CONSERVATION AREA STRATEGY

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October 18, 2024

Niagara Peninsula
CONSERVATION
nature for all

getinvolved.npca.ca/ca-strategy

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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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 km^2, 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.

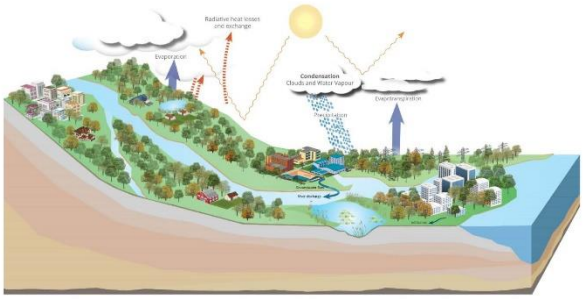

Figure 1: Watershed diagram

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.

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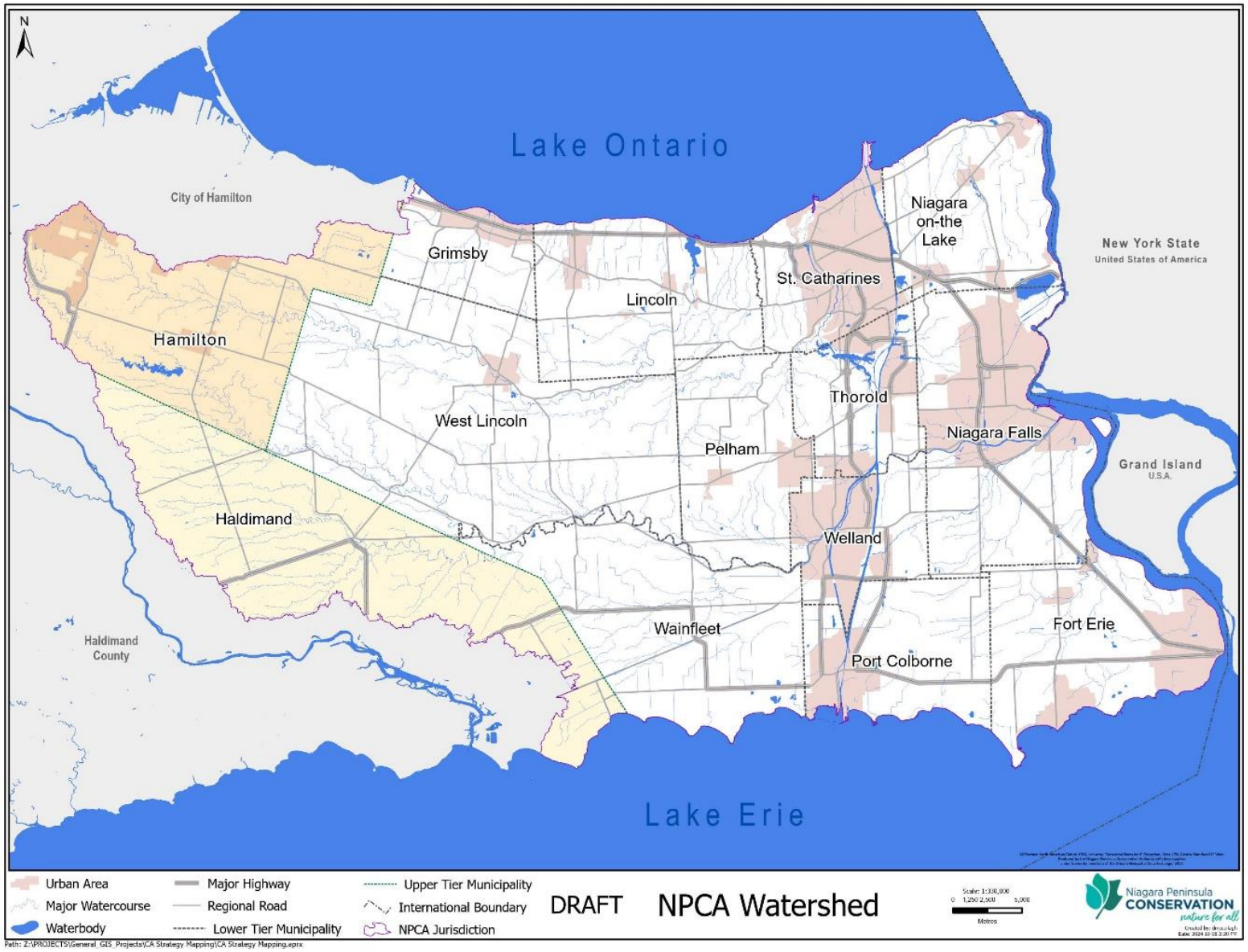
Map 1: NPCA watershed jurisdiction



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.

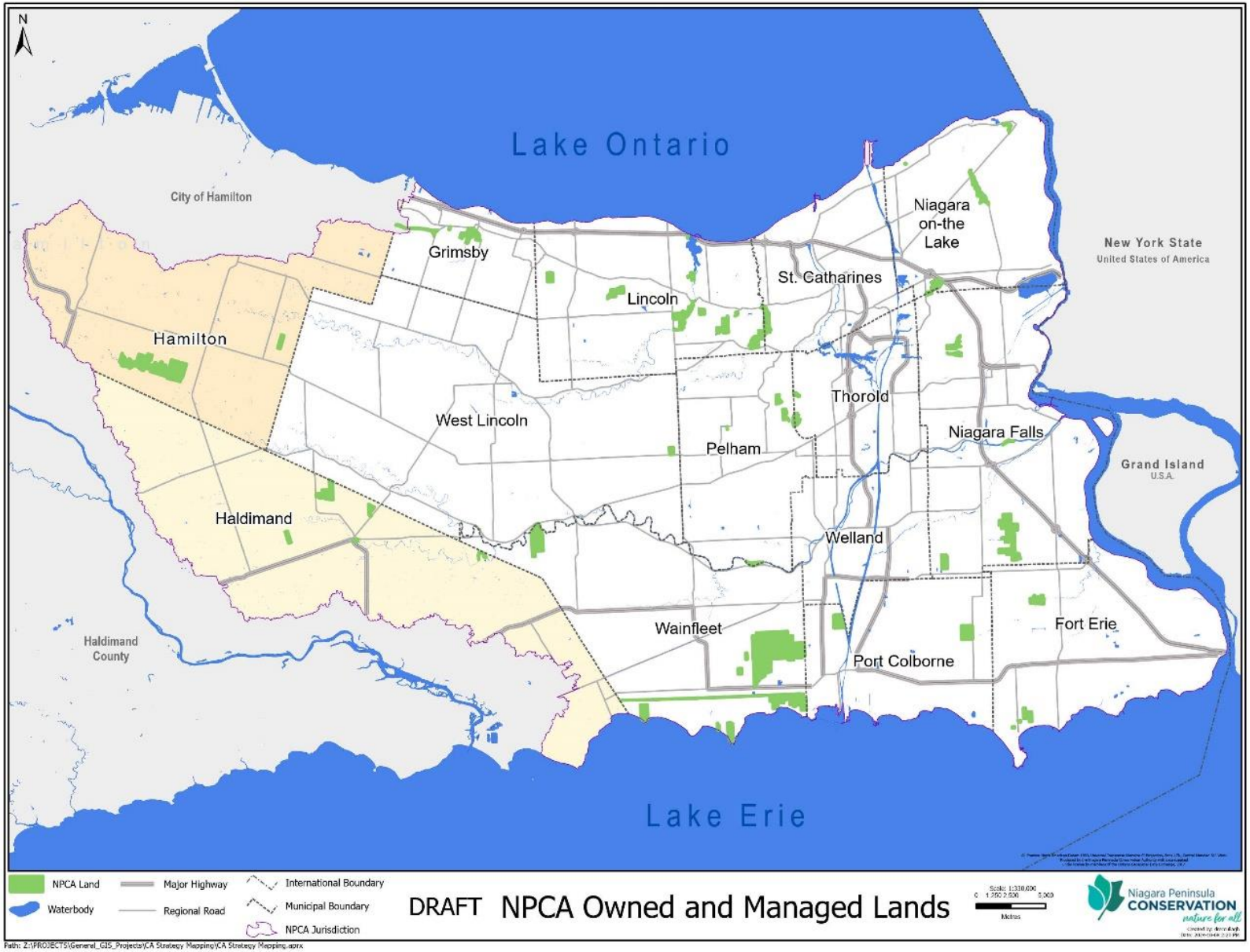
1.3 Purpose and Regulatory Framework

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 over-arching 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.

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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

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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

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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
• 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	• 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	• 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

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

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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

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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 Opens 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

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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 (MNRF) 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

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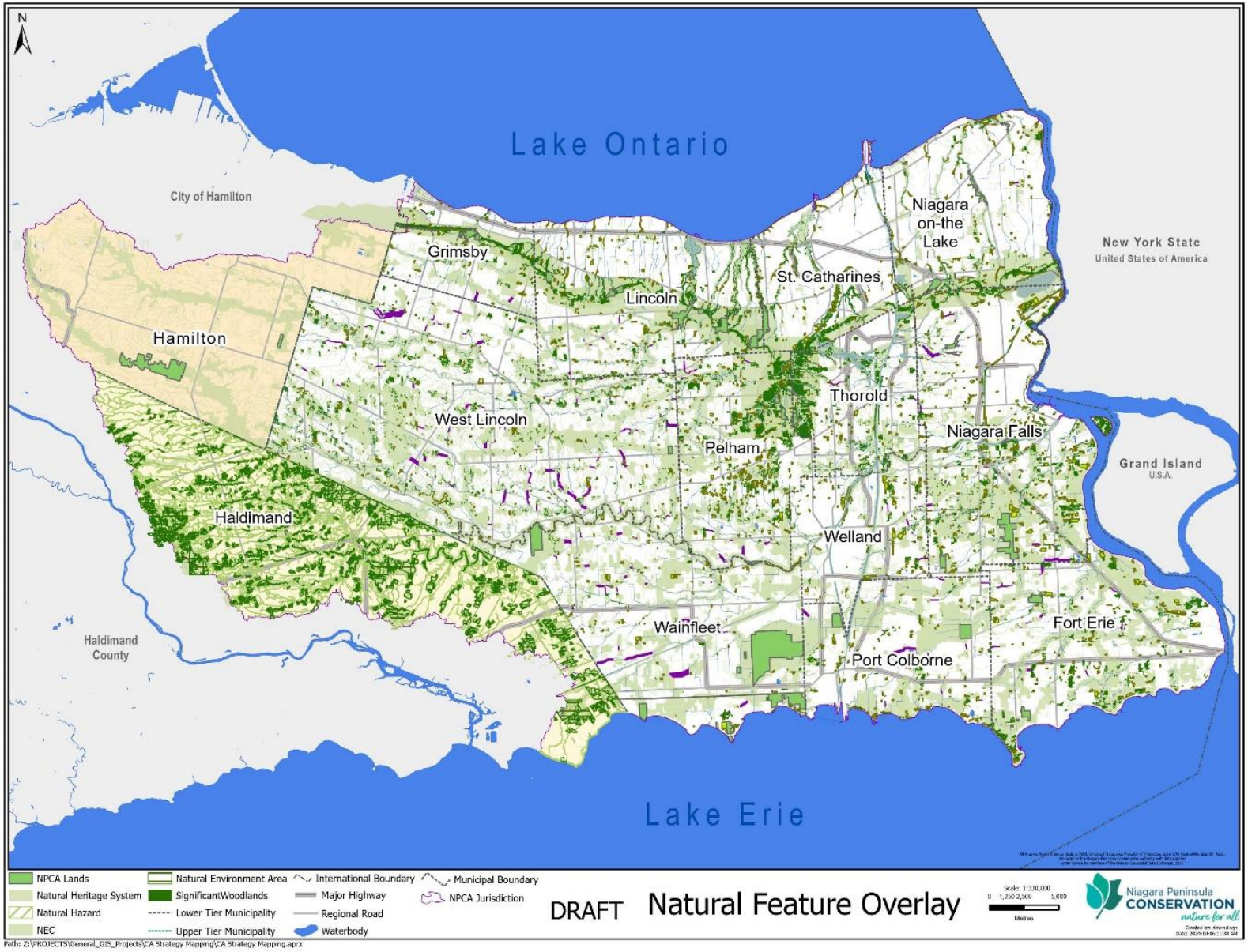
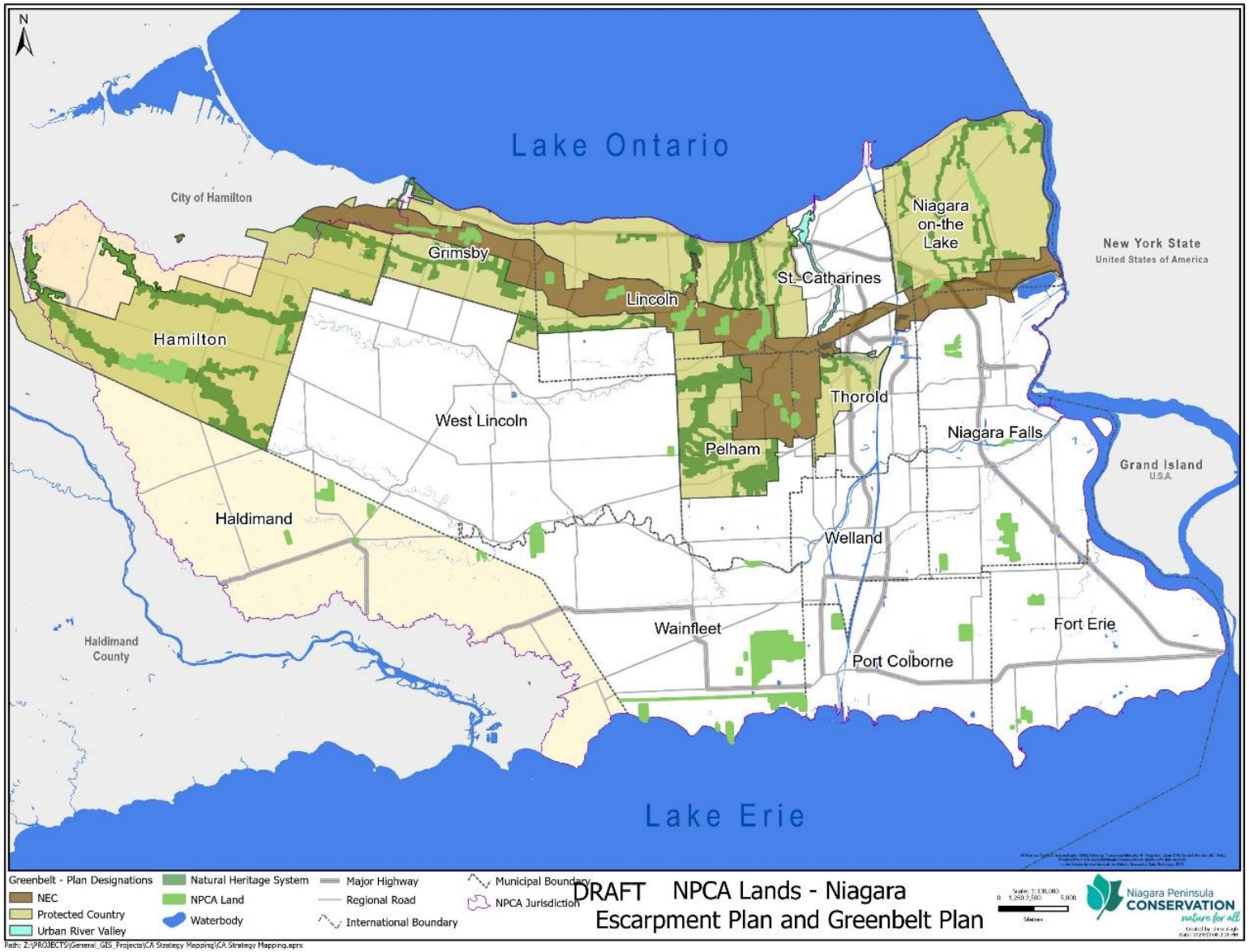
Map 3: NPCA conservation areas and the natural heritage of the watershed



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:

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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

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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)

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Further, NPCA conservation areas within 2 kilometres of Greak 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)

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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.

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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

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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.

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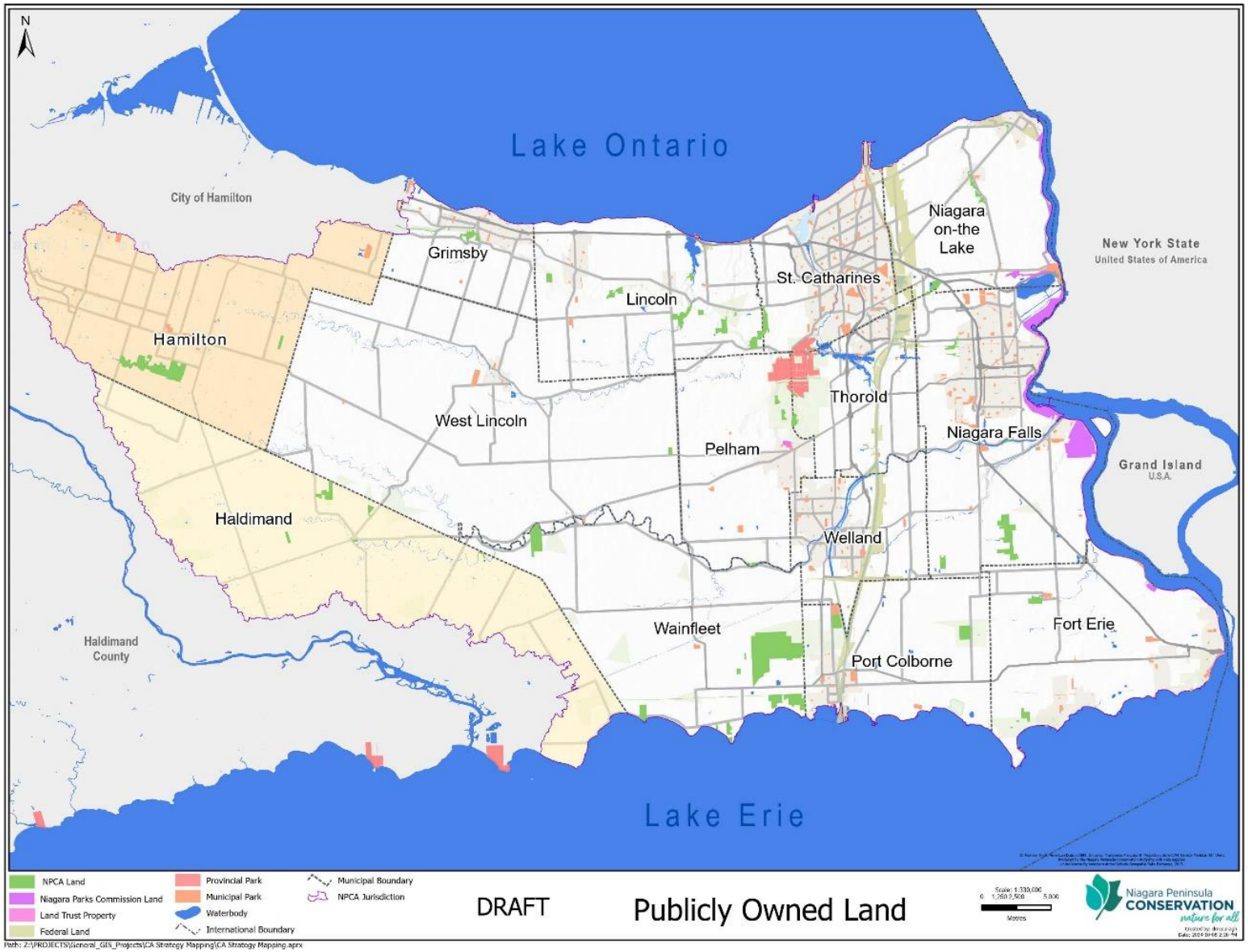
Map 5: Map of publicly-owned lands



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 Canda, Niagara Escarpment Biosphere Conservancy, and Ontario Farmland

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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

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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.

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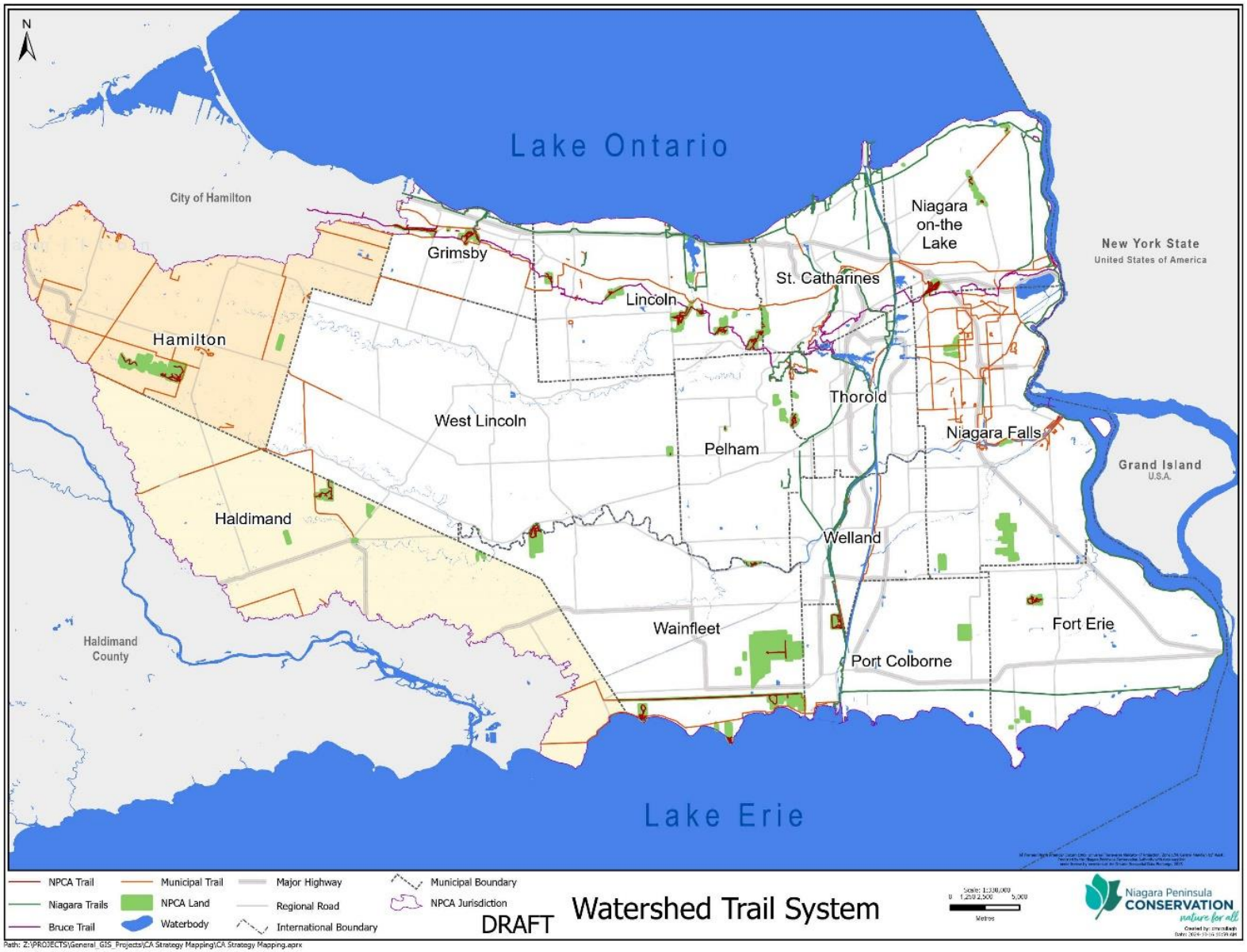
Map 6: Trail network in NPCA watershed



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.

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- 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 plants 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

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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.

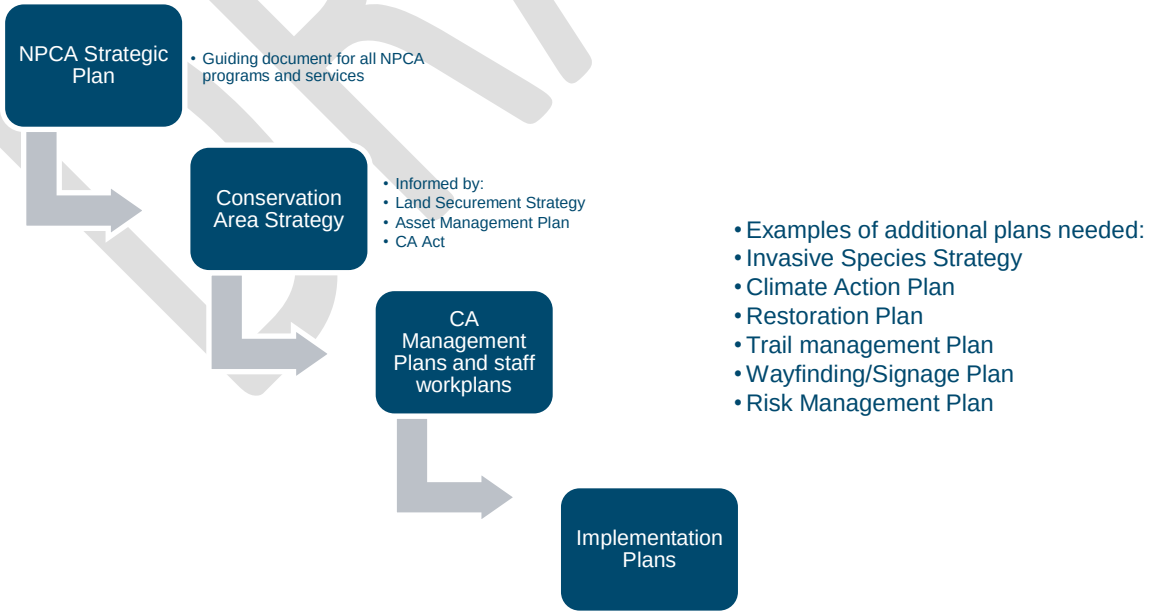
8.0 FUTURE CONSIDERATIONS

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.

Collectivley, 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.



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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/

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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	

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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

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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	

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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

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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

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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 Camping Other services (e.g., weddings, facility rentals, events and retail)	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 Cultural heritage programs	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

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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) Passive recreation Management tree management heritage buildings Risk Hazard Maintenance of Forest Management	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 Goal 3.1 Goal 3.3
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 (1, 2, 3)	Explanation of Funding Category	CA Act Reference	Cost Estimate	Funding Mechanism % of cost	MOU Required	Strategic Plan Ref
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** **107** **127** **153**	Administrative support resources (incl health and safety) and occupancy costs and policies Human Property taxes Oversight of programs Operating costs not directly related to any specific program or service (e.g., overhead) Records management Grant management	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 Goal 5.2 Goal 5.3 Goal 5.4 Goal 6.1 Goal 6.2
Financial Services	**105**	Annual budget Accounts payable and receivable Procurement Payroll Financial analytics and reporting Audit Admininstration of reserves and investments	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 Goal 5.3 Goal 6.1 Goal 6.2
Information Management and Technology	**131** **109**	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	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 Goal 1.2 Goal 1.3 Goal 2.2 Goal 5.2 Goal 5.3
Governance and Corporate Administration	**103** **150**	Support to governance and corporate administration governance Advisory Committee and ad-hoc committees planning/reporting and CAO oversight Board Public Strategic	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 Goal 5.3
Communications, Marketing and Public Relations	**111**	Marketing and promotion Media relations plan Strategic Public and stakeholder consultation	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
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** **155**						**$1,119,246**	Municipal levy - 57% Self-generated - 40% Provincial - 3%		Goal 1.2 Goal 1.4 Goal 6.3
		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)			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**			