

2024

Watershed-Based Resource Management Strategy



**KAWARTHA
CONSERVATION**

Discover • Protect • Restore

About Kawartha Conservation

Who we are

We are a watershed-based organization that uses planning, stewardship, science, and conservation lands management to protect and sustain outstanding water quality and quantity supported by healthy landscapes.

Why is watershed management important?

Abundant, clean water is the lifeblood of the Kawarthas. It is essential for our quality of life, health, and continued prosperity. It supplies our drinking water, maintains property values, sustains an agricultural industry, and contributes to a tourism-based economy that relies on recreational boating, fishing, and swimming. Our programs and services promote an integrated watershed approach that balance human, environmental, and economic needs.

The community we support

We focus our programs and services within the natural boundaries of the Kawartha watershed, which extend from Lake Scugog in the southwest and Pigeon Lake in the east, to Balsam Lake in the northwest and Crystal Lake in the northeast – a total of 2,563 square kilometers.

Our history and governance

In 1979, we were established by our municipal partners under the Ontario Conservation Authorities Act.

The natural boundaries of our watershed overlap the six municipalities that govern Kawartha Conservation through representation on our Board of Directors. Our municipal partners include the City of Kawartha Lakes, Region of Durham, Township of Scugog, Township of Brock, Municipality of Clarington, Municipality of Trent Lakes, and Township of Cavan Monaghan.

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Executive Summary

The Watershed-Based Resource Management strategy is a high-level review of Kawartha Conservation's existing programs and services. It is a legislative requirement by the province of Ontario.

It provides several management actions to address identified issues and risks that limit their effective delivery. It also considers and addresses watershed challenges, trends, and information needs identified through various community engagements.

Guiding Principles

- Our programs and services are undertaken at a watershed-level, and strive to find the balance between economic, cultural, and environmental needs.
- We use the integrated watershed management model, which focuses on science-based adaptive approaches to ensure that our programs and services continue to protect people, property and natural resources.
- Watershed management is a shared responsibility, and collaboration and partnership building are essential for all program areas.

Objectives

- Protect people, property, and infrastructure from natural hazards.
- Effectively manage conservation lands and facilities to provide recreation and education opportunities that inspire an appreciation of nature.
- Provide data-driven recommendations to advise people on water resource issues through a better understanding of past-present-future trends, including impacts associated with climate change.
- Ensure our data, products, and decision-making process are available and accessible to people through innovative ways.
- Augment our mandatory programs and services with more detailed geographic-specific projects to increase efficacy of their delivery.
- Ensure ongoing collaboration and information sharing with key federal, provincial, municipal, and local stakeholders, and First Nations communities.

Actions to Address Issues and Risks

- Create standard operating procedures for regulated areas mapping and on-site delineations of regulated features.
- Undertake floodplain mapping technical studies on lakes and their connecting rivers.
- Ensure regulated area mapping and supporting background information is easily accessible.
- Integrate climate change considerations/predictions into natural hazard technical studies.
- Establish strong working partnerships and regularly liaise with approval authorities on compliance related matters.
- Develop communication products to provide community and stakeholders with an understanding of the permitting process, its foundation, abilities and limitations.
- Undertake technical studies to refine natural hazard features on the landscape (i.e. wetlands, karst).
- Increased training of municipal staff to flag development applications for regulated areas and municipal drinking water threats.
- Develop communication products that are applicable to activities in source protection areas, which are useful to community members who are looking to protect their local source of drinking water.
- Fill geographic gaps in provincial water monitoring through local monitoring initiatives.
- Ensure key findings from the provincial water monitoring program and local monitoring program are made available in a timely manner in a format that is easily accessible.
- Ensure local monitoring programs collect data to better understand and support the delivery of the natural hazard management program.
- Review and update Lake and Watershed Management Plans on a routine basis to address community needs.
- Implement high priority management actions in Lake and Watershed Management Plans through stewardship and science-based projects in urban, rural, and shoreline areas.
- Increase revenue generation by implementing 'fee for service' and 'cost-recovery' programming.
- Ensure education programming is innovative and meets the needs of school curriculums and the current job market.
- Expand collaborative partnerships to secure funding to replace ageing infrastructure and protect sensitive lands.
- Ensure 'contingency resources' are available to address unexpected costs associated with damages to physical and digital infrastructure.
- Make continuous improvements in cyber security to support reliable and secure digital infrastructure.

Strategy Review and Updating

This Strategy should be reviewed at a minimum on a 5-year basis, to incorporate changing corporate priorities, legislation and regulations, watershed pressures, and public and stakeholder needs.

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McLaren Marsh at Ken Reid Conservation Area

1.0 Setting the Context

1.1 Introduction

The Watershed-Based Resource Management (WBRMS) strategy provides a comprehensive lens into Kawartha Conservation's programs and services. It is a replacement to the outdated 1982 Watershed Management Strategy and was triggered by amendments made to the Conservation Authorities Act.

1.2 Legislative Requirements

The WBRMS is a requirement under Ontario Regulation 686/21, which sets out the Mandatory Programs and Services that must be delivered by all conservation authorities in Ontario.

The regulation sets out the required components of this strategy, but the framework and overall content is determined by each individual conservation authority. The regulation outlines the following requirements for the WBRMS:

Guiding principles and objectives

Guiding principles and objectives that inform the design and delivery of the programs and services that the authority is required to provide.

Summary of existing technical studies, monitoring programs and other information

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.

Review of the authority's programs and services

A review of the authority's programs and services for the purposes of,

- i. determining if the programs and services comply with the regulations
- 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.

¹ Kawartha Conservation. 1982. Watershed Management Strategy. Lindsay, Ontario.

A process for periodic review and updating

A process for the periodic review and updating of the WBRMS by the authority that includes procedures to ensure stakeholders and the public are consulted during the review and update process.

1.3 Approach to Developing Strategy

The WBRMS was developed by following the general guidance established by Conservation Ontario.²

An important component of the project was to integrate the program needs identified by staff following an internal review, alongside the needs of our key partners and the broader watershed community.

Four key project enablers included: Review of Programs and Services, Community Engagement, Guidance Group Input, and Board of Directors Approval.

Review of Programs and Services

An internal review of Kawartha Conservation's programs and services was undertaken at the project onset. Staff identified several issues and risks that limit the effectiveness of the delivery of these programs and services and developed a prioritized list of actions needed to address the issues and mitigate risks.

Community Engagement

To gain an understanding of community needs, staff engaged key program partners and the broader watershed community. An initial feedback survey was distributed to receive feedback on local environmental challenges, information needs, and emerging trends. The Strategy was made available to the public for a 30-day review period. Mississauga's of Scugog Island First Nations were engaged as well. All feedback has been considered and integrated as appropriate into the WBRMS.

Guidance Group Input

A Guidance Group was established to provide feedback at key project milestones. The Group was comprised of representatives from local municipalities, academia, the waterfront community, the development industry, and the agricultural industry. The primary purpose of the Guidance Group was to ensure that the needs of their communities have been integrated into the WBRMS.

Board of Directors Approval

Kawartha Conservation's Board of Directors was provided with regular updates on the status of the project, culminating in a formal project approval in November 2024.

² Conservation Ontario. 2023. Guidance on the Conservation Authority Mandatory Watershed-Based Resource Management Strategy



1.4 Description of Administrative Area

The Kawartha Conservation administrative watershed boundary area is in south-central Ontario and covers an area of 2,563 km² (Figure 1). It includes the municipalities of City of Kawartha Lakes, Region of Durham, Township of Scugog, Township of Brock, Municipality of Clarington, Municipality of Trent Lakes, and Township of Cavan Monaghan. The area is located within the broader traditional territory of the Williams Treaties First Nations, which includes the Mississauga's of Scugog Island First Nation.

The administrative area includes a population of approximately 100,000 people, excluding the influx of seasonal visitors. Major urban centres include Lindsay, Port Perry, Fenelon Falls, Bobcaygeon, and Omemee. Outside of the urban areas, the major land uses include waterfront development, agriculture, and natural areas (e.g., forests, wetlands, lakes, rivers, and streams). Tourism and agriculture are key economic drivers for the area.

The area forms part of the Trent River watershed, which flows into Lake Ontario. It contains five large lakes: Balsam, Cameron, Sturgeon, Scugog and Pigeon, which form the upper part of the Trent-Severn Waterway National Historic Site. The administrative area is made up of 27 smaller drainage areas, referred to as 'subwatersheds'. Two large river systems, Gull River and Burnt River, drain into the Kawartha Conservation area from the north.

The area lies within a geological transition area between the Canadian Shield in the northern section (a region characterized by relatively hard bedrock with bare or shallow soils), and the St. Lawrence Lowlands in the southern section (a region characterized by relatively soft bedrock with shallow to deep soils). The middle section exhibits features of both and therefore is referred to as the 'Land Between', which is one of the most biologically and physiographically diverse regions within Ontario. The Oak Ridges Moraine is a dominant landscape feature in the southern portion and is referred to as the 'rain-barrel' of southern Ontario due to important groundwater storage function.

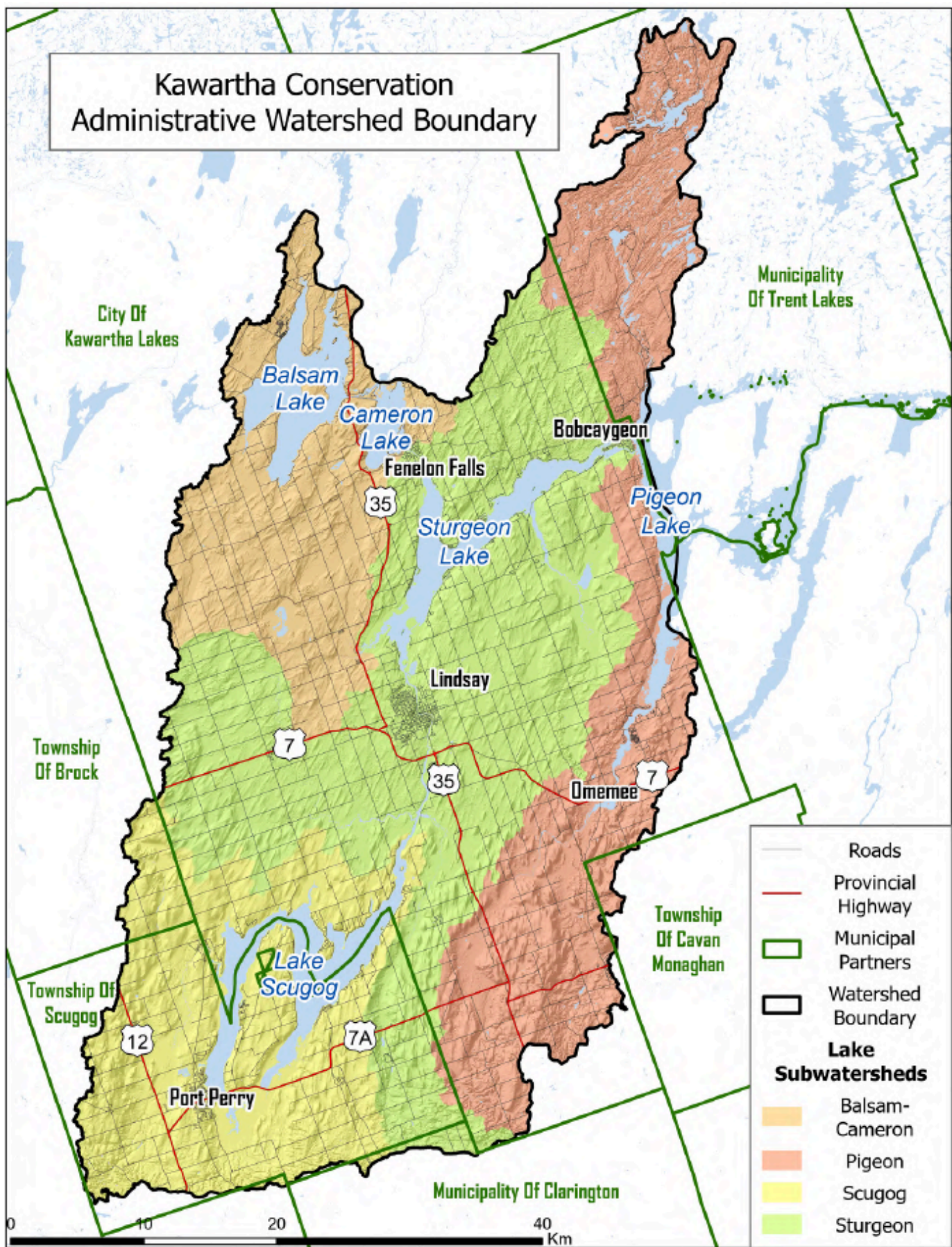


Figure 1. Kawartha Conservation administrative watershed boundary.

1.5 Watershed Challenges, Trends, and Information Needs

The following is a summary of key findings related to environment-related challenges, trends, and information needs informed through the feedback surveys, the Working Group, and the broader public engagement.

This summary is a short-list to include only those relevant to Kawartha Conservation's scope of programs and services.

Challenges

- Impacts associated with climate change
- Lack of protection of natural heritage and hydrological features
- Overlapping jurisdictions leading to delays in completing shoreline projects, and delays in enforcing violations
- Safe and reliable surface and groundwater supplies
- Increased onus related to Environmental Compliance approvals
- Uncertainty related to land use restrictions and regulations
- Securing funding to support environmental science programs
- Growing community needs regarding water infrastructure
- Reliable water quality and water quantity
- Lack of public shoreline access and educational opportunities
- Lack of communication and accountability amongst government bodies

Trends

- Incorporating extreme weather adaptation
- Unpredictability in terms of changing provincial planning responsibilities
- Increased reliance on partnering with external organizations
- Adjusting to funding cut to environmental programs
- Increased use of technology
- Increased urbanization and development around shorelines
- Farming intensification
- Continued apparent lack of enforcement consequences for environmental violations

Information Needs

- Conservation authority permitting and planning roles, rules, and requirements
- Regulated features information and mapping
- Assessment of current state of natural features
- Local weather data
- Groundwater and surface water interactions
- Water pollution science
- Soil drainage and erosion potential



2.0 Guiding Principles and Objectives

2.1 Introduction

The following guiding principles and objectives form the basis of the WBRMS. These align directly and are supported by Kawartha Conservation's [Strategic Plan](#).

2.2 Guiding Principles

- Our programs and services are undertaken at a watershed-level, and strive to find the balance between economic, cultural, and environmental needs.
- We use the integrated watershed management model, which focuses on science-based adaptive approaches to ensure that our programs and services continue to protect people, property and natural resources.
- Watershed management is a shared responsibility, and collaboration and partnership building are essential for all program areas.

2.3 Objectives

- Protect people, property, and infrastructure from natural hazards.
- Effectively manage conservation lands and facilities to provide recreation and education opportunities that inspire an appreciation of nature.
- Provide data-driven recommendations to advise people on water resource issues through a better understanding of past-present-future trends, including impacts associated with climate change.
- Ensure our data, products, and decision-making process are available and accessible to people through innovative ways.
- Augment our mandatory programs and services with more detailed geographic-specific projects to increase efficacy of their delivery.
- Ensure ongoing collaboration and information sharing with key federal, provincial, municipal, and local stakeholders, and First Nations communities.

3.0 Summary of Existing Technical Studies, Monitoring Programs & Other Information

3.1 Introduction

The following section provides details on key technical studies, monitoring programs, and other information that Kawartha Conservation relies on to directly inform and support the delivery of existing programs and services.

These are broadly categorized as ‘Overarching’ (i.e., high-level strategic direction that applies to our entire administrative watershed boundary), and ‘Watershed-Specific’ (i.e., information pertaining to certain geographic areas, such as along a creek, river, lake, or sub-watershed).

3.2 Overarching Studies and Programs

Strategic Plan

The Strategic Plan encompasses our strategic goals and helps to set a clear direction for the organization on a 5-year basis. It provides overarching guidance and direction to meet the changing needs of our broad watershed community. Strategic priority areas include Protect and Restore, Engage and Inspire, and Innovate and Enhance.

Watershed Management Strategy

The purpose of the Strategy is to assist conservation authorities with evolving or enhancing the delivery of their core programs and services, and to improve efficiencies and their effectiveness. It provides a summary of Kawartha Conservation’s programs and services, technical studies and strategic plans, and provides actions for addressing risks that limit their effective delivery.

Trent Source Protection Plan

The Trent Source Protection Plan is a policy document that directs local efforts to protect our sources of municipal drinking water. Policies in the plan apply in areas where activities have the potential to present significant threats to a municipal drinking water source. These “vulnerable areas” include wellhead protection areas for groundwater sources, and intake protection zones for surface water sources.

Climate Change Strategy

The Climate Change Strategy provides direction to address the challenge of a changing climate. It prioritizes activities such as data collection, information sharing, knowledge exchange, and support for climate mitigation and adaptation. The strategy aims to enhance regional resilience by fostering collaboration among member municipalities.

Stewardship Strategy

The Stewardship Strategy provides actions to foster a stewardship ethic where landowners, business owners, municipalities, and partners across the watershed are engaged and dedicated to having a positive impact on their own land. Positive impacts may include conserving healthy, and resilient ecosystems, protecting water resources, and restoring natural features and function.

Environmental Monitoring Strategy

The Environmental Monitoring Strategy provides actions to maintain a cost-effective environmental monitoring network that facilitates evidence-based decision making, and that provides accessible, real-time science and data to our community.

Plan Review and Regulations Policies

These provide Kawartha Conservation's permitting, planning advisory, and regulatory responsibilities and requirements. This is a resource for municipal planning, building department, public works, engineering, and community services staff, as well as developers and their agents, and landowners who may be seeking approval from the conservation authority.

3.3 Watershed-specific Monitoring Programs and Studies

Lake and Watershed Management Plans

Lake and watershed management plans provide actions for lake users and managers to address priority lake health stressors related to water quality, water quantity, and natural heritage. They also provide a characterization of the state of the resource.

Stormwater Management Plans

Stormwater management plans delineate storm sewer networks in urban areas and provides high priority areas for management and retrofit opportunities to achieve water quality and quantity objectives.

Floodplain Mapping Studies

Floodplain mapping studies support regulations that limit existing and new development inside the flood plain to protect your personal safety and property from flood hazards. The primary goals of this study are to create hydrological and hydraulic models of the watershed and produce floodplain maps for flood-prone areas, or areas prone to development.

Watershed Report Cards

Watershed Report Cards provide a 'check-up' on the status of Kawartha Conservation's subwatersheds. They report on the surface and groundwater quality as well as the conditions of forests and wetlands.

Fisheries Studies

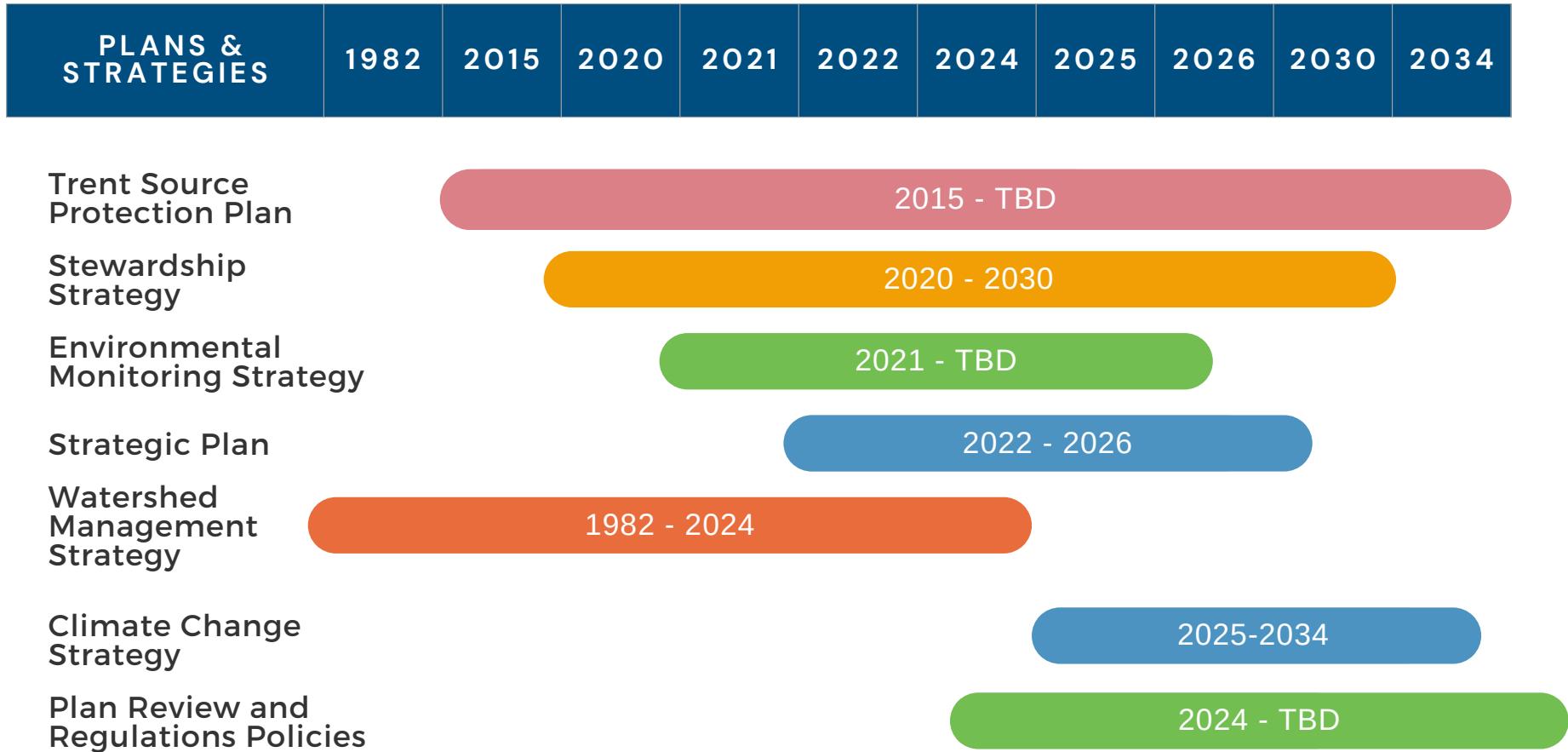
Fisheries studies such as Fisheries Management Plans and Municipal Drain Classification Reports provide a proactive and coordinated framework for protecting and enhancing fisheries and aquatic resources.

Conservation Area Management Plans

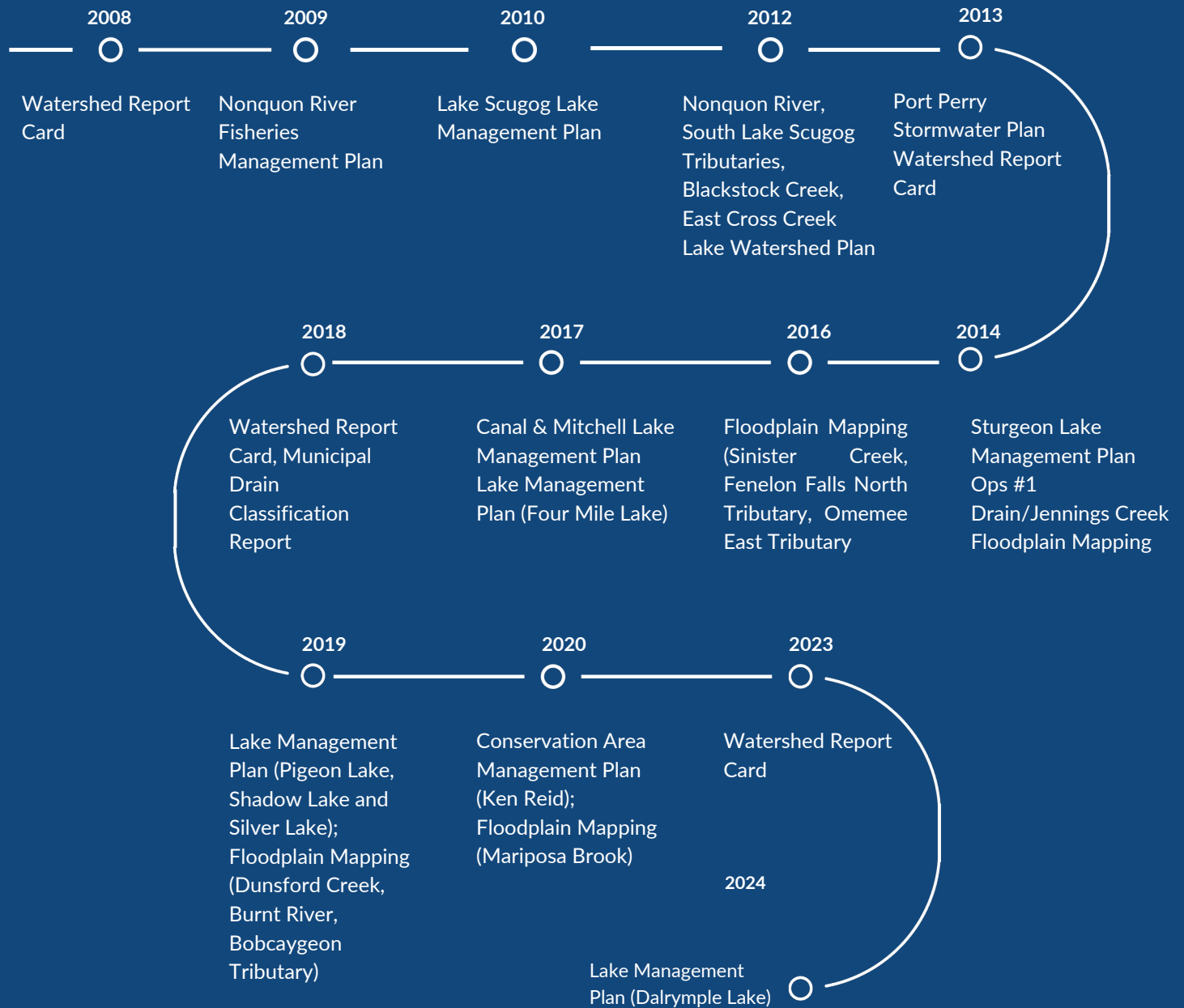
Conservation Area Management Plan provide direction for balancing the environmental needs of the land, financial resources of Kawartha Conservation, and the societal needs for access to greenspace and community gathering areas.



OVERARCHING PLANS & STRATEGIES BY YEAR



WATERSHED SPECIFIC PROGRAM & STUDIES



4.0 Inventory of Programs and Services, and Actions to Address Issues and Risks

4.1 Introduction

The following is a detailed description of Kawartha Conservation's programs and services. This represents the current inventory of programs and may be adjusted as additional provincial guidance and interpretation is supplied, as information is refined and following discussions with municipal partners on program inventory.

Programs and services are grouped according to their overarching program theme and then categorized into one of four categories: General Operating, Category 1 Mandatory, Category 2 Municipal, and Category 3 Other.

For the programs and services of each theme, key issues and risks that limit their effective delivery have been identified, along with priority actions to address them.

Department Areas

Programs and services are administered within four department areas:

- Planning and Development Services;
- Integrated Watershed Management;
- Stewardship and Conservation Lands; and,
- Corporate Services.

General Operating Programs and Services

General operating programs and services are the expenditures incurred that are fundamental to operating the organization. These functions provide key assistance provided to all departments of the conservation authority, board of directors, member municipalities and the public to enable the organization to operate in an accountable, transparent, efficient, and effective manner. General programs are not related to the provision of a program or service that an authority provides and are a supporting element in the organization.

Category 1: Mandatory Programs and Services

Ontario Regulation 686/21: Mandatory programs and services identify the programs and services that must be provided by Kawartha Conservation. These include:

- Programs and services related to the risk of natural hazards.
- 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.

- Programs and services related to the authority’s duties, functions and responsibilities as a source protection authority under the Clean Water Act, 2006.
- Functions and responsibilities related to the implementation and enhancement of the provincial groundwater and stream monitoring program.
- Programs and services related to the authority’s duties, functions and responsibilities under an Act prescribed by the regulations.

Category 2: Municipal Programs and Services

Projects are developed to implement priorities within our Strategic Plan and in response to municipal concerns. These programs and services address strategic plan directions and issues identified by our board of directors, municipal leaders, senior municipal staff, and community stakeholders. We use municipal funds to leverage grant opportunities whenever possible. Municipal programs and services are designed to meet the needs or concerns of a specific municipality, and thus directly benefit the individual municipality.

Municipal programs and services require a memorandum of understanding, or such other agreement as may be entered into with the municipality, in respect of the programs and services. The annual funding for these programs and services is then approved through the Board of Directors and Council on an annual basis.

Category 3: Other Programs and Services

Other programs and services may be provided, within Kawartha Conservation’s area of jurisdiction, and includes programs and services that are advisable to further the purposes of the Conservation Authorities Act.

Other programs and services require a memorandum of understanding, or such other agreement as may be entered into with the municipality, in respect of the programs and services where municipal levy is supporting the program or service.

Issues and Risk Limiting Effective Program Delivery

Every program and service has undergone an assessment of the issues and risk that limit their effective delivery. These are based on internal staff review and feedback from engaging with community organizations and the public, and provide the imperative for additional actions and/or support to strengthen program and service delivery.

Actions to Address Issues and Risks

Actions have been developed to address all identified issues and risks, which provide a roadmap for staff to enhance the delivery of programs and services. Actions range from being minor in nature, such as small tweaks in the areas of focus of existing programs, to major, such as new project proposals.

Cost Estimate

For every action, a cost estimate is provided. Cost estimates are grouped into three categories, according to their anticipated cost of implementation:

MINOR	no inherent cost – can be accommodated with the existing budget.
MODERATE	undertaking the action requires a modest additional financial investment.
MAJOR	undertaking the action requires a significant additional financial investment.

4.2 Natural Hazard Management

Natural Hazard Planning Services [Category 1]

Planning helps to protect properties against the loss of life, property damage and social disruption, and encourages the responsible management of natural hazard related features, while ensuring compliance with provincial legislation at the local level.

Conservation Authorities have been delegated the responsibility of commenting on behalf of the Province of Ontario on planning matters related to natural hazards. In addition, Conservation Authorities provide plan review advice with respect to the health of watersheds including the management of water.

Section 28 Administration and Compliance [Category 1]

Permitting through the Conservation Authority ensures public safety and protection of property from damage caused by natural hazards, protects watershed health by preventing pollution and damage to sensitive environmental areas such as wetlands, shorelines, and watercourses, and promotes long term sustainability of the watershed. Kawartha Conservation administers Section 28 of the Conservation Authorities Act and the supporting Ontario Regulation 182/06, the regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses. This regulation provides rules for development and other activities in relation to river and stream valleys, steep slopes, watercourses, floodplains, and wetlands, plus the respective allowances that are associated with each feature.

Conservation staff are responsible for regular monitoring of development activities impacting on natural regulated features, following up on public and municipal complaints regarding any potential violations and obtaining regulatory compliance through compliance agreements or judicial methods as pertains to Section 28 of the Conservation Authorities Act and associated specific Ontario Regulation 182/06.

Flood and Water Level Monitoring and Ontario Low Water Response [Category 1]

These programs involve our flood contingency and flood response plans, daily monitoring of water levels and precipitation, assessment of potential flood and low water threats, communication with municipalities and the community, participation in municipal flood response activities or coordination of low water response efforts to help support and protect the people and property across the watershed.

Flood forecasting and warning is a fundamental responsibility delegated to conservation authorities by the province since 1984. We fulfill this duty by monitoring the water level, precipitation, and watershed conditions.

Close collaboration and partnership with federal (Ontario Waterways – Trent Severn Waterway, Environment and Climate Change Canada), and provincial (Ministry of Natural Resources) agencies and partner conservation authorities allow for accurate forecast and reliable information which is put in context of the local watershed and provided to the community when flooding concerns are warranted.

We also assess and evaluate developing drought conditions through the Ontario Low Water Response program and communicate this information to municipalities and watershed stakeholders.



4.2.1 Issues and Risks Limiting Effective Program Delivery

The following issues and associated risks have been identified:

- Regulated features mapping and supporting background information (such as standard operating procedures) is perceived by the community as not widely accessible nor accurate, therefore there is increased risk of development projects being non-compliant with Conservation Authority regulations.
- Natural hazard programs and services do not integrate climate change science projections, therefore there is an increased risk of damage to people and property from warmer, wetter, and wilder weather.
- Updated floodplain mapping is lacking for major lakes and their connecting rivers, therefore there is an increased risk of damage to people and property along these areas.

- Communication and accountability amongst approval organizations (including the conservation authority) is perceived by the community as lacking with respect to enforcement-related matters, which increases the risk of non-compliance and mistrust in permitting and planning programs.
- Development application fees are frozen, which reduces revenue generation potential and access to legal costs.
- Natural hazard program as defined is narrow in scope and does not consider a holistic perspective for activities and protections that support the natural hazard program, and water balance which attenuates flows and reduces flooding risk.

4.2.2 Actions to Address Issues and Risks

The following actions address the identified issues and risks, and will enhance program and service delivery.

Actions to Address Issues and Risks	Cost Estimate
Create standard operating procedures for regulated areas mapping and on-site delineations of regulated features.	Minor
Undertake floodplain mapping technical studies on lakes and their connecting rivers.	Major
Ensure regulated area mapping and supporting background information is easily accessible.	Minor
Integrate climate change considerations/predictions into natural hazard technical studies.	Moderate
Establish strong working partnerships and regularly liaise with approval authorities on compliance related matters.	Minor
Develop communication products to provide the community and stakeholders with an understanding of the permitting process, its foundation, abilities and limitations.	Minor
Undertake technical studies to refine natural hazard features on the landscape (i.e. wetlands, karst).	Moderate

4.3 Drinking Water Source Protection

Drinking Water Source Protection [Category 1]

The protection of municipal drinking water supplies in the Kawartha-Haliburton region through the development and implementation of the Source Protection Plans. This includes the Gull River and Burnt River watersheds. The program operates under a memorandum of understanding with the province.

This program involves the implementation a multi-barrier approach to strengthen the protection of municipal drinking water sources, through the support of actions required to implement source protection planning. A Source Protection Plan is based on threat assessments of groundwater and surface water quality and quantity. Activities support the Source Protection Committee, Source Protection Authority, and stakeholders in the implementation of the Source Protection Plans.

4.3.1 Issues and Risks Limiting Effective Program Delivery

The following issues and associated risks have been identified:

- Lack of municipal screening of applications in a Drinking Water Source Protection policy area, which increases the risk of not addressing drinking water threats.
- Source protection doesn't cover 50% of residents in the watershed (i.e., those who are not on municipal drinking water), which lowers the effectiveness and impact of the program.



4.3.2 Actions to Address Issues and Risks

The following actions address the identified issues and risks, and will enhance program and service delivery.

Actions to Address Issues and Risks	Cost Estimate
Increased training of municipal staff to flag development applications for regulated areas and municipal drinking water threats.	Minor
Develop communications products that are applicable to activities in source protection areas, which are useful to community members who are looking to protect their local sources of drinking water.	Minor

4.4 Provincial Water Quality and Quantity Monitoring

Provincial Water Quality and Quantity Monitoring [Category 1]

The Provincial Water Quality Monitoring Program and Provincial Groundwater Monitoring Program are in partnership with the Ministry of the Environment, Conservation and Parks where Conservation Authorities and other partner organizations collect water samples at rivers and streams, or groundwater wells throughout Ontario. Both programs aim to protect water quality for future generations by ensuring there is continued surveillance of water quality to detect trends and threats, to ensure compliance with the Provincial Water Quality Objectives, and provide and deliver water quality data for water quality studies and assessment.

4.4.1 Issues and Risks Limiting Effective Program Delivery

The following issues and associated risks have been identified:

- Limited geographic coverage of monitoring stations leads to gaps in water quality and quantity understanding.
- Lack of routine reporting of key findings leads to data being not readily available to key stakeholders for decision-making purposes.



4.4.2 Actions to Address Issues and Risks

The following actions address the identified issues and risks, and will enhance program and service delivery.

Actions to Address Issues and Risks	Cost Estimate
Fill geographic gaps in provincial water monitoring through local monitoring initiatives.	Minor
Ensure key findings from the provincial water monitoring program are made available in a timely manner in a format that is easily accessible.	Minor

4.5 Local Environmental Monitoring

Local Environmental Monitoring [Category 3]

We maintain a core watershed monitoring network, including water quality and quantity for both surface and ground water on a more local scale than the Provincially mandated programs. This enables us to identify issues requiring attention early on, while gauging the effectiveness of current planning practices. The programs that fall under this category include Aquatic Biomonitoring, Coldwater Streams Temperature Monitoring, and our Citizen Science water quality monitoring program Kawartha Water Watch. All these programs work in collaboration with partners from Conservation Authorities, Provincial government, academia, and local volunteer groups to assist with the coordination of program delivery, while combining expertise and experience to ensure consistency and cost efficiency.

4.5.1 Issues and Risks Limiting Effective Program Delivery

The following issues and associated risks have been identified:

- Local monitoring programs do not always support Natural Hazard Management program, which leads to a reduced opportunities to monitor the effective delivery of that program.
- Lack of routine reporting of key findings leads to data being not readily available to key stakeholders for decision-making purposes.



4.5.2 Actions to Address Issues and Risks

The following actions address the identified issues and risks, and will enhance program and service delivery.

Actions to Address Issues and Risks	Cost Estimate
Ensure key findings from local monitoring programs are made available in a timely manner in a format that is easily accessible.	Minor
Ensure local monitoring programs collect data to better understand and support the delivery of the natural hazard management program.	Minor

4.6 Watershed Studies and Strategies

Lake and Watershed Management Plans [Category 2]

Watershed strategies provide a management framework to provide recommendations which consists of goals, objectives, indicators, and 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.

Implementation Action Plans [Category 2]

The purpose of Implementation Action Plans is to provide the framework for investment in the initiatives that play an important role in the implementation of the actions recommended in Lake and Watershed Plans. They outline multi-year projects that are delivered to satisfy priority management recommendations.

Program area of focus includes working with urban, rural, and agricultural property owners to implement best management practices (for example tree planting) to mitigate flood and erosion hazards, improve and protect water quality, restore flood plains and river valleys, reduce nutrient contamination, restore and enhance wetlands to reduce flooding peaks and augment low flow, manage terrestrial non-native invasive species, protect groundwater, and improve species at risk habitat.



4.6.1 Issues and Risks Limiting Effective Program Delivery

The following issues and associated risks have been identified:

- Lack of project implementation, and routine updating of lake and watershed plans increases risk of not addressing ever-changing community concerns and management priorities.

4.6.2 Actions to Address Issues and Risks

The following actions address the identified issues and risks, and will enhance program and service delivery.

Actions to Address Issues and Risks	Cost Estimate
Review and update Lake and Watershed Management Plans on a routine basis to address community needs.	Moderate
Implement high priority management actions in Lake and Watershed Management Plans through stewardship and science-based projects in urban, rural, and shoreline areas.	Major

4.7 Conservation Authority Lands and Conservation Areas

Conservation Lands and Areas [Category 1]

Our conservation areas includes forests, wetlands, and farmland, that we own and/or manage on behalf of external organizations. This property is essential to watershed management, environmental protection, and provides community spaces and areas for passive recreation.

Our conservation areas: Ken Reid, Pigeon River Headwaters, Fleetwood Creek Natural Area, Windy Ridge, Durham East Cross Forest, Dewey's Island, and Tuck'd Away Trail.

Management and maintenance of conservation areas includes passive recreation, risk management program, hazard tree management, gates, fencing, signage, brochures, communications, and general maintenance of boardwalks, viewing platforms, trails pedestrian bridges, parking lots, pavilions, roadways; stewardship, restoration, ecological monitoring, carrying costs such as taxes and insurance.

Habitat Restoration [Category 3]

Our conservation lands also provide sites to compensate for species or habitat disruption because of development activity to restore these vulnerable habitats in our conservation properties, and by providing expert advice and support for private land restoration projects. This program is initiated by provincial requirements and generates revenue to support other programs, improves habitat across Kawartha Conservation and private lands, and builds relationships between the development industry and the Conservation Authority.



Land Acquisition [Category 3]

Kawartha Conservation reviews and evaluates opportunities for land acquisition each year. Potential properties are evaluated on a set of criteria including ecological importance, financial impact, and opportunities for community engagement. When appropriate funding and opportunities align, they are brought to the Board of Directors for discussion and decision.

Conservation Education and Community Outreach [Category 3]

Our Community Engagement programs include our geared to curriculum education program, community events, and a variety of community hikes throughout the year. These popular programs attract residents and tourists to explore the beauty of the Kawartha Lakes area. Our community festivals like Fall Fest and Christmas at Ken Reid have become seasonal highlights for our community and create unique opportunities for people to connect with nature in a way that is meaningful for them. The Innovation Hub is a provision of education and training for professionals across a range of topics (e.g., River Ice Engineering, Project Management, Environmental Impact Assessment and Ontario Building Code, Septic Systems Exam Preparation).



4.7.1 Issues and Risks Limiting Effective Program Delivery

The following issues and associated risks have been identified:

- Increased community growth increases the demands on the use of already ageing infrastructure in conservation areas.
- Increased development pressures increase the risk of eliminating sensitive natural areas.
- Programs are heavily reliant on external funding sources, which leads to unpredictable yearly programming availability.
- Increased costs for schools to bus students to Conservation Areas increases the risk of losing education opportunities.

4.7.2 Actions to Address Issues and Risks

The following actions address the identified issues and risks, and will enhance program and service delivery.

Actions to Address Issues and Risks	Cost Estimate
Increase revenue generation by implementing 'fee for service' and 'cost-recovery' programming.	Minor
Ensure education programming is innovative and meets the needs of school curriculums and the current job market.	Minor
Expand collaborative partnerships to secure funding to replace ageing infrastructure and protect sensitive lands.	Minor

4.8 Enabling Program Services

Finance, Budget, and Audit [General Operating]

This area of business provides financial leadership and support to the organization through financial direction, reporting, and management. All accounting processes, financial statements, and audits are conducted and prepared through strict adherence to the Canadian public sector accounting standards. Ongoing scrutiny and analysis contribute to effective and efficient processing, and adherence to applicable legislation. We produce internal financial statements and reports regularly for our leadership team and the Board of Directors.

Human Resources, Health and Safety [General Operating]

Human Resources provide comprehensive services and advice to all departments in the areas of legislative compliance, recruitment, orientation, on-boarding, talent management, metrics reporting, performance management, employment grants, and policies and procedures. Within the Health and Safety function, education and training continue to be a focus to create a culture of safety in our organization. We continue to invest resources to produce an effective and progressive Health and Safety program and ensure compliance with the Occupational Health and Safety Act. In 2024, our Compensation Review will be completed with a proposed plan for implementation, as recommended.

Infrastructure, Asset Management, and Information Technology [General Operating]

Assets include land, buildings, information technology infrastructure, vehicles, and equipment. The Corporate Services team provides support in managing, maintaining, replacing, and monitoring risk and liability issues. This business area also includes the management of corporate records involving soft and hard copies along with the proper retention criteria and the implementation of the Information Management System. This system enables timely responses to client requests, helps us to meet Municipal Freedom of Information and Protection of Privacy obligations, and improves search capabilities. Hardware and software for the computer network, including system support and security, are a function of this division.

Corporate Communications [General Operating]

Corporate communications ensure organization transparency and accountability to our Board of Directors, municipal partners, staff, and the watershed community, while representing our organization in a strong, positive manner that is consistent with our vision, mission, and focus. This business area also supports all our programs, projects and services through the development and implementation of communication plans. Some of the regular services and products provided include strategic communication guidance, plan development and implementation, media relations, image and brand management, website development and maintenance, and photography management.

4.8.1 Issues and Risks Limiting Effective Program Delivery

The following issues and associated risks have been identified:

- Extreme and unexpected events (e.g., vandalism, severe storms) on infrastructure leads to unanticipated costs.
- Rapid changes in technology leads to increased risk of cyber security threats.

4.8.2 Actions to Address Issues and Risks

The following actions address the identified issues and risks, and will enhance program and service delivery.

Actions to Address Issues and Risks	Cost Estimate
Ensure 'contingency resources' are available to address unexpected costs associated with damages to physical and digital infrastructure.	Major
Make continuous improvements in cyber security to support reliable and secure digital infrastructure.	Moderate

5.0 Strategy Review and Updating

5.1 Introduction

As per Ontario Regulation, the WBRMS requires 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.

The following provides a general outline of the reviewing and updating process.

5.2 Review and Updating

The WBRMS should be reviewed at a minimum on a 5-year basis, to incorporate changing corporate priorities, legislation and regulations, watershed pressures, and public and stakeholder needs.

All reviews and updates will be vetted and approved by Kawartha Conservation's Board of Directors.

The process will include extensive public and stakeholder engagement, to include but not limited to:

- Advertising of updating process to public and key stakeholders
- Engagement and feedback surveys
- 30-day public review period on draft updates
- Board of Director's meeting agenda item(s)

The review should include a detailed update, as applicable, on the key legislative requirements, including: guiding principles and objectives, a summary of existing technical and monitoring programs, and a review of programs and services to identify risks that limit the effectiveness of the delivery of these programs, and actions to mitigate the risks.