



2024 Watershed-based Resource Management Strategy

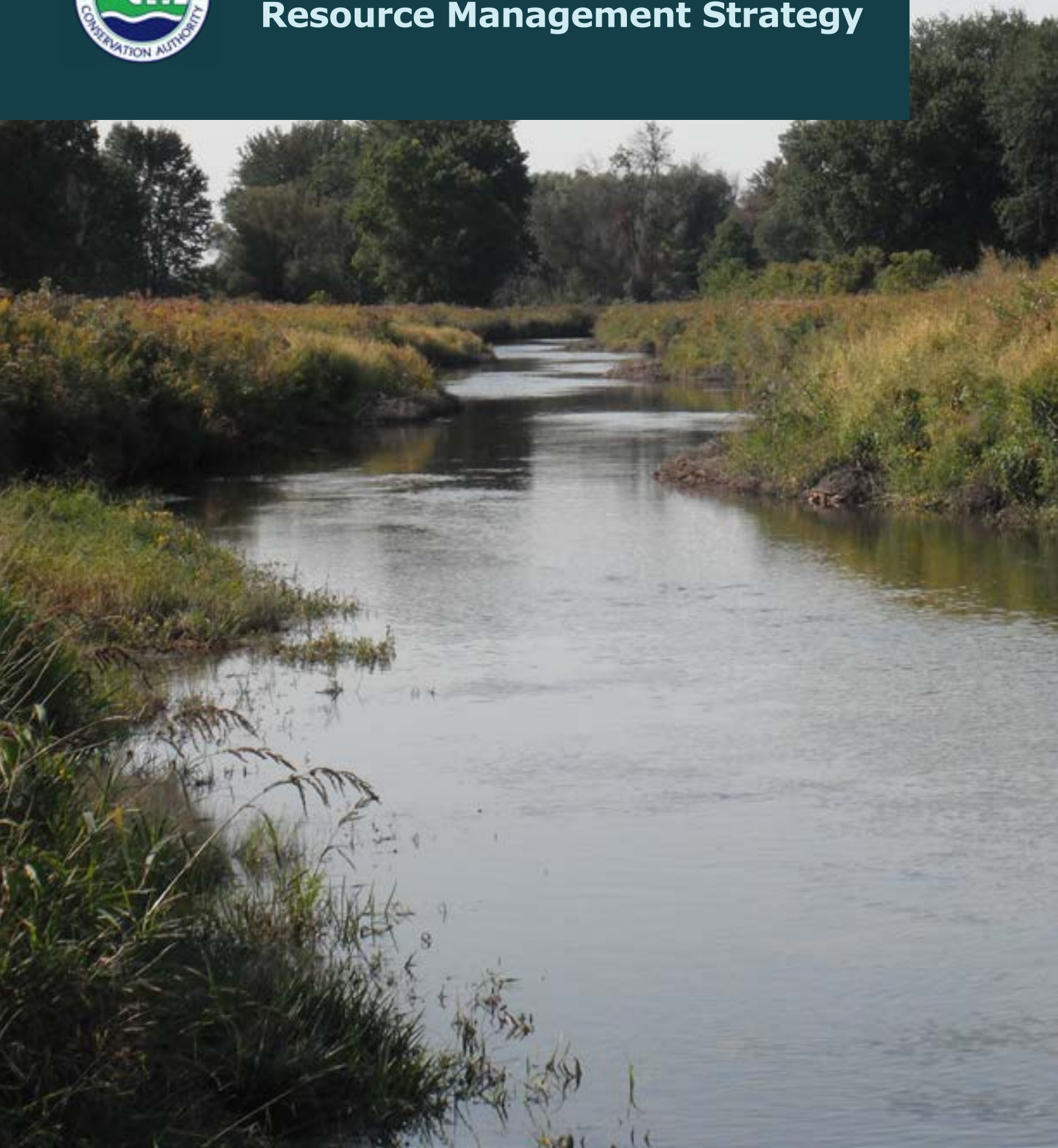


Table of Contents

| | |
|--|----|
| About the Nottawasaga Watershed..... | 5 |
| Purpose of the Watershed Based Resource Management Strategy..... | 6 |
| Guiding Principles & Objectives..... | 8 |
| Public Consultation..... | 9 |
| Programs and Services Assessment..... | 10 |
| Description of Programs and Services..... | 19 |
| Next steps..... | 33 |
| Appendix A: Funding for Programs and Services..... | 34 |
| Appendix B: Summary of Studies | 42 |

NVCA's Vision

A sustainable watershed that is resilient to the effects of climate change, urban growth and other stressors and provides for safe, healthy and prosperous people and communities.

NVCA's Mission

Working together to deliver innovative, integrated watershed management that is responsive to the environmental, economic and social sustainability of the Nottawasaga Watershed.

What We Value

An abundance of clean water, clean air and fertile soils that provide for healthy people and ecosystems.

Natural heritage systems and the ecosystem services they provide, particularly as they support resilience to the effects of a changing climate.

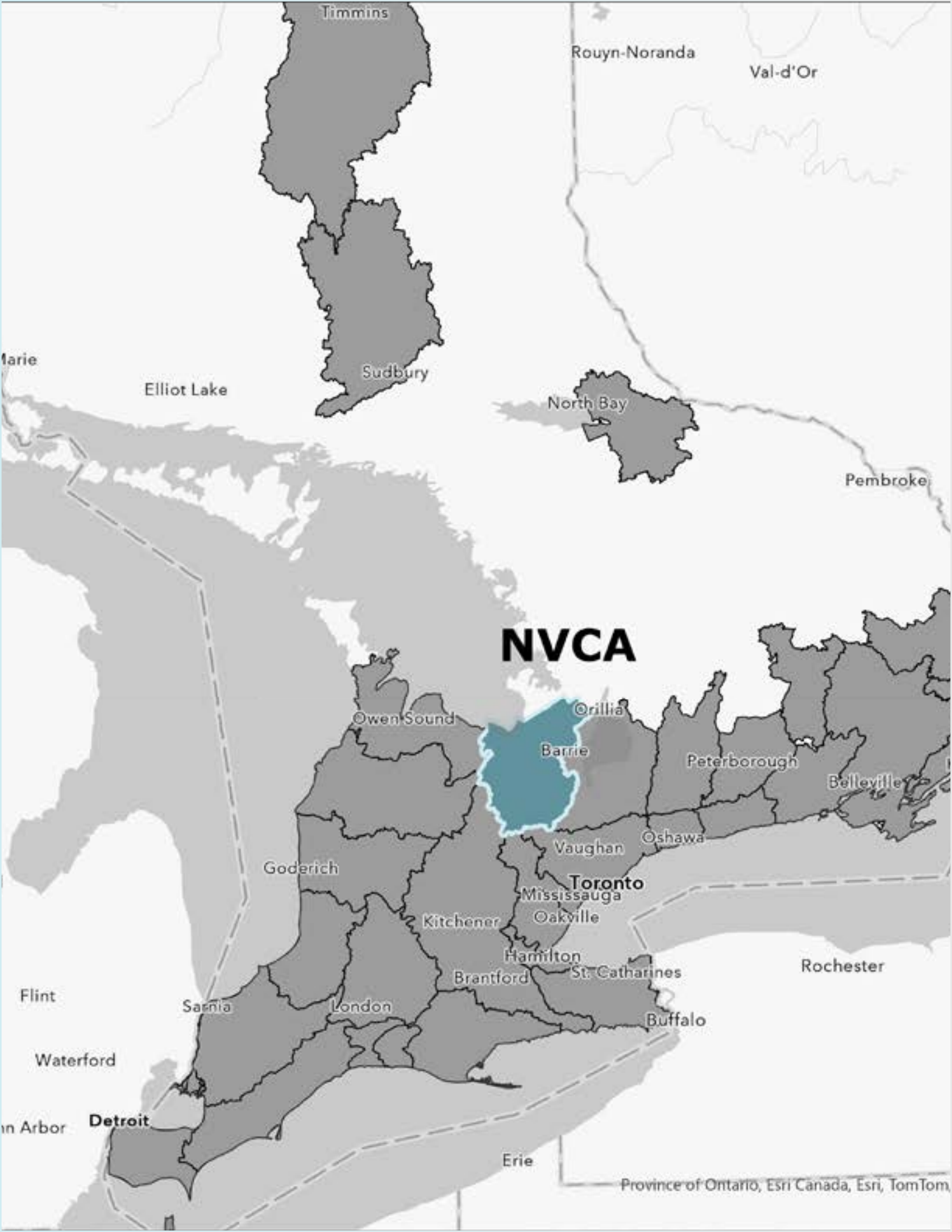
Distinctive landforms and waterways including the Georgian Bay coastline, Niagara Escarpment, Minesing Wetlands and others that give our watershed a unique sense of place.

Quality recreational opportunities that our hills, forests, meadows, wetlands, waterways and coastline provide for residents and tourists alike.

A wealth of resources within the capacity of our watershed to provide for thriving communities, successful economies and sustainable agriculture, now and in the future.



[To learn more about the benefits of having a healthy watershed, visit NVCA's website.](#)



About the Nottawasaga Watershed



The Nottawasaga Watershed is a large geographic area, approximately 3,700 km², with jurisdiction in 18 municipalities in the counties of Simcoe, Dufferin and Grey. It consists of a diverse mix of growing cities, small towns, rural communities and productive agricultural land. It is also home to a variety of natural landscapes, abundant recreational trails and other amazing natural features like the internationally significant Minessing Wetlands and the Niagara Escarpment.

Natural resources such as wetlands, rivers, streams, forests and groundwater are critical to our society, economy and environment. Not only do these natural resources sustain our lives and benefit our health and wellbeing, they help to clean our air, control flooding, protect us from summer heat, help improve our mental and physical health and much more. A healthy watershed is also resilient to climate change and urban growth.

NVCA works with member municipalities, as well as many funders, partners, volunteers, landowners and residents to sustainably manage this watershed by balancing social, economic and environmental interests through an integrated watershed management approach.

NVCA developed a characterization report of the Nottawasaga Watershed in 2018. Please contact NVCA to access the report.



Purpose of the Watershed Based Resource Management Strategy



Under recent changes to the *Conservation Authorities Act (CA Act)* and Ontario Regulation 686/21, conservation authorities (CAs) in Ontario are required to complete a Watershed-Based Resource Management Strategy (WBRMS) on or before December 31, 2024.

NVCA's WBRMS identifies the risks, issues and challenges in the Nottawasaga Watershed along with mitigation strategies to address these concerns through an integrated watershed management approach.

In developing the WBRMS, watershed health and trends, program effectiveness and other guidance documents were considered.

These guidance documents include:

- [Integrated Watershed Management Plan](#)
- [Strategic Plan](#)
- [Business Plan](#)
- [Climate Change and Action Plan](#)
- [Watershed Health Checks](#)
- [Asset Management Plan](#)
- [Conservation Areas Strategy](#)
- [Fisheries Habitat Management Plan](#)

The guidance documents listed above are used to guide program delivery. The WBRMS refers to these guidance documents to ensure objectives and goals are aligned.



Guiding Principles & Objectives

The development of NVCA's WBRMS is guided by the following principles:

- The Nottawasaga Watershed connects all 18 municipalities through natural resources such as rivers, streams, wetlands, forests and groundwater.
- A well-managed watershed is crucial for sustaining prosperity, growth, well-being and climate change resiliency.
- When developing programs and making decisions, an integrated watershed management approach is a priority as it encompasses human, economic and environmental needs.
- NVCA's programs adapt and respond to changing conditions, priorities, vulnerabilities and pressures.
- Collaboration and partnerships are essential in addressing complex and interrelated issues within the natural, economic and social environments.

The objectives of NVCA's WBRMS are to:

1. Protect life and property from natural hazards such as flooding and erosion.
2. Evaluate the status and trends of watershed health and share information with NVCA staff, municipalities, partners and other organizations who have a role in managing the Nottawasaga Watershed.
3. Ensure that the ecological integrity, climate change resiliency and biological diversity of natural heritage systems is maintained on conservation lands.
4. Foster awareness and appreciation of the watershed's natural features through outdoor experiences, opportunities and education.
5. Mitigate potential risks to drinking water sources and ensure a sustainable and clean water supply for the watershed.
6. Conserve, enhance and restore natural areas to improve ecosystem health and resilience.

Public Consultation



NVCA staff conducted public consultation through an online survey to seek feedback on the risks, issues, challenges and mitigation strategies identified in the WBRMS.

The public consultation was shared with NVCA's municipal partners, community groups, the development community, Indigenous groups, the general public and other interest holders.

In total, NVCA received 45 comments submitted through the online survey, and one comment was submitted through email. Over 90% of the respondents strongly agreed or agreed with the risks, issues and challenges identified in the WBRMS. When asked if there were additional measures NVCA could take to mitigate the issues, challenges and risks, NVCA received between 10-15 responses for each category.

Approximately 40% of the respondents were members of non-governmental organizations, 25% were members of the general public, and 12% were representatives or staff of government agencies.

While some comments received were not applicable to NVCA's mandate or the scope of the WBRMS, other comments may be taken into consideration on future strategic planning.



Programs and Services Assessment

Maintaining and enhancing natural resources is critical in ensuring the Nottawasaga Watershed is resilient to climate change and human use. This requires an integrated approach that brings stakeholders and interest groups together from across the watershed to develop and implement strategies that achieve a sustainable and resilient system.

The next section of the strategy outlines the challenges, stressors and issues that the Nottawasaga Watershed faces, as well as the strategies to mitigate them.

Development Pressure and Urban Growth

Population growth, and the resulting urbanization, presents a challenge for the protection and enhancement of the watershed's natural resources. A healthy watershed helps protect and enhance lives in many different ways.

Development in a watershed sustainably requires a well thought out plan, and maintaining natural resources must be balanced with development pressures.

Mitigation Strategies

- Prioritize development of subwatershed studies and plans to balance development pressures and the enhancement and protection of natural resources.
- Encourage a collaborative approach to protect and enhance water resources through managing drinking water, sewage and stormwater on a watershed scale.
- Ensure new infrastructure projects protect human health, safety and the natural environment.
- Ensure stormwater management plans consider cumulative impacts of development on a watershed scale.
- Encourage the incorporation of green infrastructure in stormwater management plans to minimize erosion and changes in water balance.
- Ensure development is generally directed outside of regulated areas where lives and properties can be impacted by flooding, erosion or other natural hazards.

Climate Change

The Nottawasaga Watershed is already experiencing the effects of climate change, including more frequent and intense weather events that lead to flooding, drought, habitat change and biodiversity loss. These events have resulted in property destruction and significant financial implications. Climate change will continue to have social, economic and ecological impacts in the Nottawasaga Watershed.

Mitigation Strategies

- Encourage local municipalities to include and implement climate change policies in their official plans.
- Assess land use development applications using a climate change lens and develop criteria to determine if proposed developments incorporate appropriate climate action principles.
- Develop new hydraulic and hydrologic models and mapping that consider future climate projections, impacts of human use and areas in the Nottawasaga Watershed that are vulnerable to natural hazards.
- Collaborate with other conservation authorities, municipalities and the Province of Ontario to ensure development guidelines incorporate future climate projections to help enhance climate change resiliency.
- Adapt conservation area programs, services and asset management plans to address changing climate conditions.
- Provide landowners, property managers and other professionals with knowledge and resources to help them make informed decisions that contribute to building climate change resilient and environmentally sustainable communities.
- Enhance flood forecasting and real-time flood monitoring and warning systems to keep watershed residents safe and informed.
- Work with municipalities to develop more detailed water budgets for the Nottawasaga Watershed.
- Review drought response policies and procedures, consider stakeholder input and revise drought response guidelines including low water/drought emergency response plans.



Biodiversity and Habitat Loss: Wetlands, Forest and Shoreline Vegetation

The loss of forest cover, shoreline vegetation and wetlands is resulting in habitat loss and decline in biodiversity. Invasive species disturb wetlands and terrestrial ecosystems, causing tree mortality across the watershed. Human activity continues to encroach on natural environments, decreasing species diversity through habitat loss.

Mitigation Strategies

- Promote reforestation and naturalization to improve soil and water conservation, store carbon, moderate local climate, provide shade to regulate temperature extremes, increase wildlife habitat and improve capacity to adapt to climate change.
- Manage, sustain and restore natural features, such as wetlands and forests, to increase resiliency to the effects of climate change.
- Increase protected areas through land acquisition and securement.
- Encourage municipalities to review minimum planting requirements to ensure recommended species lists include plants that are expected to adapt to future climates.
- Maintain the health of local watercourses by ensuring proposed developments have adequate erosion and sediment controls as well as associated contingency plans.
- Develop conservation area management plans that prioritize the identification of significant ecological features and areas that should be preserved from development.





Agricultural Lands

Agriculture covers a substantial percentage of the land base in the Nottawasaga Watershed. While many farmers have implemented best management practices to minimize soil and nutrient loss, there are still farms that may benefit from practices such as planting vegetated buffers, installing fencing along watercourses, conservation tillage and improving manure storage and handling.

Mitigation Strategies

- Continue to collaborate with agricultural communities through the Stewardship Services and Environmental Restoration Program.
- Maintaining natural riverine flow and buffers through agricultural lands.
- Encourage the adoption of Agricultural Best Management Practices and Environmental Farm Plans.



Aging Infrastructure

NVCA is responsible for coordinating the inspection, maintenance and repair of six flood management structures, which include dams and an ice management structure. NVCA also owns and operates infrastructure related to conservation authority administration and recreation on conservation lands. Aging infrastructure is becoming more costly to repair and replace, and may increase the potential risks to public safety, properties and liabilities.

Mitigation Strategies

- Develop management plans, master plans and/or infrastructure plans as appropriate to guide the long-term operation and maintenance of properties and associated infrastructure.
- Demonstrate leadership by incorporating green infrastructure and sustainable technologies in conservation area and infrastructure planning.
- Strike a balance between user-fees, externally generated revenues (i.e. grants, sponsorship, donations) and levy.
- Update NVCA's Capital Asset Management Plan to anticipate and cover capital costs associated with infrastructure repair and renewal.
- Implement regular maintenance standards on NVCA infrastructure.
- Investigate the incorporation of climate change scenarios into Dam Breach Models to ensure major infrastructure is able to handle more intense and frequent storms and rain events.

Water Resources

The Nottawasaga Watershed is made up of groundwater and surface water features and the Nottawasaga River forms the backbone of the system within the watershed.

In some areas, aquifers are vulnerable to land-based activities, including urban development, agriculture, and management practices such as the application of road salt, manure or fertilizer. Elevated levels of nitrates, chlorides, sodium and industrial contaminants in groundwater may become a concern in some parts of the watershed.

As the Nottawasaga Watershed continues to develop, continued efforts will be required to ensure non-point sources of phosphorus and other nutrients are not impacting surface and groundwater.

Mitigation Strategies

- Promote innovative erosion control and stormwater management practices, such as low impact development.
- Continued support for the Provincial Water Quality Monitoring Network (PWQMN) and Provincial Groundwater Quality Monitoring Network (PGMN).
- Complete a comprehensive study to identify erosion, transport and sedimentation processes and define priority management actions.
- Continue to provide grants and technical advice through the Healthy Waters Program to the agricultural community to implement agricultural best management practices.



Flood and Erosion

Protecting people and property from flooding is a shared responsibility between municipalities, conservation authorities and the Ministry of Natural Resources (MNR).

MNR and NVCA are primarily responsible for operating a flood forecasting and warning system. Through the planning and regulatory approvals outlined in the *CA Act*, NVCA ensures development is directed outside of floodplains and other natural hazard areas to avoid the loss of life and damage to property due to flooding.

Climate change is predicted to bring more frequent and intense storms which will result in increased fluctuations in water levels in the Nottawasaga Watershed. These storms are expected to further increase erosion hazards in the watershed.

Urban development increases stormwater runoff, exposing creeks and rivers to more frequent erosive forces. Removal of riparian vegetation weakens channel banks, causes bank instability and increases erosion hazard.

Mitigation Strategies

- Protect natural heritage features that provide water quantity control in flood prone areas.
- Update floodplain mapping to better understand flood risk and further identify flood prone areas.
- Complete erosion hazard assessments in areas of concern to improve erosion hazard mapping accuracy.
- Adopt advanced flood monitoring and warning systems to increase accuracy and timeliness of flood messaging and warning.
- Identify opportunities to optimize the natural form and function of watercourses to mitigate erosion risk.





Description of Programs and Services

NVCA delivers programs and services to address the issues, risks and challenges through three organizational program and service areas – Watershed Management Services, Conservation Services and Corporate Services, which are listed in further detail below.

A list of NVCA's programs and services was developed in 2022 as part of the Inventory of Programs and Services that conservation authorities were required to complete under Ontario Regulation 686/21. A modified inventory can be viewed in Appendix A.



Watershed Management

Watershed Management Services works with municipal partners, the Province of Ontario and the public to protect lives and properties from natural hazards, while also safe-guarding drinking water and monitoring the health of the Nottawasaga Watershed. Key program areas consist of Natural Hazard Management and Watershed Science.

Natural Hazard Management

The goal of the Natural Hazard Management Program is to protect lives and property from flooding, erosion and other natural hazards.

NVCA takes a proactive approach to flood management by directing development outside of floodplains, managing and maintaining a network of rain and flow gauges, identifying natural hazards and maintaining extensive floodplain mapping across the watershed.

Staff in the Natural Hazard Management Program review permit and development applications and comments on municipal plans and natural hazard policies. They also operate a flood forecasting and warning system, maintain flood and erosion control infrastructure, develop technical studies to ensure that the latest available science/technology is informing decisions relating to natural hazards and their management, provide ice management services, and offer education and public awareness opportunities.



Planning and Regulation Services

NVCA is a regulatory body under the *CA Act* and a public body under the *Planning Act*. In addition, NVCA is also a commenting agency with delegated responsibilities from the MNR to avoid loss of life and damage to property from flooding, erosion and other natural hazards.

Under the *CA Act*, property owners looking to develop in areas with natural hazards associated with rivers, streams, wetlands and shorelines must apply for a permit from NVCA.

Staff in the Planning and Regulation Services Program work closely with municipal partners to ensure proper permits are in place prior to development. If a property is in an NVCA regulated area, property owners must obtain a permit from NVCA before municipalities can issue a building permit.

Early in the development planning process, NVCA's engineers, ecologists and groundwater specialists review the proposed development plan to identify potential risks that may be impacted by the proposed development. This information is communicated to developers and municipalities, and additional information may be requested. This may include environmental impact studies, natural hazard studies and stormwater management studies.

NVCA establishes annual partnership agreements with municipalities to identify key roles and services in the development plan review process. Examples include expertise in flooding, erosion, stormwater management, natural heritage and groundwater. The partnership agreements help ensure that development application reviews are coordinated and streamlined.



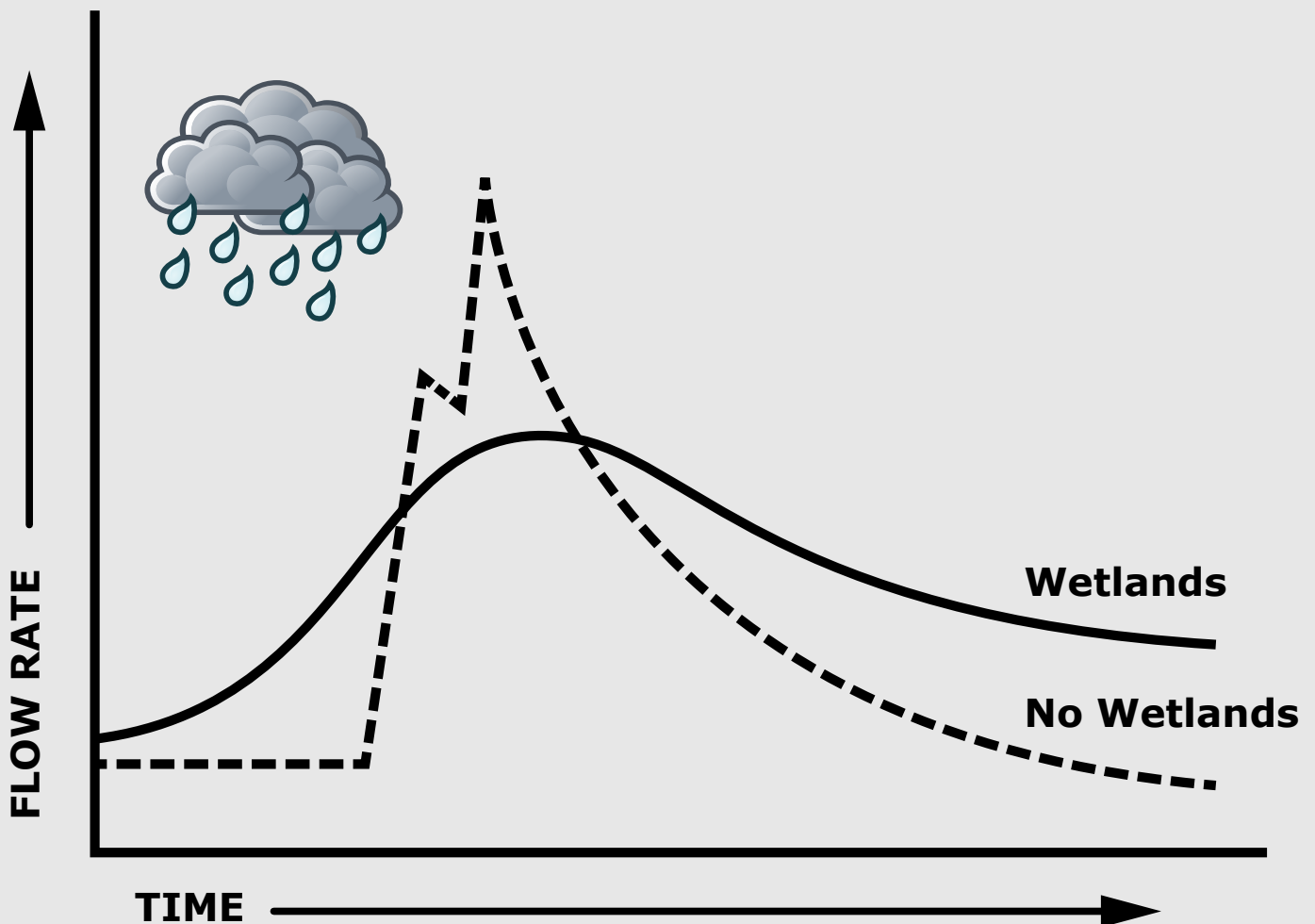
Flood Warning and Engineering Services

Staff in the Flood Warning and Engineering Services Program provide wide-ranging expertise in the hydrology and hydraulics of the watershed. Their knowledge and experience allow NVCA to deliver technical expertise related to the magnitude and severity of natural hazards such as flooding and erosion.

Engineering Services works closely with the Planning and Regulation Services Program to review technical studies to ensure development plans meet requirements under the *CA Act*.

In addition, the Flood Forecasting and Warning Program monitors watershed conditions and notifies local municipalities, agencies and the public of potential flood events and associated issues to allow time to prepare and respond.

To identify flood risk, this program collects and interprets information such as precipitation and watercourse flow data, weather forecasts, watershed conditions, snow surveys, frazil ice forecasts, wind direction, site conditions, watershed knowledge of susceptible areas for flooding and provincial flood forecasts. Access to these tools is increasingly critical in the face of climate change.



NVCA's Engineering Services also operates and maintains flood management infrastructure which mitigate flood hazards and, in some cases, erosion hazards.

Low water contingency planning is the responsibility of local water users, municipalities, conservation authorities and the MNR.

NVCA collects information regarding low water conditions and presents the analysis to the Water Response Team, a committee made up of stakeholders and interest holders. NVCA's Low Water Contingency Plan provides a roadmap and response procedures if Level I, Level II or Level III low water conditions are declared with input from the Water Response Team.

NVCA's ice management activities involve seasonal monitoring of known ice jam locations within the watershed, and providing information and expertise to municipalities to mitigate or remove ice jams. Typically, the frequency of inspections is informed by data gathered through the Flood Forecasting and Warning Program, as well as institutional understanding of environmental conditions.



Watershed Science

The goal of the Watershed Science Program is to develop a better understanding of the watershed functions through monitoring and reporting. The program works to gain an understanding of the physical and ecological processes governing watershed functions, and how they respond to change.

This information is summarized through NVCA's Watershed Report Cards, which are an important tool for policy makers, municipalities and watershed residents as they highlight priority actions to protect, restore and enhance the watershed.

Surface Water and Groundwater Monitoring Services

NVCA has partnered with the Province to deliver the PWQMN and PGMN. Through these partnerships, the Watershed Science Program conducts stream water quality monitoring, as well as groundwater level and water quality monitoring across the watershed.

Stream quality data are used to prepare reports on watershed health, and are available to municipal partners for infrastructure development projects. In addition, NVCA uses the data to help identify priority sites for restoration projects.

Groundwater data are used to monitor low water conditions and groundwater quality of many of the local aquifers. NVCA also uses the data in the preparation of Watershed Health Checks.

The coverage of the PWQMN and PGMN in the Nottawasaga Watershed is limited, to that end the Watershed Science Program carries out additional surface and groundwater monitoring programs. The additional monitoring allows for a better understanding of the current condition and stresses on watershed health. These data are used to evaluate and report on existing conditions and trends within the watershed and help to establish targets for protection and rehabilitation services.



Source Water Protection

The Drinking Water Source Protection Program (DWSP) was established by the Province of Ontario. It uses a multi-barrier approach to ensure Ontarians have clean, safe and sustainable municipal drinking water sources. Legislations relevant to DWSP include the *Clean Water Act* and the *Safe Drinking Water Act*.

As part of the South Georgian Bay Lake Simcoe Source Protection Region, NVCA administers the Nottawasaga Valley Source Protection Authority (NVSPA). This includes overseeing the implementation of Source Protection Plans, developing assessment reports, identifying priority drinking water issues and other activities required by the *Clean Water Act* and its regulations.

Risk Management under the Clean Water Act

Under the *Clean Water Act* (Part IV), municipalities are responsible for DWSP risk management services. Municipalities may carry out these responsibilities themselves or delegate responsibilities to an appropriate authority. NVSPA carries out these duties/services on behalf of 10 municipalities through memorandums of understanding (MOU) agreements.

The Risk Management Official is responsible for negotiating and establishing legally binding Risk Management Plans with people who are proposing or are engaged in activities that are a significant threat to sources of drinking water.

The Risk Management Inspector ensures activities are compliant with measures identified in Risk Management Plans and prohibitions through site visits. When warranted, notices and orders can be issued on behalf of the municipalities.

Natural Heritage Services

The Natural Heritage Services Program monitors, tracks, reports and evaluates terrestrial biological data across the watershed. Using the best available science, the program provides an unbiased assessment of current conditions and developing trends.

In line with NVCA's mandate, natural heritage monitoring focuses on NVCA-owned properties to ensure aquatic and terrestrial ecosystems in these properties are protected and can be enhanced, restored or rehabilitated as appropriate.



Conservation Services

Conservation Services engages with the community through environmental education programming, hosting community events, providing passive recreational opportunities and implementing stewardship and restoration projects throughout the watershed.

Conservation Lands

Since 1960, NVCA has secured just over 5,300 hectares of mostly environmentally sensitive areas within the watershed. NVCA's land acquisitions started shortly after the organization was formed, focusing on lands that provided flood management opportunities, natural resources management and recreational opportunities. These historic actions are now proving to have long-term, wide-ranging benefits. NVCA continues to review opportunities to strategically acquire environmentally significant lands throughout the watershed.



In addition to the benefits noted above, lands owned by NVCA also contribute to improved water quality and benefit biodiversity by providing linkages and corridors for wildlife migration. Some of these lands are not open for visitors as they contain significant natural heritage features, natural hazards and other sensitive features, such as provincially significant wetlands.

NVCA's 11 conservation areas ensure that valuable greenspace is protected and that recreational opportunities are provided in safe, well-maintained natural settings so that watershed residents can enjoy a high quality of life.

To ensure compliance under Section 29 of the *CA Act*, NVCA's Board of Directors have designated staff as Provincial Offences Officers. These Provincial Offences Officers monitor NVCA's lands and conservation areas and are often the first point of contact between members of the public and NVCA.



Stewardship Services and Environmental Restoration

NVCA's Stewardship Services and Environmental Restoration Program aims to restore river, wetland, forest and grassland habitats, and support agricultural and urban water quality improvement projects. These projects enhance the ecological health of the watershed and provide enhanced economic and recreational opportunities for local residents and visitors.

The Stewardship Services and Environmental Restoration Program has three main components:

- Providing one-on-one technical and financial assistance to rural and urban landowners,
- Coordination of targeted river restoration initiatives based on priorities identified in the Fisheries Habitat Management Plan (2009), and
- Restoration of wetlands, seeding native grasslands and managing invasive species such as Phragmites.

Engaging community volunteers, businesses and residents in doing meaningful habitat restoration provides a sense of connection and care for the watershed. These projects help reduce the risk to life and property from natural hazards, protect water resources, improve forest conditions, increase biodiversity and make the watershed more resilient to climate change.



The Nottawasaga River Restoration Program focuses on the delivery of strategic multi-partner river restoration projects that enhance habitat for species at risk, including Lake Sturgeon, as well as economically important sport fish, such as rainbow trout and Chinook salmon. Other key objectives include managing rivers as green infrastructure for water quality improvement and flood mitigation.

Stewardship staff also administer and raise funds for the Healthy Waters Grant Incentive Program which provides technical and financial support to landowners interested implementing water quality improvement projects on private property throughout the watershed.

NVCA's tree planting services are delivered on a commercial scale through the Forestry Program, as well as at a community level through the Stewardship Program. Both programs work with funders, municipalities and landowners to plant forests on private and public land across the watershed.

Planting trees helps provide wildlife habitat, shade rivers and streams, reduce erosion and potential future hazards, produces oxygen, among many other benefits. Well-managed forests protect, enhance and restore land by helping to achieve water quality targets, mitigate floods and build resilience to climate change. They also contribute to the economy by providing lumber for construction and wood fiber for products, such as paper.

The Forestry Program also contributes to watershed and community health by implementing best forest management practices, including managing forested land and expanding forest cover. NVCA is now the only agency providing this service at this scale to watershed residents.



Environmental Education

NVCA's Environmental Education Program fosters curiosity about the natural world by setting the seeds for lifelong learning and nature appreciation. By embracing people of all ages and multiple abilities, this program aims to be inclusive and diverse to fulfill the current and future needs of the watershed.

Supporting up to 14,000 participants each year, educators deliver programming to elementary and secondary school students, Specialist High Skills Major students, homeschoolers, students in Tiffin Nature School, day campers, birthday parties, seniors, Guides/Scouts, community events and more.



The overarching goal of NVCA's Environmental Education Program is to help people develop a relationship with the land and water and inspire them to conserve and protect these assets in the future. Educators model how to explore, discover and enjoy nature, then encourage participants to continue these practices on their own time by visiting local green spaces, trails and parks. As the participants spend more time in nature, not only do they become stewards of the land and water, their physical and mental health also improves.

The Environmental Education Program collaborates with multiple partners to provide the best learning opportunities for youth and adults who participate in programming, often at no cost to them thanks to funding and partnerships. The program is designed with the Ontario Ministry of Education curriculum in mind, and has earned a positive reputation through engaging, hands on, environmental and outdoor educational programming.



Corporate Services

Corporate Services includes governance, corporate communications, information services and technology, financial management and human resources. Each of these programs support and facilitate the efficient and effective delivery of other programs and services across the organization.

NVCA relies on transparent financial data and analyses for budget development and long-term planning. Services such as information management, geographic information systems (GIS), communications, risk management, health and safety, asset management and human resources promote best business practices and support corporate economic, social and environmental sustainability.

Governance

The Chief Administrative Officer (CAO) provides expert knowledge, strategic advice and recommendations to the Board of Directors with regard to policy, program and budget decisions. The CAO also provides operational leadership to staff, guiding and influencing processes, decisions and implementation, with the goal of advancing NVCA's mission.

NVCA staff supports board member decision making and leadership by facilitating the participation of municipal members on the Board of Directors. Staff also provide timely professional support, information and recommendations, through meetings with members of the Board of Directors, who guide NVCA into the future.



Corporate Communications

The Corporate Communications Program provides strategic advice and services to inform, inspire, influence and motivate those who live work and play in the watershed to support NVCA's goals and objectives from an integrated watershed management perspective.

Information Services & Technology

The Information Management and GIS programs are responsible for providing data integrity while managing a secure, reliable and integrated information technology environment that aligns with NVCA's business and strategic goals.

Financial Management

The Financial Management Program is responsible for NVCA's day-to-day financial operations, such as payroll and accounts payable/receivable. Other areas include budgeting, procurement, risk management, legal, quarterly and annual financial reporting, records management, reception and freedom of information requests/reporting.

Human Resources

The Human Resources Program is responsible for the effective management of people in the organization through the provision of services such as staff recruitment, health and safety, diversity, inclusion and accessibility, employee learning and development, benefit and insurance administration and performance management.



Next steps

NVCA will review and update the WBRMS every five years or as necessary. Public consultation will be incorporated using a method that is appropriate at the time of the update. The WBRMS will act as a reference document for future strategic plans, business plans and climate change action plans.

Appendix A: Funding for Programs and Services

Through the Province of Ontario, NVCA's program areas are separated into three categories:

- Category 1: Mandatory programs and services (*defined in regulation; where municipal levy could be used without any agreement*).
- Category 2: Municipal programs and services provided at the request of a municipality (*with municipal funding through an MOU/agreement*).
- Category 3: Other programs and services an authority determines are advisable (*use of municipal levy requires an MOU/agreement with participating municipalities*).

NVCA operates through three general funding mechanisms:

- Municipal Levy: Levy from municipalities that can be used in Category 1 programs and services without any agreement, or Category 2 and 3 services through an MOU/agreement with participating municipalities.
- Provincial – Funding provided by the Province of Ontario for flood management that must be matched with municipal levy. The Province also provides funding for Source Water Protection.
- Self-Generated – User fees, development charges and grants that support programs of NVCA, the hiring of summer students. These grants can come from the private sector, non-governmental organizations and federal and provincial grants.

The tables below identify the programs and services that are provided by NVCA as well as the funding mechanisms in place for each of these programs.

Natural Hazard Management Program

| Program/Service | Description | Category (1,2,3) | Current Funding mechanism |
|---|---|------------------|--|
| Section 28.1 Permit Administration and compliance activities | Respond to property inquiries. Reviewing and processing of permit applications and associated technical reports under O. Reg, 172/06, site inspections to confirm compliance, communication with applicants, agents, consultants and legal representatives. | 1 | Municipal Levy Self-Generated |
| Municipal Plan Input and Plan Review | <p>Provide technical input and advice to municipalities on circulated municipal land use planning applications (Official Plan and Zoning By-law Amendments, Subdivisions, Consents, Minor Variances).</p> <p>Provide input into 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 in 1983.</p> <p>Provide input into the review and approval processes under other applicable law, with comments principally related to natural hazards, wetlands, watercourses and Section 28 permit requirements.</p> | 1 | Municipal Levy Self-Generated |
| Flood & Low Water Forecasting and Warning | <p>Daily data collection and monitoring of weather forecasts, provincial and local water level forecasts, watershed conditions, snow course, flood event forecasting, flood warning, communications and response and equipment maintenance. Annual meeting with municipal flood emergency coordinator. Low water conditions monitoring and analysis.</p> <p>Technical and administrative support to the Water Response Team representing major water users and decision makers who recommend drought response actions.</p> <p>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.</p> | 1 | Municipal Levy Provincial Self-Generated |
| Flood and Erosion Control Infrastructure Operation and Management | Flood and erosion control infrastructure operations. (routine activities related to the operation of the structures). Includes five flood control projects and 13 erosion control projects that are annually inspected, and routine maintenance work completed. | 1 | Municipal Levy Provincial |
| Flood and Erosion Control Infrastructure Major Maintenance | Flood and erosion control infrastructure operations (routine activities related to the operation of the structures). | 1 | Municipal Levy Provincial Self-Generated |

| Program/Service | Description | Category (1,2,3) | Current Funding mechanism |
|--|--|-------------------------|--|
| Ice Management Services | Preventative measures associated with the control of ice in areas where there is a chronic problem occurring annually, where there is an increase in the risk to life and property and where there is a method to reduce the possible adverse effects of the ice. The Ice Management Plan is being updated. | 1 | Municipal Levy Provincial |
| Technical Studies and Policy Review | Studies and projects to inform natural hazards management programs including floodplain management, watershed hydrology, regulations areas mapping update, flood forecasting system assessment, floodplain policy, Georgian Bay shoreline management. | 1 | Municipal Levy Provincial Self-Generated |
| Natural Hazards Communications, Outreach and Education | Promoting public awareness of natural hazards including flooding, drought, and erosion, including attending public events, developing promotional and education materials, social media development and media relations. | 1 | Municipal Levy Provincial |

Provincial Water Quality & Quantity Monitoring

| Program/Service and Subservices | Description | Category (1,2,3) | Current Funding mechanism |
|---|--|-------------------------|----------------------------------|
| Provincial Water Quality Monitoring Network (PWQMN) | A long-standing (50+ year) CA/MECP partnership for stream water quality monitoring at 18 sites. Information is used for watershed characterization, Watershed Report Cards, integrated watershed management and stewardship project prioritization. | 1 | Municipal Levy |
| Provincial Groundwater Monitoring Network (PGMN) | A long-standing CA/MECP partnership for groundwater level and quality monitoring at 16 well locations. Costs include equipment, well maintenance, 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 | Municipal Levy Self-Generated |

Local Water Quality Monitoring

| Program/Service | Description | Category (1,2,3) | Current Funding mechanism |
|---|---|------------------|----------------------------------|
| Surface Water Quality/ Stream Health Monitoring Program | <p>Surface water quality monitoring uses biological and physical metrics to provide a greater picture of local stream health. Parameters measured include benthic macroinvertebrates, fish, water temperature, fluvial geomorphology, water chemistry and flows.</p> <p>These data are used for Watershed Report Cards, integrated watershed management and stewardship project prioritization.</p> | 3 | Municipal Levy Self-Generated |
| Simcoe Groundwater monitoring Program | NVCA monitors groundwater level at 29 well locations. | 3 | Municipal Levy Self-Generated |
| Watershed Report Card | Conservation Authorities report on local watershed conditions every five years, under Conservation Ontario's Watershed Report Cards initiative. NVCA reports on the health and trends of its nine sub-watersheds, allowing the public and municipal partners to focus efforts and track progress in their projects. | 3 | Municipal Levy |

Drinking Water Source Protection

| Program/Service | Description | Category (1,2,3) | Current Funding mechanism |
|---|---|------------------|---------------------------|
| Drinking Water Source Protection Program (DWSP) | 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 | Provincial |
| DWSP Risk Management Official | Carrying out Part IV duties of the Clean Water Act on behalf of municipalities through service agreements. | 2 | Self-Generated |

Natural Heritage

| Program/Service | Description | Category (1,2,3) | Current Funding mechanism |
|--|--|------------------|----------------------------------|
| Natural Heritage Services | Field based monitoring of terrestrial flora and fauna including bird monitoring, invasive species and species at risk. | 3 | Municipal Levy Self-Generated |
| Wetland & Natural Heritage Evaluations | Complete wetland evaluations and natural heritage evaluations of NVCA properties. | 1 | Municipal Levy |
| Wetland Regulation Mapping | Maintain and update NVCA wetland regulation mapping. | 1 | Municipal Levy |

Conservation Authority Lands and Conservation Areas

| Program/Service | Description | Category (1,2,3) | Current Funding mechanism |
|--|---|------------------|----------------------------------|
| Section 29 Minister's regulation for Conservation Areas | Undertake Conservation Areas regulations enforcement and compliance initiatives within Conservation Areas to prevent unlawful activity and protect the Authority from exposure to liability under the Occupiers' Liability Act. | 1 | Municipal Levy |
| NVCA forests and management areas (not Conservation Areas) | Management and maintenance of CA-owned lands. Includes forest management, signage, gates, passive recreation, stewardship/ restoration, carrying costs such as taxes and insurance. | 1 | Municipal Levy |
| Conservation Areas | Management and maintenance of 11 conservation areas and over 30km of recreational trails. Includes passive recreation, risk management program, hazard tree management, gates, fencing, signage, brochures, communications, pedestrian bridges, trails, parking lots, picnic tables, pavilions, roadways, stewardship/ restoration, carrying costs such as taxes and insurance. | 1 | Municipal Levy Self-Generated |
| Conservation Area Major Maintenance | Major maintenance and capital improvements to support public access, safety, and environmental protection such as parking lots, pedestrian bridges, boardwalks, trails. | 1 | Municipal Levy |
| Land acquisition | Strategic acquisition of environmentally significant properties as per NVCA's 2020 Land Securement Strategy. | 3 | Municipal Levy |
| Inventory of Conservation Authority lands | The land inventory includes the following information: location as well as date, method and purpose of acquisition, land use. One-time project with updates as properties are acquired or disposed of and details of agreement and/or tax programs (if applicable) (MFTIP, CLTIP). | 1 | Municipal Levy |

| Program/Service | Description | Category (1,2,3) | Current Funding mechanism |
|--|--|-------------------------|----------------------------------|
| Strategy for CA owned or controlled lands and management plans | This strategy includes the management and use of CA-owned or controlled properties including guiding principles, objectives, land use, natural heritage, classifications of lands, mapping, identification of programs and services on the lands, public consultation, publish on website. One-Year Project. | 1 | Municipal Levy |
| Land Acquisition and Disposition Strategy | A policy to guide the acquisition and disposition of land in order to fulfill the objects of the authority. Current Land Securement Strategy runs from 2020 to 2030. | 1 | Municipal Levy |
| Events | Includes weddings, corporate events, private gatherings, etc. | 3 | Municipal Levy Self-Generated |
| Festivals | Includes public events (e.g. Spring Tonic, Festival at Fort Willow, etc.) | 3 | Municipal Levy Self-Generated |

Stewardship Services and Environmental Restoration

| Program/Service and Subservices | Description | Category (1,2,3) | Current Funding mechanism |
|---|--|-------------------------|----------------------------------|
| Private Land Stewardship Program | <p>Work with property owners and environmental groups to mitigate flood and erosion hazards, protect water quality, restore floodplains, reduce nutrient contamination, restore wetlands, manage non-native invasive species, protect groundwater, improve aquatic species at risk habitat and promote climate change mitigation and adaptation.</p> <p>Coordinate targeted river restoration and fish habitat improvement initiatives using information generated by the Watershed Science department to identify priority sites and restoration techniques. Apply for and manage external funding, promote private land stewardship, provide technical advice and design support and funding assistance.</p> | 3 | Municipal Levy Self-Generated |
| CA owned Land Stewardship Program | Work to mitigate flood and erosion hazards, protect water quality, restore floodplains, reduce nutrient contamination, restore wetlands, manage non-native invasive species, protect groundwater, improve aquatic species at risk habitat and promote climate change mitigation and adaptation on CA owned lands. Coordinate targeted river restoration and fish habitat improvement initiatives using information generated by the Watershed Science department to identify priority sites and restoration techniques. | 1 | Municipal Levy Self-Generated |
| Tree Planting and Forestry Services on Private Land | Forestry services including planting plan development, site preparation, tree and shrub planting, and survival assessments. Private woodlot stewardship, technical assistance, link to funding programs to maintain form and function of watershed forest cover. | 3 | Municipal Levy Self-Generated |

Conservation Education and Community Outreach

| Program/Service and Subservices | Description | Category (1,2,3) | Current Funding mechanism |
|---------------------------------|---|------------------|----------------------------------|
| School programs | Curriculum-based education programs for pre-school, elementary and secondary students. These programs focus on local watersheds, ecosystems, and environmental issues. Community environmental educational opportunities such as climate change that is suitable for all ages and abilities. | 3 | Self-Generated Municipal Levy |
| Community programs and events | Education, day camp, outreach programs and community events to assist in achieving the objectives of the conservation authority. Some of these programs are open to people of all ages and abilities. | 3 | Self-Generated Municipal Levy |

Support Services

| Program/Service | Description | Category (1,2,3) | Current Funding mechanism |
|---------------------------------------|--|------------------|----------------------------------|
| Corporate Services | Administrative, human resources, financial, 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 the health and safety program, overseeing programs and policies. | 1 | Municipal Levy Self-Generated |
| Financial Services | Annual budget, accounts payable and receivable, payroll, financial analysis, financial audit, administration of reserves and investments, financial reports for funding agencies, preparing and submitting reports to CRA, benefits program administration. | 1 | Municipal Levy Self-Generated |
| Legal Expenses | Costs related to agreements/contracts, administrative by-law updates | 1 | Municipal Levy |
| Governance | Supporting CA Boards, Advisory Committees, Office of CAO and Senior Management. | 1 | Municipal Levy |
| Communications and Outreach | Informing public of NVCA programs and projects through media, open houses, public meetings, website administration, responding to inquiries from the public, crisis communications. | 1 | Municipal Levy |
| Administration Buildings | Office buildings and workshop used to support NVCA staff, programs and services. Includes utilities, routine and major maintenance, property taxes. | 1 | Municipal Levy |
| Information Technology Management/GIS | Data management, records retention. Development and use of systems to collect and store data and to provide spatial geographical representations of data. | 1 | Municipal Levy Self-Generated |

| Program/Service | Description | Category (1,2,3) | Current Funding mechanism |
|------------------------|---|-----------------------------|--|
| Vehicle and Equipment | A fleet of vehicles and equipment to support the work of NVCA, including capital purchases, fuel, licenses, repairs and maintenance. Programs and projects are charged for the use of the vehicles and equipment. | 1 | Municipal Levy |
| All Program areas | Asset Management Services | 1 | Municipal Levy |

Appendix B: Summary of Studies

Below is a list of existing technical studies, monitoring programs and other information on the natural resources in the Nottawasaga Watershed. Please contact NVCA to access these documents.

- NVCA Integrated Watershed Management Plan – Characterization Report
- NVCA Integrated Watershed Management Plan – Watershed Issues & Strategy Development
- 2023 Watershed Health Checks
- 2023 Watershed Report Cards
- Watershed Monitoring Strategy – Surface Water Discipline
- Land Securement Strategy
- 60 years of forest change in the Minesing Wetlands (1953-2013)
- Hydrogeochemical characterization of the eastern Minesing Wetlands (2014 report)
- Minesing Wetlands Flora and Fauna Biological Inventory (2007 report)
- Watershed Plan
- Watershed Plan Strategic Review 2006
- Black Ash Creek Subwatershed Plan
- Black Ash Creek Subwatershed Plan Figures 1-6
- Black Ash Creek Appendices
- Innisfil Creek Subwatershed Plan
- Innisfil Creek Appendices A-C
- Innisfil Creek Appendices D
- Innisfil Creek Appendices G
- Innisfil Creek Subwatershed Maps 1-6
- Innisfil Creek Subwatershed Maps 7-11
- Willow Creek Subwatershed Plan
- Willow Creek Subwatershed Maps 1-4
- Willow Creek Subwatershed Maps 5-8
- Willow Creek Subwatershed Plan Appendices
- Watershed Hydrology (MacLaren Study) – Report Text
- Watershed Hydrology (MacLaren Study) – Basin Figure
- Watershed Hydrology (MacLaren Study) – Appendix Design Flow



8195 8th Line
Utopia ON L0M 1T0
705-424-1479 | admin@nvca.on.ca
nvca.on.ca

