may have hiking trails and small parking lots.

4. Administration Area

These conservation areas contain administration buildings for NPCA staff for land management, programs, and services but are not generally accessible or used by the public.

An overview of how the land use categories were applied in the NPCA Land Inventory, the number of properties owned by the NPCA, and examples of permitted uses or programs is provided below.

As noted in previous sections of the CA Strategy, the NPCA is committed to updating or creating management plans for all its conservation areas, as identified in NPCA's Strategic Plan. Following the approval of the CA Strategy, NPCA will continue the process of updating management plans for the management and operation of conservation areas based on the identified goals and objectives to ensure that tasks, budgets, projects and workplans are aligned with the guidance and framework of the CA Strategy.

Table 3: NPCA Conservation Area Land Use Categories

LAND USE CATEGORY	# OWNED	EXAMPLES OF PROGRAMS OR PERMITTED ACTIVITIES	NPCA CONSERVATION AREAS IN THIS CATEGORY
Conservation Area - Active Recreation	4	Education programs Camping Tree-top Trekking	Ball's Falls Binbrook Chippawa Creek Long Beach
Conservation Area - Passive Recreation	8	Hiking Birdwatching Nature observation Walking	Beamer Cave Springs Gord Harry Trail Morgan's Point Rockway Ruigrok Tract St. John's Woodend
Natural Heritage	27	Hiking Birdwatching Nature observation Walking	Baird Estate Binbrook Tract Canborough Comfort Maple E.C. Brown Eight Mile Creek Hedley Forest Humberstone Marsh Jordan Harbour Lakewood Lathrop Louth Mountainview Mud Lake OPG Oswego Creek Point Abino-McGowan Point Abino-Philips Port Davidson Shriner's Creek Smith-Ness Forest Stevensville Two Mile Creek

			Virgil Dam and Reservoir Wainfleet Bog Wainfleet Wetlands Woolverton
Administration Area	2	Land Care team HQ Education programs	Gainsborough St. Johns Centre

6.0 PUBLIC ENGAGEMENT

A comprehensive communications and engagement strategy was developed in the early stages of the project, outlining a multi-channel approach and combination of traditional and digital tools and methods for informing and engaging a wide range of internal and external audiences.

NPCA sought to engage Indigenous partners and peoples, partner municipalities, residents, local interest groups, conservation area users, business owners, members of the agriculture, environment, planning, development, tourism, and education sectors, and the public within the Niagara Region, Haldimand County, and the City of Hamilton.

Communication and engagement tactics were tailored to these audiences and for each of the three phases of the CA Strategy project:

- Phase One (September): Initiate Process & Collect Feedback
- Phase Two (October-November): Check-in & Validate
- Phase Three (December): Launch & Release

Guided by the [Strategic Plan](#), NPCA staff collaborated on a discussion paper that outlined the vision for the operation and maintenance of conservation areas and lands, as well as the process for drafting the strategy. The discussion paper was shared on the [Get Involved NPCA](#) portal, which served as the central hub offering supporting materials and resources available for review and download, and several online engagement tools.

- Survey Tool: A 10-minute survey was designed to gather community input on the proposed goals and objectives developed by NPCA staff.

- **FAQ Tool:** Identified 13 questions and provided clear and concise answers to these common inquiries and concerns from the community.
- **Questions:** This tool provided a space for community members to ask questions for staff response.

Key outreach efforts included a Public Information Centre (PIC), stakeholder meetings, direct emails, and targeted social media campaigns. The use of both in-person and online engagement opportunities helped ensure accessibility for diverse audiences and broad participation.

A strong focus was also placed on proactive communication, using media releases, social media, and print advertising to keep the public informed of the many opportunities for engagement. NPCA was successful in obtaining earned media exposure from key media partners such as Niagara Dailies, Village Media, and YourTV Niagara.

Key Tools & Tactics	Results (Ongoing until November 1)
Get Involved NPCA – online engagement portal	971 web visits
On-line Survey	54 responses
Hybrid Public Information Centre + video	23 registrations 9 attended virtually 4 attended in-person 57 video views

NPCA staff, the Board of Directors, and the Public Advisory Committee (PAC) played an essential role in shaping the Conservation Area Strategy. Staff, as the experts on the ground, had opportunities to share their insights and feedback through virtual meetings, emails, and discussions. Their daily experience and expertise served as a vital sounding board for the project. The Board and PAC were updated regularly, and they provided valuable input, with PAC members also helping to share information and encourage feedback within their communities and networks.

Survey & Results

The survey launched on September 6 to encourage the public, partners, staff, and any other interested parties to provide feedback and comments on the CA Strategy. The main goal of the survey was to obtain feedback on the five draft goals and objectives developed by the project team and informed by staff and

the Strategic Plan. Survey results show strong public support for the proposed goals as per breakdown below.

- Protection and Management (98% agree)
- Greenspace Access and Connectivity (93% agree)
- Sustainability and Enhancement (96% agree)
- Climate Change Adaptation and Mitigation (91% agree)
- Engagement and Collaboration (91% agree)

Participants were asked to rank the goals from most important to least important (1 = most important, 5 = least important) and the results were as followed:

1. Protection and Management
2. Sustainability and Enhancement
3. Greenspace Access and Connectivity
4. Climate Change Adaptation and Mitigation
5. Engagement and Collaboration

Participants identified additional themes like invasive species management, biodiversity protection, access to nature, and suggestions of limiting access at some conservation areas for the protection of natural areas and species.

Indigenous Engagement

Information about the CA Strategy was shared with local First Nations, Indigenous partners and community through email. The list of contacts included local First Nations whose Traditional Territory and/or Treaty Lands are within the NPCA watershed jurisdiction, as well as the Niagara Region Métis Council, Friendship Centres, Indigenous representatives on NPCA's PAC, and local Indigenous businesses and organizations. Outreach and engagement with these partners will continue as conservation area specific management plans are developed.

Public Information Centre

NPCA hosted a hybrid PIC on September 24, which was live-streamed and shared on the YouTube channel for individuals who were not able to attend. A presentation on the CA strategy was delivered focused on the process, requirements from the CA Act, timelines, programs and services, land use categories, and the draft goals and objectives. A question-and-answer period followed, and in-person and online attendees posed questions to NPCA staff. Attendees were encouraged to visit the Get Involved NPCA portal to fill out the survey and provide additional feedback after the meeting. A total of 23 people registered

for the PIC, with four people attending in person and 9 attending online. The YouTube live stream received 42 views to date.

Draft CA Strategy

Moving forward into Phase Three, the plan emphasizes a consistent feedback loop, with opportunities for a 3-week commenting period for the draft strategy, as well as involvement from NPCA's board and staff. The timeline culminates in a final strategy release, ensuring the community has been engaged and informed at each stage of the project.

Following the initial round of public engagement, NPCA analyzed and incorporated community feedback received through the survey, PAC member comments, and the PIC to refine the goals and objectives of the CA Strategy and proceed to a draft.

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. NPCA will review the CA Strategy within a year of a new Strategic Plan to determine if the goals and objectives need to be updated. If an updated CA Strategy is required, a public engagement and consultation process like the one described in Section 6 will be undertaken to ensure the watershed community is aware, informed, and involved-in the opportunities to provide feedback and participate in the update of the CA Strategy. A review of the CA Strategy may also be required if directed by the NPCA Board of Directors.

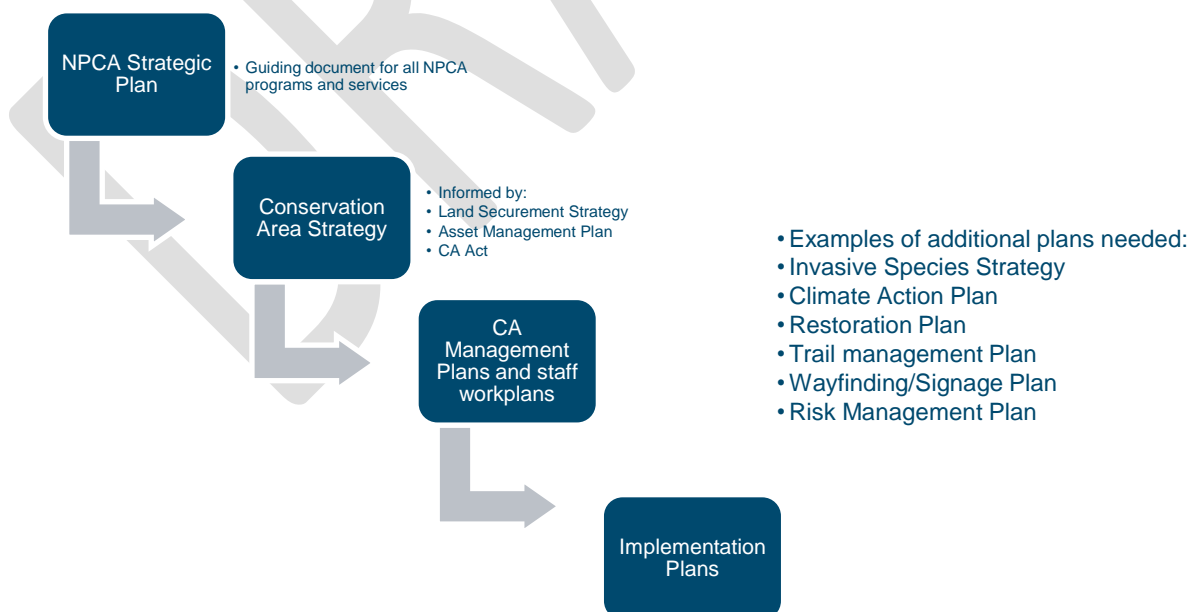
8.0 FUTURE CONSIDERATIONS

NPCA is an important environmental resource management organization - providing access to incredibly beautiful natural areas, leading educational and stewardship programs, and being a trusted source of scientific information and guidance to our partners and the community while protecting people and property from natural hazards, protecting drinking water sources, and restoring the watershed for the benefit of all who live here. NPCA recognizes that our organization must remain flexible and adaptable to change over the next decade. We continue to navigate and respond to changes to the CA Act, prioritizing the transition and legislative requirements as we continue to revitalize NPCA. Furthermore, we understand that the Niagara peninsula watershed will experience growth, intensification, and extreme weather

impacts, as well as a tremendous need for greenspace. We look forward to continuing to work with our communities, partner municipalities, conservation heroes, and our Board and staff to operationalize and implement the goals and objectives of the CA Strategy.

Collectively, NPCA Strategic Plan, Land Securement Strategy, and CA Strategy will guide our actions for accomplishing the goals and objectives outlined in this document while working toward our vision of *Nature for all*. Our mission to create a common ground for conservation-inspired action and accountability to nature is exemplified through our work every day as we develop management plans, action plans, and workplans to operationalize the CA Strategy.

The assessment of NPCA’s conservation areas in the context of the watershed natural heritage features, and the network of trails has highlighted the opportunities that exist to augment and create linkages between natural areas, trails, and other publicly accessible lands. These opportunities are supported and aligned with the NPCA Strategic Plan, Land Securement Strategy and the goals and objectives found in Section 2.2 of the CA Strategy. As NPCA moves towards implementation and the development of priority-specific plans (e.g. Invasive species strategy, restoration plans), these items will be prioritized based on future workplans, budgets and aligned with all relevant internal plans and policies (e.g. asset management plan). Development of management plans for each of the 41 conservation areas will take years to complete, but each will be guided by the goals and objectives of the CA Strategy. Each management plan will have their own engagement plan throughout the design and implementation stages to ensure that there is public support and understanding for each conservation area plan.



Continued commitment and support of the NPCA Board of Directors, staff, and all our partners in conservation will help to move us forward into the future to ensure a resilient watershed will be available for future generations, and for those that don't always have a voice at the table but deserve biodiverse and healthy natural areas to call home (plants, animals, insects). The NPCA is thankful for the continued friendship and collaboration with landowners, municipal partners, friends of groups, conservation clubs, watershed residents, conservation area users, local businesses, farmers, and school boards for working with us, being stewards of nature and the environment, and for your passion and for the appreciation you have for the beautiful Niagara Peninsula watershed, the life source for all who live here.

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9.0 RESOURCES

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

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

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

Conservation Ontario Guidance on the Conservation Authority Mandatory Conservation Area Strategy, 2022. (Document)

Conservation Ontario <https://conservationontario.ca/>

Escarpment Biosphere Conservancy <https://escarpment.ca/>

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

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

<https://pub-niagararegion.escribemeetings.com/filestream.ashx?DocumentId=33077>

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

Niagara Agriculture Profile report (Sept 2023)

Niagara Escarpment Biosphere Network <https://nebnetwork.org/>

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

Niagara Geopark <https://www.niagarageopark.com/>

Niagara Parks <https://www.niagaraparks.com>

NPCA Land Securement Strategy 2022-2032 (Document)

NPCA Strategic Plan 2021-2031 https://npca.ca/images/uploads/common/Strat_Plan_-_2021-31_Web.pdf

NPCA Watershed Report Card https://npca.ca/images/uploads/common/WRC_NPCA_2023_-_CO.pdf

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

Trans Canada Trail <https://tctrail.ca>

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Appendix 1: NPCA Inventory of Programs and Services

NPCA Inventory of Programs and Services								01-Sep-23	
Program or Service	Dept	Description	Funding Category (1, 2, 3)	Explanation of Funding Category	CA Act Reference	Cost Estimate	Funding Mechanism % of cost	MOU Required	Strategic Plan Ref
Natural Hazard Management									
Protecting people and properties from flood, erosion, and other natural hazards.									
Flood Forecasting and Warning	301					\$236,100	Municipal levy - 73% Provincial - 27%	N/A	Goal 1.1 Goal 1.2 Goal 2.3 Goal 4.2
		Delivery of accurate, real-time information for flood forecasting, warning, and messaging	1	Programs and services related to the risk of natural hazards	s.21.1(1)				
		Water quantity monitoring specific to flood forecasting and warning	1	Programs and services related to the risk of natural hazards	s.21.1(1)				
		Climate monitoring	1	Programs and services related to the risk of natural hazards	s.21.1(1)				
Flood and Erosion Management									
Note: Cost may vary; estimate does not capture ice management or flood and erosion mitigation projects. Current floodplain mapping is subsidized by self-generated revenues and federal funding grants.									
						\$347,794	Municipal levy - 70% Provincial - 30% Self-generated - TBD		Goal 1.1 Goal 1.2 Goal 2.3 Goal 4.2
		Management and monitoring of riverine erosion across the watershed jurisdiction	1	Programs and services related to the risk of natural hazards	s.21.1(1)			N/A	
		Ice management (new)	1	Programs and services related to the risk of natural hazards	s.21.1(1)			N/A	
		Floodplain mapping	1	Programs and services related to the risk of natural hazards	s.21.1(1)			N/A	
		Flood and erosion risk and mitigation studies (new; other than shoreline)	1	Programs and services related to the risk of natural hazards	s.21.1(1)			N/A	
		Operation and maintenance of NPCA flood and erosion control infrastructures	1	Programs and services related to the risk of natural hazards	s.21.1(1)			N/A	
		Flood and erosion hazard mitigation projects (NPCA owned and upper/single tier)	1	Programs and services related to the risk of natural hazards	s.21.1(1)			N/A	
		Flood and erosion hazard mitigation projects - Fee for Service	2,3	Services provided under MOU or other agreement in support of municipal flood and erosion control and remediation projects	s.21.1.1 s.21.1.2			MOU required on a project basis	

NPCA Inventory of Programs and Services

01-Sep-23

Program or Service	Dept	Description	Funding Category (1, 2, 3)	Explanation of Funding Category	CA Act Reference	Cost Estimate	Funding Mechanism % of cost	MOU Required	Strategic Plan Ref
Shoreline Hazard Management	329					\$196,178	Municipal levy - 100% Self-generated - TBD		Goal 1.2 Goal 2.2
		Shoreline management plans update	1	Programs and services related to the risk of natural hazards	s.21.1(1)			N/A	
		Integration of natural hazard management with overall shoreline climate resiliency and watershed resource management to respond to climate change risk and vulnerability (new)	1	Programs and services related to the risk of natural hazards	s.21.1(1)			N/A	
		Flood and erosion hazard mitigation projects (NPCA owned and upper/single tier)	1	Programs and services related to the risk of natural hazards	s.21.1(1)			N/A	
		Flood and erosion hazard mitigation projects - Fee for Service	2,3	Services provided under MOU or other agreement in support of municipal flood and erosion control and remediation projects	s.21.1.1 s.21.1.2			MOU required on a project basis	
Environmental Planning and Policy	345					\$429,145	Municipal levy - 56% Provincial 3% Self-generated - 41%		Goal 1.2 Goal 2.1 Goal 5.3
		Review and commenting on proposals, applications, or other matters under the Federal and Provincial Environmental Assessment Acts related to s. 28 and natural hazards	1	Programs and services related to the risk of natural hazards	s.21.1(1)			N/A	
		Review and process s. 28 permit applications related to public infrastructure (e.g. Hydro One, Enbridge, Bell, municipal, DART protocol)	1	Programs and services related to the risk of natural hazards	s.21.1(1)			N/A	
		Class Environmental Assessment for Flood and Erosion Control Projects	2	Services provided under MOU or other agreement in support of municipal flood and erosion control and remediation projects	s.21.1.1			MOU required on a project basis	
Planning and Permitting	361					\$622,759	Municipal levy - 40% Provincial - 4% Self-generated - 56%	N/A	Goal 1.2 Goal 2.1 Goal 5.3
		Review and commenting on proposals, applications, or other matters under the Planning Act, Niagara Escarpment Act, and Aggregates Resources Act related to s. 28 and natural hazards	1	Programs and services related to the risk of natural hazards	s.21.1(1)				
		Review and process s. 28 permits (not related to public infrastructure)	1	Programs and services related to the risk of natural hazards	s.21.1(1)				
Compliance and Enforcement	371	Investigation and enforcement of regulatory compliance under s.28	1	Programs and services related to the risk of natural hazards	s.21.1(1)	\$643,375	Municipal levy - 40% Self-generated - 60%	N/A	Goal 1.2
Natural Hazard Management - Total						\$2,475,351			
Watershed Resource Management and Climate Change		Programs and services to understand the current conditions, cumulative impacts, and risks to watersheds. Strategies and measures to protect, enhance, and restore watersheds toward creating healthy and climate-resilient watersheds.							
Watershed-based Resource Management Strategy	NEW	Development and implementation of the strategy, including compiling existing resources, management plans, watershed plans, studies, and data	1	Programs and services related to the risk of natural hazards	s.21.1(1)	NEW	Municipal levy - 100%	N/A	Goal 1.1 Goal 1.2 Goal 1.3 Goal 2.2 Goal 4.1 Goal 4.2

NPCA Inventory of Programs and Services

01-Sep-23

Program or Service	Dept	Description	Funding Category (1, 2, 3)	Explanation of Funding Category	CA Act Reference	Cost Estimate	Funding Mechanism % of cost	MOU Required	Strategic Plan Ref	
Watershed and Sub-watershed Resources Planning	343					\$375,210	Municipal levy - 59% New MOU's - 41%		Goal 1.1 Goal 2.2 Goal 4.1	
		Updates to NPCA watershed plans	1	Programs and services as determined by NPCA related to watershed-based resource management	s.21.1.2			N/A		
		Sub-watershed-level assessments and analyses (e.g., water budgets, catchment assessment, non-point source modelling, groundwater modelling, and systematic conservation monitoring)	1	Programs and services as determined by NPCA related to watershed-based resource management	s.21.1.2				N/A	
		Determine the cumulative watershed impacts from natural resource inventory and resource assessment studies	1	Programs and services as determined by NPCA related to watershed-based resource management	s.21.1.2				N/A	
		Develop and maintain recommendations and guidelines to assist in the management of watershed natural resources	1	Programs and services as determined by NPCA related to watershed-based resource management	s.21.1.2				N/A	
		Provide data and technical analysis to inform sub-watershed and quaternary planning for growth areas	2	Municipal programs and services provided under MOU or other agreement in support of municipal sub-watershed and quaternary planning	s.21.1.1				MOU required on a project basis	
Water Monitoring (surface and groundwater)	265 217					\$388,600	Municipal levy - 50% Self-generated - 50%		Goal 1.1 Goal 1.3 Goal 4.1 Goal 4.2	
		Provincial water quality monitoring network	1	Programs and services related to the risk of natural hazards as it relates to the Provincial monitoring programs	s. 21.1(1)			N/A		
		Local water quality monitoring program	3	Programs and services as determined by NPCA related to water monitoring beyond the Provincial monitoring programs	s.21.1.2				MOU for each benefiting municipality required	
		Benthic macroinvertebrate monitoring program	3	Programs and services as determined by NPCA related to water monitoring beyond the Provincial monitoring programs	s.21.1.2				MOU for each benefiting municipality required	
		Stream temperature monitoring program	3	Programs and services as determined by NPCA related to water monitoring beyond the Provincial monitoring programs	s.21.1.2				MOU for each benefiting municipality required	
		Provincial groundwater monitoring network	1	Programs and services related to the risk of natural hazards as it relates to the Provincial monitoring programs	s. 21.1(1)				N/A	
		Local groundwater monitoring network	3	Programs and services as determined by NPCA related to water monitoring beyond the Provincial monitoring programs	s.21.1.2				MOU for each benefiting municipality required	

NPCA Inventory of Programs and Services

01-Sep-23

Program or Service	Dept	Description	Funding Category (1, 2, 3)	Explanation of Funding Category	CA Act Reference	Cost Estimate	Funding Mechanism % of cost	MOU Required	Strategic Plan Ref
		Water quality monitoring on NPCA-owned lands in support of land management plans	1	Programs and services related to the conservation and management of lands owned or controlled by the NPCA	s. 21.1(1)			N/A	
		Water quality monitoring in support to municipal programs and services (e.g. stormwater quality monitoring)	2	Municipal programs and services provided under MOU or other agreement related to water quality monitoring	s.21.1.1			MOU required on a project basis	
		Well water decommissioning program	3	Programs and services as determined by NPCA related to water monitoring beyond the Provincial monitoring programs	s.21.1.2			MOU for each benefiting municipality required	
Ecological Monitoring	119					\$116,150	Municipal levy - 100%		Goal 1.1 Goal 1.4 Goal 2.2
		Flora, fauna, and wetlands monitoring in support of watershed resource management programs and policy development	3	Programs and services as determined by NPCA related to water monitoring beyond the Provincial monitoring programs	s. 21.1.2			N/A	
		Ecological monitoring on NPCA-owned lands in support of land management plans	1	Programs and services related to the conservation and management of lands owned or controlled by the NPCA	s. 21.1(1)			N/A	
		Ecological monitoring in support to municipal programs and services (e.g. planning for growth areas)	2	Municipal programs and services provided under MOU or other agreement related to ecological monitoring	s.21.1.1			MOU required on a project basis	
Ecological Restoration	227					\$438,270	Municipal levy - 75 % Self-generated - 25% Cost apportionment MOU's required		Goal 1.3 Goal 1.4 Goal 3.2 Goal 4.1 Goal 4.2
		Internal restoration services related to conservation area land management plans	1	Programs and services related to the conservation and management of lands owned or controlled by the NPCA	S.21.1(1)			N/A	
		Internal restoration services to support NPCA programs and services (e.g. review of s. 28 permit applications and compliance and enforcement, informing land securement strategy implementation)	1	Programs and services related to the risk of natural hazards	S.21.1(1)			N/A	
		Watershed restoration services to lead and support external ecological restoration projects, plans and strategies with municipal and private partners, including habitat creation and enhancement projects, Class Environmental Assessment (EA) flood and erosion control projects, invasive species management, and other fee-for-service opportunities.	2	Municipal programs and services provided under MOU or other agreement related to ecological restoration programs	s.21.1.1			MOU required on a project basis	
		Restoration grant program	3	Programs and services as determined by NPCA related to ecological restoration	s.21.1.2			MOU for each benefiting municipality required	

NPCA Inventory of Programs and Services

01-Sep-23

Program or Service	Dept	Description	Funding Category (1, 2, 3)	Explanation of Funding Category	CA Act Reference	Cost Estimate	Funding Mechanism % of cost	MOU Required	Strategic Plan Ref
Community Engagement and Stewardship	123					\$168,905	Municipal levy - 75% Self-generated - 25%		Goal 3.2 Goal 4.1 Goal 4.2
		Agricultural Stewardship Program for working with agricultural communities with an emphasis on best management practices, water quality improvement projects, outreach & education, promoting habitat restoration opportunities, and providing technical expertise to the agricultural community	3	Programs and services as determined by NPCA related to community engagement and stewardship	s.21.1.2			MOU for each benefiting municipality required	
		Urban Stewardship Program to encourage resilience to climate change while increasing volunteerism and inspiring larger action. May include small-scale habitat projects, community park naturalization, rain gardens and other demonstration projects, schoolyard greening, and stream/park cleanup as well as increasing the urban tree canopy cover especially in vulnerable, low nature areas.	3	Programs and services as determined by NPCA related to community engagement and stewardship	s.21.1.2			MOU for each benefiting municipality required	
		Corporate Stewardship Program to create opportunities for private corporations and businesses to engage their staff in fulfilling their corporate social responsibility goals, including reducing their environmental footprint. Activities may include invasive species removal, stream/park cleanups, tree	3	Programs and services as determined by NPCA related to community engagement and stewardship	s.21.1.2			MOU for each benefiting municipality required	
		Community outreach, engagement, and partnership building, including volunteer management	3	Programs and services as determined by NPCA related to community engagement and stewardship	s.21.1.2			MOU for each benefiting municipality required	
		Outreach engagement and stewardship projects - fee for service	2	Services provided under MOU or other agreement	s.21.1.1			MOU for each benefiting municipality required	
Regulatory Mapping Technical Studies	125	Technical studies to support NPCA hazard management functions (e.g. Ecological land classification mapping; S.28 regulation mapping of wetlands, watercourses, and karst; Digital terrain elevation model)	1	Programs and services related to the risk of natural hazards	s.21.1(1)	\$451,263	Municipal levy - 100%	N/A	Goal 1.1 Goal 1.2 Goal 1.3 Goal 2.2 Goal 5.2
Climate Change Resilience	303 133					NEW	Municipal Levy - 75% Self Generated - 25%		Goal 1.1 Goal 1.2 Goal 2.3
		Climate change research to support climate change forecasting, watershed vulnerability and risk assessments, and watershed impact assessment and	1	Programs and services related to the risk of natural hazards	s.21.1(1)			N/A	
		Emerging climate change research and practice to support municipal programs and services (e.g., natural assets inventory)	2	Municipal programs and services provided under MOU or other agreement related to climate change resilience	s.21.1.1			MOU required on a project basis	
Watershed Resource Management and Climate Change – Total						\$1,938,398			

NPCA Inventory of Programs and Services

01-Sep-23

Program or Service	Dept	Description	Funding Category (1, 2, 3)	Explanation of Funding Category	CA Act Reference	Cost Estimate	Funding Mechanism % of cost	MOU Required	Strategic Plan Ref
Other Watershed-Related Programs									
Drinking Source Water Protection	205	Source Protection Authority role as set out in the Clean Water Act, 2006 Provision of risk management services to municipalities throughout the Source Protection Region on a fee-for-service basis (currently not offered by NPCA – cost not included) Implementation of best management practices for private drinking systems (future pending provincial guidance)	1	Programs and services related to the NPCA's duties, functions and responsibilities as a source protection authority under the Clean Water Act, 2006.	s.21.1(1)	\$147,595	Agreements - 100%	N/A	Goal 1.1 Goal 4.1
Niagara River Remedial Action Plan	241	Coordination of the multi-stakeholder initiative to protect and restore the Niagara River through agreements with Canada and Ontario	3	Programs and service related to NPCA's agreement with Federal and Provincial governments to coordinate and implement the Niagara River Remedial Action Plan	s.21.1.2	\$170,000	Agreements - 100%	N/A	Goal 1.3 Goal 4.1
Other	TBD	New projects/programs funded through external funding sources that benefit partners and the watershed 2 Billion Trees - Natural Resources Canada	3	Programs and services as determined by NPCA	s.21.1.2	\$50,000	Agreements - 100%	N/A	Goal 1.3 Goal 3.2 Goal 4.1
Other watershed-related programs - Total						\$367,595			
Conservation Authority Lands and Conservation Areas		Manage 2,982 ha of lands, including 41 conservation areas essential to watershed management, environmental protection, cultural heritage, and recreation.							
Section 29 Enforcement and Compliance	489	Conservation areas regulations enforcement and compliance	1	Programs and services related to the conservation and management of lands owned or controlled by the NPCA	s. 21.1(1)	\$110,800	Municipal levy - 100%	N/A	Goal 1.4
Active Recreation Programs (conservation areas)	401, 403, 405, 407 395, 411	Day use for conservation areas Other services (e.g., weddings, facility rentals, events and retail)	Camping 3	Programs and services as determined by NPCA related to active recreation programs in Conservation Areas	s.21.1.2	\$1,728,425	Self-generated - 100%	N/A	Goal 1.4 Goal 3.1 Goal 3.2 Goal 3.3 Goal 3.4 Goal 6.2
Education Programs	413, 487	Education programs and day camps heritage programs	Cultural 2,3	Programs and services as determined by NPCA related to the delivery of education and cultural heritage programs Municipal programs and services provided under MOU or other agreement	s.21.1.1 s.21.1.2	\$173,658	Self-generated - 100%	N/A	Goal 1.4 Goal 3.1 Goal 3.2 Goal 3.3 Goal 3.4 Goal 6.2
Land Management - Other Agencies	NEW	Land and facilities' management, maintenance and operations for other agencies (Federal, Provincial, Regional, Local)	2,3	Programs and services as determined by NPCA related to land and facilities' management Municipal programs and services provided under MOU or other agreement related to land and facilities' management.	s.21.1.1 s.21.1.2	NEW	Self-generated - 100%	MOU required on a project basis	Goal 1.4 Goal 3.1 Goal 3.2 Goal 3.3 Goal 3.4 Goal 6.2

NPCA Inventory of Programs and Services

01-Sep-23

Program or Service	Dept	Description	Funding Category (1, 2, 3)	Explanation of Funding Category	CA Act Reference	Cost Estimate	Funding Mechanism % of cost	MOU Required	Strategic Plan Ref
Land Care Program (conservation areas)	427	Management and maintenance of conservation areas (e.g., gates, fencing, signage, landscaping, pedestrian bridges, trails, parking lots, and roadways)	1	Programs and services related to the conservation and management of lands owned or controlled by the NPCA	s. 21.1(1)	\$1,014,585	Municipal levy - 100%	N/A	Goal 1.4
		Passive recreation	Risk						Goal 3.1
		Management	Hazard						Goal 3.3
		tree management	Maintenance of						
		heritage buildings	Forest Management						
Land Acquisition and Disposition	TBD					Varies	Reserves New MOU's		Goal 1.4 Goal 3.1
		Strategic acquisition of properties related to mitigating the risk of natural hazards in accordance with NPCA Land Securement Strategy	1	Programs and services related to the risk of natural hazards	s.21.1(1)			N/A	
		Strategic cost-shared acquisition of properties with lower-tier municipal partners and other agencies	2	Municipal programs and services provided under MOU or other agreement related to acquisition of non-natural hazard properties	s.21.1.1			MOU with municipality as required	
		Strategic acquisition of properties in accordance with NPCA Land Securement Strategy	3	Programs and services as determined by NPCA related to the implementation of the NPCA Land Securement Strategy	s.21.1.2			MOU for each benefiting municipality required	
Land Lease and Agreement Management	TBD					\$51,633	Self-generated - 100%		Goal 1.4
		Management of current and future land leases and property agreements with specific municipalities	2	Municipal programs and services provided under MOU or other agreement related to land leases and property agreements	s.21.1.1			MOU with municipality as required	
		Management of current and future land leases and property agreements (general)	3	Programs and services as determined by NPCA related to land leases and property agreements	s.21.1.2			MOU for each benefiting municipality required	
Land Management Planning	357					NEW	TBD	N/A	Goal 1.4
		Conservation Area Land Inventory and Conservation Area Strategy – new requirement	1	Programs and services related to the conservation and management of lands owned or controlled by the NPCA	s.21.1(1)				
		Conservation Area Management Planning	1	Programs and services related to the conservation and management of lands owned or controlled by the NPCA	s.21.1(1)				
Conservation Authority Lands & Conservation Areas - Total						\$3,079,101			

NPCA Inventory of Programs and Services

01-Sep-23

Program or Service	Dept	Description	Funding Category		CA Act Reference	Cost Estimate	Funding Mechanism % of cost	MOU Required	Strategic Plan Ref	
			(1, 2, 3)	Explanation of Funding Category						
Enabling Services										
Support for all CA departments, the Board of Directors, member municipalities and the general public enables NPCA to operate in an accountable, transparent, efficient and effective manner.										
Corporate Services	101	Administrative support	Human	1	Programs and services related to the NPCA's duties, functions and responsibilities prescribed by the regulations (O. Reg. 402/22 comes into force July 1, 2023)	s.21.1(1)	\$1,489,772	Municipal levy - 90% Self Generated - 10%	N/A	Goal 5.1
	107	resources (incl health and safety)	Property taxes							Goal 5.2
	127	and occupancy costs	Oversight of programs							Goal 5.3
	153	and policies	Operating costs not directly related to any specific program or service (e.g., overhead)							Goal 5.4
		Records management							Goal 6.1	
		Grant management							Goal 6.2	
Financial Services	105	Annual budget		1	Programs and services related to the NPCA's duties, functions and responsibilities prescribed by the regulations (O. Reg. 402/22 comes into force July 1, 2023)	s.21.1(1)	\$360,418	Municipal levy - 100%	N/A	Goal 5.2
		Accounts payable and receivable								Goal 5.3
		Procurement	Payroll							Goal 6.1
		Financial analytics and reporting								Goal 6.2
		Audit								
		Administration of reserves and investments								
Information Management and Technology	131	Digital technology, licensing fees, data/voice services		1	Programs and services related to the NPCA's duties, functions and responsibilities prescribed by the regulations (O. Reg. 402/22 comes into force July 1, 2023)	s.21.1(1)	\$544,924	Municipal levy - 100%	N/A	Goal 1.1
	109	Management and integration of data for geographic information system (GIS)	Support open							Goal 1.2
		data portal and science	Mapping and							Goal 1.3
		GIS support for watershed resources planning and natural hazards management	Support							Goal 2.2
		development and implementation of watershed-based resource management strategy							Goal 5.2	
									Goal 5.3	
Governance and Corporate Administration	103	Support to governance and corporate administration	Board	1	Programs and services related to the NPCA's duties, functions and responsibilities prescribed by the regulations (O. Reg. 402/22 comes into force July 1, 2023)	s.21.1(1)	\$573,191	Municipal levy - 100%	N/A	Goal 5.2
	150	governance	Public							Goal 5.3
		Advisory Committee and ad-hoc committees planning/reporting and CAO oversight	Strategic							
Communications, Marketing and Public Relations	111	Marketing and promotion		1	Programs and services related to the NPCA's duties, functions and responsibilities prescribed by the regulations (O. Reg. 402/22 comes into force July 1, 2023)	s.21.1(1)	\$401,904	Municipal levy - 100%	N/A	All
		Media relations	Strategic							
		plan stakeholder consultation	Public and							
Vehicles and Equipment	801	Fleet and equipment required to support and maintain NPCA operations, including capital purchases, fuel, licences, repairs, and maintenance		1	Programs and services related to the NPCA's duties, functions and responsibilities prescribed by the regulations (O. Reg. 402/22 comes into force July 1, 2023)	s.21.1(1)	\$259,400	Municipal levy - 100%	N/A	All

NPCA Inventory of Programs and Services

01-Sep-23

Program or Service	Dept	Description	Funding Category (1, 2, 3)	Explanation of Funding Category	CA Act Reference	Cost Estimate	Funding Mechanism % of cost	MOU Required	Strategic Plan Ref
Asset Management	153					\$1,119,246	Municipal levy - 57%		Goal 1.2
	155						Self-generated - 40%		Goal 1.4
		Capital costs for flood infrastructure for conservation land infrastructure	Capital costs	1	Programs and services related to the risk of natural hazards Programs and services related to the NPCA's duties, functions and responsibilities prescribed by the regulations (O. Reg. 402/22 comes into force July 1, 2023)		s.21.1(1)	Provincial - 3%	N/A
		Asset management planning (including depreciation) Asset management software and equipment		3	Programs and services as determined by NPCA related to asset management		s.21.1.2	MOU for each benefiting municipality required	
Enabling services - Total						\$4,748,855			
Grand Total						\$12,609,300			

NPCA Board of Directors' Meeting Calendar 2025

January						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

February						
S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	

March						
S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

April						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

May						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

June						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

July						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

August						
S	M	T	W	T	F	S
					1	2
4	5	6	7	8	9	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

September						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

October						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25

November						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

December						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

- Full Authority Board Meeting
- Public Advisory Committee
- Statutory Holiday / Office Closure

- Governance Committee, following Full Authority
- Finance Committee

Full Authority Board Meetings

Friday, February 21
Friday, March 21
Friday, April 25
Friday, May 23
Friday, June 27
Friday, July 25
Friday, September 19
Friday, October 17
Friday, November 22
Friday, December 13 *(if required)

Note: there will be a Source Protection Authority Board meeting scheduled to coincide with the Annual General Meeting of the Full Authority Board.

Committees of the Board * 2025 potential *

Finance Committee Meetings

Wednesday, April 16
Wednesday, July 16
Wednesday, September 17
Wednesday, November 10

Governance Committee Meetings

Friday, March 21
Friday, May 23
Friday, July 25
Friday, October 17

Public Advisory Committee Meetings

Tuesday, February 25
Tuesday, May 27
Tuesday, September 23
Tuesday, November 26