Quinte CONSERVATION

WATERSHED-BASED RESOURCE MANAGEMENT STRATEGY

Land Acknowledgement

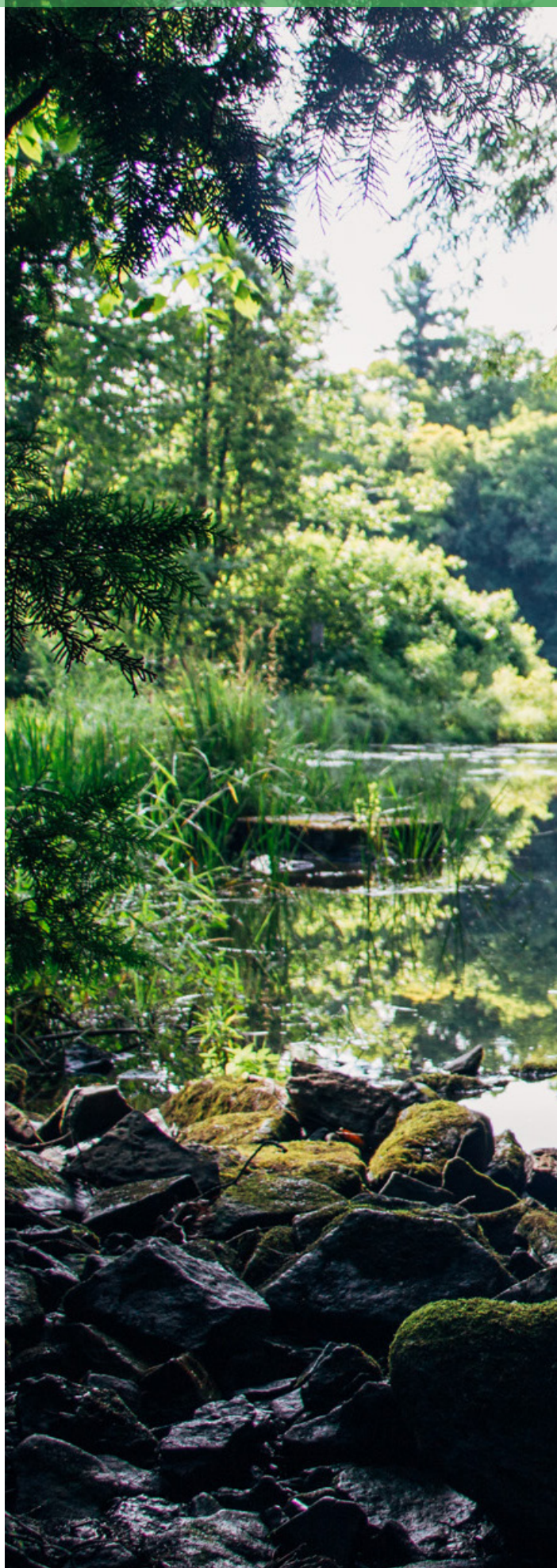
Quinte Conservation acknowledges the Indigenous Peoples of the lands where we conduct business and find ourselves on today.

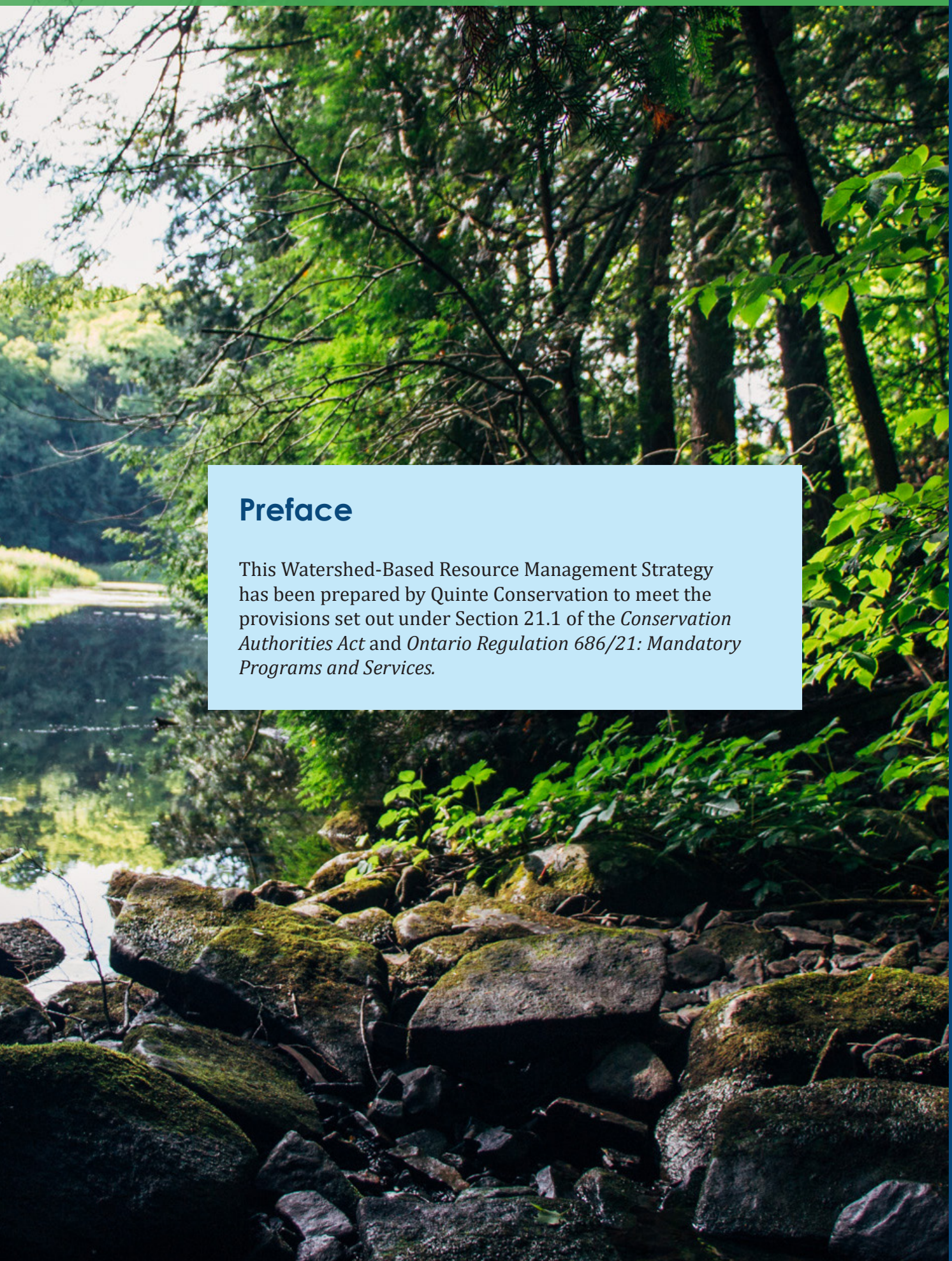
The watersheds of the Quinte region are located on the ancestral and unceded territory of the Haudenosaunee, Anishinabek, Mississaugas, and Huron-Wendat, and adjacent to the Mohawks of the Bay of Quinte. We recognize and deeply appreciate their historic connection to this place, and we acknowledge our shared responsibilities and obligations to preserve and protect the land, air, and water.

We recognize the contributions of Metis, Inuit, and other Indigenous peoples in shaping and strengthening our communities, the province, and the country.

We are grateful for the privilege to meet, explore, and connect on these shared lands. In the spirit of friendship, peace, and respect, we extend our thanks to all the generations that came before us.

Let us commit to acknowledging the harms of the past and actively work toward reconciliation and collaboration in our daily lives.





Preface

This Watershed-Based Resource Management Strategy has been prepared by Quinte Conservation to meet the provisions set out under Section 21.1 of the *Conservation Authorities Act* and *Ontario Regulation 686/21: Mandatory Programs and Services.*

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1. Introduction

1.1 Purpose

Quinte Conservation (QC) has prepared this Watershed-Based Resource Management Strategy (the Strategy) to meet the provisions set out in Section 21.1 of the Conservation Authorities Act (CA Act) and *Ontario Regulation 686/21: Mandatory Programs and Services* (O. Reg. 686/21).

The Strategy aims to identify the guiding principles and objectives of QC's mandatory, municipal and other programs, and services. The Strategy will assist the authority with enhancing the delivery of its mandatory programs and services, assess any issues, and identify risks that impact the effective delivery of its other programs and services. The Strategy also highlights desirable future programs, services, and actions that will help QC meet its objectives and long-term goals.

Ontario Regulation 686/21: Mandatory Programs and Service

12 (4) The watershed-based resource management strategy referred to in paragraph 3 of subsection (1) shall include the following components:

1. Guiding principles and objectives that inform the design and delivery of the programs and services that the authority is required to provide under section 21.1 of the Act.

2. A summary of existing technical studies, monitoring programs and other information on the natural resources the authority relies on within its area of jurisdiction or in specific watersheds that directly informs and supports the delivery of programs and services under section 21.1 of the Act.

3. A review of the authority's programs and services provided under section 21.1 of the Act for the purposes of,
   i. determining if the programs and services comply with the regulations made under clause 40 (1) (b) of the Act,
   ii. identifying and analyzing issues and risks that limit the effectiveness of the delivery of these programs and services, and
   iii. identifying actions to address the issues and mitigate the risks identified by the review and providing a cost estimate for the implementation of those actions.

4. A process for the periodic review and updating of the watershed-based resource management strategy by the authority that includes procedures to ensure stakeholders and the public are consulted during the review and update process.

(5) Subject to subsections (6) and (7), a watershed-based resource management strategy may include programs and services provided by the authority under sections 21.1.1 and 21.1.2 of the Act.

(6) If, in respect of programs and services the authority provides under subsection 21.1.1 (1) of the Act, a memorandum of understanding or other agreement is required, a watershed-based resource management strategy may not include those programs and services unless the memorandum of understanding or other agreement includes provisions that those programs and services be included in the strategy.

(7) If, in respect of programs and services the authority provides under subsection 21.1.2 (1) of the Act, an agreement is required under subsection 21.1.2 (2), a watershed-based resource management strategy may not include those programs and services unless the agreement includes provisions that those programs and services be included in the strategy.

(8) The authority shall ensure stakeholders and the public are consulted during the preparation of the watershed- based resource management strategy in a manner that the authority considers advisable.

(9) The authority shall ensure that the watershed-based resource management strategy is made public on the authority's website.

1.2 Regulatory Framework

Section 21.1 of the CA Act sets out the *Mandatory Programs and Services* which must be delivered by all conservation authorities and are described in more detail under O. Reg. 686/21.

Section 21.1.1 of the CA Act refers to the *Municipal Programs and Services* that conservation authorities are permitted to provide under agreements with their member municipalities.

Section 21.1.2 sets out the *Other Programs and Services* that conservation authorities are permitted to deliver. These three levels of programs and services are referred to as Category 1, 2, and 3 respectively.

Subsection 12(1) paragraph 3 of O. Reg. 686/21 requires all conservation authorities to prepare a watershed-based resource management strategy per subsections 12(4) through (9).

1.3 About Quinte Conservation

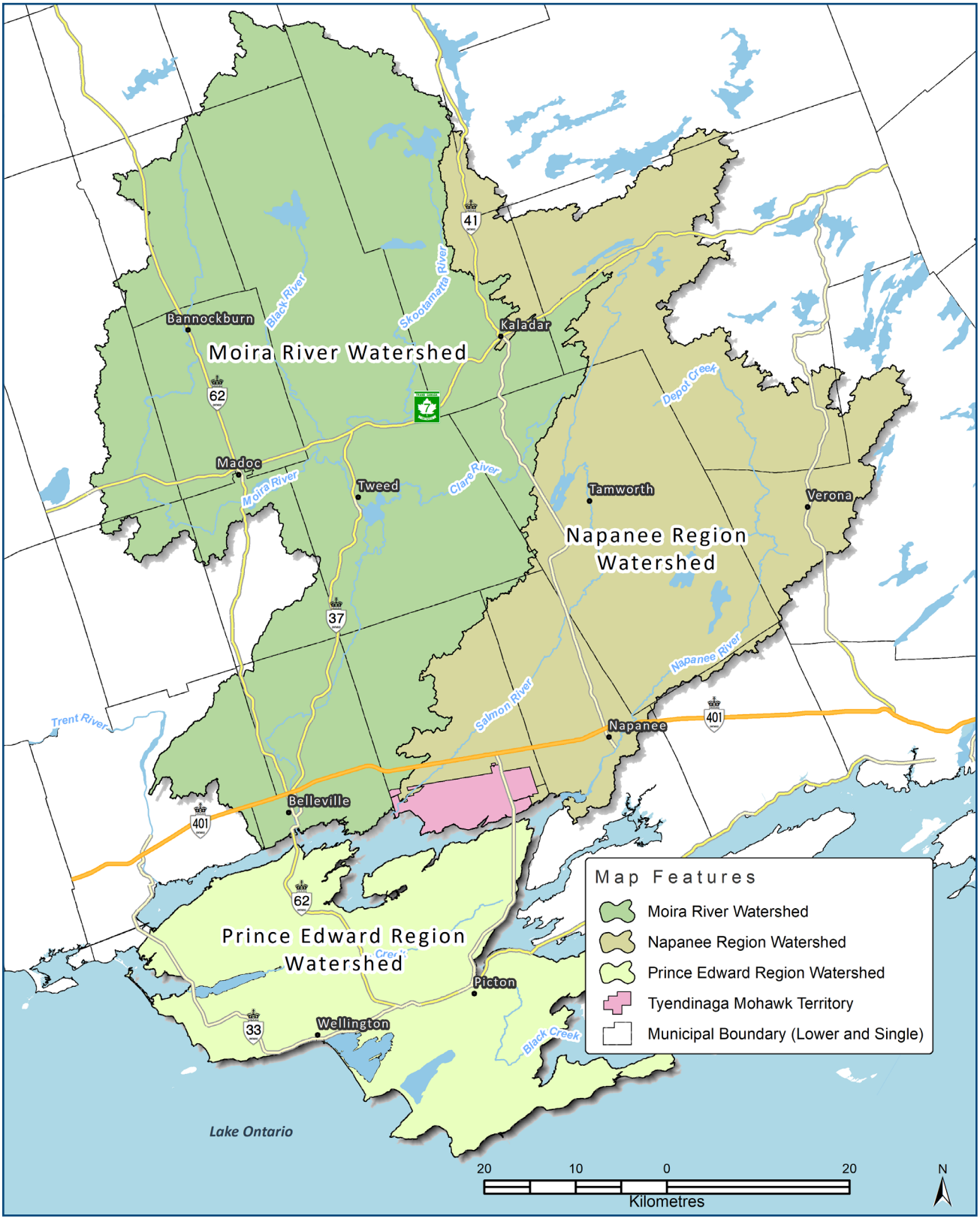
The Quinte Conservation Authority was formed in 1996 with the amalgamation of the Moira River Conservation Authority (established in 1947), the Napanee Region Conservation Authority (established in 1947), and the Prince Edward Region Conservation Authority (established in 1965) (See Map 1). Located in southeastern Ontario, QC's area of jurisdiction covers over 6,000 square kilometres and includes all, or portions of the following:

- City of Belleville
- City of Quinte West
- Corporation of Loyalist Township
- County of Prince Edward
- Municipality of Centre Hastings
- Municipality of Marmora and Lake
- Municipality of Tweed
- Town of Deseronto
- Town of Greater Napanee
- Township of Addington Highlands
- Township of Central Frontenac
- Township of Madoc
- Township of North Frontenac
- Township of South Frontenac
- Township of Stirling and Rawdon
- Township of Stone Mills
- Township of Tudor and Cashel
- Township of Tyendinaga

The CA Act of Ontario provides the mechanism for establishing and administering a Conservation Authority. The CA Act reads as follows:

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

The Quinte Conservation Executive Board (the Board) is comprised of 21 representatives from the 18 member municipalities. As per the CA Act Subsection 2.2, the City of Belleville has three representatives, and the County of Prince Edward has two representatives. The Board and staff work with a growing number of partners who share a concern for the future of the region's environment. These partners provide information, ideas, labour, and funding. More information about QC can be found at QuinteConservation.ca and in the Annual Reports and the Strategic Plan (2021-2030).



Map 1: Amalgamated watersheds.

2. Strategic Direction

2.1 Strategic Plan

The Strategic Plan 2021-2030 outlines QC's operating principles, core capabilities, drivers, and action plan, which helps the organization thrive in this ever-changing world.

QC's vision for the future *is to advance watershed knowledge and collective actions to strengthen our natural ecosystems*. The Strategic Plan identifies four drivers that support achievement of the vision:

- Accelerating Advocacy
- Boosting Well-being
- Advancing Environmental Science
- Strengthening Brand Recognition

QC's mission is to *create a sustainable ecosystem where people and nature live in harmony*.

2.2 Guiding Principles

This section describes the guiding principles and objectives that inform the design and delivery of QC's programs and services as per O. Reg. 686/21 Section 12(4)(1).

The following are QC's guiding principles:

- The watershed forms the basis of conservation, restoration, development, and management of natural resources by QC.
- The Strategy is the framework to identify and assess resource conditions, trends, risks, and issues, and to implement programs and services to manage them.
- To avoid, reduce or mitigate potential risk to public health and safety, and to property.
- To provide efficient and affordable delivery of programs and services on behalf of watershed member municipalities and their residents.
- To recognize that resource management in a watershed is interconnected, and science and monitoring are imperative to inform policy and decision-making by QC and partners.

2.3 Objectives

The objectives inform the design and delivery of the programs and services that QC is required to provide under the CA Act. They reflect Category 1 and, where supported through agreements, Category 2 and 3 programs and services.

The objectives are:

- To prevent and mitigate the risk to life and property from flooding, erosion, and other natural hazards and from the impacts of a changing climate.
- To mitigate the risk to municipal drinking water sources and to ensure a sustainable and clean water supply for present and future communities.
- To identify and understand key resource issues and the primary stressors that cause them.
- To characterize groundwater and surface water systems and other natural resources of the watershed.
- To conserve, restore, and enhance natural lands in the watershed.
- To provide opportunities for outdoor recreation, education, and stewardship.

2.4 Budget

Annually, the Board issues a budget to outline QC's priorities. The budget is created to help QC meet its goals and objectives, while striving towards its vision. The budget categorizes the programs and services into Categories 1, 2, and 3 (Mandatory, Municipal, and Other). (See Figure 1)

QC obtains revenue from several sources to fund its programs and services. The average 2023/24 distribution of revenue streams is shown below. (See Figure 2)

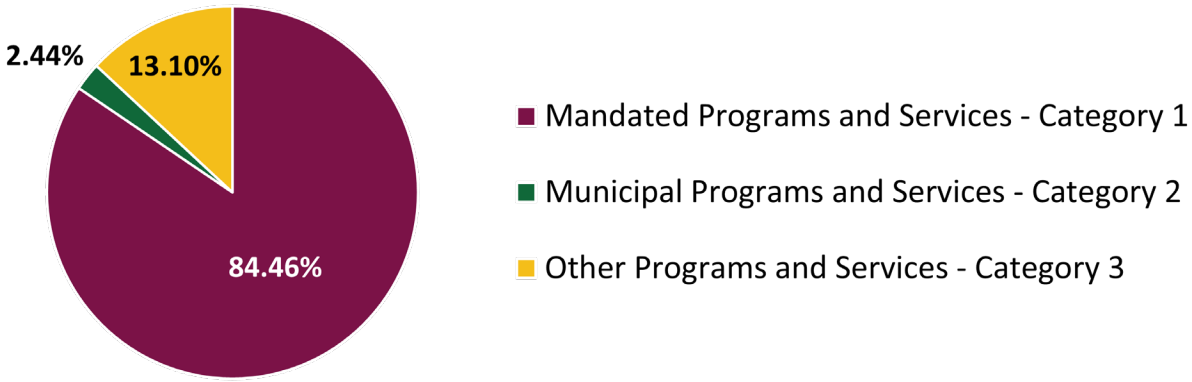


Figure 1: Quinte Conservation's budget categories.

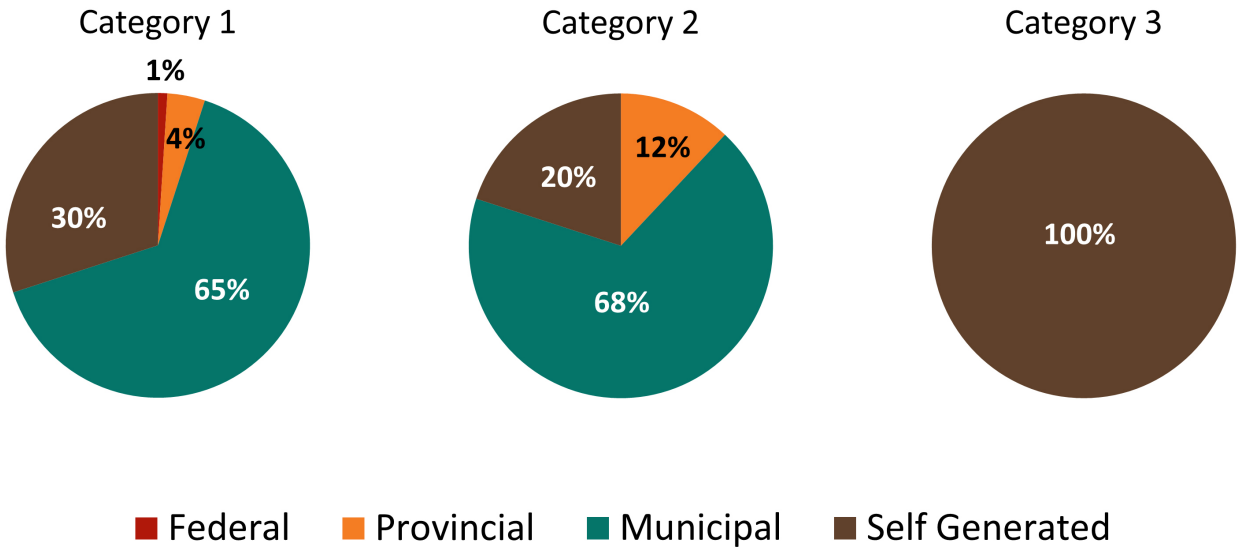
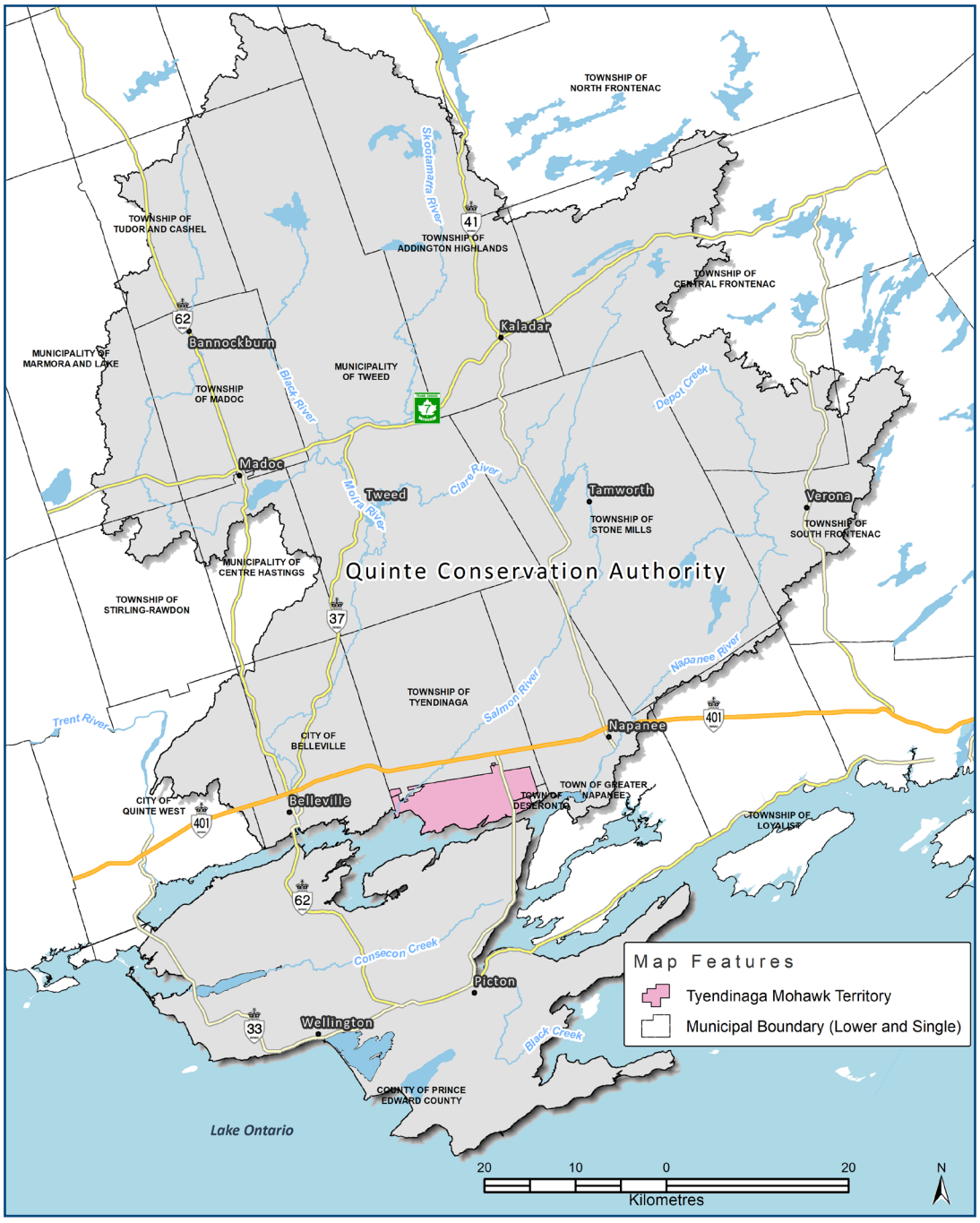


Figure 2: QC's revenue streams.

3. Watershed Characterization

The QC watershed is located in southeastern Ontario, covering over 6,000 square kilometres, stretching from Upper Partridge Lake to the Bay of Quinte and Lake Ontario (See Map 2). It is situated on the traditional territory of the Anishinaabek, Huron-Wendat, Mississaugas and Haudenosaunee peoples. The Tyendinaga Mohawk Territory is located adjacent to the eastern watershed boundary.



Map 2: QC watershed

3.1 Physical Geography

The QC watershed lies along the border of two distinct physiographic regions: the Great Lakes Lowlands and the Canadian Shield. These two regions exhibit contrasting physical conditions with the rocky highlands of the Canadian Shield to the north and the limestone plains of the Great Lakes Lowlands, along the shores of the Bay of Quinte and Lake Ontario, to the south.

With thin soil and sediment cover, bedrock geology has a large influence on the physical landscape and the flow patterns of surface water and groundwater. Precambrian bedrock underlies the entire region, with up to 300 metres of Paleozoic limestone covering the southern area of Prince Edward County. The underlying Precambrian bedrock is comprised of igneous and metamorphic rocks that range between 0.9 to 1.6 billion years of age. Precambrian rock dominates the northern portion of the watershed, ranging between 0.9 and 1.6 billion years in age, and is visible at or near the surface throughout the Canadian Shield portion of the watershed. In the southern part of the watershed, the Precambrian bedrock is overlain by sedimentary rocks of the Paleozoic era (approximately 500 million years old).

Surficial geology in the QC watershed has been shaped by the most recent glacial period (ending approximately 10,000 years ago). This period resulted in the removal and deposition of sediment throughout the watershed with most of the area being scraped and scoured leaving behind a thin cover (less than one metre) of drift over the bedrock.

Given the watershed's bedrock geology, there are numerous different soil types, including sandy loam, plant litter layers, non-calcareous, calcareous, and stony soils. These soil types play a role in what the potential land uses are. In the northern part of the watershed, the Canadian Shield has bedrock and poorly developed stony soils that are not ideal for agricultural use. In the southern part, the soil is predominantly comprised of till which is developed from the underlying soft limestone bedrock making it favourable for agricultural activities. Lastly, the soils in Prince Edward County are similar to the limestone terrain with the addition of low permeable clay layers found adjacent to watercourses.

3.2 Climate

The watershed's climate is classified as humid continental and is part of a larger climate zone which covers the Great Lakes and St. Lawrence Lowlands. This classification is characterized by hot summers and cold winters with moderate variation in the average monthly precipitation over a year. Humid conditions often prevail due to the moisture from the Great Lakes water bodies. This type of climate is considered ideal for agricultural activities due to the relatively long growing season.

Climate Change studies have determined the average annual temperature has warmed by 1.4 degrees Celsius and there has been a 10 per cent increase in annual precipitation in the City of Belleville. Further, precipitation events appear to be larger and more intense including more winter rainstorms and extreme weather events. Climate models and projections of future climate for Ontario suggest that by 2050 the average annual temperature will rise by approximately two to three degrees Celsius, with the average annual precipitation also increasing by four to 10 per cent.

3.3 Water Resources

The QC watershed contains numerous water features including Lake Ontario, the Bay of Quinte, large river systems and several small lakes. Due to the abundance of water features, there is an ample supply of water for municipal drinking water systems, irrigation, agriculture, industry, manufacturing, and recreation. Approximately 900 millimetres of annual precipitation (rain and snow combined) is produced through the water cycle. However, 60 per cent of the precipitation is removed from the ground surface through evaporation and transpiration. The consumption of water is largely driven by temperature as warmer temperatures result in increased rates of evaporation. After accounting for evaporation, the remaining water is divided equally between groundwater recharge and runoff to streams and rivers.

3.3.1 Surface Water Quality

The QC watershed's surface water quality is monitored through physical and chemical analysis, as well as the identification of benthic invertebrates. Using the data from monitoring programs, QC reports on water quality every five years through its Watershed Report Card. The 2023 Quinte Conservation Watershed Report Card shows an overall grade of *good* for the surface water quality. The Moira River Watershed has the highest grading with *excellent* due to the abundance of forests and wetlands. The Napanee Region Watershed is graded as *good*, and the Prince Edward Region Watershed is graded *fair* due to urbanization and agricultural practices. Historically, the Bay of Quinte has had several surface water quality concerns and many of these issues have been addressed through the Bay of Quinte Remedial Action Plan. However, eutrophication, undesirable algae, and invasive species remain an ongoing challenge.

3.3.2 Flooding and Erosion

Flooding and erosion are natural occurrences in the QC watershed, especially along large river systems, and the Bay of Quinte & Lake Ontario. Floods can occur at any time and are caused by heavy rainfall, rapid melting of snow, ice or debris jams, beaver dams & breaches, or in the case of Lake Ontario, wind, and waves. These natural hazards can negatively impact properties and public safety.

During flooding events and periods of high water, the rate of streambank and shoreline erosion can be accelerated. For inland watercourses, the most significant flooding is typically experienced in the spring because of snowmelts, this is commonly referred to as the spring freshet. In addition to the spring freshet, frazil ice formations can also increase the risk of flooding.

3.3.3 Water Management Structures

QC owns 40 water management structures (dams and weirs) and manages several others that are privately owned in the region. The dams that QC maintains range from small weirs that do not require any operation to large dams with stop logs and/or values that must be operated depending on the water levels and flows at any given time. Dam operations in the QC watershed provide one or more benefits to the ecosystems. For example, flood management, raising low water levels, recreation, water supply, habitat creation, historic structures, and hydropower production. In addition to dam operations, QC also operates the Skootamatta Lake Dam on behalf of the Ministry of Natural Resources (MNR). Occasionally, beaver dams cause concerns for residents which can result in flooding of agricultural lands, roadways, and nearby properties.

3.3.4 Groundwater

Groundwater in the watershed is typically found at relatively shallow depths in the top 10 to 30 metres of the underlying fractured bedrock. Due to the geology in the watershed, precipitation directly infiltrates the soils allowing for a quick recharge for aquifers. However, the fractured bedrock does not store large volumes of water and requires regular recharge to replenish the supply. Groundwater supplies are typically used for agriculture, industry, rural residents, and some urban-centered municipalities. Approximately 50 per cent of the watershed's population identifies as rural and rely on groundwater as their main source of water. Several rural municipalities rely on groundwater to service their communities (Villages of Deloro, Tweed, Madoc, and Peats Point in Prince Edward County).

3.3.5 Drought

The QC watershed has experienced historic droughts ranging from minor to severe. Drought conditions typically occur over the warmer months of summer and fall. Historically, periods of dry weather and low water levels or drought were relatively uncommon in Ontario occurring once every 10-15 years. However, the MNR records show that the watershed has been ranked amongst the highest in Ontario in terms of the number of low water declarations. Since 2000, annual low water conditions have been recorded in 11 different years.

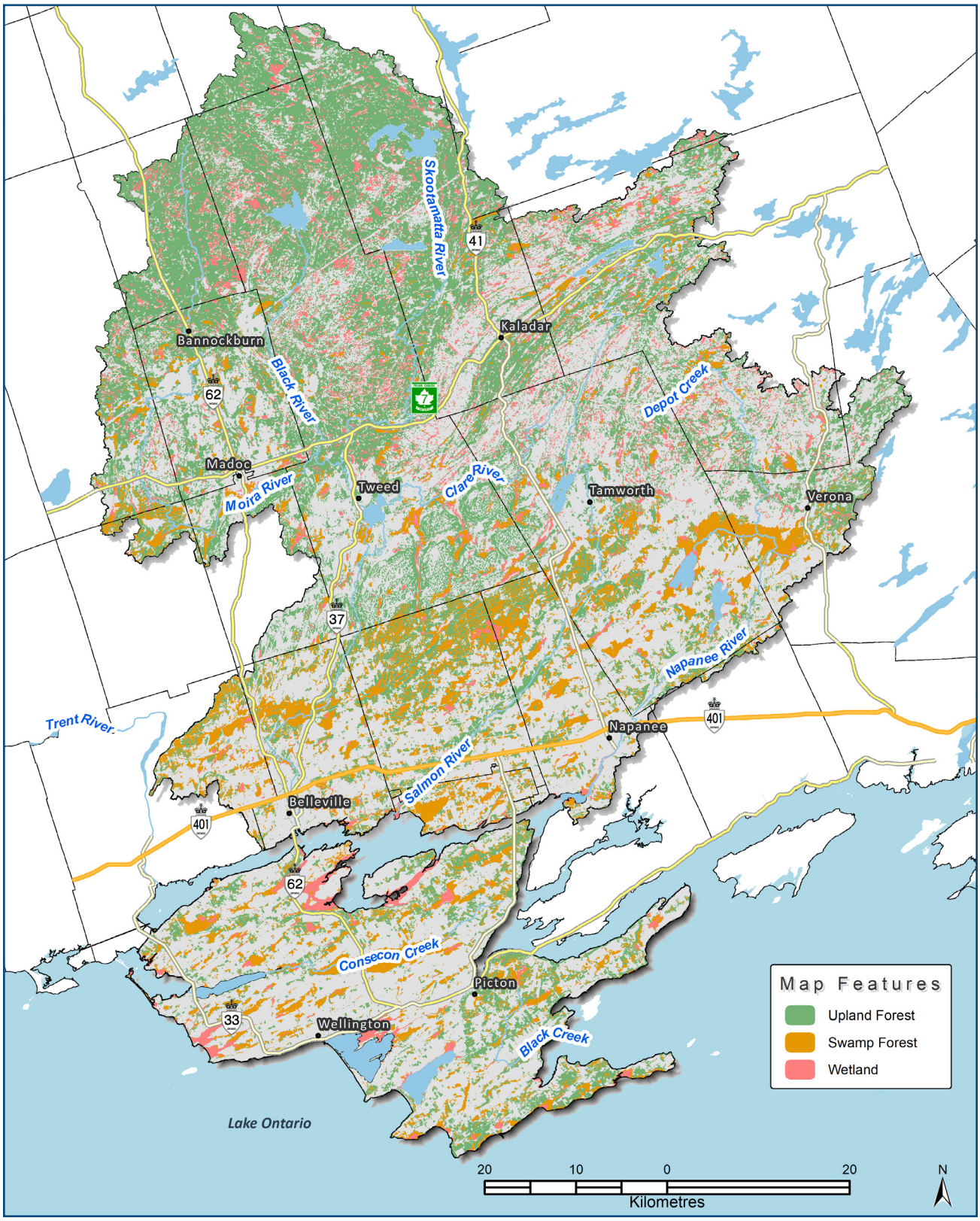
The watershed experiences droughts in several municipalities including Centre Hastings, Prince Edward County, Stirling-Rawdon, Stone Mills, Tweed, and Tyendinaga. These droughts are often due to shallow wells with low yields, hot temperatures, and low levels of precipitation. These droughts are becoming more severe as the demand for water steadily increases as climate change impacts on weather patterns and water availability are becoming more prevalent.

3.4 Habitats and Wildlife

Natural habitats in the QC watershed include forests, wetlands, and swamps (See Map 3). Forests are the predominant habitat type, with approximately 64 per cent of the Moira River Watershed, 53 per cent of the Napanee Region Watershed, and 32 per cent of the Prince Edward Region Watershed being comprised of forests. There are also several wetlands that cover approximately 15 per cent of the Moira River Watershed, 18 per cent of the Napanee Region Watershed, and 19 per cent of the Prince Edward Region Watershed.

Living within the natural habitats in the QC watershed are various mammals, birds, reptiles, amphibians, insects, and aquatic species typically found in southern Ontario. Lake Ontario, the Bay of Quinte, and numerous cold and warm water streams support a variety of fish, benthic invertebrates, and aquatic plant species.

The naturalized areas provide habitats to a variety of species at risk, including, but not limited to, the Blanding's Turtle (*Emydoidea blandingii*), Loggerhead Shrike (*Lanius ludovicianus)*, Eastern Sand Darter (*Ammocrypta pellucida*), and the American Eel (*Anguilla rostrata*). These habitats are also home to several invasive species that are negatively affecting existing habitats and typically compete with native species for resources.



Map 3: Forest, Wetlands and Swamp habitats in the Quinte watershed

3.5 Land Use

3.5.1 Settlement Patterns

Settlement and development in the region evolved around the land and water resources, and this legacy continues to be reflected on the watershed's landscape today. There are a variety of land uses including urban, rural, industrial, and agricultural intermixed with small hamlets. Large urban centres have grown along the shores of the Bay of Quinte, which includes the cities of Belleville and Quinte West, and the Towns of Greater Napanee and Picton.

The local First Nations community was among the first to settle along the shores of the Bay of Quinte. The Bay of Quinte attracted many settlers due to its bountiful sources of fish, wildlife, timber, and fertile land for growing crops. After travelling by canoe from Lachine, Quebec, ancestors of the Mohawks of the Bay of Quinte arrived on the shores of the Bay of Quinte in 1784. Approximately 100-125 people were met by Mississaugas who were already in the area. Additionally, some lands in the Bay of Quinte were already colonized by early Loyalist families.

Following exploration, settlements sprang up along rivers and shorelines. The local waterways provided power for mills and transportation for the inhabitants, their goods and products. Valuable timber, fertile arable soil on the limestone plains, and later, minerals on the Canadian Shield all played a part in the evolution of human geography in the QC watershed. Exploration, settlement and development have led to a subsequent population increase that has placed demands on local water resources and established the need to protect water for the future.

Reflecting the area's settlement history, urban centres in the region are situated on or near local waterways. Most population centres are in the southern part of the region on the shores of the Bay of Quinte or Lake Ontario. The largest urban centre, the City of Belleville, is at the mouth of the Moira River on the Bay of Quinte. Like Belleville, the Towns of Napanee, Deseronto and Picton, and the Village of Wellington, are located along the water. Even the smaller villages on the edge of the Canadian Shield, like Tweed and Madoc, have a connection to water resources as early sites of grist and sawmills. These villages, with active ties to forestry and mining, now also serve as recreational hubs for tourism and cottagers.

The surrounding countryside supports a vibrant agricultural industry, hamlets, seasonal homes, wineries, and craft breweries. Additionally, the QC watershed has constant development pressures which accelerate runoff because of increased amounts of impervious area that decreases infiltration, resulting in a variety of environmental impacts. Rural settlement clusters have developed throughout the region. Today, there may be both water quantity and quality concerns that have developed in these clusters. Often rural clusters are linear in nature, having sprung up along popular waterfront or on roads leading into villages and towns. Many of these clusters developed before adequate municipal planning controls were in place.

3.5.2 Infrastructure

3.5.2.1 Drinking Water

There are 11 municipal residential drinking water systems in the QC watershed. Of the 11 systems, four are groundwater systems serving approximately 3,400 people and seven are surface water systems, serving approximately 57,800 people. Most of the urban areas are serviced by municipal water and wastewater systems except for Ameliasburgh, Peats Point, Point Anne, and some areas of Madoc. These areas receive municipally treated water, but their wastewater treatment is through private septic systems.

Approximately half of the watershed's population relies on private drinking water systems (i.e. wells and surface water intakes). In these areas, a variety of septic systems are used to properly dispose of household wastewater. In addition to the residents relying on private systems, 355 non-municipal or non-residential rural systems use private drinking water and wastewater systems. Most residents on the Tyendinaga Mohawk Territory are serviced by the Mohawk's Bay of Quinte Water Treatment Plant through direct lines or by delivery of treated water into holding tanks.

3.5.2.2 Transportation Infrastructure

The southern portion of the watershed contains the Canadian National Railway, and the Canadian Pacific Railway, and large transportation routes such as Highways: 2, 7, 33, 37, 49, 62 & 401, and County Road 41. Many of these roads are used to transport potentially harmful or toxic substances (i.e. salt, herbicides, fuel, etc.) and spills occasionally occur when transporting these materials.

The presence of roads in the watershed can also fragment habitats and pose a risk to wildlife. Risks include vehicle collisions, noise, light, and physical pollutants. Paved roads can also contribute to the number of impervious surfaces and runoff into the watershed while increasing the amount of salt entering the groundwater through winter ice removal strategies.

The QC watershed is home to several airports including the Belleville Aerodrome, Mountain View Airport, Tyendinaga Mohawk Airfield, and the Picton Airport. Mountain View Airport is a Canadian Forces Detachment that has a history of per- and polyfluoroalkyl substances (PFAS/PFOS) contamination due to the firefighting training that occurred on the land in previous years. The Tyendinaga Mohawk Airfield is home to the only post-secondary Indigenous aviation program of its kind in Canada and provides hands-on flight training for students interested in pursuing a pilot's license or working in the aviation industry. The Picton Airport is in a long-term redevelopment, proposing the site to become a feature destination with a range of residential, commercial, and cultural opportunities.

3.5.2.3 Landfills

In 2004, there were 205 active landfill records listed with 77 of those sites considered active. Of the 77 active landfills, 17 of them are municipally owned and operated while the remaining 60 are considered privately owned and operated for either industrial or commercial use.

3.5.2.4 Pipelines

The Trans-Northern Pipeline and the TransCanada Pipeline carry fuel through the watershed along Highway 401.

3.5.3 Regional Economy

There is a diverse economy in the watershed which includes agriculture, tourism, recreation, aggregates, food processing, and manufacturing.

Agriculture is a significant industry and the predominant land use in the southern half of the region. Agricultural activities include orchards, corn, and beef and dairy farming, primarily located in the southern portion of the watershed, where physical conditions like soil type and depth are more favorable for farming compared to the Canadian Shield. In Prince Edward County, alongside traditional agriculture, there is a flourishing viticulture and wine industry, supported by well-drained rocky soils and the moderating influence of Lake Ontario on the local climate. Overall, agriculture in the Quinte region is shifting toward increased intensity on smaller land areas.

The QC watershed contains several tourist attractions. Prince Edward County is home to 40 wineries, 12 breweries, four cideries, and four Provincial Parks in which three of them are sand or pebble beaches. The City of Belleville has the Shoreline Casino and the Belleville Senators who are members of the American Hockey League and often bring in fans from the surrounding areas. The watershed also hosts several sporting tournaments including, but not limited to, hockey, soccer, and fishing. There are several local theatres, campgrounds, golf courses, prime boating and fishing locations and an extensive network of trails. The northern municipalities are known for their beautiful lakes, cottages and vast natural areas.

Quarries and aggregate pits are another type of economic activity that occurs in the watershed. The geology and glaciofluvial deposits resulted in an abundant supply of granular materials. There are also several quarries and aggregate pits that supply limestone gravel, sand, and recycled concrete.

Industrial facilities in the QC watershed are predominantly located along Highway 401. However, most municipalities will have industrial parks; land parcels that are dedicated to industrial land uses.

3.5.4 Protected Areas

Within the QC watershed, several areas are protected for their natural values through ownership and conservation easements by government (federal, provincial, or municipal), the Conservation Authority, and non-governmental organizations. These lands include QC-owned lands, five Provincial Parks, Sandbanks, North Beach, Lake on the Mountain, Monarch Point, and Bon Echo, and crown land mainly in the northern areas of the watershed.

3.6 Quinte Conservation Challenges

QC has identified five challenges in the strategic plan that may influence program priorities and services over the next few years. The challenges include:

1. Climate change
Climate change is the most significant environmental challenge currently occurring in our world. It will have a dramatic impact on natural environments which will increase flooding and droughts while simultaneously affecting plant and animal habitats and biodiversity. Incorporating vast amounts of the most up-to-date data into existing programs and services is an ongoing challenge

2. Declining financial support
QC's continuous effort to conserve, monitor, restore, and protect the watershed's resources requires financial support from municipal, provincial, and federal governments. With changing governments, funding is not always guaranteed. Therefore, a more stable funding base must be established to continue the important work that the Authority completes for the watershed.

3. Development pressures
As the population of Ontario spreads, there is continuous pressure to develop new housing areas in the QC watershed. Serviced development areas are increasingly limited. Proposed development has the potential to impact land and water resources, and sensitive areas. This leads to an ongoing demand on limited groundwater resources.

4. Low recognition
Brand recognition is an important part of providing exceptional programs and services. Low recognition can result in increases in violations, misuse of conservation authority lands, and demands for work outside the Authority's mandate. To ensure the public values and believes in our effectiveness as a community-based environmental protection agency, we must have high brand recognition.

5. "Institutional" confusion
Several environmental-focused entities have similar goals to protect Quinte ecosystems. This diverse network of environmental agencies can result in public confusion about which organization is responsible for different tasks and requests for work outside the agencies' mandates.

Issues and risks specific to programs and services can be found in the following section.

4. PROGRAMS AND SERVICES

4.1 Categorization of Programs and Services

Section 21.1 of the CA Act lists the Mandatory Programs and Services that conservation authorities must provide.

Section 21.1.1 of the CA Act refers to the Municipal Programs and Services that conservation authorities are permitted to provide under agreement with its member municipalities.

Section 21.1.2 sets out the Other Programs and Services that conservation authorities are permitted to deliver.

Ontario Regulation 687/21: Transition Plans and Agreements for Programs and Services (O.Reg 687/21), under Section 21.1.2 of the CA Act required that all conservation authorities develop a transition plan which was to include an inventory of programs and services. O. Reg. 687/21 also introduced the concept of categories of programs and services.

- Category 1 includes programs and services mandated by the Province of Ontario to be delivered by Conservation Authorities.
- Category 2 are services that are delivered by the Conservation Authority on behalf of a municipality.
- Category 3 services are those initiated by the Conservation Authority for the benefit of watershed municipalities and residents.

QC's programs and services have been reviewed, modified, and categorized to ensure conformity with the CA Act and regulations. The Conservation Authority developed its Program and Services Inventory (the Inventory) (See Appendix 1) and delivered it to all 18-member municipal watershed partners and the Government of Ontario (the Province) by February 2022. In 2023, QC revised its Inventory based on changes in legislation and regulations. Additionally, changes were made to improve understanding and clarification of program and service categories.

The categorization of the programs and services are outlined below, and the rationale for the categorization is explained in the final version of the Inventory. Memorandums of Understanding (MOUs) have been established with local municipalities for Category 2 programs and services and any municipally funded Category 3 programs.

4.2 Mandated Programs and Services: Category 1

QC delivers several Mandatory Programs and Services as set out in the CA Act and O. Reg. 686/21. These programs and services are funded through municipal levies, municipal special benefitting levies with user fees for some services, and provincial funding.

Conservation Authorities Act: Mandatory Programs and Service

21.1 (1) An authority shall provide the following programs or services within its area of jurisdiction:

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

4.2.1 Natural Hazard Management

Conservation Authorities are the lead provincial agencies for natural hazard management. The goal of natural hazard management is to protect life and property from dynamic beaches, unstable bedrock, flooding and erosion. The mandatory, watershed-wide comprehensive program applies to the Lake Ontario shoreline, including the Bay of Quinte and Weller's Bay, flood plains, streams, rivers, wetlands, and other hazardous lands.

4.2.1.1 Section 28 Permit Administration

QC administers Section 28 regulations under Part IV of the CA Act. Administrating *Ontario Regulation 41/24: Prohibited Activities, Exemptions and Permits* (O.Reg. 41/24) is a preventative approach to avoid natural hazards and ensure that new development does not aggravate or create new hazards. QC regulates development and activities in or adjacent to rivers, watercourses, Lake Ontario and the Bay of Quinte shorelines, wetlands, and other hazardous areas. Environmental impacts are considered during the review process.

Written permission (permits) from the Authority is required before work can take place in a regulated area. Section 28 permit administration includes reviewing and processing permit applications and associated technical reports, site inspections, and communication with applicants, agents, and consultants. A fee schedule is reviewed and approved annually to partially cover the costs of permit administration and the associated technical review, and to reduce the amount required from municipal levies.

4.2.1.2 Enforcement and Compliance

Under Part VII Section 30 of the CA Act (enforcement and compliance of Part VI Section 28 permits), staff review additional technical reports, conduct site visits, participate in ongoing communications with applicants, agents, and consultants, and prepare reports for hearings to the Board.

4.2.1.3 Municipal Plan Input and Review

The Municipal Plan Input and Review Program is an integrated approach that aims to ensure that new development will not result in increased risk to public safety or property damage from natural hazards. Through this program, QC provides advice to its member municipalities and watershed residents, both through a formal commenting process under the *Planning Act* and on an informal basis through general inquiries and pre-consultation meetings.

In 1995, the MNR delegated responsibility to Conservation Authorities for provincial interests related to natural hazards under Section 3.1 of the *Provincial Policy Statement*. Natural hazards include flooding, erosion, and dynamic beach hazards and hazardous sites. QC provides plan input concerning these matters on behalf of the Province on circulated Secondary Plans, Official Plans, and Comprehensive Zoning By-Laws (MOU - Planning). QC also comments on the applicability of O. Reg. 41/24 for these applications. QC may be requested by the Province to provide support to the Ministry of Municipal Affairs and Housing for appeals on applications or other matters under the Planning Act.

In addition to plan input, QC provides plan review services to its member municipalities and upper-tier municipalities on circulated subdivisions, condominiums, severances, official plans, zoning by-law amendments, minor variances, stormwater management reports, and site plan control. These comments are related to natural hazards (Section 3.1 of the Provincial Policy Statement) and the applicability of O. Reg. 41/24. QC's regulatory policies provide guidance for commenting on these planning applications.

Fees for the plan review service form part of QC's fee schedule, which is reviewed and approved annually to partially cover the review costs.

In addition to commenting on natural hazards, QC provides plan input and review services for restrictions/requirements in vulnerable areas set out in the Quinte Source Protection Plan under the *Clean Water Act.*

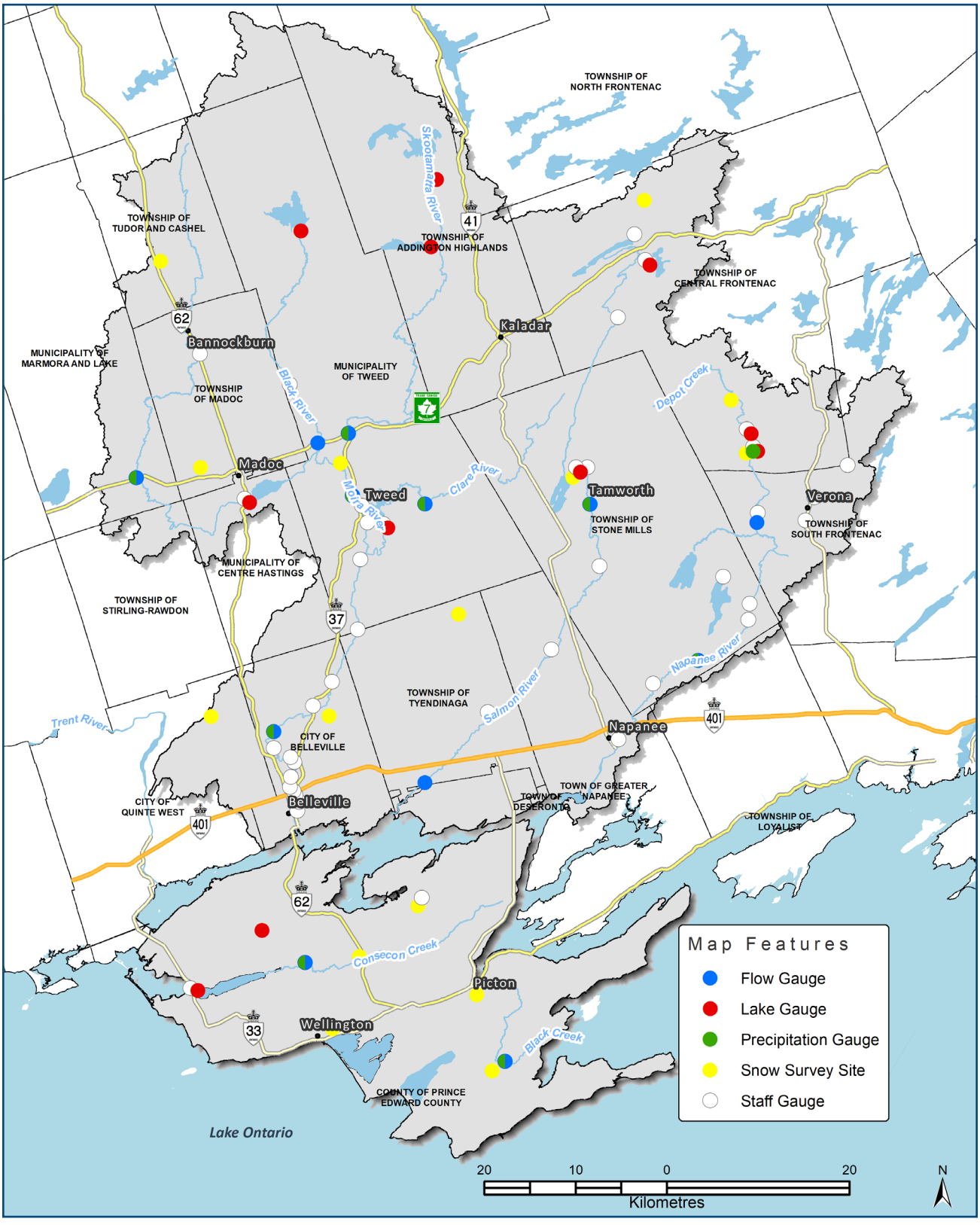
4.2.1.4 Flood Forecasting and Warning

QC maintains a flood forecasting and warning system to provide early warning of possible risks to people and property from flooding. Due to the complexity of the watershed, there are distinct forecasting areas including the Moira, Napanee and Salmon Rivers, streams, inland lakes, and Lake Ontario including the Bay of Quinte. The Authority provides local municipalities, other agencies and the public with advance notice, information, and advice so that they can respond to potential flooding and flood-related emergencies. This program includes daily data collection from federal and local water level gauges, monitoring weather forecasts, monitoring watershed conditions, snow surveys, ice monitoring, site inspections/river watch, development/running of computer models, review of provincial flood messaging, and liaising with federal and provincial agencies, municipalities, Conservation Authorities, and the public.

Ongoing communications take place with the media, municipalities, the public, and others as required. An annual meeting is held with the Flood Emergency Coordinators from each municipality. Ongoing maintenance of water level and rain gauge equipment, and annual maintenance of snow courses to facilitate and deliver the programs is required.

Flood Forecasting and Warning Monitoring Stations

	Moira River Watershed	Napanee Region Watershed	Prince Edward Region Watershed
Flow Gauges	• Black River near Actinolite • Clare River near Bogart • Moira River near Deloro • Moira River near Foxboro • Moira River near Tweed • Skootamatta River near Actinolite	• Depot Creek at Bellrock • Napanee River at Camden East • Salmon River near Tamworth • Salmon River near Shannonville	• Black Creek at Milford • Consecon Creek at Allisonville
Lake Level Gauges	• Deerock Lake • Lingham Lake • Moira Lake • Skootamatta Lake • Stoco Lake	• Beaver Lake • Big Clear Lake • Second Depot Lake • Third Depot Lake	• Consecon Lake • Roblin Lake
Snow Survey Courses	• Hawkins Bay • Madoc Whytock • Millbridge • Plainfield • Stirling • Tweed	• Beaver Lake • Dead Creek • Fourth Depot Lake • Second Depot Lake	• Black River • Consecon Creek • Demorestville Creek • Lane Creek • March Creek • Sandbanks
Precipitation Stations	• Moira at Deloro • Skootamatta River at Actinolite • Moira River at Tweed • Clare River at Bogart • Moira River at Foxboro • Quinte Office Weather • Skootamatta River at Actinolite • Cleveland Road, Tudor and Cashel • Shannon Road, Tyendinaga	• Salmon River at Tamworth • Second Depot Lake • Second Depot Climate Station • Napanee River at Camden East • Portland CA	• Consecon Creek at Allisonville • Black Creek at Milford • Roblin Lake • Macaulay Mountain CA



Map 4: QC's flood forecasting and warning monitoring stations.

4.2.1.5 QC Owned and Operated Flood Control Infrastructure

Historically, the Quinte watershed has experienced floods due to snow melt, heavy rainfall, ice jams, or a combination of these factors. Due to the watershed's history of flooding, several flood management projects in various municipalities have been created. These structures protect existing developments in the floodplain from the impacts of floods, manage water levels for recreational use and maintain downstream flow in rivers and streams. QC owns and/or operates 40 dams including:

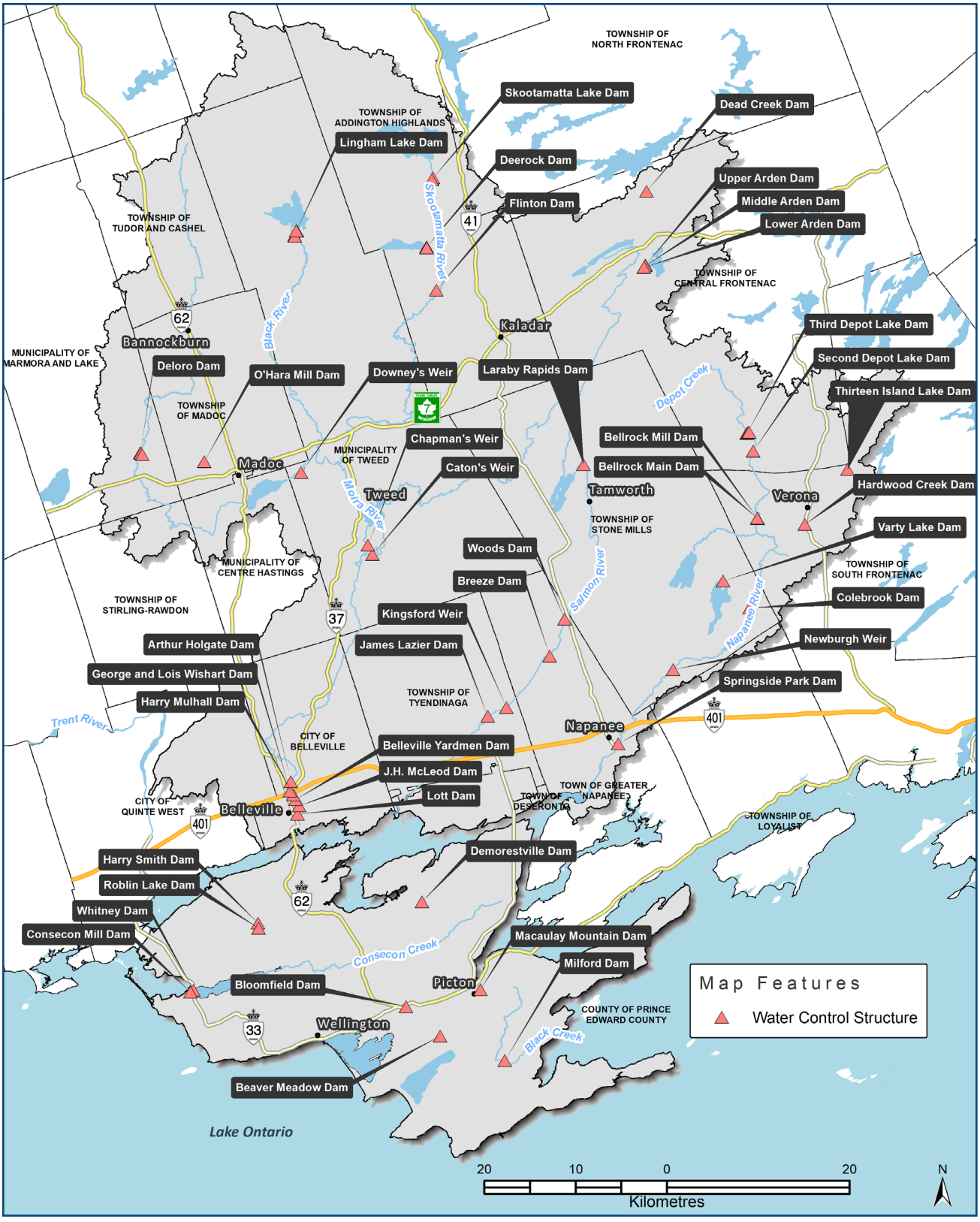
- Arthur Holgate Dam
- Beaver Meadow Dam
- Bellrock Main and Mill Dam
- Bloomfield Dam
- Breeze Dam
- Caton's Weir
- Chapman's Weir
- Colebrook Dam
- Consecon Mill Dam
- Dead Creek Dam
- Deerock Lake Dam
- Deloro Dam
- Demorestville Dam
- Downey's Weir
- Flinton Dam
- George and Lois Wishart Dam
- Hardwood Creek Dam
- Harry Mulhall Dam
- Harry Smith Dam
- James Lazier Dam
- Kingsford Weir
- Laraby Rapids Dam
- Lingham Lake Dam
- Lott Dam
- Lower Arden Dam
- Macaulay Mountain Dam
- McLeod Dam which is a hydro-electric dam
- Middle Arden Dam
- Milford Dam
- O'Hara Mill Dam
- Roblin Lake Dam
- Second Depot Lake Dam
- Skootamatta Lake Dam*
- Springside Dam
- Third Depot Lake Dam
- Thirteen Island Lake Dam
- Upper Arden Dam
- Varty Lake Dam
- Whitney Memorial Dam
- Woods Dam
- Yardmen Dam

**Owned by the Ministry of Natural Resources and Forestry*

4.2.1.5.1 Operation and Management

The flood management structures noted above require ongoing preventative repairs and maintenance to remain in good working order and to ensure that they are functioning as designed, thus reducing capital costs and major repairs. QC staff follow operating plans for each dam. The plans inform staff on how and when to operate based on the time of year and/or water levels. The plans consider all water users and the health of the lakes and rivers they influence. Many of QC's dams are only operated in the spring and fall due to the water level fluctuations for summer recreation and fall draw down to reduce ice and flood damage and provide flooding storage to reduce downstream flood impacts. QC dams can be controlled by stop logs and panels, valves, or inflatable weirs. It is important to note that some dams cannot be operated on, and they are referred to as weirs.

The McLeod Dam is the only hydro-electric dam that QC owns and operates. The green energy facility started making power in 2008 and currently makes enough energy to power 400 homes.



Map 5: Water management structures in the watershed owned and/or operated by Quinte Conservation.

4.2.1.5.2 Major Maintenance

In 2018, D.M. Wills Associates Ltd. completed a Water Control Structure Condition Assessment to determine priority capital projects for the next 10 years. As part of the work, each water management structure was inspected, and recommendations were provided for how to properly maintain the structure to ensure safe operations, public safety, and longevity.

This report was the backbone for the Water Infrastructure Asset Management Plan (WIAMP) and its associated levy to municipalities that was introduced in 2021. To ascertain the 10-year costs for a given municipality, each dam and their scope of work is broken down by the municipalities that benefit from the structure. The cost percentage is then distributed by summarizing the Municipal Property Assessment Corporation 2021 Current Value Assessment (CVA) value within the watershed. The WIAMP requests an additional $9.3 million over 10 years. The calculated costs allowed each municipality to better financially plan into 2031.

Since the inception of the WIAMP, the following projects have been completed:

- Safety Boom Installations
- Dam Safety Reviews
- Public Safety Plans
- Design and Reconstruction of the Thirteen Island Lake Dam
- Seepage Control Projects
- Geotechnical Investigations

The WIAMP work will generally include projects categorized as below:

- 40 Dam Safety Review and Public Safety Plans
- Geotechnical Reviews
- 2 Possible Dam Decommissioning Safety Booms
- Guardrails
- Updated Signage
- Stabilizing Rock Anchors
- Concrete resurfacing
- Concrete crack control
- Minor dam improvements
- Major dam improvements
- Seepage Control

In addition to the funds provided through the WIAMP, QC requests funding annually through the MNR Water Erosion Control Infrastructure (WECI) program. This program provides matching funding for any Authority owned water infrastructure in Ontario. There is $5 million distributed annually and is provided to projects/dams that have a higher risk associated with them. If a dam is larger or is more urban in nature, then it would have a higher risk category. Unfortunately, the lower risk dams may not get funded through this program and may have to be fully funded through the WIAMP.

4.2.1.6 Low Water Response

The Province established the Ontario Low Water Response Program to respond to increasing drought conditions. Low rainfall and hot weather can result in low stream flows and groundwater levels. This can affect the amount of water available for drinking water, agriculture and industry, as well as the health of the ecosystem. QC's role in the program is to establish, coordinate and support a Water Response Team for the QC watershed if low water becomes an issue. This Team may consist of municipal, agriculture, industry, business, recreation, government representatives, Indigenous communities and other decision-makers from the watershed. QC staff monitor and analyze weather forecasts, local water levels, and precipitation throughout the year.

The Water Response Team recommends drought levels and response actions based on information and advice provided by staff. The response could range from issuing communications and providing education to municipalities, media, local water users and the public, and advocating for voluntary water conservation practices.

To aid in the delivery of this program and to assist watershed residents and municipalities in preparing for drought and low water events, Quinte Conservation has developed the Quinte Region Drought Plan (2021).

4.2.1.7 Technical Studies and Policy Review

QC undertakes studies and projects to inform natural hazards management programs including shoreline studies, natural hazard mapping, regulated area mapping updates, flood forecasting system assessments, sub-watershed studies, master drainage plans, and capital works integrity studies. Staff also develop, review and update policies that inform the natural hazards program. Technical studies and projects can be short or long durations depending on their complexity and are completed based on need, the availability of human resources and necessary funding.

4.2.1.8 Natural Hazard Awareness

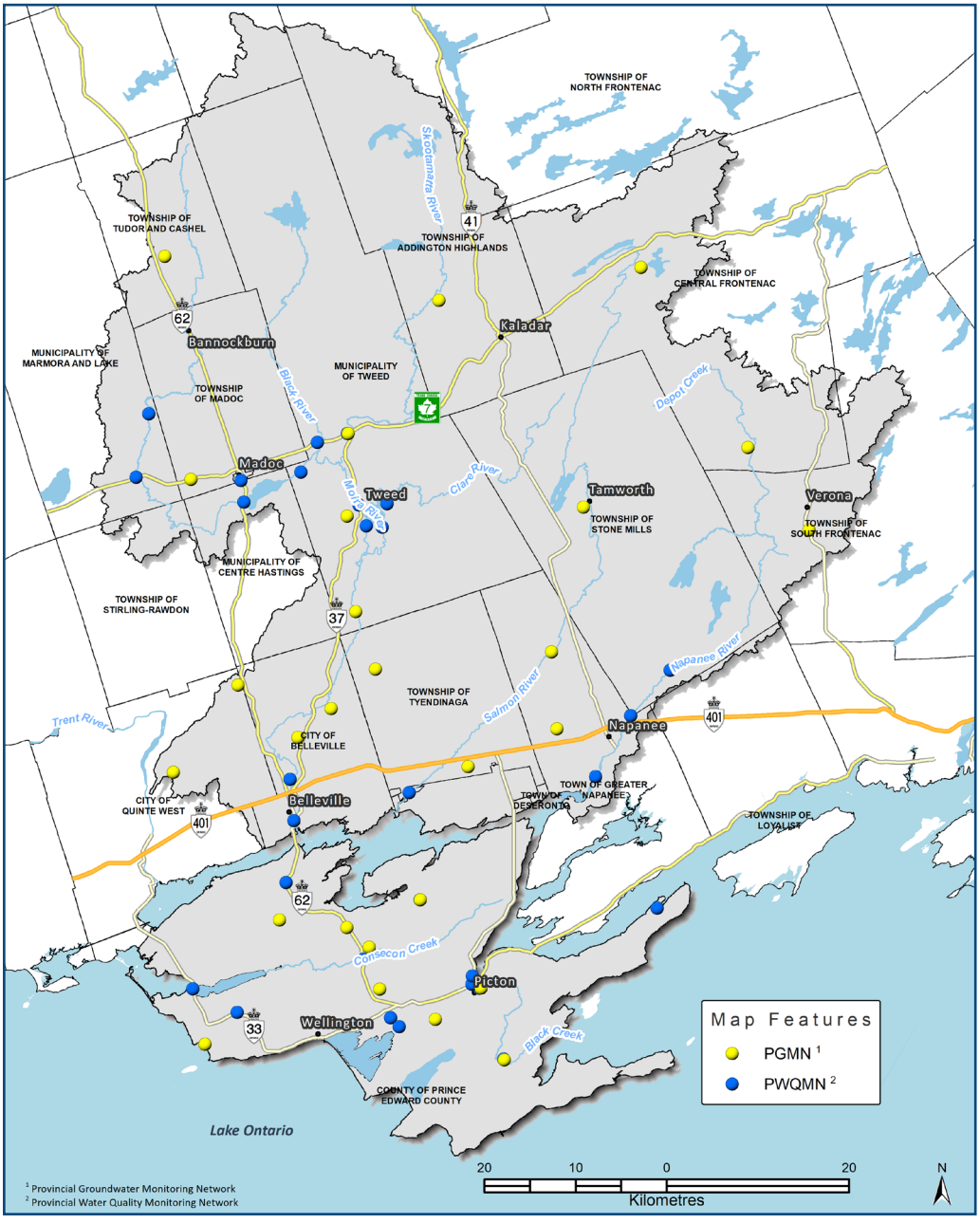
QC advises and educates municipalities and the public about natural hazards to ensure that people are prepared and safe in situations where natural hazards could cause issues. The Authority promotes public awareness of natural hazards including floods, unstable bedrock (karst) and erosion through QC's website, social media, media relations, public events, municipal meetings, and preparing and supplying educational materials. QC also educates the public and elementary students through the Spring Water Awareness and Safety Around Dams program.

4.2.1 ISSUES AND RISKS: Natural Hazard Management

1. Conservation Authorities are restricted by the Province from commenting on planning applications regarding natural heritage which has been done under agreement with municipalities since the mid-1990s. The health of natural heritage systems and features within the watershed could be negatively impacted without this regional, watershed-based review.
2. Climate change could lead to more frequent flooding and low water events, resulting in the need for more rain and stream gauges, computer models for flood forecasting, and demand for more staff time and resources. Climate change could increase the public's expectation for both flood and low water forecasting and technological advancements in alarms and notification systems.
3. Managing and completing extensive capital projects is challenging with limited funding budgets or when no provincial funding is available.
4. Plans and technical studies require a considerable amount of staff time and/or external expertise.
5. Municipal/Provincial/Federal funds and municipal agreements are required to support the completion of technical studies and mapping projects.
6. An increase in natural hazards enforcement and complaints results in an increased demand for staff time. The ability to hire new staff is paramount but limited by funding shortfalls.
7. Increased liability for natural hazard management.
8. Ongoing maintenance is required at monitoring stations to collect reliable data. This requires ongoing funding and staff resources.
9. Stormwater management system design includes water quality and quantity control. Limiting the Authority to comment on a single aspect of the integrated operation can create an incomplete review for member municipalities.
10. Staff can face conflicts and competing interests for dam operations and associated water levels.
11. The dam operation plans have information gaps that do not account for all potential water conditions.
12. Inaccurate and differing precipitation forecasts can produce variable flood analysis and reporting. This could lead to improper actions being taken due to incorrect data.
13. Increased need to include system redundancy for collecting data on water level, flow and precipitation, as well as database backups and communication systems.
14. Ensuring that the public is aware of hazards around dams and the necessary safety.

4.2.2 Provincial Water Quality and Quantity Monitoring

In partnership with the Ministry of Environment, Conservation and Parks (MECP), QC has established long-term groundwater and surface water monitoring sites (See Map 6). The data from these sites help monitor current watershed health, as well as identify climate change trends. In addition to these programs, QC also participates in the Ontario Benthos Biomonitoring Network which is discussed further in Category 3 (See Section 4.4.1.3).



Map 6: Provincial monitoring sites for Provincial Groundwater Monitoring Network, and Provincial Water Quality Monitoring Network in the QC watershed.

4.2.2.1 Provincial Water Quality Monitoring Network (PWQMN)

Through the partnership with MECP, QC is responsible for stream water quality monitoring at 29 sites (See Map 6). QC staff sample the sites monthly from May to October to be tested and analyzed by MECP for general chemistry parameters including, but not limited to, metals, mercury, and suspended solids. The information collected represents the long-term trends and current surface water quality. The data is also used to prepare watershed report cards that identify the overall watershed health, and it helps prioritize the need for watershed restoration projects.

4.2.2.2 Provincial Groundwater Monitoring Network (PGMN)

Throughout the partnership with MECP, QC is responsible for monitoring 29 wells for pesticides, metals, volatile organics, and general chemistry (See Map 6). The goal of this monitoring effort is to ensure the watershed has safe and adequate drinking water supplies through monitoring of ambient conditions. This information expands QC's knowledge of groundwater conditions and assists staff in understanding and sharing of information about water resources throughout the QC watershed. The PGMN provides information for changing water levels caused by climate conditions or human activities. The program also informs staff of regional trends in groundwater quality. The information collected is used to prepare watershed report cards and in the development of other watershed studies and plans.

In the early stages of the program, the province funded the installation of the network, and they have continued to fund equipment replacement as needed. QC costs for this program include data collection, shipping, minor equipment repairs/purchases, data management, and reporting.

4.2.2 ISSUES AND RISKS: Provincial Water Quality and Quantity Monitoring

15. Long-term access to wells on private lands (landowner turnover).
16. Integration and usefulness of PGMN data to support QC programs (e.g. low water program, watershed report cards, etc.).
17. Mandatory program costs have been offloaded to municipality due to lack of provincial funding.

4.2.3 Integrated Water and Climate Station

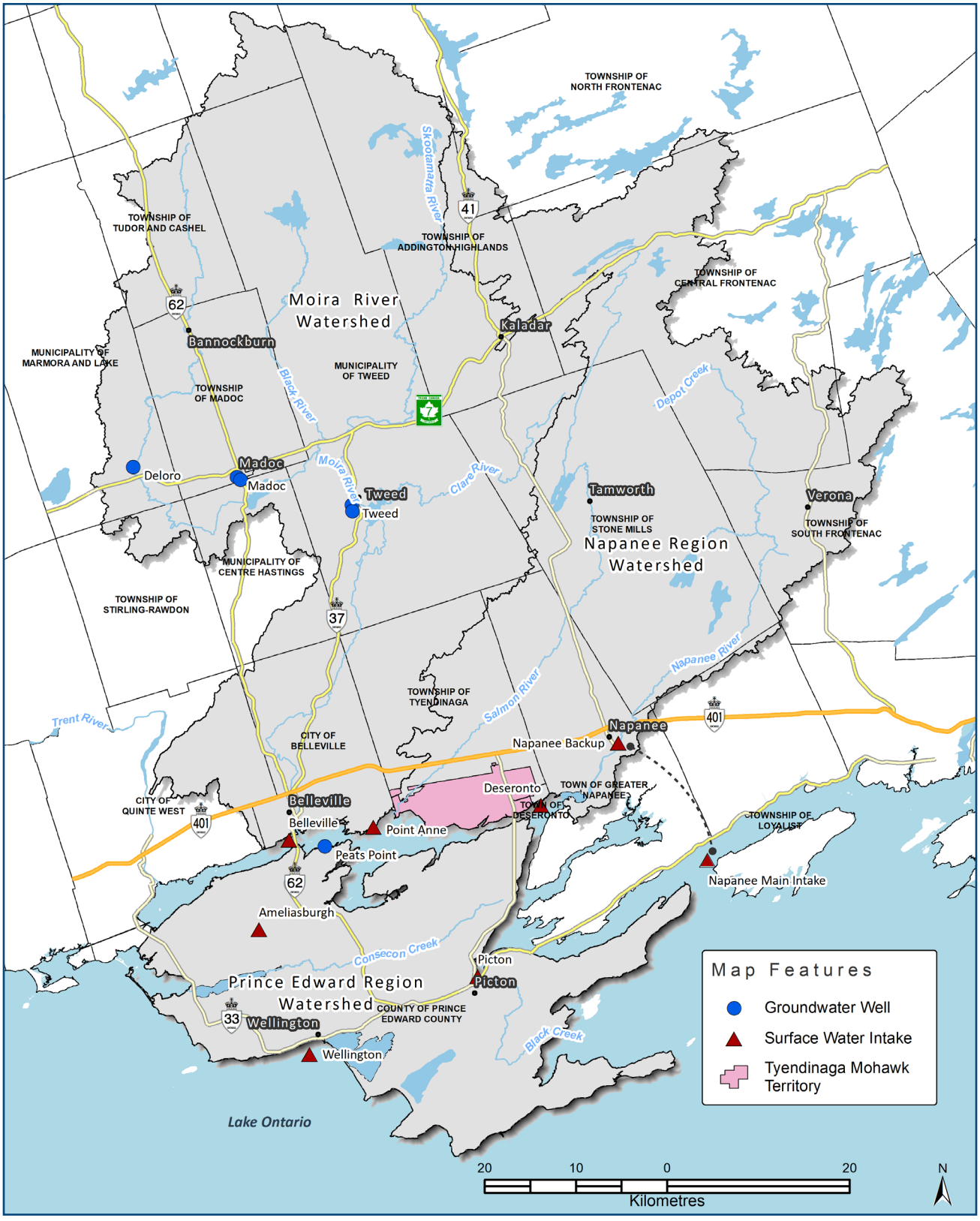
An assessment of the region's vulnerability to the impacts of climate change was completed, and the results of the assessment allowed the enhancement of QC's monitoring network. QC installed a provincially significant climate change monitoring station as well as four other local stations.

These stations are in addition to other existing monitoring stations which include groundwater, rain, soil moisture, temperature, snow depth, stream flow, stream water quality, and benthic biomonitoring. Water level gauges at lakes throughout the watershed also aid in monitoring changes to the lakes while managing water levels during floods and droughts.

This monitoring helps us better understand the impacts of a changing climate and allows us to share valuable information with watershed residents.

4.2.3 ISSUES AND RISKS: Integrated Water and Climate Station

18. Maintenance of integrated water and climate stations.



Map 7: Municipal drinking water systems in the QC watershed.

4.2.4 Drinking Water Source Protection

The Province's *Clean Water Act* sets out a framework for Drinking Water Source Protection (DWSP) on a watershed basis. In Ontario, there are 38 source protection plans and 19 multi-stakeholder Source Protection Committees (SPCs). QC has several responsibilities under this program through the development and implementation of the Source Water Protection Plan. The Quinte Source Protection Plan includes 11 municipal drinking water systems, seven of which are surface water intakes and four are municipal wells (See Map 7).

QC staff use their expertise to disseminate information, provide advice to municipalities on how to facilitate the implementation of the Quinte Source Protection Plan and identify local priorities for future updates to the Quinte Assessment Report and Source Protection Plan. Staff are also responsible for monitoring and reporting on the implementation progress of the member municipalities. QC is responsible for providing governance, reports, meetings, administrative and technical support, and the delivery of other activities required by the *Clean Water Act* regulations.

The *Clean Water Act* allows municipalities to delegate the responsibilities of Risk Management Officials and education and outreach to the Conservation Authority. All QC member municipalities have delegated these tasks to the Authority, who is therefore responsible for developing Risk Management Plans, Section 59 applications, as well as developing and delivering an education and outreach program to the watershed.

For more information, including the Quinte Source Protection Plan and related documents visit www.quintesourcewater.ca.

4.2.4 ISSUES AND RISKS: Drinking Water Source Protection

19. Discontinuation or diminished provincial funding, resources and responsibility
20. Keeping the science current (updating technical studies needed including issues identification, water budgets, wellhead protection areas, intake protection zones and vulnerability scoring).
21. Protection of non-municipal systems (communal and private).
22. Challenges with the implementation of the Quinte Source Protection Plan.
23. Delivery of an effective education and outreach program.
24. The Program Coordinator has no supervisory role over support staff who only fulfill part-time source water protection roles.
25. Increased development impacting vulnerable areas and the number of potential threats.

4.2.5 Watershed-Based Resource Management Strategy Updates

This Strategy is mandated by the Province under Section 21.1(1) of the CA Act and Section 12 of O. Reg. 686/21. This is a watershed-wide strategy that helps focus and prioritize programs and services. It includes guiding principles, objectives, goals, summaries and categorizations of QC's programs and services, as well as identifying institutional gaps.

O. Reg. 686/21 requires that a process for the periodic review and updating of the Strategy be established, including procedures to ensure stakeholders and the public are consulted during the review and update process. These updates will become an ongoing part of the QC's program.

4.2.5 ISSUES AND RISKS: Watershed-Based Resource Management Strategy Updates

26. Lack of funding and/or staff capacity to update and keep the document current.
27. Expanding and changing Provincial requirements increases the administrative work of conservation authorities.

4.2.6 Conservation Lands Program

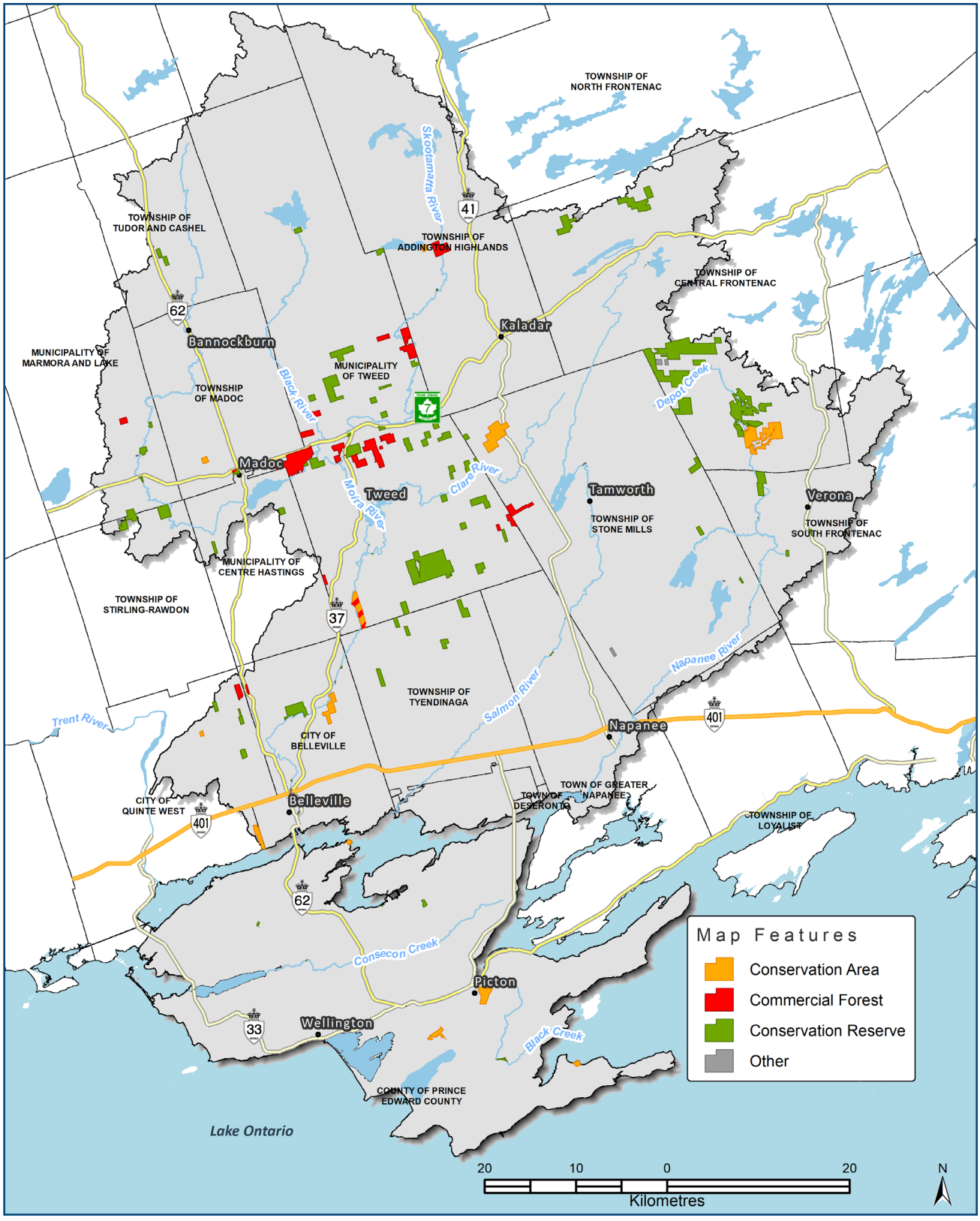
QC owns over 30,000 acres of conservation lands that are protected and naturalized areas. These lands include conservation areas, managed forests, wetlands, and natural reserves (See Map 8). Naturalized areas provide numerous benefits to our ecosystems including water management. They also encourage outdoor recreation, animal and plant biodiversity, and habitat preservation.

QC's conservation lands range in size from small to large natural areas (See Map 8). The Conservation Lands program manages 12 conservation areas, 16 managed forests (2,400 hectares), and approximately 8,600 hectares of nature reserves. QC's conservation areas provide venues for healthy and active lifestyles, attracting visitors with opportunities for hiking, bicycling, fishing, canoeing, cross-country skiing, and other recreational activities.

Conservation Areas:

- Beaver Meadow
- Depot Lakes
- H.R. Frink
- Little Bluff
- Macaulay Mountain
- Massassauga Point
- North Potter's Creek
- O'Hara Mill
- Sheffield
- Sidney
- South Potter's Creek
- Vanderwater

The conservation lands program focuses on maintaining, repairing, and improving facilities while also improving user experiences. More information about QC's properties and management priorities is provided in the Conservation Lands Strategy.



Map 8: Quinte Conservation's landholdings

4.2.6.1 Lands Management

This program includes the management and regular maintenance of 12 conservation areas and over 11,000 hectares of managed forests and nature reserves. Required activities include ecological monitoring and restoration/naturalization, invasive species management, forest management, risk management, repairs to infrastructure (e.g. gates, fencing, pedestrian bridges, trails etc.), and maintenance or replacement of signage/communications.

4.2.6.2 Major Maintenance

Major maintenance and capital improvements on conservation lands include larger projects such as improved/new public access, new trails, pedestrian bridges, boardwalks, pavilions, picnic shelters, boat launches, gates, and large-scale environmental protection/restoration projects intended to improve public safety and adapt to climate change conditions.

4.2.6.3 Section 29 Enforcement and Compliance

QC appoints Regulation Officers under Section 29 of the CA Act. Staff time is required for surveillance, enforcement, and compliance with conservation area regulations to protect the natural features, infrastructure, and ensure public safety.

4.2.6.4 Land Acquisition

Land acquisition is a one-time capital investment with minimal ongoing management costs, as existing expenses like property taxes, insurance, and staffing already cover the current holdings. Focusing on new purchases or donations in priority areas enhances the value of the overall land portfolio over time. QC considers acquiring property when it does not place a financial burden on the Authority. Therefore, QC primarily seeks donations of vacant land to expand its holdings. For any property donation, QC assumes responsibility for all transaction-related costs upon Board approval, which may include legal surveys, appraisals for charitable receipts, land transfer taxes, and legal fees for both parties.

QC's land acquisition and disposition policies are explained in the Conservation Lands Strategy.

4.2.6.5 QC Lands Inventory Updates

O. Reg. 686/21 paragraph 3 subsection 9 (1), requires that a land inventory be completed by the Conservation Authority. For every parcel of land that QC owns or controls, the land inventory must include:

- Location
- Acquisition/leasing details
- Land use category(ies)
- Whether or not it increases natural heritage in the watershed
- Description of recreational activity
- Logging details
- The parcel's sustainability for development
- Whether or not it integrates with publicly accessible lands

The specific details of the requirements are described in O. Reg. 686/21.

The land inventory must be periodically reviewed and updated as part of QC's Conservation Lands program.

4.2.6.6 Conservation Lands Strategy Updates

O. Reg. 686/21 calls for the preparation of a Conservation Area Strategy to be completed on or before December 31, 2024, for all lands owned or controlled by the Conservation Authority, including any interests in land registered on title.

This Strategy builds on the Conservation Area Inventory, which is also required under O. Reg. 686/21, by guiding the management and use of properties owned or controlled by the Authority. It identifies objectives, reviewing programs and services on the lands, land use, natural heritage, and linkages to other publicly accessible lands. The regulation requires that a process for periodic review and updating of the Conservation Lands Strategy must be established. The review and updating period must include procedures to ensure that stakeholders and the public are consulted. These updates will become an ongoing part of QC's program. Specific requirements for this section are discussed in the regulation.

4.2.6.7 QC Forests and Management Areas

In addition to conservation areas, QC owns several land parcels for commercial forests, conservation reserves, educational properties, and water management structures. The management of forest cover and wetlands will help retain water on the landscape, increase groundwater recharge and reduce runoff and erosion. Managing lands and forest also protects sensitive natural areas, wildlife habitats, and improves lands for recreational activities.

4.2.6 ISSUES AND RISKS: Conservation Lands Program

28. Increased demand for recreational use requires funding for major trail improvements and maintenance, and aging or damaged infrastructure.
29. Signage update requirements to address legislative and social needs.
30. Invasive species inventory and management.
31. Climate change impacts could influence QC's landholding resulting in the need for ecosystem enhancements, regenerations, and adaptive measures.
32. Engagement of volunteers to assist with conservation land management.
33. Population growth and increased outdoor activities resulting in increased stresses on the Conservation Area and potential for visitor conflicts.
34. Physical and environmental hazards exist in natural spaces and can never be fully eliminated. Today, these hazards open the Authority up to potential legal claims.

4.2.7 Enabling Services

Enabling Services are key services provided to all departments of the Authority, the Board, member municipalities and the public to enable QC to operate in an accountable, transparent, efficient, and effective manner. The general operating expenses and capital costs permitted as Mandatory Programs and Services under Part IV and Section 21.1 of the CA Act are not directly related to the provision of specific program or services that a conservation authority provides (*Ontario Regulation 402/22: Budget and Apportionment*). Funding for these services is both municipally funded and self-generated.

4.2.7.1 Governance

Governance is the overall framework for managing and decision making within the organization. Governance costs cover those required for the operation and support of the Executive Board, any associated boards or advisory committees, and for the Office of Chief Administrative Officer/Secretary-Treasurer.

4.2.7.2 Administration

Administration is essential for the daily operations of all QC's programs. This includes operating and financial services that support the Authority beyond the direct delivery of specific programs or services. These services include program planning and development, program oversight, and policy development and review.

4.2.7.3 Human Resources

Human resources encompass a range of functions including recruitment, administration, compensation and benefits, training and development, health and safety, employee relations, and performance management. It also includes management of QC's volunteers for special events, trail maintenance, high school co-ops, and post-secondary placements.

4.2.7.4 Financial Services

Financial services ensure the appropriate use of funds and fiscal accountability. QC is required to ensure that the funding received from member municipalities, the provincial and federal governments, other partners, agencies, and donors is used wisely for the betterment of the watershed region. The main duties of financial services include development of the annual budget, accounts payable and receivable, payroll, financial analysis, financial audit, administration or reserves and investments, asset management, financial reports for funding agencies, preparing and submitting reports to Canada Revenue Agency, and administration of the benefits and pension program.

This program is also responsible for fundraising. As a non-profit registered charity, QC undertakes fundraising to support its conservation efforts. This includes grant writing, direct requests to businesses and private donors, and fundraising campaigns (e.g. Adopt an Acre).

4.2.7.5 Legal Expenses

Legal expenses include costs related to administering agreements/contracts, human resources, property rights, and legal costs for court cases under Section 28 of the CA Act.

4.2.7.6 Outreach and Stewardship

The Outreach and Stewardship department coordinates, develops and implements cost-effective conservation education, public outreach, and landowner stewardship programs, aligning with QC's core mandate, and various programs and services.

This department engages watershed residents on environmentally sustainable actions and collaborates with local school boards, private schools, service groups, volunteer-based groups, lake associations, and related community groups, to support the organization's initiatives and mandates.

4.2.7.7 Communications

The Communications department plans, develops, and implements communications, public relations, and marketing initiatives for QC's departments, programs, projects and events. The department is integral in the delivery of flood forecasting and warnings, low water response, natural hazards programs and education.

Key components of this department include media relations, website and social media content management, and traditional communication/marketing products such as brochures, displays, fact sheets, and print & radio ads. The preparation of annual reports and progress reporting is also a significant responsibility.

4.2.7.8 Information Management & Technology and Geographic Information Systems (GIS)

Information management, technology and GIS are the hardware, software, systems, and methods which enable the creation, collection, storage, processing, analysis, and dissemination of data and information. It is key to the everyday functioning of the Conservation Authority.

Information management is the process of collecting, storing, organizing, retrieving, and managing information to support QC's goals and objectives effectively. It is the systematic handling of data and information resources to ensure that they are accessible, secure, accurate, and relevant to the organization and its stakeholders.

Information technology is the hardware and software foundations including computer hardware, software, networks, internet connections, and phone systems. To keep up to date and functional, ongoing upgrades and repairs are needed and new technology must be investigated and purchased.

GIS is mapping software critical to QC's work. It is used to transform data to information, undertake analyses, illustrate the data, and findings through mapping and reporting. Other informatics used by QC include environmental data management systems, enterprise content management systems, management systems, web-based services, and reporting tools. Ongoing staff effort is required to support staff and the Board with accessible information and enable collaborative public engagement.

4.2.7.9 Administration Buildings

QC has an administration building located at 2061 Old Highway 2, Belleville, Ontario and a land maintenance building at 512 Vanderwater Road, Thomasburg, Ontario. These buildings are used as office buildings for day-to-day operations and to store equipment that enables the delivery of programs and services. Ongoing costs include utilities, routine and major maintenance, and property taxes. Other locations that have infrastructure and buildings include the H.R. Frink, Depot Lakes, and O'Hara Mill properties.

4.2.7.10 Vehicles and Equipment

QC has a fleet of vehicles and equipment including, but not limited, to tractors, all-terrain vehicles, chainsaws, boats, and survey equipment that staff require to deliver its programs and services. Fleet management includes vehicle purchases, leases, fuel, licenses, repairs, and maintenance. Equipment for both office and land maintenance must be purchased, leased, maintained and repaired.

4.2.7 ISSUES AND RISKS: Enabling Services

35. Municipal funding is required for capital costs.
36. Provincial funding to support operational costs has not increased with inflation costs.
37. Self-generated funding is unpredictable due to social, economic, and environmental factors. Fluctuations in self-generated funding can create budget challenges from year to year.
38. Legal expenses are consistently rising and difficult to predict annually.
39. Future major maintenance or alterations to buildings and other equipment could result in increased costs.
40. Staff turnover and knowledge transfer.
41. Keeping current and acquiring technology to sustain program functions and meet expectations.
42. E-commerce/improved online customer service processes and tracking required.
43. Cyber security
44. Public expectations for open data.
45. Enhanced mapping, data, and analytical tools to facilitate faster, sound decision-making.
46. Funds for the purchase of necessary data products (e.g. Orthophotography).
47. Small staff complement with a diverse heavy workload and a flat organization structure reduces opportunities for staff development and succession planning.
48. The abundance of social media outlets creates a challenge for staff to continuously manage and respond to inquiries while ensuring public confidence and factual messaging/information is conveyed.

4.3 Municipal Programs and Services: Category 2

QC delivers some of its programs specifically on behalf of its member municipalities. Category 2 MOUs have been established with the participating municipalities for these programs. Funding is provided through these agreements.

Conservation Authorities Act: Municipal Programs and Services

21.1.1 (1) Subject to subsection (1.1), an authority may provide, within its area of jurisdiction, municipal programs and services that it agrees to provide on behalf of a municipality situated in whole or in part within its area of jurisdiction under a memorandum of understanding, or such other agreement as may be entered into with the municipality, in respect of the programs and services. 2020, c. 36, Sched. 6, s. 8 (1). 2022, c. 21, Sched. 2, s. 3 (1).

4.3.1 Flood Control Infrastructure Operations and Management

4.3.1.1 Water Management Infrastructure Operated and Managed Under Municipal MOU

QC staff install, remove, and maintain a seasonal recreation weir at the outlet of Moira Lake. This weir is an important structure to ensure residents of Centre Hastings can enjoy the lake throughout the summer. All expenses for the installation, removal and maintenance are covered by the Municipality of Centre Hastings.

Staff install, remove, and maintain a seasonal recreation weir at the outlet of Stoco Lake. The weir is an important structure to ensure residents of Tweed can enjoy the lake throughout the summer. All expenses for the installation, removal and maintenance are covered by the Municipality of Tweed.

Staff maintain the Belleville Ice Control Structures on the Moira River in the City of Belleville. These structures maintain head-ponds to promote formation of a solid ice sheet in the winter, the ice sheet insulates the river, reducing frazil ice generation. The ice booms hold the ice sheet in place to reduce potential ice jamming. All expenses related to testing of low flow valves, vegetation clearing, in-water inspections of the ice booms, replacement of deteriorated components, and fastening, clearing, and repositioning of the booms are covered by the City of Belleville. Belleville Ice Control Structures are included under water management structures in QC's 10-year Capital Asset Management Plan.

4.3.1.2 Non-QC Owned Flood Management Infrastructures

QC staff monitor and perform preventative maintenance at the Skootamatta Lake dam under an agreement with the MNR.

4.3.1 ISSUES AND RISKS: Flood Control Infrastructure Operations and Management

49. Operation of seasonal weirs requires staff time, which could be spent on core programming.
50. Seasonal weirs and maintenance of ice booms require in-water work, which exposes staff to water related hazards.
51. Continued funding and staff time is required to maintain the Belleville Ice Control Dam Booms.
52. Boom failure during early winter events could prevent required maintenance from taking place before the spring freshet due to unsafe conditions for staff.
53. Future water level monitoring and operations that benefit the entire Skootamatta watershed could be threatened if MNR did not want to continue contracting QC to operate the Skootamatta Lake dam.
54. Identified maintenance projects at the Skootamatta Lake Dam can be delayed due to Provincial budget calendars.

4.3.2 Drinking Water Source Protection: Municipal

Under the Clean Water Act (Part IV), municipalities are responsible for carrying DWSP risk management services. They are also responsible for carrying out DWSP education and outreach as per Policy G-1 under the Quinte Source Protection Plan.

These tasks have been delegated to QC by all member municipalities.

4.3.2.1 DWSP Risk Management Official/Inspector

All member municipalities have delegated Part IV duties under the Clean Water Act to the Conservation Authority through the MOU. Under this agreement, the Quinte Conservation Source Protection Authority has appointed QC staff members to be trained as Risk Management Officials and/or Inspectors.

The Risk Management Official is primarily responsible for negotiating and establishing legally binding Risk Management Plans with people engaged in (or proposing to undertake) activities that are considered significant threats to sources of municipal drinking water. The primary role of the Risk Management Inspector is to conduct site visits to ensure compliance with the measures agreed upon in the Risk Management Plans. QC has assigned both roles to multiple staff members to ensure the Risk Management Official/Inspector duties are shared and for succession planning. These Officials/Inspectors can also issue notices and orders.

On behalf of the municipalities, Risk Management Officials can issue Section 59 Notices which, under Part IV of the Clean Water Act, are required for all applications under the Planning Act and the Building Code Act.

4.3.2.2 DWSP Education and Outreach

All member municipalities have entered into agreements to delegate the responsibility for DWSP Education and Outreach to the Conservation Authority. The Education and Outreach program supplies information about source water protection and promotes awareness of the Quinte Source Protection Plan through website content, social media, displays, special events, and traditional media. Policy G-1 in the Quinte Source Protection Plan outlines in detail the responsibilities associated with the DWSP Education and Outreach program.

4.3.2 ISSUES AND RISKS: Drinking Water Source Protection: Municipal

55. Potential for municipalities to be disconnected from the DWSP programs since all member municipalities delegates the Risk Management Official/Inspector responsibilities and Education and Outreach Policy to the Authority.

4.4 Other Programs and Services: Category 3

QC delivers other programs that are not considered Mandatory or Municipal Programs and Services. These programs are either funded through municipal agreements, self-generated and/or partnership funds. All the programs influence and enhance watershed health as well as QC knowledge base and expertise. They are part of a larger integrated watershed management model and directly contribute to mandatory program delivery.

Conservation Authorities Act: Other Programs and Services

21.1.2 (1) Subject to subsection (1.1), in addition to programs and services described in sections 21.1 and 21.1.1, an authority may provide, within its area of jurisdiction, any other programs and services that it determines are advisable to further the purposes of this Act. 2020, c. 36, Sched. 6, s. 8 (1); 2022, c. 21, Sched. 2, s. 4 (1).

4.4.1 Local Water Monitoring

In addition to the mandatory surface water and groundwater quality monitoring completed through provincial programs, QC conducts watershed-wide monitoring programs to supplement its ability to monitor and report on watershed health (See Map 9). The data that is collected is used to evaluate and report on existing conditions within the watershed and help to establish targets for protection and rehabilitation activities.

Costs for these programs include staff time, equipment maintenance and calibration, sampling, analysis, and reporting. The information collected is used for watershed report cards and watershed project prioritization.

4.4.1.1 Baseflow Monitoring

Baseflow is a streamflow resulting from persistent sources of water (e.g. groundwater, lakes, wetlands, swamps, etc.) that infiltrates into the soil and eventually moves through the stream channel. This is also referred to as groundwater flow, or dry-weather flows through the watershed region. QC monitors the flow at several locations in the summer months using the Ontario Stream Assessment Protocol methodology. The data collected from this sampling helps identify where groundwater recharge and discharge areas are within individual watersheds. The baseflow sampling routine is structured so that 30 sub-watersheds are monitored at approximately 232 sites.

4.4.1.2 Surface Water Quality Monitoring

In addition to the Provincial Water Quality Monitoring Network (Category 1) sites in the Quinte Region, water quality is monitored at 15 coastal wetland sites for parameters including dissolved nutrients (nitrogen and phosphorus), turbidity, temperature, conductivity, and pH. These monitoring efforts give a more comprehensive picture of water quality throughout the watershed. Surface water quality monitoring is also undertaken with low flow measurements at 230-330 baseflow monitoring sites across 30 sub-watersheds.

4.4.1.3 Ontario Benthos Biomonitoring Network

Aquatic macroinvertebrates, commonly called benthic macroinvertebrates, live in the bottom of watercourses. They serve many functions in aquatic ecosystems including acting as both decomposers and a food source for larger macroinvertebrates, birds, and fish. They are excellent indicators of aquatic health and can be used to assess long-term water quality.

Benthic macroinvertebrate samples are collected at approximately 50 Ontario Benthos Biomonitoring Network sites across the QC watershed annually. The samples are analyzed by staff using the Hilsenhoff Biotic Index, which estimates the overall tolerance of the community in a sampled area by weighing the relative abundance of each taxonomic group found.

4.4.1 ISSUES AND RISKS: Local Water Monitoring

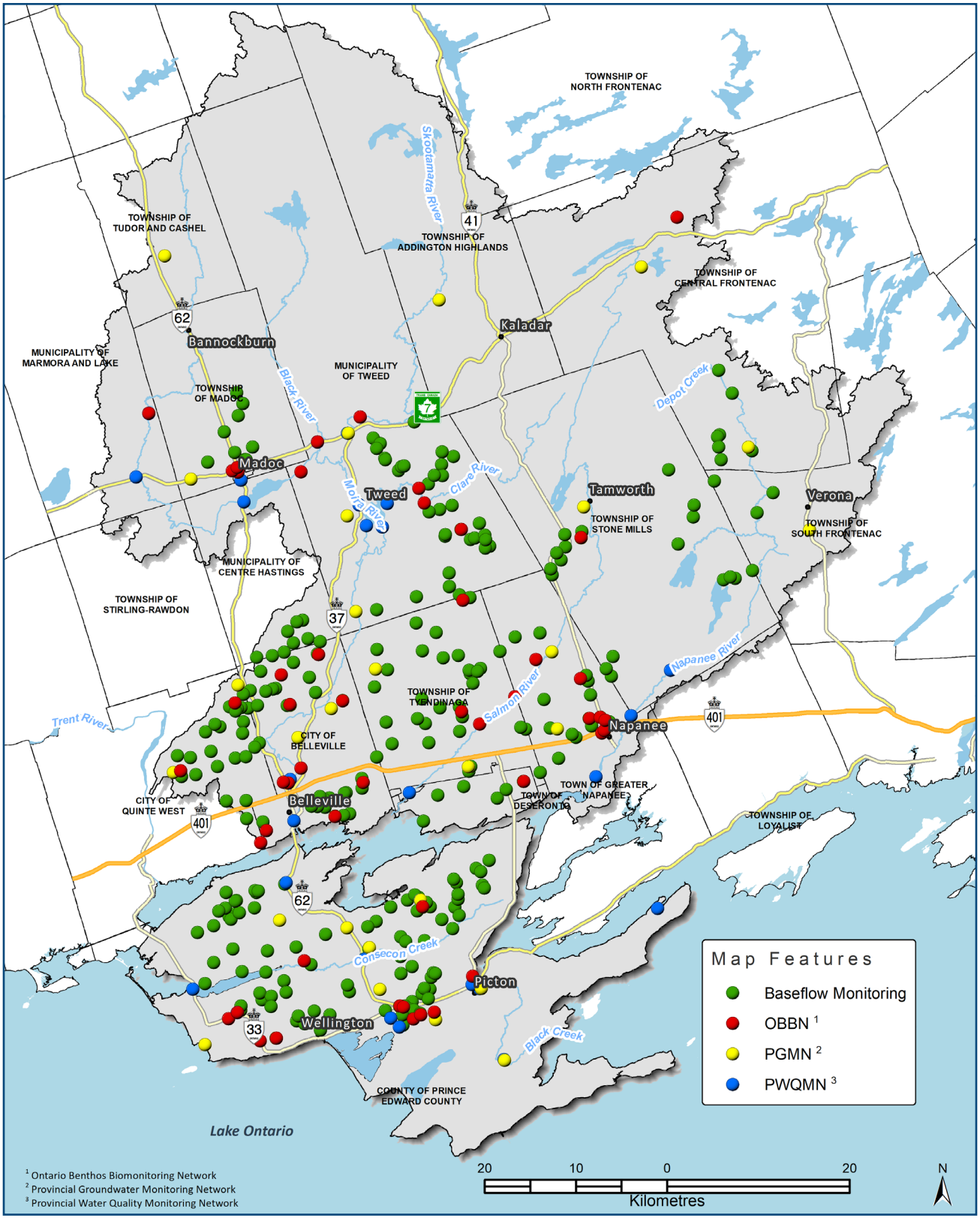
56. Maintenance of municipal support to enhance watershed knowledge and health/ conditions
57. Reporting on data should support other programs and services, municipal partners, and community needs and interests.
58. To ensure QC's monitoring efforts are accurate, funding sources are required to use the best science, monitoring, and data analysis protocols.

4.4.2 Green Energy

QC owns and operates one hydro-electric dam, McLeod Dam. The green energy facility started generating power in 2008. The original dam was updated with two turbines and generators that harness renewable energy to distribute locally. The McLeod Dam generates enough energy to power 400 homes.

4.4.2 ISSUES AND RISKS: Green Energy

59. Cost recovery challenges
60. Limited staff knowledge transfer.
61. Aging and/or damaged infrastructure requires continuous monitoring and maintenance.



Map 9: Quinte Conservation's monitoring sites for Baseflow, Ontario Benthic Biomonitoring Network, Provincial Groundwater Monitoring Network, and Provincial Water Quality Monitoring Network.

4.4.3 Depot Lakes Campground

Located in the Napanee Region, on the Canadian Shield, Depot Lakes Conservation Area and Campground offers many outdoor activities including hiking, fishing, camping, and boating. This conservation area contains approximately nine kilometres of rugged trails, 20 interior boat/paddle-in campsites and 60 seasonal sites for trailer camping opportunities. There are also boat launches at Second and Third Depot Lakes to allow for recreational boating. Seasonal trailer sites can be rented by QC from May to September, while the interior/back-country sites are rented by the day. The revenue from these rentals is utilized to maintain conservation area infrastructure and staffing.

4.4.3 ISSUES AND RISKS: Depot Lakes Campground

62. Operating and maintaining Depot Lakes Campground to a profitable degree.
63. Ensuring the operation of Depot Lakes Campground aligns with QC's mandate.
64. Conserve and protect the land from natural hazards such as shoreline erosion, and flooding.
65. Liability for situations on QC owned property.
66. Competing demands for the Depot Lake property.
67. Use of the Depot Lake Campgrounds may decline if the Depot Lake Dams are decommissioned due to funding challenges.

4.4.4 Youth Education

QC staff deliver a variety of curriculum-connected conservation-based education programs from kindergarten to grade 12 in the QC watershed. These programs are offered to private and public groups in-person at schools, community facilities, and QC owned lands. All outdoor education programs are designed to engage youth through hands-on activities. Staff encourage youth to learn about their local watershed and hope to inspire positive interactions with land and water.

QC education programs include Outdoor Programs, Watershed Workshops, Yellow Fish Road, Stream of Dreams, and Spring Water Awareness and Safety Around Dams.

4.4.4 ISSUES AND RISKS: Youth Education

68. Stable funding for ongoing activities.
69. Maintaining alignment with grade-specific curriculum.
70. Managing health and safety risks associated with outdoor education programming with local school boards and school administrators.
71. Obtaining interest from local partners to support programming.

4.4.5 Community Outreach and Stewardship

QC's Outreach and Stewardship staff organize and deliver a variety of programs and services to watershed residents and municipalities each year. These programs aim to inform individuals about the importance of protecting, maintaining, and restoring a healthy watershed and encourages them to take environmental actions. Some of these community outreach programs include interpretive hikes at conservation areas, community presentations, workshops, and attending special events (e.g. lake associations annual general meetings, and community events). At outreach events, staff provide their expertise and educational materials such as fact sheets, booklets, pamphlets, and infographics.

Private landowners in the QC watershed have access to several stewardship programs. Some stewardship programs include shoreline restoration, habitat enhancement on public and private lands, and community tree days. Through these programs, staff work directly with landowners, local groups, and municipalities to offer technical advice, site visits, advice, and occasionally financial assistance.

Additionally, QC participates in the BQRAP, which offers a variety of subsidized programs for homeowners including septic system maintenance, rain gardens, and shoreline plantings. Staff also connect landowners to stewardship programs that are delivered by other organizations.

4.4.5 ISSUES AND RISKS: Community Outreach and Stewardship

72. Grant funding for staff to deliver these programs can be difficult due to the competitive nature and narrow eligibility requirements.
73. Balancing fluctuation in public demand while aligning with QC's mandate.
74. Self-generated funds differ annually causing budget challenges.
75. Geographic requirements for some program deliverables can cause unequal access across the QC watershed.
76. The abundance of social media outlets creates a challenge for staff to continuously manage and respond to inquiries while ensuring public confidence and factual messaging/information is conveyed.
77. Limited staff requires prioritization of resources which occasionally cannot meet competing demands, causing missed opportunities.

4.4.6 Significant Partnership Programs

QC has partnered with several organizations to improve watershed knowledge and restore natural ecosystems. The most notable partnership is with Lower Trent Conservation to provide the BQRAP to restore the Bay of Quinte to its natural glory.

4.4.6 ISSUES AND RISKS: Significant Partnership Programs

78. 78. Partnerships are contingent on the program's cost and length.

4.4.7 Hunting Leases

Select Quinte Conservation landholdings are leased for hunting activities between September and December. Hunting is not allowed at any conservation area, or water control structure. To hunt on QC property, individuals must follow Provincial and Federal Hunting Regulations and have appropriate Provincial and Federal license(s) and stamps/ tags. During program expansion, adjacent landowners are given the first right of refusal on newly created blocks. Lease holders have exclusive privileges on that landholding on a three-year term, but these landholdings remain open to other transient uses. Outside of the lease period, all hunt properties are open to the public for regulated hunting purposes and recreational uses.

4.4.7 ISSUES AND RISKS: Hunting Leases

79. Liability for situations on QC owned property.
80. Unknown property boundaries create conflict between neighbouring users.
81. Increased demand for recreational uses requires funding for property maintenance.
82. Competing uses
83. Negative public perception and concern over hunting activities on conservation land.

4.5 Other Programs – Non-Category 3

QC delivers programs that are not funded by local municipalities. Currently, there are a few programs that fall into this category and extend beyond watershed boundaries.

4.5.1 Bay of Quinte Remedial Action Plan

In 1985, the Bay of Quinte was designated as an Area of Concern (AOC) by the International Joint Commission under the Great Lakes Water Quality Agreement between Canada and the United States of America. The AOC designation was made because of several environmental concerns including excess nutrients, persistent toxic contamination, bacterial contamination, and the loss and destruction of fish and wildlife habitats. These conditions impaired the beneficial uses of natural resources such as drinking water, recreation, and fish habitats. In total, 11 beneficial use impairments were identified in the Bay of Quinte area, and remediation actions have been and will be completed to remove the AOC designation.

To oversee the delisting process for the Bay of Quinte AOC, a Restoration Council was established and co-chaired by QC and Lower Trent Conservation. The Restoration Council consists of agencies from all levels of government and local representatives to implement the Remedial Action Plan and undertake the actions to rehabilitate the Bay of Quinte. There have been several environmental challenges that have been addressed leading to the restoration of eight beneficial use impairments with three uses currently in the redesignation process (restriction on fish and wildlife consumption, eutrophication or undesirable algae, and degradation of phytoplankton and zooplankton populations).

QC administers the Bay of Quinte Remedial Action Plan, provides technical support and monitoring efforts that are specifically targeted at the issues present in the Bay of Quinte. This includes governance, administration, communications, stakeholder & public outreach, First Nation engagement, stewardship programs, data compilation & analysis, science coordination and review, and strategic planning & reporting. No municipal funds are spent on this program since it is funded entirely by the federal and provincial governments.

4.5.1 ISSUES AND RISKS: Bay of Quinte Remedial Action Plan

84. Funding for long-term monitoring and data management after delisting.
85. Implementation of the Phosphorus Management Plan.
86. Continue obtaining scientific interest for monitoring efforts.
87. Ensuring equipment, technology, and protocols are accurate and current. As well as maintaining long-term datasets to assess trends.
88. Educating the public on the importance of continuous monitoring of the Bay of Quinte.
89. Ensuring the decades of ecological improvements are maintained.

4.5.2 Forest Carbon Offset Program

Quinte Conservation has partnered with Anew Climate, LLC to issue the first ever forest carbon credits by the American Carbon Registry (ACR) Improved Forest Management (IFM) on Canadian Forestlands methodology. This forest-carbon project covers more than 10,000 hectares of mixed hardwood forestland in southern Ontario. In 2021, the ACR published the methodology for IFM on Canadian Forestlands to support conservation opportunities on eligible lands in Canada, including Indigenous lands and other private and public lands that can be legally harvested for timber, with the expectation of Crown lands. With the carbon revenues generated from QC's forests, QC intends to extend stewardship programs to other properties within the watershed that otherwise may be developed or managed for timber revenue.

4.5.2 ISSUES AND RISKS: Forest Carbon Offset Program

90. Forest loss can impact the amount of carbon storage in the natural environment.
91. Program becomes obsolete due to political changes and industry sentiment leading to reduction in funding.

4.6 Information Supporting QC Programs

O. Reg. 686/21 requires this Strategy to include a summary of existing technical studies, monitoring programs, and other information about natural resources that the Authority uses to support the delivery of its programs and services under Section 21.1 of the CA Act.

CATEGORY 1	
Program	Resource List
Drinking Water Source Protection	• Annual Reports • Best Practices for Source Water Protection • Clean Water Act • Conceptual Water Budget • Electronic Annual Reporting platform • Geographic Information System • Quinte Regional Groundwater Study • Quinte Region Drought Plan • Quinte Source Protection Plan • Quinte Source Protection Plan Explanatory Document • Quinte Source Protection Area Assessment Report • Quinte Conservation Terms of Reference • Safe Drinking Water Act • Technical Rules • Tier 1 Water Budget • Tier 2 Water Budget for Ameliasburgh Subwatershed Prince Edward County • Tier 2 Water Budget Village of Madoc • Watershed Characterization Report
Provincial Water Quality and Quantity Monitoring	• 2018 Watershed Report Card • 2023 Watershed Report Card • Canadian Water Quality Guidelines • MECP's Provincial (Stream) Water Quality Monitoring Network (PWQMN) database • Ontario Snow Survey for Surface Water Monitoring • Provincial Groundwater Monitoring Network Program Binder (2008) • Provincial Groundwater Monitoring Network (PGMN) Program • Water management: policies, guidelines, provincial water quality objectives
Natural Hazard Management	• Annual Flood Warning Plan • Belleville Ice Control Dams (Klohn Crippen Consultants, 2005) • Bell Creek Floodplain and Water Management Study (1984) • Bell Creek Floodplain Mapping Master Drainage Plan (1989) • Bridge and Culvert Design Guidelines (2023) • Bellrock Dam – Dam Safety Review (2004) • Bellrock Dam – Concrete Condition Assessment (2022)

CATEGORY 1 (CONTINUED)	
Program	Resource List
Natural Hazard Management (continued)	• Bellrock Dam – Rock Anchor Design (2022) • Bellrock Dam – Guidelines and Procedures for Partial Demolition of Mills (2023) • Beaver Meadow Dam- General and Detail Plan (1981), Ducks Unlimited • Beaver Meadow Dam- Dam Inspection and Capital Maintenance Plan (2018), D.M. Wills Associates Ltd. • Bellrock Main Dam- Site Plan & Profile (1982), Cumming-Cockburn & Associates Ltd. • Bellrock Main Dam- Sections & Details (1982), Cumming-Cockburn & Associates Ltd. • Bellrock Main Dam- Pre-Engineering Study (1991), J.D. Paine Engineering Inc. • Bellrock Main Dam- Structural Restoration (1991), Zegers Engineering • Bellrock Main Dam- Plans, Elevation and Sections (2003), Acres International Ltd. • Bellrock Main Dam- Concrete Condition Plan and Elevations (2003), Acres International Ltd. • Bellrock Main Dam- Dam Safety Review (2004), Acres International Ltd. • Bellrock Main Dam-Dam Inspection and Capital Maintenance Plan (2018), D.M. Wills Associates Ltd. • Bellrock Main Dam- Concrete Condition Assessment (2022), Hatch Ltd. • Bellrock Main Dam- Dam Stability Analysis and Anchor Design (2022), Hatch Ltd. • Bloomfield Mill Dam- Concrete and Reinforcing Details (1975), Kilborn Engineering Ltd. • Bloomfield Milld Dam- Dam Details (1975), Kilborn Engineering Ltd. • Bloomfield Mill Dam- General Arrangements (1975), Kilborn Engineering Ltd. • Bloomfield Mill Dam- Pond Dredging (1975), Kilborn Engineering Ltd. • Bloomfield Mill Dam- Spillway Arrangement (1975), Kilborn Engineering Ltd. • Bloomfield Mill Dam- Concrete and Reinforcing Details (1975), Kilborn Engineering Ltd. • Bloomfield Mill Dam- Cross Section Condition Assessment (2009) Hatch Ltd. • Bloomfield Mill Dam- Dam Safety Review (2009), Hatch Ltd. • Bloomfield Mill Dam- Existing Conditions General Arrangement (2009), Hatch Ltd.

CATEGORY 1 (CONTINUED)	
Program	Resource List
Natural Hazard Management (continued)	• Breeze Dam- Reinforcing Details (1982), Cumming-Cockburn & Associates Ltd. • Breeze Dam- Sections & Details (1982), Cumming-Cockburn & Associates Ltd. • Breeze Dam- Site Plan & Profile (1982), Cumming-Cockburn & Associates Ltd. • Conservation Authorities Act • Canadian Dam Association Guidelines: ◇ Dam Safety Guidelines (CDA, 2013) ◇ Technical Bulletins (CDA, 2007) ◇ Dam Safety Reviews (CDA, 2016) • Canniff Mill Estate Sub-watershed Report (1997) • Cannifton Industrial Park Stormwater Management Study (1996) • Compliance and Enforcement Administrative Guidelines (2024) • CO Guidelines for Developing Schedules of Regulated Areas (2005) • Client Service Standards for Conservation Authority Plan and Permit Reviews (2019) • Class Environmental Assessment for Remedial Flood and Erosion Control Projects (CO, 2024) • CO/MMAH/MNRF MOU on Delegated Responsibility (2001) • Catons Weir- Location Plan (1967), Dept. of Energy & Resources Mgmt. • Catons Weir- Weir Plan and Details (1967), Dept. of Energy & Resources Mgmt. • Colebrook Dam- Plan and Sections (1980), Crysler & Lathem Ltd. • Colebrook Dam- Concrete Condition Plan and Elevations (2003), Acres International Ltd. • Colebrook Dam- Plan, Elevation and Sections (2003), Acres International Ltd. • Colebrook Dam- Dam Safety Review (2004), Acres International Ltd. • Colebrook Dam- General Arrangement Plan and Elevation (2015), WSP • Colebrook Dam- Access Platform (2016), Guthrie Engineering Ltd. • Colebrook Dam- Dam Inspection and Capital Maintenance Plan (2018), D.M. Wills Associates Ltd. • Colebrook Dam- Dam Safety Review (2022), Hatch Ltd. • Colebrook Dam- Public Safety Assessment (2023), Hatch Ltd. • Consecon Mill Dam- Dam Reconstruction (1976), Totten Sims Hubicki Associates Ltd. • Consecon Mill Dam- Dam Safety Review and Public Safety Assessment (KGS Group, 2024) • Consecon Mill Dam- Public Safety Plan (KGS Group, 2024) • Consecon Mill Dam- Seepage Monitoring Plan (2024), KGS Group

CATEGORY 1 (CONTINUED)	
Program	Resource List
Natural Hazard Management (continued)	• Drainage Management Manual (MTO) • Deadcreek Dam- General Detail and Plan (Ducks Unlimited, 1979) • Deerock Lake Dam- Dam Proposal (Kilborn Engineering Ltd., 1966) • Deerock Lake Dam- Dam Sections (Kilborn Engineering Ltd., 1969) • Deerock Lake Dam- Details (Kilborn Engineering Ltd., 1969) • Deerock Lake Dam- General Arrangements (Kilborn Engineering Ltd., 1969) • Deerock Lake Dam- Plan for 42" Diameter Conduit (Kilborn Engineering Ltd., 1969) • Deerock Lake Dam- Spillway (Kilborn Engineering Ltd., 1969) • Deerock Lake Dam- Dam Safety Review (Sanchez Engineering Inc., 2015) • Deloro Dam- Dam Inspection and Capital Maintenance Plan (D.M. Wills Associates Ltd., 2018) • Demorestville Dam- Deck and Handrail Details (1976), Totten Sims Hubicki Associates Ltd • Demorestville Dam- Reinforcing Details (1976), Totten Sims Hubicki Associates Ltd • Demorestville Dam- Plans and Sections (1976), Totten Sims Hubicki Associates Ltd. • Demorestville Dam- Site Plan and Elevations (1976), Totten Sims Hubicki Associates Ltd. • Demorestville Dam- Dam Safety Review (2010), Sanchez Engineering Inc. • Demorestville Dam- Demorestville Dam (2010), Sanchez Engineering Inc. • Demorestville Dam- Dam Inspection and Capital Maintenance Plan (2018), D.M. Wills Associates Ltd. • Demorestville Dam- Demorestville & James Lazier Catwalk Structural Details (2019), Hambly Group • Downey Rapids Dam- General Arrangement Plans, Sections and Details (1963), R. K. Kilborn & Associates • Erosion and Sediment Control Guideline for Urban Construction (Greater Golden Horseshoe Conservation Authorities, 2006) • Final Drainage Plans for Upper No Name Creek – Bell Boulevard Stormwater Management System (1998) • Floodplain mapping studies ◇ Deer Creek Floodplain Mapping Study and Maps (Aquafor Beech Limited, 2022) ◇ Consecon Lake and Creek Flood Hazard Mapping Study and Maps (KGS Group, 2024)

CATEGORY 1 (CONTINUED)	
Program	Resource List
Natural Hazard Management (continued)	◇ Napanee River Upper Lakes Flood Hazard Mapping Report and Maps (Jewell Engineering, 2024) ◇ Selby Creek Flood Hazard Mapping Final Report and Maps (Aquafor Beech Limited, 2024) ◇ Salmon River Upper Lakes Flood Hazard Mapping Report and Maps (KGS, 2024) ◇ Marsh Creek Floodplain mapping (1981) ◇ Lane Creek Floodplain Mapping Report and Maps (Jewell Engineering, 2022) ◇ Bloomfield Creek Floodplain Mapping Report and Maps (1983) ◇ Slab Creek Floodplain Mapping Report and Maps (1980) ◇ Napanee River Floodplain Mapping Report and Maps (1978) ◇ Salmon River Floodplain Mapping Report and Maps (1980) ◇ Marysville Creek Floodplain Mapping Report and Maps (1980) ◇ Mountain Grove Floodplain Mapping (1986) ◇ Moira River – south of Highway 401 Floodplain Mapping Report and Maps (1987) ◇ Moira River Floodplain Mapping Report and Maps (1984) ◇ Bell Creek Floodplain Mapping Report and Maps – North of Airport Road (1988) ◇ Bell Creek Floodplain Mapping Report and Maps – South of Airport Road (1984) ◇ Potter Creek Floodplain Mapping Report and Maps (1992) ◇ Nor-belle Creek Floodplain Mapping Report and Maps (1995) ◇ No Name Creek Floodplain Mapping Report and Maps (1977) ◇ Hospital Creek Floodplain Mapping Report and Maps (1986) ◇ Madoc North-East Quadrant Study (Ainley, 1991) • Flinton Dam- Plan and Sections (1978), Crysler & Lathem Ltd. • Flinton Dam- Dam Safety Assessment (2010), Trow Associates Inc. • Flinton Dam- Existing Plan and Sections (2010), Trow Associates Inc • Flinton Dam- Photographs Site Plan (2010), Trow Associates Inc. • Flinton Dam- Rehabilitation Plan (2010), Trow Associates Inc. • Flinton Dam- Dam Inspection and Capital Maintenance Plan (2018), D.M. Wills Associates Ltd. • Geographic Information System (GIS) • Hydro One MOU (2021) • Hospital Creek Master Drainage Plan (2011) • Hearing Guidelines (amended 2021) • Hardwood Creek Dam- General Arrangement Plans, Sections, Details for Control Weir- Verona (1965), R. K. Kilborn & Associates • Hardwood Creek Dam- Reconstruction of Control Weir- Verona (1985)

CATEGORY 1 (CONTINUED)	
Program	Resource List
Natural Hazard Management (continued)	• Harry Smith Dam- Dam Safety Review (2010), Sanchez Engineering Inc. • Harry Smith Dam- Existing Condition Plan, Profile and Sections (2014), Hydrosys Consultants Inc. • Harry Smith Dam- Proposed Dam Plan and Section (2014), Hydrosys Consultants Inc. • Harry Smith Dam- Proposed Dam Sections (2014), Hydrosys Consultants Inc. • Harry Smith Dam- Proposed Dam Sections and Details (2014), Hydrosys Consultants Inc. • Holgate Dam- Geotechnical Report (1985), Garatech Inc. • Holgate Dam- Control Structure Plan Sections & Reinforcing Details (1988), Garatech Inc. • Holgate Dam- East Abutment Plan Sections & Reinforcing Details (1988), Garatech Inc. • Holgate Dam- General Arrangement and Profile (1988), Garatech Inc. • Holgate Dam- Ice Boom Anchors Plans Sections & Reinforcing Details (1988), Garatech Inc. • Holgate Dam- Ice Boom Component Arrangement & Details (1988), Garatech Inc. • Holgate Dam- Sections and Plans (1988), Garatech Inc. • Holgate Dam- Site Plan and Property Limits (1988), Garatech Inc. • Holgate Dam- Spillway & Backfill Details (1988), Garatech Inc. • Holgate Dam- West Abutment Plan Sections & Reinforcing Details (1988), Garatech Inc. • Holgate Dam- Dam Safety Review (2005), Klohn Crippen Consultants Ltd. • Holgate Dam- Hazard Classification Review (2017), Aqua Geomatics Consultants Ltd. • Holgate Dam- Public Safety Assessment (2017), Aqua Geomatics Consultants Ltd. • Ice Management Manual (MNR, 1984) • James Lazier Dam- Control Structure (1980), Crysler & Lathem Ltd. • James Lazier Dam- Control Structure Details (1980), Crysler & Lathem Ltd. • James Lazier Dam- Control Structure Foundation & Deck Plans (1980), Crysler & Lathem Ltd. • James Lazier Dam- Details (1980), Crysler & Lathem Ltd. • James Lazier Dam- Details & Side Channel (1980), Crysler & Lathem Ltd. • James Lazier Dam- Profile at Dam Control Line (1980), Crysler & Lathem Ltd. • James Lazier Dam- Site Plan (1980), Crysler & Lathem Ltd. • James Lazier Dam- Dam Safety Report (2015), Sanchez Engineering Inc.

CATEGORY 1 (CONTINUED)	
Program	Resource List
Natural Hazard Management (continued)	• Kingsford Weir- Panel Details (1974), Totten Sims Hubicki and Associates Ltd. • Kingsford Weir- Weir Details (1974), Totten Sims Hubicki and Associates Ltd. • Lakes and Rivers Improvement Act Technical Bulletins: ◇ Alterations, Improvements and Repairs to Existing Dams (MNR, 2016) ◇ Classification and Inflow Design Flood Criteria (OMNR, 2011) ◇ Dam Decommissioning and Removal (OMNR, 2011) ◇ Dam Safety Reviews Best Management Practices (OMNR, 2011) ◇ Geotechnical Design and Factors of Safety (OMNR, 2011) ◇ Lakes and Rivers Improvement Act Administrative Guide (OMNR, 2017) ◇ Location Approval for Dams (MNRF, 2015) ◇ Maintaining Water Management Plans (MNR, 2016) ◇ Public Safety Around Dams Best Management Practices (OMNR, 2011) ◇ Seismic Hazard Criteria, Assessment and Considerations (OMNR, 2011) ◇ Spillways and Flood Control Structures (OMNR, 2011) ◇ Structural Design and Factors of Safety (OMNR, 2011) • Laraby Rapids Dam- Access Road- Plan, Traverse & Section (1975), Totten Sims Hubicki and Associates Ltd. • Laraby Rapids Dam- Details, Sections & Reinforcing (1975), Totten Sims Hubicki and Associates Ltd. • Laraby Rapids Dam- General Arrangement (1975), Totten Sims Hubicki and Associates Ltd. • Laraby Rapids Dam- Plan, Elevations & Sections (1975), Totten Sims Hubicki and Associates Ltd. • Laraby Rapids Dam- Dam Inspection and Capital Maintenance Plan (2018), D.M. Wills Associates Ltd. • Lingham Lake Dam- Main Dam Details (1984), Ainley and Associates Ltd. • Lingham Lake Dam- Main Dam Profile and Saddle Dam Details (1984), Ainley and Associates Ltd. • Lingham Lake Dam- Main Dam and Sections (1984), Ainley and Associates Ltd. • Lingham Lake Dam- Plan of Sluiceway Modifications (1984), Ainley and Associates Ltd. • Lingham Lake Dam- Stilling Well & Shed Detail (1984), Ainley and Associates Ltd. • Lingham Lake Dam- Dam Safety Report (2004), Acres International Ltd.

CATEGORY 1 (CONTINUED)	
Program	Resource List
Natural Hazard Management (continued)	• Lingham Lake Dam- Emergency Preparedness Plan (2004), Acres International Ltd. • Lingham Lake Dam- Dam Upgrade by Quinte Conservation (2009), Guthrie Engineering Ltd. • Lingham Lake Dam- Dam Inspection and Capital Maintenance Plan (2018), D.M. Wills Associates Ltd. • Lingham Lake Dam- Public Safety Plan (2020), D.M. Wills Associates Ltd. • Lott Dam- Plan and Elevation (1979), Crysler & Lathem Ltd. • Lott Dam- Spillway and Pier Sections (1979), Crysler & Lathem Ltd • Lott Dam- Ice Boom Anchor Plans, Sections and Reinforcing Details (1987), Garatech Inc. • Lott Dam- Ice Boom Component Arrangement and Details (1987), Garatech Inc. • Lott Dam- Ice Boom Miscellaneous Details (1987), Garatech Inc. • Lott Dam- Site Plan and Property Limits (1987), Garatech Inc. • Lott Dam- Dam Safety Review (2005), Klohn Crippen Consultants Ltd. • Lott Dam- Geotechnical Investigation (2006), Trow Associates Inc. • Lott Dam- Hazard Potential Classification Review (2017), Aqua Geomatics Consultants Ltd. • Lott Dam- Public Safety Assessment (2017), Aqua Geomatics Consultants Ltd. • Lower Arden Dam- Dam Safety Review (2009), Hatch Ltd. • Lower Arden Dam- Existing Conditions Plan, Elevation and Section (2009), Hatch Ltd. • Lower Arden Dam- Dam Inspection and Capital Maintenance Plan (2018), D.M. Wills Associates Ltd. • Lower Arden Dam- Dam Safety Review and Public Safety Risk Assessment (2024), KGS Group • Lower Arden Dam- Public Safety Plan (2024), KGS Group • Lower Arden Dam- Seepage Monitoring Plan (2024), KGS Group • MNRF Technical Guides (2002) ◇ Understanding Natural Hazards ◇ Flood Hazard Limit Definition ◇ Erosion Hazard Limit Definition ◇ Great Lakes/Large Inland Lakes • Moira Valley Conservation Report (1950) • Macaulay Mountain Dam- Spillway Construction (1979), Ministry of Natural Resources • Macaulay Mountain Dam- Dam Safety Review (2009), Hatch Ltd. • Macaulay Mountain Dam- Existing Conditions General Arrangement (2009), Hatch Ltd.

CATEGORY 1 (CONTINUED)	
Program	Resource List
Natural Hazard Management (continued)	• McLeod Dam – Project Location and Drawing List (Hatch Acres, 2008) • McLeod Dam – Project General Arrangement (Hatch Acres, 2008) • McLeod Dam – Spill Channel General Arrangement (Hatch Acres, 2008) • McLeod Dam – Obermeyer Gate Foundation Concrete Plan and Sections (Hatch Acres, 2008) • McLeod Dam – Obermeyer Gate Foundation Concrete and Reinforcing (Hatch Acres, 2008) • McLeod Dam – Existing Ice Boom Piers Modification Plan and Sections (Hatch Acres, 2008) • McLeod Dam - New Ice Boom Piers Plan, Sections and Details (Hatch Acres, 2008) • McLeod Dam - Spillway Channel Profile and Sections (Hatch Acres, 2008) • McLeod Dam – Powerhouse Layout Longitudinal Section A-A (Hatch Acres, 2008) • McLeod Dam – Powerhouse Layout Plan Sections B-B & C-C (Hatch Acres, 2008) • McLeod Dam – Powerhouse Layout Cross Sections D-D through J-J (Hatch Acres, 2008) • McLeod Dam – Revised Intake Structure (B. Keene, 2007) • McLeod Dam – Powerhouse Concrete and Reinforcing Longitudinal Section A-A (Hatch Acres, 2008) • McLeod Dam – Powerhouse Concrete and Reinforcing Plans B-B, C-C & D-D (Hatch Acres, 2008) • McLeod Dam – Powerhouse Concrete and Reinforcing Cross Sections E-E, F-F, G-G & H-H (Hatch Acres, 2008) • McLeod Dam – Powerhouse Concrete and Reinforcing Beams B1, B2 & B3 • McLeod Dam – Powerhouse Concrete and Reinforcing Approach Channel Wing Walls and Plug (Hatch Acres, 2008) • McLeod Dam – Powerhouse Miscellaneous Steel Stairs and Platforms (Hatch Acres, 2008) • McLeod Dam – Powerhouse Miscellaneous Steel Stairs and Ladder Details (Hatch Acres, 2008) • McLeod Dam – Powerhouse Miscellaneous Steel Ladder and Handrail Details (Hatch Acres, 2008) • McLeod Dam – Powerhouse Miscellaneous Steel Hatch Frame and Cover Details (Hatch Acres, 2008) • McLeod Dam – Powerhouse Miscellaneous Steel Trashrack Details (Hatch Acres, 2008) • McLeod Dam – Powerhouse Building Services Single Line Diagram (Hatch Acres, 2008)

CATEGORY 1 (CONTINUED)	
Program	Resource List
Natural Hazard Management (continued)	• McLeod Dam – Powerhouse Building Services Panel Schedules and Details (Hatch Acres, 2008) • McLeod Dam – Powerhouse Building Services Equipment List and Details (Hatch Acres, 2008) • McLeod Dam – Powerhouse Electrical and Mechanical Specifications (Hatch Acres, 2008) • McLeod Dam Generating Station Generator Control System (Hatch Acres, 2007) • McLeod Dam Stability Update (Acres International, 2006) • McLeod Dam Safety Review (Stantec, 2021) • McLeod Dam Public Safety Plan (Stantec, 2021) • Middle Arden Dam- Dam Safety Review (2009), Hatch Ltd. • Middle Arden Dam- Existing Conditions Plan and Sections (2009), Hatch Ltd. • Middle Arden Dam- Dam Retrofit (2012), Guthrie Engineering Ltd. • Middle Arden Dam- Dam Inspection and Capital Maintenance Plan (2018), D.M. Wills Associates Ltd. • Middle Arden Dam- Dam Safety Review and Public Safety Risk Assessment (2024), KGS Group • Midde Arden Dam- Public Safety Plan (2024), KGS Group • Milford Dam- Plans- Access, Excavation & Backfill (1979), Totten Sims Hubicki Associates Ltd. • Milford Dam- Dam Safety Review (2008), Sanchez Engineering • Mulhall Dam- Preliminary Hazard Potential Classification (2005), Klohn Crippen Consultants Ltd. • Mulhall Dam- Hazard Potential Classification Review (2017), Aqua Geomatics Consultants Ltd. • Mulhall Dam- Public Safety Assessment (2017), Aqua Geomatics Consultants Ltd. • Nor-Belle Development Study (1996) • Nor-Belle Sub-Watershed Plan (1995) • Napanee Region Conservation Report (1967) • Napanee Valley Conservation Report (1957) • Natural Resources Canada & Public Safety Canada (2018). Federal Flood Mapping Framework. version 2.0, Natural Resources Canada, General Information Product, 112e. • Natural Resources Canada & Public Safety Canada (2022). Federal airborne LiDAR data acquisition guideline. version 3.1, Natural Resources Canada, General Information Product, 117e.

CATEGORY 1 (CONTINUED)	
Program	Resource List
Natural Hazard Management (continued)	• Natural Resources Canada & Public Safety Canada (2018). Case studies on climate change in floodplain mapping, volume 1. Natural Resources Canada, General Information Product, 118e. • Natural Resources Canada (2023). Federal hydrologic and hydraulic procedures for flood hazard delineation. 2.0, Natural Resources Canada, General Information Product, 113e. • Natural Resources Canada & Public Safety Canada (2019). Federal geomatics guidelines for flood mapping. version 1.0, Natural Resources Canada, General Information Product, 114e. • Natural Resources Canada & Public Safety Canada (2021). Federal flood damage estimation guidelines for buildings and infrastructure. version 1.0, Natural Resources Canada, General Information Product, 124e. • Natural Resources Canada & Public Safety Canada (2018). Bibliography of best practices and references for flood mitigation. version 2.0, Natural Resources Canada, General Information Product, 115e. • Ontario Regulation 41/24: Prohibited Activities, Exemptions and Permits • Ontario Flood Forecasting and Warning Implementation Guidelines – 2023 Version English (PFFWC, 2023) • Ontario Snow Surveying Manual – Addendum (OMNRF, 2019) • O'Hara Mill Dam- Dam Safety Review (2007), Trow Associates Inc. • O'Hara Mill Dam- Demolition Plans & Elevations (2010), Trow Associates Inc. • O'Hara Mill Dam- Diversion and Sediment Control Plans (2010), Trow Associates Inc. • O'Hara Mill Dam- Elevations (2010), Trow Associates Inc. • O'Hara Mill Dam- General Site Plan (2010), Trow Associates Inc. • O'Hara Mill Dam- Miscellaneous Details (2010), Trow Associates Inc. • O'Hara Mill Dam- Plan (2010), Trow Associates Inc. • O'Hara Mill Dam- Sections (2010), Trow Associates Inc. • O'Hara Mill Dam- Structural Details (2010), Trow Associates Inc. • O'Hara Mill Dam- Structural Sections (2010), Trow Associates Inc. • O'Hara Mill Dam- Dam Safety Review (2021), D.M. Wills Associates Ltd. • O'Hara Mill Dam- Public Safety Risk Assessment (2021), D.M. Wills Associates Ltd. • O'Hara Mill Dam- Public Safety Plan (2022), D.M. Wills Associates Ltd. • Potter Creek Subwatershed Plan (1994) • Potter Creek Master Drainage Plan (2008) • Potter Creek Master Drainage Plan – Implementation Report (2008) • Policies and Procedures for Conservation Authority Plan Review and Permitting Activities (2010) • Provincial Policy Statement (2020)

CATEGORY 1 (CONTINUED)	
Program	Resource List
Natural Hazard Management (continued)	• Prince Edward Region Conservation Report (1968) • QC Karst (Unstable Bedrock) Investigation Guidelines (2023) • Shoreline Management Plan (2022) • Stormwater Management Planning and Design Manual (MOE, 2003) • Selby Creek Master Drainage Plan (2011) • Stormwater Management Planning and Design Manual (MOE, 2003) • Second Depot Lake Dam- General Plan & Earth Sections (1949), R.K. Kilborn & Associates Ltd. • Second Depot Lake Dam- Storage Dam, Wing Walls (1957), R.K. Kilborn & Associates Ltd. • Second Depot Lake Dam- Storage Dam, Sluices (1958), R.K. Kilborn & Associates Ltd. • Second Depot Lake Dam- Overflow Spillway General Arrangement and Details (1965), R. K. Kilborn & Associates Ltd. • Second Depot Lake Dam- Dam Safety Review (2004), Acres International Ltd. • Second Depot Lake Dam- Emergency Preparedness Plan (2004), Acres International Ltd. • Second Depot Lake Dam- Geotechnical Assessment (2008), Hatch Ltd. • Second Depot Lake Dam- Dam Safety Review (2009), Hatch Ltd. • Second Depot Lake Dam- Dam Inspection and Capital Maintenance Plan (2018). D.M. Wills Associates Ltd. • Springside Dam- Plans and Sections (1980), Crysler & Lathem Ltd. • Springside Dam- Dam Inspection and Capital Maintenance Plan (2018), D.M. Wills Associates Ltd. • Snow Survey Manual and Procedures (Conservation Authorities and Water Management Branch, February 1985) • Third Depot Lake Dam- Main Closure Dam (1970), Kilborn Engineering Ltd. • Third Depot Lake Dam- Main Closure Dam Details (1970), Kilborn Engineering Ltd. • Third Depot Lake Dam- Spillway – Concrete (1971), Kilborn Engineering Ltd. • Third Depot Lake Dam- Spillway - Details (1971), Kilborn Engineering Ltd. • Third Depot Lake Dam- Spillway – Reinforcing (1971), Kilborn Engineering Ltd. • Third Depot Lake Dam- Dam Safety Review (2004), Acres International Ltd. • Third Depot Lake Dam- Emergency Preparedness Plan (2004), Acres International Ltd.

CATEGORY 1 (CONTINUED)	
Program	Resource List
Natural Hazard Management (continued)	• Third Depot Lake Dam- Seismicity Assessment and Stability Review (2006), Hatch Acres • Third Depot Lake Dam- Dam Safety Review (2009), Hatch Ltd. • Third Depot Lake Dam- Assessment of Dam Stability Under Maximum Flood Level Conditions (2013), Hatch Ltd. • Third Depot Lake Dam- Dam Hazard Classification and IDF Mitigation Options (2013), Hatch Ltd. • Third Depot Lake Dam- Dam Inspection and Capital Maintenance Plan (2018), D.M. Wills Associates Ltd. • Thirteen Island Lake Dam- Contour Plan of Existing Site (1975), Ministry of Natural Resources • Thirteen Island Lake Dam- Control Structure Details (1975), Ministry of Natural Resources • Thirteen Island Lake Dam- Culvert & Abutment Details (1975), Ministry of Natural Resources • Thirteen Island Lake Dam- Dam Inspection and Capital Maintenance Plan (2018), D.M. Wills Associates Ltd. • Thirteen Island Lake Dam- General Arrangement (2022), Jewell Engineering • Thirteen Island Lake Dam- Plan & Profile (2022), Jewell Engineering • Thirteen Island Lake Dam- Structural Details (2022), Jewell Engineering • Upper No Name Creek Water Management Study (1995) • Upper Arden Dam- Dam Safety Review Report (2009), Hatch Ltd. • Upper Arden Dam- Existing Conditions Plan, Elevation and Section (2009), Hatch Ltd. • Upper Arden Dam- Dam Retrofit, Cross Sections (2013), Guthrie Engineering Ltd. • Upper Arden Dam- Dam Retrofit, Plans, Sections & Elevations (2013), Guthrie Engineering Ltd. • Upper Arden Dam- Dam Break Analysis (2017), AHYDTECH Geomorphic Ltd. • Upper Arden Dam- Dam Inspection and Capital Maintenance Plan (2018), D.M. Wills Associates Ltd. • Upper Arden Dam- Dam Safety Review and Public Safety Risk Assessment (2024), KGS Group • Upper Arden Dam- Public Safety Plan (2024), KGS Group • Upper Arden Dam- Seepage Monitoring Plan (2024), KGS Group • UPDATED Interim Strategy Flood Messaging on Static Great Lake Levels (SWMC, May 2018) • Varty Lake Dam- Control Weir- General Arrangement (1972), Totten Sims Hubicki Associates Ltd.

CATEGORY 1 (CONTINUED)	
Program	Resource List
Natural Hazard Management (continued)	• Varty Lake Dam- Control Weir- Reinforcing Details (1972), Totten Sims Hubicki Associates Ltd. • Watershed Regulation O.Reg. 41/24 Policy Manual (2024) • Whitney Dam- Dam Improvements (1986), Totten Sims Hubicki Associates Ltd. • Whitney Dam- Dam Inspection and Capital Maintenance Plan (2018), D.M. Wills Associates Ltd. • Whitney Dam- Public Safety Risk Assessment (2021), D.M. Wills Associates Ltd. • Whitney Dam- Dam Safety Review (2022), D.M. Wills Associates Ltd. • Whitney Dam- Public Safety Plan (2022), D.M. Wills Associates Ltd. • Whitney Dam- Spillway Gate Assembly (2022), The Machining Center • Wishart Dam- Dam Safety Review (2005), Klohn Crippen Consultants Ltd. • Yardmen Dam- Control Structure- Plan, Section and Reinforcing Details (1986), Garatech Inc. • Yardmen Dam- East Abutment- Plan, Section and Reinforcing Details (1986), Garatech Inc. • Yardmen Dam- General Arrangement and Profile (1986), Garatech Inc. • Yardmen Dam- Ice Boom Anchors- Plan, Section and Reinforcing Details (1986), Garatech Inc. • Yardmen Dam- Ice Boom Component Arrangement and Details (1986), Garatech Inc. • Yardmen Dam- Miscellaneous Details (1986), Garatech Inc. • Yardmen Dam- Site Plan and Property Limits (1986), Garatech Inc. • Yardmen Dam- Spillway and Backfill Details (1986), Garatech Inc. • Yardmen Dam- Trash Rack and Handrail Details (1986), Garatech Inc. • Yardmen Dam- Preliminary Hazard Potential Classification (2005), Klohn Crippen Consultants Ltd.
Conservation Lands	• Conservation Authorities Act • Conservation Lands Strategy (2023) • Conservation Area Upgrades Strategy (2023) • Conservation Lands Inventory (2024) • Forest Inventory Update (2018) • Hunting Lease Agreement (QC) • Managed Forest Plan (1998) • Ontario Regulation 41/24: Prohibited Activities, Exemptions and Permits • Provincial and Federal Hunting Regulations • Parking Terms and Conditions • Strategic Plan 2021-2030

CATEGORY 1 (CONTINUED)	
Program	Resource List
Enabling Services	• 2024 Programs and Services Inventory • Administrative Bi-Laws • Board Approved Annual Budget • Conservation Authorities Act • Capital Asset Management Plan • Canadian Public Sector Accounting Standards • Fee Schedule • Group Insurance Program with Conservation Ontario • Memorandum of Understanding for all 18 member municipalities • Municipal Freedom of Information and Protection of Privacy Act • Order in Council for Quinte Conservation • Personnel Policy • Quinte Conservation Foundation By-laws • Strategic Plan 2021-2030 • Transition Plan

CATEGORY 2	
Program	Resource List
Drinking Water Source Protection (DWSP)	• Annual Reports • Best Practices for Source Water Protection • Clean Water Act • Conceptual Water Budget • Electronic Annual Reporting platform • Geographic Information System (GIS) • Quinte Source Protection Plan • Quinte Source Protection Plan Explanatory Document • Quinte Source Protection Area Assessment Report • Quinte Conservation Terms of Reference • Quinte Regional Groundwater Study • Quinte Region Drought Plan • Safe Drinking Water Act • Tier 1 Water Budget • Tier 2 Water Budget for Ameliasburgh Subwatershed Prince Edward County • Tier 2 Water Budget Village of Madoc • Technical Rules • Watershed Characterization Report

CATEGORY 2 (CONTINUED)	
Program	Resource List
Non-QC Owned Flood and Erosion Control Infrastructure Operations and Management	• Skootamatta Lake dam Ministry of Natural Resources contract

CATEGORY 3	
Program	Resource List
Local Water Monitoring (Baseflow, Surface Water Quality, Benthic)	• FlowTracker Handheld ADV Technical Manual Ontario Benthos Biomonitoring Network: Protocol Manual • Ontario Benthos Biomonitoring Network Dataset • Ontario Stream Assessment Protocol (OSAP) • Rapid Field Assessment of Organic Pollution with a Family-Level Biotic Index
Youth Education	• Bay of Quinte Region Pollution Prevention and Control Plan Final Report - 2011 • Conservation Authorities Act • Frink Program Facilitator Contract • Fee Schedule • Ontario Benthos Biomonitoring Network: Protocol Manual • Potter Creek Subwatershed Plan, 1994 • Quinte Conservation Watershed Report Card, 2023 • Quinte Conservation Watershed Report Card, 2018 • Ontario Curriculum & Resources, 2020-2024 • Quinte Conservation Annual Reports • Quinte Conservation Outdoor Education School Programs Contract, 2024 • School Board Agreements • Stream of Dreams License
Community Outreach and Stewardship (continued)	• 2024 Programs and Services Inventory • Bay of Quinte Remedial Action Plan • Bay of Quinte and Lake Ontario Shoreline Management Plan, 2022 • Bay of Quinte Region Pollution Prevention and Control Plan Final Report – 2011 • Conservation Authorities Act • Conservation Lands Strategy (2023) • Conservation Area Upgrades Strategy (2023) • East Lake Aquatic Vegetation Report, 2021 • East Lake Stewardship Report, 2013

CATEGORY 3 (CONTINUED)	
Program	Resource List
Community Outreach and Stewardship	• East Lake Stewardship Plan, 2015 • Fee Schedule • Great Lakes Water Quality Agreement • Great Lakes Water Quality Agreement • Groundwater Stud, 2004 • Memorandum of Understanding for all 18 member municipalities • Quinte Conservation Annual Reports • Quinte Conservation Climate Change Strategy – 2016 • Quinte Region Drought Plan – 2021 • Quinte Conservation Watershed Report Card, 2023 • Quinte Conservation Watershed Report Card, 2018 • Stoco Lake Aquatic Vegetation Report, 2021 • Stoco Lake Stewardship Plan • Strategic Plan 2021-2030 • Wellers Bay Aquatic Vegetation Report, 2021 • West Lake Aquatic Vegetation Report, 2021

NON-CATEGORY 3	
Program	Resource List
Bay of Quinte Remedial Action Plan	• Assessing Biological Integrity of Great Lakes Coastal Wetlands Using Marsh Bird and Amphibian Communities • Bay of Quinte Remedial Action Plan Rural Stewardship Programs • Bay of Quinte Remedial Action Plan • Discussion Paper: A Long-term Phosphorus Management Strategy for the Bay of Quinte • Durham Region Coastal Wetland Monitoring Project: Methodology Handbook (2007) • Marsh Monitoring Program Participant's Handbook For Surveying Amphibians (2008) • Marsh Monitoring Program Participant's Handbook For Surveying Marsh Birds (2008) • Marsh Monitoring Program Participant's Handbook Getting Started (2009)
Depot Lakes Campground	• 2024 Depot Lakes Seasonal Terms and Conditions • Conservation Authorities Act • Conservation Lands Strategy (2023) • Conservation Area Upgrades Strategy (2023) • Conservation Lands Inventory (2024) • Depot Lakes Campground Business Plan • Fee Schedule

NON-CATEGORY 3 (CONTINUED)	
Program	Resource List
Depot Lakes Campground (continued)	• Interior Camping & Conservation Area Terms and Conditions • Ontario Regulation 41/24: Prohibited Activities, Exemptions and Permits • Parking Terms and Conditions
Hydro dam	• Belleville Ice Control Dams (Klohn Crippen Consultants, 2005) • McLeod Dam – Project Location and Drawing List (Hatch Acres, 2008) • McLeod Dam – Project General Arrangement (Hatch Acres, 2008) • McLeod Dam – Spill Channel General Arrangement (Hatch Acres, 2008) • McLeod Dam – Obermeyer Gate Foundation Concrete Plan and Sections (Hatch Acres, 2008) • McLeod Dam – Obermeyer Gate Foundation Concrete and Reinforcing (Hatch Acres, 2008) • McLeod Dam – Existing Ice Boom Piers Modification Plan and Sections (Hatch Acres, 2008) • McLeod Dam - New Ice Boom Piers Plan, Sections and Details (Hatch Acres, 2008) • McLeod Dam - Spillway Channel Profile and Sections (Hatch Acres, 2008) • McLeod Dam – Powerhouse Layout Longitudinal Section A-A (Hatch Acres, 2008) • McLeod Dam – Powerhouse Layout Plan Sections B-B & C-C (Hatch Acres, 2008) • McLeod Dam – Powerhouse Layout Cross Sections D-D through J-J (Hatch Acres, 2008) • McLeod Dam – Revised Intake Structure (B. Keene, 2007) • McLeod Dam – Powerhouse Concrete and Reinforcing Longitudinal Section A-A (Hatch Acres, 2008) • McLeod Dam – Powerhouse Concrete and Reinforcing Plans B-B, C-C & D-D (Hatch Acres, 2008) • McLeod Dam – Powerhouse Concrete and Reinforcing Cross Sections E-E, F-F, G-G & H-H (Hatch Acres, 2008) • McLeod Dam – Powerhouse Concrete and Reinforcing Beams B1, B2 & B3 • McLeod Dam – Powerhouse Concrete and Reinforcing Approach Channel Wing Walls and Plug (Hatch Acres, 2008) • McLeod Dam – Powerhouse Miscellaneous Steel Stairs and Platforms (Hatch Acres, 2008) • McLeod Dam – Powerhouse Miscellaneous Steel Stairs and Ladder Details (Hatch Acres, 2008) • McLeod Dam – Powerhouse Miscellaneous Steel Ladder and Handrail Details (Hatch Acres, 2008) • McLeod Dam – Powerhouse Miscellaneous Steel Hatch Frame and Cover Details (Hatch Acres, 2008) • McLeod Dam – Powerhouse Miscellaneous Steel Trashrack Details (Hatch Acres, 2008)

NON-CATEGORY 3 (CONTINUED)	
Program	Resource List
Hydro dam (continued)	• McLeod Dam – Powerhouse Building Services Single Line Diagram (Hatch Acres, 2008) • McLeod Dam – Powerhouse Building Services Panel Schedules and Details (Hatch Acres, 2008) • McLeod Dam – Powerhouse Building Services Equipment List and Details (Hatch Acres, 2008) • McLeod Dam – Powerhouse Electrical and Mechanical Specifications (Hatch Acres, 2008) • McLeod Dam Generating Station Generator Control System (Hatch Acres, 2007) • McLeod Dam Stability Update (Acres International, 2006) • McLeod Dam Safety Review (Stantec, 2021) • McLeod Dam Public Safety Plan (Stantec, 2021)
Forest Carbon Offset Program	• Anew Climate • Eastern Ontario Model Forest Certification program

4.7 Future Initiatives

QC welcomes new opportunities that align with public political and scientific interests that benefit the watershed, municipal partners, and landowners. These projects could be long-term or short-term initiatives and may consist of updating existing studies and mapping, addressing current and emerging issues, and/or assisting with the delivery of programs. Future initiatives provide the opportunity for staff to increase their area of expertise, acquire new resources, and enhance partnerships.

Future initiatives could fit under any of the three categories permitted under the CA Act (Category 1: Mandatory, Category 2: Municipal, or Category 3: Other). Examples of future initiatives are explained below, but other opportunities not currently envisioned could also materialize.

4.7.1 Land Acquisition

Any new acquisition of property is considered on a case-by-case basis by the Board through the provision of a staff report and recommendation. Such acquisitions involve a one-time capital expense with limited additional management costs, as existing resources for property taxes, insurance, and staffing will suffice for new holdings. By prioritizing purchases or donations in key areas, the value of QC's overall land holdings will continue to grow. QC will pursue new properties only when doing so does not strain the Authority's finances, with a preference for donated vacant land. For any donation, QC will cover the transaction costs, which may involve legal surveys, appraisals for tax receipts, land transfer taxes, and legal fees, pending Board approval.

4.7.2 Watershed/Sub-Watershed Plans

Watershed/sub-watershed plans are important for proactively identifying watershed opportunities and constraints in order to focus program priorities. A watershed plan identifies measures to protect, enhance, and restore the health of the watershed and requires extensive public consultation. It addresses existing issues in the watershed and helps mitigate impacts from future land uses and activities. This allows municipalities to continue to rely on the Authority's expertise on a larger scale rather than individual applications. Special funding is required from the municipalities to facilitate this type of project and therefore it would be a Category 2 initiative. These types of projects take a significant number of resources and often require outside expertise. Staff time is required to seek sources of funding, prepare Requests for Proposals, review proposals and provide project management of projects completed by consultants.

4.7.3. Technical Projects/Mapping

Technical projects include but are not limited to flood plain mapping, shoreline management plans, natural hazard studies and mapping, GIS/remote sensing projects, science and monitoring, and master drainage plans. These may fall under any one of the three types of categories, depending on the type of study/funding arrangement. These types of projects take a significant number of resources and often require outside expertise. Staff time is required to seek sources of funding, prepare Requests for Proposals, review proposals and provide project management of projects completed by consultants.

4.7.4 Stewardship and Restoration Projects

Funding from the government or other agencies is sometimes made available to deliver new stewardship programs or complete restoration projects. These would likely be Category 2 or Category 3 initiatives. Restoration projects could occur on private or QC-owned land. Stewardship or restoration projects on QC lands would be Category 1 initiatives.

4.7.5 Flood Control Projects

New flood control projects could be required to facilitate development or to respond to a catastrophic event. These would fall into Category 1 or potentially Category 2.

5. Risk Assessment and Mitigation Measures

QC has reviewed the issues and risks mentioned in this Strategy and has identified existing and future mitigation measures. This is based on current risks and mitigation measures. Should additional issues and risks occur in the future, this document will be updated accordingly.

5.1 MANDATED PROGRAMS AND SERVICES: CATEGORY 1			
	Issue & Risk	Mitigation Measures	Cost
4.2.1 Natural Hazard Management			
1.	Conservation Authorities are restricted by the province from commenting on planning applications regarding natural heritage which has been done under agreement with municipalities since the mid-1990s. The health of natural heritage systems and features within the watershed could be negatively impacted without this regional, watershed-based review.	• Monitor requirements • Ensure continued communication with municipalities with regards to the need for natural heritage review • Support municipal staff as requested	• Included in the budget. • Requires additional funding from climate change grants. • Additional staff complement required.
2.	Climate change could lead to more frequent flooding and low water events, resulting in the need for more rain and stream gauges, computer models for flood forecasting, and demand for more staff time and resources. Climate change could increase the public's expectation for both flood and low water forecasting and technological advancements in alarms and notification systems.	• Ensure staff efficiencies, budget for increased staffing, training and resources. • Equipment is covered under the Capital Asset Management Plan. • Apply for funding and dedicate staff resources to increase alarming capacity. • Be transparent about QC's capacity for warning. • Manage public expectations by communicating QC's ability to provide flood forecasting and warning services.	• Included in the budget • Requires additional funding from climate change grants. • Additional staff complement required.

4.2.1 Natural Hazard Management (continued)			
3.	Managing and completing extensive capital projects is challenging with limited funding budgets or when no provincial funding is available.	• Continue to regulate development to lessen need for control works. • Continue regular inspections and maintenance of existing assets to identify upcoming maintenance requirements and associated budgets and incorporate these into the Capital Asset Management Plan. • Maintain municipal support for future maintenance requirements through the Capital Asset Management Plan. • Communicate the need and urgency of major maintenance projects to the Executive Committee.	• Included in the budget. • Requires additional funding from infrastructure grants and affected municipal levies.
4.	Plans and technical studies require a considerable amount of staff time and/or external expertise.	• Costs for Project Management should be built into the project when available. • A process should be in place for review of staff workload management and reallocation as necessary to ensure that all essential duties are being completed effectively. • Create a project wish list to identify potential projects when funding opportunities are announced	• Included in the budget. • Requires additional funding from grants. • Additional staff complement required.
5.	Municipal/provincial/federal funds and municipal agreements are required to support the completion of technical studies and mapping projects.	• Contribute to Special Projects Reserve when funds are available. • Create a project wish list to identify potential projects when funding opportunities are announced. • Maintain strong working relationships with potential project partners to garner support for projects and keep abreast of grant opportunities.	• Requires additional funding from climate change grants.

4.2.1 Natural Hazard Management (continued)			
6.	An increase in natural hazards enforcement and complaints results in an increased demand for staff time. The ability to hire new staff is paramount but limited by funding shortfalls.	• Ensure staff efficiency. • Create and maintain budget contingencies, reserve build. • Build a legal reserve fund into the budget; any unspent operation funds could be added annually with board approval. • Streamlined complaint reporting and data management processes.	• Included in the budget. • Requires additional funding from municipal levies. • Additional staff complement required.
7.	Increased liability for natural hazard management.	• Maintain sufficient insurance. • Continued staff training and development. • Transparently report delays in capital maintenance to the Executive Committee. • Establish Duty Officer role. • Create and maintain redundancy in flood forecasting and warning systems. • Communicate flood risks and uncertainties to municipal partners. • Ensure that municipal partners are aware of the differences in municipal and CA roles in flood events through training and the Flood Warning Plan. • Create and maintain standard operating policies. • Ensure sufficient peer review of natural hazard mapping projects and technical projects.	• Included in the budget. • Requires additional funding from municipal levies.
8.	Ongoing maintenance is required at monitoring stations to collect reliable data. This requires ongoing funding and staff resources.	• Create and maintain monitoring station SOPs. • Ensure staff efficiencies, budget for increased staffing, training and resources. • Continue to fund capital monitoring network improvements through the Capital Asset Management Plan.	• Included in the budget. • Requires additional funding from municipal levies. • Additional staff complement may be required.

4.2.1 Natural Hazard Management (continued)			
9.	Stormwater management system design includes water quality and quantity control. Limiting the Authority to comment on a single aspect of the integrated operation can create an incomplete review for member municipalities.	• Advocate for changes to Provincial regulations to allow CAs to effectively support member municipalities.	• Included in the budget.
10.	Staff can face conflicts and competing interests for dam operations and associated water levels.	• Comprehensively study the environmental, economic and social impacts of water levels and flows to optimize dam operations plans.	• Additional funding required from grants. • Additional staff may be required.
11.	The dam operation plans have information gaps that do not account for all potential water conditions.	• Comprehensively study the environmental, economic and social impacts of water levels and flows to optimize dam operations plans.	• Additional funding required from grants. • Additional staff may be required.
12.	Inaccurate and differing precipitation forecasts can produce variable flood analysis and reporting. This could lead to improper actions being taken due to incorrect data.	• Flood forecasting staff should review a range of precipitation forecasts and understand the range of potential conditions and the forecast reliability and applicability. • The data used and the confidence in flood forecasts should be communicated.	• Included in the budget. • Additional funding may be required from grants.
13.	Increased need to include system redundancy for collecting data on water level, flow and precipitation, as well as database backups and communication systems.	• Install backup systems. • Document and train staff on how to activate and use the backup systems.	• Included in the budget. • Additional funding may be required from grants.
14.	Ensuring that the public is aware of hazards around dams and the necessary safety measures.	• Continue to educate the public about dam hazards and delineate hazardous areas with signage, fencing, buoys and/or booms as deemed necessary.	• Included in the budget. • Additional funding may be required from grants.

4.2.2 Provincial Water Quality and Quantity Monitoring			
15.	Long-term access to wells on private lands (landowner turnover).	• Maintain communications. • Ensure agreements are in place. • If new wells are required, ensure they are on accessible land (i.e. QC owned lands, or public areas). • Provide monitoring reports to landowners.	• Included in the budget. • MECP is responsible for funding the capital expenses for this program.
16.	Integration and usefulness of PGMN data to support QC programs (e.g. low water program, watershed report cards, etc.).	• Seek assistance from Province with interpretation. • Train staff in data interpretation and analysis. • Continued participation in Provincial working groups. • Dedicate time for quality control and data analysis.	• Included in the budget. • Additional staff complement may be required.
17.	Mandatory program costs have been offloaded to municipality due to lack of provincial funding.	• Lobby for continued provincial funding.	• Requires additional provincial funding.
4.2.3 Integrated Water and Climate Station			
18.	Maintenance of integrated water and climate stations.	• Create and maintain monitoring station SOPs. • Ensure staff efficiencies, budget for increased staffing, training and resources. • Continue to fund capital monitoring network improvements through the Capital Asset Management Plan.	• Included in the budget. • Requires additional municipal and provincial funding. • Additional staff complement may be required.
4.2.4 Drinking Water Source Protection			
19.	Discontinuation or diminished provincial funding, resources and responsibility.	• Continue to lobby the province for funding to support the DWSP program.	• Requires consistent provincial funding.

4.2.4 Drinking Water Source Protection (continued)			
20.	Keeping the science current (updating technical studies needed including issues identification, water budgets, wellhead protection areas, intake protection zones and vulnerability scoring).	• Lobby for provincial support for updated technical studies and the associated funding. • Incorporate data from other QC departments to support updated science and/or technical studies.	• Included in the budget. • Cost-saving program for the Ontario government.
21.	Protection of non-municipal systems (communal and private).	• Lobby for provincial support and funding.	• Requires additional provincial funding.
22.	Challenges with the implementation of the Quinte Source Protection Plan.	• Encourage Source Protection Committee to review policy effectiveness. • Increase focus for Education and Outreach. • Providing member municipalities with annual reports.	• Included in the budget.
23.	Delivery of an effective education and outreach program.	• Seek additional funding/ staffing for new tools and increased outreach. • Track the effectiveness/of education campaigns through surveys, etc.	• Included in the budget. • Requires additional provincial funding. • Additional staff complement may be required.
24.	The Program Manager has no supervisory role over support staff who only fulfill part-time source water protection roles.	• Program Coordinator involvement in the development of local work plan targets with QC department managers.	• Included in the budget.
25.	Increased development impacting vulnerable areas and the number of potential threats.	• Increase education for municipal leaders and staff to understand the significance of unsafe development. • Update vulnerability studies.	• Included in the budget. • Requires additional municipal and provincial funding. • Additional staff complement may be required.

4.2.5 Watershed-Based Resource Management Strategy Updates			
26.	Lack of funding/staff capacity to update and keep the document current.	• Budget for updates and identify shortfalls to the Province.	• Requires provincial funding. • Additional staff complement is required.
27.	Expanding and changing Provincial requirements increases the administrative work of conservation authorities.	• Increased funding and staff capacity to meet requirements	• Included in the budget. • Requires provincial funding. • Additional staff complement is required.
4.2.6 Conservation of Lands Program			
28.	Increased demand for recreational use requires funding for major trail improvements and maintenance, and aging or damaged infrastructure.	• Capital Asset Management Plan in place to anticipate and cover capital costs. • Follow the guidance of the Conservation Area Land Strategy. • Increased revenue that is generated from paid parking, and other sources.	• Included in the budget. • Requires a consistent funding source. • Additional staff complement may be required.
29.	Signage update requirements to address legislative and social needs.	• Budget for work. • Capital Asset Management Plan • Park and Pay • Follow the guidance of the Conservation Area Land Strategy	• Included in the budget.
30.	Invasive species inventory and management.	• Budget staffing to undertake work. • Grant proposals. • Matching funds from Forest Carbon Program through the Quinte Conservation Foundation	• Included in the budget. • Requires additional funding from grants.
31.	Climate change impacts could influence QC's landholding resulting in the need for ecosystem enhancements, regenerations, and adaptive measures.	• Partnerships with municipalities • Grant proposals • Budget staff time • Matching funds from Forest Carbon Program through the Quinte Conservation Foundation	• Included in the budget. • Requires additional grant funding. • Additional staff complement may be required.

4.2.6 Conservation of Lands Program (continued)			
32.	Engagement of volunteers to assist with conservation land management.	• Promote and enhance volunteer programs • Use social media to increase engagement • Hold training/information sessions	• Included in the budget. • Additional staff complement may be required.
33.	Population growth and increased outdoor activities resulting in increased stresses on Conservation Areas and potential for visitor conflicts.	• Budget for increased maintenance/repairs (Capital Asset Management Plan and Park and Pay). • Increased staff presence on CA Lands. • Follow the guidance of the Conservation Area Land Strategy. • Matching funds from Forest Carbon Program through the Quinte Conservation Foundation.	• Included in the budget. • Additional staff complement may be required.
34.	Physical and environmental hazards exist in natural spaces and can never be fully eliminated. Today, these hazards open the Authority up to potential legal claims.	• Maintain adequate insurance coverage (errors and omissions, directors and officers, and liability). • Maintain staff to monitor and repair major issues. • Maintain and promote safety measures and standards.	• Included in the budget. • Additional staff complement may be required.
4.2.7 Enabling Services			
35.	Municipal funding required for capital costs.	• Capital Asset Management Plan in place to anticipate and cover capital costs, to be reviewed every 5 years. • The costs were estimated in the Capital Asset Management Plan. In the event costs are inaccurate, additional funding would be obtained through grants or municipal funding.	• Included in the budget. • Could require additional funding.

4.2.7 Enabling Services (continued)			
36.	Provincial funding to support operational costs has not increased with inflation costs.	• Regular budgeting process and implementation of a Board member budget sub-committee. • Maintaining a self-sufficient budget • Create and maintain cost-recovery initiatives and programs. • Lobby for changes to the funding model.	• Included in the budget. • Could require additional funding.
37.	Self-generated funding is unpredictable due to social, economic, and environmental factors. Fluctuations in self-generated funding can create budget challenges from year to year.	• Plan and budget on more reliable funding sources. • Create and maintain cost-recovery initiatives and programs. • Create and maintain budget contingencies; reserve build. • Maintain an admin fee for all programs (inflation built into the admin fee on an annual basis).	• Included in the budget. • Could require additional funding.
38.	Legal expenses are consistently rising and difficult to predict annually.	• The legal reserve fund increased to cover increasing legal action. • Allocate when surplus funds are available. • Build a legal reserve fund into the budget; any unspent operation funds could be added annually with board approval.	• Included in the budget. • Will require additional funding.
39.	Future major maintenance or alterations to buildings and other equipment could result in increased costs.	• Capital Asset Management Plan in place to anticipate and cover capital costs, to be reviewed every 5 years. • Implement an ongoing contingency within the Capital Asset Management Plan.	• Included in the budget. • Could require additional funding.

4.2.7 Enabling Services (continued)			
40.	Staff turnover and knowledge transfer.	• Establish a Staff Retention Policy; maintain competitive salaries and benefits; develop a positive collaborative corporate culture (mandatory team building program). • Maintain good records. • Continue to utilize the expertise of a human resource consultant. • Develop/maintain/standardize policies and procedures documents; implement a succession plan.	• Included in the budget. • Could require additional funding. • Additional staff complement may be required.
41.	Keeping current and acquiring technology to sustain program functions and meet the expectations.	• Ensure sufficient annual budget. • Regular review of Information Technology and Operations recommendations to assist in prioritizing technology upgrades and apply to budget cycle. • Capital Asset Management Plan has been approved to address this concern for the future. • Retain external resources as a backup.	• Included in the budget. • Could require additional funding. • Additional staff complement may be required.
42.	E-commerce/improved online customer service processes and tracking required.	• Utilize current tools and resources (staff expertise, Data Management System, website, etc.)	• Included in the budget. • Could require additional funding. • Additional staff complement may be required.
43.	Cyber security	• Cyber insurance • Budget for external Information Technology provider and staff training, as recommended in the Information Technology and Operation Review. • Put safeguards in place. • Professional development for current staff; inspire staff advocacy. • Develop protocols to handle different situations.	• Included in the budget. • Could require additional funding. Additional staff complement may be required.

4.2.7 Enabling Services (continued)			
44.	Public expectations for open data.	• Use current platform to maximize accessibility. • Utilize disclaimers to reduce liability.	• Included in the budget.
45.	Enhanced mapping, data, and analytical tools to facilitate faster, sound decision-making.	• Use current platform to maximize accessibility and enhance public knowledge and partnered organizations (municipalities, counties, industry-relevant agencies). • Increase staff support.	• Included in the budget. • Could require additional funding. • Additional staff complement may be required.
46.	Funds for the purchase of necessary data products (e.g. Orthophotography).	• Capital Asset Management Plan in place to anticipate and cover costs.	• Included in the budget. • Could require additional funding.
47.	Small staff complement with a diverse heavy workload and a flat organization structure reduces opportunities for staff development and succession planning.	• Update and sustain a vertical organizational chart: ◇ Define the requirements for job titles (director, officer, manager, coordinator, specialist, student, etc.) ◇ Maintain job descriptions that outline the responsibilities, skills, and required knowledge for all positions. ◇ Create department budgets and workflows. ◇ Create staff development opportunities related to necessary skills and knowledge in current job position. ◇ Continue to manage a competitive pay scale for internal and external equity with a review every 5 years.	• Included in the budget. • Could require additional funding. • May require external support through human resource consultants.
48.	The abundance of social media outlets creates a challenge for staff to continuously manage and respond to inquiries while ensuring public confidence and factual messaging/ information is conveyed.	• Develop a social media policy, procedures to empower staff (employee advocacy), brand awareness.	• Included in the budget. • Additional staff complement may be required.

5.2 MUNICIPAL PROGRAMS AND SERVICES: CATEGORY 2			
	Issue & Risk	Mitigation Measures	Cost
4.3.1 Flood Control Infrastructure Operations and Management			
49.	Operation of seasonal weirs require staff time, which could be spent on core programming.	• QC to manage staff workloads and prioritize appropriately. • QC to consider the value of this work to maintain working relationships with municipal partners.	• Included in the budget.
50.	Seasonal weirs and maintenance of ice booms require in-water work, which exposes staff to water related hazards.	• Ensure staff have appropriate training, equipment and personal protective equipment.	• Included in the budget.
51.	Continued funding and staff time is required to maintain the Belleville Ice Control Dam Booms.	• Maintain existing relationships with municipal partners. • Ensure the municipality is aware of the function and benefits of the Belleville Ice Control Dams. • Identification of failure modes and potential could allow for preventative maintenance to reduce capital costs and reduce the risk of failure leading to ice jamming.	• Included in the budget. Could require additional funding.
52.	Boom failure during early winter events could prevent required maintenance from taking place before the spring freshet due to unsafe conditions for staff.	• Increase monitoring and surveillance of ice conditions and break-up to provide lead time for ice jam concerns. • Identification of failure modes and potential could allow for preventative maintenance to reduce capital costs and reduce the risk of failure leading to ice jamming.	• Included in the budget. • Could require additional funding.
53.	Future water level monitoring and operations that benefit the entire Skootamatta watershed could be threatened if MNR does not contract QC to operate the Skootamatta Lake dam.	• Maintain good working relationship with MNR and continue to provide good value for their money.	• Included in the budget.

4.3.1 Flood Control Infrastructure Operations and Management (continued)			
54.	Identified maintenance projects at the Skootamatta Lake Dam can be delayed due to Provincial budget calendars.	• Early identification and communication of remedial works can provide MNR advanced notice for maintenance needs.	• Included in the budget.
4.3.2 Drinking Water Source Protection			
55.	Potential for municipalities to be disconnected from the DWSP programs since all member municipalities delegates the Risk Management Official/ Inspector responsibilities and Education and Outreach Policy to the Authority.	• The Conservation Authority engages member municipalities by providing annual reports on the DWSP program, presentations to the Source Protection Authority, and through municipal working groups. • Existing QC staff have been appointed to be Risk Management Officials/ Inspectors thus ensuring proper screening and review of source water protection mandates.	• Included in the budget.

5.3 OTHER PROGRAMS AND SERVICES: CATEGORY 3			
	Issue & Risk	Mitigation Measures	Cost
4.4.1 Local Water Monitoring			
56.	Maintenance of municipal support to enhance watershed knowledge and health/conditions.	• Regular reporting to municipal partners on local water monitoring program results.	• Included in the budget. • Could require additional funding. • Additional staff complement may be required.
57.	Reporting on data should support other programs and services, municipal partners, and community needs and interests	• Preparing reports for landowners who give QC access to perform program duties. • Collaborate with all QC departments and municipal partners on data needs, sharing and incorporation.	• Included in the budget.

4.4.1 Local Water Monitoring (continued)			
58.	To ensure QC's monitoring efforts are accurate, funding sources are required to use the best science, monitoring, and data analysis protocols.	• Inventory funding opportunities available for future projects and collaborating with partners on new technology.	• Requires additional funding. • Additional staff complement may be required.
4.4.2 Green Energy			
59.	Cost recovery challenges	• Continue to pay down the loan. • Continue to optimize revenue generation by planning major maintenance for off peak generating periods. • Lobby for operator safety measures to be eligible for funding through the Water Erosion Control Infrastructure (WECI) grant program.	• Included in the budget. • Additional funding may be required. • Additional staff resources may be required.
60.	Limited staff knowledge transfer.	• Continue training various staff on the operations, maintenance, and emergency response plans. • Develop Standard Operating Procedures (SOPs) for the McLeod dam.	• Included in the budget. • Additional staff resources may be required.
61.	Aging and/or damaged infrastructure requires continuous monitoring and maintenance.	• Repairing the McLeod dam to ensure that it is operating as expected. • Increase security measures to ensure that the McLeod dam is protected from damage and vandalism.	• Funding could be required. • Additional staff resources may be required.
4.4.3 Depot Lakes Campground			
62.	Operating and maintaining Depot Lakes Campground while remaining profitable.	• Review the existing business plan annually at the end of each camping season to evaluate surplus or deficit.	• Included in the budget.
63.	Ensuring the operation of Depot Lakes Campground aligns with QC's mandate.	• Review existing strategic plan annually to ensure that it aligns with operational requirements.	• Included in the budget.
64.	Conserve and protect the land from natural hazards such as shoreline erosion, pollution, and flooding.	• Use existing internal expertise to manage development and demonstrate best management practices to the public.	• Included in the budget. • Could require funding.

4.4.3 Depot Lakes Campground (continued)			
65.	Liability for situations on QC-owned property.	• Ensure that site holders have liability insurance.	• Included in the budget.
66.	Competing demands for the Depot Lake property.	• Distinguish boundaries between the Conservation Area and Campground (seasonal and transient) using these resources: ◇ Conservation Area Lands Strategy ◇ Depot Lakes Campground Business Plan	• Included in the budget. • Additional funding may be required.
67.	Use of the Depot Lake Campgrounds may decline if the Depot Lake Dams are decommissioned due to funding challenges.	• Ensure recreational use is a priority when decommissioning dams; include a rigorous public consultation process. • Explore gated parking or camping permits as a revenue generation source for Third Depot Lake Dam in the same manner as other locations.	• Included in the budget. • Additional funding is required.
4.4.4 Youth Education			
68.	Stable funding for ongoing activities.	• Continue to promote youth education. • Invite councilors and Board members to youth education events to enhance program importance. • Continue to seek donations and grants to pay for supplies and summer student positions. • Seek funding support from Quinte Conservation Foundation.	• Included in the budget. • Requires additional funding.
69.	Maintaining alignment with grade-specific curriculum for a variety of programs.	• Review and expand curriculum-connected programs as needed	• Included in the budget.
70.	Managing health and safety risks associated with outdoor education programming with local school boards and school administrators.	• Liability insurance • Staff and volunteers continue to monitor trails and report findings/safety hazards	• Included in the budget.

4.4.4 Youth Education (continued)			
71.	Obtaining interest from local partners to support programming.	• Maintain current relationships and grow new ones relative to goals of QC.	• Included in the budget.
4.4.5 Community Outreach and Stewardship			
72.	Grant funding for staff to deliver these programs can be difficult due to the competitive nature and narrow eligibility requirements.	• Continue to seek donations and grants. • Promote the outreach and stewardship programs by inviting Board members to participate in associated activities.	• Included in the budget. • Requires additional funding.
73.	Balancing fluctuation in public demand while aligning with QC's mandate.	• Survey the public annually on demands to balance fluctuations (public consultation). • Review Strategic Plan internally every five years (minimum) to ensure QC is still on course.	• Included in the budget.
74.	Self-generated funds differ annually causing budget challenges.	• Build a contingency or operating reserve account.	• Included in the budget. • Additional funds are required
75.	Geographic requirements for some program deliverables can cause unequal access across the QC watershed.	• Create program opportunities in other municipalities. • Public consultation for municipalities to share needs and resources. • Inform municipalities what resources are available to them (each municipality is different).	• Included in the budget.
76.	The abundance of social media outlets creates a challenge for staff to continuously manage and respond to inquiries while ensuring public confidence and factual messaging/information is conveyed.	• Develop a social media policy, procedures to empower staff (employee advocacy), brand awareness/accuracy. • Utilize topic experts and senior staff to ensure accurate information is shared.	• Included in the budget.

4.4.5 Community Outreach and Stewardship (continued)			
77.	Limited staff requires prioritization of staff resources which occasionally cannot meet the programs' demands, causing missed opportunities.	• Review programs annually for cost-recovery. • Find and use current partnerships to offset program delivery demands. • Increase revenue generation to support increasing staff demands.	• Included in the budget. • Requires additional funding. • Additional staff complement is required.
4.4.6 Significant Partnership Programs			
78.	Partnerships are contingent on the program cost and length.	• Maintain current partnerships • Seek new partnership opportunities.	• Included in the budget.
4.4.7 Hunting Leases			
79.	Liability for situation on QC owned property.	• Maintain sufficient insurance. • Ensure lease agreements in place. • Maintain and promote safety measures and standards.	• Included in the budget. • May require additional funding.
80.	Unknown property boundaries create conflict between neighbouring users	• Continued information and data sharing with hunters to ensure boundaries are known. • Dedicate resources (mapping / surveying / flagging) to known boundaries of concern.	• Included in the budget.
81.	Increased demand for recreational uses requires funding for property maintenance.	• Follow the guidance of the Conservation Area Land Strategy.	• Included in the budget. • May require additional funding.
82.	Competing uses outside lease period	• Appropriate signage. • Maintain and promote safety measures and standards.	• Included in the budget. • May require additional funding.
83.	Negative public perception and concern over hunting activities on Conservation Land.	• Appropriate signage. • Maintain and promote safety measures and standards. • Consider changing borders.	• May require additional funding.

4.5.1 Bay of Quinte Remedial Action Plan			
84.	Funding for long-term monitoring and data management after delisting.	• Provide business cases to the provincial and federal governments for continued funding. • Identify new funding opportunities for Area of Concern monitoring with climate change resiliency as focus.	• Additional funding required.
85.	Implementation of the Phosphorus Management Plan.	• Provide business case to the provincial and federal governments for funding/staffing to oversee implementation of the Phosphorus Management Plan.	• Included in the budget. • Requires additional funding. • Additional staff complement is required.
86.	Continue obtaining scientific interest for monitoring efforts.	• Collaboration with partners through partnerships and in-kind activities to maintain working relationships with the scientific community.	• Included in the budget. • Requires additional funding.
87.	Ensuring equipment, technology, and protocols are accurate and current. As well as maintaining long-term datasets to assess trends.	• Ensure staff track equipment use to obtain sufficient funds for eventual replacement. • Checking protocols annually to ensure they are up to date and appropriate for the equipment used for monitoring purposes. • Reporting on decade long statistics for monitoring programs to assess trends.	• Included in the budget. • May require additional funding.
88.	Educating the public on the importance of continuous monitoring of the Bay of Quinte.	• Hosting workshops and open house events to invite the public. • Attending Bay of Quinte events and seminars in watershed. • Offer site visits to interested landowners on BQRAP programs.	• Included in the budget. • May require additional funding.

4.5.1 Bay of Quinte Remedial Action Plan (continued)			
89.	Ensuring the decades of ecological improvements are maintained.	• Continuously identifying funds to support BQRAP initiatives and invasive species removal. • Continue education and outreach to stakeholders about the importance of the Bay of Quinte Remedial Action Plan	• Included in the budget. • Could require additional funding.
4.5.2 Forest Carbon Offset Program			
90.	Forest loss can impact the amount of carbon storage in the natural environment.	• Pay into a contingency pool tied into Carbon Offset Program (10-year agreement). • Maintain and update existing Forest Management Plans. • Maintain good standings with Forest Steward Council through the Eastern Ontario Model Forest. • Invasive species management. • Aligning reforestation efforts to species tolerance to mitigate and adapt to climate change.	• Additional funding is required. • Additional staff complement is required.
91.	Program becomes obsolete due to political changes and industry sentiment leading to reduction in funding.	• Create outreach programs to educate the public on the importance of carbon offsetting. • Lobby the governments to continue to promote carbon offset programs. • Avoid relying on this program to offset the operating budget. • Continue to prioritize the voluntary carbon purchasing market.	• Included in the budget. • Additional funding could be required.

6. Public Engagement

The Strategy draft was released for public engagement on October 4, 2024. Comments were reviewed and necessary changes were made to improve the document. The Board approved the draft on BLANK DATE (MOTION #) and the approved document has been published on QC's website at quinteconservation.ca/wbrms.

To ensure this document remains relevant, a public engagement phase will occur during each five-year review period.

7. Periodic Review

This document will be reviewed every five years. This will allow QC to alter and adapt its programs and priorities to consider evolving political and socio-economic matters and address emerging environmental issues. Stakeholders and the public will be consulted during periodic reviews in a manner that aligns with the degree of revisions and ensures regulatory requirements are met.

8. Resources

- Bay of Quinte Remedial Action Plan, 2021, *https://www.bqrap.ca/*
- Dillon Consulting Limited, 2004, *Quinte Regional Groundwater Study*
- Ministry of Natural Resources and Forests, 2004, *Ontario Low Water Response*
- Government of Ontario, 2020, *Planning Act: Provincial Policy Statement, 2020*
- Government of Ontario, 2023, *Building Code Act, 1992, S.O. 1992, c. 23*
- Government of Ontario, 2024, *Clean Water Act, 2006, S.O. 2006, c. 22*
- Government of Ontario, 2024, *Conservation Authorities Act, R.S.O. 1990. c. C.27*
- Government of Ontario, 2024, *Conservation Authorities Act, R.S.O. 1990. c. C.27: Ontario Regulation 41/24: Prohibited Activities, Exemptions and Permits*
- Government of Ontario, 2024, *Conservation Authorities Act, R.S.O. 1990. c. C.27: Ontario Regulation 402/22: Budget and Apportionment*
- Government of Ontario, 2024, *Conservation Authorities Act, R.S.O. 1990. c. C.27: Ontario Regulation 686/21: Mandatory Programs and Services*
- Government of Ontario, 2024, *Conservation Authorities Act, R.S.O. 1990. c. C.27: Ontario Regulation 687/21: Transition Plans and Agreements for Programs and Services Under Section 21.1.2 of the Act*
- Government of Ontario, 2024, *Planning Act, R.S.O. 1990, c. P.13*
- Government of Canada and Government of the United States of America, 1978 (amended by Protocol in 2012, *Great Lakes Water Quality Agreement*
- Quinte Conservation, n.d, *Apply for a Permit*
- Quinte Conservation, 2008, *Watershed Characterization*
- Quinte Conservation, 2016, *Quinte Conservation Climate Change Strategy*
- Quinte Conservation, 2021, *Quinte Conservation Strategic Plan (2021-2030)*
- Quinte Conservation, 2021, *Quinte Region Drought Plan*
- Quinte Conservation, 2022, *Transition Plan*
- Quinte Conservation, 2023, *Conservation Lands Strategy*
- Quinte Conservation, 2023, *2023 Annual Report*
- Quinte Conservation, 2023, *Quinte Conservation Watershed Report Card 2023*
- Quinte Region Source Protection Committee, 2023, *Approved Quinte Region Assessment Report*

9. Appendices

9.1 Appendix 1

CATEGORY 1 - MANDATORY + ENABLING SERVICES			Program Area	Category Rationale	DESCRIPTION	Funding Mechanism	CATEGORY 1 - MANDATORY + ENABLING SERVICES
	1.a		**NATURAL HAZARD MANAGEMENT**		*Conservation Authorities (CAs) are the lead provincial agencies on Natural Hazard issues. The goal is to protect life and property from flooding and erosion. This watershed-wide, comprehensive program includes development applications and permits, municipal plan input and review, environmental planning and policy, flood forecast and warning, flood and erosion control infrastructure, technical studies, ice management, education, and public awareness.*	**Municipal Levy** **Self-Generated** **Provincial**	
		1.a.1	Section 28 Permit Administration	CAA s.21.1; Reg.686/21 s. 8	*Reviewing and processing permit applications, associated technical reports, site inspections, communication with applicants, agents, and consultants and legal costs associated with violations and court proceedings.*		
		1.a.2	Enforcement and Compliance	CAA s.21.1, s.28	*Under Part VII of the Conservation Authorities Act – enforcement and compliance to Part VI Section 28 permits*		
		1.a.3	Municipal Plan Input and Review	CAA s.21.1; Reg.686/21 s.6, s.7	*Technical information and advice to municipalities on circulated municipal land use planning applications (Official Plan and Zoning By-law Amendments, Subdivisions, Site Plans, Consents, Minor Variances). Input to municipal land-use planning documents (OP, Comprehensive ZB, Secondary plans) related to natural hazards, on behalf of Ministry of Northern Development, Mines, Natural Resources and Forestry (MNMNRF), delegated to CAs (1983). Input to the review and approval processes under other applicable law, with comments principally related to natural hazards, wetlands, watercourses, and Sec. 28 permit requirements.*		
		1.a.4	Flood Forecasting and Warning	CAA s.21.1	*Daily data collection and monitoring of weather forecasts, provincial and local water level forecasts, watershed conditions, snow surveys, flood event forecasting, flood warning, communications and response and equipment maintenance. Regular meetings with municipal flood emergency coordinating staff.*		
		1.a.5	Flood and Erosion Control Infrastructure Operation and Management	CAA s.21.1	*Water and erosion control infrastructure and low flow augmentation. Includes all 43 water management structures (flood control, weirs, erosion control, low flow augmentation structures, etc.) that are annually inspected, and routine maintenance work completed.* *'Requirement under new regulation - Update asset management plan for these structures. In the future will have costs associated with the Capital Asset Management Plan for Water Control Infrastructure.*		
		1.a.6	Low water response	CAA s.21.1	*Conditions monitoring and analysis. Technical and administrative support to the Water Response Team representing major water users and decision makers, who recommend drought response actions.*		
		1.a.7	Flood and Erosion Control Infrastructure Major Maintenance	CAA s.21.1	*Major maintenance on flood and erosion control structures as required. Projects are dependent on Water and Erosion Control Infrastructure (WECI) funding from the province and support from our municipal partners.*		
		1.a.8	Technical Studies and Policy Review	CAA s.21.1	*Studies and projects to inform natural hazards management programs including floodplain management, watershed hydrology, regulations areas mapping update, flood forecasting system assessment, floodplain policy, Lake Ontario shoreline management. These projects often last one to two years and are distributed over time as human resources and funding is available.*		
	1.b		**Water Quality & Quantity Monitoring**		*Program Description: Quinte Conservation, in partnership with Ministry of Environment, Climate Change and Parks (MECP), has established long term sites to monitor surface and ground water conditions as well as an investment into long-term monitoring of climate change trends. Quinte Conservation, in partnership with community organizations, municipalities, and federal and provincial agencies has established sites to monitor surface water quality and quantity as well as many other parameters to support a healthy ecosystem.*	**Municipal Levy** **Self-Generated** **Provincial**	
		1.b.1	Provincial Water Quality Monitoring Network (PWQMN)	Reg.686/21 s.12 (1) 2	*A long-standing (50+ year) CA/MECP partnership for stream water quality monitoring at 28 sites. Quinte Conservation staff take water samples and MECP does lab analysis and data management. Information is used for watershed report cards and stewardship project prioritization.*		
		1.b.2	Provincial Groundwater Monitoring Network (PGMN)	Reg.686/21 s.12 (1) 2	A long-standing CA/MECP partnership for groundwater level and quality monitoring at 30 stations. Costs include equipment, data collection, analysis, data management and reporting. MECP funded network installation and continues to fund equipment replacements. Data collected supports flood forecast and warning, low water response, and water quality monitoring.		
		1.b.3	Integrated Water and Climate Station	Reg.686/21 s.12 (1) 2	Climate monitoring at 5 locations (Price Conservation Area – Skootamatta River also a Provincially Significant Station – Reference site for province; Macaulay Mountain Conservation Area – PEC station; Potters Creek Conservation Area – Environment Canada significant site; Cleveland Road Property – Moira River watershed; Tyendinaga Township at Shannon Road Property – Salmon River; Portland Conservation Area – Napanee River watershed) for groundwater, soil, water quality, snow monitoring and meteorological parameters. Data collected support flood forecast and warning, low water response, water quality monitoring and several external partners including MECP and academic institutions for climate change impacts.		
	1.c		**DRINKING WATER SOURCE PROTECTION**		*The protection of municipal drinking water supplies in the Quinte Conservation region through the development and implementation of the Source Protection Plans.*	**Provincial**	
		1.c.1	Drinking Water Source Protection Program (DWSP)	Clean Water Act + Reg.686/21 s.3	*Source Protection Area/Region, technical support, Source Protections Committee support, Source Protection Authority reports and meetings. Activities required by the Clean Water Act and regulations.*		
	1.d		**WATERSHED-BASED RESOURCE MANAGEMENT STRATEGY**		*The purpose of a watershed plan is to understand the current conditions of the watershed, and identify measures to protect, enhance, and restore the health of the watershed. Watershed strategies provide a management framework to provide recommendations which consists of goals, objectives, indicators, and management recommendations. This addresses existing issues in the watershed and mitigate impacts from potential future land uses, while recommending appropriate actions to protect, enhance, and restore the watershed.*	**Municpal Levy** **Self Generated**	
		1.d.1	Strategy Development	Reg.686/21 s.12 (1) 3	*New Project: Collate/compile existing resource management plans, watershed plans, studies, and data. Strategy development, implementation, and annual reporting. This is a one-year project which builds on the previous Watershed Management Strategies.*		

CATEGORY 1 - MANDATORY + ENABLING SERVICES	1.e	**CONSERVATION AUTHORITY LANDS AND AREAS**			*Quinte Conservation owns 30,000 acres of land which includes conservation areas, management areas, conservation forests, farmland and flood control structures and surrounding land. Quinte Conservation property is essential to watershed management, environmental protection, helps implement the Watershed Management Strategy and provides areas for passive recreation.*	
		1.e.1	Section 29 Minister's regulation for Conservation Areas	CAA s.29	*Conservation areas regulation enforcement and compliance.*	
		1.e.2	QC forests and management areas (not Conservation Areas)	CAA s.21.1	*Management and maintenance of CA owned lands. Includes forest management, signage, gates, passive recreation, stewardship, restoration, ecological monitoring, carrying costs such as taxes and insurance. Health and Safety, FSC Certification and ensuring compliance with standards.*	**Municipal Levy** **Self-Generated**
		1.e.3	Conservation Areas	CAA s.21.1	*Management and maintenance of 12 conservation areas and over 70 kilometers of recreational trails. Includes passive recreation, risk management program, hazard tree management, gates, fencing, signage, brochures, communications, pedestrian bridges, trails, parking lots, pavilions, roadways, stewardship, restoration, ecological monitoring, carrying costs such as taxes and insurance.*	
		1.e.4	Conservation Area Major Maintenance	CAA s.21.1	*Major maintenance and capital improvements to support public access, safety, and environmental protection such as pedestrian bridges, boardwalks, trails.*	
		1.e.5	Inventory of Conservation Authority lands	Reg.686/21 s.9 (3)	*The land inventory will include the following information: location, date, method and purpose of acquisition, land use. Project updates as property inventory changes.* *To be completed on or before December 31, 2024, per the requirements of Regulation.*	**Municpal Levy** **Self Generated**
		1.e.6	Strategy for CA owned or controlled lands and management plans	Reg.686/21 s.9 (3)	*The land inventory will include the following information: location, date, method and purpose of acquisition, land use. Project updates as property inventory changes.* *To be completed on or before December 31, 2024, per the requirements of Regulation.*	**Municpal Levy** **Self Generated**
		1.e.7	Land Acquisition and Disposition Strategy	Reg.686/21 s.9 (2) vi	A policy to guide the acquisition and disposition of land to fulfill the objects of the authority. Strategic acquisition of environmentally significant properties. To be completed on or before December 31, 2024, per the requirements of Regulation.	**Municpal Levy** **Self Generated**
	1.f	**ENABLING SERVICES**			*Key assistance provided to all departments of the conservation authority, board of directors, member municipalities and the general public to enable Quinte Conservation to operate in an accountable, efficient and effective manner.*	
		1.f.1	Corporate Services	CAA s.20	*Administrative, human resources, operating and capital costs which are not directly related to the delivery of any specific program or service, but are the overhead and support costs of a conservation authority. Includes health and safety program, overseeing programs and policies.*	
		1.f.2	Financial Services	CAA s.20	*Annual budget, accounts payable/receivable, payroll, financial analysis, financial audit, administration of reserves and investments, financial reports for funding agencies, preparing, and submitting reports to CRA, benefits program admin.*	
		1.f.3	Legal Expenses	CAA s.20	*Costs related to agreements/contracts, administrative by-law updates*	
		1.f.4	Governance	CAA Part IV	*Supporting CA Boards, Advisory Committees, Office of CAO and Senior Management.*	
		1.f.5	Administration Buildings	CAA s.20	*Office buildings and workshop used to support Quinte Conservation staff, programs, and services. Includes utilities, routine and major maintenance, property taxes. In the future will have costs associated with the Capital Asset Management Plan.*	**Municipal Levy** **Self-Generated**
		1.f.6	General Communications	CAA s.20	*Informing public of Quinte Conservation programs and projects through media, open houses, public meetings, website administration, responding to inquiries from the public, crisis communications.*	**Provincial**
		1.f.7	Natural Hazards, Outreach and Education	CAA s.21.1(2)	*Promoting public awareness of natural hazards including flooding, drought, and erosion. Attending public events, supplying materials. Social media services. Media relations. Educate elementary school students and the public about the danger of floodwaters, dangers of dams, etc.*	**Federal**
		1.f.8	Information Technology Management/ GIS	CAA s.20	'Data management, records retention. Development and use of systems to collect and store data and to provide spatial geographical representations of data. In the future will have costs associated with the Capital Asset Management Plan.	
		1.f.9	Information Management	CAA s.21.1	*Data collection, mapping, data sets, watershed photography. Development and use of systems to collect and store data and to provide spatial geographical representations of data. This includes our geographical information systems and support.*	
		1.f.10	Vehicle and Equipment	CAA s.20	*A fleet of vehicles and equipment to support the work of Quinte Conservation, including capital purchases, fuel, licenses, repairs, and maintenance. Programs and projects are charged for the use of the vehicles and equipment.*	

CATEGORY 1 - MANDATORY + ENABLING SERVICES

			Program Area	Category Rationale	DESCRIPTION	Funding Mechanism	
CATEGORY 2 - NON-MANDATORY	2.a		**INFRASTRUCTURE**		*Non-QC Owned Flood and Erosion Control Infrastructure Operation and Management*		CATEGORY 2 - NON-MANDATORY
		2.a.1	Moira Lake Weir	CAA s.21.1.1	*Quinte Conservation staff install, remove, and maintain a seasonal recreation weir at the outlet of Moira Lake. This weir is an important structure to ensure residents of Centre Hastings can enjoy the lake throughout the summer. All expenses for the installation, removal and maintenance are covered by the Municipality of Centre Hastings.*	**Special Bennefitting Municipal Levy**	
		2.a.2	Stoco Lake Weir	CAA s.21.1.1	*Quinte Conservation staff install, remove, and maintain a seasonal recreation weir at the outlet of Stoco Lake. The weir is an important structure to ensure residents of Tweed can enjoy the lake throughout the summer. All expenses for the installation, removal and maintenance are covered by the Municipality of Tweed.*	**Special Bennefitting Municipal Levy**	
		2.a.3	Skootamatta Lake Dam	CAA s.21.1.1	*QC staff monitor and perform preventative maintenance at the Skootamatta Lake dam under agreement with the Ministry of Natuiral Resources and Forestry*	**Provincial**	
		2.a.4	City of Belleville Ice Control Structures	CAA s.21.1.1	*Quinte Conservation staff maintain the Belleville Ice Control Structures on the Moira River in the City of Belleville. These structures maintain head-ponds to promote formation of a solid ice sheet in the winter, the ice sheet insulates the river, reducing frazil ice generation. The ice booms hold the ice sheet in place to reduce potential ice jamming. All expenses related to testing of low flow valves, vegetation clearing, in-water inspections of the ice booms, replacement of deteriorated components, and fastening, clearing, and repositioning of the booms are covered by the City of Belleville. Quinte Conservation's 10-year capital asset management plan for our water management structures includes the Belleville Ice Control Structures.*	**Special Bennefitting Municipal Levy**	
	2.b		**DRINKING WATER SOURCE PROTECTION**		*The protection of municipal drinking water supplies in the Quinte Conservation region through the development and implementation of the Source Protection Plans.*	**Special Bennefitting Municipal Levy**	
		2.b.1	DWSP Risk Management Official Services including Education and Outreach	CAA s.21.1.1	*Carrying out Part IV duties of the Clean Water Act on behalf of municipalities through service agreements. Carrying out policy G-1-E&F: Education and Outreach responsibilities on behalf of municipalities through service agreements.*		

			Program Area	Category Rationale	DESCRIPTION	Funding Mechanism	
CATEGORY 3 - SPECIAL PROJECTS	3.a		**CONSERVATION EDUCATION AND OUTDOOR PROGRAMS**		*-Education not directed to madated programs - centered on watershed and natural environment*	**Self-Generated** **(These programs subsidizes other programs within the Quinte region)**	CATEGORY 3 - SPECIAL PROJECTS
		3.a.1	School programs	CAA s.21.1.2	*Curriculum-based education programs for elementary and secondary students. These programs focus on local watersheds, ecosystems, and environmental issues. Programs take place at schools (indoors and outdoors), field trips to conservation areas and community parks and through online learning.*		
		3.a.2	Community programs and events	CAA s.21.1.2	*Education and outreach programs and community events to assist in achieving the objectives of the conservation authority. These programs are open to people of all ages.*		
	3.b		**LOCAL WATER QUALITY MONITORING**				
		3.b.1	Surface Water Quality Monitoring Program	Reg.686/21 – s.1.2, s.3, s.7, s.8, s.9, s.10, s.12, s.13	*Surface water quality monitoring at 322 baseflow sites, 9 Long-term Monitoring Open water sites, 4 tributary sites (in addition to PWQMN), Lake Ontario nearshore water monitoring at area beaches, coastal wetland monitoring of Bay of Quinte Area of Concern, benthic monitoring at 48 OBBN sites across the watersheds. Costs include sampling, analysis, and reporting.*		
		3.b.2	Requested Partner Projects	CAA s.21.1.2	*Partners provide funding to Quinte Conservation to conduct fisheries assessments, wetland health assessments and research on their behalf. This includes habitat compensation assessments and other related research. This is a component of the CA Act review and relates directly to hazards, protection of headwater features, habitat, and ecosystem health. Past examples include OPG – Big Island; Bay of Quinte Area of Concern Research; Ducks Unlimited Fisheries Assessment at Clarke Island; etc.*		
	3.c		**Watershed Stewardship and Restoration Services (Urban, rural & agricultural)**		*Program Description: The stewardship and restoration program have some key components: one-on-one technical assistant to watershed landowners, connecting landowners with cost-share funding, and the reforestation program. Projects reduce the risk to life and property from natural hazards, protect water quality and quantity, improve forest conditions, increase biodiversity, and make the watersheds more resilient to climate change.*		
		3.c.1	Private Land/Rural Stewardship Program	Great Lakes Water Quality Agreement CAA s.21.1.2	*Work with property owners to implement Best Management Practices to mitigate flood and erosion hazards, improve and protect water quality, restore floodplains and river valleys, reduce nutrient contamination, restore, and enhance wetlands to reduce flooding peaks and augment low flow, management of terrestrial non-native invasive species, protect groundwater, and improve aquatic species at risk habitat. Includes partnership programs with Lower Trent CA. Apply for and manage external funding, promote private land stewardship, outreach, provide technical advice and design assistance, participation on technical working groups, etc.*		
		3.c.2	Tree Planting and Forestry Services	CAA s.21.1.2	*Forestry services including initial site visit to determine if landowners would qualify for a large-scale tree planting and then pass them onto the 50-Million Tree Program local delivery agent. Private woodlot stewardship, technical assistance, link to funding programs to maintain form and function of watershed forest cover. Our goal will be to build on this service in partnership with other lead agencies.*		
		3.c.3	Community/Watershed Services	CAA s.21.1.2	*Quinte Conservation works with communities to develop and implement sub watershed plans. Plans and initiative examples are: East Lake Plan, 14 Island Lake Plan, Stoco Lake Plan, etc. Activities include community engagement and objective setting, supporting protection, enhancement, and restoration activities, and monitoring and evaluating actions.*		
	3.d		**Green Energy**			**Self Generated**	
		3.d.1	McLeod Dam Hydro Facility	Climate Change Adaptration	*Operate a hydro facility and associated infrastructure at an existing water control structure within the City of Belleville. McLeod Dam has a FIT contract until 2028.*		
	3.e		**Non-Passive Recreation**			**Self Generated**	
		3.e.1	Depot Lakes Campground	N/A	*'Operate a campground and associated facilities at the Depot Lakes Conservation Area that provides seasonal and interior camping.*		

9.1 Appendix 2 - Abbreviations

Long Form	Short Form
American Carbon Registry	ACR
Area of Concern	AOC
Conservation Authorities Act	CA Act
Current Value Assessment	CVA
Drinking Water Source Protection	DWSP
Geographic Information Systems	GIS
Improved Forest Management	IFM
Memorandums of Understanding	MOU
Ministry of Natural Resources	MNR
Ministry of Environment, Conservation and Parks	MECP
Ontario Government	the Province
Ontario Regulation 686/21: Mandatory Programs and Services	O. Reg. 686/21
Ontario Regulation 41/24: Prohibited Activities, Exemptions and Permits	O. Reg. 41/24
per- and polyfluoroalkyl substances	PFAS/PFOS
Program and Services Inventory	the Inventory
Provincial Water Quality Monitoring Network	PWQMN
Provincial Groundwater Monitoring Network	PGMN
Quinte Conservation	QC
Quinte Conservation Executive Board	the Board
Source Protection Committee	SPC
Watershed-Based Resource Management Strategy	the Strategy
Water Erosion Control Infrastructure program	WECI
Water Infrastructure Asset Management Plan	WIAMP

Quinte
CONSERVATION

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WATERSHED MUNICIPALITIES

City of Belleville
City of Quinte West
County of Prince Edward
Loyalist Township
Madoc Township
Municipality of Centre Hastings
Municipality of Marmora and Lake
Municipality of Tweed
Town of Deseronto
Town of Greater Napanee
Township of Addington Highlands
Township of Central Frontenac
Township of North Frontenac
Township of South Frontenac
Township of Stirling-Rawdon
Township of Stone Mills
Township of Tudor and Cashel
Township of Tyendinaga