NIAGARA PENINSULA CONSERVATION AUTHORITY

FULL AUTHORITY MEETING
Wednesday October 19, 2016 6:30 pm
Ball's Falls Centre for Conservation – Glen Elgin Room
3292 Sixth Avenue, Jordan,ON

A G E N D A

6:30 pm — *Public Session*

- **DECLARATION OF CONFLICT OF INTEREST**
- **ADOPTION OF AGENDA**
- **BUSINESS**

(1) A. Full Authority Meeting---------- Draft Minutes September 21, 2016

B. Draft Committee Minutes

- *CLAC (September 8, 2016)*
- *Budget Committee Meeting (October 12, 2016)*
- *Watershed Floodplain Committee (October 12, 2016)*

(2) Business Arising from Minutes

(3) Correspondence

- *Ontario Wetland Strategy*
- *Oct. 6 - Multi Stakeholder Letter – Re: CA Act Review*
- *St. Catharines – Where do my Property Taxes Go?*

(4) Chairman's Remarks

(5) Chief Administrative Officer Comments

Reports for Information

(6) Project Status Reports:

1. *Watershed Management*---------- ***Report No. 99-16***
2. *Operations*---------- ***Report No. 100-16***
3. *Corporate Services*---------- ***Report No. 101-16***

Continued …P2

(7) Financial & Reserves update month ending September 30---------- ***Report No. 102-16***

(8) Tree & Forest Conservation By-law Status ---------- ***Report No. 103-16***

(9) Q3 Quarterly Communications update ---------- ***Report No. 104-16***

(10) Q3 Capital Projects update ---------- ***Report No. 105-16***

(11) 2014-2017 Strategic Plan update ---------- ***Report No.106-16***

(12) Wainfleet Bog Restoration Plan ---------- ***Report No. 107-16***

(13) Gord Harry Trail Restoration ---------- ***Report No. 108-16***

- *Staff Presentation (copy attached)*

(14) Watershed Plans – Establishing a Framework---------- ***Report No. 109-16***

Reports for Consideration

(15) 2017 Draft Capital Budget and Apportionment---------- ***Report No. 110-16***

- *Staff Presentation*
- *Recorded Vote*

(16) 2017 Fees Report – Operations ---------- ***Report No. 111-16***

(17) Coordinated Provincial Plan Review---------- ***Report No. 112-16***

(18) Other Business

Closed Session

1. Confidential Matter of Advice Identifying an individual(s) ---------- ***Report CR-113-16***

Public Session

- Resolution(s) from closed session
- **ADJOURNMENT**

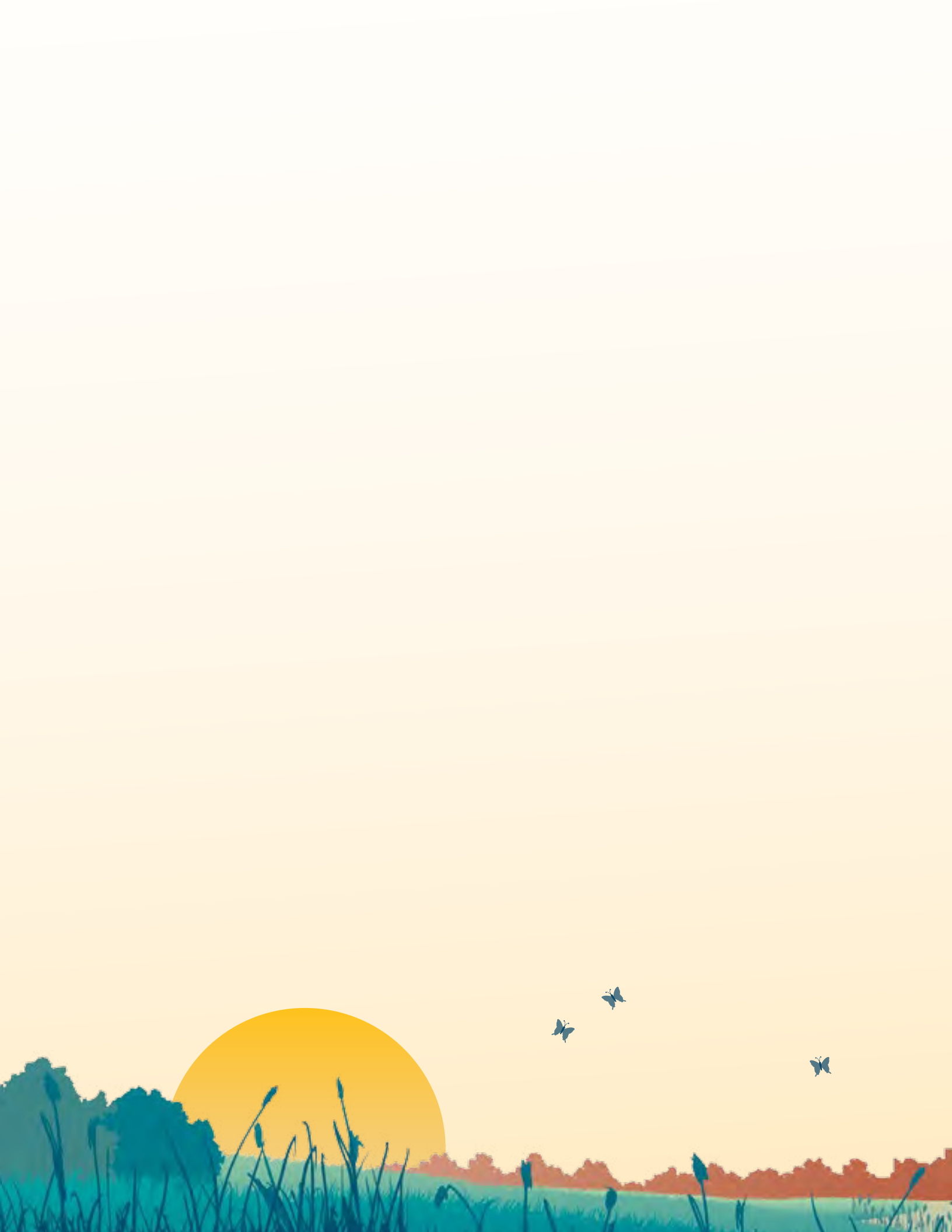
CORRESPONDENCE #1

October 19, 2016 Full Authority Meeting

Draft: A Wetland Conservation Strategy for Ontario

2016–2030

Ontario



Executive Summary

Wetlands are among the most productive and diverse habitats on Earth and form an important part of Ontario's landscape. From the swamps and marshes in the southern part of the province to the vast peatlands in the north, wetlands play a vital role in supporting Ontario's rich biodiversity and providing essential ecosystem services on which Ontarians depend for health and well-being.

Building on over 30 years of positive achievements in conserving Ontario's wetlands, *A Wetland Conservation Strategy for Ontario* represents a 15-year framework to guide the future of wetland conservation across the province. The intent of the Strategy is to establish a common focus and path forward, so that greater success can be achieved in a more efficient and effective manner.

The Strategy itself includes two main sections. The first section describes the current state of wetlands in Ontario and provides information on the variety of legislation, regulations, policies, guidelines, programs and partnerships that support wetland conservation across the province. The second section describes the new wetland conservation framework, which includes a clear vision, goals and desired outcomes, as well as a series of actions the Ontario government will undertake over the next 15 years to improve wetland conservation.

The vision is stated: Ontario's wetlands and their functions are valued, conserved and restored to sustain healthy and resilient ecosystems, and to provide ecosystem services for present and future generations.

This vision is supported by goals and desired outcomes that are aligned with four strategic directions reflecting the critical components required to conserve Ontario's wetlands. These include **awareness**, **knowledge**, **partnership** and **policy**.

A comprehensive suite of actions that the Ontario government is taking, or will take, is also an important part of the Strategy. Priority actions include improving Ontario's wetland inventory and mapping, developing policy approaches and tools to prevent the net loss of Ontario's wetlands and improving guidance for evaluating the significance of Ontario's wetlands.

Finally, the success of the Strategy will be measured through two overarching targets. These targets include:

1. By 2025, Ontario's significant wetlands are identified and conserved to sustain essential ecosystem services.
2. By 2030, the net loss of wetlands is halted in areas where wetland loss has been greatest.

The Ontario government commits to developing performance measures and reporting to the public on progress in implementing the actions, as well as progress towards achieving the targets. Progress will be monitored and assessed on a five-year time frame to encourage completion of ambitious action that will ultimately lead to improved conservation of wetlands across the province.

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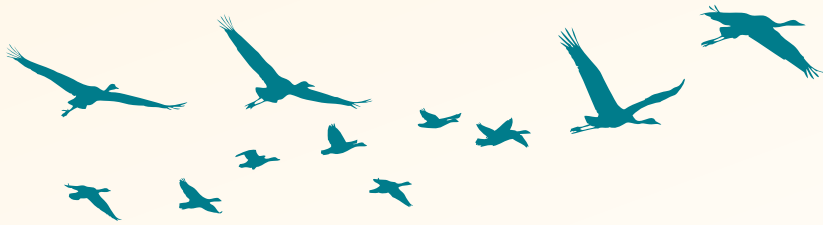


Introduction

Ontario's wetlands have played an important role in shaping the history and culture of the province and continue to play a vital role in supporting environmental and economic sustainability. Forming the connection between land and water, wetlands are among the most productive and diverse habitats on Earth. Ontario's wetlands are biodiversity hotspots, serving as important habitat to an array of plants, birds, insects, amphibians, fish and other animals. Wetlands also provide Ontarians with a variety of ecosystem services that impart economic benefits and contribute to a high quality of life. These benefits include providing clean and abundant water, flood, drought and erosion prevention, climate moderation, climate change mitigation, recreational opportunities and other important social, cultural and spiritual benefits.

Building on over 30 years of progressive wetland policy and partnerships, *A Wetland Conservation Strategy for Ontario* provides a coordinating framework to guide wetland conservation across the province. The intent is to provide both the Ontario government and Ontarians with a common focus and a path forward so that greater success can be achieved in a more efficient and effective manner. The Strategy will serve as a launching point for new, innovative conservation commitments and actions that can improve Ontario's wetland conservation efforts.

A Wetland Conservation Strategy for Ontario includes a vision, strategic directions, goals and desired outcomes for wetlands in Ontario and establishes actions the Ontario government will undertake over the next 15 years to improve wetland conservation across the province. This includes increasing knowledge and understanding of wetland ecosystems and raising awareness about the importance of wetlands. It also includes building strong and effective wetland policies, encouraging cooperation at all levels of government and supporting strategic partnerships in a shared responsibility for conserving wetlands. These actions, taken together, will help Ontario stop the net loss of wetlands across the province.

ONTARIO'S WETLANDS

Ontarians are fortunate to be stewards of more than 1,000,000 square kilometres of land and water—approximately one-third of which is made up of wetlands. In fact, Ontario currently accounts for about 25 per cent of all the wetlands in Canada and 6 per cent of all the wetlands in the world. This places Ontario in a unique position and imparts a responsibility to protect these wetlands for current and future generations.

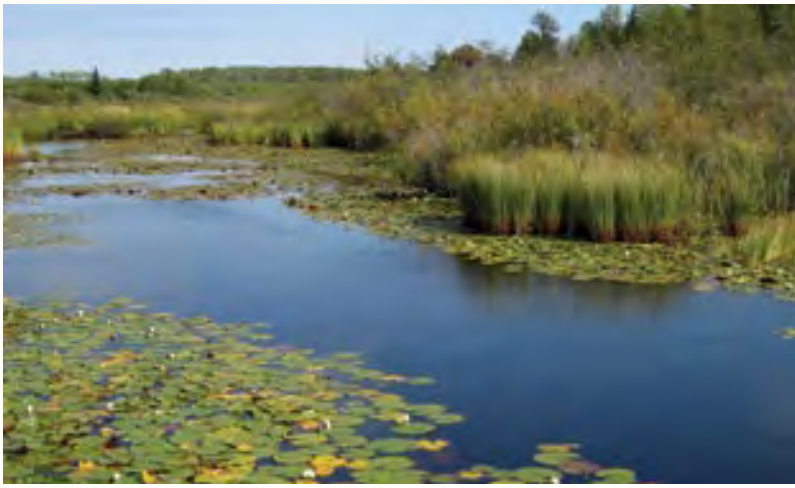


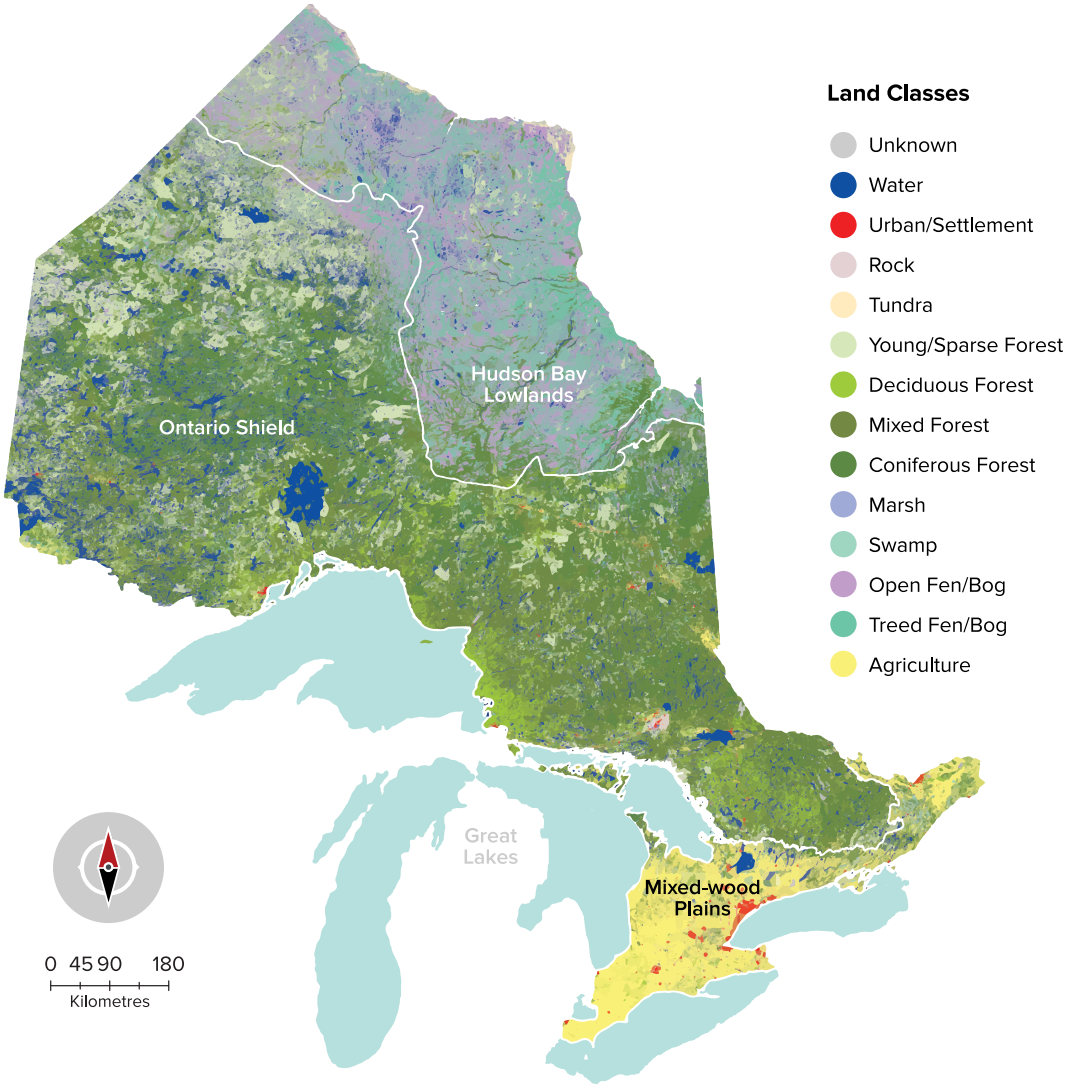
Photo: Open water marsh, Simon Dodsworth

Wetlands can be described as lands that are saturated with water long enough to cause the formation of hydric (waterlogged) soils and the growth of hydrophytic (water-loving) or water-tolerant plants. They are often transitional habitats, forming the connection between aquatic and terrestrial ecosystems and can occur where the water table is at or close to the surface, in low-lying locations, in areas with perched water tables or along the edges of lakes and rivers.

Many wetlands are permanently flooded, while others flood only periodically in the spring or fall. Others are never wet above the surface; however, the water table is not far below the ground. Wetlands can range in size from very small (only a few square metres) to exceptionally large, covering hundreds of square kilometres. Wetlands may also be isolated, or exist in conjunction with other natural vegetation such as woodlands, shrublands and native grasslands. Sometimes, several closely spaced wetlands, related in a functional way can also form what is known as a wetland complex.

Climate, geology and ecosystems differ throughout the province, as do the number, size, type and distribution of wetlands (figure 1). In Ontario, the majority of wetlands are found in northern Ontario, with the Hudson Bay Lowlands Ecozone accounting for 20,000,000 hectares or about 57 per cent of Ontario's wetlands (Ontario Biodiversity Council 2015). An estimated 10,000 square kilometers or 1,000,000 hectares of wetlands exist in southern Ontario, with an average size of 25 hectares.

FIGURE 1: Ontario's Ecozones and associated land cover



There are four main types of wetland in Ontario—**swamp**, **marsh**, **bog** and **fen**.

Swamps are the most common and most diverse type of wetland found in southern Ontario. Largely dominated by trees and shrubs, swamps are found throughout a variety of ecological settings and support a large diversity of vegetation and wildlife.

Photo: Sam Brinker

Marshes are the most recognized type of wetland in Ontario; however, they are also the least common throughout the province. Marshes often have open areas of water with floating plants such as water-lilies and emergent plants (those plants standing above the water) such as cattails. They provide critical habitat for migratory waterfowl and a wide variety of other animal and plant species. In particular, the vast marshes on the coasts of James Bay and Hudson Bay provide important breeding and nursery habitat for numerous waterfowl and shorebirds.

Photo: Rebecca Zeran

Bogs are very old wetlands—thousands of years old in many cases. Bogs are extremely rare in southern Ontario, but much more common in the north. They are peat-covered areas or peat-filled depressions with a surface carpet of Sphagnum moss that receive water only from rainfall or surface run-off. Bogs are typically low in nutrients and strongly acidic.

Photo: Sam Brinker

Fens, like bogs, are rare in southern Ontario and more common in the north. They often contain Sphagnum moss; however, they are less acidic and more nutrient rich than bogs. This allows for a higher diversity of plant life, including a variety of sedges, grasses and reeds.

Photo: Sam Brinker

Photo: Kayakers in a wetland, Ontario Tourism Marketing Partnership Corporation (OTMPC)

Bogs and fens, characterized by accumulations of peat greater than 40 centimetres, are also known as **peatlands**. Peat is formed where dead plant material is conserved for thousands of years due to a combination of permanent water saturation, low oxygen levels and low temperatures. High water levels in peatlands limit oxidation, thereby minimizing the release of carbon dioxide into the atmosphere—an important service in mitigating the effects of climate change. In fact, it is estimated that peatlands in the Far North of Ontario annually sequester an amount of carbon equal to about one third of Ontario's total carbon emissions (Far North Science Advisory Panel 2010). Increases or decreases in water levels as a result of climate change may alter the ability of Ontario's peatlands to store and sequester carbon.

Ontario is also home to a unique kind of wetland known as a **Great Lake coastal wetland** (OWES 2014). Great Lake coastal wetlands are located in close proximity to the Great Lakes coastline and are connected by surface water to a Great Lakes system lake or channel. These wetlands are among the region's most ecologically valuable and productive habitats, providing a number of essential ecosystem services to Ontarians. This includes improving Great Lakes water quality by filtering pollutants and sediment; storing and cycling nutrients and organic material from land into the aquatic food web; and reducing flooding and erosion during periods of high water. These wetlands also provide important habitat for wildlife, including breeding/spawning and nursery habitats for many Great Lakes species.

Similarly, the **coastal wetlands along James Bay and Hudson Bay** in Ontario's far north are among the most productive subarctic wetland habitats in the world. They provide critical habitats and support a globally significant migratory flyway for waterfowl and shorebirds. In addition, these systems represent the densest carbon storage and water-retention ecosystems in Ontario.

The Critical Functions of Ontario's Wetlands

Healthy, biologically diverse wetlands are public assets that provide multiple ecosystem services to Ontarians (figure 2). Ecosystem services are defined as the benefits people obtain either directly or indirectly from nature. Natural systems, such as wetlands, provide services to humans, including water filtration, flood control, erosion reduction, groundwater recharge/discharge, carbon sequestration and recreational, cultural and spiritual opportunities.

Protecting Ontario's valuable wetlands means Ontarians can benefit from these ecosystem services for years in the future. For example, wetlands intercept rainfall and filter pollutants out of the water, making Ontarians less dependent on storm water and water treatment infrastructure (Ducks Unlimited Canada 2011). Wetlands also play an important role in soil stabilization and flood protection, providing benefits to the surrounding landscape and the people who inhabit it. In particular, wetlands can provide much-needed flood attenuation services in the face of more frequent extreme weather events resulting from climate change. When wetlands are protected, so are these important ecosystem services that they provide.

Information on the value of Ontario's wetlands is growing and can be used to communicate the benefits of wetland conservation, as well as to help assess the costs associated with the loss of these important ecosystems. For example, a recent study found that southern Ontario's urban and sub-urban wetlands filter water and produce at least $14 billion in economic benefits each year (Troy and Bagstad 2013). Similarly, the total annual non-market value of the wetlands in Ontario's Greenbelt has been estimated at $1.3 billion based on services, including climate regulation, flood control, water filtration, waste treatment, provision of habitat, recreation and aesthetics (David Suzuki Foundation 2008).

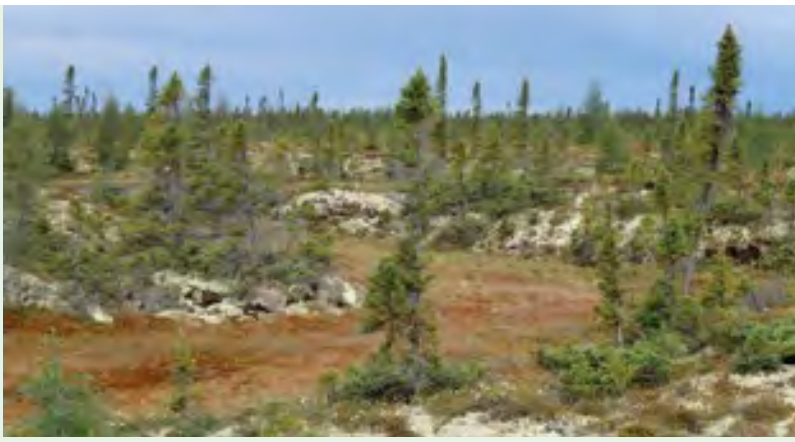
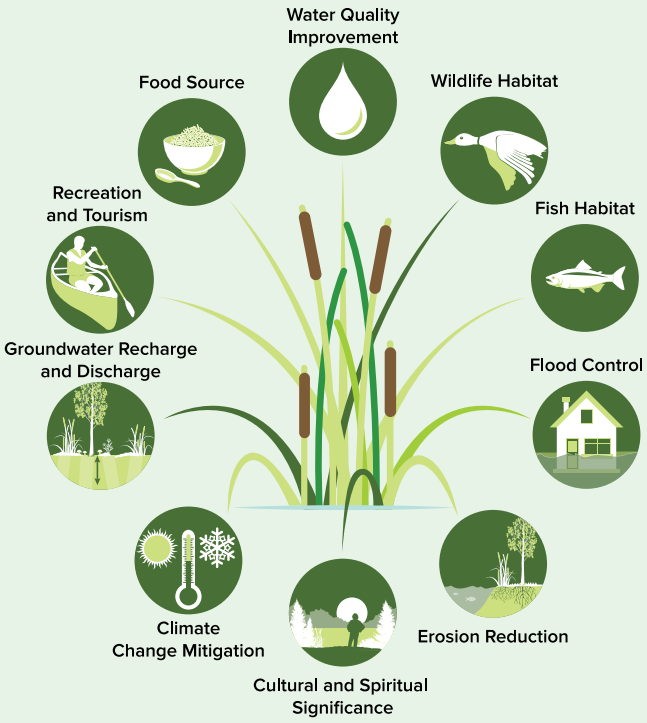


Photo: Peatlands in the Hudson Bay Lowlands, Peter Uhlig

FIGURE 2: Wetland ecosystem services



CURRENT STATUS AND THREATS

The province of Ontario was once characterized as a vast sea of contiguous forest, lakes, rivers and wetlands with small, scattered islands of openings, savannahs, prairie and alvars. However, since the time of European settlement, the landscape has undergone repeated change in response to various economic and resource-use opportunities. In the southern portion of the province (Mixedwood Plains Ecozone), a thriving economy and fast-growing human population has resulted in many wetlands being drained or filled to accommodate agricultural, industrial and residential land uses. Estimates suggest that 68 per cent of the wetlands originally present in southern Ontario were lost by the early 1980s (OBC 2010). An additional 4 per cent has been lost since this time (OBC 2015); however, a recent assessment has shown that the rate of loss appears to be decreasing (OBC 2015). While land conversion is the primary cause of wetland loss in southern Ontario, pollution, invasive alien species, alteration to natural water levels and climate change also pose serious threats.

Photo: Wye Marsh Wildlife Centre, OTMPC

Ontario's Great Lakes coastal wetlands have also experienced similar historical losses and degradation over the past 200 years. It is estimated that by 1984, 35 per cent of wetlands along the Canadian shores of Lakes Erie, Ontario, and St. Clair had been lost, with the greatest losses occurring between Toronto and the Niagara River. The majority of this loss occurred when large wetlands were dredged for shipping and filled for industrial and urban development (Ball et al. 2003). Loss and degradation continue today, largely resulting from shoreline alteration, water level control, nutrient and sediment loading, invasive species, dredging, and industrial, agricultural, and residential development. Upstream land use practices also have an impact, particularly through run-off from agricultural lands and impervious surfaces.

Despite some localized loss and degradation, wetlands in the northern part of Ontario (Hudson Bay Lowlands and Ontario Shield Ecozones) remain largely intact. Threats to northern Ontario wetlands are, in many areas, quite different from those in southern Ontario. Although urban development and drainage for agriculture are a concern in the more settled regions of northern Ontario, pressures from activities such as mining, hydro-electric and alternative energy development, and transmission and transportation infrastructure are more common. Longer-term, climate change is also expected to have a significant impact on wetlands in northern Ontario, particularly peatlands in the Far North. Increases or decreases in water levels as a consequence of climate change may result in changes in the extent and composition of current wetlands and alter the ability of these ecosystems to store and sequester carbon.

It is important to recognize that wetlands are often exposed to multiple threats at the same time, and in many cases, these threats are closely linked. Cumulative effects are those effects on the environment that result from repeated actions of the same type in the same area over time, or from the synergistic interaction of different stressors. For example, the impact of climate change on stream flows, coupled with increased water takings to support population growth, or increased habitat fragmentation in urbanized areas creating pathways for the introduction and spread of an invasive species, such as Phragmites. Cumulative effects often have a far greater negative outcome and lead to greater wetland loss or degradation than any single threat on its own.

Invasive Species and Wetlands

Invasive species are having a profound impact on Ontario's most fragile and threatened natural ecosystems, including wetlands. The large number of lakes and interconnected waterways have allowed the continued spread and establishment of numerous aquatic and terrestrial invasive species. For example, invasive Phragmites (also known as the Common Reed) has been identified as a threat to 25 per cent of identified species at risk in Ontario.

To address this issue, on November 3, 2015 the Ontario government passed Bill 37, the *Invasive Species Act, 2015*. The Act establishes an enabling regulatory framework that will allow Ontario to better prevent, detect, control and eradicate invasive species across the province. For example, following the regulation of an invasive species, the Act would allow an inspector to issue orders to prevent action that would result in the further spread of an invasive species. These actions, combined with other programs to prevent, detect and control and eradicate invasive species will help to reduce the threat posed by invasive species to Ontario's wetlands.

Photo: Invasive Phragmites, Wasyl Bakowsky

Photo: Urban wetland, David Hintz

Climate Change and Wetlands

Wetlands are among the ecosystems most vulnerable to climate change. Studies indicate that the most pronounced effects on wetlands will be altered hydrological regimes and more frequent or intense extreme weather events (heat waves, droughts, storms and floods). Temperature, precipitation and water levels are key determinants in the distribution, productivity and functioning of wetlands. A future with a warmer and drier climate may reduce many wetlands in size, convert some wetlands to dry land or shift one wetland type to another. In particular, bogs and fens, which depend on precipitation and surface runoff rather than groundwater, are particularly sensitive to drying. Peatlands are also likely to become dry due to increased evapotranspiration. This drying will promote the establishment of woody species and increase the rate of peat decomposition and, over the long-term, carbon loss. Further, if large areas of peatlands become drier they may be more susceptible to fire, which could in turn, lead to increased carbon emissions (McLaughlin and Webster 2013).

Water-level fluctuations also have a strong influence on the structure and function of wetlands. Increased runoff during severe rain events may alter wetland ecosystem function, including changes to the resident plant and animal species and their relationships. Alternatively, reduced water levels may eliminate or modify wetlands, affecting their ability to maintain shoreline integrity, reduce erosion, filter contaminants, absorb excess storm water, and provide fish and wildlife habitat (e.g., the natural succession of wetland plants and fish spawning areas) (Chu 2015).

While climate change poses a serious threat to wetlands in Ontario, the conservation of wetlands can play an important role in mitigating climate change by reducing greenhouse gas concentrations and adapting to the impacts of climate change—by regulating temperature, reducing the heat-island effect, slowing impacts of droughts and reducing flood risks and negative impacts on water quality. Peatlands and forested wetlands are especially important because they can store significant amounts of carbon. Draining or otherwise altering wetlands will release stored carbon and may contribute to rising levels of atmospheric greenhouse gasses.

Wetland Conservation in Ontario

To address historical losses and current threats, the Ontario government has, over time, developed a variety of legislation, regulations, policies, guidelines and agreements to support wetland conservation. This also includes grant and incentive programs, as well as strategic partnerships. All aspects are important to enable and support wetland conservation (which includes protection, restoration, management and stewardship) across the province.

ONTARIO'S CURRENT WETLAND POLICIES

Ontario's first public discussions regarding the development of wetland policy occurred more than 30 years ago, when the government released a discussion paper titled *Towards a Wetland Policy for Ontario*. The result of that effort was a wetland policy issued by the Ontario government in 1984 titled *Guidelines for Wetlands Management in Ontario* and later on, the 1992 Wetland Policy Statement—a precursor to what are now the wetland-related natural heritage policies under the Provincial Policy Statement.

Since this time, pressures on Ontario's wetlands have changed and evolved and wetland policy has followed suit. Currently, wetlands are managed through a variety of policies that include over 20 different pieces of legislation administered and/or implemented by five provincial Ministries, two federal departments, a provincial agency (Niagara Escarpment Commission), 36 conservation authorities and 444 municipalities. Some of these statutes enable aspects of natural resource or natural heritage conservation and management, which can include wetlands, while others explicitly prohibit or permit certain land uses or activities within them, such as development.

Table 1 outlines the major legislation and policy instruments currently in place that influence and guide wetland conservation in Ontario. In addition to the legislation and policy described, several other provincial statutes require consideration of wetlands when making decisions (e.g., *Aggregate Resources Act*) or influence wetlands in some way (e.g., *Drainage Act*). Others recognize that wetlands are part of recharge areas, which are important to protecting sources of drinking water in Ontario (e.g., those wetlands mapped in local source protection plans prepared under the *Clean Water Act*). Several federal policies and statutes also contribute to wetland conservation in Ontario (e.g., *Fisheries Act*, Federal Policy on Wetlands).

Photo: Farm wetland, Ducks Unlimited Canada

TABLE 1A: Policy instruments that guide wetland conservation and management in Ontario

PROVINCIAL INSTRUMENTS THAT PROHIBIT CERTAIN ACTIVITIES IN WETLANDS

Policy Instrument	Link to Wetland Conservation and Management
Planning Act, Provincial Policy Statement 2014	Protects provincially significant wetlands and coastal wetlands from development and site alteration depending on where they are located within the province.
Niagara Escarpment Planning and Development Act & Plan	Protects wetlands located within the Niagara Escarpment planning area from development.
Oak Ridges Moraine Conservation Act, 2001 & Plan	Protects wetlands located within the Oak Ridges Moraine planning area from development.
Greenbelt Act, 2005 & Plan	Protects wetlands in the area designated as Protected Countryside within the Greenbelt Plan in the Greater Golden Horseshoe.
Lake Simcoe Protection Act, 2008 & Plan	Protects wetlands located in the Lake Simcoe watershed (as defined) from development.
Conservation Authorities Act Regulations	Regulates development in and around wetlands for effects on the control of natural hazards (e.g., flooding), as well as activities that may interfere with a wetland.
Renewable Energy Approvals Regulation *(*under the *Environmental Protection Act)*	Prohibits most activities associated with renewable energy projects from locating directly within provincially significant wetlands in southern Ontario and significant coastal wetlands, while enabling a risk-based approach to minor encroachments from infrastructure.
Crown Forest Sustainability Act, 1994 & Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales (2010)	Provides for the long-term health of Crown Forests and for forest sustainability. Forest management guides used during the planning and implementation of operations and construction of roads contain mandatory direction and best management practices designed to protect the integrity of aquatic habitats that include permanent and seasonal wetlands (inclusive of those recognized as provincially significant).
Public Lands Act and enabling processes	Guides disposition of Crown land resources via a permitting process (e.g., peat, vegetation removal, etc.).
Lakes and Rivers Improvement Act & *Water Resources Act*	Requires approval for the installation and operation of water control structures used to restore or enhance wetland habitat.

TABLE 1B: Policy instruments that guide wetland conservation and management in Ontario

PROVINCIAL INSTRUMENTS THAT FACILITATE WETLAND CONSERVATION

Policy Instrument	Link to Wetland Conservation and Management
Great Lakes Protection Act, 2014	Enables establishment of wetland targets and supporting plans to prevent net loss of wetlands, as well as regulatory tools and initiatives to support shoreline and coastal protection and restoration.
Far North Act, 2010	Establishes objectives for community-based land use planning, including the protection of 225,000 square kilometres of land in the Far North of Ontario, and the maintenance of biological diversity, ecological processes and functions such as the storage and sequestration of carbon.
Endangered Species Act, 2007	Prohibits the damage and destruction of the habitat of endangered and threatened species, some of which carry out life processes in wetlands.
Provincial Parks and Conservation Reserves Act, 2006	Permanently protects a system of provincial parks and conservation reserves that includes ecosystems representative of all of Ontario's natural regions and provincially significant elements of Ontario's natural heritage, including wetlands.
Municipal Act, 2001	Enables a municipality to pass by-laws to restrict tree cutting (e.g., in swamps), placing or dumping of fill, and removing topsoil (e.g., defined to include peat).
Assessment Act	Sets out eligibility criteria for lands that can receive property tax exemptions under the Conservation Land Tax Incentive Program and the Managed Forest Tax Incentive Program—many of these lands contain wetlands.
Conservation Land Act	Enables the protection of natural areas, including wetlands, by establishing conservation easements on private land.
Environmental Assessment Act	Requires an assessment of any major public sector and some private sector undertakings that may have a significant environmental impact. The process requires ministries such as the Ontario Ministry of Transportation to make design decisions to avoid impacts and mitigate or compensate where avoidance is not possible.

INTERNATIONAL COOPERATION FOR WETLAND CONSERVATION

Wetlands are recognized globally as a resource of great ecological, economic, cultural and recreational value. Numerous conventions, agreements and collaborative partnerships have been developed to help ensure that wetlands and the important functions they provide are conserved and sustained for future generations. These initiatives operate at various scales, involve both government and non-government organizations, and often seek to coordinate conservation action across provincial, national and continental boundaries.

Photo: Great Blue Heron, Rebecca Zeran

Ramsar Convention: In 1971, a multi-national global treaty, called the Ramsar Convention, was adopted in the Iranian city of Ramsar to provide a framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. The treaty was negotiated in the 1960s by countries and non-governmental organizations concerned about increasing loss and degradation of wetland habitat for migratory birds.

A key commitment of the Ramsar Convention is to identify globally important wetlands on the List of Wetlands of International Importance. There are eight Ramsar Wetlands of International Importance designated in Ontario, including Long Point National Wildlife Area, St. Clair National Wildlife Area, Southern James Bay, Polar Bear Provincial Park, Point Pelee National Park, Mer Bleue Conservation Area, Matchedash Bay Provincial Wildlife Area and Minesing Swamp. Together, these important wetlands cover an area of 56,419 hectares.

Convention on Biological Diversity: Established in 1992, this convention provides a broad framework for the conservation and sustainable use of biodiversity. Nationally, the Convention on Biological Diversity is supported by the Canadian Biodiversity Strategy and the recently established Canadian 2020 Biodiversity Goals and Targets. On a provincial level, **Ontario's Biodiversity Strategy 2011** and **Biodiversity: It's In Our Nature—Ontario Government Plan to Conserve Biodiversity 2012–2020** contribute to Canada's actions to conserve biodiversity, both of which include actions to improve wetland conservation.

United Nations Framework Convention on Climate Change: Established in 1992, The Climate Change Convention aims to address problems resulting from the increasing concentrations of carbon dioxide and methane in the atmosphere. Wetlands are likely to be affected by the expected changes in hydrology associated with climate change. For Canada and Ontario, major responses to obligations under the Climate Change Convention are addressed through **Canada's Way Forward on Climate Change** and **Ontario's Climate Change Strategy and Action Plan**. Wetland conservation is identified as a key action in mitigating carbon emissions and the impacts of changing climatic conditions.

Eastern Habitat Joint Venture (EHJV):

This joint venture is a collaborative partnership of government and non-government organizations working together across eastern Canada to conserve continentally significant wetlands and other habitats that are important to waterfowl and other migratory birds. Since 1986, the EHJV has helped to implement habitat conservation programs—such as wetland securement, restoration stewardship and management—that support continental waterfowl objectives identified under the North American Waterfowl Management Plan (NAWMP).

The EHJV, one of more than 20 joint ventures in North America, spans the six easternmost Canadian provinces. Each province has established its own provincial partnership to implement activities that support the joint ventures as a whole. In Ontario, this partnership is known as the Ontario EHJV. Ontario EHJV partners include the Government of Canada, the Government of Ontario, Ducks Unlimited Canada, the Nature Conservancy of Canada, Bird Studies Canada and Long Point Waterfowl. Partners work across Ontario, however, the focus is often in areas of southern Ontario where loss of wetland habitat has been highest. Funding is leveraged through the *North American Wetlands Conservation Act* as recognition of the importance of wetlands in providing important habitat for various life stages of migratory waterfowl.

CONSERVING WETLANDS IN THE GREAT LAKES BASIN

It has long been recognized that wetlands play an important role in maintaining the water quality and ecosystem integrity of the Great Lakes basin. Several initiatives have developed over the last 40 years that recognize the important role of wetlands in the Great Lakes, identify the threats that wetlands face in this region and seek to implement actions to protect and restore wetlands across the basin. Many of these initiatives involve close inter-jurisdictional cooperation and a commitment to work together. These include:

Canada-U.S. Great Lakes Water Quality Agreement (GLWQA): This bi-national agreement has a vision to restore and maintain the chemical, physical and biological integrity of the waters of the Great Lakes. The amended agreement (2012) includes an objective to support healthy and productive wetlands and other habitats to sustain resilient populations of native species.

Photo: Spotted Turtle, Joe Crowley

Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health, 2014 (COA): This agreement outlines how the governments of Canada and Ontario will work together to restore, protect and conserve Great Lakes water quality and ecosystem health. The 2014 COA includes a priority focusing on restoring, protecting and conserving wetlands, beaches and other coastal areas of the Great Lakes.

Lakewide Action and Management Plans (LAMPs): Bi-national action plans created to help restore and protect each Great Lake, LAMPs are used to assess the status of each Great Lake. These action plans also outline how federal, provincial and state agencies are working together to implement management actions that address lake-wide environmental issues, including wetland conservation.

Photo: Coastal wetland complex, Jason Mortlock

Ontario's Great Lakes Strategy, 2012: This Strategy provides a roadmap for how Ontario ministries are taking action to protect the Great Lakes—St. Lawrence River basin. Now enshrined as a living document under the *Great Lakes Protection Act, 2015*, it is designed to focus provincial actions across ministries, and to enhance collaboration and engagement with the broader Great Lakes community. One of the six goals of the Strategy is to improve wetlands, beaches, shorelines and coastal areas.

Great Lakes Wetland Conservation Action Plan (GLWCAP): Prepared by government and non-government organizations in 1994, this action plan outlines a framework for wetland conservation in the Great Lakes basin through eight implementation strategies. The plan is coordinated by a team of federal, provincial and non-governmental organizations, and actions are updated regularly.

Great Lakes Water Level Management: Established under the Boundary Waters Treaty in 1909, the International Joint Commission (IJC) is an advisor to the governments of Canada and U.S. on implementation of the GLWQA and helps to manage Great Lakes waters by regulating boundary water uses, investigating trans-boundary issues and recommending solutions. The Ontario government participates in the IJC's initiatives, including investigating the impacts of water level regulation on Great Lakes coastal wetlands.

PARTNERS IN WETLAND CONSERVATION

Wetland conservation efforts can be significantly strengthened through the support of citizens and organizations that can help to monitor, maintain and enhance wetlands across the province. Such efforts are an important contribution to the continual, on-the-ground work of wetland management and build awareness and appreciation for these sites among the broader community.

The Ontario government recognizes that wetland conservation involves private landowners, industry, conservation organizations and many others. Private landowners are important partners in the conservation of wetlands, particularly in southern Ontario where the majority of wetlands are privately owned.

Private landowners can conduct stewardship projects in conjunction with provincial and federal government agencies, municipalities, conservation authorities and environmental organizations, such as Ducks Unlimited Canada and the Nature Conservancy of Canada.

First Nation and Métis peoples and communities are also important partners in wetland management. The Ontario government recognizes that Indigenous communities are involved in managing and using wetlands sustainably, and that local and traditional knowledge can substantially contribute to effective wetland management practices. The livelihoods, food security and cultural heritage of Indigenous Peoples are often connected to wetlands. This unique relationship with the land and its resources pre-dates the existence of the province and continues to be of central importance in Indigenous communities across Ontario today.

Community Based Land Use Planning in the Far North of Ontario

In 2008, the Ontario government announced that it would work with First Nations to protect more than half of the Far North Boreal region. Under the Far North Land Use Planning Initiative, Ontario is working with local First Nations to prepare land use plans that clarify where development can occur and where land is dedicated to protection.

The *Far North Act, 2010* puts into law, for the first time in Ontario's history, a requirement for First Nations approval of land use plans on public lands. The Act sets out a land use planning process where joint First Nations-Ontario planning teams prepare and approve land use plans to identify lands in the Far North that will be designated as lands that are protected, those that are open for sustainable economic development, and how such land and water will be managed into the future. As of 2016, five First Nation communities have completed community-based land use plans (Pikangikum, Cat Lake, Slate Falls, Pauingassi and Little Grand Rapids) and all but a few of the remaining First Nation communities are engaged with MNRF in the various stages of preparing a land use plan.

Photo: Fens in Northern Ontario, Monique Wester

Kettle and Stony Point First Nation Phragmites Control Program

Wetland conservation in Ontario requires a coordinated approach that includes meaningful involvement of Indigenous Peoples and communities. Many First Nations are leading wetland conservation projects in their communities. For example, the Chippewas of Kettle and Stony Point First Nations in southern Ontario have implemented a successful invasive Phragmites control program to protect coastal meadow marsh in their community.

Phragmites (also known as the Common Reed) is an invasive plant that grows and spreads easily, quickly out-competing native species for water and nutrients. Phragmites is well established in parts of Ontario and was found to be present within the coastal meadow marsh and interior wetlands on Kettle and Stoney Point.

In the fall of 2011, First Nations selected an approximately 1.8 hectare section of coastal meadow marsh overtaken with Phragmites as a demonstration site to show the local community the restoration benefits of using a combination of herbicide and mechanical control methods. The positive response of native vegetation and wildlife during the following summer helped gain community support for a Phragmites control program in the area.

Photo: Kettle and Stony Point First Nation Phragmites control, Janice Gilbert

As a result, a five-year community Phragmites Management Plan was developed to help guide effective, efficient, and environmentally responsible control efforts. The First Nation was also successful in obtaining funds through the Canada/Ontario Resource Development Agency in 2012 and 2013 to support the development and implementation of the control program.

The community's efforts resulted in a noticeable decline in Phragmites in the project area. Prior to control efforts, coverage of Phragmites ranged from 20 to 100 per cent. Post-control, the average coverage declined to approximately 1.5 per cent. An increase in the diversity of native vegetation and wildlife in the area was also observed.

The Ontario government administers several grant and incentive programs to encourage conservation and stewardship of wetlands and other important habitats. Examples of these programs include:

Conservation Land Tax Incentive Program: Administered by the Ministry of Natural Resources and Forestry, this program is designed to recognize, encourage and support the long-term private stewardship of Ontario's provincially important lands. It offers 100 per cent tax exemption to land-owners who agree to protect provincially important natural heritage features on their property. Provincially significant wetlands are eligible under this program.

Land Stewardship and Habitat Restoration Program: Administered by the Ministry of Natural Resources and Forestry, this program provides financial support up to $20,000 for organizations and groups to undertake projects that support biodiversity conservation and fish and wildlife habitat restoration in Ontario, including wetland restoration.

Great Lakes Guardian Community Fund: Administered by the Ministry of the Environment and Climate Change, this fund offers up to $25,000 in grant funds for projects in the Great Lakes — St Lawrence River basin that support at least one of three goals: (1) protect water quality for human and ecological health, (2) improve wetlands, beaches and coastal areas, (3) protect habitats and species.

The Canada-Ontario Environmental Farm Plan (EFP): Administered by the Ontario Soil and Crop Improvement Association on behalf of the governments of Canada and Ontario, the Canada-Ontario Environmental Farm Plan provides education on wetlands and wildlife habitat and links to incentive funding as cost share assistance to Ontario farmers to implement beneficial management practices identified in their Environmental Farm Action Plan. Actions may include wetland restoration and management.

Growing Forward 2: Administered by the Ontario Soil and Crop Improvement Association on behalf of the governments of Canada and Ontario, Growing Forward 2 provides cost-shared funding for a wide variety of projects, including "actions for biodiversity/habitat enhancements" such as wetland restoration.

Species-at-Risk Farm Incentive Program: Administered by the Ontario Soil and Crop Improvement Association on behalf of the Ministry of Natural Resources and Forestry and Environment and Climate Change Canada, this program includes restoration and creation of wetlands as an eligible project type.

Species at Risk Stewardship Fund: Created under the *Endangered Species Act* and administered by the Ministry of Natural Resources and Forestry, this program encourages people to become involved in protecting and recovering species at risk through stewardship activities. This can include restoration of habitat such as wetlands.

Photo: Wetland stewardship project, Ministry of Natural Resources and Forestry.

A Wetland Conservation Strategy for Ontario

PURPOSE

The Ontario government has long understood the importance of wetlands and continues to provide strong leadership to conserve these vital ecosystems. From enacting progressive legislation and policy designed to protect and enhance wetlands, to working with partners in the delivery of innovative programs to encourage stewardship and landscape restoration, the Ontario government is committed to conserving wetlands.

Photo: Wye Marsh, OTMPC

In 2014, the Ministry of Natural Resources and Forestry was given a mandate to work with other ministries, municipalities and partners in the review of Ontario's broad wetland conservation framework and identification of opportunities to strengthen policies and stop the net loss of wetlands. To achieve this mandate, the Ministry of Natural Resources and Forestry has developed *A Wetland Conservation Strategy for Ontario* that will work to improve wetland conservation and stop the net loss of wetlands, particularly in those areas where wetland loss has been greatest.

The development of this Strategy mirrors the preparation of similar policy documents across Ontario, Canada and the world, where there has been a realization that investing in wetland conservation is for more than just the conservation of wildlife. It is also about ensuring the protection of these natural assets that are essential to ensuring quality of life now and in the future.

Through a series of engagement opportunities on *Wetland Conservation in Ontario: A Discussion Paper,* Ontarians expressed their concern about wetland loss in the province and loss of the important ecosystem services they provide. Ontarians also discussed the different issues and opportunities for wetland conservation in the different parts of the province, highlighting that there is no one-size-fits-all solution to wetland conservation. Finally, Ontarians expressed strong support for the development of this strategy as well as the strategic directions identified.

A Wetland Conservation Strategy for Ontario represents a 15-year blueprint to improve the conservation of wetlands across the province. The Strategy provides a conceptual framework for conserving Ontario's wetlands, as well as a list of actions the Ontario government will undertake to ensure progress. The Strategy operates as an integrated part of the existing legislative, policy and strategic framework for natural resource and biodiversity conservation in the province and seeks opportunities for improvement. It also supports provincial, regional, continental and international objectives for wetland conservation that have been established though a variety of mechanisms (e.g., North American Waterfowl Management Plan, Ontario Eastern Habitat Joint Venture, Ontario's Great Lakes Strategy, etc.). The intent is to provide both the Ontario government and Ontarians with a common focus and a path forward, so that greater success in wetland conservation can be achieved in a more efficient and effective manner.

Wetlands management, akin to the management of other natural resources, requires an integrated approach. A shared commitment among all sectors, including the provincial government, is essential to conserving Ontario's wetlands. As such, *A Wetland Conservation Strategy for Ontario* has been shaped through engagement with a variety of industry, academic and non-governmental organizations, stakeholders, Indigenous Peoples and communities, individual Ontarians and federal, provincial and municipal government staff. Of critical importance is the need for all stakeholders to support this strategy as a mechanism to achieve more integrated and collaborative approaches to the management of wetlands in Ontario.

The successful implementation of *A Wetland Conservation Strategy for Ontario* will also require the support, involvement, knowledge and innovations and practices of Indigenous Peoples and communities. The Strategy is consistent with the constitutional protections provided by existing Aboriginal and treaty rights and supports the involvement of Indigenous Peoples in wetland conservation in Ontario.

A Wetland Conservation Strategy for Ontario is intended to serve as a launching point for new, innovative conservation commitments and actions that can push Ontario's conservation efforts to a new level. While there are already many important policies and programs in place to protect Ontario's wetlands, without future action these areas will face increasingly serious threats. The Ontario government and its partners must continue to reach higher and further to ensure that wetlands remain an enduring part of Ontario's landscape.

Photo: Eastern Ribbon Snake, Sam Brinker

VISION

Ontario's wetlands and their functions are valued, conserved and restored to sustain healthy and resilient ecosystems, and to provide ecosystem services for present and future generations.

GUIDING PRINCIPLES

This Strategy is underpinned by seven core principles that establish important concepts, values and approaches that form the basis of effective wetland conservation. These principles are as follows:

1. Wetlands should be regarded as integral components of their watersheds, as part of a system of natural heritage and hydrologic features and areas, and as part of the larger landscape.
2. Wetlands and the ecological functions they perform provide important benefits (ecological, economic, cultural, spiritual and social) that are vital to the health and well-being of all Ontarians. Efforts to sustain these benefits should be a priority.
3. Wetlands should be conserved based on three hierarchical priorities:
   - **Protection** – retain existing wetlands,
   - **Mitigation** – minimize further damage to wetlands, and
   - **Restoration** – improve wetland function on the landscape.
4. Wetlands should be conserved based on a precautionary approach, and using the best available science, information and traditional knowledge.
5. Protection of provincially significant wetlands is a priority, but conservation of all wetlands is encouraged.
6. Wetlands should be conserved in a manner that recognizes, and is informed by, the rights and interests of Indigenous communities.
7. Wetlands should be conserved in strong partnership with other levels of government, private landowners, Indigenous communities, non-government organizations and other stakeholders involved in wetland conservation.

GOALS AND OUTCOMES

A Wetland Conservation Strategy for Ontario is based on four strategic directions that reflect the critical components required to conserve Ontario's wetlands. These include awareness, knowledge, partnership and policy. Each of the strategic directions is supported by a long-term goal and desired outcome to focus efforts, provide aspirations for achievement and establish a flexible framework through which wetland conservation actions can be planned and implemented. The four strategic directions, goals and outcomes are outlined in Table 2.

TABLE 2: Strategic directions with associated goals and desired outcomes.

Strategic Direction	Goal	Desired Outcome
Awareness	Develop and advance public awareness of, appreciation for and connection to Ontario's wetlands.	People are inspired and empowered to value and conserve Ontario's wetlands.
Knowledge	Increase knowledge about Ontario's wetlands, including their status, functions and vulnerability, to inform and improve conservation.	Essential knowledge for conserving Ontario's wetlands is available and used to make decisions.
Partnership	Establish and strengthen partnerships to focus and maximize conservation efforts for Ontario's wetlands.	People and organizations collaborate and work together to improve wetland conservation.
Policy	Develop policy approaches and improve policy tools to protect, restore and enhance the extent and quality of Ontario's wetlands.	Ontario has a strong and effective policy foundation to conserve and stop the net loss of wetlands.

FIGURE 3: ***A Wetland Conservation Strategy for Ontario* 2016–2030 Framework**

VISION

Ontario's wetlands and their functions are valued, conserved and restored to sustain healthy and resilient ecosystems, and to provide ecosystems services for present and future generations.

AWARENESS

Goal

Develop and advance public awareness of, appreciation for and connection to Ontario's wetlands.

Outcome

People are inspired and empowered to value and conserve Ontario's wetlands.

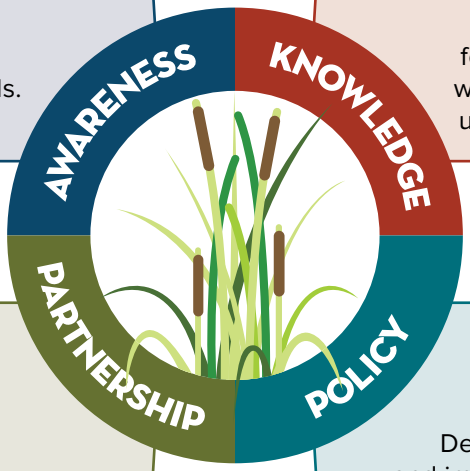
KNOWLEDGE

Goal

Increase knowledge about Ontario's wetlands, including their status, functions and vulnerability, to inform and improve conservation.

Outcome

Essential knowledge for conserving Ontario's wetlands is available and used to make decisions.



PARTNERSHIP

Goal

Establish and strengthen partnerships to focus and maximize conservation efforts for Ontario's wetlands.

Outcome

People and organizations collaborate and work together to improve wetland conservation.

POLICY

Goal

Develop policy approaches and improve policy tools to protect, restore and enhance the extent and quality of Ontario's wetlands.

Outcome

Ontario has a strong and effective policy foundation to conserve and stop the net loss of wetlands.

TARGETS

By **2025**, Ontario's significant wetlands are identified and conserved to sustain essential ecosystem services.

By **2030**, the net loss of wetlands in Ontario is halted in areas where wetland loss has been greatest.

ACTIONS

A Wetland Conservation Strategy for Ontario includes a comprehensive suite of actions the Ontario government is taking or will take, to conserve Ontario's wetlands. Each action is related to one or more of the goals and desired outcomes and contributes to achieving the Strategy's overarching vision and targets.

Resulting from shared legislative responsibility, several ministries have a management interest in (e.g., Ministry of Northern Development and Mines, Ministry of Transportation), or responsibility for wetland management (e.g., Ministry of Natural Resources and Forestry, Ministry of the Environment and Climate Change, Ministry of Agriculture, Food and Rural Affairs, Ministry of Municipal Affairs and Housing). In order to advance implementation of the actions described below, different ministries will take responsibility for initiating and coordinating particular actions. Some actions will also require ministries to work together in a coordinated and collaborative way to achieve the desired results. Through government priority setting, ministries will establish timelines and deliverables for individual actions.

It is important to note that as our knowledge and understanding of wetlands and their conservation improves, new issues will emerge and further actions may be considered. Some actions may also be completed more quickly than expected, while others may take longer. As such, the identified actions do not represent an exhaustive list or preclude the identification of new Ontario government initiatives to support wetland conservation in the future.

Landscape Level Planning for Wetlands

Many jurisdictions, including Ontario, agree that biodiversity conservation, sustainable resource management, and reconciling potentially conflicting resource uses or objectives are best accomplished using ecosystem or landscape-based management. Taking an ecosystem or broader landscape approach to natural resource management and planning means implementing management actions in an integrated way, over larger areas of land and water, and over appropriate—often longer—time periods. In the context of wetland conservation, this will mean identifying ecologically meaningful scales of management by taking into consideration the importance of habitat connectivity, watershed context, adjacent lands and land uses, natural heritage and water resource systems, protected area networks, the life histories of native aquatic and terrestrial species and areas of resource development needed to sustain quality of life of Ontarians.

Photo: Wetlands in the landscape, Jason Mortlock

STRATEGIC DIRECTION – AWARENESS

At the most fundamental level, the greatest challenge to wetland conservation in Ontario is the limited value that society, as a whole, places on the functions that wetlands perform and the services and benefits they provide. This is, in part, due to limited awareness; however, the fact that many wetland functions are 'public goods' whose benefits accrue to the wider community rather than individual landowners also poses a challenge.

The Ontario government recognizes the need for better education, communication and awareness about the importance of wetlands and the essential role they play in maintaining a healthy environment and supporting our quality of life. There is also a need to encourage and support private stewardship of wetlands, so they can continue to supply benefits to the wider community.

Actions under this strategic direction include those related to improving wetland education, better communicating the value of wetlands to the public and encouraging active participation in wetland conservation through volunteerism and stewardship.

Photo: Child hiking in a wetland, OTMPC

Goal: Develop and advance public awareness of, appreciation for and connection to Ontario's wetlands.

Outcome: People are inspired and empowered to value and conserve Ontario's wetlands.

Actions:

- Evaluate existing communication materials and outreach initiatives about wetlands to assess gaps.
- Improve understanding of the motivations, values, attitudes and practices of landowners who conserve or do not conserve wetlands, as a guide for promoting stewardship.
- Develop and employ innovative strategies to effectively communicate the value of wetlands to the public.
- Develop, implement and promote initiatives that communicate the socio-economic values of wetlands and the ecosystem services they provide.
- Promote existing education programs (e.g., Project Wild, Envirothon, Adopt-a-Pond) and develop new programs to teach the importance of wetlands to youth.
- Continue to support international partnerships that raise awareness of the importance of Ontario's wetlands in the broader landscape (e.g., Ramsar Convention, North American Waterfowl Management Plan, Eastern Habitat Joint Venture, etc.).
- Work with Indigenous communities and organizations to develop targeted initiatives and materials, as well as to include Indigenous perspectives in wetland awareness initiatives.
- Develop and improve public online access to wetlands inventory and mapping data and results of research on functions, status and trends.
- Continue to support, encourage and promote stewardship of wetlands on private lands (e.g., Canada-Ontario Environmental Farm Plan, Conservation Land Tax Incentive Program, Growing Forward 2, Species at Risk Farm Incentive Program, and Species at Risk Stewardship Fund).
- Explore the development of stewardship programs that support Indigenous community studies, restoration and monitoring.
- Analyse and describe practical opportunities for industry to undertake wetland conservation projects, including development and communication of best management practices.
- Explore the development of multi-ecosystem (e.g., wetland, woodland, grassland) stewardship plans.

STRATEGIC DIRECTION – KNOWLEDGE

Decades of scientific inquiry have expanded our knowledge of wetlands, their important role on the landscape and the ecosystem services they provide, but there is still much to learn. For example, we need to better understand the relationship between wetlands and uplands and their implications for habitat connectivity, as well as the relationship between wetlands and recharge areas, which are important for source water protection. Further, there is a need to better understand ecological patterns and processes, so that impacts, mitigation and restoration techniques are more predictive and effective. In addition, there is a need to increase our understanding of the role wetlands play in ecosystem services related to climate change, such as carbon sequestration and flood attenuation.

Successful wetland management also depends on ongoing monitoring and assessment to ensure that conservation activities are tailored to the dynamic nature of the landscape. Implementing robust monitoring and assessment of the condition of Ontario's wetlands is crucial to ensuring Ontario's efforts are making a difference. For example, monitoring changes in Ontario's wetlands will help to make assessing the effects of climate change possible and focused. Actions under this strategic direction include support for ongoing research, as well as improvements to monitoring and assessment of the extent and quality of Ontario's wetlands.

Photo: Open graminoid bog, Sam Brinker

Goal: Increase knowledge about Ontario's wetlands, including their status, functions and vulnerability, to inform and improve conservation.

Outcome: Essential knowledge for conserving Ontario's wetlands is available and used to make decisions.

Actions:

- Develop criteria and a framework to prioritize areas for improving wetland inventory and knowledge.
- Assess and improve the capability of existing tools and resources for mapping, describing and documenting change in the extent and quality of wetlands over time at various scales.
- Support mapping and assessment of ecologically significant groundwater recharge areas and discharge to wetlands to provide information on water balances and sustainability.
- Continue to investigate current and emerging threats to wetlands and develop effective strategies to mitigate impacts on wetland functions.
- Support research into the development of effective control of invasive species in wetlands (mechanical, biological and chemical control).
- Support research into the role of wetlands in adapting to and mitigating the effects of climate change (e.g., assessing the role of wetlands in flood attenuation and assessing the function and measuring the relative effectiveness of wetlands as carbon sinks in all regions of the province).
- Expand programs that assess wetland species and ecosystem vulnerability to climate change (e.g., effects of climate change on wetlands, including Far North permafrost, peatland drying, changes in fire regime, water levels, habitat, plant communities, nutrient dynamics, etc.).
- Support research into the role that wetlands (existing, restored and constructed) can play in improving water quality and managing water quantity.
- Enhance understanding of wetlands in relation to ground and surface water features and function.
- Support Indigenous communities in collecting, storing and managing local ecological and Indigenous knowledge related to wetlands.
- Identify and better understand the ecosystem services provided by wetlands, as well as their economic value.
- Improve and develop new tools to evaluate and monitor wetland function at the watershed scale and site-specific tools for assessing wetland function, condition and restoration success.
- Support research into the efficacy of terrestrial and riparian buffers in maintaining wetland conditions.
- Enhance expertise and guidance on wetland restoration techniques and their success in restoring wetland functions and benefits.
- Increase capacity and provide advice on the design of monitoring programs to track changes in wetlands and evaluate the outcomes of conservation and mitigation activities.
- Develop and implement a broad-scale monitoring program to assess trends in the quality and function of wetlands.
- Establish a framework for determining province-wide priority areas for conservation and restoration that considers the broader landscape context (e.g., habitat connectivity, watershed context, adjacent lands, natural heritage systems, water resource systems, protected area networks, areas of resource development need to sustain quality of life for Ontarians).

STRATEGIC DIRECTION – PARTNERSHIP

Across Ontario, many public and private agencies, organizations and institutions are involved in the conservation of wetlands (e.g., provincial government, federal government, municipalities, conservation authorities, non-government organizations, local community interest groups, etc.). While the overall goals of these groups are often similar, they do not always work together. The conservation of Ontario's wetlands requires a coordinated and integrated approach. Encouraging cooperation and supporting partnerships is essential to successful wetland conservation. Actions under this strategic direction include efforts to clarify roles and responsibilities, improve cooperation and coordination and work collaboratively with partners involved in wetland conservation.

Photo: Dunlin feeding, Simon Dodsworth

Goal: Establish and strengthen partnerships to focus and maximize conservation efforts for Ontario's wetlands.

Outcome: People and organizations collaborate and work together to improve wetland conservation.

Actions:

- Clarify roles and responsibilities of various agencies involved in wetland conservation.
- Improve inter-agency cooperation and coordination to ensure wetland programs and policies do not have conflicting objectives.
- Work collaboratively with partners to enhance coordination, leadership, outreach and learning about the importance of wetlands and conservation actions.
- Enhance coordination within government to prioritize wetland conservation projects supported through funding initiatives.
- Support the efforts of land securement agencies in all sectors to protect and enhance wetlands.
- Continue to participate in partnerships such as the Ontario Eastern Habitat Joint Venture and other initiatives that work to promote and conserve Ontario's wetlands important in a broader landscape context.
- Further develop conservation partnerships with the agricultural community, Indigenous communities, private landowners and industry to promote wetland values, encourage conservation, implement best management practices and identify restoration opportunities.
- Encourage partnerships between the Ontario government, municipalities, stakeholders and Indigenous communities in wetland conservation.
- Continue to work with partners to address threats to wetlands (e.g., removal and control of invasive species, pollution control, etc.).
- Build partnerships with the academic community to research effective techniques for wetland restoration and creation.
- Work with partners (e.g., academia, federal government) to monitor and assess carbon emissions and sequestration in wetlands.
- Work with partners to develop and implement regional and landscape level wetland conservation strategies to guide local governments, stakeholders, Indigenous communities and interest groups.

STRATEGIC DIRECTION – POLICY

Ontario has a broad range of policies and legislation to support wetland conservation and the integration and implementation of these tools remains a priority; however, improvements to Ontario's current wetland conservation policies are also required. These will result from reviewing the effectiveness of the provincial laws, regulations and policies that impact wetlands, identifying gaps and proposing improvements as opportunities arise. Exploring the development of new policies to better conserve Ontario's wetlands will also be important. Actions under this strategic direction include seeking opportunities to improve wetland policy and enhancing guidance for wetland conservation.

Photo: Winter Cattails, Regina Varrin

Goal: Develop policy approaches and improve policy tools to protect, restore and enhance the quality of Ontario's wetlands.

Outcome: Ontario has a strong and effective policy foundation to conserve and stop the net loss of wetlands.

Actions:

- Continue to review provincial laws, regulations and policies as opportunities arise, with the goal of strengthening Ontario's wetland policies, e.g. Co-ordinated Land Use Planning Review.
- Integrate a clear and consistent definition of wetlands across policy.
- Support the development of policy tools to improve the conservation of all wetlands.
- Develop policy approaches and tools to prevent the net loss of wetlands in Ontario, focusing on areas where wetland loss has been greatest.
- Review and improve the method by which provincially significant wetlands are identified.
- Promote and expand opportunities to enhance wetland conservation and restoration through the *Drainage Act*.
- Strengthen provincial level guidance for integrating wetland values in Environmental Impact Statements.
- Review and enhance guidance for wetland conservation on Crown lands.
- Develop and ensure that adequate policy guidance is available on incorporating wetland protection strategies in local planning (e.g., natural heritage system planning).
- Continue and enhance protection of wetlands through the provincial Protected Areas System and other effective area-based conservation measures.
- Continue to support and strengthen Great Lakes policies, initiatives and other efforts for wetland conservation aligning with commitments made in domestic and binational agreements (e.g., Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health) and strategies (e.g., Ontario's Great Lakes Strategy).
- Ensure that wetland conservation strategies and tools integrate climate change adaptation and mitigation considerations.
- Develop best management practices for activities in proximity to wetlands (e.g., establish limits for surface and groundwater withdrawals, draining or infilling of vulnerable wetlands in order to enhance the resiliency of these wetlands to change).
- Support the identification of additional candidate wetlands for international recognition under the Ramsar Convention and/or other national/international programs (e.g., UNESCO Biospheres, Important Bird Areas, Western Hemisphere Shorebird Reserve Network, etc.).
- Integrate wetland restoration and planning efforts with other watershed planning efforts.
- Include Indigenous knowledge, where available and feasible, in wetland conservation strategies and best management practices.
- Explore improvements to incentive programs to encourage wetland conservation on private land.
- Develop and implement policies and strategies to mitigate the effects of climate change by sequestering and storing carbon in wetlands.
- Integrate the economic value and the value of the ecosystem services provided by wetlands into decision-making.

Wetlands Defined in Ontario's Municipal Land Use Planning Policy

One of the action items in this Strategy is to integrate a clear and consistent definition of 'wetlands' across provincial policy as opportunities arise.

Photo: Improving wetland mapping techniques, Regina Varrin

The first wetland policy, issued by the Ontario government in 1984, was titled *Guidelines for Wetlands Management in Ontario* and later on, the 1992 *Wetland Policy Statement*. These policies were the precursor to what we now know as the wetland-related natural heritage policies under the Provincial Policy Statement (PPS).

The definition of wetlands, originally from The Ontario Wetland Evaluation System (OWES) and since then incorporated into the Provincial Policy Statement, 2014, is:

> ***"Lands that are seasonally or permanently flooded by shallow water as well as lands where the water table is close to the surface; in either case the presence of abundant water has caused the formation of hydric soils and has favoured the dominance of either hydrophytic or water-tolerant plans. The four major types of wetlands are swamps, marshes, bogs, and fens.***
>
> ***Periodically soaked or wet lands being used for agricultural purposes, which no longer exhibit wetland characteristics, are not considered to be wetlands for the purposes of this definition."***

The key points in this definition are that the land is wet enough for long enough that the soils become waterlogged, resulting in the growth of water-dependent or water-tolerant plants.

The level of protection of wetlands varies depending on where they occur in the province. Where losses have been highest, in ecoregions 5E, 6E, 7E, and Great Lakes coastal areas, provincially significant wetlands (PSW) are protected from development under the PPS. In other parts of the province subject to the PPS, provincially significant wetlands are protected from development unless it can be demonstrated that no negative impacts will occur. This means that municipalities must provide appropriate protection direction for wetlands in their official plans and zoning by-laws.

The Ontario Wetland Evaluation System was created to meet the need for a standardized approach to map wetlands, assess their functions and determine their level of significance for purposes of municipal land use planning. Design of the system was overseen by a committee with representation from provincial and federal government, with input from conservation authorities, academia, consultants and others. Development of the system began with a review of scientific literature and evaluation methods being

used in other jurisdictions at the time, and involved extensive field-testing, consultation with experts, and statistical analysis. The resulting Ontario Wetland Evaluation System has been in use in ecoregions 6E and 7E since 1983, and was expanded in 1994 to include a northern manual for use north of 6E, up to and including ecoregions 2E and 2W.

The Ontario Wetland Evaluation System is the only means of evaluating whether particular wetlands are provincially significant or not, and determining the boundaries of a PSW. The Ontario Wetland Evaluation System contains a set of rules for delineating boundaries based on the presence of wetland plants. The boundary between the wetland and upland areas is drawn where the vegetation cover is 50 per cent wetland. There are also rules for drawing the boundary between the wetland and open water in areas bordering lakes and rivers.

In some parts of the province, protection of wetlands goes beyond provincially significant wetlands. In 2014, the PPS was updated to include protection for all non PSW (Great Lakes) coastal wetlands in 5E, 6E, and 7E, unless no negative impacts can be demonstrated. The Ontario Wetland Evaluation System and PPS define coastal wetlands as:

> ***"Any wetland that is located on one of the Great Lakes or their connecting channels (Lake St. Clair, St. Marys, St. Clair, Detroit, Niagara and St. Lawrence rivers); or***
>
> ***any other wetland that is on a tributary to any of the above-specified water bodies and lies, either wholly or in part, downstream of a line located 2 kilometres upstream of the 1:100 year floodline (plus wave run-up) of the large water body to which the tributary is connected."***

Photo: Moose in Algonquin Provincial Park, OTMCP

Landscape-level plans, including the Niagara Escarpment Plan, Oak Ridges Moraine Conservation Plan, Greenbelt Plan and the Lake Simcoe Protection Plan, also provide protection for unevaluated wetlands, as well as wetlands that have been evaluated but did not meet the threshold for provincial significance. Wetlands in these plans are also defined by the presence of hydric soils and wetland plants, and in some cases, the definitions include wording to ensure that unevaluated wetlands can also be protected. Tools other than the Ontario Wetland Evaluation System may be used to map these 'other' (i.e., unevaluated) wetlands.

Note: In legislation outside of municipal land use planning, additional wording may be included in a regulatory definition of a wetland in order to scope the application of a regulation to meet the intent. The definition of a wetland in this instance is not intended to be a comprehensive definition of a wetland in general.

Restoring Wetlands Using the Drainage Act

Historically, drainage for agriculture resulted in the loss of many wetlands across Ontario, North America and many parts of the world. Today Ontario's *Drainage Act* can be used creatively to restore wetlands and wetlands functions. The Wetland Drain Restoration Project developed a methodology to use Section 78(1) of the Act, which allows for design alteration to take place (extending the hydro period through water control structure installation) during normal maintenance work on municipal drains, in order to restore wetland functions.

The *Drainage Act* provides a municipally-focused regulatory process to engage landowners in a collective solution. Across southwestern Ontario, 40+ projects under the Wetland Drain Restoration Project have allowed restoration of wetland functions to numerous provincially significant wetlands. This process has allowed drainage superintendents, biologists, conservationists and landowners the ability to work together to improve wetlands and their associated benefits, while still maintaining legal outlet.

Photo: Restoring wetlands, Stephen May

One example of how this has helped to restore a wetland is the Dry Creek Drain Wetland Restoration Project in Norfolk County. Under the guidance of an engineer's report, two environmentally friendly water control structures were installed that resulted in improved wetland function and water quality and quantity benefits to downstream landowners. The expansion of this work to other parts of Ontario provides an opportunity to enhance wetland restoration throughout the province.

Wetland Conservation – an Opportunity

Wetland conservation is an efficient, cost-effective solution to several challenges facing Ontario. Key provincial priorities that can be addressed through a commitment to wetland conservation include protecting the province's biodiversity, protecting water supplies and the Great Lakes, addressing growing infrastructure needs and helping communities build resiliency to the impacts of climate change.

Photo: Silver Maple Swamp, Wasyl Bakowsky

Monitoring Success

To monitor the success of this Strategy, two overarching targets have been established:

1. By 2025, Ontario's significant wetlands are identified and conserved to sustain essential ecosystem services.
2. By 2030, the net loss of wetlands is halted in areas where wetland loss has been greatest.

Given these broad benchmarks, monitoring and assessment must provide information on the ability to identify and conserve significant wetlands, as well as the total area and condition of wetlands in the province. Tracking this information over time will provide evidence to determine whether or not the Strategy is having the desired effect, and in doing so, indicate if changes are required to the actions, the way they are implemented, or both.

To measure and report on these targets will initially be challenging, particularly in areas where Ontario's wetland inventory is incomplete or in need of updating. Also, to date there has not been a rigorous, systematic and standardized approach taken to assessing wetland condition. Despite these limitations, there are several actions outlined in the Strategy that will allow for advancement in these areas in the near future. Together, these actions will lay the groundwork for measuring the success of the Strategy.

As part of monitoring the success of this Strategy, the Ontario government also commits to developing a comprehensive performance measurement framework and reporting to the public on progress in implementing the actions in this Strategy, as well as progress towards achieving the targets. Reporting will occur on a five-year cycle beginning in 2020.

Photo: Cardinal Flower, Melinda Thompson

Towards Implementation

Photo: Surveying by canoe, Canada-Ontario Agreement

Ontario's commitment to wetland conservation is embedded in the actions described in this Strategy. These have been developed over time and in response to the growing pressures facing wetlands. Some actions will be simple and straightforward to complete, while others will involve sequential steps, engage a number of partners and take time to complete.

Following consultation and engagement with a variety of industry, academic and non-governmental organizations, stakeholders, Indigenous Peoples and communities, individual Ontarians and federal, provincial and municipal government staff, three actions in this Strategy have been prioritized above all others. Work to advance these actions will begin with the release of the Strategy. These actions represent clear needs for wetland conservation and will help Ontario achieve the targets outlined in the Strategy. These actions are described more fully below.

1 Improving Ontario's Wetland Inventory and Mapping

Ontario's changing landscape and associated land use practices require contemporary information about the extent, location and quality of existing wetland habitat. This information, coupled with wetland trend analyses and assessments, can help focus conservation, restoration and wetland monitoring programs; support assessment of changes in wetland abundance and classification in relation to threats; assist in the development and implementation of land use policies and protocols; and measure performance of those policies and protocols towards established conservation objectives.

The Ontario government currently maintains a wetland inventory for the province that includes best available information about the location, extent and status (i.e., significance) of wetlands. This includes high-quality information collected through detailed field work, as well as mapping based on air photo interpretation and satellite imagery. While this inventory is a good start, more current and detailed mapping is required to better conserve wetlands.

Ontario's wetland inventory could be improved by implementing a series of activities that includes:

- Updating and refining provincial wetland mapping.
- Strategically enhancing wetland mapping in areas both in and adjacent to high growth zones and in areas where wetland mapping is currently limited.
- Standardizing wetland mapping techniques to improve consistency.

Photo: Wetland mapping, Jason Mortlock

- Conducting accuracy assessments for wetland mapping from various data sources.
- Actively exploring and implementing the latest technologies for improved mapping and remote sensing.
- Continuing to monitor wetland change and improving methods to detect and measure change over time.
- Collaborating with partners in the ongoing maintenance and improvement of wetland mapping and information.
- Improving the availability and accessibility of wetlands data.

Improving Ontario's wetland inventory is a priority action in *A Wetland Conservation Strategy for Ontario* and will lay the foundation for improved wetland conservation across the province.

2 Developing policy approaches and tools to prevent the net loss of wetlands in Ontario

As Ontario's population grows and demands for resources increase, natural areas such as wetlands will continue to be threatened where human infrastructure and economic growth interests intersect with conservation interests. One option to prevent the net loss of wetlands in Ontario is the development of a wetland offsetting policy.

Wetland offsetting is a policy in which the negative impacts of development on wetlands are compensated for by the intentional restoration or creation of new wetlands, which can provide positive environmental impacts of an equivalent or greater magnitude and kind. This approach is sometimes referred to as a net gain. This type of policy is typically set within a mitigation hierarchy and involves the hierarchical progression of alternatives, including avoidance of impacts, minimization of unavoidable impacts and compensation for impacts that cannot be avoided. Compensation is considered only as a final option to ensure there is no overall loss of wetlands on the landscape.

The hierarchy itself is an expression of the value of leaving natural ecosystems intact and the risks and uncertainties inherent in human interventions aimed at minimizing disturbance and restoring, enhancing or constructing wetlands to create effective offsets.

Thoughtful work on the best way to conceive and implement a wetland offsetting policy is ongoing. Several jurisdictions in Canada and around the world have developed wetland offsetting policies, providing clear models and lessons learned, which can provide information for the development of this type of policy in Ontario.

Photo: Duck banding in a wetland, Ministry of Natural Resources and Forestry.

Adopting a wetland offsetting policy in Ontario could provide a tool for better land use decisions and help to stop the net loss of wetlands in the province, particularly in areas where wetland loss has been greatest. Key considerations in the development of the policy will be:

- Understanding the types of land or resource use that would be subject to a wetland offsetting policy. This includes consideration of local and regional issues affecting wetlands, the variety of existing land use planning frameworks in the province, and need for compliance.

- Identification of the types of wetlands and functions that can or cannot be compensated for. Some sites, features and habitat, such as provincially significant wetlands, may be ineligible for offsetting based on, for example, their biological and hydrological attributes, their vulnerability or irreplaceability. etc.
- Understanding and establishing equivalence or greater in compensation, in particular, replacement of both quantity (size) and quality (function) of the wetland. The location of the wetland offset, including its proximity to the impact, should also be considered in assessing equivalency. Wetland losses in the south should not be compensated for by gains in the north.
- Determining the duration of wetland offsets. This may be based on the duration of the negative impacts of the development project or require wetlands to be secured in perpetuity.
- Development of appropriate policy mechanisms for implementation.
- Identification of clear roles and responsibilities for implementation.
- Lessons learned from other jurisdictions that have adopted offsetting policies and feedback from stakeholders and partners.

The Ontario government is committed to developing policy approaches and tools to prevent the net loss of its wetlands and will seek input from municipalities, conservation authorities, private landowners, Indigenous communities and other stakeholders and partners in this process.

Photo: Urban wetland, OTMPC

Photo: Turtle tracking in wetland, Anna Sheppard

Photo: Bogbean Buckmoth, Regina Varrin

3 Improving guidance for evaluating the significance of wetlands

The Ontario Wetland Evaluation System (OWES) was originally created in the early 1980s to inform Ontario's municipal land use planning process. The system was developed to standardize the evaluation of wetland values so that wetlands could be ranked relative to one another. The Ontario Wetland Evaluation System identifies and measures wetland functions, and provides a means of evaluating the relative importance of individual wetlands based on perceived societal values.

The Ontario Wetland Evaluation System identifies and measures wetland functions, and provides a means of evaluating the relative importance of individual wetlands based on perceived societal values. It generates a numerical ranking of wetland values or functions that are grouped into four main categories:

- **Biological Component** recognizes that wetlands can differ in terms of productivity and habitat diversity.
- **Social Component** measures some of the direct human uses of wetlands, including economically valuable products (such as wild rice, commercial fish and furbearers), recreational activities and educational uses.
- **Hydrological Component** characterizes water-related values, such as the reduction of flood peaks and contributions to groundwater recharge and discharge, and water quality improvements.
- **Special Features Component** addresses the geographic rarity of wetlands, the occurrence of rare species, ecosystem age, and habitat quality for wildlife, including fish.

The Ontario Wetland Evaluation System has now been in use for over thirty years. In that time, over half of the wetlands in southern Ontario have been evaluated, and some high-value wetlands in northern Ontario have been evaluated. The application of the system has also expanded beyond the municipal land use planning system.

Wetland evaluations, or the mapping of provincially significant wetlands, is used to identify properties eligible under the Conservation Land Tax Incentive Program, to implement Renewable Energy approvals, and to regulate wetlands under the *Conservation Authorities Act*. Wetland evaluations are also used as a source of information in the consideration of impacts to wetlands when issuing permits for aggregates or forestry operations, on public lands, to take water, or in accordance with the Lakes and *Rivers Improvement Act*.

A review of the method for mapping and evaluating wetland significance will allow exploration of whether it is possible to:

- Develop more efficient, cost-effective methods of mapping and evaluation, without compromising the quality or accuracy of the OWES process.
- Incorporate recent advances in our knowledge about science and technology.
- Assess whether some values that are not currently considered should be added, and whether other values could be removed.
- Improve the way in which traditional ecological knowledge or other Indigenous values are evaluated.
- Increase clarity where current guidance is limited.

The end product of this review may be a new edition of the Ontario Wetland Evaluation System, or it may be a new approach to mapping and evaluating the significance of wetlands in Ontario.

Photo: Evaluating a wetland, Joel Mostoway

Conclusion

Ontario is committed to wetland conservation and has established a variety of policies, programs and partnerships to conserve its wetlands; however, without continued action these areas will face increasingly serious threats. *A Wetland Conservation Strategy for Ontario* represents an important step forward in the conservation of Ontario's wetlands. All sectors are encouraged to work together to implement the Strategy and ensure wetlands remain an enduring part of Ontario's landscape.

Photo: Sundew, Melinda Thompson

Glossary

Biodiversity: the variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems, and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems.

Carbon Sequestration: the removal and storage of carbon from the atmosphere in carbon sinks (such as wetlands, oceans, forests or soils) through physical or biological processes, such as photosynthesis.

Climate Change Adaptation: the ability to respond and adjust to actual or potential impacts of changing climate conditions to moderate harm or take advantage of any positive opportunities such changes may afford.

Climate Change Mitigation: an intervention intended to reduce adverse human influence on the climate system; it includes strategies to lower greenhouse gas emissions and to enhance greenhouse gas sinks.

Coastal Wetland: includes intertidal and supratidal marshes (salt marshes), estuarine marshes (brackish to fresh), lagoons (brackish to fresh) and freshwater wetlands (shallow wetlands within beach ridge mosaics) along the Hudson Bay and James Bay coastlines. Further south, coastal wetlands include those swamps, marshes, and fens that are located on or very near one of the Greats Lakes or their connecting channels. For the policy definition of Great Lakes coastal wetlands, see definition below.

Conservation: actions that are intended to establish, improve or maintain good relations with nature. This can include protection, restoration, rehabilitation, management, stewardship and wise use.

Cumulative Effects: effects on the environment that result from repeated actions of the same type in the same area over time, or from the synergistic interaction of different stressors.

Ecological processes or ecosystem function: the dynamic attributes of ecosystems, including interactions among organisms and interactions between organisms and their environment. Ecological processes are the basis for self-maintenance in an ecosystem.

Ecosystem: a dynamic complex of plant, animal and micro-organism communities and their physical environment functioning as an ecological unit.

Ecosystem resilience: the capacity of an ecosystem to adapt to changes and disturbances and still retain its basic functions and structures.

Ecosystem services: the services that humans derive from ecological functions, such as photosynthesis, oxygen production, water purification and so on.

Ecoregions: a unique area of land and water nested within an ecozone that is defined by a characteristic range and pattern in climatic variables. A map of Ontario's ecoregions can be found at: https://www.ontario.ca/document/ecosystems-ontario-part-1-ecozones-and-ecoregions.

Ecozones: geographic divisions of the landscape that separate coarse-scale enduring features. These features are based on key abiotic processes functioning at global and continental scales within which human and ecosystem functions are defined and constrained. There are three terrestrial ecozones in Ontario: Hudson Bay Lowlands, Ontario Shield, and Mixedwood Plains. The Great Lakes represent the only aquatic ecozone in Ontario.

Great Lakes Coastal Wetland: any wetland that is on the Great Lakes (Lakes Ontario, Erie, Huron and Superior), their connecting channels (Lake St. Clair, St. Mary's, St. Clair, Detroit, Niagara, and St. Lawrence rivers), or on a tributary to the Great Lakes or their connecting channels and lies, either wholly or in part, downstream of a line located 2 kilometres upstream (as the crow flies) of the 1:100 year floodline (plus wave run-up) of the large water body to which it is connected.

Habitat: an area on which a species depends, directly or indirectly, to carry out its life processes, such as reproduction, rearing, hibernation, migration or feeding.

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

Hydrology: the science of water, its properties and laws, and its distribution over the Earth's surface.

Invasive species: species that are not native to an area and whose introduction or spread threatens the environment, the economy or society, including human health.

Landscapes: complexes of ecosystems in geographically defined areas.

Landscape-level: a term used to describe a perspective that is above individual sites, stands or other local ecological units. It usually refers to a scale that considers a mosaic of interconnected ecological units.

Natural Heritage: natural features consisting of physical and biological formations or groups of such formations that are of outstanding value from the aesthetic or scientific point of view.

No net loss of wetlands: balancing wetland loss with mitigation and restoration efforts, so that the total area of wetlands does not decrease, but remains constant or increases.

Peatlands: areas with peat soil more than 40 centimetres deep. Peat is formed where dead plant material is conserved for thousands of years due to a combination of permanent water saturation, low oxygen levels and low temperatures.

Precautionary Approach: making decisions about the environment when risks are suspected but not known with certainty. The 1992 Declaration on Environment and Development states: "In order to protect the environment, the precautionary approach shall be widely applied by States [i.e., jurisdictions] according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."

Protection: a commitment to protect individuals, a population or subpopulation or an ecosystem (or portions of one) from adverse impacts that may result in their loss.

Resilience: see Ecosystem Resilience.

Restoration: the process of assisting the recovery of an ecosystem that has been degraded, damaged or destroyed. Restoration can encompass a wide variety of actions, including removing a specific source of stress, restoring natural processes like flooding and fire, removing invasive species or reintroducing extirpated native species. Restoration can also include elements of rehabilitation, reclamation and ecosystem creation.

Stewardship: an ethic that embodies cooperative planning and management of environmental resources in which individuals, organizations, communities and other groups actively engage in the prevention of habitat loss, as well as the facilitation of resource restoration or rehabilitation, usually with a focus on long-term sustainability.

Watershed: the area of land that drains into a river, lake or other water body.

Wetland: lands that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to or at the surface. In either case, the presence of abundant water has caused the formation of hydric soils and has favoured the dominance of either hydrophytic plants or water tolerant plants. The four major types of wetlands are swamps, marshes, bogs and fens.

Wetland Complex: a group of wetlands that are functionally linked to one another and no more than 750 metres apart.

Appendix

Goals, outcomes and actions in *A Wetland Conservation Strategy for Ontario*:

STRATEGIC DIRECTION – AWARENESS

Goal: Develop and advance public awareness of, appreciation for and connection to Ontario's wetlands.

Outcome: People are inspired and empowered to value and conserve Ontario's wetlands.

Actions:

- Evaluate existing communication materials and outreach initiatives about wetlands to assess gaps.
- Improve understanding of the motivations, values, attitudes and practices of landowners who conserve or do not conserve wetlands as a guide for promoting stewardship.
- Develop and employ innovative strategies to effectively communicate the value of wetlands to the public.
- Develop, implement and promote initiatives that communicate the socio-economic values of wetlands and the ecosystem services they provide.
- Promote existing education programs (e.g., Project Wild, Envirothon, Adopt-a-Pond) and develop new programs to teach the importance of wetlands to youth.
- Continue to support international partnerships that raise awareness of the importance of Ontario's wetlands in the broader landscape (e.g., Ramsar Convention, North American Waterfowl Management Plan, Eastern Habitat Joint Venture, etc.).
- Work with Indigenous communities and organizations to develop targeted initiatives and materials, as well as to include Indigenous perspectives in wetland awareness initiatives.
- Develop and improve public online access to wetlands inventory and mapping data and results of research on functions, status and trends.
- Continue to support, encourage and promote stewardship of wetlands on private lands (e.g., Canada-Ontario Environmental Farm Plan, Conservation Land Tax Incentive Program, Growing Forward 2, Species at Risk Farm Incentive Program, and Species at Risk Stewardship Fund).
- Explore the development of stewardship programs that support Indigenous community studies, restoration and monitoring.
- Analyse and describe practical opportunities for industry to undertake wetland conservation projects, including development and communication of best management practices.
- Explore the development of multi-ecosystem (e.g., wetland, woodland, grassland) stewardship plans.

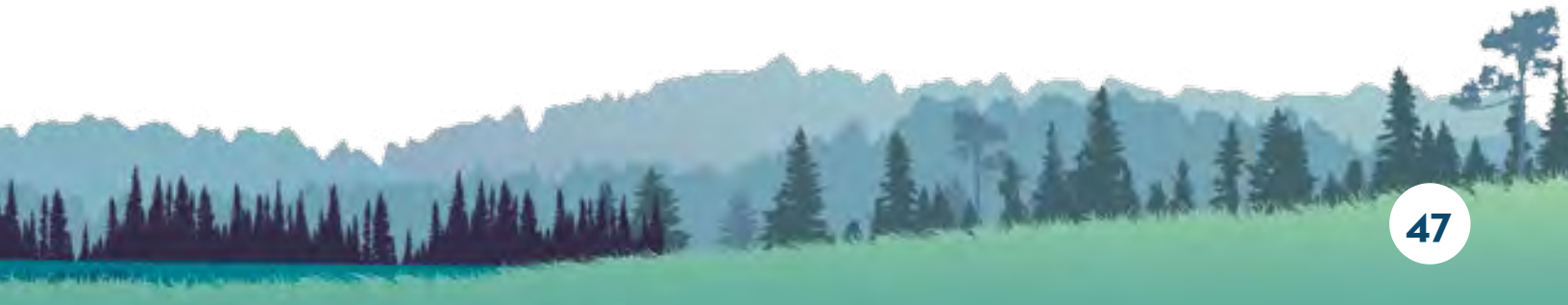
STRATEGIC DIRECTION – KNOWLEDGE

Goal: Increase knowledge about Ontario's wetlands, including their status, functions and vulnerability, to inform and improve conservation.

Outcome: Essential knowledge for conserving Ontario's wetlands is available and used to make decisions.

Actions:

- Develop criteria and a framework to prioritize areas for improving wetland inventory and knowledge.
- Assess and improve the capability of existing tools and resources for mapping, describing and documenting change in extent and quality of wetlands over time at various scales.
- Support mapping and assessment of ecologically significant groundwater recharge areas and discharge to wetlands to inform water balances and sustainability.
- Continue to investigate current and emerging threats to wetlands and develop effective strategies to mitigate impacts on wetland functions.
- Support research into the development of effective control of invasive species in wetlands (mechanical, biological and chemical control).
- Support research into the role of wetlands in adapting to and mitigating the effects of climate change (e.g., assessing the role of wetlands in flood attenuation and assessing the function and measuring the relative effectiveness of wetlands as carbon sinks in all regions of the province).
- Expand programs that assess wetland species and ecosystem vulnerability to climate change (e.g., effects of climate change on wetlands, including Far North permafrost, peatland drying, changes in fire regime, water levels, habitat, plant communities, nutrient dynamics, etc.).
- Support research into the role that wetlands (existing, restored and constructed) can play in improving water quality and managing water quantity.
- Enhance understanding of wetlands in relation to ground and surface water features and function.
- Support Indigenous communities in collecting, storing and managing local ecological and Indigenous knowledge related to wetlands.
- Identify and better understand the ecosystem services provided by wetlands, as well as their economic value.
- Improve and develop new tools to evaluate and monitor wetland function at the watershed scale and site-specific tools for assessing wetland function, condition and restoration success.
- Support research into the efficacy of terrestrial and riparian buffers in maintaining wetland conditions.
- Enhance expertise and guidance on wetland restoration techniques and their success in restoring wetland functions and benefits.
- Increase capacity and provide advice on the design of monitoring programs to track changes in wetlands and evaluate the outcomes of conservation and mitigation activities.
- Develop and implement a broad-scale monitoring program to assess trends in the quality and function of wetlands.
- Establish a framework for determining province-wide priority areas for conservation and restoration that considers the broader land scape context (e.g., habitat connectivity, watershed context, adjacent lands, natural heritage systems, water resource systems, protected area networks, areas of resource development need to sustain quality of life for Ontarians).



STRATEGIC DIRECTION – PARTNERSHIP

Goal: Establish and strengthen partnerships to focus and maximize conservation efforts for Ontario's wetlands.

Outcome: People and organizations collaborate and work together to improve wetland conservation.

Actions:

- Clarify roles and responsibilities of various agencies involved in wetland conservation.
- Improve inter-agency cooperation and coordination to ensure wetland programs and policies do not have conflicting objectives.
- Work collaboratively with partners to enhance coordination, leadership, outreach and learning about the importance of wetlands and conservation actions.
- Enhance coordination within government to prioritize wetland conservation projects supported through funding initiatives.
- Support the efforts of land securement agencies in all sectors to protect and enhance wetlands.
- Continue to participate in partnerships such as the Ontario Eastern Habitat Joint Venture and other initiatives that work to promote and conserve Ontario's wetlands important in a broader landscape context.
- Further develop conservation partnerships with the agricultural community, Indigenous communities, private landowners and industry to promote wetland values, encourage conservation, implement best management practices and identify restoration opportunities.
- Encourage partnerships between the Ontario government, municipalities, stakeholders and Indigenous communities in wetland conservation.
- Continue to work with partners to address threats to wetlands (e.g., removal and control of invasive species, pollution control, etc.).
- Build partnerships with the academic community to research effective techniques for wetland restoration and creation.
- Work with partners (e.g., academia, federal government) to monitor and assess carbon emissions and sequestration in wetlands.
- Work with partners to develop and implement regional and landscape level wetland conservation strategies to guide local governments, stakeholders, Indigenous communities and interest groups.

STRATEGIC DIRECTION - POLICY

Goal: Develop policy approaches and improve policy tools to protect, restore and enhance the quality of Ontario's wetlands.

Outcome: Ontario has a strong and effective policy foundation to conserve and stop the net loss of wetlands.

Actions:

- Review provincial laws, regulations and policies as opportunities arise with the goal of strengthening Ontario's wetland policies.
- Integrate a clear and consistent definition of wetlands across policy.
- Support the development of policy tools to improve the conservation of all wetlands.
- Develop policy approaches and tools to prevent the net loss of wetlands in Ontario, focusing on areas where wetland loss has been greatest.
- Review and improve the method by which provincially significant wetlands are identified.
- Promote and expand opportunities to enhance wetland conservation and restoration through the *Drainage Act*.
- Strengthen provincial level guidance for integrating wetland values in Environmental Impact Statements.
- Review and enhance guidance for wetland conservation on Crown lands.
- Develop and ensure adequate policy guidance is available on incorporating wetland protection strategies in local planning (e.g., natural heritage system planning).
- Continue and enhance protection of wetlands through the provincial Protected Areas System and other effective area-based conservation measures.
- Continue to support and strengthen Great Lakes policies, initiatives and other efforts for wetland conservation aligning with commitments made in domestic and binational agreements (e.g., Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health) and strategies (e.g., Ontario's Great Lakes Strategy).
- Ensure wetland conservation strategies and tools integrate climate change adaptation and mitigation considerations.
- Develop best management practices for activities in proximity to wetlands (e.g., establish limits for surface and groundwater withdrawals, draining or infilling of vulnerable wetlands to enhance the resiliency of these wetlands to change).
- Support the identification of additional candidate wetlands for international recognition under the Ramsar Convention and/or other national/international programs (e.g., UNESCO Biospheres, Important Bird Areas, Western Hemisphere Shorebird Reserve Network, etc.).
- Integrate wetland restoration and planning efforts with other watershed planning efforts.
- Include Indigenous knowledge, where available and feasible, in wetland conservation strategies and best management practices.
- Explore improvements to incentive programs to encourage wetland conservation on private land.
- Develop and implement policies/strategies to mitigate the effects of climate change by sequestering and storing carbon in wetlands.
- Integrate the economic value and the value of the ecosystem services provided by wetlands into decision-making.

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Notes

CORRESPONDENCE #2

October 19, 2016 Full Authority Meeting

Honourable Kathryn McGarry
Minister of Natural Resources and Forestry
6th Floor, Whitney Block, Room 6630
99 Wellesley St. W
Toronto, Ontario M7A 1W3

Honourable Glen Murray
Minister of Environment and Climate Change
11th Floor, Ferguson Block
77 Wellesley St. W.
Toronto, Ontario M7A 2T5

Honourable Jeff Leal
Minister of Agriculture, Food and Rural Affairs
11th Floor, 77 Grenville St.
Toronto, Ontario M7A 1B3

Honourable Eleanor McMahon
Minister of Tourism, Culture and Sport
Hearst Block, 9th Floor
900 Bay St.
Toronto, Ontario M7E 2A1

Honourable Bill Mauro
Minister of Municipal Affairs
777 Bay St.
College Park, 17th Floor
Toronto, Ontario M5G 2E5

Honourable Bob Chiarelli
Minister of Infrastructure
Mowat Block, 5th Floor, 900 Bay St.
Toronto, Ontario M7A 1C2

Honourable Dr. Eric Hoskins
Minister of Health and Long-Term Care
Hepburn Block, 10th Floor, 80 Grosvenor St.
Toronto, Ontario M7A 2C4

Honourable Mitzie Hunter
Minister of Education
Mowat Block, 22nd Floor
900 Bay St.
Toronto, Ontario M7A 1L2

Honorable David Orazietti
Minister of Community Safety and Correctional Services
George Drew Bldg, 18th Floor
25 Grosvenor St.
Toronto, Ontario M7A 1Y6

October 6, 2016

Re: Conservation Authorities Act Review

Dear Ministers,

Our organizations work together in support of Ontario's economic and environmental priorities. We have taken the time to consider the *Conservation Authorities Act* Review and to identify a couple of high level common goals and objectives that we all agree with. These comments are in addition to our more detailed submissions made to *Conserving our Future: Proposed Priorities for Renewal* (EBR 012-7583) and they are not intended to limit the government's review of those comments.

Improving Client Service Delivery

Our organizations have a history of working together for improved service delivery within both the Conservation Authorities' plan review and permitting programs. We welcome the creation of a multi-stakeholder Service Delivery Review Committee (similar to the Ministry of Natural Resources/Ministry of Municipal Affairs CA Liaison Committee (CALC) with additional stakeholders) to address, on a regular basis, streamlining and other issues related to service standards (e.g. Service Agreements, user fees). It is supported that regular multi-stakeholder training on the MNRF (2010) *Policies & Procedures for CA Plan Review and Permitting Activities* be provided. It is further noted that varying financial capacity/disparity among Conservation Authorities impacts the programs and services that are available on a province-wide basis. Frameworks for improvement need to allow flexibility to reflect local watershed needs and reflect best practices on a continual basis.

Addressing the Provincial Funding Gap

The lack of a renewed/updated funding commitment from the Province continues to be disappointing. There have been no increases (neither inflationary nor program improvements) to the provincially funded portion of the natural hazards program since the mid-1990s despite increased risks presented by climate change. As well, there is a lack of support for examining the broader benefits and cost savings obtained by the Province from program delivery through an integrated watershed management approach. It makes sense to invest in Conservation Authority programs and services which protect water, build ecosystem resilience, provide green space, and, prevent costly expenditures for flood damages, business disruptions and healthcare. We support development of a sustainable multi-ministry funding formula to achieve provincial priorities and to meet Ontario's current and emerging environmental imperatives (e.g. climate change, Great Lakes water protection). In the examination of broader benefits/provincial interest, it is noted that, if new responsibilities devolve to CAs; new funding needs to accompany these new duties. We also urge the Province to re-engage the federal government which also has expectations for local watershed management. Finally, in development of a sustainable funding formula, to address in part some issues of capacity, the Province should consider some resource equalization grants for CAs, taking into account local ability to pay.

Again, we are committed to working together, as provincial organizations and through our members at the watershed level to ensure the sustainable and resilient ecological and socio-economic well-being of Ontario. We ask that the Province partner with us. To be successful, we need your leadership and action on the above two priorities.

Sincerely,

Dick Hibma, Chair,
Conservation Ontario

Lynn Dollin, President,
Association of Municipalities of Ontario

Don McCabe, President,
Ontario Federation of Agriculture

Theresa McClenaghan, Executive Director,
Canadian Environmental Law Association

c.c. Gillian McEachern, Premier's Office
Dr. Dianne Saxe, Environmental Commissioner of Ontario
Gilles Bisson, Critic, MNRF
Todd Smith, Critic MNRF
CAOs, All Conservation Authorities

CORRESPONDENCE #3

October 19, 2016 Full Authority Meeting

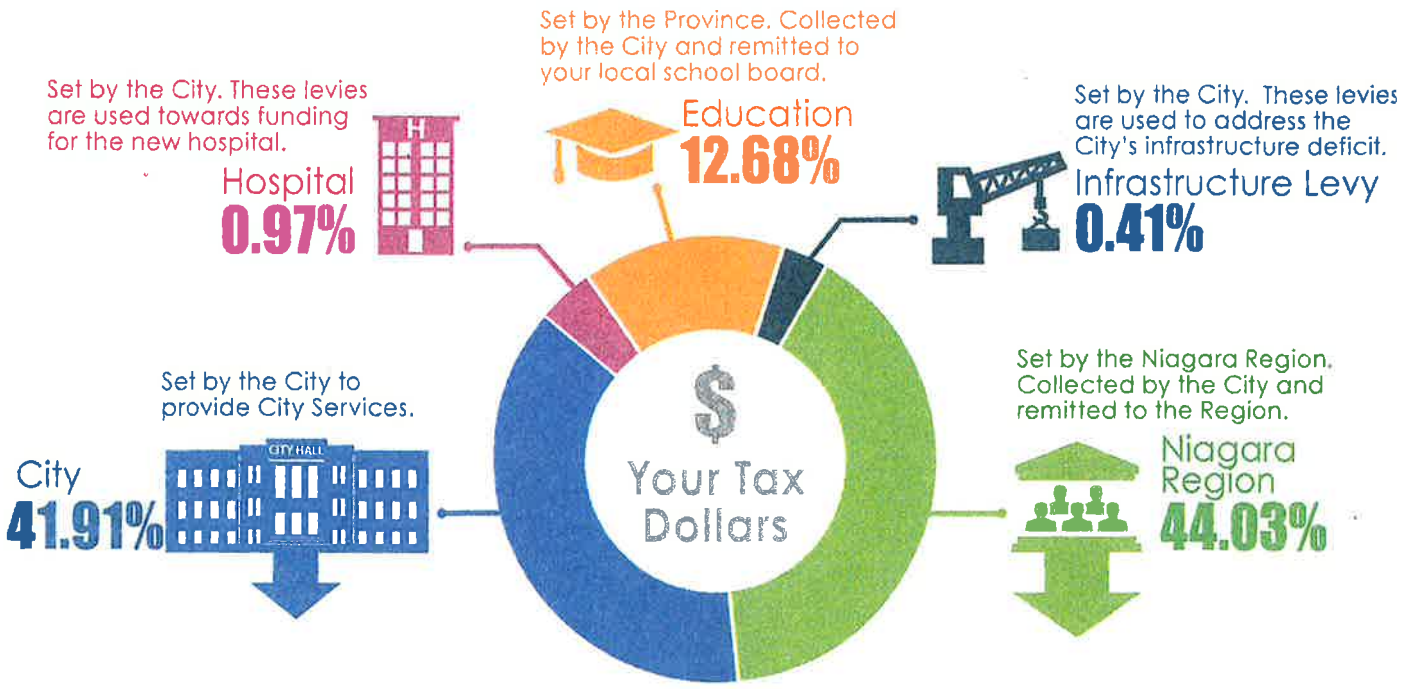
St. Catharines

WHERE DO MY PROPERTY TAXES GO?

MEDIAN RESIDENTIAL PROPERTY

$221,000 ASSESSMENT VALUE = **$3,275.99** IN TAXES ANNUALLY

Region	$1,442.53
City	1,372.88
Hospital	31.64
Education	415.48
Infrastructure Levy	13.46
	$3,275.99



How is the City portion used?

Fire Services	$320.16	23.32%
Roads, Sidewalks, Winter Control, Drainage etc	$273.48	19.92%
Parks, Trees, Recreation, Pools, Beaches & Arenas	$254.67	18.55%
General Government	$152.25	11.09%
Transit - conventional and paratransit	$133.72	9.74%
Libraries	$73.17	5.33%
Other Expenditures	$43.38	3.16%
Museum/Welland Canal Centre/Performing Arts	$34.60	2.52%
Community Planning & Development	$32.54	2.37%
Street Lighting	$29.79	2.17%
Contributions to Capital Projects	$18.12	1.32%
Environmental Monitoring	$3.57	0.26%
Senior Citizen Centres	$3.43	0.25%
	$1,372.88	**100%**

How is the Region portion used?

Boards & Agencies	Police Service	$569.33	39.47%
	Regional Housing	$125.52	8.70%
	Conservation Authority	$27.95	1.94%
	Court Services	-$3.30	-0.23%
Regional Departments	Regional Roads	$201.23	13.95%
	Waste Management	$157.28	10.90%
	Emergency Medical Services	$96.29	6.68%
	Social Services	$86.28	5.98%
	Seniors Services	$63.66	4.41%
	Public Health	$49.09	3.40%
	Leadership and Governance	$35.64	2.47%
	Children's Services	$33.43	2.32%
	Community Planning	$19.19	1.33%
	Regional Transit	$18.16	1.26%
	Economic Development	$13.28	0.92%
	Revenue	-$50.50	-3.50%
		$1,442.53	**100%**

REPORTS FOR INFORMATION

October 19, 2016 Full Authority Meeting

NIAGARA PENINSULA CONSERVATION AUTHORITY

Report To: **Board of Directors**

Subject: **Watershed Management Status Report**

Report No: **99-16**

Date: **October 19, 2016**

RECOMMENDATION:

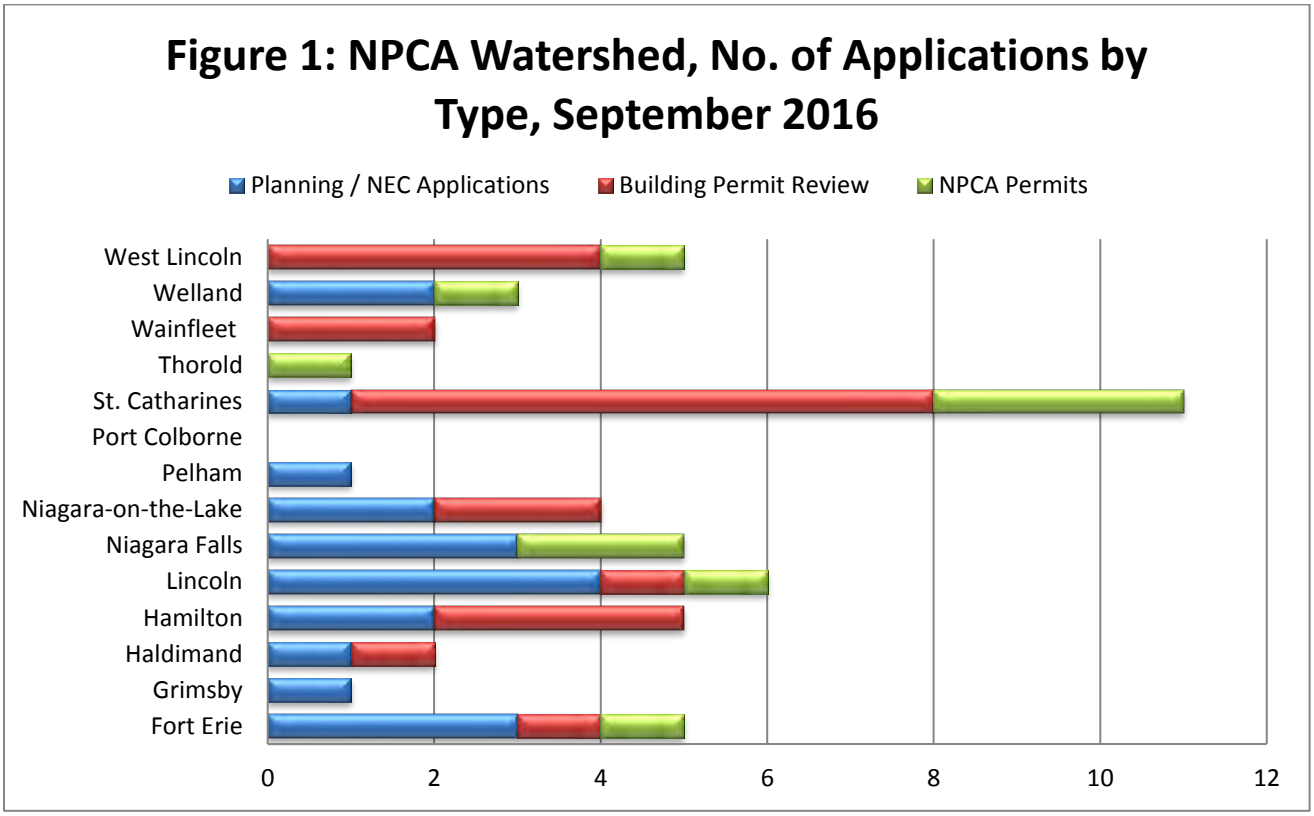
THAT Watershed Management Status Report No. 99-16 be **RECEIVED** for information.

PURPOSE:

To update the Board on the Watershed Management Team's activities and achievements during September 2016.

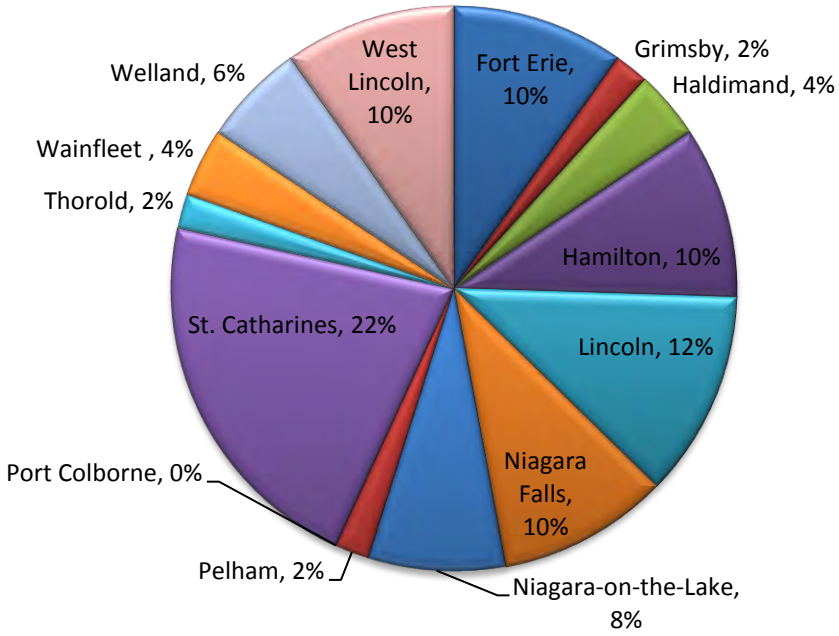
BACKGROUND:

A. Plan Review & Regulations



	Fort Erie	Grimsby	Haldimand	Hamilton	Lincoln	Niagara Falls	Niagara-on-the-Lake	Pelham	Port Colborne	St. Catharines	Thorold	Wainfleet	Welland	West Lincoln	Totals
Planning / NEC Applications	3	1	1	2	4	3	2	1	0	1	0	0	2	0	**20**
Building Permit Review	1	0	1	3	1	0	2	0	0	7	0	2	0	4	**21**
NPCA Permits	1	0	0	0	1	2	0	0	0	3	1	0	1	1	**10**
Totals	**5**	**1**	**2**	**5**	**6**	**5**	**4**	**1**	**0**	**11**	**1**	**2**	**3**	**5**	**51**

Figure 2: Total No. of Applications (%), September 2016



1) Municipal and Development Plan Input and Review

The Watershed Management Department is responsible for reviewing *Planning Act* applications and Building Permit applications where there is a feature regulated by the NPCA. Under the Memorandum of Understanding (MOU) with Niagara Region, the NPCA reviews *Planning Act* applications with respect to the Region's Natural Environment Policies (Chapter 7 of the Regional Official Plan).

During September, 2016, the Watershed Management Department reviewed 20 *Planning Act* applications (various type and complexity)/Niagara Escarpment Commission Development Permit applications, 21 Building Permit applications, and 8 property information requests. Staff have been busy reviewing on-going/active applications as well as larger on-going municipal projects (Official Plan updates, Secondary Plans, etc.). Staff also responded to various inquiries from the public and local municipalities, as well as attended weekly consultation meetings with the local municipalities and conducted various site inspections.

2) Construction Approvals (NPCA Permits)

During the month of September 2016, NPCA Permits and Compliance issued a total of 10 construction permits as per Section 28 of the Conservation Authorities Act. These are works that have or are to occur within regulated features, buffers to regulated features or hazard lands.

No.	PERMIT #	MUNICIPALITY	ADDRESS	WORKS PROPOSED/PURPOSE	REGULATED FEATURE	TOTAL DAYS	COMMENTS
1	3697A	Thorold	Merrittville Highway	Niagara Region Multi-Use Path	PSW/Lands adjacent to watercourse	30	
2	3798	St. Catharines	1090/1104 Lakeshore Road West	New Home Construction & Shorewall Repair	Lake Ontario Shoreline	30	
3	3824	Niagara Falls	Beaver Dams & Kalar	Channel Work	Watercourse Alteration	28	
4	3829	St. Catharines	1703 South Service Road	New Warehouse Adjacent to watercourse and piping of watercourse	Watercourse Alteration	29	
5	3830	Welland	287 Silverthorn Street (GE)	Culvert and Utility Installation	Watercourse Alteration	14	
6	3831	St. Catharines	1200 Fourth Avenue	Parking Lot	Lands Adjacent Watercourse	28	
7	3832	Lincoln	3522 Rittenhouse Road	Home addition	Floodplain	0	
8	3833	West Lincoln	Regional Road 20 from Streamside Drive to 140m East of S. Grimsby Road 5	Intersection Modifications including road widening, slope stabilization, sidewalks, sanitary sewer works and installation of storm sewer system	PSW Buffer/Lands adjacent to watercourse/adjacent valleyland	2	
9	3834	Niagara Falls	4875 Lyon's Parkway	New Home Construction and Dock	PSW Buffer/Lands adjacent to watercourse	14	
10	3835	Fort Erie	Between 2927 & 2995 Dominion Rd	New Home Construction	PSW Buffer	13	

3) Watershed Biology

In the month of September, the Watershed Ecological Technicians have provided biology review for a variety of planning and regulations files.

Approximately 18 site visits were conducted for planning files, 19 site visits for permit files, and 7 site visits for compliance related issues, for a total of approximately 44 site visits in the month of September. Most of the site visits were followed with internal and external natural heritage comments.

Approximately 23 planning applications and 23 permit applications have been reviewed, with formal comments submitted to the Watershed Planning and Permit Departments

Time has also been contributed to the Cave Springs Management Plan project, to the Health and Safety committee as the Worker Co-Chair, and to ongoing updates related to CityView.

All Biology staff have begun a Cornell Lab Bird Academy course on Spring Field Ornithology, which will be completed this fall.

The Supervisor of Watershed Biology has been attending meetings, site visits and working on several files including Thundering Waters (Niagara Falls), Warren Woods (Niagara Falls), the Bridgeburgh Neighborhood (Fort Erie), Vinemount Quarry (Lincoln), completing scoping for several EIS's, attended the DSAO Chapter 5 Drainage meeting as Chapter Secretary, and has begun the NextGen Municipal Leadership course offered through Brock University.

4) Tree and Forest Conservation By-law – See Forest By-Law Summary Report

5) NPCA Policy Review

Dillon consulting is reviewing the submissions on the Living Landscape Discussion Paper. Based on the feedback received from the general public, NPCA staff, Area Planners, and a broad range of stakeholders, Dillon is now working on the first draft of the Policy Document. Once completed, the final round of public consultation sessions will be rolled out during Fall 2016.

6) Welland River Floodplain Mapping Study

Following two rounds of extensive public consultation MMM consulting group is now working on developing the floodplain model. The hydrology component of the model is close to completion with the results of this stage of the modelling process being presented to the Watershed Floodplain Committee on **October 12, 2016 @ 5:30 pm** at Balls Falls Conservation Centre.

B. Projects / Programs

1) Source Water Protection Plan

- A Source Protection Committee (SPC) meeting was held September 15, 2016 to review the draft annual progress report on the implementation of the source protection plan.

- Staff continued to answer enquiries on source water protection, and respond to requests from the MOECC.

2) Water Quality Monitoring Program

- Staff continued routine monitoring at all NPCA 75 water quality monitoring stations. This will be performed monthly until November. Samples will then be analyzed for general chemistry, nutrients, metals and bacteria.

- Staff continue to identify and process benthic macroinvertebrate samples from the NPCA's biological monitoring program.
- *Provincial Groundwater Monitoring Network (PGMN):* Staff continue to visit monitoring wells for manual downloads and perform QA/QC check on groundwater level data as part of their routine data maintenance protocol. Staff have also commenced fall water quality sampling of PGMN wells.

- Staff attended the Glanbrook Landfill Committee Meeting to discuss the continued water quality monitoring in the vicinity of the landfill.
- Staff attended a meeting with Niagara Public Health and Niagara River RAP officials to discuss water quality issues of Queens Royal Beach in NOTL.
- To date, the NPCA has completed nine (9) projects under the Well Water Decommissioning Program for 2016. At this time 100% of the funding for this program has been allocated. The NPCA continues to receive applications for the program.
- Staff continue to process data requests from other governmental agencies, consultants, and academic institutions.

3) Flood Control

a) Flood Forecasting and Warning

- Binbrook Reservoir – The water level in the Reservoir is presently sitting 1 foot (300mm) below the normal operational holding level. Due to the dry weather over the past two months, water discharge from the reservoir has been greatly reduced. Staff continue to monitor reservoir water levels on a daily basis and make adjustments as warranted.
- Staff continue to monitor daily water levels at our 15 stream gauge stations, climatic data at our 15 climate stations, and undertake routine maintenance, calibration, and inspections at all 30 installations, as part of the NPCA's routine Flood Forecasting and Warning duties. The public may access this real-time water level and rainfall information through the NPCA's website.
- As part of this program's approved 2016 capital projects, NPCA staff have installed a new stream gauge station on 20 Mile Creek in the City of Hamilton (at Woodburn Road) in order to provide advanced flood warning for the community of Smithville in West Lincoln. The new station is operational and the water levels are being displayed on the NPCA website.

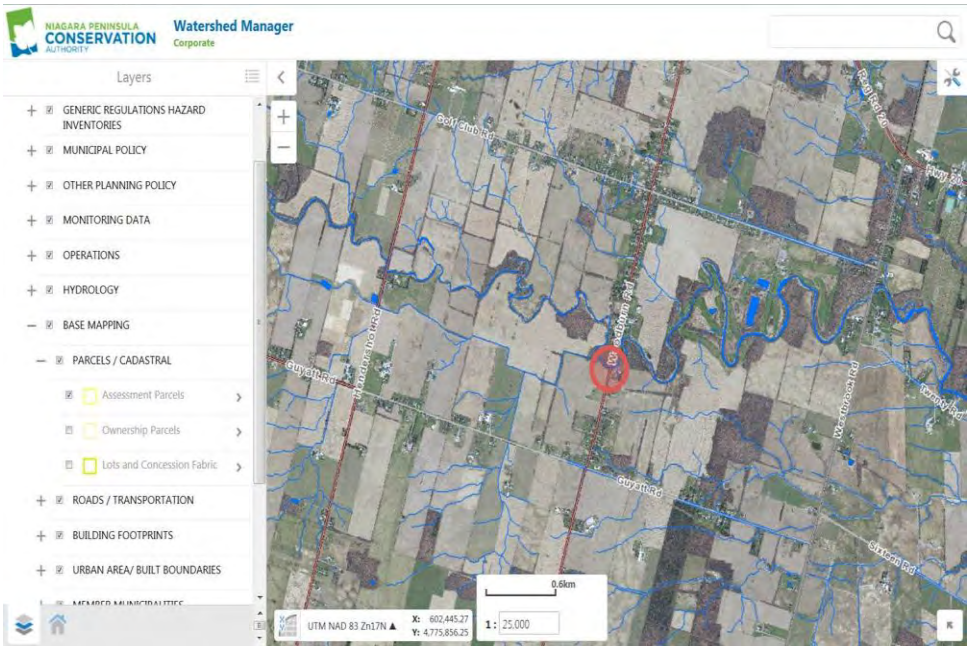


Photo 1. Stream Gauge Location

Photo 2. New Gauge

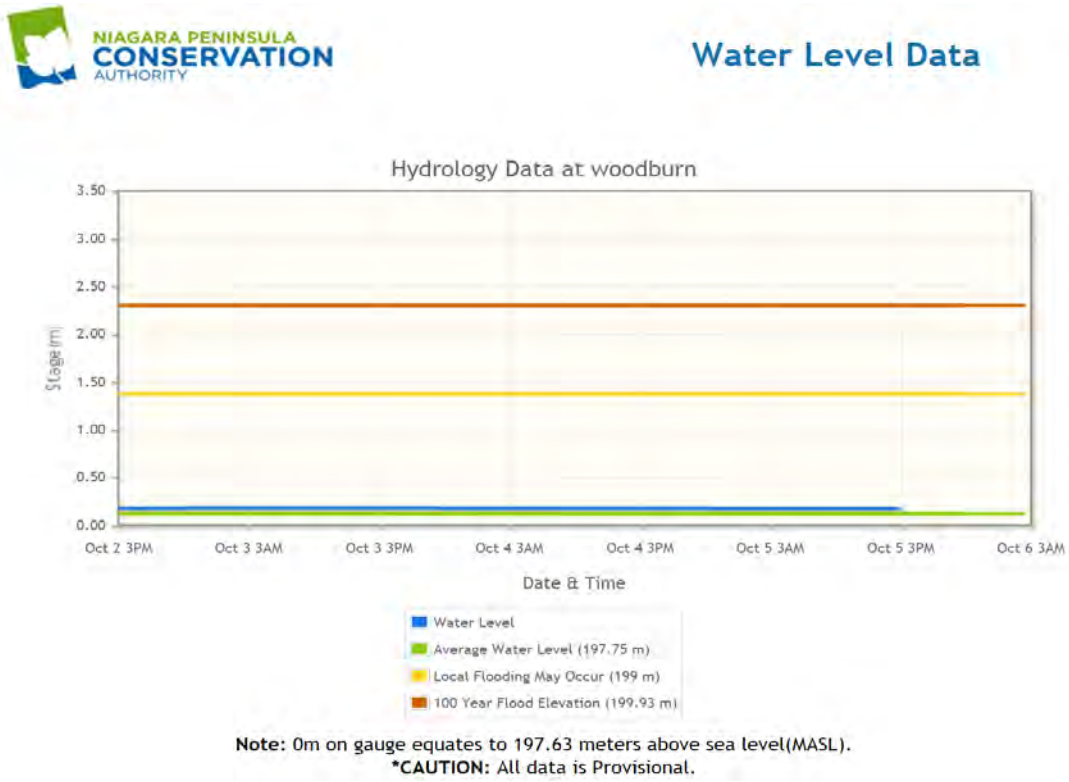


Photo 3. Water levels from the new Woodburn gauge displayed on NPCA website

b) Water Resource Engineering

- Staff continue to provide daily support to the Planning and Regulations program with respect to the analysis of natural hazards and the review of storm water management engineering designs.

- In September staff attended the annual meeting of the *Provincial Flood Forecasting and Warning Conference* in order to ensure that the NPCA flood forecasting and warning efforts remain consistent and integrated with the Province and our local Conservation Authorities.

4) Restoration

<u>Project Implementation – Watershed Plans</u>

The Watershed Restoration Program is responsible for improving water quality, water quantity and biodiversity within the NPCA Watershed. The Restoration Program advances these areas through the implementation of comprehensive watershed plans.

Watershed Plans have been developed for many of NPCA's watersheds. Each watershed plan identifies water quality/quantity and ecological objectives for that watershed, and details voluntary actions and activities that community partners and agencies can undertake to achieve those objectives.

The restoration program administers a cost-sharing program, offering local landowners financial incentives to implement water quality and habitat improvement projects on their properties. In addition to providing financial assistance to landowners, restoration staff will conduct one-on-one site visits providing technical advice.

Project Implementation – Voluntary Stewardship

Staff are completing 2016 stewardship projects. All restoration projects include Best Management Practices (BMP's) principals. Typical BMP's are conservation farm practices, nutrient prevention and management projects, habitat naturalization, stream-bank stabilization, bioengineering, habitat diversification and rehabilitation such as wetland and riparian buffer restoration, etc.

Haldimand County Water Quality Program

Three projects have been approved under this initiative in 2016.

Niagara River Remedial Action Plan (RAP)

- *RAP Re-designation Reports* – Seven (7) Beneficial Use Impairment (BUI) assessment reports are remaining. Re-designation reports are required for each assessment to document the issues, describe the actions and present the results. These reports require extensive public and stakeholder engagement before the process for de-listing can commence.

- *Communication Plan Development* – A RAP Communication Plan is being developed for public outreach and engagement activities which will be undertaken along with the re-designation of the remaining priority actions.

- Staff attended the *Great Lakes Public Forum* conference in Toronto. Updates were provided on the Great Lakes Water Quality agreement and corresponding programs.

- Staff will be attending a binational meeting (date to be confirmed) this fall in Buffalo for New York State Area of Concern (AOC) updates.

5) Special Projects

- Staff provided comments on planning applications for Niagara Region and local municipalities under the Planning Memorandum of Understanding. Staff also provided comments on proposed updates to provincial plans, MOECC Permits to Take Water and a proposed quarry expansion.

- Staff assisted Operations with the Ball's Falls Sewage System and the Cave Springs Master Plan.

- Staff continued work on Bedrock Aquifer Study tasks, including borehole geophysics by Natural Resources Canada (also benefitting Niagara Region Waste Management), installation of data logging systems, procurement of sampling pumps, and fall groundwater sampling with the Ontario Geological Survey (OGS).

- Staff responded to information requests from consultants and the public, and supported the Source Water Protection program.

- Staff participated on the MOECC's committee to address provincial auditor general's source protection report recommendation 5b. This concerns notifying the public about elevated naturally occurring groundwater levels above drinking water standards.

- Staff used the NPCA-OGS field site at Glynn A Green Elementary school (Fonthill) to teach a field lab for Brock University students on groundwater testing (see photos below).

FINANCIAL IMPLICATIONS:
None

RELATED REPORTS AND APPENDICES:
None

Prepared by:

Peter Graham, P.Eng. Director, Watershed Management

Respectfully submitted by:

Carmen D'Angelo, CAO/Secretary-Treasurer

This report was prepared with consultative input from Suzanne McInnes, MCIP, RPP – Manager, Plan Review and Regulations, Brian Wright, P.Eng. – Manager, Watershed Projects, and NPCA staff.

Report To: **Board of Directors**

Subject: **Operations Status Report**

Report No: **100-16**

Date: **October 19, 2016**

RECOMMENDATION:

THAT the NPCA Board **RECEIVE** Report No. 100-16 for information.

PURPOSE:

To provide Board members with a summary of Conservation Area activity and projects.

DISCUSSION:

- **Ball's Falls CA**

The weather in September has been a lot cooler and has brought some welcomed rain with it. Correspondingly, the number of park visitors has decreased. The creek is beginning to collect and retain water. Preparations for the upcoming Thanksgiving Festival are well underway.

Capital:

The report outlining the work needed to maintain our historical buildings is still being finalized. The belfry is complete and has been placed back on top of the church. For the time being we have reinforced the foot bridge to the lower falls lookout and plan to replace it after the festival is complete.

	September
Adults admissions	686
Seniors/students admissions	369
Children admissions	170
Maximum - vehicles admissions	81
Membership renewals	1
Pavilion Rentals	3
Historical Tours given	2
Barn Wedding Receptions	18
Church Ceremonies	6
Centre for Conservation - wedding receptions	4
Centre for Conservation – non wedding rentals	6

Education Programs

School education programs: During the month of September there were three classes that attended education programs at Ball's Falls. In total 97 students participated, generating $644.25 in revenue.

A new education program was developed this year, "Fall Harvest", targeting grade 3 students and supporting teachers that teach their pioneer or early settler unit in the fall. Students were able to visit the Grist Mill and see how wheat is ground into flour. They also visited the blacksmith shop and assisted in making tools. Students further visited the cabin and fruit drying shed to dry apples over the fire and save pumpkin seeds for spring planting. Wonderful feedback was received from teachers that attended this program. They loved that the students were able to have a hands on experience on all the jobs that had to be done before winter.

Christmas in the Country Program:
An e-mail marketing piece was created for the Christmas in the Country program and sent out to all schools in the NPCA watershed, and to individual teachers that have attended the program in the past.

Cadets:
We had three troops of cadets visit and participate in our new compass orienteering course In September. 20 cadets attended generating $90.00 of revenue.

Guided Tours:
Two guided tours were booked for the month of September with 19 guests participating, generating $184.92 in revenue.

Building Maintenance:
All of the historical buildings are being cleaned for the Thanksgiving Festival.

Thanksgiving Festival Preparation:
All milling supplies for the Grist Mill have been ordered. Decorations have been sourced and ordered. Steel has been picked up for the blacksmith shop.

	Revenue	*Increase*
Total Revenue for the month of September	$919.17	
Total Programming Revenue to-date	$27,263.79	
Increase from 2015		$8,013.11

Respectfully Submitted by Nathaniel Devos, Park Superintendent at Ball's Falls Conservation Area and Jill Walters-Klamer, Program Assistant

❖ Binbrook CA

Operations

A handful of student staff remain on hand on a part-time basis to assist with off season tasks. The underside of Pavilion #2 roof has been re-painted in advance of the wedding.

As part of the Primary Recommendations stemming from the Waterfront Safety Audit, shoreline rescue stations with appropriate signage have been installed at six locations, providing the general public with access to rescue equipment.

An area has been prepared by staff, for plantings, courtesy of the Canadian Wild Turkey Federation/Mount Hope Chapter which will help foster sustainable growth of the wild turkey population.

Binbrook is the beneficiary recipient of another volunteer representing Springboard Community Services. Eric Bomberry is currently volunteering at Binbrook and assisting with area maintenance and daily operations.

Roughly 350 annual passes were sold at Binbrook this season. Unofficial total revenue targets are currently exceeding expectations by approximately 7% to this point, with some additional waterfowl hunting still to come.

The Annual Waterfowl Hunting Program is officially underway at Binbrook with the first four hunting dates fully booked. The season (weather permitting) will extend into early December. Hunting Blind reservations are being accepted for the duration of the season.

Special Events

A wedding ceremony and pictures took place on Saturday October 1st at Pavilion #2.

Capital

Splash Pad - Ground has been broken in the splash pad area. All existing concrete has been removed and many of the new features have arrived on site. Upon receipt of the electrical demands of the new splash pad, quotations are now being received to address the electrical demand for this site.

Trail Upgrade - the final capital project for 2016 is almost complete. The accessible beach matting system has arrived on site and will be rolled out for the 2017 season. Additional trail extensions/upgrades throughout the day use area are currently under construction and will be complete by year end.

This report was respectfully submitted by Mike Boyko, Park Superintendent

❖ Chippawa Creek Conservation Area

Operations

Camping
For the month of September there were 50 camping transactions completed at the park, with 92 additional vehicles passes and 247 day passes sold.

This was a very successful year for camping revenue much attributed to the nice weather all summer long.

The 2017 seasonal camping waitlist has increased to 35 people.

Gatehouse Store
There were 280 retail purchases of various snack items sold during the month of September not including the sales of 221 bags of ice and 75 bags of firewood.

Honey Wagon Service
The monthly total trailer sewage pump outs was 57. This has become a very popular and convenient service for campers with additional seasonal campers expressing interest for this service in 2017.

Park Maintenance
Grass cutting has resumed on a daily basis again after some cooler weather and regular rains.

Capital Projects

Trail rehabilitation will resume around Dils Lake once the campers leave for the season. There is a safety risk operating machinery and equipment when the trail is being used heavily.

Respectfully Submitted by Rob Kuret, Park Superintendent, Chippawa Creek CA.

❖ Long Beach Conservation Area

Operations:

Most summer students have already returned to school. Those still working are working reduced hours.

We had an end of season Campers meeting on September 17. The feedback was generally positive.

Senior Park staff met with Inspector Ryan Bassi (Niagara Regional Public Health Inspector) to discuss potable water quality and daily water testing records. This was a general inspection and there were no issues. These inspections occur annually.

Capital Projects:

The Park Superintendent met with ASI Consulting to discuss future wastewater system operations and to determine whether any Capital works would be necessary.

Staff also met with a couple of Electrical Contractors to discuss possible site upgrades for the 2017 camping season.

Respectfully Submitted by Mike MacIntyre, Park Superintendent, Long Beach CA.

❖ Central Workshop – Gainsborough CA

Operations:

Summer Staff have all left for the season. Grass cutting has increased. Tree cutting work across the watershed has also increased. Staff started preparing Ball's Falls Conservation Area, on September 26th, for the Annual Thanksgiving Festival.

Capital Projects:

Capital Projects are coming to completion. There are two large projects at Beamer Memorial Conservation Area to finish (removal of lookouts, trail work, and an expanded parking area) to be completed at the end of October and into November. Erosion work along the pond at St. John's Conservation Area is completed for this year. Final quotes are coming in for work to be done at the Central Workshop.

Respectfully Submitted by Mich Germain, Superintendent, Central Workshop

❖ ECOLOGICAL STATUS REPORT

- **Binbrook Lake Conservation Area**
  Waterfowl Hunting continues at the site. The lottery days were selected for the first two weeks. The waterfowl hunting blind lottery is now complete and on October 8th the blinds are open on a first come first served basis continuing through December 10.

- The Canadian Wild Turkey Federation, Mount Hope Chapter will be providing funding and habitat for wild turkey habitat at the Binbrook site. On October 22, the federation with the direction of NPCA staff, will be seeding an area with native tall grass species. This seeding will increase the diversity of species and vegetative communities at the site for improved environmental health.

- **Gord Harry Trail Conservation Area**
  The work of the Niagara Region Wind Farm (NRWF) has been completed on the trail section west of Etling Road in the Town of Wainfleet. The NPCA staff Ecologist has reviewed the vegetation assessment of the project, comparing 2015 to 2016. The trail was widened with vegetation removal on the south side of the trail. Other areas of vegetation removal include a bypass station area, entrance to the Wind Turbine 23, and

the turning corner (Etling and Gord Harry Trail juncture). These areas are being restored with a hydroseed mix of native grasses and wildflowers. It will replace the removed vegetation of Canada goldenrod, wild grape and non-native White Sweet Clover, and Queen's Anne lace and the regrowth of non-native Charlock Mustard (*Brassica kabe*r). Staghorn Sumac, Poplar, several smaller dbh (diameter at breast height) trees and willow shrubs were also removed in these disturbed areas with replacement to be determined later.

- **Mud Lake Conservation Area**
  Waterfowl Hunting continues at the site. The lottery days were selected for the first two weeks. The waterfowl hunting blind lottery is now complete and on October 8th the blinds are open on a first come first served basis continuing through November 30.

- **St,Johns Annex/ Lathrop Conservation Area**
  The ecological reptile study has been completed for 2015 at the site. The survey was completed by the staff Ecologist with summer students and an area volunteers. The results for snakes at the site using coverboards and transect highlighted common garter snakes (*Thamnophis sirtalis*), Dekay's brown snake (*Storeria dekayi*), Eastern Milksnake (*Lampropeltis triangulum*) using the site. Hot summer with varying weather conditions have possible limitations on the species findings. Surveys for skinks using coverboards and transects resulted in no findings. Given the hot fairly uniform conditions and the elusiveness of these species two more years of surveys will be conducted to determine the possible presence/absence of this species at the site.

  These surveys are two of a number of species surveys to assess the overall ecological community of the site including, birds, bats, small mammals studies, large mammals, amphibians, plants etc. being completed at the site to determine the baseline resource information on which site management decisions can be made.

- **Rockway Conservation Area**
  Staff met with the selected consultant, Archaeological Research Associates Ltd. to commence the Rockway CA archaeological study. The firm is completing the historical research, followed by an archaeological site assessment (via a Test Pit and document archaeological resources), and structure condition assessment and a Strategic Conservation Plan with recommendations of stabilization measure in short term and long term of the existing structures found. This study will be completed by December 31, 2016. The findings will be used by NPCA staff for completion of historical restoration work at the site including conservation of any significant historic features, and development and implementation of appropriate signage and educational messaging/programs of the sites history.

- **Smith Ness Conservation Area**
  Restoration of the meadow is completed at the site. Four areas were prepared, tilled and seeded with tall grass prairies species of grasses, sedges and wildflowers. This assists in providing potential habitat (otherwise limited) for some rarer bird species (i.e. bobolinks or Eastern Meadowlark) and well as, habitat needs for other species such as a butterflies, a variety of birds, amphibians, insects, small mammals etc.

Overall the meadow and tall grass area contributes to a greater representation of this vegetative community on our Conservation Areas, resulting in wildlife habitat for rare species and to support species of the larger ecosystem cycle.

- **Wainfleet Bog Conservation Area**
  As part of the proactive fire management of the site, all lightning strikes continue to be monitored by the Ontario Ministry of Natural Resources and Forestry Haliburton Office (OMNRF) and reported to the NPCA for site assessment and confirmation of any fires in field. For the month of September, no lightning strikes have been reported in the Wainfleet Bog.

- **Wainfleet Acquisition Conservation Area**
  The ecological reptile study has been completed for 2015 at the site. The survey was completed by the staff Ecologist with summer students and an area volunteers. The results for snakes at the site using coverboards and transect highlighted garter snakes using the site. Hot summer with varying weather conditions have possible limitations on the species findings. Surveys for skinks using coverboards and transects resulted in no findings. Given the hot fairly uniform conditions and the elusiveness of these species two more years of surveys will be conducted to determine the possible presence/absence of this species at the site. As well turtle surveys were completed using basking surveys and none were observed.

  These surveys are two of a number of species surveys to assess the overall ecological community of the site including, birds, bats, small mammals studies, large mammals, amphibians, plants etc. being completed at the site to determine the baseline resource information on which site management decisions can be made.

<u>Other Conservation Area Ecological Activity</u>

NPCA Hunting Program

a) General: Hunting Permits
   Staff has issued an additional 73 hunting permits for a total of 336 permits issued for the NPCA Conservation Areas for 2016, with 53 individual residing outside of our administrative area.

b) Controlled Deer Hunt. The first of the two provincial annual Controlled Deer Hunts will start November 7 through November 13. The Conservation Authority usually observes an increase in hunters at its sites during this time. The site observed annually with the highest number of hunters during this time is the Wainfleet Bog Conservation Area. Staff enforcement of hunting areas and permits is usually increased during the Controlled Deer Hunts to ensure adherence to site policies and regulations and well as ensure hunters have NPCA hunting permits.

Prepared By Kim Frohlich, Ecologist

❖ EVENTS STATUS REPORT

Ball's Falls Thanksgiving Festival:

Thanksgiving Festival will have been executed by the time the board receives this status report.

A more complete festival report will be delivered to the November meeting.

To date there are 175 confirmed artisans, concessionaires, and farmer's participating at the event, which represents an approximate revenue of $84,000. We have also attracted 4 new food trucks to the event; Poutine Supreme, True North, Wrapture, and Tide & Vine.

The 'on-the-ground' work that was executed to prepare the grounds and surrounding area was extensive and required support staff for multiple field locations. NPCA staff erected the new NPCA tent over a two day time frame, they have worked to establish a significant amount of snow fencing, laid Ethernet and phone cable for our new ATM Vendor, marked all of the vendor booths, cleaned and prepared the mill for its operation at the event. Placed all of the event signage, ran electrical provisions to each of the tents, worked to clean the festival grounds, purchased décor and laid it out throughout the site. Staff has installed a temporary crossing for cars to be able to access the park. They will work to put out the festival gates, and ensure there are tents on site for the gate keepers

Shuttle buses will now be included as part of the festival as per the direction of the CAO. We will continue to have a larger quantity of large golf carts, including accessible carts.

We have also secured a new ATM Vendor, Via Cash, and a new brewer; Bench Brewery.

Our goal for waste reduction remains to divert nearly 80% of our waste created and we will be doing so by working closely with the ECO Defenders.

To date there are approximately 80 volunteers confirmed for the event.

A Volunteer orientation session will took place at Ball's Falls on Monday October 3rd.

Again this year, the NPCA will host an event "kick-off" dinner for all of our vendors, to welcome them to the event and provide a warm and welcoming atmosphere to our guests, this dinner will take place on Friday.

Event dates are Friday October 7th to Monday October 10th. The event is open from 10am to 5pm daily and admission is $6 per person. Seniors are able to access the event for $4 on Friday only. Weekend Passes are available for $10.

- ***Christmas Village:***

  This year's Christmas Village will be held on December 3rd and 4th. Unlike last year's event, pre-registration will be required.

  To date the event will feature Disney Characters from the movie Frozen including Elsa, Anna and Olaf. Santa will also be a big feature of the event, as well as horse drawn wagon rides, and roasting marshmallows over the campfire.

  Event Décor has been sourced and secured, with plans in motion to secure food vendors, livestock rentals, and additional character rentals. Logistical considerations such as lighting, portable washrooms, and casual staffing will be secured throughout October.

- ***Niagara Children's Water Festival:***

  The Water Festival Committee attended Children's Water Education Council meeting in September to discuss trending programming ideas, development of new activity centres, event evaluations and funding opportunities. Plans to enhance the 5 areas of festival improvement have been identified, and will be implemented through the winter months. A new festival website needs to be investigated for the event as well, as identified as a priority by the festival committee.

  A member of the festival committee has also been asked to speak at a Niagara Region Engineering Conference in November to discuss how building partnerships has led to the success of the Niagara Children's Water Festival. The 2017 festival will take place on May 9th to 12th 2017, at Ball's Falls Conservation Area. As always, this event will remain free to our young participants.

- ***New Event-Spring 2017:***

  A partnership event between the Twenty Valley Tourism Association (TVTA) and the NPCA is beginning to take shape. The two organizations are planning to create a sustainable spring event which will showcase the local culinary, craft beverage and artisanal talents of Twenty Valley in a natural setting. This two-day event will be held at Ball's Falls Conservation Area.

  The proposed event will look to bring awareness to the growing craft beverage producers in Twenty Valley and its surrounding area. The event will promote the area as an energetic growing region, working together to produce world class wines, impressive craft brewery & distillers while offering healthy sustainable culinary dishes.

  The event team has proposed an admission $25, which would include sample tickets for the day. Additional food and beverage samples would require additional tickets. The event would also offer an educational tour/walk for guests which, will help to promote our local surroundings and ensure active flow through the event space.

  Based on past experience with events of this nature, the expected attendance would be estimated at 2,000 to 2,500.

- ***Canada 150 Celebration at Binbrook-New Event:***
  Early stages of planning for the Canada day 150 Celebration event at Binbrook have begun.

  To date an event committee has been formed, with initial meeting date taking place in October.

  Upcoming meetings will focus on the development of event themes, purpose, description, budget, communications plan and the event critical path.

Respectfully Submitted by Brianne Wilson, Events Coordinator

Prepared by:

Gregg Furtney
Supervisor, Operations

Reviewed by:

Mark Brickell
Acting Director of Operations

Submitted by:

Carmen D'Angelo
Chief Administrative Officer/
Secretary Treasurer

Report To: **Board of Directors**

Subject: **Corporate Services Project Status Report**

Report No: **101-16**

Date: **October 19, 2016**

RECOMMENDATION:

THAT Corporate Services Project Status Report No. 101-16 be **RECEIVED** for information.

PURPOSE:

To provide the Board a summary of projects important to the Conservation Authority's business objectives.

DISCUSSION:

The project status report is to provide information pertaining to process improvements, initiatives in support of the strategic plan and supporting the organization to achieve its mission, vision and values.

Information Management & Technology Services:

- The CityView development tracking system continues implementation refinements now that it has been live for almost two months.
  - Technical staff received the final System Administration training this month to conclude all formal training requirements. We are being transitioned from CityView's professional services team to their technical support team now that the implementation services contract is coming to a close.
  - Since going live 180+ review processes have been entered into the system and are being tracked and supporting documents digitally documented.
  - Several tweaks and improvements have been made by staff already based on the Configuration training received. These are largely workflow modifications, including the ability to escalate a Building Permit Clearance application type to a Permit application type based on screening and issue identification results, and a vice versa de-escalation. These refinements include changing the staff assigned to deal with the appropriate tasks for the outcomes of these processes.
  - Staff created digital stamps for PDF documents that come in as part of review processes so that planners do not have to print, stamp and then scan these documents into the system.
  - Staff is currently working on improving the letter templates in the system for the various review processes so that planning staff can start to use and depend on them more heavily as intended.

- GIS staff worked with the Construction Compliance Technician to update our regulations violations spatial flagging layer in our mapping environments. This layer simply flags for

all other staff in a very general sense that the Authority has been involved in a complaint or violation on a property currently or in the past as an awareness measure.

- GIS staff have been utilizing the coaching hours purchased with our FME automation software to create a model for our complicated parcel and property information update process. Staff look forward to leveraging FME and its automation modeling capabilities in application to a lot of the NPCA's manual data maintenance activities.

- Cave Springs
  - GIS staff assisted with document review and map updates.
  - GIS staff assisted with directly editing the charter as well.

- GIS staff are working with the biology department to customize field web mapping applications as part of a broader 2016 capital project to identify and acquire appropriate GPS equipment and associated mobile mapping solutions for watershed management field staff.

- GIS Staff continued their support of the Water Resources team with flood forecasting and warning database corrections and the creation of several project maps.

Communications and Foundation:

Communications

- NPCA Board Meetings - Live-Stream Results (The live stream was promoted on local Postmedia websites, NPCA website and social media channels)

Month	Peak Viewers	Average Viewers	Average View Duration
March	18	97	18:47
April	22	81	22:29
May	14	88	12:55
June	8	80	12:01
July	7	67	9:52
September	9	59	20:40
Monthly Combined Average	13	78.6	15:37

- The Communications department has developed corporate identity guidelines for approval from the Senior Management Team. The document sets forth a clear direction for usage of the Niagara Peninsula Conservation Authority brand mark, as well as colour, style, and sizing standards.

- Communications staff has contributed to the Cave Springs Management Plan through the production of a video highlighting an overview of the project. The video will be shown at the next Public Open House, which the Communications team will help promote.

Furthermore, staff is also contributing to the design and production of final Management Plan documents.

- ❖ Communications provided marketing support for the 42nd Annual Ball's Falls Thanksgiving Festival. The festival was promoted in various mediums, including; radio, internet banner advertising, mobile geo-targeting, paid and organic social media, and print advertising.

- ❖ Head status for the purposes of Freedom of Information Requests has been delegated to the Communications Specialist. Five requests have been processed in the last month.

Foundation

- ❖ The 2nd Annual Rt. Hon. John Turner Gala for Water & Environmental Leadership was held on Thursday, Sept. 29 at the Queen's Landing Hotel in Niagara-on-the-Lake. Highlights from the evening include the announcement of the two award recipients (Grimsby resident Bruce MacKenzie and Grimsby-based Central Public School) an inspirational keynote address from Julie Angus and words of wisdom shared by the Rt. Hon. John Turner.

- ❖ The memorial bench program is still active with several inquiries for St. John's and Balls Falls Conservation Areas. The memorial bench program is set to be re-vamped in 2017. This new program is still in the research stages exploring different bench and memorial item options as well as future possible memorial locations. Further, a memorial tree is scheduled to be planted the last week of October.

- ❖ Reports for the Foundation Strategic Plan are being finalized by Liz Palmieri. Work on Phases 2 and 3 will begin once the Board and Ms. Palmieri have met to discuss policy development and the board recruitment process.

Human Resources:

Recruitment

- ❖ Temporary Student Positions posted and filled for Thanksgiving Festival
  - 134 applications received; 45 temporary students screened and hired

Employee Relations

- ❖ Workplace Harassment policy updated in response to Bill 132
  - Upcoming training to occur for all staff in October
- ❖ Non-union job descriptions finalized

Community Outreach and Volunteer Report

Community Liaison Advisory Committee (CLAC)

Draft meeting minutes from the September 8th CLAC meeting have been included in the Agenda Package for the October meeting. The next Community Liaison Advisory Committee meeting will be held in December 2016.

Volunteers

Staff continued recruiting volunteers for the Ball's Falls Thanksgiving Festival, Christmas in the Country School Program, Christmas Village event and various other NPCA programs and activities throughout the month of September. These programs rely heavily on volunteers to ensure their success. This year's Thanksgiving Festival needed over 200 volunteers over the four-day event, including heritage tours and demonstrations, vendor relief, customer surveys, parking, and recycling team.

Volunteers assisted NPCA staff in planting two pollinator gardens, one at St. John's Valley Centre and one at Smith-Ness Forest Conservation Area. The St. John's planting was in partnership with the Niagara Catholic District School Board and Brock University. These plantings have been generously funded by the Government of Ontario's Community Environment Fund. Signs will be erected at all three sites this Fall.

Volunteers have been assisting staff in collecting ecological information at various conservation areas including assistance with salamander studies, bat surveys, and monitoring bluebird boxes.

The Glanbrook Conservation Committee has been busy at Binbrook Conservation Area over the month of September. Volunteers planted 20 14-foot Sugar Maple trees in the Tyneside Trail parking lot and in the main park area. The trees were donated by Braun Nurseries. Volunteers also removed garbage, worked on shoreline stabilization, and trail maintenance for a total of 40 hours.

Earlier in the year, the NPCA submitted two possible video projects to Niagara College for consideration by their 3rd year TV production program. A group of students from the program chose the volunteer video as their project for 2016. The Community Outreach staff and the Communications staff have been working with the crew of six students. They are creating a 6-minute video featuring the NPCA's volunteers and highlighting the reasons why they volunteer with us.

The NPCA has been helped by over 40 volunteers and recorded 250 volunteer hours in the month of September.

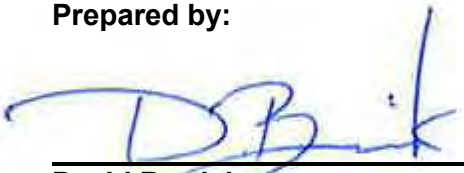
Community Outreach

The NPCA is partnering with the Eco-Defenders volunteer group for the Ball's Falls Thanksgiving Festival. After filling two garbage bins of waste in 2015, staff enlisted the help of this group to reduce our waste for this year's Festival. The Eco Defenders bring a waste sorting booth and a group of volunteers to sort waste and put recyclables and organics in their proper place. The NPCA is also working with Niagara Falls Cadets and a Welland Scouting group to assist with this project.

The final “Heritage Days” at Ball’s Falls Conservation Area took place on Sunday September 11th. Volunteer blacksmiths and spinners/weavers were on site to give demonstrations in addition to the tours being offered in the historical buildings.

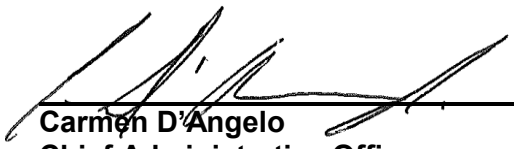
Final comments and reviews were submitted for the Cave Springs Management Plan. Staff have been working closely with other members of the Technical Steering Committee to get the Draft document prepared for the Board and Steering Committee.

Prepared by:



David Barrick
Director of Corporate Services

Submitted by:



Carmen D’Angelo
Chief Administrative Officer
Secretary Treasurer

This report was prepared in consultation with: Geoff Verkade, Manager, Information Management and Technology Services; Michael Reles, Communications Specialist; Genevieve-Renee Bisson, Foundation Coordinator; Misti Ferrusi, HR Generalist; and, Kerry Royer, Community Outreach Coordinator.

NIAGARA PENINSULA CONSERVATION AUTHORITY

Report To: **Board of Directors**

Subject: **Financial and Reserve Report – Month Ending Sept. 30, 2016**

Report No: **102-16**

Date: **October 19, 2016**

RECOMMENDATION:
THAT Report No. 102-16 be **RECEIVED** for information.

DISCUSSION:
To provide the Board a summary of operations & capital expenditures versus revenues and to provide a comparison of actual results to the budget as approved by the Board.

The report confirms the general financial oversight and compliance with Public Sector Accounting Board standards.

FINANCIAL IMPLICATIONS:
The lines of business are within budget allocations identified during the budget preparation and approval cycle.

RELATED REPORTS AND APPENDICES:
Appendix 1 – Budget Status Report: month ending August 31, 2016 (consolidated)
Appendix 2 - Statement of Reserves for month ending August 31, 2016

Prepared by:

David Barrick
Director of Corporate Services

Submitted by:

Carmen D'Angelo;
CAO/Secretary Treasurer

This report was prepared in consultation with John Wallace, Manager of Finance.

NIAGARA PENINSULA CONSERVATION AUTHORITY
CONSOLIDATED NON CAPITAL
JANUARY 1, 2016 - SEPTEMBER 30, 2016

REVENUES	**YTD ACTUAL**	**ANNUAL BUDGET**	**% OF BUDGET**
MNR TRANSFER PAYMENTS	174,496.00	174,500.00	100.0%
PROVINCIAL GRANTS - MOE	110,295	95,000	116.1%
PROVINCIAL GRANTS - OTHER	341,180	235,000	145.2%
FEDERAL GRANTS	187,061	235,000	79.6%
MUNICIPAL LEVY - GENERAL	5,145,765	5,145,765	100.0%
LEVY - SPECIAL - NIAGARA	2,172,633	2,172,633	100.0%
LEVY - SPECIAL - HAMILTON	19,700	19,700	100.0%
ADMINISTRATION FEES	289,056	355,000	81.4%
USER FEES	1,381,281	1,379,495	100.1%
RESERVE FUNDS	-	135,000	0.0%
LAND OWNER CONTRIBUTION	12,393	-	100.0%
MISCELLANEOUS	122,613	331,474	37.0%
	9,956,473	**10,278,567**	**96.9%**

EXPENDITURES			
CAO/BOARD & CORPORATE SERVICES	3,424,723	4,149,598	82.5%
WATERSHED	2,224,170	3,225,585	69.0%
OPERATIONS	2,160,209	2,903,384	74.4%
	7,809,102	**10,278,567**	**76.0%**

NIAGARA PENINSULA CONSERVATION AUTHORITY
CAO/BOARD AND CORPORATE SERVICES
JANUARY 1, 2016 -SEPTEMBER 30, 2016

REVENUES	YTD ACTUAL	ANNUAL BUDGET	% OF BUDGET
MNR TRANSFER PAYMENTS	75,796	75,800	100.0%
MUNICIPAL LEVY - GENERAL	2,325,665	2,325,665	100.0%
LEVY - SPECIAL - NIAGARA	1,563,133	1,563,133	100.0%
INTEREST INCOME	17,751	60,000	29.6%
MISCELLANEOUS	1,712	-	100.0%
RESERVE FUNDS		55,000	100.0%
CONSERVATION FOUNDATION	19,508	70,000	27.9%
	4,003,565	**4,149,598**	**96.5%**
EXPENDITURES			
CAO & BOARD EXPENSES	**256,016**	**325,073**	**78.8%**
CORPORATE SERVICES			
CORPORATE MANAGEMENT	1,605,354	1,828,842	87.8%
OFFICE SERVICES	644,511	767,094	84.0%
FINANCIAL SERVICES	246,906	273,937	90.1%
HUMAN RESOURCES	61,476	117,590	52.3%
INFORMATION TECHNOLOGY	369,806	511,324	72.3%
CORPORATE COMMUNICATIONS	240,654	325,738	73.9%
	3,168,707	**3,824,525**	**82.9%**

NIAGARA PENINSULA CONSERVATION AUTHORITY
WATERSHED
JANUARY 1, 2016 - SEPTEMBER 30, 2016

REVENUES	**YTD ACTUAL**	**ANNUAL BUDGET**	**% OF BUDGET**
MNR TRANSFER PAYMENTS	98,700	98,700	100.0%
PROVINCIAL GRANTS - MOE	110,295	95,000	116.1%
PROVINCIAL GRANTS - OTHER	341,180	235,000	145.2%
FEDERAL GRANTS	187,061	235,000	79.6%
MUNICIPAL LEVY - GENERAL	1,628,441	1,628,441	100.0%
LEVY - SPECIAL - NIAGARA	477,500	477,500	100.0%
LEVY - SPECIAL - HAMILTON	19,700	19,700	100.0%
ADMINISTRATION FEES	289,056	355,000	81.4%
RESERVE FUNDS	-	-	0.0%
LAND OWNER CONTRIBUTION	12,393	-	100.0%
MISCELLANEOUS	19,520	81,244	24.0%
	3,183,846	**3,225,585**	**98.7%**
EXPENDITURES			
WATERSHED MANAGEMENT	211,412	326,785	64.7%
PLAN REVIEW AND REGULATIONS	838,247	1,119,381	74.9%
WATERSHED PROJECTS	1,174,511	1,779,419	66.0%
	2,224,170	**3,225,585**	**69.0%**

NIAGARA PENINSULA CONSERVATION AUTHORITY
OPERATIONS
JANUARY 1, 2016 -SEPTEMBER 30, 2016

REVENUES	**YTD ACTUAL**	**ANNUAL BUDGET**	**% OF BUDGET**
MUNICIPAL LEVY - GENERAL	1,191,659	1,191,659	100.0%
LEVY - SPECIAL - NIAGARA	132,000	132,000	100.0%
USER FEES	1,381,281	1,379,495	100.1%
RESERVE FUNDS	-	80,000	0.0%
MISCELLANEOUS	64,122	120,230	53.3%
	2,769,062	**2,903,384**	**95.4%**
EXPENDITURES			
OPERATIONS MANAGEMENT	314,882	457,673	68.8%
STRATEGIC INITIATIVES	407,369	599,348	68.0%
LAND PROGRAMMING	1,325,538	1,645,863	80.5%
VEHICLES AND EQUIPMENT	112,420	200,500	56.1%
	2,160,209	**2,903,384**	**74.4%**

NIAGARA PENINSULA CONSERVATION AUTHORITY
CONSOLIDATED CAPITAL
JANUARY 1, 2016 - SEPTEMBER 30, 2016

REVENUES	YTD ACTUAL	YTD BUDGET	% OF BUDGET
FEDERAL GRANTS	-	245,000	100.0%
MUNICIPAL LEVY - GENERAL	653,248	864,845	75.5%
LEVY - SPECIAL - NIAGARA	500,000	500,000	100.0%
LEVY - SPECIAL - HAMILTON	100,000	100,000	100.0%
RESERVE FUNDS	-	694,500	0.0%
MISCELLANEOUS	-	29,000	100.0%
	1,253,248	**2,433,345**	**51.5%**

EXPENDITURES			
CORPORATE SERVICES	105,689	182,500	57.9%
WATERSHED	41,268	112,500	36.7%
LAND DEVELOPMENT	520,205	1,710,876	30.4%
NIAGARA DIFFERENTIAL (RESERVE)	-	427,469	0.0%
	667,162	**2,433,345**	**27.4%**

NIAGARA PENINSULA CONSERVATION AUTHORITY
CORPORATE SERVICES - CAPITAL
JANUARY 1, 2016 - SEPTEMBER 30, 2016

REVENUES	**YTD ACTUAL**	**YTD BUDGET**	**% OF BUDGET**
MUNICIPAL LEVY - GENERAL	182,500	182,500	100.0%
	182,500	**182,500**	**100.0%**
EXPENDITURES			
CORPORATE SERVICES	27,080	70,000	38.7%
GIS	78,609	112,500	69.9%
	105,689	**182,500**	**57.9%**

NIAGARA PENINSULA CONSERVATION AUTHORITY
WATERSHED CAPITAL
JANUARY 1, 2016 - SEPTEMBER 30, 2016

REVENUES	**YTD ACTUAL**	**YTD BUDGET**	**% OF BUDGET**
RESERVE FUNDS	-	112,500	0.0%
	-	**112,500**	**0.0%**
EXPENDITURES			
BINBROOK DAM	-	10,000	0.0%
STREAM GUAGE & MONITORING NETWORK	41,268	92,500	44.6%
GENERAL OFFICE ENHANCEMENT/MISC.	-	10,000	0.0%
	41,268	**112,500**	**36.7%**

NIAGARA PENINSULA CONSERVATION AUTHORITY
CONSERVATION LAND DEVELOPMENT - CAPITAL
JANUARY 1, 2016 - SEPTEMBER 30, 2016

REVENUES	YTD ACTUAL	YTD BUDGET	% OF BUDGET
FEDERAL GRANTS	-	245,000	100.0%
MUNICIPAL LEVY - GENERAL	254,876	254,876	100.0%
LEVY - SPECIAL - NIAGARA	500,000	500,000	100.0%
LEVY - SPECIAL - HAMILTON	100,000	100,000	100.0%
RESERVE FUNDS	-	582,000	0.0%
MISCELLANEOUS	-	29,000	100.0%
	854,876	**1,710,876**	**50.0%**
EXPENDITURES			
LAND ACQUISITION (RESERVE)	-	600,000	0.0%
BALL'S FALLS	76,977	65,000	118.4%
BINBROOK	118,747	645,499	18.4%
CHIPPAWA CREEK	114,774	130,000	88.3%
LONG BEACH	64,212	132,000	48.6%
ECOLOGICAL PROJECTS	697	29,000	100.0%
GAINSBOROUGH CENTRAL WORKSHOP	144,798	109,377	132.4%
	520,205	**1,710,876**	**30.4%**

NIAGARA PENINSULA CONSERVATION AUTHORITY
STATEMENT OF CONTINUITY OF RESERVES AND RESERVE FUND
PROJECTION FOR THE YEAR ENDED DECEMBER 31, 2016

	Balance 31-Dec 2015	Approved Budgeted Inflows	*Approved Budgeted Outflows	Projected 31-Dec 2016
	$	$	$	$
Unexpended capital reserves				
Capital Assets				
Vehicle	210,731	0	60,000	150,731
Equipment	59,582	0	20,000	39,582
Computers & office equipment	79,522	0	0	79,522
	349,835	0	80,000	269,835
Conservation area capital reserve				
Niagara Region	1,209,346	0	804,569	404,777
City of Hamilton	136,682	0	327,250	(190,568)
Haldimand County	11,594	0	0	11,594
Niagara Levy Differential	347,000	427,469	0	774,469
Land acquisition-Hamilton	800,000	100,000	0	900,000
Land acquisition-Niagara	298,174	500,000	0	798,174
	2,802,796	1,027,469	1,131,819	2,698,446
Water management capital projects				
Welland River restoration - Niagara	242,210	0	0	242,210
Welland River restoration - Hamilton	10,676	0	0	10,676
Water Management	46,167	0	51,200	(5,033)
Watershed Studies-Niagara	3,162	0	0	3,162
Watershed Studies-Hamilton	20,260	0	0	20,260
Watershed Studies-Haldimand	22,032	0	0	22,032
Flood Protection Services	483,978	0	10,000	473,978
Resource Inventory & Monitoring	52,443	0	51,300	1,143
	880,928	0	112,500	768,428
	4,033,559	1,027,469	1,324,319	3,736,709
Operating reserves				
Conservation Areas				
Niagara Region	90,274	0	0	90,274
City of Hamilton	191,372	0	0	191,372
Haldimand County	14,931	0	0	14,931
	296,577	0	0	296,577
Conservation Land Management				
Tree Bylaw	61,765	0	0	61,765
Agreement forest	20,606	0	0	20,606
Regulations & planning services	181,647	0	0	181,647
General operating contingency	45,808	0	40,000	5,808
	606,403	0	40,000	566,403
Reserve Fund				
Accumulated sick leave	16,103	0	15,000	1,103
Ontario Power Generation Funding	1,906,616	0	110,244	1,796,372

* Approved outflows include: $394,801 from 2015 carryover capital projects

Report To: **Board of Directors**

Subject: **NPCA Forestry and Tree and Forest Conservation By-law Status**

Report No: **103-16**

Date: **October 19, 2016**

RECOMMENDATION:

THAT Report No. 103-16 regarding the status of NPCA Forestry activities and the Tree and Forest Conservation By-law be **RECEIVED** for information**.**

PURPOSE:

To provide an update on the status of Tree & Forest Conservation By-law and forestry activities being conducted by the NPCA Forester.

BACKGROUND:

By-law issues/main activities since September 7, 2016 include:

- Harvest operations approved under Good Forestry Practices (GFP) permits in woodlots located in West Lincoln and Fort Erie are in progress. Operations are being routinely monitored by the NPCA Forester to ensure conformance with permit conditions and operating conditions are suitable. Monitoring has increased because of Fall weather conditions.
- Conducted final inspection in one woodlot located in West Lincoln harvested under a GFP permit. Operations were conducted during the favourable weather conditions in September. Soil disturbance was minimal throughout the woodland and was confined to main skid trails. Operations were well conducted in accordance with Good Forestry Practices as outlined in the permit.
- Approved two GFP permit applications for woodlots in West Lincoln. Operations are planned for fall/winter 2016-17.
- Conducted a site visit with woodlot owners in Pelham and Niagara Falls interested in managing/harvesting their hardwood forest. Provided forestry advice on what steps could be taken and gave them instructions on how to obtain a Good Forestry Practices permit.
- Submitted a draft reforestation/restoration plan to our legal counsel for a property subject to a Bylaw charge from March 2016. The matter is before court.
- Assisted the NEC with a property in St. Davids on York Rd. I marked the boundary line of the NEC's Natural Area for the purpose of indicating the extent of woodland clearing for proposed agricultural use by the land owner.

- Dealt with one tree cutting complaint in Port Colborne. No By-law violation was observed. Cutting was confined to small diameter trees along a fence line and removal of hazardous limbs on remaining red oaks.
- Received inquiries from two land owners adjacent to the Shriner's Creek CA regarding dead ash trees located on authority property. The inquiries involve potential hazard tree damage from declining ash trees. These trees pose a risk as individual ash trees decline from Emerald Ash Borer (EAB) infestation. The hazardous trees were assessed and marked by the NPCA Forester and then assigned to operations staff to manage their removal.
- The hazardous tree inquiries above and previous ones since March 2016 have been summarized in a work report (NPCA Ash Removal Program) to assist NPCA operations staff in tracking the number of trees to be removed and work completed.
- Commenced work on an inventory project to locate and assess hazard trees located on authority properties adjacent to private residential lots. The project will determine the scope of work needed to address hazard tree removal. The majority of the hazard trees will be dead and declining ash trees impacted by EAB. The assessment will include the level of risk each tree or groups of trees pose to private property. A high risk assessment would involve a large diameter dead tree(s) leaning towards a private property within a distance of causing damage to a structure and/or poses a safety risk. The inventory will be summarized in the work report (NPCA Ash Removal Program) and provided to NPCA operations staff to create a work plan to remove identified hazard trees. This inventory is scheduled to be completed by March 31, 2017.

FINANCIAL IMPLICATIONS:
None

RELATED REPORTS AND APPENDICES:
None

Prepared by:

Dan Drennan

Dan Drennan,
R.P.F; Forester

Reviewed by:

Peter Graham
Director, Watershed Management

Submitted by:

Carmen D'Angelo
Chief Administrative Officer
Secretary Treasurer

Report To: **Board of Directors**

Subject: **NPCA 2016 Q3 Quarterly Communications Report**

Report No: **104-16**

Date: **October 19, 2016**

RECOMMENDATION:

THAT the NPCA 2016 Q3 Quarterly Communications Report be **RECEIVED.**

Note: The Draft Quarterly Report will be distributed to participating municipalities, community stakeholders, CLAC, and the public.

PURPOSE:

To provide the NPCA Board of Directors with a Draft 2016 Quarterly Report to be distributed among key stakeholders, and the public via various forms of media.

This report aligns with the 2014-2017 Strategic Plan under, 'Transparent Governance & Enhanced Accountability,' specifically, *"Improve NPCA profile and accountability to municipal governments by providing ongoing quarterly briefings to watershed member municipalities and local councils on activities and key issues being addressed by NPCA."*

DISCUSSION:

Subsequent to the NPCA Board receiving the 2016 Q3 Quarterly Report, the document will be distributed throughout the community in various media formats.

FINANCIAL IMPLICATIONS:

Distribution of Quarterly Report is within 2016 budget allocations.

RELATED REPORTS AND APPENDICES:

1. Appendix 1: DRAFT 2016 Q3 Quarterly Report

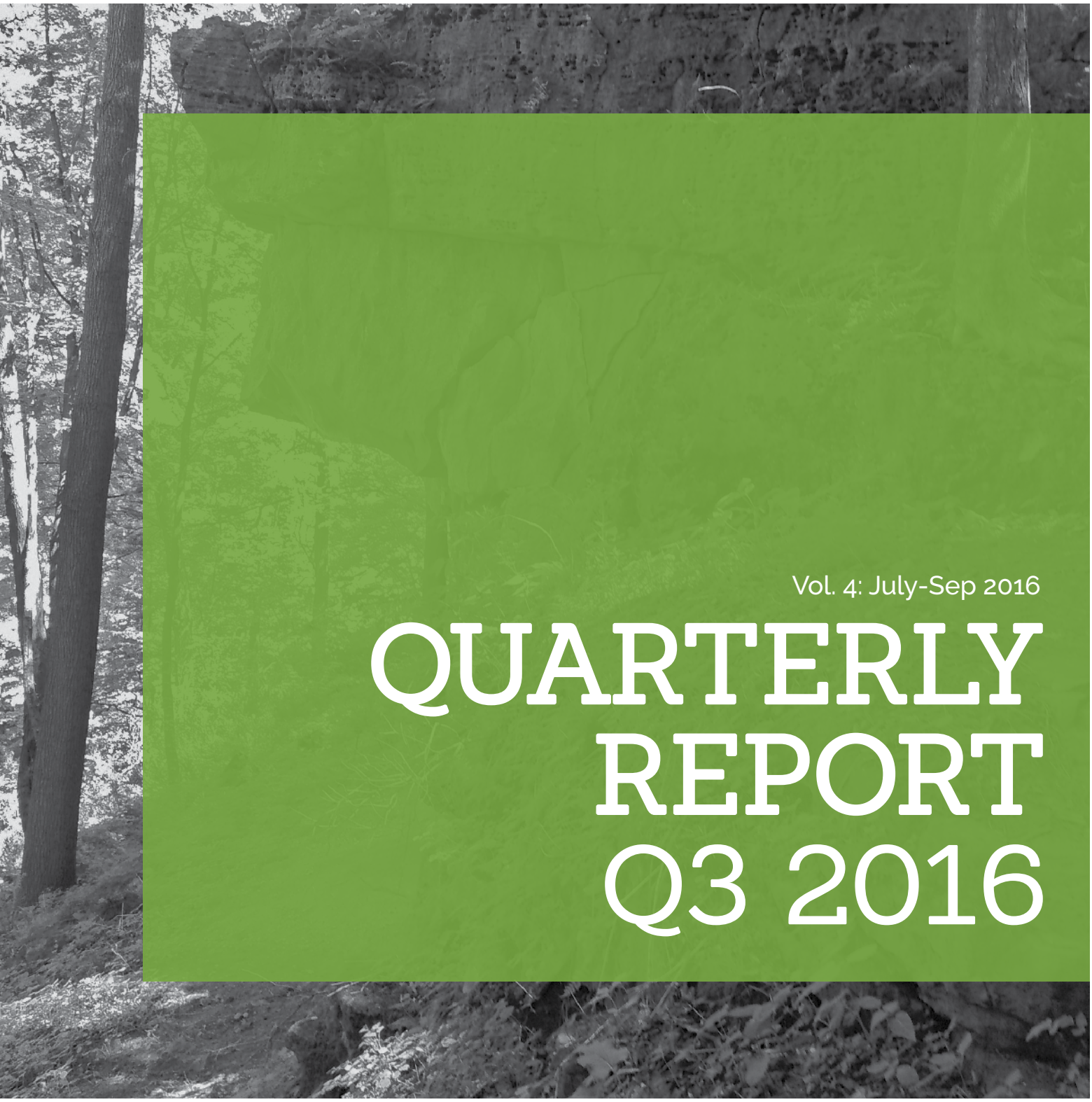
Prepared by:

David Barrick
Director of Corporate Services

Submitted by:

Carmen D'Angelo
CAO / Secretary Treasurer

This report was prepared with the consultative input from Michael Reles, Communication Specialist; and, the Senior Management Team.



Vol. 4: July-Sep 2016

QUARTERLY REPORT Q3 2016

NIAGARA PENINSULA CONSERVATION AUTHORITY

NPCA MISSION, VISION & VALUE STATEMENTS

"The objects of an authority are to establish and undertake, in the area over which it has jurisdiction, a program designed to further the conservation, restoration, development and management of natural resources other than gas, oil, coal and minerals."
R.S.O. 1990, c.C.27 s.20

Responsibilities of NPCA include;

- Floodplain Management (1970's)
- Hazard Land Management including the management of local areas susceptible to flood and erosion risks (1983)
- Great Lake Shoreline management (1988)
- Ontario Regulation 155/06 NPCA: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses (2006)

MISSION
To manage our watershed's natural resources by balancing environmental, community, and economic needs.

VISION
Balancing conservation and sustainable development for future generations by engaging landowners, stakeholders and communities through collaboration.

VALUES
To the landowners, stakeholders and communities affected by our actions, we value:

1. A sustainable balance between environmental conservation, economic growth and agricultural prosperity.
2. Clear and respectful communication.
3. Integrity, fairness and sensitivity to all impacted by our actions decisions.
4. Creativity and innovation in service delivery to clients.
5. Transparency, accountability and quality in our services.
6. Pragmatic solution oriented approaches to decision making.
7. A respectful work environment and professional development.

Content

Welcome to our Quarterly Report. Each year we will endeavour to produce quarterly reports for our funders, stakeholders and communities we are proud to serve. As laid out in our Strategic Plan, we are making a concerted effort to be more transparent and hope that these reports are helpful in your understanding of our work.

Carmen D'Angelo, BSc, MPA
Chief Adminstraitive Officer

Bruce Timms, P.Eng
Chair, Board of Directors

ABOUT US

The Niagara Peninsula Conservation Authority (NPCA) was established on April 30, 1959, under the Conservation Authorities Act, and serves approximately half a million people in the Niagara Peninsula Watershed, encompassing the entire Niagara Region and portions of the City of Hamilton and Haldimand County. The NPCA strives to manage the impact of human activities, urban growth and rural activities on its watershed.

The Niagara Peninsula is one of the most complex watersheds in the Province. It includes lands drained by the Niagara River, Twenty Mile Creek, the Welland River, the Welland Canal, Lake Erie and Lake Ontario. NPCA programs focus on the conservation and preservation of the unique environment, and initiatives that help keep people and their property safe from flooding and erosion while keeping our drinking water clean and safe.

The NPCA's ongoing commitment to land stewardship is reflected in the management of over 2,870 hectares of unique natural areas. These lands are held in public trust, allowing the people of Niagara, Hamilton, and Haldimand County to enjoy its distinctive natural heritage at 39 Conservation Areas, each offering diverse recreational and educational opportunities and a place for both children and adults to experience nature's beauty.

KEY PROJECTS

Dillon Consulting attended the July NPCA Board of Directors meeting to present the Draft **NPCA Policy Review** Discussion Paper. It outlines the issues and policy gaps that have been identified by stakeholders and the public and includes some potential preliminary options to address them. The commenting period for the Discussion Paper (Phase 2) closed September 30, 2016. The project is now in the third and final phase, Based on this feedback, NPCA, and Dillon Consulting are rewriting and revising the policy document for final review by a broad range of stakeholders and the general public.

The **Welland River Floodplain Mapping** Consultation Summary Report has been posted on the project website (www.wellandriver.ca). During the month of June, Round #2 Public Information Sessions were held at four different locations across the watershed to explain the technical aspects of the floodplain modeling. These meetings also addressed outstanding topics and additional public input on any new issues using the facilitated discussion format. These information sessions were followed up with a Watershed Floodplain Committee (WFC) meeting on June 22, 2016, at Ball's Falls Conservation Centre. Once approval of the new NPCA policy document has been received, the third and final round of public outreach will take place.

The **CityView** development tracking system went live on August 15th. End user training was conducted for two days at a computer lab at Niagara College. The implementation team received advanced configuration and reporter training in the office. Planning and permitting staff are meeting weekly to discuss any implementation issues as we get more familiar and used to the system, and develop best practices. Staff look forward to providing the Board with a live demonstration and a full report at the October meeting.

Staff has been recruiting volunteers for the **Ball's Falls Thanksgiving Festival**, Christmas in the Country School Program, Christmas Village event and various other NPCA programs and activities. These programs rely heavily on volunteers to ensure their success. This year's Thanksgiving Festival will need over 200 volunteers, including heritage tours and demonstrations, vendor relief, customer surveys, parking, and recycling team.

CA ACT REVIEW

Last July 2015, as a first step in the review of the Conservation Authorities Act, the Ministry of Natural Resources and Forestry (MNRF) posted a discussion paper to the Environmental Registry (EBR Registry Number 012-4509) for public consultation. The Province held over twenty stakeholder and indigenous engagement sessions along with targeted meetings across the province to gain feedback on the following three areas:

- Governance
- Funding Mechanisms
- Roles and Responsibilities

In response, the Niagara Peninsula Conservation Authority responded to this initial posting via the following mechanisms:

1. NPCA Board of Director's adopted response via NPCA Report No. 97-15 (September 16, 2015);
2. Board Members and NPCA staff participated in stakeholder meetings for conservation authorities;
3. NPCA CAO participated in conservation authorities CAO/ General Managers meetings (including being a member of the CA Act Review Working Group);
4. NPCA Chair and CAO participated in Conservation Ontario's response in association with the 36 conservation authorities in Ontario;
5. Board Members and NPCA staff participated in an agricultural stakeholder meeting held in Niagara-on-the-Lake;
6. NPCA Board Members and NPCA staff participated in an MNRF staff focused meeting held at Ball's Falls Conservation Area; and
7. NPCA staff participated in Niagara Area Planners Group, which formed a regional report adopted by Niagara Regional Council.

Overall, the MNRF received over 270 individual submissions identifying perspectives from ten different sectors, and more than 2,700 individual or distinct comments related to the review. Based on these responses, the MNRF released a second Discussion Paper and posted the document on the Environmental Registry (EBR Registry Number: 012-7583) on May 12, 2016. Public comments were due by September 9, 2016.

The Discussion Paper, and draft comments from Conservation Ontario, were shared with the NPCA's Community Liaison Advisory Committee (CLAC). The CLAC members were encouraged to provide the NPCA with feedback, and, submit sector specific or individual feedback directly to the province.

In addition to the NPCA Board of Directors approved response, the Chair, Vice-Chair, Board Members and senior staff have provided feedback at one of the multi-stakeholder meetings hosted by the province. Also, NPCA staff will once again make comments to Conservation Ontario and the Niagara Area Planners Group.

Most respondents agreed that the watershed continues to serve as an ecologically appropriate scale for many resource management activities, particularly water management, and allows for a balance in developing and implementing locally appropriate solutions and working across larger scales and political boundaries.

CA ACT REVIEW (CONT)

All sectors providing input into the review recognized the value and public benefit of conservation authority roles in providing:

- environmental education
- landowner and broader stewardship programs
- the provision of access to natural areas and recreational opportunities provided through conservation areas; and
- the critical role conservation authorities play in protecting people and property from water-related natural hazards.

Feedback provided in response to the Ministry's discussion paper did not indicate a need for drastic, wholesale changes. A strong desire from all sectors, including from conservation authorities themselves, to update the existing legislative, regulatory and policy framework to match current expectations for clarity, transparency, and accountability in the operation of public sector organizations.

In response to feedback obtained from the initial phase of the Ministry's review, the government has established five priorities for updating the Conservation Authorities Act legislative, regulatory and policy framework:

1. Strengthening oversight and accountability in decision-making;
2. Increasing clarity and consistency in roles and responsibilities, processes, and requirements;
3. Improving collaboration and engagement among all parties involved in resource management.
4. Modernizing funding mechanisms to support conservation authority operations.
5. Enhancing flexibility for the province to update the Conservation Authorities Act framework in the future.

When establishing these priorities, the province notes "...In many instances, conservation authorities have already taken steps to help meet these expectations by voluntarily incorporating best management practices into their operations and working together to share and coordinate resources and expertise. In fact, several of the proposed actions contained within this consultation document are explicitly intended to integrate and build upon these best management practices formally." In the NPCA's initial comments, there are examples where the NPCA have already incorporated best management practices.

The objective of the second consultation document is to obtain feedback on the Ministry's priorities for updating the Conservation Authorities Act legislative, regulatory and policy framework and the actions being considered by the Ministry in support of these priorities.

NPCA staff have engaged in the following activities related to this review:

- Consultation with NPCA's Community Liaison Advisory Committee;
- Consultation with the Niagara Area Planners Group;
- Participated at the provincial multistakeholder meetings;
- Participated in the discussions with Conservation Ontario and the 36 conservation authorities;
- Provided a formal NPCA Board of Director's response (prior to the September 9, 2016 deadline).

OUR LAND

As part of the site resource inventory being completed at the **New Wainfleet Conservation Area**, plants and reptiles are being assessed. To date, the spring ephemeral plant inventory is complete, while the reptile survey continued through September. When completed this information will assist in providing baseline information for site management and site use decisions. The work is being completed by the staff Ecologist with the assistance of volunteers. The 2016 results to be completed in November. Staff met with the adjacent development to coordinate restoration work for the required Fowler's Toad Habitat Enhancement Area on the two properties. An estimate of the site restoration costs for the required 10 years (2017-2027) was provided to the adjacent landowner for further discussion.

The NPCA, in partnership with the Township of Wainfleet, is in the process of developing a **Master Plan** to guide the future development and management of certain NPCA owned and managed properties in the Township, including: Long Beach Conservation Area, Morgan's Point Conservation Area, Wainfleet Wetlands, and the recently acquired former Easter Seals property. NPCA Staff and the consultants retained to assist in preparing the Master Plan are soliciting feedback via online survey to help guide the process.

The NPCA was successful in obtaining a $25,000 grant from the Ministry of Natural Resource and Forestry's 'Water and Erosion Control Infrastructure' (WECI) program in order to undertake an overall updated **Safety Review of the Binbrook Dam**. The last comprehensive Safety Review of the Binbrook Dam was completed in 2003. Best management practices recommend that a Safety Review for a large dam like Binbrook be carried out every 10 – 15 years. Through a competitive selection process, the NPCA has retained WSP Canada Inc. to carry out the study at a total cost of $65,145. WSP Canada is a large, reputable engineering firm who specialize in this area of practice. The Safety Review is scheduled to be completed by March 2017.

Two fire events were discovered and extinguished at **Wainfleet Bog Conservation Area** over the summer. The Conservation Area was closed to the public on June 30 due to the high-risk of fire, On July 5, a substantial fire was discovered and later confirmed to be 6.4 hectares. Firefighters from the Ministry of Natural Resources and Forestry arrived within 18 hours of discovery and began to extinguish the fire. A second fire was discovered on Aug 14 and was extinguished within a few hours by the Wainfleet Fire Department. NPCA staff regularly patrolled the Conservation Area throughout the summer months, and continue to monitor lightning strikes within the Bog.

MILESTONE

The NPCA Board of Directors honoured their longest tenured member at the September meeting. Dominic 'Mickey' Difruscio in celebration of his 90th birthday. Secondarily, Mr. Difruscio has also represented the City of Thorold for 23 years at the NPCA Board.

THE NUMBERS
by the quarter

$12,711,912 2016 Gross Approved Budget

Total Expenditure to Date **$8,476,264**

239	250	145
Planning Act Applications (YTD)	Building Permit Reviews (YTD)	NPCA Permits (YTD)

263 Hunting Permits Issued

221 Site Visits by Watershed Ecological Technicians

published by the NPCA communications office

NIAGARA PENINSULA CONSERVATION AUTHORITY

250 Thorold Road, 3rd Floor

Welland, ON L3C 3W2

Phone: 905-788-3135

Report To: **Board of Directors**

Subject: **2016 Q3 Capital Projects Update**

Report No: **105-16**

Date: **October 19, 2016**

RECOMMENDATION:

THAT Report No 105-16 be **RECEIVED** for information.

PURPOSE:

To provide Board members with a quarterly report on the 2016 Capital Projects, Operations Department.

BACKGROUND:

A detailed Projects Calendar is attached as Appendix 1.

As can be seen by the Projects Calendar, there were 7 projects identified and approved for Ball's Falls, 20 projects for Binbrook, 18 for Central Workshop, 13 for Chippawa Creek, and 12 for Long Beach Conservation Areas. The largest project, which will be fully completed in the Spring of 2017, is the $525,000 Splashpad at Binbrook Conservation Area. 35 projects have been completed to date. The total value of projects approved for 2016 (and into 2017 – 2 year window to complete projects) is $1,885,695.18. As of the end of September, we have spent $665,073.69.The others remain in progress with invoices that have not been submitted. We are on track with all projects. There will be an overall surplus. The Fourth Quarter Update will be a final summation of project work, costs, and project carry-over requests (if necessary).

A 2017 Capital Projects Budget is being reviewed by the NPCA Senior Management Team at the time this report is being written. It will then go to the Budget Steering Committee and off to the Board of Directors for final approval.

DISCUSSION:

Park and Senior Staff have completed the second of two Seasonal Campers' meetings at both Chippawa Creek and Long Beach. They took place on Saturday September 17th, 2016. Both meetings were well attended. Campers have commented that they have appreciated the opportunity to provide input and feedback with respect to their camping experience. Campers have seen some significant capital improvements as they returned to the campgrounds this season.

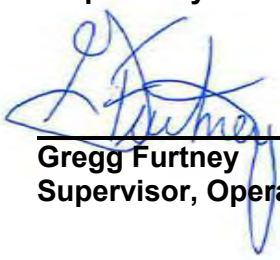
FINANCIAL IMPLICATIONS:

There are no financial implications beyond the approved 2016 Capital Budget.

RELATED REPORTS AND APPENDICES:

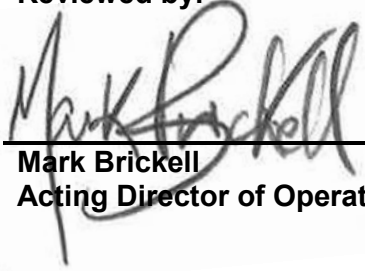
1. Appendix 1: Updated 2016 Capital Projects Calendar

Prepared by:



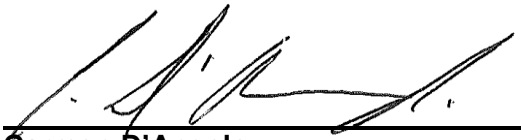
Gregg Furtney
Supervisor, Operations

Reviewed by:



Mark Brickell
Acting Director of Operations

Submitted by:



Carmen D'Angelo
Chief Administrative Officer
Secretary Treasurer

Projects Calendar for 2016

Conservation Area	Project Description	Reference No.	B U D G E T	Pr. Lead	Project Schedule	ACTUAL EXPENSES
Ball's Falls CA	Zero Turn Lawn Mower	BF - 2016 - 01	$ 25,000.00	J.F.	Jan, Feb, Mar: Completed	27,683.87
						-
	Fury Cabin Refurbishment	BF - 2016 - 02	$ 20,000.00	N.D.	June, July, Aug, Sept: Completed	19,716.24
						-
	Replace Footbridge to Lower Falls	BF - 2016 - 03	$ 5,000.00	N.D.	Sept, Oct: Not Initiated	4,394.57
						-
	Re-roof the Cabin - Cedar Shingles/Church Roof Repair	BF - 2015 - 04	$ 7,000.00	N.D.	July, Aug, Sept, Oct: Initiated	-
						-
	Enclosed Cargo Trailer	BF - 2016 - 04	$ 15,000.00	N.D.	Feb, Mar, Apr: Completed	14,823.53
						-
	WI-FI Enhancements (Streaming)	BF - 2016 - 05	$ 16,980.00	J.F	Mar, Apr: Completed	16,980.00
						-
	Additional Audio System Microphones	BF - 2016 - 06	$ 18,855.18	J.F.	Feb, Mar: Completed	18,855.18
						-
		TOTAL:	$ 107,835.18			102,453.39
Binbrook CA	Canada 150 Splash Pad	BB - 2016 - 01	$ 500,000.00	R.S.	Feb, Mar, Apr, May, June, July, Aug: Initiated; Sept, Oct, Nov, Dec: Initiated	7,139.64
						-
	Fishing Pier/ Dock	BB - 2016 - 02	$ 45,724.00	R.S.	Mar, Apr, May, June, July, Aug: Completed	44,754.72
		BB - 2015 - 01	$ 28,000.00			4,639.13
	Lifeguard Station	BB - 2016 - 03	$ 2,500.00	M.B.	July, Aug: Completed	-
						-
	Scoping of Water System Upgrades	BB - 2016 - 04	$ 5,000.00	M.B.	Apr, May, June, July: Completed	6,647.06
						-
	Comfort Station Upgrades/ Improvements	BB - 2016 - 05	$ 25,000.00	R.S.	Mar, Apr, May, June: Completed	24,789.65
						-
	Splash Pad System Building	BB - 2016 - 06	$ 25,000.00	R.S.	Sept, Oct, Nov: Initiated; Dec: Initiated	-
						-
	Scoping of Proposed Electrical Upgrades	BB - 2016 - 07	$ 3,000.00	M.B.	Feb, Mar, Apr: Completed	2,825.00
						-
	Trail Network Improvements	BB - 2016 - 08	$ 20,000.00	M.B.	June, July, Aug, Sept: Initiated; Oct: Initiated	9,992.89
						-
	Replacement Picnic Table Frames	BB - 2016 - 09	$ 10,000.00	M.B.	May, June: Completed	9,915.75
						-
	POS System	BB - 2016 - 10	$ 5,000.00	M.B.	Oct, Nov: Initiated; Dec: Initiated	-
						-
	Comfort Station Roof	BB - 2016 - 11	$ 10,000.00	R.S	May, June: Completed	7,206.16
						-
	Scoping of Wastewater System	BB - 2016 - 12	$ 20,000.00	M.B.	May, June, July, Aug, Sept: Completed	-
						-
	Metal Roof - Pavilion 2	BB - 2015 - 02	$ 15,000.00	R.S.	Apr, May: Completed	9,116.71
						-
	Splashpad Health and Safety Improvements	BB - 2015 - 03	$ 30,000.00	M.B.	Mar, Apr, May, June, July: Completed	14,235.13
						-
	Water Softening System for Splashpad	BB - 2015 - 05	$ 7,500.00	M.B.	Mar, Apr, May, June, July: Completed	6,633.10
						-
	Kubota Salt Spreader	BB - 2015 - 06	$ 2,500.00	M.B.	Mar, Apr, May: Completed	2,079.20
						-
	Kubota Cab Enclosure	BB - 2015 - 07	$ 2,500.00	M.B.	Mar, Apr, May: Completed	2,194.10
						-
	Wind Curtain - Pavilion #2	BB - 2015 - 08	$ 5,000.00	M.B.	June, July, Aug, Sept: Completed	6,768.70
						-
	Kayak Condo	BB - 2015 - 09	$ 25,000.00	M.B.	Mar, Apr, May, June, July: Completed	20,897.80
						-
	Gazebo - Fall of 2016 to coincide with Splashpad	BB - 2015 - 10	$ 35,000.00	M.B	Sept, Oct, Nov: Initiated	1,130.00
						-
		TOTAL:	$ 821,724.00			180,964.74

NIAGARA PENINSULA CONSERVATION AUTHORITY

Initiated | Not Initiated | On Hold | Completed

Projects Calendar for 2016

Conservation Area	Project Description	Reference No.	B U D G E T	Pr. Lead	Project Schedule	ACTUAL EXPENSES
Central Workshop Gainsborough CA	Galvanized Trailers	CW - 2016 - 01	$ 6,377.00	M.G.	Mar, Apr, May: Completed	5,881.70
						-
	Repair/ Renovate Workshop and Carpenter Shop Ceiling	CW - 2016 - 02	$ 25,000.00	R.S.	Oct, Nov: Initiated	-
						-
	Concrete Floor for existing storage building	CW - 2016 - 03	$ 30,000.00	R.S.	May, June, July: Initiated	17,910.50
						-
	Snow Blower & Salt Spreader & Cab Enclosure	CW - 2016 - 04	$ 9,500.00	R.S.	Feb, Mar: Completed	9,164.37
						-
	2 New Garage Doors	CW - 2016 - 05	$ 4,500.00	R.S.	Feb, Mar, Apr: Completed	4,231.85
						-
	Brush Hog	CW - 2016 - 06	$ 7,000.00	M.G.	Sept, Oct, Nov	-
						-
	Backhoe	CW - 2016 - 07	$ 9,500.00	R.S.	Feb, Mar: Completed	8,491.95
						-
	Expand Parking Lot at Beamer Memorial CA	CW - 2016 - 08	$ 7,500.00	M.G.	Aug, Sept, Oct: Initiated	-
						-
	Electrical Upgrade at Wainfleet Wetlands to meet code	CW - 2016 - 09	$ 10,000.00	M.G.	Aug, Sept, Oct	-
						-
	Benches	CW - 2016 - 10	$ 10,000.00	R.S.	Aug, Sept, Oct	-
						-
	Galvanized Storage Trailers (2) & compound	CW - 2016 - 11	$ 68,500.00	M.G.	May, June, July, Aug, Sept, Oct: Initiated	7,961.15
						-
	Movie System	CW - 2016 - 12	$ 20,000.00	GF	July: Completed	25,261.15
						-
	Purchase of 2 EZ Radiant Heaters	CW - 2015 - 01	$ 10,000.00	R.S.	Sept, Oct	-
						-
	Improvements to 2 Beamer CA Lookouts	CW - 2015 - 02	$ 70,353.00	R.S.	Jan, Feb, Mar, Apr, May, June, July: Initiated	-
						-
	St. John's Pond Erosion Control Measures	CW - 2015 - 03	$ 35,000.00	R.S.	July, Aug, Sept: Completed	26,555.00
						-
	Fishing Pier at St. John's CA	CW - 2015 - 04	$ 28,000.00	R.S.	July, Aug: Completed	29,225.42
						-
	Purchase of 30 garbage cans/ recycle bins	CW - 2015 - 05	$ 5,000.00	R.S.	Oct, Nov	-
						-
	Trans Canada/Gord Harry Trail Head Sign Installation	CW - 2015 - 06	$ 5,000.00	R.S.	Apr, May: Completed	5,515.25
						-
					Sept	
						-
						-
						-
	TOTAL:		$ 361,230.00			140,198.34
						-

Initiated | Not Initiated | On Hold | Completed

NIAGARA PENINSULA CONSERVATION AUTHORITY

Projects Calendar for 2016

Conservation Area	Project Description	Reference No.	BUDGET	Pr. Lead	Project Schedule: Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	ACTUAL EXPENSES
Chippawa Creek CA	Refurbish Old Main Comfort Station	CC - 2016 - 01	$ 48,000.00	R.K.												Initiated	28,520.49
																	-
	Replace Submersible Pumps for Water System	CC - 2016 - 02	$ 25,000.00	R.K.					Completed								17,571.68
																	-
	Rehabilitation of Walking Trail around Dils Lake	CC - 2016 - 03	$ 15,000.00	R.K.												Initiated	387.13
																	-
	Update Old Pavilion Washroom	CC - 2016 - 04	$ 7,000.00	R.K.												Initiated	-
																	-
	Replace Roof on Beach Comfort Station	CC - 2016 - 05	$ 5,000.00	R.K.									Completed				-
																	-
	Construct Fence around Bio-Filter Area	CC - 2016 - 06	$ 30,000.00	R.K.									Completed				6,829.67
																	-
	Fishing Pier	CC - 2015 - 01	$ 55,000.00	R.S.									Completed				65,085.84
																	-
	Electrical Upgrades	CC - 2015 - 17	$ 125,000.00	R.K.													3,852.80
																	-
	Upgrade Campsites	CC - 2015 - 02	$ 30,000.00	R.K.												Initiated	11,066.66
																	-
	Replace old comfort station tanks & related improvements	CC - 2015 - 03	$ 25,000.00	R.K.													-
																	-
	Beach Washroom Renovations	CC - 2015 - 04	$ 8,094.00	R.K.											Completed		-
																	-
	Workshop Area Upgrades	CC - 2015 - 05	$ 7,812.00	R.K.											Initiated		-
																	-
	Entry/ Exit Roadway Improvements	CC - 2015 - 06	$ 3,000.00	RK											Initiated		2,388.82
																	-
			$ -														-
																	-
			$ -														-
																	-
			$ -														-
																	-
																	-
	TOTAL:		$ 383,906.00														135,703.09

Initiated Not Initiated On Hold Completed

NIAGARA PENINSULA CONSERVATION AUTHORITY

Projects Calendar for 2016

Conservation Area	Project Description	Reference No.	B U D G E T	Pr. Lead	Project Schedule: Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	ACTUAL EXPENSES
Long Beach CA	Fence and Clearing (Phase 2)	LB - 2016 - 01	$ 65,000.00	M.M.											Initiated		48,694.04
																	-
	Trailer Storage	LB - 2016 - 02	$ 12,000.00	M.M.											Initiated		-
																	-
	Scope Boat Launch upgrade	LB - 2016 - 03	$ 3,000.00	M.M.													386.37
																	-
	Zero Turn Lawn Mower	LB - 2016 - 04	$ 25,000.00	M.M.				Completed									18,065.31
																	-
	Scope Water Treatment Plant	LB - 2016 - 05	$ 7,000.00	G.F.													-
																	-
	Scope De-Commissioning of Lagoon/ Abatement	LB - 2016 - 06	$ 20,000.00	G.F.										Initiated			-
																	-
	New Metal Stairs to Beach (2 to 4 sets)	LB - 2015 - 01	$ 20,000.00	M.M													-
																	-
	Campsite Drainage Improvements - North Side	LB - 2015 - 08	$ 2,500.00	M.M													1,130.83
																	-
	Re-Side Comfort Station #2	LB - 2015 - 02	$ 5,000.00	M.M					Completed								3,975.34
																	-
	Valve Box Replacement	LB - 2015 - 03	$ 2,000.00	M.M													-
																	-
	Upgrade Campsites	LB - 2015 - 16	$ 30,000.00	M.M													33,502.24
																	-
	WIFI	LB - 2015 - 04	$ 19,500.00	M.M													-
																	-
																	-
																	-
		TOTAL:	$ 211,000.00														105,754.13
TOTAL 2016 CAPITAL PROJECTS			$ 1,885,695.18														$ 665,073.69

Initiated Not Initiated On Hold Completed

NIAGARA PENINSULA CONSERVATION AUTHORITY

Report To: **Board of Directors**

Subject: **2014 – 2017 NPCA Strategic Plan Update – October 2016**

Report No: **106-16**

Date: **October 19, 2016**

RECOMMENDATION:

THAT Report No. 106-16 related to the 2014 – 2017 NPCA Strategic Plan be **RECEIVED** for information.

PURPOSE:

For the NPCA Board to receive an update of the 42 Deliverables as identified in the 2014 – 2017 NPCA Strategic Plan.

BACKGROUND:

With the provision of over 50 years of NPCA regulations, programming and services, the NPCA Board of Directors developed and implemented its inaugural Strategic Plan in 2014 to guide the corporation over the next 4 years.

The Strategic Plan contained the first ever Mission, Vision and Values of the corporation. In addition, the Strategic Plan returned the corporation back to its legislative mandate of *conserving, restoring, managing and development* of the natural resources within the watershed.

This report provides an update in the completion of the 42 Deliverables contained in the Strategic Plan. The implementation and completion of these deliverables is a performance measure of the Chief Administrative Officer.

DISCUSSION:

The 2014 – 2017 Strategic Plan contained 42 Deliverables under the themes of:

- Effective NPCA Model to set Policies and Priorities;
- Streamlined, Efficient Delivery of Development Approvals Process;
- Improved Capacity for Managing Assets and Land Program;
- Transparent Governance and Enhanced Accountability; and
- Effective Communication with Stakeholders and Public.

To date, as identified in Appendix 1 of this report, 36 of the 42 deliverables (86%) have been completed. The remainder of the 16% are scheduled to be completed either by the end of 2016 or thereafter in Q1 2017.

In brief, the yet-to-be-completed Deliverables are focused on the completion of the policy review entitled *The Living Landscape* (associated to O. Reg. 155/06), a staff satisfaction survey, corporate identity standard, and a corporate communications strategy.

FINANCIAL IMPLICATIONS:

The completion of the remaining Deliverables is within the 2016 and 2017 budget plans.

RELATED REPORTS AND APPENDICES:

Appendix 1: Strategic Plan Update – October 2016

Prepared and Submitted by:

Carmen D'Angelo
Chief Administrative Officer
Secretary Treasurer

This report was prepared in consultation with the Senior Management Team.

NIAGARA PENINSULA CONSERVATION AUTHORITY

NPCA STRATEGIC PLAN DELIVERABLES AS AT OCTOBER 2016

	Category Description	Status	Proposed Start Date	Completed Date	Target Date	Comments	Department Lead
1	**Effective NPCA Model to set Policies and Priorities**						
a	Board to establish/endorse draft Mission, Vision & Value Statements.	Completed	Q1 2014	Q1 2014		NPCA Board of Directors adopted the 2014-2017 Strategic Plan on February 19, 2014 via Report Number 06-14, which included the Mission, Vision and Value Statements	NPCA Board
b	Board must confirm NPCA's Lines of Business and Program Priorities.	Completed	Q2 2014	Q4 2014		NPCA Board of Directors adopted Organizational Structure of staff in alignment with regulatory and business functions (focus on CAO's Office, and the departments of Watershed Management, Operations and Corporate Services).	NPCA Board and CAO
c	High level screening tool developed and tested by Policy Working Group to be used for this purpose.	Completed	Q2 2014	Q2 2014		Policy screening tool developed by the "Policy Working Group"	NPCA Board
d	Board to confirm priority list of policies for review	Completed and continously ongoing	Q2 2014	Q1 2016		Policies reviewed and completed to date: √ Memorandum of Understanding for Improving the Planning Function in Niagara (March 19, 2014). √ Consultant Selection Policies Amended (March 19, 2014). √ Binbrook Master Plan (May 21, 2014) √ Community Liaison Advisory Committee Terms of Reference (May 21, 2014) √ 2014 Vehicle Assessment and Options (May 21, 2014) √ Vehicle and Equipment Policy (June 18, 2014) √ Unsolicited Proposal Policy (July 16, 2014)	

Category Description	Status	Proposed Start Date	Completed Date	Target Date	Comments	Department Lead
					√ Accessibility Standard Compliance Policy (July 16, 2014) √ Policy Revisions related to O. Reg. 155/06 (July 16, 2014) √ Dispute Resolution Process (November 19, 2014) √ Regulation #1 - Governance and Administration Policies (November 19, 2014) √ Regulation #2 - Meeting Procedures (November 19, 2014) √ Regulation #3 - Hearing Procedures (November 19, 2014) √ NPCA Permit Approval Process (December 17, 2014) √ Health and Safety Policy Statement (February 19, 2015) √ Workplace Violence and Harassment Prevention Policy (February 19, 2015) ☑ Tangible Capital Asset Accounting Policy (May 20, 2015) √ Phase One of Provincial Policy Review of Greenbelt Act, Niagara Escarpment Act, and Places to Grow Act (May 20, 2015) √ Land Management Plan - includes land acquisition criteria (June 17, 2015) √ Moveable Assets Policy (July 15, 2015) √ Naming of Assets and Facilities Policy (July 15, 2015) √ NPCA Geocaching Guidelines (November 18, 2015) √ Planning and Regulation Fees (November 18, 2015) √ Purchasing and Procurement Policy (December 16, 2015) √ Cash Deposit Policy (January 20, 2016) √ Capital Assets Management and Planning Policy (January 20, 2016) **Other Policy Reviews Completed** √ Phase One of Provincial Policy Review of Greenbelt Act, Niagara Escarpment Act, and Places to Grow Act (May 20, 2015)	NPCA Board and CAO

	Category Description	Status	Proposed Start Date	Completed Date	Target Date	Comments	Department Lead
						√ Phase One of Conservation Authorities Act Review (September 16. 2015) √ Phase One of Ontario Wetland Strategy (September 16, 2015) √ Phase Two of Conservation Authorities Act Review (July 20, 2016)	
						Policies in progress: √ Cave Springs Master Plan (Commenced June 18, 2014) √ Welland River Floodplain Mapping (Commenced 17, 2014) √ Policy Review for O. Reg. 155/06 (Commenced April 16, 2015) √ Phase Two of Provincial Policy Review of Greenbelt Act, Niagara Escarpment Act, and Places to Grow Act (May 20, 2015)	
e	NPCA Development Approval Policies will kick-off review process. Priority policies will be vetted using decision making tool developed by Policy Group.	Ongoing	Q2 2014 & Ongoing		Q1 2017	The Policy Review for O. Reg. 155/06 has commenced with the issuance of an RFP in April 2015 and an anticipated completion date of December 2016. Public consultation process to be undertaken. Policies related to floodplains will receive consultation from Floodplain Steering Committee. Several updates have been provided to NPCA Board of Directors, CLAC and Municipal Working Group. Policies related to floodplains will receive consultation from Floodplain Steering Committee.	Watershed Management

	Category Description	Status	Proposed Start Date	Completed Date	Target Date	Comments	Department Lead
2	**Streamlined, Efficient Delivery of Development Approvals Process**						
a	Board to consider & adopt the development review and permit approval process business rules/flow charts and dispute resolution process, (including the recommended processing timelines).	Completed	Q2 2014	Q3 2014 and Q4 2014		Construction Permit Approval Process Business and Flow Charts completed and adopted (July 2014 and December 2014) and Dispute Resolution Process completed and adopted (November 2014). Development Permit Approval Business and Flow Charts completed and adopted (September 2016).	Board and Watershed Management
b	Board to consider & adopt the dispute resolution process tool.	Completed	Q3 2014	Q4 2014		Dispute Resolution Process completed and adopted (November 2014).	Board and Watershed Management
c	The Community Liaison Advisory Committee (CLAC), endorsed by the Board, will participate in providing specific detailed recommendations beyond the conclusion of this process.	Ongoing	Q4 2014		Q4 2016	Policy Review of O. Reg 155/06 commenced April 2015 and consultation with CLAC has occurred at each phase of the project, and is ongoing.	Watershed Management
d	Complete majority of review and permit approvals with in-house staff to improve management control and continuity - confirm in 2014 budget.	Completed	Q2 2014	Q2 2014 and Q2 2915		2014 and subsequent budgets confirmed for staff resourcing. Staff review of permit approvals completed (July 2014, November 2014 and December 2014) with Development Tracking Software (CityView) to be implemented (Q4 2016) and comprehensive review to be completed next year (June 2016).	Watershed Management

	Category Description	Status	Proposed Start Date	Completed Date	Target Date	Comments	Department Lead
e	Watershed Management	Completed	Q2 2014	Q2 2014 and Q1 2015		Overall Organizational Structure adopted by the NPCA Board (2014) with management oversight of development reviews and permits. An increase of 2.0 FTEs in the number of qualified Planners (2014) and an increase in 1.0 FTE in the number of Watershed Technicians.	CAO and Watershed Management
f	NPCA should adopt use of a software system for monitoring development applications.	Ongoing	Q3 2014	Q3 2016		NPCA issued an RFP for a software system to develop for monitoring development applications and selected CityView as the successful system. Launch of CityView completed on August 15, 2016.	Watershed Management & Corporate Services
g	NPCA policy document should clearly distinguish between broader planning guidance and regulatory/permit requirements.	Completed	Q4 2014	Q4 2014		Revisions to current policies (July 2014 and December 2014) provided further clarity between planning guidance and regulatory/permit requirements. In specific, the December 2014 report clearly distinguishes the permit approval process (flow chart) with associated decision points and timelines. Further clarity on processes to be developed with the comprehensive review to be completed in Q4 2016.	Watershed Management
h	Education via workshops and public meetings to communicate NPCA planning and permitting policy and objectives.	Ongoing	Q4 2014		Q1 2017	Education and workshops are an integral part of the approved plan to conduct a comprehensive review of the policies to be completed in December 2016.	Watershed Management
i	Advise stakeholders about the roles of NPCA permitting procedures.	Ongoing	Q4 2014		Q1 2017	Stakeholder consultation is an integral part of the approved plan to conduct a comprehensive review of the policies to be completed in December 2016.	Watershed Management

	Category Description	Status	Proposed Start Date	Completed Date	Target Date	Comments	Department Lead
j	Design/implement key performance indicators and report them to the NPCA, key stakeholders and the public.	Completed	Q1 2015	Q2 2016		Key Performance Indicators (KPIs) are being reported via the Annual Report, Quarterly Communications, and monthy via Departmental Status Reports. Further performance measures related to planning and permits will be established with the implementation of the CityView software system.	Watershed Management & Corporate Services
3	**Improved Capacity for Managing Assets and Land Program**						
a	Initiate Board approval process for recommended new land management criteria in consultation with Community Liaison Advisory Committee (CLAC).	Completed	Q3 2014	Q2 2015		The new Land Management Plan has been adopted and includes newly developed land acquisition criteria initiated via the Strategic Plan working group.	Board and Operations
b	Conduct review of current NPCA land holdings to determine properties that meet/fail to meet new land acquisition and management criteria.	Completed	Q4 2014	Q2 2015		All non-NPCA owned lands have been divested back to the appropriate agencies. Master Plans for all NPCA owned properties either completed (Binbrook), in development (Cave Springs, Lake Erie Properties) or in review.	Operations
c	Properties outside acquisition criteria should be flagged for long-term management solutions – including management, acquisition, transfer, and partnership.	Completed	Q4 2014	Q2 2015		This process is ongoing for all NPCA owned properties with the adoption of the new Land Management Plan.	Operations

	Category Description	Status	Proposed Start Date	Completed Date	Target Date	Comments	Department Lead
d	Develop GIS mapping of candidate properties for land management. Appendix for land acquisition strategy & guide for establishing priority sites.	Completed	Q4 2014	Q2 2015		Land acquisition Strategy part of the new Land Management Plan.	Operations
e	Execute comprehensive condition rating on complete inventory of NPCA assets.	Completed	Q2 2015	Q4 2015		Purchase of software assisted in completing inventory of assets.	Operations
f	Establish required reserve contributions based on overall asset replacement plan.	2015		Q1 2015		Capital budget reserve established.	Corporate Services & Operations
g	Asset management plan based on “first to worst” rankings. Focus on top 5 priorities. Integrate with capital budget.	Completed	2015	Q1 2015		Of the current land holdings, capital projects ranked and top projects approved in the 2015 and subsequent budgets.	Operations
4	**Transparent Governance and Enhanced Accountability**						
a	Review established governance processes and develop improved public transparency - provide easily accessible information about board appointment process.	Completed	Q3 2014	Q2 2015		Board appointment process is the responsibility of the three participating municipalities. The appointment process was posted on the NPCA website for transparency.	Corporate Services

	Category Description	Status	Proposed Start Date	Completed Date	Target Date	Comments	Department Lead
b	Provide board profile page on website to include but not limited to photograph, conservation training/employment or relevant education, personal interests in conservation.	Completed	Q3 2014	Q3 2015		New NPCA web site RFP awarded February 17, 2015. New web site developed, tested and implemented on time and on budget. All Board members are identified and contact information is accessible.	Corporate Services
c	Implement board member event participation tracking tool for annual reporting.	Completed	Q3 2014	Q1 2015		All NPCA Board members submit their attendance at NPCA events via tracking sheets submitted to the Administrative Assistant to the Chair and CAO.	CAO
d	Expand public participation to support NPCA Governance via establishment of a Community Liaison Advisory Committee (environment, agriculture, landowners, development, industry, volunteer/user sectors).	Completed	Q3 2014	Q1 2015		Community Liaison Advisory Committee (CLAC) established May 21, 2014 with regular scheduled meetings in 2015. The CLAC is supported by the Senior Management Team and a Community Liaison and Volunteer Coordinator.	Board, CAO and Corporate Services
e	Improve NPCA profile and accountability to municipal governments by providing ongoing quarterly briefings to watershed member municipalities and local councils on activities and key issues being addressed by NPCA.	Completed	Q3 2014	Q3 2015		Annual Report and quarterly reports are distribited to watershed member municipalities, including all 12 local municipalitiesd in Niagara.	Corporate Services

	Category Description	Status	Proposed Start Date	Completed Date	Target Date	Comments	Department Lead
f	Design and implement business planning based on core lines of business and key performance indicators and vet through board and newly created community liaison groups.	Completed	Q4 2014	Q1 2015		Master Plans (example *Cave Springs*) and Business Plans (example Land Management Plan, Permit Fees) are vetted by the Community Liaison Advisory Committee and thereafter approved by the NPCA Board.	Senior Management Team
g	Create long range business plan and redesign NPCA operating and capital budget process and accounting structures to reflect real programming and staffing deployment. Link budgets to key performance indicators.	Completed	Q4 2014	Q1 2015		Upgrades to accounting software and payroll systems implemented. 2015 budget restructured to represent real programming and staffing deployment. Monthly budget tracking established and distributed to all Departments and Divisions.	Corporate Services
h	PSAB compliant capital project reporting.	Completed	Q4 2014	Q2 2015		Capital asset software purchased and *Tangible Capital Asset Accounting Policy* approved May 20, 2015.	Corporate Services and Operations
i	Implement code of conduct to satisfy legislative requirements.	Completed	Q2 2014 to Q4 2015	Q1 2015		*Code of Conduct Policy* compliant to legislative requirements implemented prior to Strategic Plan process. *Workplace Violence and Harassment Prevention Policy* renewed annually.	Senior Management Team
j	Develop and implement a workplace satisfaction survey and publish annual results.	Ongoing	Q2 2014 to Q4 2015		Q4 2016	Staff Recognition Committee formed in 2015. One of the goals is to establish a Employee Satisfaction Survey.	Corporate Services

	Category Description	Status	Proposed Start Date	Completed Date	Target Date	Comments	Department Lead
k	Develop an employee recognition program and review annually.	Ongoing	Q2 2014 to Q4 2015	Q4 2015		Staff Recognition Committee formed. Service recognition awards presented every year in 5-year milestones and retirements recognized.	Corporate Services
l	Develop and implement a performance review process for CAO and directors to include personal growth development.	Ongoing	Q2 2014 to Q4 2015	Q3 2016		Performance Reviews of all management members completed.	CAO and Human Resources
5	**Effective Communication with Stakeholders and Public**						
a	Initiate a corporate culture of effective two-way communication; encourage employee participation in contributing towards the Board's aims and objectives.	Complete	Q2 2014	Q4 2014		□ NPCA Staff participated in the development of Strategic Plan. □ Town Hall staff meetings occur regularly with a goal of capturing continuous feedback. □ Extended Management Team (EMT) meetings and Senior Management Team (SMT) meetings occur regularly where department and divisional feedback is received. □ NPCA staff encouraged to attend Board meetings when their programming is on the agenda in order to promote greater interaction between staff and Board members.	Senior Management Team
b	Develop corporate conceptual marketing and communications materials and budget for all NPCA's programs and initiatives to ensure consistency of messaging priorities.	Ongoing	Q3 2014		Q4 2016	Budget has been established in 2015 for *Marketing and Community Relations* division. Marketing and communication materials (and policy) in development with a projected completion date of Q4 2016.	Corporate Services

	Category Description	Status	Proposed Start Date	Completed Date	Target Date	Comments	Department Lead
c	Create NPCA identity standards manual and provide training to ensure corporate protocol is followed including; style and readability of communications materials.	Ongoing	Q3 2014		Q1 2016	All corporate materials are vetted via the *Marketing and Community Relations* division. Staff training to coincide with the implementation of the Marketing and Communications policy.	Corporate Services
d	Provide appropriate level of resources for communication.	Completed	Q2 2014	Q1 2015		2015 budget and staff resources established for *Marketing and Community Relations* division.	Corporate Services
e	Use social media opportunities to strengthen connections and encourage information sharing – use opportunities and look for ways to get more for less. Set clear, realistic and measurable goals.	Completed	Q3 2014	Q1 2015		Social media opportunities utilized by NPCA with the direct responsibility of the Communications Specialist. In addition to using social media to communicate decisions ay Board meetings, social media utilized for all NPCA events and specialized programming (such as Thanksgiving Festival, Cave Springs Master plan, etc.).	Corporate Services
f	Identify potential new partners, funders and allies. Encourage commitment and involvement.	Completed	Q3 2014	Q1 2015		The Community Liaison and Volunteer Coordinator is responsible in forging new partnerships, volunteer opportunities and stakeholders engagement. Fundraising is the focus of the newly re-invented Niagara Peninsula Conservation Foundation, which is a seperate entity of the NPCA with its own Board.	Corporate Services
g	Develop clear and concise communications strategy and time lines outlining the Board's objectives as to the roles and services performed by NPCA.	Ongoing	Q3 2014		Q6 2015	Communication strategy and timelines being developed by the *Marketing and Community Relations* division.	Corporate Services

	Category Description	Status	Proposed Start Date	Completed Date	Target Date	Comments	Department Lead
h	Develop staff training opportunities for external communication and media protocols.	Completed	Q3 2014	Q2 2015		Initial staff training to be completed on June 24, 2015 and subsequent training to occur upon completion and implementation of the Marketing and Communications policy.	Corporate Services

Report To: **Board of Directors**

Subject: **Wainfleet Bog Restoration Plan**

Report No: **107-16**

Date: **October 19, 2016**

RECOMMENDATION:

THAT Report No. 107-16 be **RECEIVED** for information

PURPOSE:

To provide information further to the Board's July 20, 2016 meeting, regarding the NPCA Wainfleet Bog Restoration Plan and its' measures to address fire issues at the site.

BACKGROUND:

The NPCA acquired the Wainfleet Bog property in 1995 with the funding of many agencies, and corporate and individual donations. In order to maintain the significant natural and cultural resources, a Site Management Plan and Ecological Restoration Plan were completed for the Conservation Area in 1997 and 2000 respectively. This included a full ecological inventory 1997-1999, and restoration measures implemented 2000-2001.

The Wainfleet Bog Restoration Plan implements the Wainfleet Bog CA Management Plan, and its goals and objectives. This primary goal is to restore the site to a healthier, more natural bog ecosystem, providing recreational, education and scientific research opportunities for existing and future generations. It includes natural restoration and monitoring measures based on ecosystem wise philosophies to correct identified factors of adverse impact on the bog. Specifically, the Management Plan is intended to:

- Restore the bog to a healthier state.
- Re-establish the development of a peat dome formation (*sphagnum* growth and peat accumulation) and natural bog processes through ecologically self-sustaining restoration techniques of limited to no human intervention.
- Provide habitat for site species
- Provide educational and scientific opportunities
- Control non-native species
- Be of minimal cost

This site management goal is met through the objectives to:

- identify and rehabilitate limiting factors

- promote bog awareness/ understanding through site visitation, recreation (trails), workshops, signage
- develop a Monitor Program including measures of:
    - water levels
    - plants
    - animals (snakes and turtles using indicator species)
    - human impact, and
    - Education Outreach: number of tours, articles, workshops, presentations

Site Limiting Factors to Address

The main factors having impacted the bog include past peat extraction and site drainage, resulting in a lowered water table; drier, less acidic site conditions and site alterations favouring more upland plant and animal species; as well as, limited unique wildlife habitat; and colonization of non-native European birch. Fires resulting from dry site conditions have also impacted the area and site financial resources. Since the NPCA has acquired the land, fires have occurred in years 1997, 1998, 1999, 2001, 2002, 2012 and 2016. These fires occurred prior to restoration measures (1997-199), during early restoration years (2002) and dry seasons (2012 and 2016). These were caused by campfires, smoking, A.T.V. backfiring and lightning.

Recovery Activity to Date

To date the above limiting site factors have been addressed and continue to be monitored. Physical rehabilitation activity is focused on the west half of the property, with the east half maintained as status quo for existing species to adapt to changes. Within this selected area (Refer to Figure1):

1. Several internal peat canals are blocked to maintain water levels at the site.

2. Bare peat fields have been treated with shallow surface indentations to maintain water on the site.

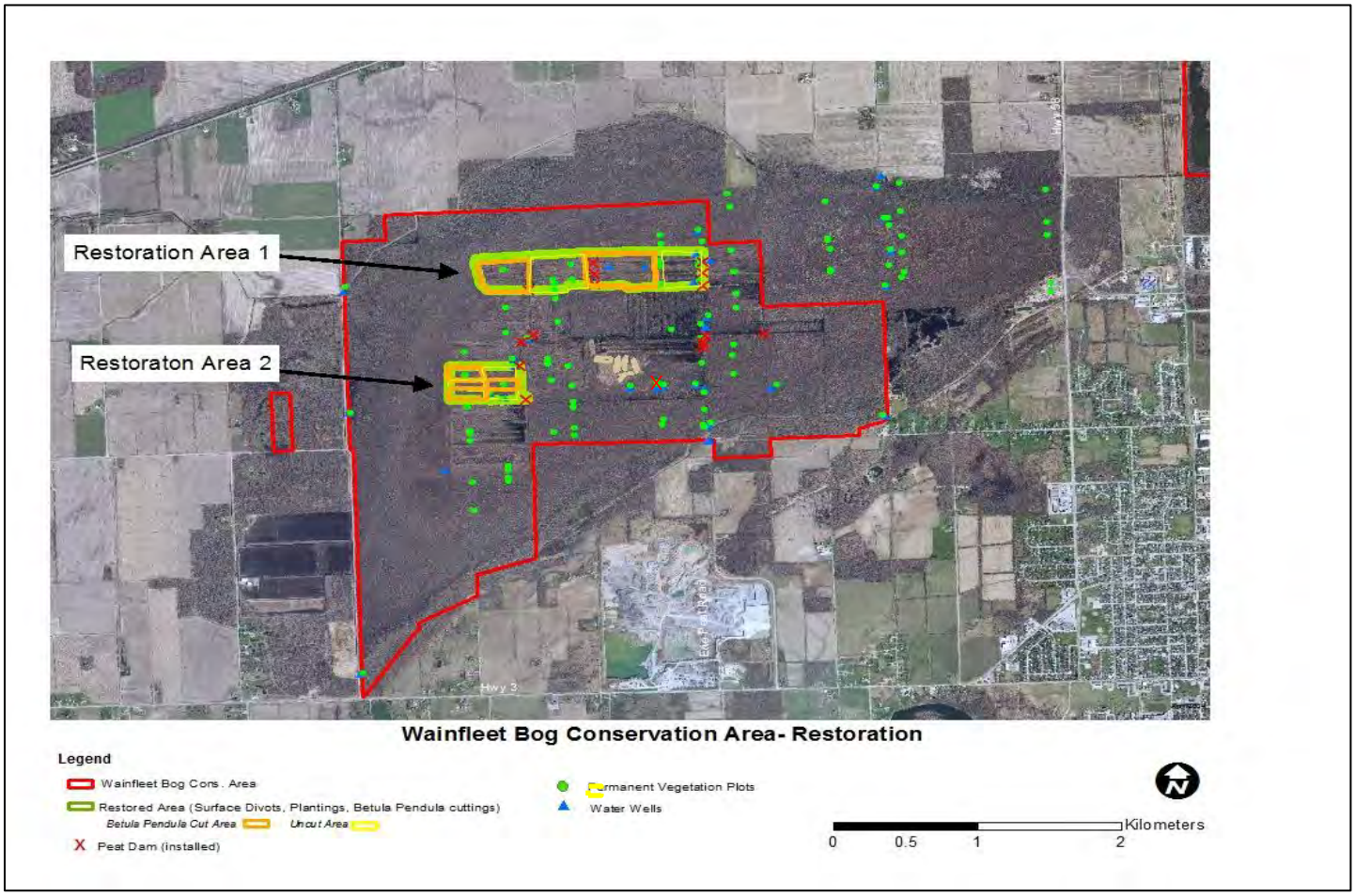
3. Surface indentations have been planted with native plant material to provide food and cover for plants and animals at the bog. Plantings included seeds, hardstem cutting and plugs of: leatherleaf, labrador tea, sheep laurel, and blueberry among others. *Sphagnum* fragments from site donor sites where also distributed. To maintain moisture, minimize frost upheaval and assess technique, 'Weed Free' Straw mulch was used on the plantings, while also maintaining some as controls.

4. Half of the non-native European Birch trees have been cut to assist in maintaining water levels at the site, minimize surface temperatures and soil and provide surface cover for small mammals, reptiles and amphibians.

5. A monitoring program has been established to evaluate the rehabilitation activities including ground water levels, vegetation changes and sensitive animal populations, for the site over time; and

6. Bog educational interactive / awareness programs has been implemented, including: past community based workshops and site Bog Newsletter; as well as a present webpage on the site restoration, to help the awareness of the importance and value of the bog, its functions and its' interconnected plants and animals.

Figure 1: Restoration Areas to Date



Recovery Progress to Date

The monitoring program and recovery of the Wainfleet Bog are ongoing. Limiting factors were addressed and continually monitored, implementing revised restoration measures as deemed necessary over time by the monitoring. To date the monitoring results show the bog progressing positively towards a more natural bog ecosystem. *Sphagnum* moss is growing in sown areas, as well as other bog species improving.

- determined site limiting factors (water wells, animal & plants surveys)
- finalized site restoration needs
- established a site monitoring program for water, plants, animals and education
- restored 56 ha (138 acres) of habitat
    - 8 ha (19 acres) shallow divots
    - 5 ha (12.4 acres) planted and mulched
    - 28 ha (69 acres) cut birch tree cover

- installed 13 peat dams in selected drains (central west)
- ground water level improving in restored areas
- water held longer in surface divots, dams & restored areas

- soil is moister 5m-10m of blocked drain
- sown and mulched *sphagnum* moss fragments are growing
- moss increasing in cut restored areas
- bog plant species increasing in restored areas
- surface indentations are beginning to colonize by natural regeneration
- vegetation progressing towards a bog community in restored area (increased moss; sown *sphagnum* growth, cotton grassand ericaceous species)
- identified habitat needs of rarer species
- habitat and ecosystem needs are included in restoration and reconfirm site goal/objectives
- small animals using restored area
- European Birch trees dying along blocked drains
- extensive regrowth of cut European birch (*Betula Pendula*) trees
- plant dispersal limitation determined over competition
- increased public awareness & understanding of the bog, including land use issues for fire:
    - Annual Wainfleet Bog Newsletter (2000-2006)
    - Wainfleet Bog Factsheet
    - webPage on bog rehabilitation
    - greater than 3 public workshops, 9 group tours, 2 library/school presentations, 4 conferences, 12 school field trip, 13 site public volunteer opportunities (snake searches, plantings & birch cutting)
    - media coverage (radio, t.v., national & international interest groups meetings, brochures, webpages)

- landowner contact
- increased snake awareness, including rattlesnake stewardship guide contributions
- providing educational opportunities: 12+ bog university research projects and 1 Phd
- beaver activity has compromised some constructed dams with water levels lower than original dam holding levels

Proposed Additional Restoration Measures to Address Fire Concerns

Based on the existing site objectives, restoration activity, progress and monitoring results, the site is progressing towards a more natural bog ecosystem. Soil saturation to the interior peat areas is slowing progress over time. Site access due to wetter soils and non-permitted activities of campfires and smoking has been reduced. In light of site fire issues and further restoration efforts that can be implemented include (Refer to Appendix 2 map):

- repair existing dams where beaver passage or other damage has occurred
- construct shallow channels and/or additional hummocks and pools in the interior drier peat fields (beyond the existing saturated soil drain areas to date)
- removal of the European birch trees via modified cutting (to reduce high evapotranspiration rates from the bog)
- plant addition bog species and disperse *sphagnum* moss fragments in the restored area divots/pools
- continue monitoring program of site changes in:
    - water levels
    - plants

- animals, and
- human impacts

- continue fire related information handouts to high use interest groups, and site signage
- develop of an interpretative centre, site educational programs and ongoing public awareness programs

DISCUSSION:

To provide the Board a summary of additional site measures to reduce fire concerns at the bog and its related impacts on the environment, human resources and safety,

Implementation of the above measures would assist in increasing water levels in greater areas of the site which would reduce the hazards associated to fire.

This would assist in providing effective communication with the stakeholders and public and improving development process performance and other initiatives in support of the strategic plan and supporting the organization to achieve its mission, vision and values

FINANCIAL IMPLICATIONS:

Additional funding for restoration activities and labour/ equipment to address saturated soils would be required. The total cost to be determined.

RELATED REPORTS AND APPENDICES:

1. Appendix 1 Report No. 84-16
2. Appendix 2 Wainfleet Bog Conservation Area Fire Area Map

Prepared by:

Kim Frohlich;
Ecologist

Reviewed by:

Mark Brickell;
Acting Director of Operations

Submitted by:

Carmen D'Angelo;
Chief Administrative Officer / Secretary Treasurer

NIAGARA PENINSULA CONSERVATION AUTHORITY

Report To: **Board of Directors**

Subject: **Wainfleet Bog Fire Risk Mitigation**

Report No: **84-16**

Date: **July 20, 2016**

RECOMMENDATION:

1. **That Report No. 84-16 be RECEIVED for information,**

2. **That staff be authorized to purchase the items referenced in this report at an estimated cost of $112,000, to come from Capital Reserves,**

3. **That a dedicated reserve be considered during the 2017 budget deliberations in order to support fire suppression efforts on NPCA properties, as required.**

PURPOSE:

To seek Board approval for the purchase of key equipment necessary to mitigate against various risks associated with fire at the Wainfleet Bog and other NPCA properties.

BACKGROUND:

Since 1997 there have been five confirmed fires at the Wainfleet Bog. The risk of fires at the Bog is greatly increased when the summer months are hot and dry. Recognizing the high risk of fire this year, due to weather conditions, NPCA convened a meeting of key stakeholders, including the Fire Chiefs from Welland, Port Colborne and Wainfleet, and the Resource Management Supervisor from the Ministry of Natural Resources and Forestry (MNRF) on June 28th. The purpose of the meeting was to discuss and update protocols, roles and responsibilities related to monitoring and mitigating the risk of fire at the Wainfleet Bog, and dealing with a fire event, should one occur.

During this meeting a number of suggestions were put forward, many of which had minimal financial implications, such as the development of a site specific fire plan, enhanced communication strategies, the development of fire risk parameters, monitoring the property more frequently, and closing the Wainfleet Bog during times of high fire risk.

Other suggestions focused on the need to purchase equipment that would better allow NPCA to monitor the site, access more remote areas of the property and support fire suppression efforts, as required.
On July 5th, a fire was detected at the Bog. NPCA's experience with this fire further confirmed the need for this investment.

As we are still very early in summer, the risk of another fire this year, remains high. This report focuses on the cost items.

DISCUSSION:

Staff have consulted with local Fire Chiefs, MNRF officials (local office, Regional Fire Advisor, and Wainfleet Bog Fire Incident Commander) and staff. Based on these consultations, staff is recommending the following purchases, in addition to, the establishment of a dedicated reserve to be used to mitigate fire risks and support fire suppression efforts, as required. The equipment purchases to address the immediate needs are:

Description	Estimated Cost
3-4 Portable Water Tanks of Various Size	$35,000
ARGO/ATV with Off-road Trailer	$35,000
Drone with Video, Thermal-Imaging and GPS	$14,000
Hand-held Thermal-Imaging Camera	$8,000
Enclosed Trailer (for Storage)	$20,000
TOTAL	**$112,000**

FINANCIAL IMPLICATIONS:

The items referenced above were not included in the 2016 Budget. Staff is recommending these items be purchased with capital reserves. Estimated cost is $112,000.

Staff has also recognized the need for further specialized training related to matters referenced above. It is proposed that these costs be included in the 2017 Training Budget.

Staff is further recommending the establishment of a permanent reserve to be used to mitigate fire risks and support fire suppression efforts, as required.

RELATED REPORTS AND APPENDICES:

Meeting Notes, Stakeholder Meeting Re: Fire Protocols, Roles and Responsibilities for the Wainfleet Bog, June 28, 2016

Prepared by:

Mark Brickell
Acting Director, Operations

Submitted by:

Carmen D'Angelo
Chief Administrative Officer/
Secretary Treasurer

This report was prepared with the consultative input from:
Gregg Furtney (Operations Supervisor), Mich Germain (Superintendent, Central Workshop), and Rob Shoalts (Capital Projects Coordinator).

MEETING NOTES

STAKEHOLDER MEETING RE: FIRE PROTOCOLS, ROLES AND RESPONSIBILITIES FOR THE WAINFLEET BOG

June 28, 2016
1:00 p.m.
NPCA Boardroom

Present: Denys Prevost (Fire Chief, Community Emergency Management Coordinator), Harry Flagg (Fire Chief, Wainfleet Fire and Emergency Services), Thomas Cartwright (Director, Port Colborne Fire and Emergency Services), Joad Durst (Resource Management Supervisor MNR&F), Carmen D'Angelo (Chief Administrative Officer, NPCA), Mark Brickell (Acting Director of Operations, NPCA), Gregg Furtney (Acting Manager of Strategic Initiatives, NPCA), Mich Germain (Superintendent, Central Workshop, NPCA), Kim Frohlich (Ecologist, NPCA)

Purpose: The Wainfleet Bog is a unique and important 3500 acre property owned in parts by NPCA (approximately 2000 acres), MNR&F (approximately 768 acres), and other private land owners (approximately 800 acres). It is the largest and least disturbed bog in Southern Ontario. It is a water resource for area streams, drains and wildlife. It is also the habitat for a number of rare species and species at risk. Historically, the bog has supported activities such as hunting, peat extraction, bird-watching / nature appreciation and research.

In years of hot, dry summers, the risk of fire(s) at the Bog is increased significantly. Most recently, in 2012, there was a major Bog fire that burned for nearly two weeks. MNR&F fire crews ultimately brought the fire under control.

This year, the Niagara Region is once again experiencing a hot, dry summer and concerns have been raised by all parties about the potential for fire at the Bog.

Key stakeholders were convened to review lessons learned from the 2012 fire and to make recommendations for reducing the risk of fire, and developing protocols to be used, should a fire develop at the Bog.

Thoughts/Concerns from Around the Table

- Local fire departments are not properly trained or equipped to fight wetland/wild land fires
- Local fire departments are not organized to fight campaign fires
- NPCA does not have the mandate, training or equipment to battle Bog fires
- **Prevention** efforts are critically important and should be main focus
- Check to see if Bog Best Fire Prevention Practices are documented elsewhere
- Should review the 2012 Wainfleet Bog Fire Report
- Risk Assessment and Mitigation strategies need to be developed
- Early fire detection is necessary to contain and suppress fire
- People and lightning strikes are the major causes of fires, in a Bog – e.g. shot-gun cartridges, cigarette butts, quads and ATV's
- Should be **no people** at the Bog when fire risk is high
- Need to be aware of parameters/indicators that lead to closing of Bog
- Need to monitor more closely water-levels at the Bog
- Specialized Joint Training of local fire departments and key NPCA staff may be desirable
- Brush piles on the property are very large and of great concern
- Bog fire smoke impacts both humans and animals, particularly seniors and people with breathing problems such as asthma
- Costs approximately $7,000/day to fight a Bog fire
- The Wainfleet Bog is one of the few places in Niagara that municipal fire services are ill-equipped to fight
- The risk of a serious fire at the Bog this year is very high

Possible Strategies/Options

- **Prevention, Prevention, Prevention**
- NPCA should close the Bog to public access immediately
- Monitoring of the Bog should be stepped up significantly
- Monitoring of water-levels at the Bog should be scheduled regularly
- Formal MNR&F parameters/indicators for fire risk should be applied to the Bog
- Specialized joint training to allow local fire departments and NPCA to better support fire-fighting efforts at the Bog
- Request that Burnaby Skydiving Club be notified of the fire risk and be requested to report any evidence of fire they observe
- Seek volunteers to improve monitoring of the property

- Place video cameras on the property
- Facilitate Infra-red/GPS equipped drone flyovers
- NPCA should purchase an ATV
- Monitor lightning strikes at the Bog via Environment Canada
- MNR&F is willing to fight the fire(s), on a full cost-recovery basis, subject to availability
- Brush piles should be cleared via chipper or controlled burning in the winter
- Enforcement strategy is required – Wainfleet Bog hunters may be a natural ally
- It was also suggested that NRP be notified of the situation and asked to be part of the solution
- MNR&F recommended coordinating with the Fire Management Supervisor, MNR&F
- Possible opportunity to pool resources and purchase additional equipment
- Need to increase public awareness and establish communication plan
- Need to develop a Fire Safety Plan specifically for the Bog
- Maintain communication and dialogue with local Fire Chiefs

Discussion:

1) NPCA has closed the Wainfleet Bog to the public, in line with the Wainfleet fire ban, until further notice. Signs have been posted and a media release has been sent out. Local media and CHCH are helping to get the word out.

2) NPCA staff has been given direction to be on the property as often as possible and to report any unusual sightings, smells or trespassers. In addition, NPCA staff is recommending the purchase of an infra-red/GPS equipped drone for identifying hot spots. Staff is further recommending the purchase of an ATV or ARGO to allow for fuller access to the property. Both recommendations will be dealt with at the July 20th NPCA Board meeting.

3) NPCA staff is now reviewing its water-level monitoring protocols at the Bog and will be updating them in the near future.

4) Joad Durst has arranged for Robin Vernon, Regional Fire Advisor, MNR&F, to meet with NPCA staff at the Bog on Friday, July 8th, to further assess risks and opportunities, and to assist with the establishment of parameters for monitoring high risk fire areas.

5) Once NPCA has met with the Regional Fire Advisor, NPCA will further communicate with local Fire Chiefs to review joint training options and the need to purchase specialized equipment.

6) Mich Germain has reached out to the Burnaby Skydiving Club to request its support in monitoring the property from the sky, as possible.

7) Safety concerns have been expressed about having monitoring volunteers on the property without adequate training. NPCA is looking to work with Wainfleet Bog Hunting Permit holders to be eyes on the property, as they share a common interest. NPCA's Community Outreach Coordinator is exploring other opportunities, including the use of Niagara College students, who would first need to be trained.

8) There is no electrical source at the Bog. Therefore, it is impractical to place video cameras on site.

9) NPCA is now monitoring, on a daily basis, lightning strikes at the Bog, via Environment Canada. Any lightning strike on or near the Bog will be investigated by NPCA staff.

10) MNR&F has provided contact information for Robin Vernon, Regional Fire Advisor, MNR&F (705-755-5653 or 647-982-6759) and Bob Hurley, Fire Management Supervisor (705-754-1902 ext. 5019 or 705-457-0184).

11) NPCA is exploring options for the removal of the large brush piles. Concerns have been expressed about leaving that volume of wood chips on the property and serving as fuel for a fire. Concerns have also been expressed about the possibility of starting a fire by using the wood chipper. The NPCA Ecologist is assessing the impacts of conducting a "controlled burn" during the winter months.

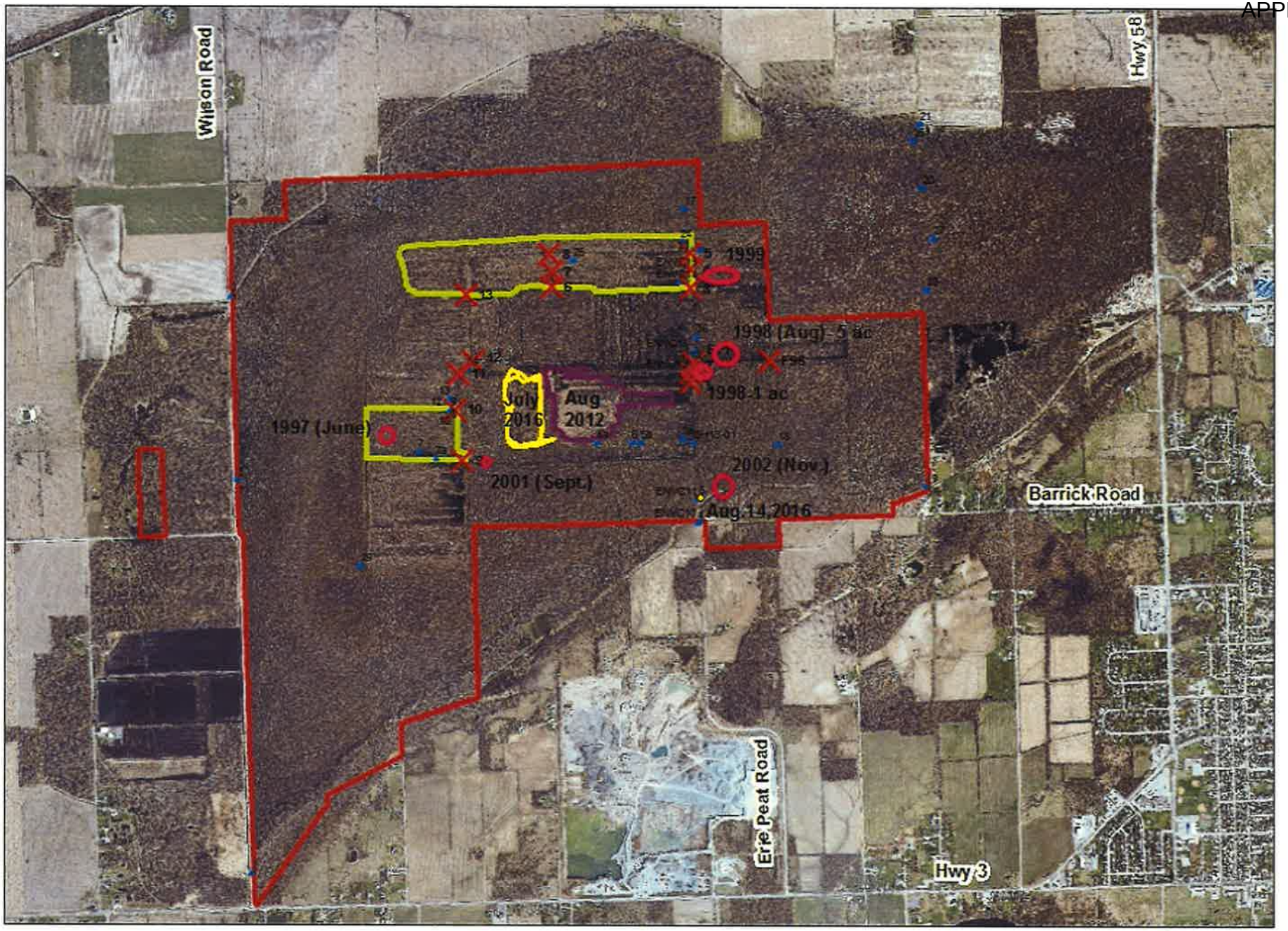
12) NPCA staff will be meeting with NRP staff to inform them of the Bog fire risk and to seek NRP's support in monitoring the area.

13) NPCA will provide regular updates to local Fire Chiefs re: actions taken to mitigate fire risks at the Bog.

14) Further clarification is still required in the case of MNR&F not being able to respond to a Bog Fire, due to other immediate demands.

Other Considerations

- Incident Command shall rest with the Fire Department until the MNR&F fire crew arrives on the scene, at which time it will assume Command
- Need to confirm that the responsible Fire Department is responsible for communicating with adjacent land owners



Wainfleet Bog Conservation Area- Fire Areas Since 1995

Legend

- Wainfleet Bog Cons. Area Boundary
- Fire Locations
  - 1998- 3 ha (8 ac)
  - 1999- 1.6 ha (4 ac)
  - 2001- 3m2- Sept 21
  - 2002- Nov 13
  - 2012 1.3 ha (32 ac) Aug
  - 2016 July (6.4 ha)
- Restored Areas
- Peat Dams

0 0.25 0.5 1 Kilometers

Report To: **Board of Directors**

Subject: **Gord Harry Trail- NWRT Section**

Report No: **108-16**

Date: **October 19, 2016**

RECOMMENDATION:

THAT Report No. 108-16 be **RECEIVED** for information

PURPOSE:

To provide information further to the Board's April 15, 2015 meeting, and March 23, 2016 meeting regarding Gord Harry Trail NWRT Section.

BACKGROUND:

Gord Harry Trail Conservation Area is approximately 13 kilometres (8 miles) in length from Cement Plant Road to the County of Haldimand boundary. A portion of the trail from Etling Road to East of Hutchinson Road approximately 629 metres (2064 feet) was entered into an agreement with Niagara Region Wind Corporation/ Enercon for access use for construction and to maintain two nearby wind turbines. The trail was to be widened by 3 metres and restored to pre-construction conditions or better.

DISCUSSION:

During 2015-2016 the trail reconstruction was completed. Vegetation was removed for the trail widening and the establishment of a turning corner on the north east side, an entrance to one wind turbine (WT23) and for a side lane which was installed for truck passing and later removed. A native seed mix of grass and flowers will be hydroseeded at the site as part of the restoration. Mention of tree replacement was not indicated.

The seed mixture of Big Bluestem, New England Aster, Fox Sedge, Bottlebrush grass, Fowl manna grass, Fowl bluegrass and Brown-eyed susans will be used. This will replace the removed vegetation of Staghorn Sumac, Willow shrubs, Canada goldenrod, wild grape and non-native White Sweet Clover, and Queen's Anne lace; and the regrowth of non-native Charlock Mustard (*Brassica kaber*) Poplar and several smaller dbh trees were also removed in these disturbed areas with replacement to be determined later

FINANCIAL IMPLICATIONS:

There is no cost to the NPCA for restoration/ remediation of the site. All costs are covered by the Niagara Region Wind Corporation/ Enercon.

RELATED REPORTS AND APPENDICES:

1. NPCA Report No. 85 -15

Prepared by:

Kim Frohlich, Ecologist

Reviewed by:

Mark Brickell, Acting Director of Operations

Submitted by:

Carmen D'Angelo;
Chief Administrative Officer / Secretary Treasurer

NIAGARA PENINSULA CONSERVATION AUTHORITY

Report To: **Board of Directors**

Subject: **Easement Agreement between the NPCA and NRWC**

Report No: **85-15**

Date: **July 15, 2015**

RECOMMENDATION:

That the NPCA Board of Directors authorize an Easement Agreement between the NPCA and NRWC for the approximate 635 m use of the Gord Harry Trail, and, to provide direction to the Chief Administrative Officer to finalize the agreement in consultation with NPCA legal counsel.

PURPOSE:

To receive direction from the NPCA Board of Directors on the use of the Gord Harry Trail by the Niagara Region Wind Corporation (NRWC) for buried conduits in the connection of two wind turbines.

BACKGROUND:

The NPCA Board of Directors have been deliberating in their consideration on the NRWC's request to utilize approximately 635 m of the Gord Harry Trail in order to bury conduits in the connection of two local wind turbines, and thereafter, the provision of maintenance access. The request consists of approximately 5% of the total 13 km trail.

All environmental issues pertaining to renewable energy projects (such as serious or irreversible harm to the environment, plant and animals) are within the primary jurisdiction of the Ministry of Environment and Climate Change (MOECC). The MOECC has approved the NRWC's application to construct and operate a renewable energy project. An appeal of the MOECC's approval was submitted by Mothers Against Wind Turbines and was subsequently dismissed by the Environmental Review Tribunal.

The NPCA Board considered the issues in the utilization of the Gord Harry Trail as summarized in Report No. 64-15. An associated draft easement agreement was also reviewed. The decision on the matter was deferred to the July 15, 2015 meeting.

DISCUSSION:

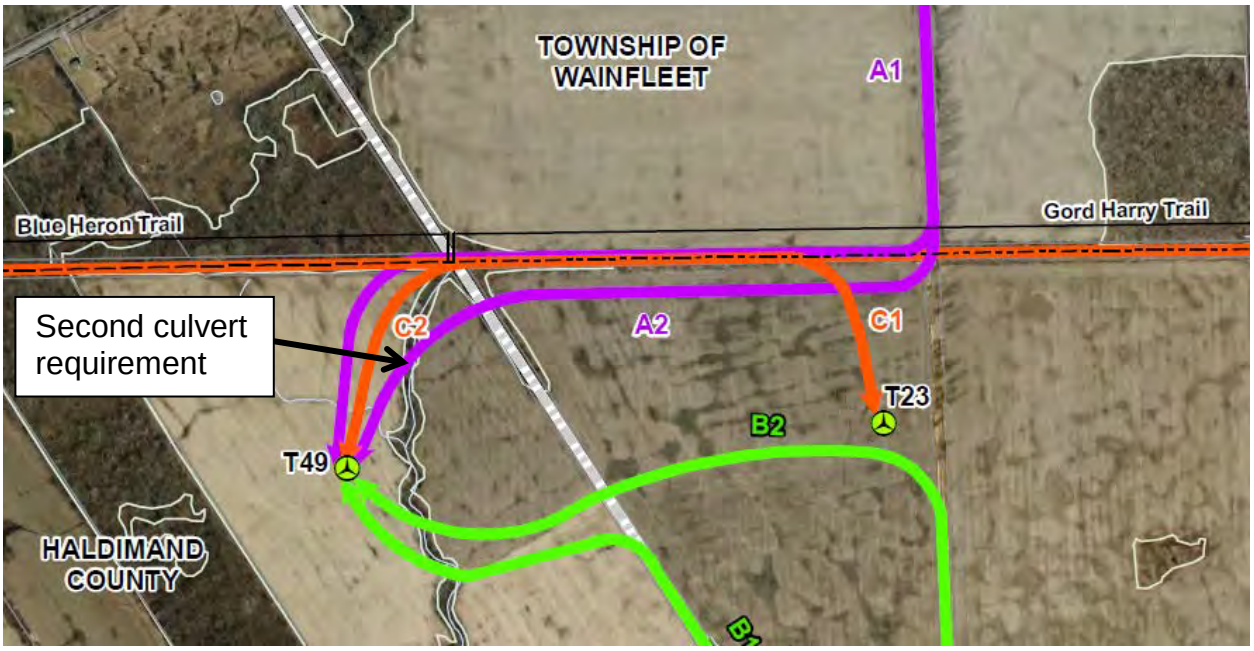
The matters before the NPCA have been identified in previous reports, and most recently, NPCA Board Report No. 64-15 that the Board deliberated on June 17, 2015 (attached as Appendix 1 of this report)

During the June 17, 2015 deliberations, a Board Member requested a “performance bond” be implemented to ensure the proposed mitigation measures contained in the easement agreement are completed to the satisfaction of the NPCA. Legal counsel for the NPCA has been instructed to include provisions of a performance bond within the easement agreement.

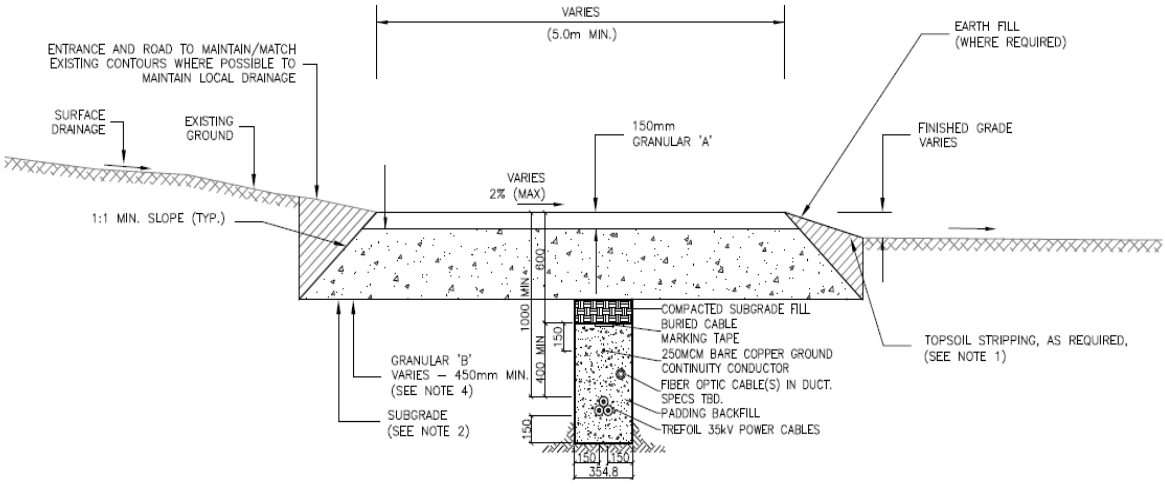
It should be noted that Option A1 (illustrated below) requires approximately 100 m of the Blue Heron Way Trail owned by Haldimand County, and, 635 m of the Gord Harry Trail owned by the NPCA. Both trails are part of the Trans Canada Trail. On July 6, 2015 Haldimand County Council authorized their staff to enter into an easement agreement as per Option A1. It was observed that there was no community opposition to the utilization of the Blue Heron Way Trail.

Option A1 (purple) is the preferred route selected by NRWC. It remains staff professional opinion that the impacts to the Gord Harry Trail are temporary and can be mitigated via agreed

upon measures. Re-vegetating the trail with species native to the region should be considered an improvement to the local environment.
It is further the opinion of staff that the Gord Harry Trail is a recreational area (not a conservation area) and that local abandoned railway lines are the best location for recreational trails in association with unobstructed utility corridors. As illustrated below, Option A2 would require the installation of a second culvert to cross the watercourse.



A typical engineered cross section is illustrated below. The trail width would be modified from the current 3 m (9.8 feet) to a 5 m (16.4 feet) width with appropriate drainage features.



NPCA Chair Bruce Timms has conducted several site visits to the proposed area of construction. On several occasions, Chair Timms has been joined by other Board Members in walking the trail to visualize and understand the scope of the project. Other Board Members have taken the opportunity to walk the trail on their own time.

FINANCIAL IMPLICATIONS:

The easement agreement refers to a $100,000 donation to the Niagara Peninsula Conservation Foundation, and $20,000 per year for 20 years (subject to CPI increases). It is recommended to the NPCA Board of Directors that the $100,000 be allocated to NPCA capital projects within the Township of Wainfleet, and that, the $20,000 per year be allocated for trail development, maintenance and signage throughout the watershed.

RELATED REPORTS AND APPENDICES:

1. NPCA Board of Directors Report No. 64-15.

Prepared and Submitted by:

Carmen D'Angelo
Chief Administrative Officer
Secretary Treasurer

This report was prepared with the consultative input from the David Barrick, Director of Operations. Report 64-15 was prepared with the input of Biologist Lee-Ann Hamilton and Ecologist Kim Frohlich.

NIAGARA PENINSULA CONSERVATION AUTHORITY

Report To: **Board of Directors**

Subject: **Easement Agreement – Gord Harry Trail**

Report No: **64-15 (Revised)**

Date: **June 17, 2015**

RECOMMENDATION:

That the NPCA Board of Directors **APPROVE** the Easement Agreement between the Niagara Peninsula Conservation Authority and Niagara Region Wind Corporation for the utilization of 635 meters of the Gord Harry Trail, and that, the Chief Administrative Officer be authorized to sign the agreement.

PURPOSE:

To update the NPCA Board of Directors on the action items directed towards staff, which were received during the April 2015 meeting, and, to seek authorization to enter into an easement agreement with the Niagara Region Wind Corporation.

BACKGROUND:

On April 16, 2015 the NPCA Board of Directors considered the request (Report No. 38-15) from the Niagara Region Wind Corporation (NRWC) to utilize 635 meters of the Gord Harry Trail for the purpose of installing buried conduits along the trail and for the continued vehicle use for maintenance purposes between wind turbines.

During deliberations of the possible agreement, the NPCA Board of Directors received two delegations from the community opposing an easement agreement (Ms. Linda Rogers from Mother Against Wind Turbines, and Ms. Loretta Shields). The concerns raised by the delegates focused on impacts to the use of the trail and environmental impacts to native plants and species at risk. The NPCA Board also heard from Ms. Angie Harry, the widow of former NPCA Chair and Mayor of Wainfleet Gord Harry. In her comments, Ms. Harry identified that she and her late husband were very much in favour of allowing proponents of wind turbines access to the Gord Harry Trail.

In considering Report No. 38-15 the Board of Directors concluded that the report should be forwarded to the June 2015 meeting and staff were given the following direction:

1. Meet with the delegates Ms. Rogers and Ms. Shields to scope their concerns;
2. Ensure that the use of the Gord Harry Trail does not include any overhead lines;
3. The 20 years agreement contains an inflationary rate;
4. Further assess the impacts of the options; and
5. Meet with the Town of Lincoln's CAO to review the agreement between the Town of Lincoln and NRWC.

Further, on April 29, 2015 the NPCA Board received communication (via email entitled "*Billion Dollar Liens filed against Townships*") referencing concerns on liens pertaining to wind turbine corporations and their impact on land use agreements. The following discussion of this report was prepared based on the concerns expressed and the direction staff received from the NPCA Board of Directors.

DISCUSSION:

On May 20, 2015 the Environmental Review Tribunal (ERT) reached a decision on the Appeal submitted by Mothers Against Wind Turbines (MAWT) of the Ministry of Environment and Climate Change's (MOECC's) approval associated to the renewable energy project proposed by Niagara Region Wind Corporation (NRWC). The ERT decision dismissed the appeal.

The concerns presented to the NPCA Board from the delegates Ms. Rogers and Ms. Shields relative to the environmental impact on the environment were similar in nature to the concerns raised in the appeal by MAWT. The ERT considered the concerns raised by the appellant that the project would cause serious or irreversible harm to plants, animals and the natural environment. Overall, the ERT made its decision based on the information presented by the appellant, the response to the information from the regulator (MOECC), and the response from the proponent (NRWC). In specific, the ERT concluded:

a. **Migratory Butterfly Conservation Areas**
   Acceptance of the evidence provided by the proponent's consultant Stantec, that notwithstanding the absence of candidate specific habitant, Stantec has proposed mitigation measures to address any potential impacts;
b. **Wetlands**
   The appellant has not advanced sufficient evidence to demonstrate that serious and irreversible harm will be caused to wetlands due to the location of the project.
c. **Red Mulberry**
   The evidence does not support the appellant's assertion that construction of a specific turbine would cause serious or irreversible harm to the red mulberry.
d. **Significant Woodlots**
   No specific evidence presented from the appellant related to the mitigation measures proposed would cause serious or irreversible harm to the woodlands.
e. **Bird Kills**
   Without further evidence, unable to find that bird kills due to collisions with transmission lines raises the level of serious and irreversible harm
f. **Blanding Turtle**
   Based on the limited evidence, the appellant failed to meet its burden under the Environmental Test in relation to the Blanding's turtle.

Notwithstanding the ERT decision, and in specific to the request to use 635 m of the Gord Harry Trail, there is no evidence that such a proposal would cause serious or irreversible harm to plants, animals and the natural environment. With that stated, the proponent (NRWC) has offered to implement the following mitigation measures to reduce any temporary impact:

i. Where possible, and in consultation with NPCA staff, remove vegetation along the trail during times that avoid the core nesting season of migratory birds;
ii. All disturbed areas will be re-stored and re-vegetated to preexisting conditions;
iii. Re-vegetation will use local species; and
iv. Erosion and sediment control measures will be installed, maintained, and monitored during all phases of construction.

On June 11, 2015 NPCA staff met with Ms. Rogers and Ms. Shields with respect to their concerns. Present at the meeting was Ms. Johnson and Ms. Hughes. The meeting was respectful and NPCA staff recognized the tremendous amount of work and passion these community members have invested into the issue of wind turbine projects. The following are the list of concerns/issues expressed by these community members:

a. Related to NPCA permits and the use of the Gord Harry Trail.

   i. That the NPCA take photos of areas requiring NPCA permits, prior to any development, to ensure any conditions attached to the permits are adhered to.
   NPCA Response: The proponent (NRWC) has taken a significant amount of photography of the development areas and has provided the information to staff. When staff conducts sites visits, the NPCA has committed to taking additional photography and documented notes. (Action – Biologist Lee-Ann Hamilton)

   ii. That the NPCA take photos of areas impacting the Gord Harry Trail, prior to any development, to ensure the trail is reverted back to pre-existing or better conditions based on the mitigation measures.
   NPCA Response: The NPCA has committed to taking photography and documented notes of the trail to ensure mitigation measures have been followed. (Action – Ecologist Kim Frohlich).

b. In the event the NPCA Board of Directors approves the use of the Gord Harry Trail, what are the impacts on the NPCA's liability insurance?
   NPCA Response: As reviewed by NPCA legal counsel, the easement agreement contains language "in favour of NPCA" indemnification language with respect to any claims or causes of action arising out of the use of the property by the easement holder, including indemnification with respect to environmental damage to third parties.

c. Is the value of $100,000 donation and $20,000 per year for 20 years (subject to CPI) fair value for the use of the trail?
   NPCA Response: In comparison to other easement agreements, the offer is fair value.

d. The community members presented a "binder" containing detailed information and requested that the information be considered when issuing NPCA permits.
   NPCA Response: The information will be provided to the Supervisor of Construction Permits, Darren Mackenzie for his reference. (Action – Supervisor Darren Mackenzie).

e. If post construction, the Gord Harry Trail will only be used for ongoing monthly maintenance, how will the proponent access the wind turbines for parts replacement (such as turbine blades) and decommissioning efforts?
   NPCA Response: The proponent will be asked and shared with the community members (Action – David Barrick).

Further to this meeting, the community members were asked if they would consider establishing a *"Friends of the Gord Harry Trail"* community group that would be supported by the NPCA. The community members indicated they would consult with their committee members and respond thereafter.

On April 29, 2015 the NPCA Board of Directors received concerns (and associated documentation) expressed by a local resident via an email entitled "*Billion Dollar Liens filed*

against Townships". The law firm *Hedley & McLachlin* was approached to conduct a review of the issues contained in the documentation. This law firm was approached based on their extensive experience in representing landowners with respect to agreements with wind turbine corporations.

A legal opinion was received by *Hedley & McLachlin* and is **attached** under separate cover. The opinion indicates that the rights given as security to a third party would not be capable of impacting, affecting or interfering with the ownership rights of NPCA in any greater manner than the actual rights granted to NRWC would. Further, the opinion indicates the NPCA would have no responsibility or liability for repayment of any amounts owing to a third party pursuant to whatever mortgages or security might be granted.

A meeting was scheduled between the NPCA and the proponent on May 29, 2015. The proponent was advised, should the NPCA Board approve an easement agreement, the agreement should include a provision that "wires or conduits" cannot be installed overhead of the Gord Harry Trail. Further, the agreement should include a provision that the $20,000 per annum include an inflationary rate adjustment (such as the Consumer Price Index). The proponent agreed to the terms and a draft easement agreement was received. The draft easement agreement has since been initially reviewed by *Hedley & McLachlin* and their commentary is **attached** under separate cover. The agreement may be subject to further amendments to protect the rights of the NPCA as recommended by legal counsel.

Further, in consultation with Mike McLachlin of *Hedley & McLachlin,* any easement agreement between the NPCA and the proponent would have to respect the Township of Wainfleet's right for an easement for future opportunities. Given that these types of easements typically "share" similar corridors for utilities, the easement agreement needs to reflect the Township's right of access. The CAO for the Township of Wainfleet has previously indicated to NPCA staff that the current proposal does not interfere with the Township's access.

A meeting was scheduled between the Town of Lincoln's CAO and the NPCA CAO to review the municipality's agreement associated with the wind turbine project in order to emulate similar language to protect the interests of the NPCA. The meeting was cancelled based on a staffing issue with the municipality. However, as with any proposed long term agreement, NPCA staff retained the services of *Hedley & McLachlin* law firm to review the draft easement agreement.

The Township of Wainfleet, as previously communicated, remains opposed to NRWC utilizing the Gord Harry Trail for buried conduit lines. However, on June 8, 2015, the Township entered into an agreement with NRWC on a road use agreement. The agreement contains a financial component for "above or below" installation of transmission lines on Township property. The agreement provides access for the proponent to proceed with wind turbine locations, which in turn, has prompted the proponent to select the Gord Harry Trail as an access route. The financial component related to the Township's agreement equates to $5,000 per kilometer of road per annum and is subject to a CPI increase.

Finally, NPCA staff (specifically Lee-Ann Hamilton, Biologist and Kim Frohlich, Ecologist) were asked to further assess the options presented in Report 38-15. Their impact assessment is **attached** to this report. In summary, staff advised "*...mitigative measures for potential impacts on plants and animals would be required for both options... Should the Gord Harry Trail Conservation Area Option be approved, a land use agreement would need to be entered with the proponent to ensure all potential impacts are minimized. This would assist in maintaining the watershed's natural resources (wildlife habitat) by balancing conservation and sustainable*

development for future generations and supporting the organization to achieve its mission, vision and values." To this point, the draft easement agreement does include consultation with NPCA staff and recommended mitigative measures.

FINANCIAL IMPLICATIONS:

There is financial compensation for the use of the Gord Harry Trail by NRWC. The compensation includes $100,000 donation to the Niagara Peninsula Conservation Foundation. These funds would be directed to capital projects on NPCA properties located in the Township of Wainfleet. In addition, there is $20,000 per annum for the next 20 years (subject to increase via Consumer Price Index), which staff proposes that the funds to be allocated in trail development and maintenance throughout NPCA properties in the watershed.

Currently, there are no trail maintenance costs within the NPCA budget. NPCA staff does receive complaints and concerns from local trail users throughout the watershed related to: illegal use of trails by motorized vehicles, lack of signage, maintenance issues (including unauthorized alterations and littering), lack of trail maps, and the need for increased connectivity to other trails.

RELATED REPORTS AND APPENDICES:

1. *Hedley & McLachlin* Legal Opinion (under separate cover marked confidential);
2. *Hedley & McLachlin* Comments of Draft Easement Agreement (under separate cover marked confidential);
3. Draft Easement Agreement between NPCA and NRWC (under separate cover marked confidential); and
4. NPCA Staff Impact Assessment of Options - attached

Prepared and Submitted by:

Carmen D'Angelo
Chief Administrative Officer
Secretary Treasurer

This report was prepared with the consultative input from the Senior Management Team, Kim Frohlich, Ecologist and Lee-Ann Hamilton, Biologist.

Staff Impact Assessment of Options

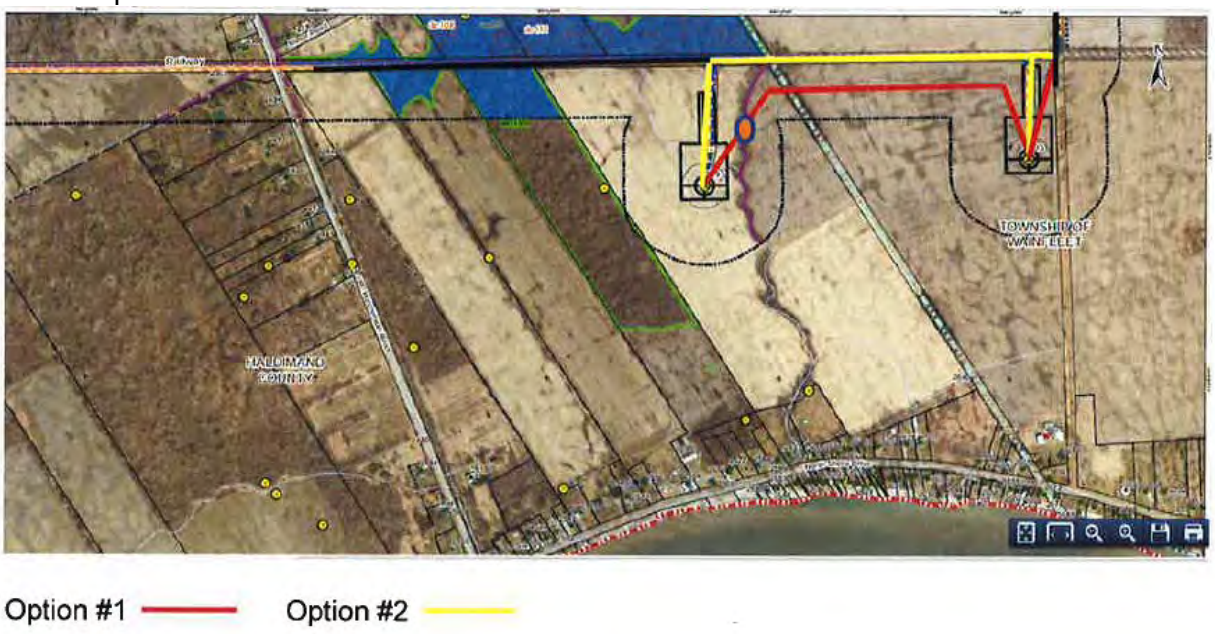
Purpose

To provide information further to the Boards April Meeting request, regarding Niagara Region Wind Corporation (NRWC) Access Options regarding the Gord Harry Trail Conservation Area (T 49 and T23).

Background:

NPCA staff was asked to provide further information on the potential impacts of the two proposed NRWC accesses related to the Gord Harry Trail Conservation Area for Turbines 49 and 23. The two options are illustrated below:

Access Options



In light of the above, a site inspection was conducted on June 1, 2015 by NPCA staff Lee-Ann Hamilton (Supervisor, Watershed Biology) and Kim Frohlich (Ecologist) to assess potential impacts. The resources are noted below for potential impacts. Details on proposed construction for the access was not available, and access to private land was not gained by NPCA staff for review of adjacent lands, and therefore not included in this impact assessment.

NPCA staff review offers the following for consideration:

Natural Heritage Resources in the area include:

- Species at Risk - Snapping Turtle (Special Concern) and Blanding's Turtle (Threatened), Bobolink (Threatened bird) and Bald Eagle (Special Concern)
- Moulton West, and East, Provincially Significant Wetlands (PSW)
- groundwater recharge area
- Hoover Creek

Potential impacts to existing resources include:

Option along Gord Harry Trail (Option 2):

- Vegetation was contiguous including mature trees, tall shrubs and ground cover on the south side; and shrub and ground cover on the north side - Construction and access widening would likely require removal of a portion of this vegetation.
- Provincially significant Wetland to the northwest - Construction, access widening, and decommissioning activities may result in potential reduction or alteration of wetland hydrology and habitat loss
- Drain/waterway is present on both the north and south sides of the property; Hoover Creek exists at the southwest corner – potential impact include sedimentation and habitat loss
- Potential noise of equipment/construction on breeding birds
- Wildlife habitat corridor (including possible use by turtle Species at Risk) - Construction, maintenance, and decommissioning activities could result in mortality to species moving through the area or potential nesting
- Potential impact to turtles or turtle nests using the corridor May 1 through October 31 - Construction, maintenance, and decommissioning activities could result in impacts to species, eggs, offspring, and useable habitat during this time.

Option South of Gord Harry Trail (Option 1):

- Hedgerow – Construction would likely require removal of a portion of this vegetation.
- Waterway crossing at west end – New culvert installation may impact the watercourse by removing habitat and vegetation cover and sedimentation into the watercourse may occur as a result of construction activities.
- Farm field with existing vegetation (including potential use by bird species at risk if left in hay/pasture) – Construction of new access road may remove Species at Risk habitat (potential bird and turtle areas).
- Potential noise of equipment/construction on breeding birds
- Habitat corridor area (including possible use by turtle Species at Risk) - Construction, maintenance, and decommissioning activities could result in mortality to species moving through the area.
- Potential impacts to turtles or turtle nests on the existing trail (including Species at Risk turtles) and protection of eggs May 1 through October 31

In light of the above, mitigative measures for potential impacts on plants and animals would be required for both options. NPCA staff would suggest the following mitigation/conditions be added to any agreement for these proposed works. Review of detailed construction drawings may result in some additional mitigation requirements:

Mitigation/Conditions for Potential Impact of Both Options

POTENTIAL IMPACTS	**POTENTIAL MITIGATION**
Vegetation removal	- No removal of any natural vegetation within the wetland (PSW). - Minimize the removal of trees or other vegetation along the Gord Harry Trail. Additional considerations of construction footprint extent and location for access would be required, if

	the Gord Harry Trail is chosen, to minimize site impacts (i.e. to determine optimal location north, south or balance on both sides of the existing trail). The area should be staked to visually identify and finalize any construction limits - The installation of a limit of work fence would be required to prevent material/equipment from entering non-construction area - Large stock tree planting may be required at a 2:1 ratio for all trees removed from the trail corridor.
Monthly use of trail/access route by vehicles may impact turtles and nests	- Exclusion fence installed along the perimeter as per the consultants-MNR EIS protocol, or - No vehicle traffic allowed on the trail from May 1 to October 31 of any year unless an environmental consultant/herpetologist conducts nest searches and determines that there are no nests in the area - Vehicular site use for transmission tower access/ maintenance from May 1 through Oct. 31 requires one to walk/assess area for basking turtles and disturbed soil/nesting prior to driving and avoid any species/areas found
Construction noise for adjacent breeding birds	- Vegetation removal associated with clearing, site access and staging should occur outside the key breeding bird period identified by Environment Canada for migratory birds to ensure compliance with the *Migratory Birds Convention Act* (MBCA), 1994 and Migratory Bird Regulations (MBR). If vegetation is to be removed between March 15 and August 31, a nest survey should be completed by a qualified avian biologist prior to commencement of works to identify and locate active nests of species covered by the MBCA. This should include the development of a mitigation plan to address any potential impacts on migratory birds and their active nests.
Groundwater recharge area	- No vehicle fuelling on site. - Sediment controls. - Pervious granular materials only allowed for trail repair/upgrade. - All granular materials must be washed and free of fine particles.
Potential Wetland Impacts (i.e. vegetation loss, soil compaction.)	Any trail widening may be restricted to the south to minimize impacts. Clear limit of work fencing installed along edge of wetland to prevent storage of materials, grading, removal of vegetation or equipment entering the wetland boundary. No vehicle fuelling on site. Sediment controls.
Creek crossing	- Detailed design of crossing required. - Specific design mitigation measures can be provided. - NPCA Permit may be required.
Sediment entering wetland and/or watercourse	- Specific sediment and erosion control mitigation measures can be provided. - All granular materials must be washed and free of fine particles.

Specific construction and maintenance mitigation measures can be provided by staff to reduce the potential impacts to the natural heritage features present once the preferred Option has been chosen.

Future maintenance activities requiring construction, placement or removal of granular materials or removal of vegetation must adhere to the above mitigation measures, and may require an NPCA Permit at that time.

Discussion:

To provide the Board with a summary of potential impacts of the Gord Harry Trail Conservation Area, for its' consideration.

Should the Gord Harry Trail Conservation Area Option be approved, a land use agreement would need to be entered with the proponent to ensure all potential impacts are minimized. This would assist in maintaining the watershed's natural resources (wildlife habitat) by balancing conservation and sustainable development for future generations and supporting the organization to achieve its mission, vision and values.

COMMUNICATIONS TOWER – GORD HARRY TRAIL

THIS AGREEMENT made this 27th day of OCTOBER, 2005

BETWEEN:

NIAGARA PENINSULA CONSERVATION AUTHORITY
(hereinafter referred to as the "Grantor")

OF THE FURST PART;

- and -

ROGERS WIRELESS PARTNERSHIP
(hereinafter referred to as the "Grantee")

OF THE SECOND PART;

WHEREAS:

(i) The Grantor is the registered owner in fee simple of the lands described in Schedule "A" hereto annexed (the "Lands");
(ii) The Grantor has agreed to grant a 20 (Twenty) year easement to the Grantee over the lands described in Schedule "A" hereto annexed;

NOW THEREFORE THIS INDENTURE WITNESSETH THAT in consideration of the premises and of the sum of One ($1.00) Dollar of lawful money of Canada now paid by the Grantee to the Grantor, receipt whereof is hereby acknowledged:

1. The Grantor grants, conveys and transfers unto the Grantee, and its servants, agents, contractors and workmen, successors and assigns, the right, licence, liberty, privilege and easement:
   (a) to enter upon, lay construct, maintain, inspect and repair, an access road upon the lands described in Schedule "A"; and
   (b) to enter upon the Lands described in Schedule "A" at all times, and to pass and repass at all times with plant, machinery, material, vehicles and equipment for all purposes necessary or incidental to the exercise of and for the enjoyment of rights, licences, privileges and easements herein granted.

2. The Grantor shall not, without the prior consent of the Grantee in writing, excavate, drill install, erect or permit to be excavated, drilled, installed or erected, on or under the Lands described in Schedule "A", any pit well, foundation, pavement, building or other structure or installation, or in any way restrict, impede, affect or alter the construction of the access road on the Lands described in Schedule "A", but otherwise the Grantor shall have the full right to use and enjoy the Lands described in Schedule "A", subject always to and so as not to interfere with the easement, rights, licence and privileges hereby granted and conferred upon the Grantee.

3. When entering the Lands described in Schedule "A", with vehicles or equipment, the Grantee, and its servants, agents, contractors and workmen, successors and assigns, shall maintain a slow speed of travel and yield to trail traffic.

4. After each entry upon the Lands described in Schedule "A", the Grantee shall restore them to the same condition as nearly as may be possible as they were in at the time of such entry.

5. The easements herein are declared to be appurtenant to and for the benefit of the operations of the Grantee, being the operation of a wireless installation, to which this access route is connected.

6. The easement shall not be extended to any other parties without prior written consent of the Grantor.

7. This agreement shall enure to the benefit of and be binding upon the parties hereto and their respective heirs, executors, administrators, successors and assigns.

IN WITNESS WHEREOF the parties hereto have executed this Agreement the day and year first above written.

SIGNED, SEALED AND DELIVERED in the presence of:

NIAGARA PENINSULA CONSERVATION AUTHORITY
Per:

A. L. Burt, General Manager /Secretary Treasurer

ROGERS WIRELESS PARTNERSHIP
Per:

Mike Millar
Regional Manager, Real Estate
I have the authority to bind the Corporation

THIS AGREEMENT made this 8TH day of DECEMBER., 2005

BETWEEN:

NIAGARA PENINSULA CONSERVATION AUTHORITY
(hereinafter referred to as the "Grantor")

OF THE FURST PART;

- and -

BELL MOBILITY INC
(hereinafter referred to as the "Grantee")

OF THE SECOND PART;

WHEREAS:

(i) The Grantor is the registered owner in fee simple of the lands described in Schedule "A" hereto annexed (the "Lands");

(ii) The Grantor has agreed to grant a 20 (Twenty) year easement to the Grantee over the lands described in Schedule "A" hereto annexed; Six ~~Hundred~~ Thousand ($6000.00) as a one time payment

NOW THEREFORE THIS INDENTURE WITNESSETH THAT in consideration of the premises and of the sum of ~~One ($1.00)~~ Dollar of lawful money of Canada now paid by the Grantee to the Grantor, receipt whereof is hereby acknowledged:

1. The Grantor grants, conveys and transfers unto the Grantee, and its servants, agents, contractors and workmen, successors and assigns, the right, licence, liberty, privilege and easement:
   (a) to enter upon, lay construct, maintain, inspect and repair, an access road upon the lands described in Schedule "A"; and
   (b) to enter upon the Lands described in Schedule "A" at all times, and to pass and repass at all times with plant, machinery, material, vehicles and equipment for all purposes necessary or incidental to the exercise of and for the enjoyment of rights, licences, privileges and easements herein granted.

2. The Grantor shall not, without the prior consent of the Grantee in writing, excavate, drill install, erect or permit to be excavated, drilled, installed or erected, on or under the Lands described in Schedule "A", any pit well, foundation, pavement, building or other structure or installation, or in any way restrict, impede, affect or alter the construction of the access road on the Lands described in Schedule "A", but otherwise the Grantor shall have the full right to use and enjoy the Lands described in Schedule "A", subject always to and so as not to interfere with the easement, rights, licence and privileges hereby granted and conferred upon the Grantee.

3. When entering the Lands described in Schedule "A", with vehicles or equipment, the Grantee, and its servants, agents, contractors and workmen, successors and assigns, shall maintain a slow speed of travel and yield to trail traffic.

4. After each entry upon the Lands described in Schedule "A", the Grantee shall restore them to the same condition as nearly as may be possible as they were in at the time of such entry.

5. The easements herein are declared to be appurtent to and for the benefit of the operations of the Grantee, being the operation of a wireless installation, to which this access route is connected.

6. The easement shall not be extended to any other parties without prior written consent of the Grantor.

7. This agreement shall enure to the benefit of and be binding upon the parties hereto and their respective heirs, executors, administrators, successors and assigns.

IN WITNESS WHEREOF the parties hereto have executed this Agreement the day and year first above written.

SIGNED, SEALED AND DELIVERED in the presence of:

NIAGARA PENINSULA CONSERVATION AUTHORITY
Per:

A. L. Burt, General Manager /Secretary Treasurer

BELL MOBILITY INC.
Per:

(Name/Title) STEVE MOUNTFORD.
I have the authority to bind the Corporation DIR. WIRELESS NET. ENG + OPS.

Gord Harry Trail
NRWC Section

October, 2016

Kim Frohlich, Ecologist

NIAGARA PENINSULA CONSERVATION AUTHORITY

Overview

- Gord Harry Trail Conservation Area is 13 kilometers (8 miles) linear passive recreational trail
- NRWC and NPCA entered into an agreement to use a portion of the trail (approx. 629 metres/ 2064 feet)
- Project Site construction started in 2015, ended in 2016
- On-going site use for Wind Turbine maintenance (1/month) on average

NIAGARA PENINSULA CONSERVATION AUTHORITY

Changes

- Trail Wider in this section
- Plant removal on south side of trail for trail width
- Entrance/turning corner at Etling Road (North Side)
- Entrance to Wind Turbine 23 (South Side
- Culvert replacement (West end)
- Plant removal for Road By-pass Area

NIAGARA PENINSULA CONSERVATION AUTHORITY

Trail Width

- Widened
- Widening appears on South side only

NIAGARA PENINSULA CONSERVATION AUTHORITY

Etling Road Entrance

NIAGARA PENINSULA CONSERVATION AUTHORITY

Wind Turbine 23 Entrance

AUTHORITY

Road By-Pass Area

NIAGARA PENINSULA CONSERVATION AUTHORITY

Trail Look- wider

NIAGARA PENINSULA CONSERVATION AUTHORITY

View East End Looking West

2015

2016

NIAGARA PENINSULA CONSERVATION AUTHORITY

View West End Looking East

2015

2016

NIAGARA PENINSULA CONSERVATION AUTHORITY

Vegetation Removed

- Disturbed areas to be revegetated with hydroseeded Native Grass and Flower Seed Mix
- To include: Big bluestem, New England Aster, Fox sedge, Bottlebrush grass, Fowl manna grass, Fowl bluegrass and Brown-eyed Susans

NIAGARA PENINSULA CONSERVATION AUTHORITY

Vegetation Remediation (cont'd)

- Vegetation replacing previous species of:

  Staghorn Sumac, poplar, willow, tall shrubs, Canada goldenrod, Wild grape and invasives- white sweet clover

NIAGARA PENINSULA CONSERVATION AUTHORITY

NPCA Objectives

- Native plants
- Maintain cover and passive recreational use
- Vegetation to be grass and forbs instead of shrubs, grass and forbs of pre construction conditions
- Site will regenerate with existing seed bank and surrounding seed rain

NIAGARA PENINSULA CONSERVATION AUTHORITY

Strategic NPCA Mission

- Assists us in providing communication with the stakeholders and public and address customer and community concerns, as well as supporting the organization's mission, vision and values

NIAGARA PENINSULA CONSERVATION AUTHORITY

Report To: **Board of Directors**

Subject: **Watershed Plans – Establishing a Framework**

Report No: **109-16**

Date: **October 19, 2016**

RECOMMENDATION:

THAT Report No. 109-16 and the attached consultant's report titled, "Establishing a Framework for Watershed Plans in the NPCA Watershed" be RECEIVED for information purposes.

PURPOSE:

The purpose of this report is to:

- Present the Aecom Report titled, "Establishing a Framework for Watershed Plans in the NPCA Watershed," which assesses the status of the Niagara Peninsula Conservation Authority's (NPCA's) watershed plans and prioritizes the recommended actions for updating watershed plans in NPCA watersheds.
- Highlight the importance of prioritized watershed planning in addressing water quality issues in the NPCA watersheds.

This report aligns with NPCA's mandate to advocate and implement programs that "improve the quality of lands and water within its jurisdiction".

BACKGROUND:

Between 2005 and 2012 the NPCA developed watershed plans for 12 of its 18 watershed planning areas. The program was suspended in 2012 due to budget constraints. However, the development and implementation of watershed plans is highly recommended for various reasons, including:

- The province has been increasingly emphasizing the importance of using watershed plans and sub-watershed plans as a planning tool to help protect the natural environment while directing development to occur in an appropriate and sustainable manner. This focus on the use of watershed plans is evident in the province's proposed amendments to the Greenbelt Plan, Niagara Escarpment Plan, and the Growth Plan for the Greater Golden Horseshoe.
- Completing the NPCA's remaining six (6) plans, updating the existing 12 plans, and maintaining and implementing the plans was listed as an objective in Niagara Region's Water Quality Strategy (2014).

- Watershed plans provide an integrated and systematic approach to addressing water quality issues.
- The public expressed concern about the suspension of the program during the NPCA strategic plan consultation process.

In 2014 the Niagara Peninsula Conservation Authority (NPCA) was awarded a grant of $25,000 from *Niagara WaterSmart* to conduct an assessment of its watershed plans. The purpose of the study was to:

- Outline the evolution of watershed planning in Ontario;
- Review current best practices and legislation covering watershed planning in Ontario, and outline how it affects NPCA;
- Evaluate the status of NPCA's watershed plans and conduct a gap analysis by comparing the existing plans to current best practices and requirements;
- Provide recommendations on the content of watershed and sub-watershed plans; and
- Provide recommendations on how to move forward with completing the remaining watershed plans, and updating existing plans.

Aecom was retained to undertake the study. The results of the study are provided in the draft report (Attachment #1). Prioritizing the recommended actions was a key element of the study report. For instance, NPCA wanted to know if existing older watershed plans should be updated first or whether the areas with no watershed plans should be a higher priority.

The Community Liaison Advisory Committee (CLAC) and a technical steering committee consisting of staff from NPCA, Niagara Region, and some municipalities provided input to the study.

DISCUSSION

The following is a brief description of the report sections to help guide the reader.

Section 1 outlines the purpose of the report.

Section 2 of the report outlines the development of watershed planning in Ontario, and describes how it affects the NPCA. Watershed planning focused on floodplain mapping in the early 1980s, but this has since evolved towards integrated watershed management where human activities and natural resources are managed on a watershed basis, and multiple issues and factors are addressed in a more holistic and integrated approach.

The NPCA's mandate is to *establish and undertake programs designed to further the conservation, restoration, development and management of natural resources (other than gas, oil, and minerals)*. Watershed and sub-watershed plans can assist NPCA in fulfilling this mandate in two main areas:

- Watershed plans can assist with policy review and development to oversee land use practices (e.g. hazard land identification and control, and application of stormwater management requirements).
- Watershed plans can provide direction to stewardship programs (e.g. implementation of programs that promote best management practices to protect and enhance watersheds).

Section 3 outlines the documents that were reviewed in the study including existing watershed plans, and other information obtained through more recent projects.

Section 4 outlines input from the CLAC and technical steering committee.

Section 5 provides a summary of the existing watershed plan reports and outlines the gaps that were identified. Table 5.2 describes the gaps that were identified for each watershed.

Section 6 summarizes the tasks that need to be completed for each watershed based on the gaps analysis and input from the steering committee and the CLAC. This section also explains how the watersheds and tasks were prioritized.

Summary

Watershed plans use a broad integrated approach where the primary intent is to protect the health of the ecosystem in the watershed through a more holistic approach.

Surface water quality is often linked to other factors such as soil erosion, and types of land uses; consequently, surface water quality was one of the key factors considered by the Aecom report, when prioritizing the watershed plans/studies.

A number of watershed planning areas were considered high priority based on the analysis by Aecom. Watersheds studies given a high priority should be completed in 2 to 5 years. Moderate priority watershed studies should be completed in 5 to 10 years.

Given they have no watershed plans or sub-watershed plans and are experiencing strong development pressures, Grimsby, Lincoln and South Niagara Falls are considered high priority areas. Big Forks Creek watershed was also considered a high priority area because of the poor quality of the surface water (e.g. high phosphorus concentrations). A key recommendation is to conduct surface water quality modelling in Big Forks Creek as well as the remainder of Central Welland River watershed. Other higher priority watersheds include Lake Erie North Shore, Fort Erie, and Beaverdams and Shriners Creek.

FINANCIAL IMPLICATIONS

This report is provided for information purposes only; however, a business case for undertaking watershed planning will be proposed in 2017.

RELATED REPORTS AND APPENDICES:

1. Attachment 1: Establishing a Framework for Watershed Plans in the NPCA Watershed – Draft, Sept 2016, by Aecom.

Previous Related NPCA Board Reports

1. NPCA Board report 112-14, *Niagara WaterSmart* Grant for Gap Analysis to establish a framework for Watershed Plans.
2. NPCA Board report 67-16, 2016 NPCA Water Quality Report.
3. NPCA Board report 80-16, Prioritization of BMPs to Improve Water Quality.

Prepared by:

Brian Wright, P.Eng.
Manager, Watershed Projects

Reviewed by:

Peter Graham, P.Eng.
Director, Watershed Management

Submitted by:

Carmen D'Angelo
Chief Administrative Officer / Secretary Treasurer

AECOM

Niagara Peninsula Conservation Authority

Establishing a Framework for Watershed Plans in the NPCA Watershed - DRAFT

Report

Water AECOM

Niagara Peninsula Conservation Authority

Establishing a Framework for Watershed Plans in the NPCA Watershed - DRAFT

Prepared by:

AECOM
50 Sportsworld Crossing Road, Suite 290 519.650.5313 tel
Kitchener, ON, Canada N2P 0A4 519.650.3424 fax
www.aecom.com

Project Number:

60339091

Date:

September, 2016

Statement of Qualifications and Limitations

The attached Report (the "Report") has been prepared by AECOM Canada Ltd. ("Consultant") for the benefit of the client ("Client") in accordance with the agreement between Consultant and Client, including the scope of work detailed therein (the "Agreement").

The information, data, recommendations and conclusions contained in the Report (collectively, the "Information"):

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- represents Consultant's professional judgement in light of the Limitations and industry standards for the preparation of similar reports;
- may be based on information provided to Consultant which has not been independently verified;
- has not been updated since the date of issuance of the Report and its accuracy is limited to the time period and circumstances in which it was collected, processed, made or issued;
- must be read as a whole and sections thereof should not be read out of such context;
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AECOM
50 Sportsworld Crossing Road, Suite 290
Kitchener, ON, Canada N2P 0A4
www.aecom.com

519.650.5313 tel
519.650.3424 fax

September XX, 2016

Brian Wright, MBA, P.Eng.
Manager, Watershed Projects
Niagara Peninsula Conservation Authority
250 Thorold Road West
Welland, Ontario, L3C 3W2

Dear Mr. Wright:

Project No: **60339091**

Regarding: **Establishing a Framework for Watershed Plans in the NPCA Watershed**

Please find attached the draft Report **Establishing a Plan for Watershed Plans in the NPCA Watershed**. The report details the background information and project understanding, describes the project process and summarizes our findings, conclusions and recommendations.

We trust that this report meets your requirements. Should you have any questions or comments, please do not hesitate to contact the undersigned.

Sincerely,
AECOM Canada Ltd.

Ray Tufgar, P.Eng., M.Eng., MBA
Lead, North America, Water Resources, Water
ray.tufgar@aecom.com

Distribution List

# of Hard Copies	PDF Required	Association / Company Name
1	√	Niagara Peninsula Conservation Authority

Revision Log

Revision #	Revised By	Date	Issue / Revision Description
1	RT	January 21, 2016	Draft
2	RT	April 14, 2016	Draft
3	RT	September 1, 2016	Draft

AECOM Signatures

Report Prepared By:

Ray Tufgar, P.Eng., M.Eng., MBA
Lead, North America, Water Resources,
Water

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Appendices

1. Introduction

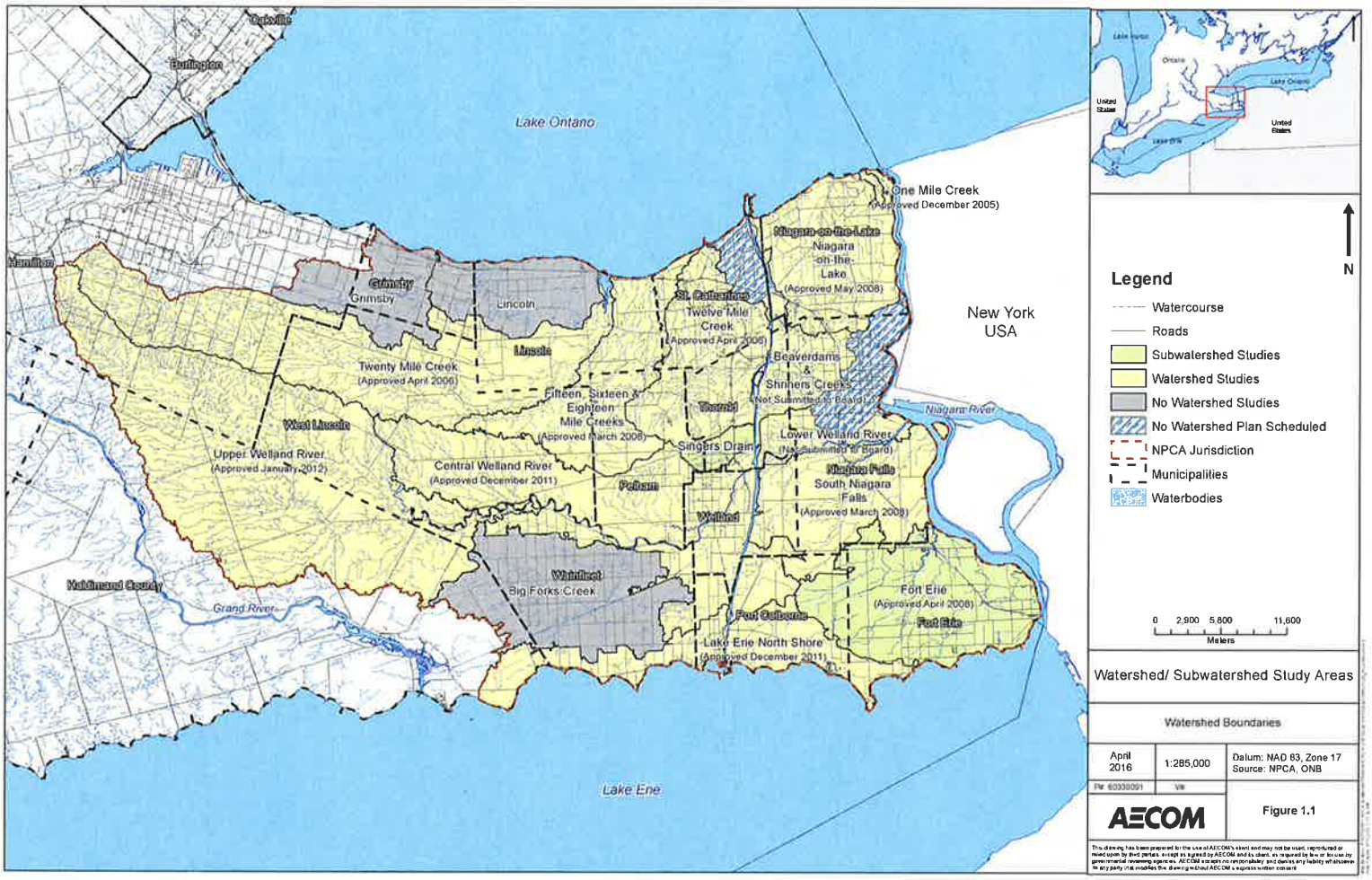
The Niagara Peninsula Conservation Authority (NPCA) has developed Watershed Plans for 12 of the 18 watersheds in its area of jurisdiction prior to being suspended due to budget constraints in June 2011 (see **Figure 1.1**). An objective identified in the *Shoreline and Watershed Management Theme of the Niagara Water Quality Strategy* (2014) was to complete the remaining 6 Watershed Plans, update the existing 12 plans, and to maintain and implement all of them. Prior to commencing with this work, the NPCA decided to evaluate their status of watershed planning with respect to current practice and guidelines and to undertake a comprehensive gap analysis. NPCA then asked AECOM to: 'Establish a Framework for Watershed Plans in the NPCA Watershed'.

This report provides a summary of the gaps identified in the current Watershed and Subwatershed Studies that should be addressed so that the NPCA and its member Municipalities can develop and implement the management measure needed for directing future land use planning and management as well as carry out an effective stewardship strategy for the watersheds under its jurisdiction.

Integrated Watershed Management is constantly evolving in response to the need for improving the current science of Watershed Planning. Integrated Watershed Management is the process of managing human activities and natural resources on a watershed basis, taking into account social, economic, and environmental issues, as well as community interest in order to manage water resources sustainably (Conservation Ontario, 2012). An integrated Watershed Management process should result in sustainable outcomes by addressing issues in an integrated fashion, including science-based decision-making, improved collaboration, and leveraging existing local environmental and natural resource investments.

The *Framework for Watershed Plans in the NPCA Watershed* needs to address the requirements of provincial planning documents, including the MNRF guidelines: "Watershed Management on a Watershed Basis: Implementing an Ecosystem Approach" (June 1993), The Greenbelt Plan (2005), The Provincial Policy Statement (PPS, 2014) and the recent David Crombie report: "Planning for Health, Prosperity and Growth in the Greater Gold Horseshoe: 2015-2041" (2015). These documents are the primary overriding guidelines and policies directing Watershed and Subwatershed Planning. There are a number of legislative items directing individual elements of Watershed and Subwatershed Planning that are discussed later in this report.

The development of this framework requires a Gap Analysis based on a review of the existing NPCA Watershed Plans to determine any additional information that is required. The framework identifies and recommends best practices for Watershed and Subwatershed Planning, and their applicability within the NPCA Watershed. Recommendations (including priorities) includes; completing outstanding Watershed Plans, updating existing plans, and maintaining and implementing these plans. The report also identifies the disciplines that are critical to fully understand watershed characteristics and processes, including; Aquatic and Terrestrial Biology, Fluvial Geomorphology, Hydrology and Hydraulics, and Hydrogeology and Geology. This report presents the framework as identified above.


Oakville
Burlington
Lake Ontario
Hamilton
Grimsby
Lincoln
Twenty Mile Creek
(Approved April 2006)
West Lincoln
Upper Welland River
(Approved January 2012)
Haldimand County
Grand River
Central Welland River
(Approved December 2011)
Fifteen, Sixteen & Eighteen Mile Creeks
(Approved March 2008)
Thorold
Pelham
Whitchurch
Big Forks Creek
St. Catharines
Twelve Mile Creek
(Approved April 2006)
Niagara-on-the-Lake
Niagara on the Lake
(Approved May 2008)
One Mile Creek
(Approved December 2005)
Beaverdams & Shriners Creeks
(Not Submitted to Board)
Singers Drain
Lower Welland River
(Not Submitted to Board)
Niagara Falls
South Niagara Falls
(Approved March 2008)
Welland
Fort Erie
(Approved April 2008)
Port Colborne
Lake Erie North Shore
(Approved December 2011)
Niagara River
New York
USA
Lake Erie
Lake Huron
Ontario
Lake Ontario
United States
Lake Erie
United States
N
Legend
Watercourse
Roads
Subwatershed Studies
Watershed Studies
No Watershed Studies
No Watershed Plan Scheduled
NPCA Jurisdiction
Municipalities
Waterbodies
0 2,900 5,800 11,600
Meters
Watershed/ Subwatershed Study Areas
Watershed Boundaries
April 2016
1:285,000
Datum: NAD 83, Zone 17
Source: NPCA, ONB
Pit: 60333091
Ver
AECOM
Figure 1.1

The review of documents, gap analysis and subsequent development of recommendations to move forward in Watershed and Subwatershed Planning within NPCA was carried out considering two primary roles that NPCA carries out to fulfill Watershed Management responsibilities:

- The development and implementation of a Stewardship Plan to protect, enhance and rehabilitate ecological functions in the watersheds.
- To administer and provide guidance to its member Municipalities with respect to land use planning, the review of urban land use plans, monitoring for potential impact and development of mitigation measures as necessary.

The report sections are structured as follows:

1. **Introduction:** Outline of the purpose of this study.
2. **Background:** Overview of current status of Watershed and Subwatershed Planning in Ontario, Legislation affecting Watershed and Subwatershed Planning and a discussion of the roles and responsibilities of NPCA and its member Municipalities.
3. **Review of Documents:** Discussion on the approach taken in the review of current documents and a summary of the current state of the NPCA watersheds, based upon the watershed report cards.
4. **Community and Steering Committee Input:** Input review from CLAC and the Steering Committee.
5. **Summary of Information and Report Reviews - Gap Analysis:** Summary of the current watershed and subwatershed reports and the gaps identified.
6. **Strategy for Watershed and Subwatershed Planning:** Recommendation for studies need to fill the gaps identified including recommended priority.

2. Background

2.1 The Watershed and Subwatershed Planning Process

2.1.1 State of Watershed and Subwatershed Planning in Ontario and How it Affects NPCA and its Municipalities

Planning for the protection and conservation of natural resources and the management of land within the study area, is the responsibility of landowners, Provincial Agencies, NPCA and member Municipalities. Authority for such land use planning is provided by the Planning Act (R.S.O. 1990) of Ontario. Directions for Watershed Planning, as part of the Official Plan process within Municipalities is provided in the Provincial Policy statement (PPS) (2014). As such, Watershed and Subwatershed Planning is required as part of the planning process, through the PPS. However, the steps to follow to accomplish this are left up to the Municipalities and Conservation Authority.

The NPCA functions under the Conservation Authorities Act (2015). One of the main purposes is to manage, conserve and protect natural resources throughout the NPCA watershed (including the Region of Niagara, City of Hamilton and Haldimand County. Conservation Authorities, including NPCA, work closely with their members in developing policies and procedures to fulfill this mandate. One of these tools is the use of Watershed and Subwatershed Studies to help in guiding both their stewardship strategies and the land use planning process.

The primary method of planning at the municipal level is the Official Plan (OP). This is a planning document that is used by council and land owners as a decision making guide. The OP sets out objectives and policies that establish the basis for land pattern change and for protecting and conserving natural resources. To implement the OP's policies and objectives, Municipalities pass zoning by-laws which establish certain land use rights, and restrictions, on individual properties. Area Municipalities approve the creation of new lots and their supporting services through plans of subdivision and consents to sever.

The following summary of the status of planning provides a context for understanding how Subwatershed Planning objectives can be implemented by various government institutions.

- The Government of Ontario has put into place a Provincial Policy Statement (2014) that provides direction in achieving sound environmental objectives in the subwatershed. Additional legislation exists that applies to the development and implementation of Subwatershed Plans, including: Greenbelt Plan, Places to Grow Plan, Environmental Protection Act, Environmental Assessment Act, Planning Act, and Conservation Authorities Act.

- NPCA is contained within the municipal boundaries of the Region of Niagara (and its corresponding Municipalities) Haldimand County and City of Hamilton, with the Region of Niagara having the largest coverage area. Within this area, growth and development is primarily controlled and directed by the Regional or Municipal Official Plan, which implements the Niagara Region Growth management Strategy, the Provincial Growth Plan for the greater Golden Horseshoe, and the Greenbelt Plan. Within Hamilton and Haldimand County, land use planning is also controlled by Official Plans within their jurisdiction. Among other matters, these policies and regulations, together with the Provincial Policy Statement, are designed to provide reasonable protection for significant natural areas such as floodplains, Environmentally Sensitive Areas and Provincially Significant Wetlands against changes in the use of land either in or adjacent to them.

2.1.2 Evolution of Subwatershed Planning

Watershed and Subwatershed Planning has evolved over time to become more comprehensive (see **Figure 2.1**). As a result, it has required an increasing level of involvement from various scientific disciplines as well as an increasing level of integration of disciplines. This has resulted from the inclusion of increasing concerns with regard to environmental impacts, plus the recognition of the complexity of watershed and subwatershed functions and the need to acknowledge this and include it in the management strategies. This is to ensure the protection and/or enhancement of the watershed from an ecological standpoint and provide public safety.

- In the early 1980's Subwatershed Studies were mostly comprised of floodplain management, runoff quantity control, erosion/flood control works, major/minor system design, and culvert improvements.
- In the late 1980's, Subwatershed Planning was expanded to also include water quality, and erosion/sediment control.
- In the early 1990's, Subwatershed Planning was expanded further to add monitoring, enhancement opportunities, infiltration, water temperature, baseflow maintenance, and fisheries/aquatic habitat.

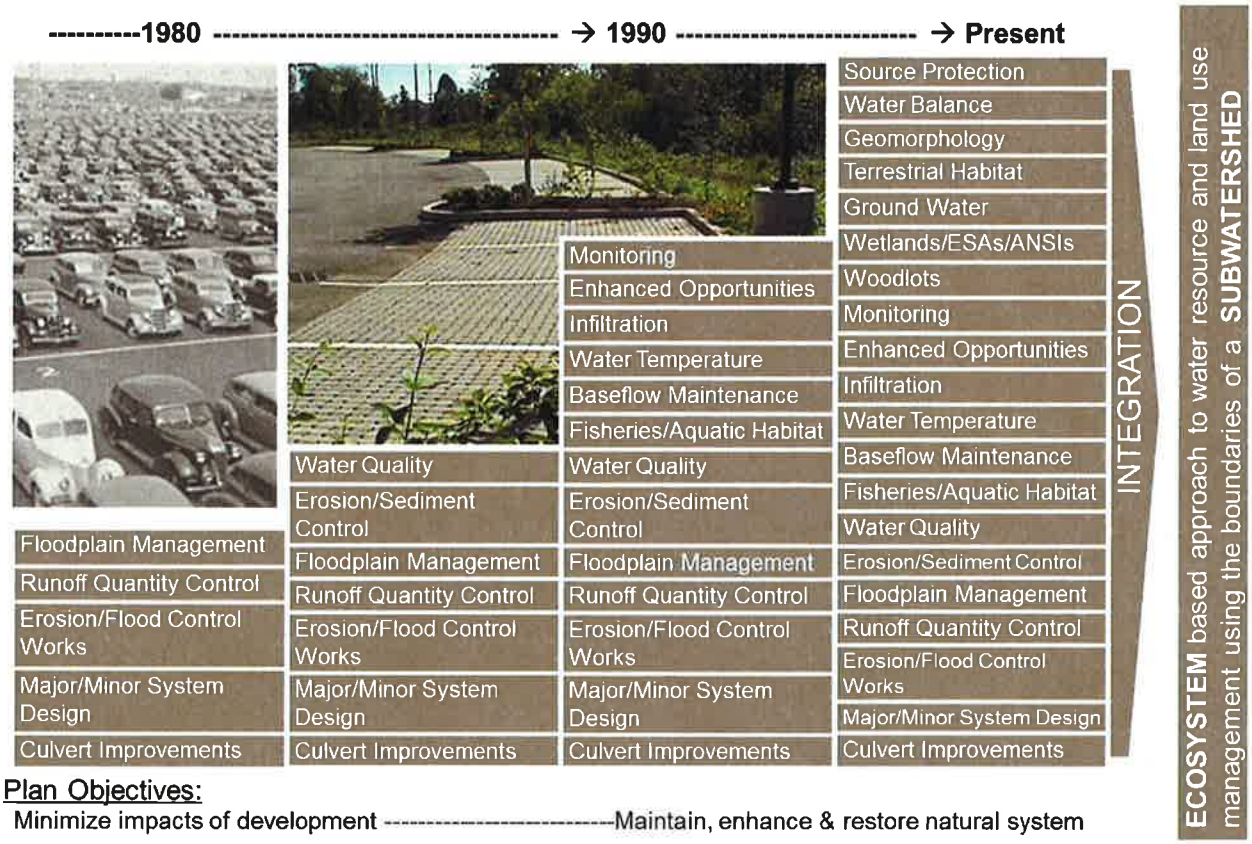
Watershed and Subwatershed Planning was formalized by MNRF through the development of guidelines entitled, "Watershed Management on a Watershed Basis" Implementing an Ecosystem Approach (June 1993) (referred to as MNRF Guidelines (1993)). Further to this, Conservation Ontario produced a document outlining the principals behind an integrated approach needed for watershed management (Conservation Ontario April 2012). These principals are stated as follows:

> *"**Integrated watershed management** is the process of managing human activities and natural resources on a watershed basis, taking into account social, economic, and environmental issues, as well as community interests, in order to manage water resources sustainability.*
>
> *This approach enables us to address multiple issues and stressors across sectors in a more efficient and holistic manner, taking advantage of existing local watershed initiatives, programs and partnerships.*
>
> *To effectively understand and influence the protection of the Great Lakes, IWM needs to consider the nearshore coastal areas and the inter-relationships with the associated Great Lake shorelines and watersheds."*

These documents set the framework for the development of comprehensive Watershed and Subwatershed Plans. They also set the process of incorporating Watershed and Subwatershed Strategy Development into the planning process. Since that time, the Ministry of Municipal Affairs and Housing has incorporated Watershed and Subwatershed Planning requirements into the Provincial Policy Statement.

Present day Subwatershed Planning also includes geomorphology, terrestrial habitat, ground water, wetlands/ESAs/ANSIs, and woodlots in addition to the above. Today's Subwatershed Planning is an integrated ecosystem-based approach to water resource and land use management using the boundaries of a subwatershed.

Figure 2.1 Evolution of Subwatershed Planning



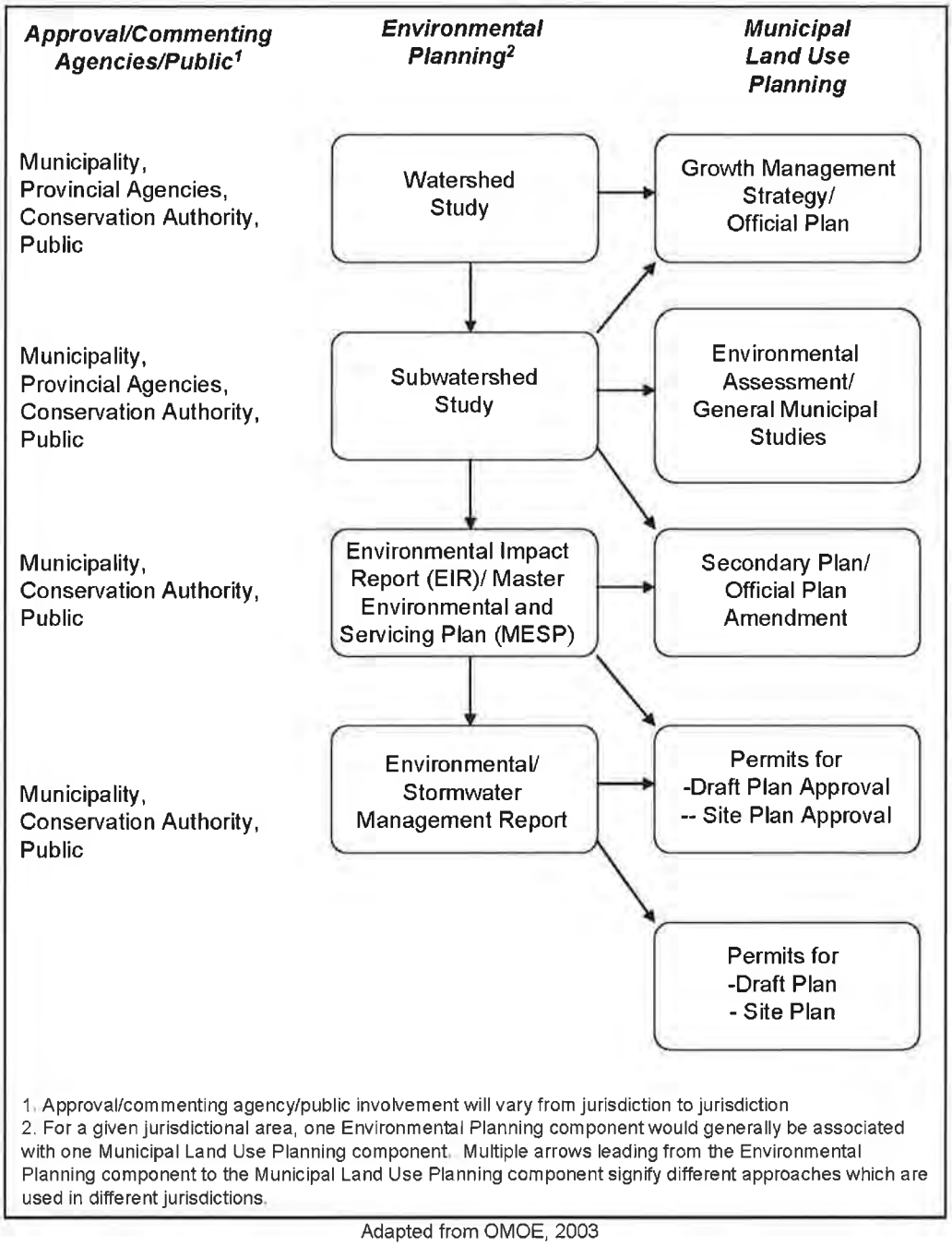
2.1.3 Overall Process-Watershed Studies, Subwatershed Studies and Municipal Planning

Watershed Planning

The Watershed and Municipal Planning Process as presented in **Figure 2.2** shows the typical process that follows the Watershed Plan stage through to site-specific management plans. In the first stage of Watershed Planning, a broad approach is taken to provide watershed-wide policy on various issues with a focus on water and water-resources related issues as well as the natural heritage system from a high level (ecological integrity)(see **Figure 2.3**). The Watershed Plan delineates Subwatershed Planning areas, and presents goals, objectives and targets for Subwatershed Studies.

Watershed Plans are often referenced in the development of Upper Tier Municipal Plans, which are subsequently used to support the development of Regional Official Plans and By-Laws.

Figure 2.2 Watershed and Municipal Planning Process



Adapted from OMOE, 2003

Figure 2.3 Watershed Plans

- will take a broad ecosystem approach to water, water related natural features, terrestrial resources, fisheries, water dependencies/linkages and valley/open space systems

- will provide watershed-wide policy and direction for:
  - ecological integrity and carrying capacity
  - the protection of valley systems and green space planning
  - the management of water quantity and quality
  - aquifer and ground water management
  - fisheries management
  - rehabilitation/enhancement programs
  - a framework for implementation of watershed policies and programs
  - regional opportunities/constraints
  - document servicing needs/availability of water/sewerage

- will delineate subwatershed planning areas
- present targets, goals and objectives for subwatershed

PLAN RECOMMENDATIONS TO BE INPUT TO OFFICIAL PLANS

From: Subwatershed Planning (June 1993, Ontario Ministry of Natural Resources, Ministry of Environment and Energy.

Watershed Management Plans are developed with the intent to protect the health of the ecosystem as land uses change, by managing water, land/water interactions, aquatic life and aquatic resources within a particular watershed. The requirements as outlined in the MNRF Guidelines (1993) are illustrated in **Figure 2.3**. They are generally developed through collaboration between government agencies and other stakeholders and can be used as background documents for Regional Plans. In addition, they are used to develop overall watershed based stewardship plans.

Recommendations are made within the Watershed Plan on how to protect and enhance water resources in relation to changing land uses. It provides an understanding of how land use changes can take place without being in conflict with watershed and water resources. Watershed studies also become the starting point when undertaking smaller scale Subwatershed Management Plans.

Watershed Plans take a broad ecosystem approach to water, water related natural features, terrestrial resources, fisheries, water dependencies/linkages and valley/open space systems. Policy and direction is provided on a watershed-wide scale for ecological integrity, protection of valley systems, green space planning, management of water quantity and quality, aquifer and ground water management, fisheries management, rehabilitation/enhancement programs, framework for implementation of Watershed Policies and Programs, regional opportunities/constraints, and documentation of servicing needs/availability of water/sewerage. Although these broad issues are generally covered in a Watershed Plan, the main focus is water and water resources-related issues. The ecological mapping of a watershed provides and prioritizes sensitivity ratings for natural values, and identifies selected areas for preservation, protection, enhancement, or rehabilitation. The overall Watershed Plan provides a snapshot of how the watershed should look and function. As part of this, typically Subwatershed planning areas are delineated, and targets, goals and objectives are presented for the Subwatershed Planning stage.

Subwatershed Planning

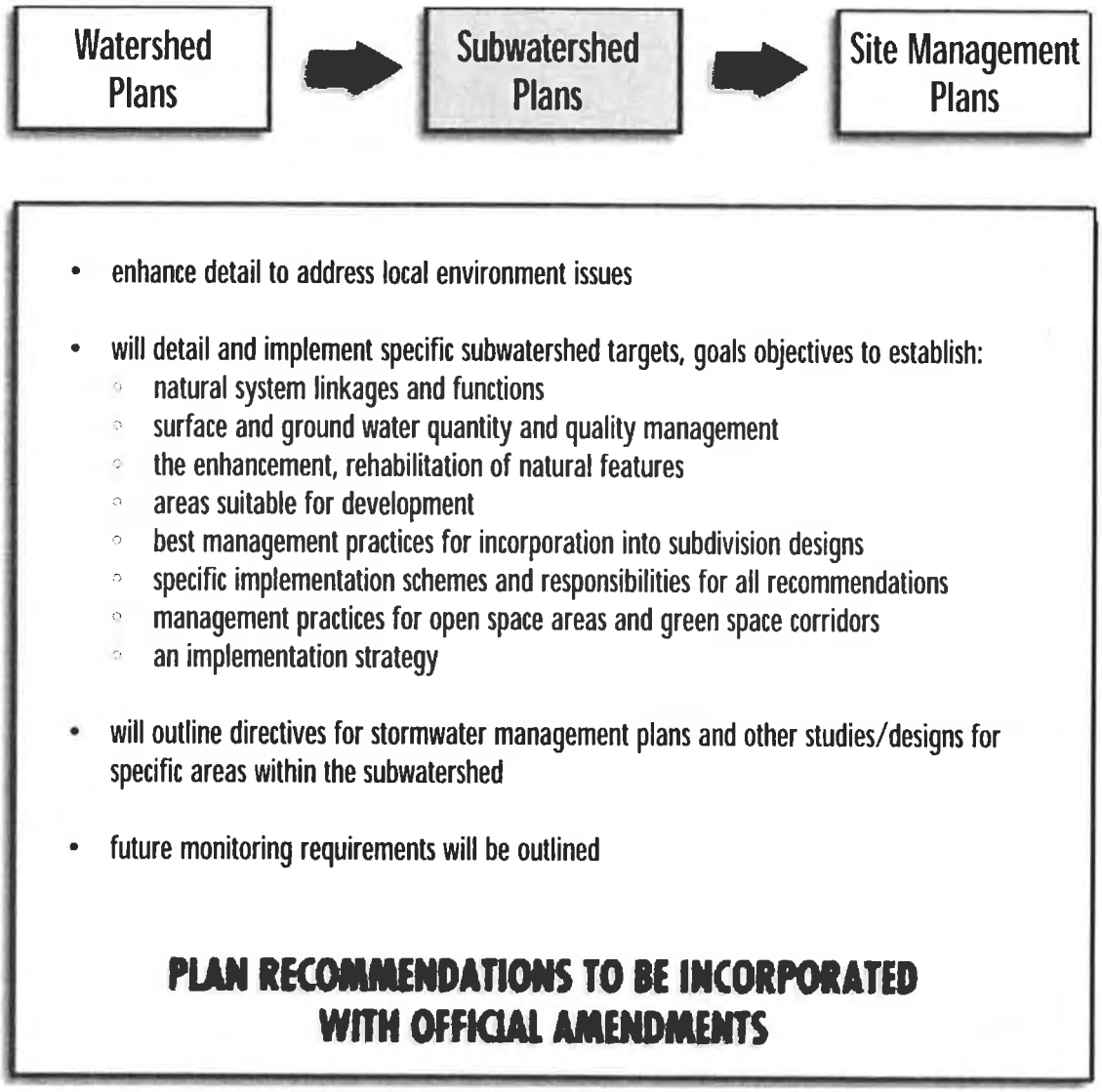
Subwatershed Studies provide a management strategy (within the context of land use changes) for the protection, enhancement and rehabilitation of natural environment features and their function. The requirements as outlined in the MNRF Guidelines (1993) are illustrated in **Figure 2.4**. These are typically carried out as part of the Municipal level planning process as a background document to a Secondary Plan. This provides the "footprint" for land use planning to allow official plans to be developed and submitted.

Municipalities use Subwatershed Plan stage details to address local environment issues. Municipalities often use Subwatershed Plans in their preparation of Municipal-Level Official Plan Amendments, which in turn guide in the development of plans of subdivisions.

The elements of a Subwatershed Plan (**Figure 2.4**) typically include:

- Specific goals, objected and related targets to meet these objectives set.
- Delineate the Natural Heritage System (NHS) including buffers and linkages.
- Identify and quantify the subwatershed ecological characteristics and functions supporting those characteristics.
- Identify the "footprint" of the NHS that will constrain any future land use changes or activities.
- Develop a management strategy to protect and enhance the subwatershed during future land use activities and/or changes.
- Provide an implementation plan that outlines the action items along with roles and responsibilities of the respective agencies including a monitoring plan.

Figure 2.4 Subwatershed Plans



From: Subwatershed Planning (June 1993, Ontario Ministry of Natural Resources, Ministry of Environment and Energy.

As outlined in **Figure 2.5** below, there are four major phases in a Subwatershed Plan. This is also referred to as the Adaptive Environmental Management (AEM) loop.

Phase I – Involves establishing the form, function and linkages of the water and related environmental resources. This is done by examining environmental features and functions (i.e., soils, climate, groundwater, surface waters, river systems, habitats, and wildlife) and how they interrelate.

Phase II – Further characterization of subwatershed and data collection (based on the focus provided by Phase I). Detailed analysis of processes that influence watershed characteristics. Impact analysis of land use changes and analysis of effectiveness of management scenarios.

Phase III – Development of a management strategy and implementation plan.

Phase IV – Implementation and monitoring plan and evaluation/modification of the management strategy.

A more detailed flowchart outlining the study process for Subwatershed Planning is illustrated in **Figure 2.6**. This figure illustrates the importance of the input from both external agencies and the public during the subwatershed process. External agencies will include the member Municipalities as well as both Federal and Provincial agencies (depending upon the nature of the subwatershed and issues involved). It is important to include public representation for the subwatershed, since the strategy will influence future land use and any mitigation measures identified in the development of a management strategy for that subwatershed. The public involvement typically includes landowners, special interest groups and other interested residents.

Site level Management Plans (often referred to as Environmental Impact Report or Master Environmental and Servicing Plan and Environmental/Stormwater Management Report, see **Figure 2.3**) present the designs of specific best management practices, subdivision drainage designs, and details of enhancement or rehabilitation programs. They demonstrate the compatibility of designs with the Subwatershed Plan recommendations. They may include permits and applications required for construction approvals, and possibly requests for clearance of draft plan conditions. Site Management Plans may identify the need for specific environmental assessments, and may detail design, operation and maintenance of Stormwater Best Management Practices. They should also provide recommendations to assist with the preparation of plans of subdivision and land/resource development proposals.

Role of Federal, Provincial and Conservation Authority Agencies

The roles and responsibilities with regard to Watershed and Subwatershed Planning, of course extend beyond the Municipalities. **Figure 2.7** provides an overview of the roles and responsibilities at the Federal, Provincial, CA and Municipal level. Much of this is mandated by policies or legislation, however, the level of involvement or day-to-day activities often varies by area, as well as time. Further detail on the legislation involved is outlined in **Figure 2.8**.

Figure 2.5 Adaptive Environmental Management (AEM) Loop

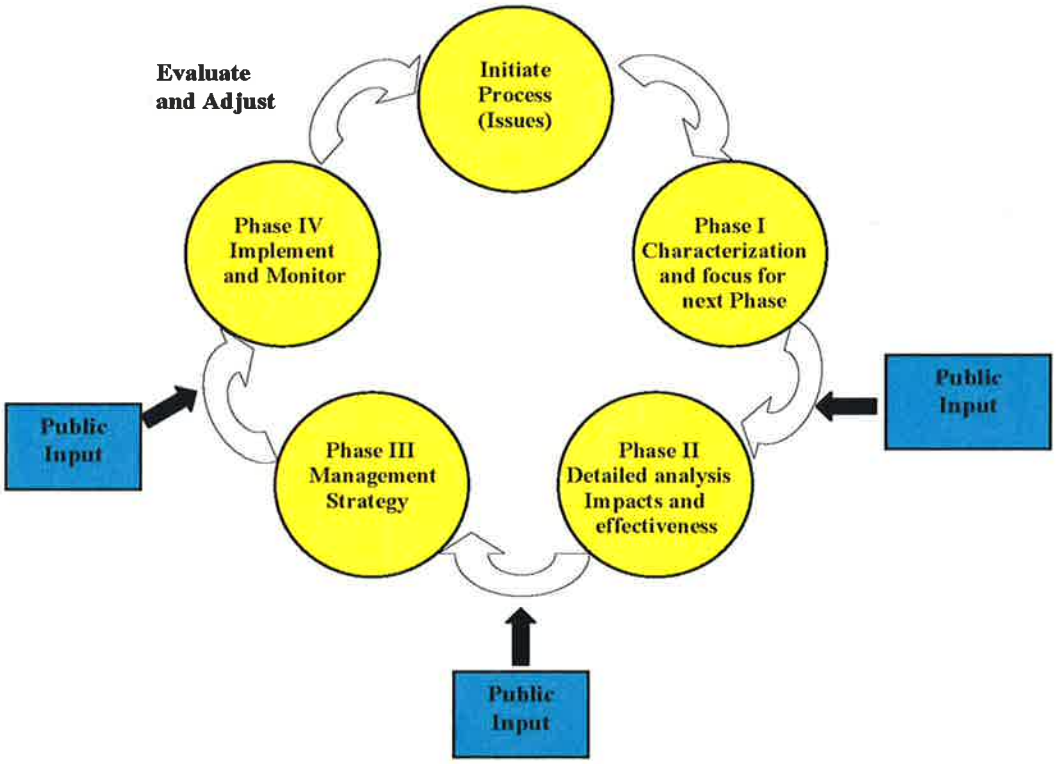


Figure 2.6 Subwatershed Study Approach

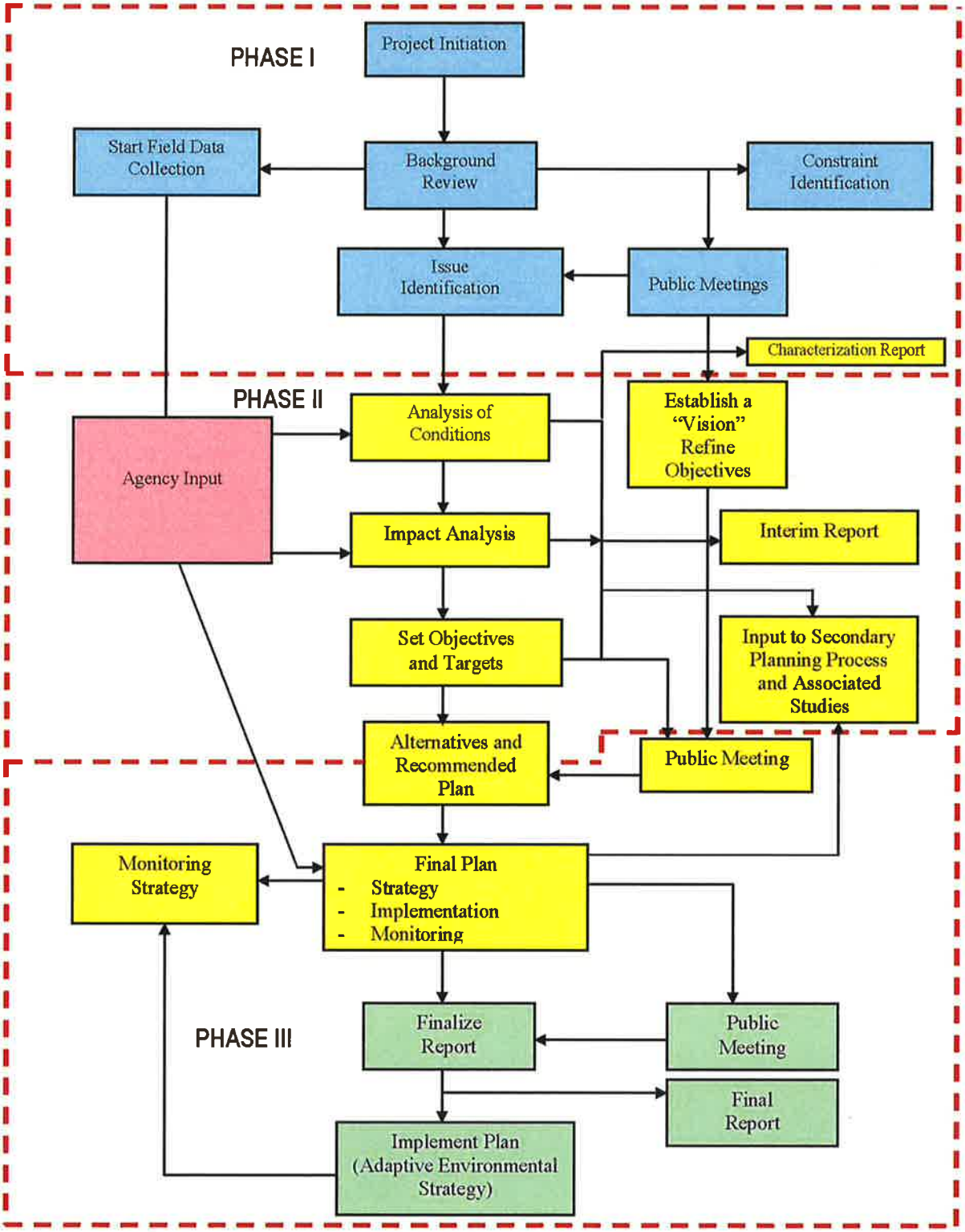


Figure 2.7 Watershed Planning Roles and Responsibilities

FEDERAL	PROVINCIAL	CONSERVATION AUTHORITY	MUNICIPALITY
Environmental Protection Fisheries (DFO) Canadian Environmental Assessment	**Ministry of Environment** -Water Quality -Stormwater Management -Source Protection **Ministry of Natural Resources** -Watershed Planning -Fishery Resource -Resource Planning -Wetlands **Ministry of Municipal Affairs** -Land use planning -Provincial Policy Statement **Ministry of Transportation** -Drainage Standards	Conservation Authority Act -Watershed/Subwatershed Planning (shared with member Municipalities) -Flood Protection -Erosion Control -Stormwater Management -Stewardship -Education -Monitoring	Municipal Act -Land use Planning -Servicing Standards -Stormwater Management -Stewardship -Education -Monitoring -Maintenance

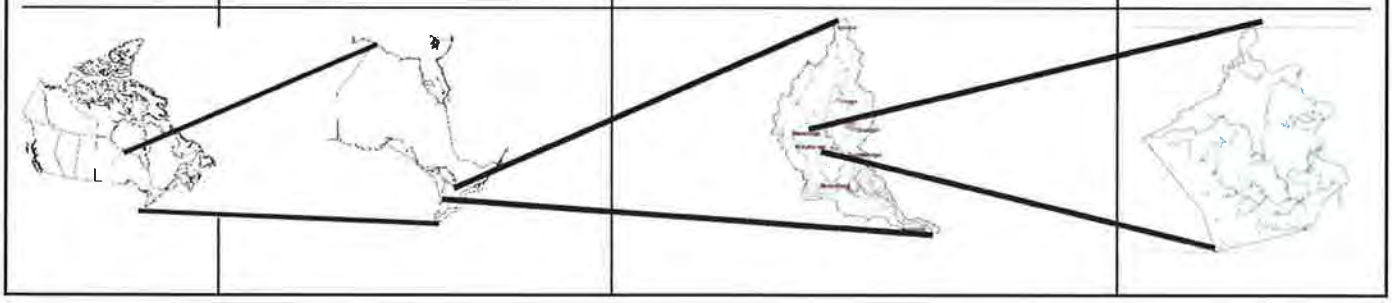
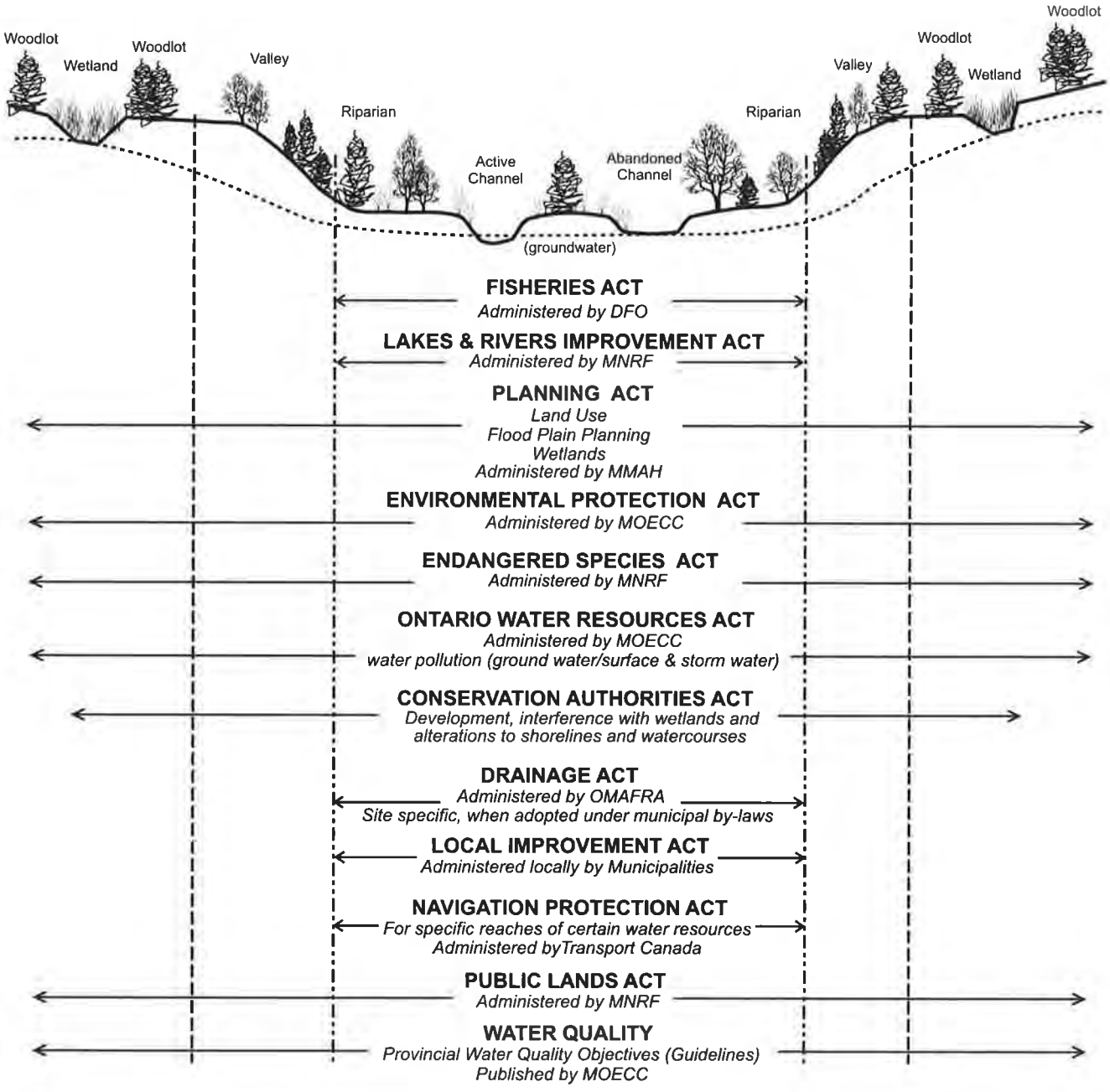


Figure 2.8 Legislative Framework



Subwatershed Studies Goals, Objectives and Targets

The overall goal of a Subwatershed Study is to provide recommendations and a strategic framework for the sustainable management of natural resources within the study area. It should provide sufficient detail to support the designation of a sustainable Natural Heritage System, through refinement of the Regional Natural Heritage System, as well as recommendations for a Water Management Strategy to be followed by a subsequent Secondary Plan and associated servicing studies. Future development and site specific environmental and servicing management plans must adhere to and implement these recommendations. The results of the Subwatershed Study must ensure that all applicable Provincial, Regional and local land use planning requirements, as well as Conservation Authority regulations, are adhered to. An example of the Natural Hazards Goals and Objectives used in Subwatershed Studies is provided in **Appendix A**. Following goals and objectives, specific targets are typically set for both terrestrial and aquatic conditions to facilitate future monitoring and evaluation activities, with the objective of ensuring that subwatershed goals and objectives are being met.

Differences Between Watershed and Subwatershed Studies

A summary comparison between Watershed and Subwatershed Studies is presented in **Table 2.1**. This is the current state of practice, and is the basis of what was used for this review. Watershed Studies can provide support for Regional level Official Plans and set only goals and objectives. Watershed issues and stressors are identified. In comparison, Subwatershed Studies can be prepared in support of Municipal level Official Plans, and set goals, objectives, and also targets. Watershed issues and stressors are also included, although at a more comprehensive level as compared to Watershed Studies.

Table 2.1 Watershed and Subwatershed Study Comparison

Watershed Study	Subwatershed Study
• In support of Regional OP	• In support of Municipal OP
• Goals and Objectives Set	• Goals, Objectives and Targets Set
• Watershed issues and stressors included	• Watershed issues and stressors included • More comprehensive than watershed level

• Comprehensive and Integrated approach
  • Hydraulics and Hydrology
  • Terrestrial Biology
  • Aquatic Biology
  • Fluvial Geomorphology
  • Hydrogeology
  • Water Quality
	• Comprehensive and Integrated approach
	  • Hydraulics and Hydrology
	  • Terrestrial Biology
	  • Aquatic Biology
	  • Fluvial Geomorphology
	  • Hydrogeology
	  • Water Quality

• Review of background data
  • Streamflows
  • Hydrogeology (including karst)
  • Water Quality
  • Terrestrial field work
  • Aquatic field work
  • Fluvial geomorphology
  • Linkages considered
	• Review of background data
	  • Rain gauge
	  • Streamflows
	  • Hydrogeology (including karst)
	  • Water Quality
	  • Terrestrial field work
	  • Aquatic field work
	  • Fluvial geomorphology
	  • Linkages considered

Watershed Study	Subwatershed Study

• Evaluate characteristics through background review	• Modelling/Analysis done
	  • Hydraulics and Hydrology (Calibrated)
	  • Hydrogeology (Calibrated)
	  • Water Balance
	  • Water Quality
	  • Fluvial Geomorphology
	  • Karst function modelled
	• Integration of modelling between disciplines
	• Completion of Characterization
	• Develop targets for stormwater management (SWM)

	• Streams Classified including belt width
• Generic mapping for hazard mapping	• Hazard lands identified including floodlines and stable slopes through modeling • Identifies the "footprint" for potential future landuse changes and natural heritage and hazard areas to protect and manage.

Both Watershed and Subwatershed Studies provide a comprehensive and integrated approach to hydraulics and hydrology, terrestrial biology, aquatic biology, fluvial geomorphology, hydrogeology, and water quality. Both also provide a review of background data such as streamflows, hydrogeology (including karst), water quality, terrestrial field work, aquatic field work, fluvial geomorphology, and consideration of linkages.

Watershed Studies evaluate characteristics through background review. Subwatershed Studies take this analysis further by carrying out modelling/analyses relating to hydraulics and hydrology (including calibration), hydrogeology, water balance (including calibration), water quality, fluvial geomorphology, and karst functions. Modelling is generally integrated with other disciplines. As such, the characteristics of the subwatershed are comprehensive and complete.

Floodline mapping (for the purposes of developing hazard mapping) is typically carried out by the Conservation Authority at the watershed level. More detailed, site specific hazard mapping, such as erosion, valley wall, and coastal setbacks are typically carried out at the subwatershed level. Impact analysis and modelling are generally carried out for hydraulics and hydrology, hydrogeology, terrestrial, aquatics, fluvial geomorphology, and water quality.

Watershed Studies typically consider climate change. Public and stakeholder input may be included. Subwatershed Studies consider climate change as well, and may possibly include modelling of climate change along with the consideration of potential mitigation. Public involvement is often mandatory, as Subwatershed Studies typically need to follow the EA process, setting the stage for master servicing plans.

Watershed Studies develop a Management Strategy for stewardship purposes, and generally include rehabilitation plans. Subwatershed Studies develop a Management strategy for land use planning purposes, and include enhancement plans for watershed resiliency.

Watershed Studies include major features and linkages of the Natural Heritage System (NHS). Subwatershed Studies include all features of the NHS in preparation for field staking. In addition, linkages are identified for

preservation and enhancement in land use planning. Subwatershed Studies identify management targets for future development and SWM purposes, and provide implementation and monitoring plans.

2.2 Legislation Affecting Watershed and Subwatershed Planning

There is a broad framework of legislation that regulates land use and other activities within a watershed and along streams. The current framework for Watershed Planning is illustrated in **Figure 2.8** and legislation related to issues is outlined in **Table 2.2**.

Table 2.2 Ontario Policies and Regulations Related To Watershed Planning

Problem/Issue	Legislation/Policy Document	Administered By
• Flood Protection Stormwater Conveyance Design	• Municipal Act	MMAH
	• Planning Act	MMAH
	• Building Code Act	MMAH
	• Conservation Authorities Act and Related Regulations	MNRF, CA
	• Lakes and Rivers Improvement Act	MNRF
	• Navigation Protection Act	TC
	• Floodplain Criteria (1982)	MNRF
	• Technical Guide – River and Stream Systems-Flooding Hazard Limit (2002)	MNRF
	• Beds of Navigable Waters Act	MNRF
	• Drainage Act	OMAFRA
	• Public Lands Act	MNRF
	• MTO Drainage Management Manual	MTO
• Sediment Control During Construction	• Municipal Act	MMAH
	• Conservation Authorities Act	MNRF, CA
	• Endangered Species Act	MNRF
	• Canadian Environmental Protection Act	EC
	• Lakes and Rivers Improvement Act	MNRF
	• Ontario Water Resources Act	MOECC
	• Fisheries Act	DFO
• Fisheries Protection	• Endangered Species Act	MNRF
	• Fisheries Act	DFO
	• Species at Risk Act	MNRF
• Bacteria Control	• Ontario Water Resources Act	MOECC
	• Canadian Environmental Protection Act	EC
• Water Quality	• Pesticides Act	MOECC
	• Canadian Environmental Protection Act	EC
	• Ontario Water Resources Act	MOECC
	• Clean Water Act	MOECC

• Watershed Planning	•	Conservation Authorities Act	MNRF, CA
	•	Crown Forest Sustainability Act	MNRF
	•	Drainage Act	OMAFRA
	•	Endangered Species Act	MNRF
	•	Environmental Assessment Act	MNRF
	•	Canadian Environmental Protection Act	EC
	•	Forestry Act	MNRF
	•	Fish and Wildlife Conservation Act	MNRF
	•	Historical Parks Act	MTCS
	•	Lakes and Rivers Improvement Act	MNR
	•	Municipal Act	MMA
	•	Ontario Planning and Development Act	MMA
	•	Ontario Water Resources Act	MOE
	•	Aggregate Resources Act	MNR
	•	Planning Act	MMA
	•	Canada Waters Act	EC
	•	Canada Wildlife Act	DFO
	•	Navigation Protection Act	TC
	•	Provincial Policy Statement	MMAH
	•	Species at Risk Act	MNRF
	•	Species at Risk	MNRF
	•	Migratory Birds Convention Act	EC
	•	Water Opportunities and Water Conservation Act	MOECC
	•	Greenbelt Act	MMAH
	•	Places to Grow Act	MMAH
	•	Canadian Environmental Assessment Act	EC
	•	Environmental Assessment Act	MEA

Agencies:	MMAH	-	Ministry of Municipal Affairs and Housing
	MNRF	-	Ministry of Natural Resources and Forestry
	CA	-	Conservation Authority
	TC	-	Transport Canada
	OMAFRA	-	Ontario Ministry of Agriculture and Food and Rural Affairs
	EC	-	Environment Canada
	DFO	-	Department of Fisheries and Oceans
	MOECC	-	Ministry of the Environment and Climate Change
	MTO	-	Ministry of Transportation
	MTCS	-	Ministry of Tourism, Culture and Sport

2.3 NPCA Administrative and Legislative Responsibilities

The administrative and legislative responsibilities of the NPCA are multifaceted, with a mandate to establish and undertake programs designed to further the conservation, restoration, development and management of natural resources. The NPCA fulfills this mandate by advocating and implementing programs that:

- Improve the quality of lands and waters
- Contribute to public safety from flooding and erosion
- Provide for the management of conservation and hazard lands
- Enhance the quality of life in its watershed by using its lands for recreation, heritage preservation and conservation education

The role of the NPCA from a Watershed and Subwatershed Management perspective can be viewed in two general areas.

1. Stewardship – The Conservation Authority has developed and is implementing a stewardship program that promotes and supports the use of land and stormwater management best practices to protect and enhance the watersheds under its jurisdiction. This includes farm conservation programs, promoting BMP's for agricultural activities, preservation of natural heritage lands, rehabilitation of terrestrial habitat, stream restoration and rehabilitation of aquatic habitat, etc. As part of this, NPCA carries out significant effort in understanding the watersheds. This includes monitoring, field work and studies to provide scientific background information on conditions, functions and the response characteristics of the watersheds to perturbations.
2. Plan review, policy development and administration to oversee land use practices. This includes the administration of a number of legislative documents or partnering with others in acting to protect and enhance environmental conditions. This ranges from hazard land identification and control, to land use application review and stormwater management requirements.

3. Review of Documents

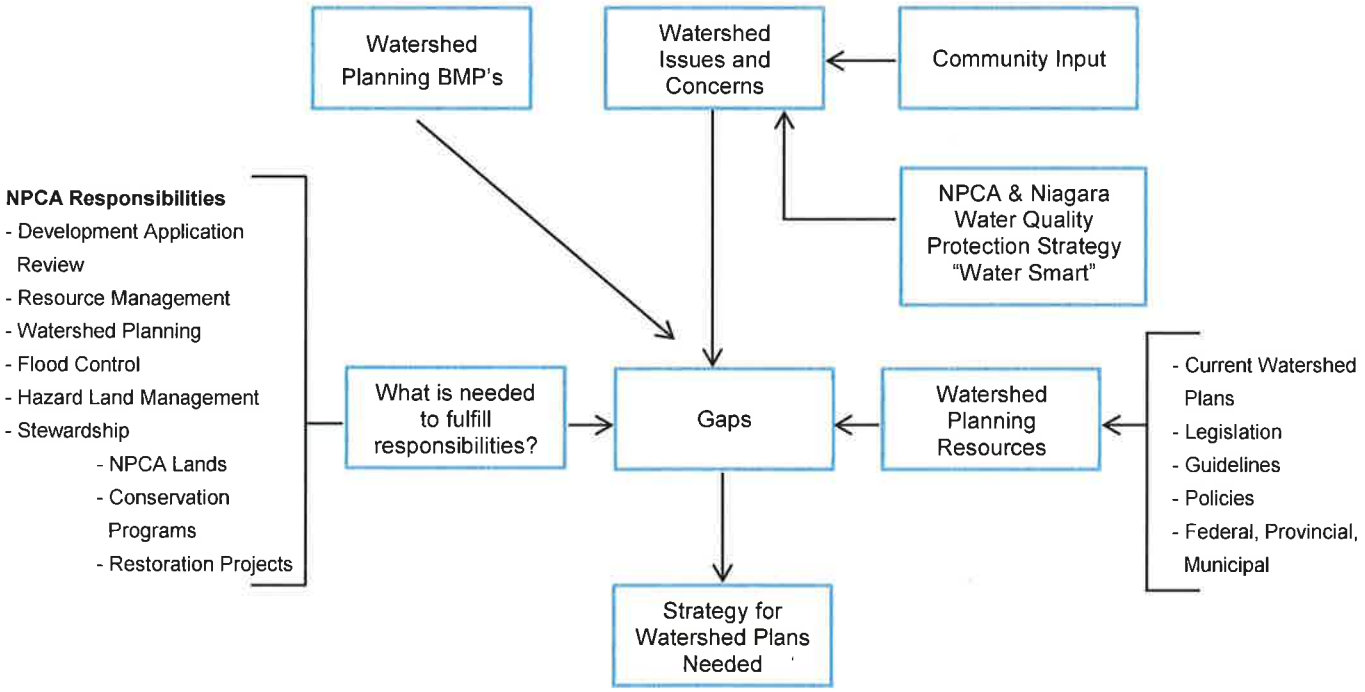
3.1 Assessing Status of Watershed and Subwatershed Plans

The primary purpose of this report is to provide recommendations on what is needed within the NPCA and its member Municipalities with regard to Watershed and Subwatershed Planning. To do this, the current Watershed and Subwatershed Reports were reviewed and current gaps were identified. The identification of these gaps was accomplished through consideration of the role and associated responsibilities of the NPCA (and its member Municipalities) (see **Figure 3.1**). This role and associated responsibilities, as they relate to Watershed and Subwatershed Planning, are discussed in **Section 2** of this report.

In addition, watershed related issues and concerns were identified through discussion with the Steering Committee and a meeting with the Conservation Liaison Advisory Committee (CLAC). Further insight into issues and concerns being faced by NPCA was obtained through the review of additional background information (such as the NPCA Watershed Report Cards).

This information review led to the identification of gaps related to Watershed and Subwatershed Planning and the development of recommendations for work required.

Figure 3.1 Gap Analysis Process Chart



3.2 Outline of Information and Reports Reviewed

The following Watershed and Subwatershed Reports were reviewed in the preparation of this report:

- 15-16-18 Mile Creek Watershed Plan (NPCA, 2008)
- Beaverdams & Shriners Creeks (NPCA, 2011)
- Central Welland River Watershed Plan (NPCA, 2010)
- Fort Erie Creeks Watershed Plan (Phillips, 2008)
- Lower Welland River characterization Report (NPCA, 2011)
- NOTL Watershed Study Report and appendices (Aquafor Beech, 2008)
- One Mile Creek Watershed Plan (Aquafor Beech, 2005)
- Port Robinson West Subwatershed Plan (TSH, 1999)
- South Niagara Falls Watershed Report (NPCA, 2008)
- Twelve Mile Creek Watershed Plan (NPCA, 2006)
- Twenty Mile Creek Watershed Plan (NPCA, 2006)
- Upper Welland River Watershed Plan (NPCA, 2006)
- Lake Ontario Shoreline Management Plan (NPCA, 2010)
- Lake Erie Shoreline Management Plan (Shoreplan, 2010)
- City of Hamilton – Airport Economic Growth District (AEGD) Subwatershed Study (Aquafor Beech, 2011)
- City of Thorold – Port Robinson West Scoped Subwatershed Study (Aquafor Beech, 2014)
- Fonthill Area 1, Subwatershed Study (Totten Sims Hubicki, no date)
- East Fonthill Subwatershed Study, draft 2009
- Master Drainage Plan Update Report – Binbrook Settlement Area (Westlake, 2008)

Additional relevant reports were reviewed to provide background information and are included in the references (**Section 7**).

3.3 NPCA and Watershed Report Cards

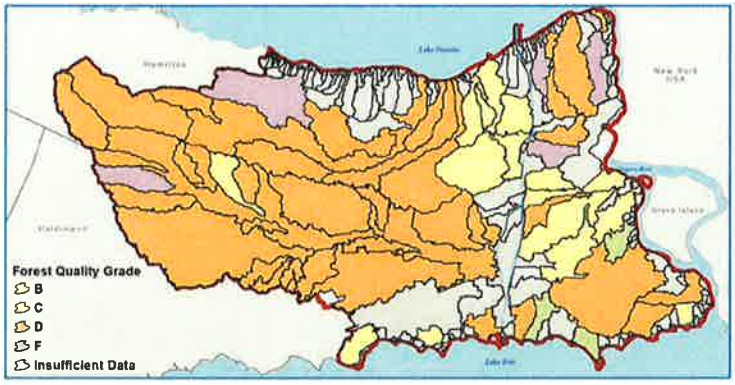
The NPCA Watershed Report Cards were reviewed to develop an understanding of current conditions within the various NPCA Watersheds. This provided information on the current "state of the watersheds" and helped determine watershed needs, particularly from a stewardship standpoint as well as data daps.

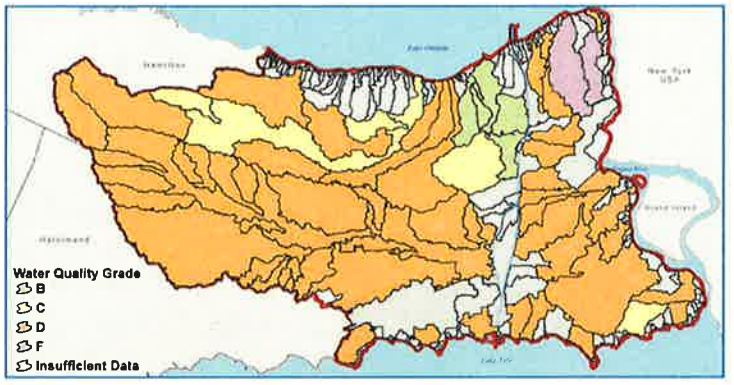
The Watershed Report Cards (2012) were developed by the NPCA for several of the subwatersheds (see **Figure 3.2**). The report cards provided a summary of surface water quality, forest and groundwater quality in order to better understand the watershed and help to focus efforts where they are most needed, as well as to track progress. They also help to identify healthy and ecologically important areas that require protection or enhancement. The report cards assigned a grade to the subwatershed measures, with grades standardized as A – Excellent, B – Good, C – Fair, D – Poor, and F – Very Poor.

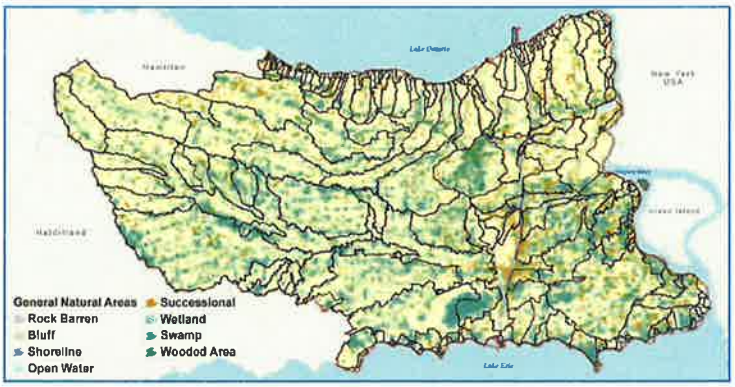
Our review was focused on surface water quality which is graded based on:

- phosphorus loading (contributions from excessive fertilizer use and effluent discharge)
- Escherichia coli (*E. coli*) bacteria (found in the intestines of humans and other animals)
- Benthic macroinvertebrates (small animals without a backbone that live at the bottom of streams)

Brief summaries of the individual Report Cards are provided in **Appendix B**.







Source
Niagara Peninsula Conservation Authority - Watershed Report Card 2012

AECOM

Watershed Report Card Summary (2012)
Synopsis of Results

Figure 3.2

Some of the key highlights for surface water and groundwater quality that were identified include:

- In terms of surface water quality, the majority of the subwatersheds scored D – Poor, due to high phosphorus concentrations and low benthic indicator scores.
- The lowest water quality scores were found in the Niagara-on-the—Lake watershed, including Two Mile Creek and Four Mile Creek.
- The highest surface water quality score was found in the Lower Twelve Mile Creek watershed, due to the large volume of Lake Erie water transported by the Welland Canal and Lake Gibson system.
- A major cause of impairment in the NPCA watershed continues to be nutrient and bacteria contamination in addition to other water quality stressors from non-point sources (agricultural/livestock runoff, faulty septic systems), and point sources (combined sewer overflow, urban stormwater).
- Groundwater quality and water levels in locally significant hydrogeologic areas are monitored by the NPCA as part of the Ministry of the Environment and Climate Change (MOECC) Provincial Groundwater Monitoring Network (PGMN).
- The groundwater quality at most of the monitored wells is good, but some did exceed Ontario Drinking Water Standards.
- Most exceedances were attributed to natural bedrock conditions, while nitrate exceedances at two wells were attributed to adjacent land use sources.
- In cases where rural residents utilize groundwater from dug or drilled wells, the property owner is responsible for making sure that the well is up to standard and is expected to have the water tested regularly to ensure that it is clean and safe.

4. Community and Steering Committee Input

AECOM met with the steering committee on a number of occasions throughout this study to gain their input and insights into this review and gap analysis.

January 23, 2015 – Steering Committee Meeting
May 14, 2015 – NPCA CLAC Meeting (presentation included in **Appendix C**)
August 11, 2015 – Steering Committee Meeting
December 8, 2015 – Steering Committee Workshop to discuss recommended steps and prioritize

AECOM circulated a list of key components to be considered during the review process to the Steering committee. Input was received from committee members and incorporated into the review process.

The Steering Committee meetings and CLAC meeting provided input to the study process that was used in the development of an understanding behind the current Watershed and Subwatershed Studies, development of gap analysis details and identifying requirements for next steps. Some of the items raised at the meeting included:

- CLAC members express concerns regarding certain drainage problems related to flood potential and water quality.
- The members recognize the need for an effective stewardship program as part of a strong management program in the NPCA watersheds.
- Steering Committee staff acknowledge the need for NPCA staff and Niagara Region staff to work together in the development and administration of a comprehensive Natural Heritage Strategy.
- Steering Committee staff are concerned that the current fisheries classification is out of date.
- Steering Committee staff recognize that additional flood hazard mapping is needed to bring their hazard mapping up to date.

5. Summary of Information and Report Reviews – Gap Analysis

5.1 Process Followed – Gap Analysis and Workshops

AECOM worked with the steering committee to set up the process for the gap analysis.
Figure 3.1 presents the elements that were considered in carrying out the gap analysis and developing a strategy to fill these gaps and carry out the Framework. The strategy included:

- Identifying the issues and concerns that needed to be addressed in the NPCA Watershed Planning process (input provided from the NPCA steering committee as well as community stakeholders, provided by CLAC).
- Issues and concerns evolving from the NPCA and Niagara Water Quality Protection Strategy (NWQPS – now named Water Smart) that have been developed.
- Watershed Planning BMPs in the Management Strategy process.
- Identifying the Watershed Planning needs based upon the administrative responsibilities of NPCA.
- Identifying what currently exists through the review of Watershed Plans that have been carried out.

A checklist was used throughout the gap analysis, and was reviewed with the steering committee and with CLAC.

In addition to overall background reports that were reviewed, all of the current Watershed and Subwatershed Reports were reviewed as listed in **Section 3.2**. The additional background reports provided further insight into available information on watershed and subwatershed conditions and characteristics. This included reports on hydrogeologic conditions, water quality (including Welland eutrophication study), shoreline conditions, karst characteristics etc. (Full list of references included in **Section 7**).

5.2 Summary description and Summary Table

The review of the current Watershed and Subwatershed Reports and identification of gaps or information needed to either update or provide additional details to meet the needs of NPCA and its member Municipalities in managing the watershed and meet its stewardship goals included a number of considerations:

- The age of the current report.
- The relevance of the study information and report as compared to current state of practice for Watershed and Subwatershed Studies.
- The ability of the report information to provide a background document for the NPCA stewardship strategy and work.
- The ability of the report to provide the necessary information for use by NPCA in administering land development activities.

The status of the current Watershed and Subwatershed Studies (what is provided and what is not) is summarized in **Table 5.1**. This provides a summary of:

- The age of the current study and report.
- The completeness of what is included from a technical component standpoint and how does it compare to the current state of practice. These categories range from natural heritage system (NHS) information to the provision of stream classification.

A definition of the categories included and what was considered in each is outlined as follows:

Natural Heritage System (NHS) – Has the NHS, from a terrestrial and aquatic standpoint been identified, evaluated and mapped (including field work in the identification and analysis)?

Linkages – Have the environmental linkages within, and external, to the watershed been identified and evaluated? This typically involves a narrow terrestrial corridor that provides a wildlife linkage between significant terrestrial features. This could also include a "protected" or managed corridor, such as a hydro corridor. In addition vegetation riparian corridors along defined watercourses can be identified as a linkage, if providing that function.

Fisheries – Have the fisheries characteristics been assessed, particularly dependent upon field work to identify site conditions (habitat, species, diversity etc.)?

Fluvial Geomorphology – Have the streams been characterized from a fluvial geomorphological standpoint, particularly considering condition and characteristics (including aggradation and degradation)?

Municipal Drains – Have municipal drains been identified and characteristics discussed from an ecological perspective (i.e. fishery habitat conditions)?

Water Quality – Has monitoring been carried out and any evaluation/analysis done (predominately surface water quality).

Water Balance – Has a surface and groundwater balance analysis been carried out?

Highly Vulnerable Aquifer Identification – Has the necessary work been carried out to identify the highly vulnerable aquifers?

Karst – Have karst features been identified and their function assessed from an ecological perspective? Have they been evaluated in accordance with MNR guidelines?

Hazards (flood, shore, slope) – Has hazard mapping been carried out (flooding and erosion)?

Public Input – Was public consultations carried out during the study?

Potential Impact Analysis – Was any analysis done to consider the impact of current or future land use changes?

Management Plan – Has a management strategy been provided?

Restoration and Rehab Priority – Have watercourse restoration (watershed rehabilitation) plans been developed, including a priority plan?

Further Studies – Have further studies been recommended in the report to address specific issues or concerns?

Erosion Sites – Have significant erosion sites been identified (could be part of fluvial geomorphology)?

SWM Requirements – Does the report identify the SWM recommendations for current or future urban development? Are the recommendations broad in scope (quantity, quality, erosion)?

Stream Class – Have the watercourses been classified through an integrated approach (aquatic, terrestrial, fluvial geomorphology, hydrologic and hydrogeologic conditions)? Does this meet current practice (typically followed in CVC, TRCA Headwater Classification Guidelines 2013)? It is recognized that NPCA is preparing

"Contemporary Watercourse Mapping" which is to be completed for the Niagara Region area of jurisdiction. This will provide a significant amount of information which will be very useful in managing its watercourses. This does not, however, provide the same level of detail as the classification system that is needed at a subwatershed level in preparation for urban land use changes.

The information gathered from the reports and summaries developed for **Table 5.1** were then used to identify further work that is needed in order to both bring the studies up to a current standard and meet the needs of NPCA and its member Municipalities (to administer their programs).

Some of the gaps identified became evident during the review of the background report and others during discussions with the study Steering Committee. Both of these influenced the identification of further watershed and subwatershed work as summarized in **Table 5.1**. In addition, through the information review and discussions, there were either some items or overarching issues that are common to more than one watershed, which impact on the additional work needed. These include:

- In some areas neither watershed nor subwatershed studies currently exist, and the only watershed based resource information that exists includes overarching work such as the Source Water Protection strategy, overall MNR fisheries classification mapping, generic hazard mapping, Water Smart water quality information and Regional NHS mapping.
- As noted in **Table 5.1** and **Figure 1.1**, the watersheds that do not currently have watershed or subwatershed reports include:
  - Grimsby and Lincoln watersheds
  - Big Forks Creek (this is a tributary to the Welland River)
  - Two unnamed areas including area east of Twelve Mile Creek and an area north of South Niagara Falls
- Some of the watershed and subwatershed studies were completed a number of years ago and are now dated. The general recommendation contained in the existing reports was that they be updated every 5 years. That timing has validity, but is quite aggressive given the budget constraints that typically exist. As a result, the studies that date back to 10 years or older are considered as needing an update and are highlighted in blue.
- The columns signify areas of consideration and analyses that are typically recommended for a comprehensive watershed or subwatershed study. Through the review carried out and discussion these were identified as a gap and highlighted as missing. These items typically match the areas of consideration.

A listing of the work that has been identified as required for each watershed is provided in **Table 5.2** and an overall summary in **Table 5.3**. These listing and corresponding summary were developed through the information review and discussion. There are a series of common elements that pertain to each watershed which affect future steps to address the identified needs. In addition, there are items that are specific to certain watersheds which required explanation. These include:

Table Columns

The column headings in **Table 5.1** and **Table 5.3** are generally the same, however there are some differences depending upon the needs identified and the related approach to fill gaps. Examples include:

- NHS, Linkages and Fisheries were all identified as being covered in **Table 5.1** and, as a result, not included in **Table 5.3**. In addition, these areas of investigation are being addressed in area-wide studies (discussed later in this section) which would be incorporated in future watershed studies.

- Similarly, the columns entitled "Public Input, Potential Impact Analysis, Management Plan, Further Studies, Erosion Sites and SWM Recommendations" from **Table 5.1** are not included in **Table 5.3** either, because they are addressed in the existing studies, or these items are covered in columns that summarize the work that is needed (i.e. "Water Balance" and "Highly Vulnerable Acquifer Identification" from **Table 5.1** are identified in more detail under "Groundwater Susceptibility", "Quarry Impacts" and "Irrigation Plan" in **Table 5.3**).

Road Salt Impacts

The concern regarding the impact of road salt applications and related potential water quality impacts, including possible increased loadings associated with growth, is an item that is referred to in most the existing studies. This is an item that can be addressed in general terms from a management perspective for all of the NPCA area of jurisdiction. At the watershed and subwatershed level, this should be considered in a more detail by looking at the chloride levels in each respective watershed and the associated watershed level management need. This would account for the loadings and sensitivities specific to that watershed.

Climate Change

Similarly, climate change and the potential for impacts to watershed health and hazard mapping is an item that can be considered and addressed across all watersheds. However, conditions within each watershed may vary depending upon the respective sensitivities (to both high flows, low flows and temperatures). In this regard, the potential impacts and related management impacts can vary from watershed to watershed.

Growth Areas

The watersheds that are expected to be highest growth areas are considered to have a higher priority in relation to the need for growth related management plans. This has also affected the priorities set for future studies as provided in **Section 6.1** of this report. **Table 5.4** provides a summary of the expected growth within Niagara Region over the near future (Municipal Comprehensive Review – How we Grow: Phase 1 and Phase 2 Summary Report, May 11, 2016). The highest growth areas appear to be Niagara Falls, Welland, and Fort Erie, followed closely by Lincoln, Niagara-on-the-Lake, Grimsby, Thorold and Pelham. In addition, the City of Hamilton is experiencing high growth rates, which affects the Upper Welland River, Twenty Mile Creek and Grimsby watersheds. It is recommended that these areas be given higher priority when considering work scheduling.

Chippewa Area Growth

The Chippewa area, as part of the South Niagara Falls watershed is currently experiencing significant growth. Secondary Plans have been prepared or are planned for the near future. This should be considered as a high priority area for Subwatershed Planning to provide the background report for upcoming Secondary Plans. In areas where Secondary Plans have already been developed, a Master Drainage/SWM Plan could be developed.

Area-wide Studies

There are area-wide studies either planned or underway which provide background information for future watershed/subwatershed studies or updates. This information is useful on its own to assist in both the plan review and Stewardship activities with NPCA and its member Municipalities but needs to be linked with the other components of watershed and subwatershed studies to provide a comprehensive, watershed based strategy. This also requires the integration of like information across Niagara Region, Hamilton and Haldimand County. These area-wide studies include:

- **Natural Heritage System Update (NHS)** – to provide details on the terrestrial mapping and classification.
- **Fisheries Update** – to provide updated mapping on fisheries, including habitat conditions.
- **Contemporary Watercourse Mapping –** provide a high level update on stream classifications considering aquatic, fluvial, terrestrial and flow regime conditions within the Niagara Region portion of NPCA jurisdiction.
- **Source Water Protection** – mapping and characteristics related to the threats to water supply quality.

Hazard Mapping

In addition to the Watershed and Subwatershed report review, NPCA staff indicated that floodline mapping for the following watercourses is needed (or requires updating):

- Lincoln watercourses (Bartlett Creek, Beamer Creek, Beamsville Creek, Tufford Creek, Saan Creek, Prudhommes Creek)
- Grimsby watercourses (40 Mile Creek, various Lake Ontario Tributaries)
- Major Welland River Tributaries:
  - Drapers Creek and Coyle Creek – Welland
  - Beaver Creek – West Lincoln
  - Big Forks Creek – Wainfleet
  - Thompsons Creek – Niagara Falls
  - Oswego Creek – Haldimand
- Shriners and Beaverdams Creek – Niagara Falls/Thorold
- Walkers and Beamer Creek – St. Catharines
- Little Forks Creek and Mill Race Creek – Wainfleet (in the Big Forks Creek watershed)

Area-Wide Information Gaps

There are certain information types where gaps affect more than one watershed area that affect the needs in each respective watershed, but where area-wide studies could be carried out to provide the necessary background:

- Karst investigation from the standpoint of an environmental role, water supply and potential hazard feature.
- Identification of valley slopes along river systems and the escarpment from a hazard potential perspective.

Niagara River Remedial Action Plan (RAP)

The Niagara River Remedial Action Plan is an ongoing program which includes mitigation measures and monitoring. The actions carried out as well as monitoring and evaluation affects the respective Watershed Management Planning and Implementation process. As a result, the ongoing RAP program and related activities need to be taken into account in any Watershed/Subwatershed Plan updates.

Lake Erie North Shore Water Quality

Water quality concerns exist along the north shore of Lake Erie related both to water supply, recreational activities along the shoreline, as well as the associated economic impacts. Water quality within Lake Erie and its associated impacts from both and environmental, recreation and economic standpoint has been the subject of discussion and studies for a number of years. Any investigation needs to consider conditions and any initiatives that are being carried out on a Lake-wide basis in looking at any potential management measures within the NPCA jurisdiction.

Table 5.1 Status of Watershed/Subwatershed Studies

Watershed	Watershed/ Subwatershed Study	Date	NHS	Linkages	Stream Class	Fisheries	Fluvial Geomorphology	Municipal Drain	Erosion Sites	Water Quality	Highly Vulnerable Aquifer Identification (1)	Water Balance (2)	Karst	Hazards - Flood, Shore, Slope	Potential Impact Analysis	Public Input	Management Plan	Restoration and Rehab Plan	Further Studies	SWM Recs	Climate Change Consideration
Grimsby	None	-									√	√									X
Lincoln	None	-									√	√									X
Twenty Mile Creek	Watershed	2006	√	√	High Level	√	√	√	√	√	√	√	√	X	X	√	√	√	√	Generic	X
15, 16, 18 Mile Creeks	Watershed	2008	√	√	High Level	√	?	√	√	√	√	√	√	X	X	√	√	√	√	Generic	X
12 Mile Creek	Watershed	2006	√	√	High Level	√	X	X	Partly	√	√	√	X	√	X	√	√	√	√	Generic	X
Beaverdam and Shriners	Watershed	2011	√	√	High Level	√	X	√	X	√	√	√	X	X	X	√	√	√	√	Generic	X
Niagara-on-the Lake	Watershed	2006	√	√	High Level	√	√	√	Partly	√	√	√	X	√	X	√	√	Partly	√	Generic	X
One Mile Creek	Watershed	2006	√	√	High Level	√	√	√	√	√	√	√	X	√	X	√	√	√	√	Generic	X
Upper Welland	Watershed	2012	√	√	High Level	√	X	√	X	√	√	√	X	X	X	√	√	√	√	Generic	X
Central Welland	Watershed	2011	√	√	High Level	√	X	√	X	√	√	√	X	X	X	√	√	√	√	Generic	X
Lower Welland	Watershed	2011	√	√	High Level	√	X	√	X	√	√	√	X	X	X	√	√	√	√	Generic	X
Singers Drain	Subwatershed	1999	√	√	High Level	√	√	√	√	√	√	√	X	√	√	√	√	√	√	√	X
Port Robinson West	Subwatershed	2014	√	√	√	√	√	X	√	√	√	√	X	√	√	√	√	X	X	√	X
Big Forks Creek	None	-									√	√									
Lake Erie/North Shore	Watershed	2011	√	√	High Level	√	X	√	X	√	√	√	X	Shoreline	X	√	√	√	√	Generic	X
South Niagara Falls	Watershed	2008	√	√	High Level	√	X	√	X	√	√	√	X	X	X	√	√	√	√	Generic	X
Fort Erie Watersheds	Quasi Subwatershed	2008	√	√	High Level	√	√	√	√	√	√	√	X	√	√	√	√	√	√	√	X

1 – This is part of the Source Water Protection area-wide study carried out for NPCA jurisdiction. This work identified the vulnerable aquifers and protection requirements.

2 – High level water balance analysis was carried out as part of the area-wide Source Water Protection work.

– Studies that are 10 years or older, or where gaps exist in the studies.

√ – Indicates that this item has been addressed.

X – Indicates that this item needs to be addressed.

Table 5.2 Description of Gaps Identified and Work Needed

Watershed	Gaps and Work Needed
Grimsby	• Currently Subwatershed Studies have not been done (these are needed to identify the NHS, set SWM criteria and provide a management strategy). • Subwatershed Studies should be carried out to provide guidance for growth management as well as provide direction on the overall watershed ecological conditions to protect and enhance watershed health. The management plan will also assist in providing guidance to the NPCA Stewardship Program. • Road salt management strategy is required. • Climate change impact analysis is required[1].
Lincoln	• Currently Subwatershed Studies have not been done (these are needed to identify the NHS, set SWM criteria and provide a management strategy). • Subwatershed Studies should be carried out to provide guidance for growth management as well as provide direction on the overall watershed ecological conditions to protect and enhance watershed health. The management plan will also assist in providing guidance to the NPCA Stewardship Program. • Road salt management strategy is required. • Climate change impact analysis is required[2].
Twenty Mile Creek	• Watershed Study should be updated. • Hamilton SWM Plan needed (completed for Airport lands). • Smithville – Master Drainage Plan (MDP) and SWM Plan needed (consider 1990 study recommendations) (hazard mapping has been completed). • Karst concerns (more detail is needed to identify and develop a strategy for possible environmental and hazard issues). • Fluvial geomorphology needs to be detailed further for stream classification and a detailed stream riparian restoration plan (with prioritization). • Comprehensive watercourse mapping is underway and provides background information for this. • Irrigation plan should be developed taking into consideration the various water demands (irrigation, environment, private and municipal water supply etc.). • Road salt management strategy is required. • Climate change impact analysis is required[3].
15, 16, 18 Mile Creeks	• A subwatershed study is needed to provide a growth management plan. • Water quality (modelling) is required to investigate concerns regarding water quality impacts and associated management needs. • Stream classification is needed for management plan. • Irrigation plan should be developed considering various demands on surface and groundwater (irrigation, environment, private or municipal demands etc.) A diversion is discussed in the current report and should be addressed in this work. • Impact concerns regarding groundwater susceptibility need to be investigated. • Further karst investigation needed to consider environmental role and

[1] *Note: The scope of climate change analysis is constantly evolving, however consideration of the potential impact of climate change to a management strategy should be included in a watershed or subwatershed strategy.*

[2] *Note: The scope of climate change analysis is constantly evolving, however consideration of the potential impact of climate change to a management strategy should be included in a watershed or subwatershed strategy.*

[3] *Note: The scope of climate change analysis is constantly evolving, however consideration of the potential impact of climate change to a management strategy should be included in a watershed or subwatershed strategy.*

Watershed	Gaps and Work Needed
	constraint to urban land use. • Road salt management strategy is required. • Climate change impact analysis is required[1].
12 Mile Creek	• Watershed study should be updated. • Lake Gibson – Ecological and Human Health risk study has been done. Need to update overall Management Plan to incorporate the Ecological and Human Health risk study into the Watershed Management Plan. • SWM Plan needed for St. Catharines and Thorold. • Stream classification required within the Management Plan. The Contemporary Watercourse Mapping (CWM) can be used as a basis. • A comprehensive approach needed for the Irrigation Plan. • More information needed on restoration priority. • Road salt management strategy is required. • Climate change impact analysis is required[1].
Beaverdam and Shriners	• Diurnal fluctuation due to Welland River (impact study needed). • SWM Plan required. • More detailed fluvial geomorphology is being carried out (possibly been done?). Should be incorporated into watershed study. • Stream classification is required for management plan. CWM can provide background information. • Flood hazard analysis is needed. • Road salt management strategy is required. • Climate change impact analysis is required[1].
Niagara-on-the Lake	• Flood control works to be studied further. Implementation Plan developed. • Priorities for work is needed (this is an on-going discussion) by the respective agencies. • Municipal Drain works have been recommended but further details are needed to guide implementation. • Virgil Reservoir (further study needed to develop a reservoir operations and management plan). • Additional consideration is needed in the development of an irrigation management plan, taking into consideration the various demands on water supply. • Stream classification is required for a management plan. Some additional field work is currently underway as part of the Niagara-on-the-Lake Official Plan. • Mitigation measures for flood hazards were recommended (e.g. floodproofing, improvements to culvert and channel capacity. Some of these measures have been completed). • Priority strategy needed for stream restoration work. • Road salt management strategy is required. • Climate change impact analysis is required[1].
One Mile Creek	• Watershed study should be updated (possibly as a subwatershed study) considering amount of urban lands and need for SWM details. • Landsdowne Pond – Sediment and water quality issues exist. Further implementation investigation may be beneficial. • Flood control works proposed (not all have been completed?). • Further detail is needed for SWM implementation (LID and End-of-Pipe).

Watershed	Gaps and Work Needed
	• Stream classification is required for the management plan. • Road salt management strategy is required. • Climate change impact analysis is required[1].

Upper Welland	• Within Niagara River AOC – updated remdial action plan needed to be followed.
	  – Sources of water quality impairment
	  – Restoring fish habitat
	  – PCB clean up
	  – Monitoring
	  – 122 RAP projects in Welland River (implementation is underway)
	• Glycol discharges from Hamilton Airport. A plan has been developed. There is a need to monitor for effectiveness and mitigate as needed.
	• Welland River Eutrophication Study.
	  – Action Plan needed (BMP controls)
	  – Further work is needed with respect to DO analysis and/or modelling for management details
	  – CSO controls (this is an ongoing process)
	  – Delisting process (this is an ongoing process)
	• High PFCs in fish and turtles (work underway by Environment Canada).
	• SWM master plan for Hamilton. SWM retrofit has been identified. An implementation plan is needed.
	• Nutrient Master Pan needed.
	• Further work is needed to investigate Binbrook Reservoir operations. Consider multiple objectives of fish habitat, recreation, flood control, flow augmentation.
	• Fish by-pass works have been recommended for two locations.
	• Stream classification is required.
	• Municipal Drain impact study and comprehensive management plan needed
	• .
	• Road salt management strategy is required.
	• Climate change impact analysis is required[1].

Central Welland	• Welland River fluctuation impacts require further study. • Lyons Creek West – Contaminated site (arsenic and PCB) – study needed (dealt with MOECC order). • SWM master plan needed for growth area. • Agricultural non-point-source (NPS) pollutant loading update needed and water quality modelling. • More detailed fluvial geomorphology analysis required and incorporated into watershed study. • Stream classification required for management plan. CWM can provide background information. • Irrigation plan required (report indicates that additional supplies for irrigation are needed). • Areas of high groundwater susceptibility (strategy needed). • Landfill action plan needed (this may be completed) • CSO program needs to be developed further to develop a protection and mitigation strategy. • Part of Niagara River Area of Concern. Niagara River AOC remedial action

Watershed	Gaps and Work Needed
	plan update needed . • Road salt management strategy is required. • Climate change impact analysis is required[1].
Lower Welland	• Part of Niagara River AOC. • Further data and modelling needed to characterize water quality. • Updated modelling for agricultural NPS loading is needed. • Stream classification required for Management Plan. CWM can provide background information. • Road salt management strategy is required. • Further modelling needed for groundwater susceptibility. • Niagara River Area of Concern action plan needed (update). This is underway, but an action plan will be needed. • Climate change impact analysis is required.
Singers Drain	• Subwatershed study should be updated. • SWM Plan for Fonthill growth area required. • Implementation plan needed for flood damage mitigation works including prioritization. • Stream classification is needed. • Road salt management strategy is required. • Climate change information is required[1].
Port Robinson West	• SWM Plan for Fonthill growth area is required. • Road salt management strategy is required. • Climate change impact analysis required[1].
Big Forks Creek	• Watershed study needed. • Should combine this with Central Welland. • Part of Niagara River Area of Concern. Niagara River AOC (needs to be addressed in report). • Stream classification required for Management Plan. CWM can provide background information. • Modelling update needed for agricultural NPS loading. • Road salt management strategy is required. • Climate change impact analysis is required[1].
Lake Erie/North Shore	• Water quality is a concern regarding both water supply and along the shoreline for water content. A management strategy is needed to address water quality concerns. Shoreline water quality concerns, however need to be tied to any initiatives for Lake Erie. • Stream classification required for management plan. • Groundwater susceptibility study management plan needed (stress due to PTTW). • Port Colborne CSO management plan (proposed action plan being implemented). When complete, should be incorporated into watershed management plan. • Sustainable private sewage management is a concern, strategy on inspection needed. • Road salt management strategy is required. • Climate change impact analysis is required[1].
South Niagara Falls	• Subwatershed study (or studies) needed for Chippawa urban area.

Watershed	Gaps and Work Needed
	• Niagara to GTA corridor a potential concern (this also exits in other watersheds, but has been identified as a concern here. • Lyons Creek sediment (a mitigation strategy is needed). • Further study on groundwater susceptibility needed. • Niagara River Area of Concern action plan is underway and needs to be confirmed. • Road salt management strategy is required. • Climate change impact analysis is required[1].
Fort Erie Watersheds	• Subwatershed study done but SWM targets need to be established. • Some analysis done on stream classification, needed for preservation and management. • Further study needed on groundwater susceptibility, modelling has not been carried out. When done, incorporate into management approach. • Road salt management strategy is required. • Climate change impact analysis is required[1].
Unnamed watersheds (East of 12 Mile Creek includes Walkers, Spring and Beamers Creek) (East of Beaverdams and Shriners Creek includes Queenston Pond canal and various drainage systems)	• Subwatershed studies should be carried out for Walkers, Spring and Beamers Creeks to address urban impacts, investigate flood, erosion and water quality mitigation potential. Management plan should be developed from this. • Drainage areas east of Beaverdams and Shriners Creek do not have any watershed studies and no issues appear to have been raised. No further work appears necessary.

Table 5.3 Further Work Needed (Issues to Address)

Watershed	Watershed/ Subwatershed Study	Growth Management	Stream Classification	Fluvial Geomorphology	Municipal Drains	Water Quality	Irrigation Plan	Groundwater Susceptibility	Quarry Impacts	Landfill	Karst Investigation	Hazards-Flood, Shore, Slope	Restoration and Rehab Plan	Road Salt	CSO	Niagara River Area of Concern	Septic Tanks	Climate Change
Grimsby	None	Study needed																
Lincoln	None	Study needed																
Twenty Mile Creek	Watershed	Hamilton Smithville (SWM Plan needed)	Needed	Need to prioritize			Conflicts between environment and irrigation. Need further investigation		Yes		Sinkhole Creek (done) Water quality, urban		Riparian -Details needed	Management strategy needed				√
15, 16, 18 Mile Creeks	Watershed	Study needed	Needed			Water quality modelling needed	Conflicts (status of proposed diversion)	Impact concerns			Needed			Management strategy needed				√
12 Mile Creek	Watershed	-St. Catharines, Thorold -current and infill	Needed				Comprehensiv e approach needed						More needed on priority	Management strategy needed				√
Beaverdam and Shriners	Watershed	Growth impact study needed	Needed	Being done (status?)					Yes -Study needed			Bing done (status?)		Management strategy needed	Mitigation needed (status?)			√
Niagara-on-the Lake	Watershed	Minimal growth?	Needed		Details needed for works		-Management Plan needed -Changes to current					Mitigation measures recommended -Status?	Priority needed for stream work	Management strategy needed				√
One Mile Creek	Watershed	Infill and redevelopme nt	Needed											Management strategy needed				√
Upper Welland	Watershed	Hamilton growth	Needed		-Impact study needed - Comprehensive management	-Niagara River AOC -Program need to continue -Water quality modelling needed								Management strategy needed		Action Plan needed (update)	Break outs an issue	√
Central Welland	Watershed	Growth area	Needed	Needed		Water quality modelling needed	-Additional sources needed -Master plan	-Areas of high susceptibility -Strategy needed		Action plan needed				Management strategy needed	CSO program (status?)	Action Plan needed (update)	Break outs an issue	√
Lower Welland	Watershed	Some potential (limited)	Needed			-Further data need to characterize - Water quality modelling needed		-Further modelling needed						Management strategy needed		Action Plan needed (update)		√
Singers Drain	Subwatershed	Growth area (Fonthill)	Needed											Management strategy needed				√

Watershed	Watershed/ Subwatershed Study	Growth Management	Stream Classification	Fluvial Geomorphology	Municipal Drains	Water Quality	Irrigation Plan	Groundwater Susceptibility	Quarry Impacts	Landfill	Karst Investigation	Hazards-Flood, Shore, Slope	Restoration and Rehab Plan	Road Salt	CSO	Niagara River Area of Concern	Septic Tanks	Climate Change
Port Robinson West	Subwatershed	Growth area (Fonthill)												Management strategy needed				√
Big Forks Creek	None – could combine with Central Welland																	
Lake Erie/North Shore	None		Needed			-Beach postings a concern -Strategy needed		-Stress due to PTTW -Study management plan needed						Management strategy needed	-Port Colbourne management plan status ?	Action Plan needed (update)	Impact a concern Strategy needed Inspection on needed	√
South Niagara Falls	None	Chippawa urban area	Needed					-Further study needed						Management strategy needed		Action Plan needed (update)		√
Fort Erie Watersheds	Quasi Subwatershed		-Some analysis done -Needed for preservation and management					-Further study needed -modelling not done						Management strategy needed				√

Table 5.4 Expected Growth Areas

Municipality	2006 Population	2031 Population	2006 to 2013 Population Growth	2006 Employment	2031 Employment	2006 to 2013 Employment Growth	Total Population and Employment Growth
Fort Erie	31,200	38,877	7,677	11,790	14,950	3,160	**10,837**
Grimsby	24,900	30,582	5,682	8,120	9,340	1,220	**6,902**
Lincoln	22,600	28,583	5,983	10,200	11,670	1,470	**7,453**
Niagara Falls	85,500	100,341	14,841	42,800	47,670	4,870	**19,711**
Niagara-on-the-Lake	15,200	20,688	5,488	11,000	12,690	1,690	**7,178**
Pelham	16,700	22,387	5,687	4,260	5,130	870	**6,557**
Port Colborne	19,300	20,888	1,588	6,760	7,770	1,010	**2,598**
St. Catharines	137,300	137,919	619	65,750	68,740	2,990	**3,609**
Thorold	18,900	24,086	5,186	8,010	9,460	1,450	**6,636**
Wainfleet	6,900	8,195	1,295	1,430	1,630	200	**1,495**
Welland	52,300	61,464	9,164	20,410	23,650	3,240	**12,404**
West Lincoln	13,700	16,990	3,290	3,840	5,300	1,460	**4,750**
Niagara Region	**444,500**	**511,000**	**66,500**	**194,370**	**218,000**	**23,630**	**90,130**

– High growth areas highlighted in red
..... – Moderate growth areas highlighted in yellow

6. Strategy for Watershed and Subwatershed Planning

This section summarizes the work required to complete the framework, and also provides a preliminary priority plan for carrying out the work.

6.1 What is Needed?

Based upon the gap analysis carried out, and discussion during a workshop with the Steering Committee, a list of projects needed to fill the gaps discussed in **Section 5** where developed. These reflect both the gap analysis carried out and input from the committee.

Additional discussions were held to prioritize the list of projects, based upon the following factors.

- Relative importance from the perspective of NPCA staff in developing and carrying out their stewardship and administrative duties.
- Relative importance in the issues or problems being faced from a risk to life and environmental protection standpoint.
- Where appropriate, the areas of higher potential growth area given higher priority.
- The age, relevance and thereby usefulness of information in the current Watershed and Subwatershed Studies. (The current state of practice is to update a management strategy every 5-10 years).
- The concerns regarding future urban development as compared to ongoing current agricultural (and urban) impacts and related concerns need to be considered in setting priority. New or purposed urban development and the potential for impacts typically has a higher priority since the need exists to prevent or mitigate further impacts. The concerns over the impacts of ongoing agricultural or urban activities can be high as well but are typically assigned a lower priority since it is an existing condition. This will depend, however, on the severity of an existing concern or impact, and a watershed study is often needed to quantify this level of concern.

Priorities were assigned, based upon discussion with the Steering Committee with regard to current and future needs with the following timing:

- High Priority 2-5 years
- Medium Priority 5-10 years
- Low Priority 10 years plus

It must be noted that not all of the gaps and associated studies have been included in the list of recommended work. The studies included are the ones that are judged to be the most important through discussions with the Steering Committee.

The list of projects are outlined in the following:

High Priority (2-5 years)

- Grimsby and Lincoln
  - This is a growth area and Subwatershed Studies needed to provide guidance for future development (have an MDP for Grimsby).
  - Environmental issues/concerns are not a major concern.
  - Need to address flooding, erosion, groundwater, irrigation supply, Lake protection (WQ).
  - Need to protect NHS and watercourses.

  - Hazard mapping (floodlines) needed for watercourses.

- Beaverdam and Shriners
  - Need to update floodlines (now use 1985 mapping using 100yr criteria).
  - Perhaps a CSO plan is needed.

- South Niagara Falls
  - Chippawa development area (some secondary planning is done).
  - Land development is proceeding quickly.
  - Subwatershed studies have not been done.
  - Subwatershed Plans should be prepared.
  - Master Drainage /SWM Plans can be done in areas where Secondary Plans are complete.

- Fort Erie
  - Subwatershed Study needs to be augmented.
  - Two areas identified to complete plan.
    - Need to set SWM targets.
    - Need to carry out stream classification.

- Lake Erie North Shore
  - Issues that need to be studied and management approach developed:
    - Water supply security
    - GW contamination
    - Beach water quality
    - Ag runoff NPS
    - Septic impacts
    - Impact of the Grand River outfall on the beach water quality

- Fishery information for all watersheds is significantly out of date.
  - Need to update.

- Big Forks Creek
  - This is a tributary to Central Welland River.
    - Recommended that it be included with Central Welland watershed.
  - NPS (agriculture). Loading is a big issue. Water Quality modelling needed.
    - Along with Central Welland.
  - Flood mapping needed for Little Forks Creek and Mill Race Creek.

Medium Priority (5-10 years)

- Karst Investigation (area-wide)
  - Need to look at karst in Glanbrook and Smithville in particular, with the possible need to delineate hazard lines and develop a management plan.
  - Include all Karst areas in study.

- Agricultrual Lands within NPCA (Central and West)
  - Need a WQ evaluation update (potential need for modelling).
  - Need to identify, prioritize and develop a mitigation plan for WQ impacts (primarily agriculture).
  - Need to tie into Niagara River RAP.

  - Welland River and Fifteen, Sixteen and Eighteen Mile Creeks are the areas of highest interest.

- Welland
  - The nutrient loading needs to be quantified and linked.
  - Central area is of most concern including upper 15 and 16 plus Big Forks - sig loading areas.
  - Hazard mapping (floodlines) needed for Draper Creek, Coyle Creek, Beaver Creek, Big Forks Creek, Thompson Creek and Oswego Creek.
  - Binbrook MDP needs to be updated and expanded to include water quality and erosion control criteria.

Low Priority (10 years plus)

- Smithville
  - Need either an MDP or Subwatershed Study.
  - Would need to consider Twenty Miles Creek watershed as the receiver but would not need full watershed evaluation.
  - Consider upstream and downstream conditions.
  - Concerns:
    - Flood, erosion, WQ – Need a SWM plan
    - Karst

- Twelve Mile Creek
  - Some new urban development occurring, but relatively limited.
  - Need to determine if the controls in Fonthill are appropriate.
    - Has been impacted upon by past development.
  - A Watershed Study update is needed to improve current conditions.
  - Significant cold water fishery – need to protect and enhance.

- Niagara on-the Lake
  - Need to prepare a water management plan to look at irrigation water taking vs. what is needed for the environment.

- Singers Drain
  - No mitigation work has been done at this point – should reinvestigation and prioritize.

- Airport Lands
  - Subwatershed Study currently sets SWM targets (need to implement).
  - Determine if PFOS are still an issue.

- Spring Garden and Walker Creek
  - Beaver Creek – do the current dams present a concern?
  - Fully built up but some urban impacts are a concern.
  - Small creeks in St. Catharines – urban impacts need to be evaluated with the potential for mitigation.
  - Erosion problems.

- All relevant watersheds
  - Update Watershed Reports on a 5-10 year cycle.

- Unnamed Creeks East of 12 Mile Creek
  - Complete subwatershed study to identify mitigation opportunities and develop a plan.

7. References

- Drinking water Source Protection – updated Assessment Report Niagara Peninsula Sources Protection Area, NPCA, 2013
- The Welland River Eutrophication Study in the Niagara River Area of Concern in Support of the Beneficial use Impairment (NPCA, 2011)
- NPCA Water Quality Annual Reports, NPCA
- Watershed Report card (NPCA, 2012)
- Natural Areas Inventory (NPCA 2006-2009)
- Geological Hazard Mapping Study, Karst Topography, Phase 1, NPCA Watershed Area (TDC, 2006)
- Groundwater Vulnerability Analysis, Niagara Peninsula Source Protraction Area
- Niagara Peninsula Source Water Protection Assessment Report, NPCA
- Niagara Peninsula Source Water Protection Tier 1 water budget
- Significant Groundwater Recharge Area Delineation, Niagara Peninsula Source Water Protection Area.
- 15-16-18 Mile Creek Watershed Plan (NPCA, 2008)
- Beaverdams & Shriners Creeks (NPCA, 2011)
- Central Welland River Watershed Plan (NPCA, 2010)
- Fort Erie Creeks Watershed Plan (Phillips, 2008)
- Lower Welland River characterization Report (NPCA, 2011)
- NOTL Watershed Study Report and appendices (Aquafor Beech, 2008)
- One Mile Creek Watershed Plan (Aquafor Beech, 2005)
- Port Robinson West Subwatershed Plan (TSH, 1999)
- South Niagara Falls Watershed Report (NPCA, 2008)
- Twelve Mile Creek Watershed Plan (NPCA, 2006)
- Twenty Mile Creek Watershed Plan (NPCA, 2006)
- Upper Welland River Watershed Plan (NPCA, 2006)
- Lake Ontario Shoreline Management Plan (NPCA, 2010)
- Lake Erie Shoreline Management Plan (Shoreplan, 2010)
- City of Hamilton – Airport Economic Growth District (AEGD) Subwatershed Study (Aquafor Beech, 2011)
- City of Thorold – Port Robinson West Scoped Subwatershed Study (Aquafor Beech, 2014)
- Fonthill Area 1, Subwatershed Study, Totten Sims Hubicki
- East Fonthill Subwatershed Study, draft 2009
- Town of Grimsby Stormwater Quality Master Plan, Technical Memo #1 (AMEC, 2013)
- Town of West Lincoln "Smithville North" Master Drainage Plan (Philips, 1990)
- Niagara River Remedial Action Plan – Stage 2 Update (Niagara River Remedial Action Plan, 2009)
- Contemporary Watercourse mapping for the Niagara Region Methodology Report (NPCA, 2013)
- An Integrated Watershed Management Approach to Great Lakes Protection (Conservation Ontario, 2012)

REPORTS FOR CONSIDERATION

October 19, 2016 Full Authority Meeting

Report To: **Board of Directors**

Subject: **2017 DRAFT Capital Budget and Apportionment**

Report No: **110-16**

Date: **October 19, 2016**

RECOMMENDATION:

(1) That the NPCA Board **APPROVE** the 2017 Levy supported Draft Capital Budget of $471,000, as recommended by the Budget Steering Committee.

(2) That the NPCA Board **APPROVE** the 2017 OPG fund supported Draft Capital Budget of $271,000, as recommended by the Budget Steering Committee.

(3) That the following 2017 apportionment costs identified in Chart #1 **BE FORWARDED** to the participating municipalities in accordance with Section 2.(1)(b) of Ontario Regulation 670/00.

Chart #1: Apportionment of Costs to Participating Municipalities

Municipality	Niagara	Hamilton	Haldimand	Total
Levy Formula	4,739,948	1,214,568	116,200	6,070,716
Special Levy	2,699,359	120,897	0	2,820,256
Totals	**7,439,307**	**1,335,465**	**116,200**	**8,890,972**

PURPOSE:

To receive approval on the 2017 Capital budget by the NPCA Board of Directors and the subsequent approval on the apportionment costs to the participating municipalities.

BACKGROUND:

In preparation of their budgets, participating municipalities typically set 'budget guidance' to their respective internal departments and ABCs (agencies, boards and commissions). For 2017, the Region of Niagara set their budget guidance at 1% with a 1% assessment growth option. The City of Hamilton provided a budget guidance of 1.8%. To date, no formal correspondence has been received from Haldimand County.

On June 29, 2016 the NPCA Budget Steering Committee met and deliberated revenue sources, opportunities and budget pressures. One of the outcomes of the committee was the passing of a motion that staff prepare the 2017 Operating and Capital budgets with a 1% total combined levy increase (which equates to a 0.69% total budget increase).

The following motion was passed by the Budget Steering Committee on June 29, 2016:

THAT Committee recommend to the Board that staff follow a 1% total combined levy increase to formulate the 2017 draft budget;
THAT there be a no net reduction to the operating reserves;
THAT staff sustain cost savings realized to date; and,
THAT staff continue to pursue additional revenue generating opportunities.

At its Sept. 14, 2016 meeting the Budget Steering Committee was advised that staff had met each of their requests and direction with respect to the 2017 Operating Budget. They passed the following motion:

THAT the NPCA Budget Steering Committee recommend to the Board, ***approval*** *of the 2017 Draft Operating Budget as amended.*

Further, the Budget Steering Committee recommended approval of consolidating NPCA reserve accounts (Appendix 1).

At its Full Authority meeting on Sept. 21, 2016, the Board approved the 2017 Operating Budget and consolidation of reserves by passing the following resolution:

Resolution No. FA-120-16

THAT, the Full Authority Board of Directors ***APPROVE*** *the minutes for the Budget Steering Committee meeting held September 14, 2016 and the recommendations within.*

Chart #2: 2017 Levy Increase

2017 Proposed Levy Increase

Revenues	2015 Budget/ Actual	2016 Budget/ Actual	2017 1% Increase Total Levy
Niagara Region			
Regular Levy	4,697,550	4,697,550	42,398
Special Levy	2,672,633	2,672,633	26,726
City of Hamilton			
Regular Levy	1,197,320	1,197,320	17,248
Special Levy	119,700	119,700	1,197
Haldimand County			
Regular Levy	115,740	115,740	460
Total			
Regular Levy	6,010,610	6,010,610	60,106
Special Levy	2,792,333	2,792,333	27,923
Total Municipalities	8,802,943	8,802,943	88,029

As identified in Chart #2, the overall levy increase for municipalities is 1%, which meets the budget guidance as set by the NPCA Budget Steering Committee. With that stated, as per the MEMO from the Ministry of Natural Resources dated August 30, 2016 (Appendix 2), the NPCA is required to use the municipal levy apportionment data supplied by MPAC for the 2017 budget.

Therefore, the levy increase for the Region of Niagara is 0.94% with a received municipal budget guidance of 1% and a 1% assessment growth option (as determined by Niagara Regional Council); the levy increase for the City of Hamilton is 1.4% with a received municipal budget guidance of 1.8%; and, the levy increase for Haldimand County is 0.4% with no guidance received to date. Further, it is important to note that through this budget process, the NPCA has eliminated its reliance on operating reserves.

Chart #3: 2017 Funding Allocation

Allocated to Operating Budget	
Regular Levy	5,638,972
Special Levy	1,749,385
Federal Grant	190,000
Provincial Grant	485,996
Park Operations/Strat Init.	1,612,279
Admin Fees	360,325
Reserves	
Foundation	28,035
Other	78,400
Opg Funds	
Operating Budget Funding Total	10,143,392
Expenditure	
Corporate	4,028,507
Watershed	3,103,513
Operations	3,011,372
Operating Expenditure Total	10,143,392
Surplus/(Deficit)	0

DISCUSSION:

2017 Capital Projects

At its Oct. 12, 2016 meeting, the Budget Steering Committee has recommended that the Board approve the following list of capital projects for 2017:

Funding Source	Cost Centre	Title/ Descrip.	Value ($)
Levy	Ops- Ball's Falls	Replace Ball Home Porch, Outbuilding Repairs, Fence	$50,000
Levy	Ops- Ball's Falls	Septic System Replacement - Lower Comfort Station	$70,000
Levy	Ops- Jordan Harbour	Waterfront - Pedestrian Bridge	$15,000
Levy	Ops- Jordan Harbour	Eavetrough Replacement	$15,000
Levy	Ops- Long Beach	Electrical Upgrades	$100,000
Levy	Ops- Long Beach	Water Treatment Upgrades	$75,000
Levy	Ops- Long Beach	Replace Gate System	$70,000
Levy	Corp. Services- GIS	Data Centre Maintenance	$30,000
Levy	Watershed- Resources	Monitoring & Conductivity Loggers	$26,000
Levy	Watershed- Resources	Water Quality stereo microscope	$10,000
Levy	Watershed- Resources	Flood Forecasting telemetry & water sensor upgrades	$10,000
Available 2017 Capital Levy $471,871		**TOTAL:**	**$471,000**
OPG Funds	Ops- Ecological	Brook Trout Spawning Area	$6,000
OPG Funds	Ops- Ecological	Perched Culvert Restoration	$15,000
OPG Funds	Ops- All Parks	Tree Planting, Shade Structures and Landscaping	$150,000
OPG Funds	Corp. Services - GIS	Digital Terrain Model Update	$100,000
Available OPG Funds $1,796,372		**TOTAL:**	**$271,000**

There is still an additional $2.5 million worth of Capital projects that have been considered and recommended for deferral due to fiscal constraints for 2017. Further, the 'Niagara Levy Apportionment Differential' for 2017 is $431,744 and the NPCA Budget Steering Committee has recommended allocation of this funding to the Niagara Levy Differential Reserve.

Summary

Overall, the 2017 NPCA budget represents a 1% increase to the municipal levies which meets the NPCA Budget Steering Committee's total levy guidance of 1.0%.

Reliance on operating reserves has been eliminated.

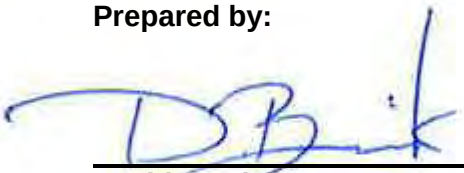
The Niagara levy apportionment differential of $431,744 is recommended to be allocated to capital reserves.

At the NPCA's Budget Steering Committee of October 12, 2016 the 2017 Capital budget, as outlined in this report, was approved to be recommended to the NPCA Board of Directors.

RELATED REPORTS AND APPENDICES:

1. Appendix 1: Consolidated Reserve Accounts
2. Appendix 2: MNR Memo dated Aug.30, 2016

Prepared by:



David Barrick
Director of Corporate Services

Submitted by:

Carmen D'Angelo
Chief Administrative Officer
Secretary Treasurer

This report was prepared with the consultative input from Budget Steering Committee and the Senior Management Team.

NIAGARA PENINSULA CONSERVATION AUTHORITY
STATEMENT OF CONTINUITY OF RESERVES AND RESERVE FUND
PROJECTION FOR THE YEAR ENDED DECEMBER 31, 2016 & 2017 Adjustments

	Balance 31-Dec 2015	Approved Budgeted Inflows	*Approved Budgeted Outflows	Projected 31-Dec 2016	2017 Budget	2017 Adjusted
	$	$	$	$		
Unexpended capital reserves						
Equipment	349,835	0	80,000	269,835		269,835
General Capital	1,754,572	0	1,346,319	408,253		408,253
Flood Protection Services	483,978	0	10,000	473,978		473,978
Niagara Levy Differential	347,000	427,469	0	774,469	431,744	1,206,213
Land acquisition-Hamilton	800,000	100,000	0	900,000	100,000	1,000,000
Land acquisition-Niagara	298,174	500,000	0	798,174	500,000	1,298,174
	3,683,724	1,027,469	1,356,319	3,354,874	1,031,744	4,386,618
	4,033,559	1,027,469	1,436,319	3,624,709		4,656,453
Operating reserve						
General Operating Reserve	540,135	0	55,000	485,135		485,135
Tree Bylaw Agreement	82,371	0	0	82,371		82,371
	622,506	0	55,000	567,506		567,506
Deferred Revenues						
Catholic School Board Funding (St.Johns Conservation Area)				85,000 **		85,000
Branthaven Funding				50,000 **		50,000
Ontario Power Generation Funding	1,906,616	0	110,244	1,796,372		1,796,372
	1,906,616	0	110,244	1,931,372		1,931,372

* Approved outflows include: $394,801 from 2015 carryover capital projects
** Currently accounted for as deferred revenues subject to change at year end audit

Ministry of Natural Resources

Regional Operations Division
Integration Branch
300 Water Street
Peterborough, ON K9J 8M5
Tel.: 705-755-1278
Fax.: 705-755-1267

Ministère des Richesses naturelles

Division des opérations régionales
Direction de l'intégration
300, rue Water
Peterborough ON K9J 8M5
Tél.: 705-755-1278
Téléc.: 705-755-1267

August 30, 2016

MEMORANDUM

Subject: Agreement regarding the Use of Modified Property Assessment Information dated September 26th, 2012

In the past, the Ministry of Natural Resources has required each conservation authority to sign an agreement annually to ensure the appropriate use of data provided by MPAC. This year, the Ministry of Natural Resources and Forestry is prepared to extend the 2012-13 Agreement to March 31, 2017, in accordance with the provisions of this letter. The Agreement is amended to reflect the updated description of the Product as "Content of Assessment Breakdown by Class from the 2015 Year-End Summary of Assessment for Tax" information. Under the extension, MNRF will continue to supply the conservation authority with products under the terms and conditions of the Agreement. If you agree with this extension, no special action is required by you. We will deem your acceptance of the extension provisions to have occurred by the authority's use of the products in 2016-17.

Attached is your municipal levy apportionment data for next year's budget. The levy apportionment figures are calculated from assessment data provided by the Municipal Property Assessment Corporation (MPAC), and further revised based on the Conservation Authority Levies Regulation (Ontario Regulation 670/00 under the *Conservation Authorities Act*). The assessment data is based on current value as of December 2015.

The spreadsheets will also include population data, provided by MPAC and modified based on the percentage of the area of each municipality within your CA jurisdiction. MPAC population data is based on a province-wide enumeration conducted in 2010 as well as other information sources such as sales affidavits, school support forms, and MPAC's Tenant Information Program updated annually. Use of this data is not mandatory; alternative population data may be used if agreed upon by the board. Population does not affect levy apportionment.

If you have any questions about the Agreement or the data provided, please contact Rheanna Leckie at (705) 755-5405 or Rheanna.Leckie@ontario.ca.

Sincerely,

Original signed by

Kathy Woeller
Manager, Program Services Section

Report To: **Board of Directors**

Subject: **Conservation Area Rates & Fee Schedule 2017**

Report No: **111-16**

Date: **October 19, 2016**

RECOMMENDATION:

THAT Report No. 111-16 be **RECEIVED** for information; and

THAT the NPCA Board **APPROVE** the 2017 Conservation Area Fee Schedule as outlined in Appendix 1 of this report; and further,

THAT the NPCA Board **APPROVE** the 2017 Seasonal Campsite Fee and other Camping Fee increases recommended for both Chippawa Creek and Long Beach Conservation Areas, in this report.

PURPOSE:

For the NPCA Board to consider the 2017 Conservation Area fee structure.

This report aligns with the 2014-2017 NPCA Strategic Plan under 'Effective Communication with Stakeholders & Public.'

For the NPCA Board to direct staff on the appropriate fee increase for Seasonal Campsites at Chippawa Creek and Long Beach Conservation Areas.

BACKGROUND:

Senior Operations staff met to analyze and recommend fee changes to the Board. A summary of the proposed Conservation Area Program Fees is attached as Appendix 1 of this report.

DISCUSSION:

- *Day Use Fees*

  The recommendation, continued from 2016, for Day Use fees for adults, students and seniors is to make them consistent throughout the four revenue generating parks.

  Fees for Admission will include taxes. All other fees will be advertised without tax included. All parks have shown a steady growth in day use attendance.

- *Pavilion Rentals*

  Pavilion rental fees are recommended to increase from $110 + tax to $115 + tax for a roofed Pavilion and from $60 + tax to $62.50 + tax for an Open Air Picnic Area, at all parks.

- *Membership Pass*

  The membership (seasonal day) pass fee is recommended to be adjusted to a uniform $95, plus tax, across the board. This pass is good at all NPCA owned and operated parks. It is a Season pass, valid from January 1st to December 31st, 2017. As of August 1, 2017, the rate becomes pro-rated to be $57 (60%) or staff may recommend that the patron pay as they attend, whichever is less. It will not carry over from year to year as a 12-month pass as has been past practice. Staff believes the price point of this product is well placed in comparison to similar pass programs offered by the Hamilton Conservation Authority and Conservation Halton; who have more fee-for-service operations. Staff, again, recommend eliminating the Senior/ Youth and early renewal fees for simplicity and easier advertising. No further incentive coupons are being offered.

- *Camping Fees*

  Staff recommends that Seasonal Campsite Fees be increased by 2%, in line with the projected CPI of 1.5 – 2.0%.

  The $250 Non-Refundable Seasonal Campsite deposit was non-negotiable. It remains due by December 1st, 2016 in order to secure their existing campsites. If the deposit is not paid by December 1st, their campsite would be forfeited and placed back into the general campsite pool, available to anyone on a first come, first serve basis.

  Overall, staff are recommending nominal fee increases over the next few years in an attempt to bring fees closer to the public park average. .

  Seasonal campers will continue to be offered one free membership pass to offset their 'extra vehicle permit' cost; valued at $70. 2015 also saw the NPCA add a Long Weekend premium on all sites of $4. Staff continues to support this idea, for Transient Campers. NPCA campgrounds are at capacity during these peak periods showcasing the high demand. This is a common practice at many campgrounds and it is recommended to continue to do so at NPCA campgrounds.

  For 2017, staff is recommending the one-night fee for camping increase by $5.

  Demand at Long Beach and Chippawa Creek, particularly 30 amp electrically serviced camping, is very strong. There is a waiting list for these sites and an increase in advance bookings each season. Trends in both advanced bookings and increased waiting lists, point to a steady increase in demand and supports an additional nominal increase for the 2017 season.

FINANCIAL IMPLICATIONS:

The estimated financial implications of the recommended nominal fee changes should result in additional revenues of approx. $25-30,000/year (approx. $12,000 Day-Use/$5,000 Membership Pass/$12,000 Seasonal).

Further, staff anticipates additional revenue capture in the 2017 season as a result of the fee increases related to rentals for the Church/Barn/Centre at Balls Falls as well as the Pavilions at the other operating parks (Appendix 1).

RELATED REPORTS AND APPENDICES:

1. Appendix 1- Proposed 2017 CA Fee Schedule

Prepared by:

Gregg Furtney
Supervisor, Operations

Reviewed by:

Mark Brickell
Acting Director of Operations

Submitted by:

Carmen D'Angelo
Chief Administrative Officer
Secretary Treasurer

Proposed 2017 Fee Schedule

Long Beach and Chippawa Creek

Day Use (includes tax)	2015	2016	2017
Adults	$ 4.00	$ 6.00	$ 7.00
Seniors	$ 3.00	$ 4.00	$ 5.00
Students	$ 3.00	$ 4.00	$ 5.00
Max Car	$ 15.00	$ 18.00	$ 21.00
Bus (over 20/ vehicle)	$ 79.10	$ 120.00	$ 130.00
Camping (non-serviced) (plus tax)	**2015**	**2016**	**2017**
One Night	$ 34.00	$ 35.00	$ 36.00
Seasonal	X	X	X
Camping (15 Amp) (plus tax)			
One Night	$ 38.00	$ 39.00	$ 40.00
Seasonal	$ 2,000.00	$ 2,100.00	$ 2,165.00
Camping (15 Amp Premium) (plus tax)	**2015**	**2016**	**2017**
One Night	$ 42.00	$ 43.00	$ 44.00
Seasonal	$ 2,200.00	$ 2,300.00	$ 2,370.00
Camping (30 Amp + Water) (plus tax)	**2015**	**2016**	**2017**
One Night	$ 44.00	$ 45.00	$ 46.00
Seasonal	$ 2,300.00	$ 2,400.00	$ 2,475.00
Camping (30 Amp Premium/ or Lakefront) (plus tax)	**2015**	**2016**	**2017**
One Night	$ 46.00	$ 47.00	$ 48.00
Seasonal	$ 2,500.00	$ 2,600.00	$ 2,680.00

Hunting Permits (tax included)	2015	2016	2017
Hunting Permit	$ 30.00	$ 30.00	$ 40.00

Binbrook Conservation Area

Day Use (Includes tax)	2015	2016	2017
Car and Driver	$ 6.00	$ 6.00	$ 7.00
Additional Adult	$ 5.00	$ 5.00	$ 6.00
Senior/ Student	$ 4.00	$ 4.00	$ 5.00
Max Car	$ 18.00	$ 18.00	$ 21.00
Bus (over 20/ vehicle)	$ 90.00	$ 120.00	$ 130.00
Facilities Rental (plus tax)	2015	2016	2017
Picnic Pavilion	$ 100.00	$ 110.00	$ 115.00
Open Air Picnic Area	$ 55.00	$ 60.00	$ 62.50

Ball's Falls Conservation Area

Day Use (Includes tax)	2015	2016	2017
Adult	$ 5.00	$ 6.00	$ 7.00
Senior/ Student	$ 3.50	$ 4.00	$ 5.00
Max Car	$ 14.00	$ 18.00	$ 21.00
Bus (over 20/ vehicle)	$ 110.00	$ 120.00	$ 130.00
Self Pay/ Donation	$ 5.00	$ 5.00	$ 5.00

Membership Pass (plus HST)

Park (plus tax)	2015	2016	2017
Ball's Falls	$ 80.00	x	x
Ball's Falls Senior/ Student Rate	$ 70.00	x	x
Binbrook	$ 85.00	x	x
Binbrook Senior/ Student Rate	$ 75.00	x	x
CCCA/ LBCA	$ 70.00	x	x
CCCA/ LBCA Senior/ Student Rate	$ 60.00	x	x
All Park Pass	$ 95.00	$ 89.00	$ 95.00

Proposed 2018 Fee Schedule (Fees do NOT include Taxes)

Ball's Falls Conservation Area	2016	2017	2018
Barn Rental			
Barn Reception - non-licensed	$ 1,800.00	$ 2,000.00	$ 2,500.00
Barn Reception - licensed	$ 1,800.00	$ 2,000.00	$ 2,500.00
Barn Wedding Value Package Rental - Includes: Historical Area, Barn, V, Mid field, Pavilion and Field Centre			$ 6,000.00
Security- Hourly Rate			$ 50.00
Set-up Rental (5pm to 10pm) *These rates apply only if available within 2 weeks of wedding date	$ 200.00	$ 225.00	$ 250.00
Non-Wedding Rates - Barn			
Sunday through Thursday	$ 550.00	$ 575.00	$ 600.00
Barn Volume Discount (4 or more rentals 15% Discount)		$ 500.00	$ 521.73
~~Educational Small Group (*Admission Extra)~~	~~$ 120.00~~	~~$ 125.00~~	~~$ 140.00~~
Portable Projector / Screen and Audio	$ 50.00	$ 50.00	$ 50.00
Set-up Rental (5pm to 10pm) * These rates apply only if available within 2 weeks of event	$ 200.00	$ 225.00	$ 250.00
** All Barn Wedding Ceremonies are to be held inside only. No outside receptions permitted. ** Alcohol is not permitted outside of the barn			
Tent Rental			
Initial Tent Set up			$ 3,000.00
Daily Rental Rate			$ 2,000.00
Center For Conservation Glen Elgin Room (Ball's Falls C.A.)			
Glen Elgin Rom Reception - non-licensed	$ 2,100.00	$ 2,300.00	$ 2,800.00
Glen Elgin Room Reception - licensed	$ 2,100.00	$ 2,300.00	$ 2,800.00
~~Glen Elgin Room Ceremony~~ ~~* up to 170 Guests, 11am to 4pm~~	~~$ 900.00~~	~~$ 950.00~~	~~$ 1,000.00~~
Set-up Rental (5pm to 10pm) * These rate apply only if available within 2 weeks of wedding date	$ 200.00	$ 225.00	$ 250.00
Center For Conservation Glen Elgin Room (Non-Wedding)			
Glen Elgin Room (Friday and Saturday)	$ 1,200.00	$ 2,300.00	$ 2,800.00

Glen Elgin Room (Sunday through Thursday)	$ 600.00	$ 600.00	$ 750.00
Glen Elgin Room - Corporate Rate May 1st - Oct 31 st	$ 1,570.00	$ 2,300.00	$ 2,300.00
Glen Elgin Room - Corporate Rate Nov 1st - April 30th		$ 1,570.00	$ 1,570.00
Glen Elgin Room - Volume Discount (4 or more rentals 15% Discount)		$ 521.73	$ 652.17
Projector / Screen and Audio System Rental	$ 50.00	$ 50.00	$ 75.00
Set-up Rental (5pm to 10pm)	$ 200.00	$ 225.00	$ 250.00
Church Rental - Wedding Rates (Ceremony) 2 HR Allotments	$ 700.00	$ 750.00	$ 800.00
** Rental Times: 9:30am to 11:30am; Noon to 2pm; 2:30pm to 4:30pm; 5pm to 7pm			
Pavilion Rentals			
Daily Rental Rate		$ 200.00	$ 200.00
~~Wedding Rates - Ceremony/ Reception~~	~~$ 600.00~~	~~$ 650.00~~	~~$ 650.00~~
Non Wedding Rates (*Admission Included)			
~~1 to 50 people~~	~~$ 115.00~~	~~$ 125.00~~	~~$ 130.00~~
~~51 to 100 people~~	~~$ 225.00~~	~~$ 235.00~~	~~$ 250.00~~
~~101 to 150 people~~	~~$ 335.00~~	~~$ 345.00~~	~~$ 375.00~~
Outdoor Natural Setting Ceremony	$ 625.00	$ 675.00	$ 725.00
Field Center Rental			
Daily Rental Rate	$ 150.00	$ 150.00	$ 180.00
~~Portable Projector and Screen Rental~~	~~$ 50.00~~	~~$ 50.00~~	~~$ 75.00~~

Other Conservation Areas, excludes Ball's Falls Conservation Area

Binbrook, Chippawa Creek, and Long Beach Conservation Areas			
Beach/ Outdoor Natural Setting Ceremony (2 hour time allotment)	$ 300.00	$ 325.00	$ 350.00
Pavilion Ceremony Only (3 hour time allotment)	$ 300.00	$ 325.00	$ 350.00
Pavilion Reception - Licensed	$ 850.00	$ 950.00	$ 1,000.00
Pavilion Ceremony & Reception - Licensed	$ 1,100.00	$ 1,100.00	$ 1,200.00
Outdoor Ceremony & Pavilion Reception - Licensed	$ 1,100.00	$ 1,200.00	$ 1,300.00
Pavilion Rental - Non Wedding	$ 50.00	$ 110.00	$ 115.00

Report To: **Board of Directors**

Subject: **Coordinated Provincial Plan Review 2016**

Report No: **112-16**

Date: **October 19, 2016**

RECOMMENDATION:

1. THAT Report No. 112-16 be **APPROVED** by the Board and forwarded to the Province for their consideration in the review of the Greenbelt Plan, Places to Grow Plan and Niagara Escarpment Plan.

2. THAT a copy of this report be forwarded to the watershed municipalities.

PURPOSE:

To provide comments to the Provincial Government for consideration in the review of the Greenbelt Plan, Growth Plan and Niagara Escarpment Plan.

BACKGROUND:

On May 10, 2016 the Province released the new draft Provincial Plans and is currently seeking feedback on them by October 31, 2016. Staff provided comments to Conservation Ontario in July for the preparation of comments on behalf of all Ontario Conservation Authorities. Staff have participated in discussions with the Niagara Area Planners about the proposed changes. Staff also discussed the changes to the Provincial Plans with NPCA's Community Liaison Advisory Committee (CLAC) on two (2) occasions (June 20, 2106 and September 8, 2016).

The NPCA provided comments in 2015 on the proposed changes to the Provincial Plans (Report 51-15, May 2015). The comments were focused on the Provincial Plans that apply within the NPCA Watershed (Greenbelt Plan, Places to Grow and Niagara Escarpment Plan). The 2015 comments focused on 3 broad categories: Clarity, Flexibility and Sustainability. The proposed 2016 Plans have addressed some of NPCA's previous comments and new questions have arisen with the proposed policy changes.

The comments in this report are based on the Conservation Authority mandate under Section 20 of the Conservation Authorities Act: "The objects of an authority are to establish and undertake, in the area over which it has jurisdiction, a program designed to further the conservation, restoration, development and management of natural resources other than gas, oil, coal and minerals."

REPORT:

The Province has focused their review into eight (8) categories:

1. Building Complete Communities
2. Supporting Agriculture
3. Protecting Natural Heritage and Water
4. Growing the Greenbelt
5. Addressing Climate Change
6. Integrating Infrastructure
7. Improving Plan Implementation
8. Measuring Performance, Promoting Awareness and Increasing Engagement

The comments in this report are focused on Building Complete Communities, Supporting Agriculture, Protecting Natural Heritage and Water. The detailed comments on the individual Provincial Plans are included in Appendix 1.

Building Complete Communities

The province describes Complete Communities as *"places where homes, jobs, schools, community services, parks and recreation facilities are easily accessible. Complete communities encourage active transportation, like walking or biking, support public transit, and provide opportunities for people to connect with one another."* (p. 6, Shaping Land Use in the Greater Golden Horseshoe) **Staff support the concept of the development of "Complete Communities" and encourage the Province to broaden the definition** to include all aspects of healthy and sustainable communities such as public health and safety, and the contributions of a healthy environment (clean air/water; functioning and accessible natural systems and green infrastructure) to the overall health and well-being of residents.

The province is proposing to increase intensification targets in the Growth Plan to assist Ontario in reaching its climate change objectives as outlined in the Climate Change Strategy (2015). **Strong policies are required to ensure that increasing intensification targets does not equate to unreasonable pressure to develop lands adjacent to or within natural heritage or natural hazard areas** (e.g. steep slopes, floodplains) in order for municipalities and developers to meet the density targets. At the same time, thoughtful approaches to protection and management of natural features is required based on science, best management practices, and innovative technology.

Supporting Agriculture

In 2015, NPCA comments on the Provincial Plan review **encouraged the Province to develop a broader definition of agriculture and address value added agriculture** while at the same time maintaining the Plans' integrity regarding protecting water resources and natural heritage features. The Province provided clarification and greater flexibility for "on-farm diversified uses" by using common definitions from the Provincial Policy Statement (PPS) in the updated Provincial Plans.

In 2015, the NPCA also asked the Province to begin a policy discussion **to examine how reduced buffers could be implemented in the Greenbelt Plan for the Niagara Peninsula Tender Fruit and Grape Lands.** For example, Section 3.2.5. of the Greenbelt Plan proposed a reduced setback under certain conditions (e.g. Policy 3.2.5.9 indicates that a 15m vegetation protection zone between buildings or structures and the stream which is an agricultural swale, roadside ditch

or municipal drain as determined through provincially approved mapping without a hydrological evaluation in the Niagara Peninsula Tender Fruit and Grape Lands). A minimum 30m vegetation setback is required for all other locations in the Greenbelt Plan. The definition of "Vegetative Protection Zone" (VPZ) has also been updated in the proposed Greenbelt Plan.

When reviewing applications under the current Greenbelt Plan, NPCA staff recommend VPZs contain natural unmaintained vegetation, a variety of native grasses, shrubs and trees to establish natural cover. **For any VPZ areas under the Greenbelt Plan that has been determined to not require "self-sustaining vegetation" (i.e. Tender Fruit and Grape lands) the NPCA has recommended the establishment of deep rooted native grasses, which significantly aids in bank stabilization and provides some habitat value and benefit to the quality of water of the watercourse. These deep rooted grasses can be mowed 2-3 times a year. Staff continue to recommend the use of deep rooted native grasses in VPZs in the Niagara Peninsula Tender Fruit and Grape lands under the proposed Greenbelt Plan.**

Staff report to the Board annually on water quality within its watershed (Report 67-16). There is a known prevalent problem with poor water quality within NPCA watercourses. The 2012 NPCA Watershed Report Card https://npca.ca/sites/default/files/NPCA_2012WatershedReportCard_Summary_Web2.pdf includes a map showing the Surface Water Quality. The majority of the watershed report cards scored a "D" (poor water quality) due to high phosphorus concentrations and low benthic indicator scores. At the July 2016 Board meeting staff reported on Best Management Practices (BMPs) to improve Water Quality (Report 80-16). One of the recommended BMPs is riparian buffers (also called vegetative protection zones in the Greenbelt Plan) on watercourses. Riparian buffers are a common BMP recommended by Conservation Authorities, Ministry of Natural Resources and Ministry of Agriculture and Food.

The NPCA's restoration program provides a cost sharing program for buffers on watercourses https://npca.ca/sites/default/files/BufferBrochure.pdf for up to 75% of the project cost up to a maximum of $10,000. **Staff recommend that the NPCA partner with the Province (MMAH, OMAFRA, MNR) and willing landowners in the Niagara Tender Fruit and Grape Area to practically demonstrate how a buffer or VPZ can work to not only meet the needs of the agricultural community and but to also address the water quality issues identified in the NPCA's Annual Water Quality Report.**

When NPCA commented on the Provincial Plan review in 2015, we asked the Province to provide guidance documents with specific practical examples of what plant species could be included within vegetative protection zones. The NPCA continues to recommend that the Province provide this guidance tool in order to provide clarity to landowners, municipalities and Conservation Authorities as we all work towards achieving a sustainable balance between environmental conservation and agricultural prosperity.

Protecting Natural Heritage and Water

Natural Heritage Mapping

NPCA supports the identification of a Natural Heritage System and associated Water Resources System throughout the Greater Golden Horseshoe as proposed under the amended Growth Plan. The recent mandate letters from the Premier to the Provincial Ministries indicates that this mapping will be completed by the summer of 2017. **The Province is encouraged to use existing mapping from Conservation Authorities and municipalities, where it exists, to ensure that the best possible mapping product is developed.** For example, the NPCA

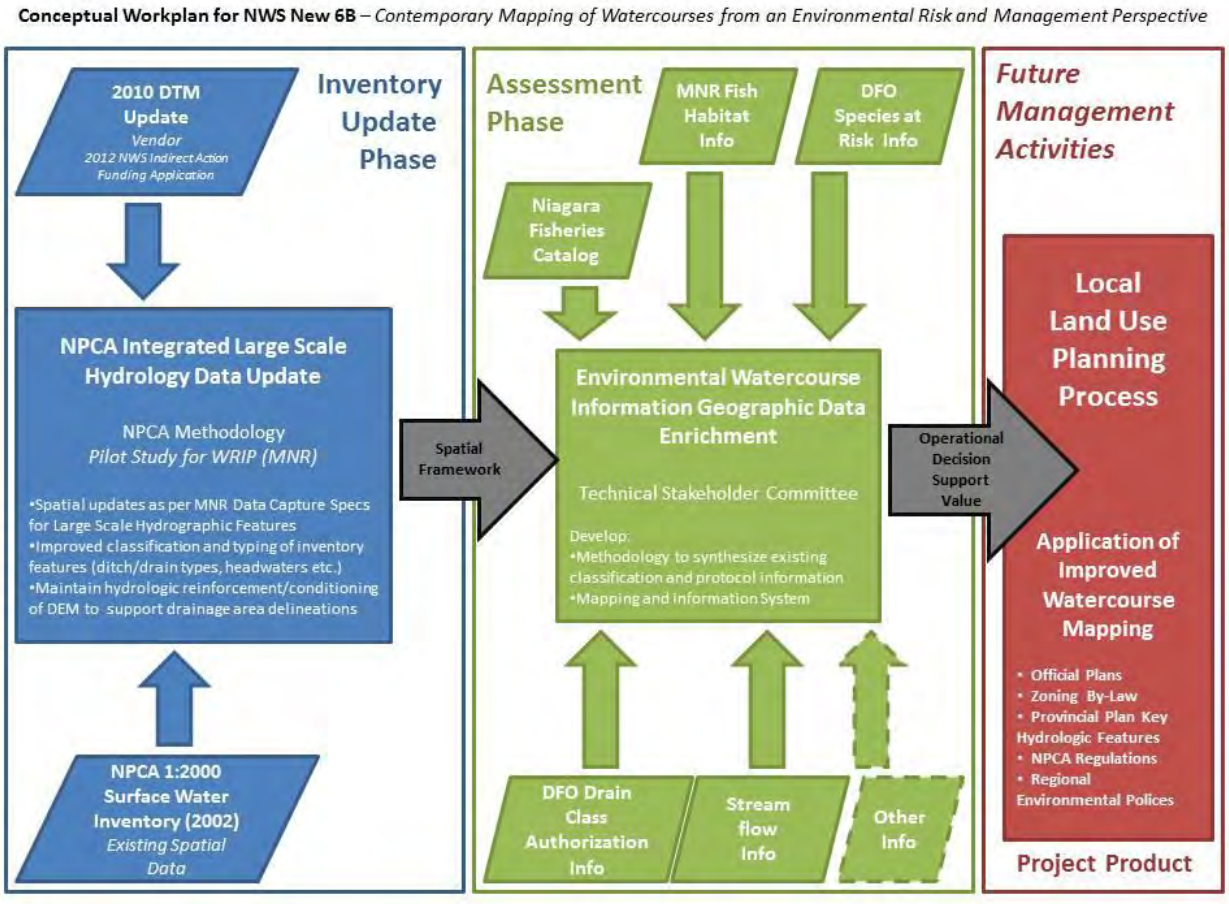
completed the Natural Areas Inventory (NAI) for the NPCA watershed in 2009 and it includes mapping a scale of 1:2000 community series mapping (in accordance with the Province's Ecological Land Classification (ELC) System). https://npca.ca/natural-areas-inventory

Natural Heritage mapping is often completed as part of a Watershed Plan. The Provincial Policies and mapping need to acknowledge that there will be an intersection of the two products. There also needs to be policy to address change in natural features that can take place over the 10-year life span of the Provincial Plans. **It is recommended that the Provincial Plans be amended to indicate that the Natural Heritage System and Water Resources System policies apply to unmapped features that meet the technical criteria for inclusion in the systems**.

Water Resource System Mapping

In 2015, NPCA recommended that the Province use the Contemporary Watercourse Mapping (CWM) prepared jointly by the NPCA and Region of Niagara to map "Key Hydrologic Features" in the Greenbelt Plan. **NPCA recommends that the Province use this methodology to map the Provincial Water Resources System**. Figure 1 below summarizes the workplan to be completed by the Region and NPCA (Phase 1 shown in blue has been completed). A pilot project in Niagara-on-the-Lake is underway to address the remaining phases.

Figure 1 - Contemporary Mapping of Watercourses Workplan



The **NPCA recommends that the Province revise the definitions of Permanent and Intermittent streams in the Provincial Plans** to be consistent with and to reflect the Provincial guidance provided in The Stream Permanency Handbook for South-Central Ontario, Second Edition, OMNR, 2013.http://www.ontla.on.ca/library/repository/mon/27009/316535.pdf The handbook indicates that Permanent Streams usually flow for most of the year but can run dry during drought conditions. Intermittent streams usually flow during wet seasons and in the summer after a major rain event. They are characterized as any non-permanent flowing drainage feature having a definable channel and evidence of annual scour or deposition.

Watershed Planning

NPCA staff supports the need to undertake watershed planning using an integrative collaborative approach, and the most current mapping and information. In this light, the Province is encouraged to amend the Plans to clearly identify Conservation Authorities as partners in the watershed planning process (as compared to Section 4.2.1.1 of the existing GP which states municipalities should partner with CAs only "as appropriate"). Conservation Authorities have significant expertise in this area and are prepared to assist with the development of Provincial guidance on watershed and subwatershed plan preparation.

Consistent terminology and definitions with regard to watershed planning within the Plans and between the Plans is also important.

The NPCA has completed some watershed plans within our jurisdiction https://npca.ca/watershed-plans. The NPCA received funding through the Region of Niagara's Watersmart program to complete a gap analysis including suggested priorities. A separate report on this subject is included in the October 2016 NPCA Board package (Report No 109-16) that can be shared with the Province.

FINANCIAL IMPLICATIONS:

None at this time.

RELATED REPORTS AND APPENDICES:

1. Report 51-15, 2015 Provincial Plan Review (referenced only)
2. Report 67-16, Water Quality Annual Report (Referenced only)
3. Report 80-16 Prioritization of Best Management Practices (BMPs) to Improve Water Quality (referenced only)
4. Report 112-14, Niagara Watersmart Grant for Gap Analysis to Establish a Framework for Watershed Plans (referenced only)
5. Report 109-16 – A Framework for Updating Watershed Plans
6. Appendix 1, Detailed comments on the Provincial Plans

Prepared by:

Suzanne McInnes, MCIP, RPP
Manager, Plan Review & Regulations

Reviewed by:

Peter Graham, P.Eng.
Director, Watershed Management

Submitted by:

Carmen D'Angelo
Chief Administrative Officer / Secretary Treasurer

Greenbelt Plan

Section	Comment
General Comments	The NHS system could use refinement within the NPCA jurisdiction. The NPCA would be happy to provide information to support the Province in this regard.
General Comments	Detailed guidance for the determination of Key Hydrologic Features (i.e. do these include ephemeral watercourses?) and significant surface water contribution areas (i.e. how much area to meet criteria as significant?) should be a priority, and will be essential to ensure consistent application of the Policies of the Plan.
General Comments	There are many instances where policies of the Greenbelt Plan and Growth Plan with respect to natural heritage are very similar but with minor wording differences. These should be updated so that both plans use the same policy wording and terms, to avoid confusion over the intent of these minor differences.
General Comments	All Key Hydrologic Features policies within all Plans should ensure that their ecological functions are also considered and subject to "no negative impact" as some only refer to hydrologic functions.
Policy 3.2.1	The Protected Countryside includes several areas of hydrologic significance, including: The former Lake Iroquois shoreline in … Niagara Region. Need clarification from the Province about the significance of this feature with the NPCA watershed.
Policy 3.2.2.3(a)	of the Greenbelt Plan requires "no negative effects", while the Growth Plan requires "no negative impacts". The same wording should be used for both sets of policies to avoid confusion.
Policy 3.2.5.7	exempts proposed development from the requirement of establishing a condition of natural self-sustaining vegetation within a vegetation protection zone. The NPCA requests more detailed information on examples of what would be acceptable vegetation within this area if not expected to be natural self-sustaining. For example, would vineyard, crops, ornamental gardens, etc. be acceptable forms of vegetation protection zone?
Policy 3.2.5.8 b) through f)	allows for development which is exempted from requiring a hydrologic evaluation based on the proposal meeting a variety of mitigation conditions. The NPCA is concerned that these conditions may be difficult to implement due to wording such as "where feasible", "to the maximum extent possible" and due to the fact that the determination of whether a proposed development has met many of these conditions could be very subjective.
Policy Section 4.3.2 (9)(b)	A new *mineral aggregate operation* or wayside pits and quarries may only be considered on primary and secondary selected sand and gravel resources on the Fonthill Kame, in the Town of Pelham, as identified by Aggregate Resource Inventory Paper

	#4. Does this statement mean the ANSI designation does not matter?
Definitions	
Access Standards	defined in PPS but not any of the other Provincial Plans
Adjacent lands	defined in in PPS but not any of the other Provincial Plans
ANSI	Greenbelt Plan only refers to Life Science ANSI's. PPS and all other Plans include both Life Science and Earth Science ANSi's. A consistent definition should be used.
Coastal Wetland	only defined in PPS, none of the other Provincial Plans
Development	Why does Greenbelt Plan have a different definition from PPS and Growth Plan? Should be a consistent definition.
Erosion Hazard	why no definition in the Greenbelt Plan? Only PPS & NEP include this definition currently.
Flooding Hazard	why no definition in the Greenbelt Plan? Only PPS & NEP include this definition currently.
Groundwater features	why isn't this in Greenbelt Plan? Only PPS and Growth Plan include this definition
Hazardous Sites	this is only defined in PPS? Why not in other Provincial Plans?
Intermittent streams	This definition is new. It should be revised to reflect the Province's Stream Permancy Handbook 2013 http://www.ontla.on.ca/library/repository/mon/27009/316535.pdf
Natural Self Sustaining Vegetation	While it is defined in the plan there is no detail or guidance from the Province as to what is intended.
Negative Impact	Why is the Greenbelt definition different from the PPS? Need consistent definitions in the PPS and Provincial Plans.
Permanent streams	Definition should be revised to reflect the Province's Stream Permancy Handbook 2013 http://www.ontla.on.ca/library/repository/mon/27009/316535.pdf
Recreational Uses	should be defined. For example, are motorized sports or large scale or commercial recreational uses included?
Stormwater Management Plan	Why is this only defined in the Growth Plan? Stormwater Management is important outside of urban areas and settlement areas too.
Significant Groundwater Recharge Area	It should be noted the definition of significant groundwater recharge area has been broadened. It can now be more than just mapping completed as part of the Source Water Protection Assessment Report.
Vegetated Protection Zone	The **Vegetated Protection Zone** definition has been changed to simply state "A vegetated buffer area surrounding a key natural heritage feature or key hydrologic feature", which does not provide us with any more detail regarding acceptable "buffer" types than previously.

Growth Plan

Section	Comment
Section 1.1	The last bullet point before Section 1.2 emphasizes protecting valuable water resources and natural areas. This was not in the existing Growth Plan.
Section 1.2.1	One of the Guiding Principles of the proposed Growth Plan is protection of natural heritage, hydrologic and landform features and functions, which was not in the existing Growth Plan.
Section 1.2.2	The transition policy appears to be that as of an effective date all decisions made on or thereafter on a planning matter is to conform with the proposed Growth Plan. This has significant implications as there appears to be many new policies around natural heritage that the NPCA will be responsible for reviewing (under the Niagara MOU) that can affect applications that are in mid-process when the proposed Growth Plan takes effect.
Section 1.2.3	This section provides more clarity on which of the Provincial Plans takes precedent in the event of a conflict.
Section 2.2.1.4	This subsection pertains to managing growth and identifies some of the requirements for managing growth. One of the new policies requires municipalities to identify areas where development is prohibited. Presumably, this will involve identifying natural heritage features, which will have implications for the NPCA under the Niagara MOU (assisting in delineating natural heritage features).
Section 2.2.2.3	The previous intensification target of 40 percent of all residential development within the built-up area is being increased to 60 percent. This will likely result in an increase in development of underutilized lots in all municipalities but especially those municipalities with no Greenfield areas (e.g. St. Catharines). This may create greater pressure to develop lands along/within natural heritage areas or hazards/valleys in urban areas in order for developers to meet the density targets.
Section 2.2.7	This Section applies to Greenfield areas and increased the required density target from 50 people and jobs per hectare to 80 people and jobs per hectare. This may create greater pressure to develop lands along/within natural heritage areas or hazards/valleys in urban areas in order for developers to meet the density targets.
Section 2.2.8	This Section applies to settlement area boundary expansions. There is a new requirement for municipalities to complete a subwatershed plan or equivalent when undertaking a municipal comprehensive review. This will have significant implications for the NPCA since we have several watershed/subwatershed plans and are a key stakeholder for any municipality undertaking watershed/subwatershed plan. The NPCA's exact role in this remains unclear (will the NPCA be taking the lead on subwatershed plans or will the NPCA provide a supporting role for municipalities undertaking subwatershed planning?). In addition, Provincial staff have advised that an update to existing

	provincial technical documents for watershed and subwatershed planning will be undertaken, however, this is not expected until 2018. There is also a new requirement for municipalities to demonstrate the financial viability of infrastructure through asset management planning. There may be implications to the NPCA since we review stormwater management plans for development applications through the Niagara MOU and much of the stormwater infrastructure we review gets assumed by local municipalities.
General Comment	Throughout the proposed Growth Plan, there are polices that require various municipal studies/planning exercises to be "informed" by either subwatershed planning or watershed planning. The exact meaning of the term "informed" is unknown and may be a subject of debate between the NPCA and area municipalities.
Section 3.2.1	This Section pertains to integrated planning. This is a new term in the proposed Growth Plan. As part of planning for new/expanded infrastructure, watershed planning is required to be conducted. The above comment for Section 2.2.8 applies here.
Section 3.2.5.1	This Section pertains to infrastructure corridors. There is a requirement for upper-tier/single-tier municipalities to demonstrate through an Environmental Assessment avoidance or impact minimization/mitigation to key natural heritage features, key hydrologic features and key hydrologic areas, to the extent possible. This is a helpful policy that provides extra emphasis on protection of natural heritage features.
Section 3.2.6.2	New water/wastewater systems or expansions to existing water/wastewater systems require a comprehensive water/wastewater master plan or equivalent, which is to be informed by watershed planning. The same comment as noted for Section 2.2.8 applies here.
Section 3.2.7 (b)	Needs clarification (e.g. how extreme is extreme) – "examine the cumulative environmental impacts of stormwater from existing and planned development, including an assessment of how extreme weather events will exacerbate these impacts"
Section 3.2.7.1	This Section requires stormwater master plans to be informed by watershed planning. This section also requires stormwater master plans to incorporate low impact development and green infrastructure. The same comment for Section 2.2.8 applies here.
Section 3.2.7.2	This Section requires large-scale developments proceeding by way of secondary plans, plans of subdivision and vacant land condominiums to be supported by a stormwater management plan (or equivalent) that is informed by a subwatershed plan or equivalent. It is unclear what is considered an "equivalent" to a subwatershed plan. There is a concern that a developer may try

	to argue that a stormwater management plan is the equivalent of a subwatershed plan. Also, the proposed Growth Plan does not define “large-scale development” so there is a question about what is considered a large-scale development (this will vary from one municipality to another). Also, is it the municipality who determines if a development is large scale or can the NPCA make this determination for the purposes of reviewing a stormwater management plan?
Section 4	This Section has been completely re-written and focuses mainly on protecting natural heritage systems/features.
Section 4.2.1.1	This Section requires municipalities to undertake watershed planning. While it notes a partnership with Conservation Authorities, the use of the term “as appropriate” makes it unclear if partnering with a CA is discretionary or mandatory (e.g. when would it be inappropriate to partner with a CA?).
Section 4.2.1.2	This Section requires the identification of a water resource system and applying appropriate Official Plan designations to ensure protection of key hydrologic features and key hydrologic areas over the long-term. This will have implications for projects such as the Contemporary Watercourse Mapping Project that involve us providing our municipal partners with watercourse information/mapping.
Section 4.2.2.1	This policy provides an emphasis on protecting/maintaining/restoring/enhancing the diversity and connectivity of natural heritage features and areas. This new direction in the proposed Growth Plan will have implications for the NPCA in reviewing development applications in Niagara Region. Under the Niagara MOU, the NPCA is to review development applications against Provincial Plans, including the existing/proposed Growth Plan. The existing Growth Plan does not have any real environmental policies, however, the proposed Growth Plan has extensive environmental policies that apply in areas where there may not have been any applicable environmental policies.
Section 4.2.2.2	This Section notes that the Province will be providing mapping for a natural heritage system. It is unclear if the NPCA will have any role in such a mapping exercise. Provincial staff have indicated that this exercise will not be complete until sometime in 2018; this leaves uncertainty as to what mapping will be used in the interim.
Section 4.2.2.4	This Section is new and contains policies for natural heritage systems, particularly criteria for permitted uses. Several of the individual policies are identical to the existing Greenbelt Plan Natural Heritage System policies. Most of the policies in this Section do not apply to a natural heritage system within a settlement boundary.
Section 4.2.3	This Section is new and provides policies for Key Hydrologic Features, Key Hydrologic Areas and Key Natural Heritage

	Features. This is a similar approach to the existing Greenbelt Plan and would apply similar policies the remainder of the NPCA's watershed that is not within the existing Greenbelt Plan.
Section 4.2.3.2	This specific policy applies to Key Hydrologic Areas that are undergoing large-scale development proceeding by secondary plans, plans of subdivision and vacant land condominiums. There is a requirement that such large-scale development demonstrate that the hydrologic functions of the area will be protected and that the development will maintain, improve or restore the quality and quantity of water. While this policy only applies outside of settlement areas (where such development is typically limited), there is still the issue of lack of clarity on what is considered "large-scale".
Section 4.2.4	This Section pertains to adjacent lands to Key Hydrologic Features, Key Hydrologic Areas and Key Natural Heritage Features and contains similar policies to the current Greenbelt Plan. This Section has significant implications for much of the NPCA's watershed as it now requires vegetation protection zones around Key Hydrologic Features (which by definition includes **any** permanent stream, intermittent stream, inland lake, seepage area and springs and wetlands). This policy has been challenging in the Greenbelt municipalities, particularly NOTL and may be challenging in the southern municipalities.
Section 4.2.5	This is a new Section that applies to developed shoreline areas outside of settlement areas. It provides policies to guide minor rounding out, infill development, redevelopment and resort development that were previously zoned for concentrations of development as of an effective date. This Section may have implications for areas along Lake Erie. It is unclear what is meant as a "concentration of development" (e.g. is linear development along a shoreline considered a concentration of development?). The policies in this Section provide greater environmental protection and have stringent requirements for redevelopment and resort development.
Section 4.2.8	This Section applies to Mineral Aggregate Resources and provides new environmental policies for such operations. While there are not a lot of aggregate operations in the NPCA's watershed, there are still some active operations to which these policies would apply at the time of expansion.
Section 4.2.9	This Section has been updated to include new policies. One new policy in particular applies to excess soil and fill. Unfortunately, there is not a lot to this policy and the approval framework for excess soil and fill needs updating by the Province.
Section 5.2.2	This Section provides supplementary direction from the Province to implement the proposed Growth Plan. The concern of staff is that in many instances, direction from the Province on several technical issues (watershed planning, delineation of a natural heritage system, etc.) will not be coming for a least a year from when the proposed Growth Plan comes into effect. There is no

	direction on how to proceed with implementing the proposed Growth Plan in the absence of the required information from the Province.
Section 5.2.5.4	This specific policy clarifies that the density targets in the proposed Growth Plan do not apply to permit development within hazardous lands. While this will help alleviate development pressures within such features, it does little to assist in situations where developers/municipalities contest the presence of hazardous lands in the first place.
Section 5.2.6	This Section pertains to performance indicators and monitoring. It is specifically noted that the Minister (Municipal Affairs and Housing) may require municipalities and conservation authorities to provide data and information to the Minister for the purpose of demonstrating progress in implementing the proposed Growth Plan. This will have implications with respect to the NPCA's water quality monitoring program and it may be appropriate to review our monitoring program to look for possible improvements.
Section 5.2.8	This Section contains policies affecting existing Draft Approved Plans of Subdivision and requires consideration of the Growth Plan at the time of extension of DPA. Since there are several Niagara municipalities with subdivisions that have been Draft Approved for more than 5 years, this policy has significant implications for NPCA staff since a number of these subdivisions would not conform to the proposed Growth Plan.
Definitions	
Ecological Function	Term only defined in Greenbelt Plan. Should be included in Growth Plan too. See Policy 4.2.4.2.
Ecological Integrity	Term only defined in Greenbelt Plan. Should be included in Growth Plan too. See Policy 4.1, 4.2.8.5
Ecological Value	Term only defined in Greenbelt Plan. Should be included in Growth Plan too. See Policy 4.2.8.5
Intermittent streams	Only defined in NEP and Greenbelt. In the Growth Plan it is included in the definition of "Key Hydrologic Features". Consistent definitions should be used in all Provincial Plans.
Significant Wildlife Habitat	Growth Plan definition doesn't match PPS. Consistent definitions should be used in the PPS and all Provincial Plans.
Significant Woodland	Growth Plan definition doesn't match PPS. Consistent definitions should be used in the PPS and all Provincial Plans.
Significant Valleyland	Growth Plan definition doesn't match PPS. Consistent definitions should be used in the PPS and all Provincial Plans.

Niagara Escarpment Plan

-Section 1.3.1, Section 1.4.1, Section 1.5.1 (6), pdf page 33 & Section 1.8.1 (6),	There is no mention of hydrologic function or features in the objectives for Escarpment Natural or Protection Areas, but there are objectives for lesser sensitive Escarpment Rural and Escarpment Recreational Areas?
Section 1.6.8, -Section 1.7.5, Section 1.8.5 (9), Section 1.7.3	The hydrologic feature, Intermittent streams, have not been mapped using the new provincial definition which includes consideration of the water table. The hydrologic features, seeps and springs, also have not been mapped. Without mapping implementing these protection policies will be difficult.
Section 2.2. General Development Criteria, (1b)	Natural hazards are not defined in document. Does this include karst situations? Karst terrain is a consideration with respect to hydrologic features, e.g. seeps and springs and aquifer protection.
Section 2.6 Development Affecting Water Resources,	1. The hydrologic feature, Intermittent streams, has not been mapped using the new provincial definition which includes consideration of the water table. The hydrologic features, seeps and springs, also have not been mapped. Without mapping implementing these protection policies will be difficult. 2. To implement these policies a new process will need to be developed by NPCA. For example staff would need to complete an internal hydrologic review for assessment of impact (e.g. annual infiltration requirements for an adjacent provincially significant wetland). If it was believed negative impact could occur an external study (which may include field work) could be requested and/or mitigation measures recommended. This would be additional work for proponents, and additional work for NPCA staff. I believe the policy is implementable but not without additional staff resources and a framework for implementing that may require public consultation and research.
Section 2.6	Development Affecting Water Resources. Some policies here regarding stream realignments, flood and erosion control works which is fine. Interestingly enough, there is no mention of the need to implement SWM controls to protect the water quality or to prevent flooding. Recognizing that development in the NEP will generally not be on a large scale, but some language regarding the need for SWM would benefit the intent of the plan. NPCA staff suggest that the NEP use the same strategy as the Greenbelt plan and defer to the SWM policies outlined in the Growth Plan.
Section 2.6 (7)	While the set-back is welcome I would recommend including also including a 50 metre set-back from any existing or future groundwater supply as well (at least as possible within a lot of record). Otherwise this policy may only protect features but not water users because aquifer is not listed as a key hydrologic feature.
Section 2.6 (9?)	Policy appears reasonable and implementable. However I would advocate we, or the province, or the municipalities, attempt to describe the details of protection similar to the

	Explanatory Document for the Source Protection Plan. This would serve everyone to ensure consistency in policy application.
Section 2.7,	To implement this policy a new process will need to be developed by NPCA. For example staff would need to complete an internal hydrologic review for assessment of impact (e.g. annual infiltration requirements for an adjacent provincially significant wetland). If it was believed negative impact could occur an external study (which may include field work) could be requested and/or mitigation measures recommended. This would be additional work for proponents, and additional work for NPCA staff. I believe the policy is implementable but not without additional staff resources and a framework for implementing that may require public consultation and research.
Section 2.7	To implement this policy I believe our existing process for forest management would require adding a screening layer for the forester to screen for groundwater recharge and discharge areas. However we do not have mapping of the discharge areas. Without the mapping implementing this policy would be incomplete. NPCA could generate this discharge mapping but would require additional staff resources in the field.
Section 3.1.2.2	Not all NEPOSS properties warrant the same extensive management planning approach as prescribed in the NEPOSS Planning Manual. There should be a fast-track process for many of the smaller NEPOSS properties, particularly when major land-use changes are not being proposed.
Section 3.1.5.1	Not reasonable or cost-warranted to prepare a management plan for each park and open space within the NEPOSS
Other	We appreciate the opportunity to allow rock climbing, zip-lining and ropes courses……however, we would further suggest that minor exceptions or variations be allowed through a management plan process Clarity around use of off-road vehicles is appreciated.
Definitions	
Conserved	The NEP definition does not match PPS. Use consistent definitions in the PPS and Provincial Plans.
Development	There is no definition in the NEP for development. Consider adding one that is consistent with the PPS.
Habitat of Endangered and Threatened Species	The NEP definition does not match PPS. Use consistent definitions in the PPS and Provincial Plans.
Hazardous Lands	There is no definition in the NEP for Hazardous Lands. Consider adding one that is consistent with the PPS.
Intermittent Streams	This definition likely requires NPCA to start gathering data about the presence of the water table during spring and these watercourses. A number of pilot sites could potentially provide sufficient information to generalize in certain soil types and physiography. However additional NPCA staff and resources would be required.

Negative Impact	The NEP definition does not match PPS. Use consistent definitions in the PPS and Provincial Plans.
Seepage Areas and Springs	NPCA does not have mapping of these key hydrologic features. Additional NPCA staff and resources would be required to map these for implementing policies.
Site Alteration	There is no definition in the NEP for site alteration. Consider adding one that is consistent with the PPS.
Stormwater Management	There is no definition in the NEP for stormwater management. Consider adding one that is consistent with the PPS.
Woodland	There is no definition in the NEP for woodland. Consider adding one that is consistent with the PPS.