

Land Conservation & Resource Strategy



DRAFT v2 for Public Comment

10/15/2024

Executive Summary

This Strategy was prepared to meet the requirements of Sections 10 and 12(4) of *Ontario Regulation 686/21*, which requires Mississippi Valley Conservation Authority (MVCA) to document its guiding principles, the objectives of its programs and services, gaps in those programs, risks and mitigating measures, and to prepare policies regarding the acquisition and disposal of land (where acquisition includes the leasing and licencing of land from others). The regulation also requires the Strategy to list background studies, and to clearly distinguish how MVCA assets and programs and services integrate with those provided by other organizations in its jurisdiction.

Background

Several projects were undertaken over the period 2019-2024 to enable preparation of this Strategy including completion of the *Mississippi River Watershed Plan*, reviews of the Monitoring & Reporting and the Stewardship programs, ongoing review of the Education program, inventory and analysis of MVCA assets and preparation of the Land Inventory, preparation of the business case for Category 2 and 3 programs and services, and evaluation of the gaps and risks associated with each program. As well, MVCA engaged a variety of community partners to confirm the extent to which they provide similar programs and services to allow MVCA to define its niche.

Context

The follow key variables and trends influenced the drafting of this Strategy:

- Many MVCA assets are aged and need renewal or replacement and projected costs are significant;
- All levels of government are facing financial constraints, in particular our municipal partners;
- Large areas of our jurisdiction are subject to natural hazards;
- Growth can exacerbate natural hazards and impact natural heritage resources;
- Climate change is affecting the risk of natural hazards and impacting natural heritage resources;
- Climate change is also affecting how we design and operate water control infrastructure;
- The nature and extent of wetlands within the lower watershed are at risk;
- MVCA shares responsibility for natural heritage resources protection and management;
- MVCA has seen significant changes in its regulatory powers and responsibilities; and
- There are limits on the cost-recovery mechanisms of conservation authorities.

Vision

MVCA's programs and services review and drafting of the Strategy were based upon this vision:

Watershed stakeholders working together to foster a sustainable landscape where ecological integrity is maintained, natural hazards are mitigated, and nature can be enjoyed and appreciated by all.

Program Goals

MVCA delivers ten programs to the municipalities and residents within its jurisdiction. The following goals are proposed for each program.

Flood Forecasting & Warning

- Watershed users receive timely and accurate information and warnings regarding watershed conditions and how to protect themselves and their property.

Regulatory Mapping & Program Administration

- Development does not occur in regulated areas unless properly assessed and permitted.
- MVCA is considered to be a fair and responsive regulator.

Assets & Operations

- Water management activities consistently mitigate the impacts of natural hazards.
- MVCA is a trusted asset manager and operator of the Mississippi River system.

Land Management

- The natural resources of the Mississippi, Carp, and Ottawa river watersheds are managed sustainably for the enjoyment and welfare of current and future generations.
- Land ownership and management are used as tools for reconciliation with First Nations.

Conservation Areas

- Conservation areas provide opportunities for walking, hiking, and solitude in a natural setting and contribute to the quality of life and sustainability of the watershed.
- Conservation areas are accessible to all.

Conservation Preserves

- Eliminate risk of future losses in areas at high risk of natural hazards.
- No net loss of ecological and hydrological services in the watershed.

Source Water Protection & Monitoring

- MVCA demonstrates value for money in delivering system monitoring and resource management services to the province and municipalities.

Education and Outreach

- Watershed residents and users:
 - a. understand how the watershed functions and their role in it.
 - b. make informed decisions that mitigate risks and support resource sustainability.

- MVCA is a partner of choice for education and community engagement.

Stewardship

- The protection of water quality, wetland cover, forest cover, and other environmental features by working with watershed landowners to make meaningful improvements to their properties and practices.

Visitor Services (at Mill of Kintail)

- Sustainable management of the property and buildings for current and future generations.
- A top-10 destination in Lanark County.

Program Risks

The following is a summary of key risks that could impact the ability of MVCA to achieve the goals and objectives of this Strategy:

Flood Forecasting & Warning

- Large areas of the Mississippi watershed have yet to be studied and modeled, which limits forecast accuracy and the ability to optimize system operations.
- Federal and provincial grant programs are inconsistent in focus, value, and timing.
- Communities need to be regularly reminded of natural hazards and how to mitigate them.

Regulatory Mapping & Program Administration

- MVCA's regulatory responsibilities are unknown or misunderstood by many.
- Regulations governing floodplain mapping and regulatory limits have not been updated to consider the aggregated impacts of watershed development and climate change.

Assets & Operations

- Funding of Ontario's Water & Erosion Control Infrastructure (WECI) grant program has not increased in ~20 years and provides insufficient time to tender and implement projects.
- There is an affordability gap that limits the building of capital reserves to deliver more than the current 10-year capital plan, and only with the support of long-term loans.
- There is insufficient public understanding of how the watershed functions and the limits of watershed infrastructure and operations.

Land Management

- Most land transfers to MVCA did not include legal surveys registered on title.
- Some property boundaries provided by the province are inconsistent with MVCA's records.

Conservation Areas

- None of the conservation areas have a verified accessible trail per the *AODA*.
- There is no accessible toilet serving the Education Centre, Picnic Shelter and Cloister at the Mill of Kintail; and the only other property with accessible toilets is Morris Island CA.
- Unmet demand for hiking and walking trails and campsites is evident across the jurisdiction.
- Prohibitive cost of land acquisition to establish new conservation areas.

Conservation Preserves

- Buy-out programs do not exist for primary-residence dwellings located within the floodplain.
- Affordable sites are unavailable in the lower watershed to accommodate offsetting and support ecological restoration.

Source Water Protection & Monitoring

- Most municipalities in the watershed do not receive support in protecting water supplies under the *Clean Water Act*. CA regulations prevent use of Category 1 revenues to investigate and support municipalities in protecting water supplies at a watershed level.
- There is a lack of awareness of the cumulative and downstream effect of leaking septic facilities on drinking water quality, the health of the river system, and recreational tourism.

Category 3 Programs

Funding of the Education & Outreach, Stewardship, and Visitor Service programs are all inherently at risk due to variable grant availability and success, and the affordability limits of both program users and funders.

Policy Direction

This Strategy contains a variety of policies to direct how MVCA will manage its assets and program delivery. The following is a selection of key policies, with a focus on land management and financial matters:

Flood Forecasting & Warning

- A System Surveillance Strategy will be developed to guide the design and management of the monitoring network, update facility benchmark information, and prioritize future investments.

Regulatory Mapping & Program Administration

- A Hazard Mapping Strategy should be prepared to inform short and mid-term studies, confirm mapping priorities, and support annual regulatory reporting requirements.
- Planning and permit application fees should cost recover a minimum of 90% of development review and associated administrative costs.

Assets & Operations

- The *10-year Capital Plan* will be updated annually, and the *Schedule of Municipal Capital Levy Increases* updated at least once every four years.
- Where the primary purpose of the structure is to maintain recreational water levels, land acquisition and other capital costs should not be borne by MVCA; administrative costs such as legal fees and taxes and operating costs may be funded using revenues obtained via the Municipal Levy.

Land & Resource Conservation

- A plan will be prepared and implemented to address gaps in legal surveys and legal titles, including easements, and to register such in the Land Registry or Land Titles office.
- MVCA shall not enter into Conservation Easement agreements except as a condition of a Board-approved stewardship program, with the easement not to exceed 10-years.
- MVCA may enter into Partial Takings or Direct Conveyance where deemed by the Board of Directors to be in the interest of the Authority.
- MVCA may enter into service agreements to deliver conservation land management services to other public and conservation organizations as follows:
 - a. Municipal: via the Programs & Services Agreement and a Special Levy.
 - b. Other Public or Conservation Organization: via Stewardship Agreement, Forest Management Agreement, or other contract that shall not exceed 5-years.

Conservation Areas

- The Mill of Kintail Museum is a community asset and cultural attraction. MVCA will operate the museum while seeking another organization to assume management of collections.
- Acquisition of lands (including lease and license agreements) from the province and local municipalities and counties will be prioritized over land donations for the establishment of new conservation areas.
- Funding Operating:
 - a. Education & Outreach Program, which is a combination of Category 1 and 3 programming, via the Municipal Operating Levy and Other Sources with a target revenue ratio of 15:85 on an annualized basis. (Some program elements will be profit-making while other elements may be delivered at a loss).
 - b. Visitor Services: via the Municipal Operating Levy, user fees, and grants and donations with a target revenue ratio of 20:50:30 on an annualized basis.
- Funding of capital works of existing Category 3 structures will be in accordance with municipal Programs & Services Agreements.
- Land acquisitions will require Board approval and a business case, market valuation, title search, legal survey, completion of an Environmental Site Assessment (ESA), and grant approvals prior to execution.

Conservation Preserves

- MVCA will continue to manage existing conservation preserves that provide flood and erosion control or natural heritage conservation located at:
 - a. Cedardale on the Clyde River;
 - b. Glen Cairn on the Carp River; and
 - c. Appleton on the Mississippi River.
- MVCA should work with local municipalities to identify and assess existing publicly owned land for the purpose of providing suitable hydrological and ecological offsetting opportunities.
- MVCA should explore opportunities under the Canadian GHG Offset Credit System and other mechanisms to secure revenues to protect or enhance natural carbon sinks within the watershed.
- The acquisition of Conservation Preserves for Stewardship, Wetland Offsetting or Carbon Offsetting purposes will be done on a 100% cost-recovery basis.

Source Water Protection & Monitoring

- Provincial monitoring programs will serve as the platform upon which local monitoring objectives are met in accordance with Category 2 Programs & Services Agreements.

Category 3 Programs

In summary, Category 3 programs (Education & Outreach, Stewardship, and Visitor Services/Mill of Kintail CA) are to have an up to date plan that is delivered in accordance with Category 3 PSAs.

The Strategy expands on all of these matters, and includes program objectives, measures for mitigating risks, and appendices that illustrate how MVCA works with partners to minimize overlap and gaps in the delivery of programs and services within our jurisdiction.

Contents

Executive Summary	1
Purpose and Background	9
Mississippi Valley Conservation Authority (MVCA).....	11
Vision	13
1. A Shared Understanding	14
2. Context	15
3. Programs & Services.....	27
3.1. Hazard Management.....	28
Flood Forecasting & Warning (FFW)	31
Regulatory Mapping & Program Administration	33
Assets & Operations	35
3.2. Land & Resource Conservation	37
General	39
Conservation Areas	41
Conservation Preserves.....	47
Water & Erosion Control Infrastructure Land.....	49
Administrative Land	50
3.3. Source Water Protection.....	51
3.4. Category 3 Programs & Services	54
Education & Outreach.....	55
Stewardship.....	56
Visitor Services	57
Appendices.....	59
Appendix 1: Watershed Partners	60
Appendix 2: Registry of Hazard Events	63
Appendix 3: Status of Watershed and Subwatershed Plans, 2024.....	70
Appendix 4: Inventory of MVCA Programs and Services & Funding, 2024 Budget.....	79
Operating Summary: Category 1.....	79

Operating Summary: Category 2 & 380

Appendix 5: MVCA Conservation Areas – Summary Review82

 Mill of Kintail Conservation Area (MOK)82

 Morris Island Conservation Area.....85

 Purdon Conservation Area88

 Palmerston-Canonto Conservation Area91

 Carp River Conservation Area94

 K&P Trail Conservation Area97

Purpose and Background

This document is **DRAFT** and has been released for your review and comment.

Send your comments to info@mvc.on.ca by **November 22, 2024**.



The *MVCA Land Conservation & Resource Strategy* documents the Vision, Guiding Principles, Objectives and the Programs & Services Policies of Mississippi Valley Conservation Authority. It is intended to guide decisions by staff and the Board of Directors; and provide transparency to the work of the Authority. It is also designed to meet mandatory content requirements of O. Reg. 686/21 of a Watershed-based Resource Management Strategy and Conservation Area Strategy.

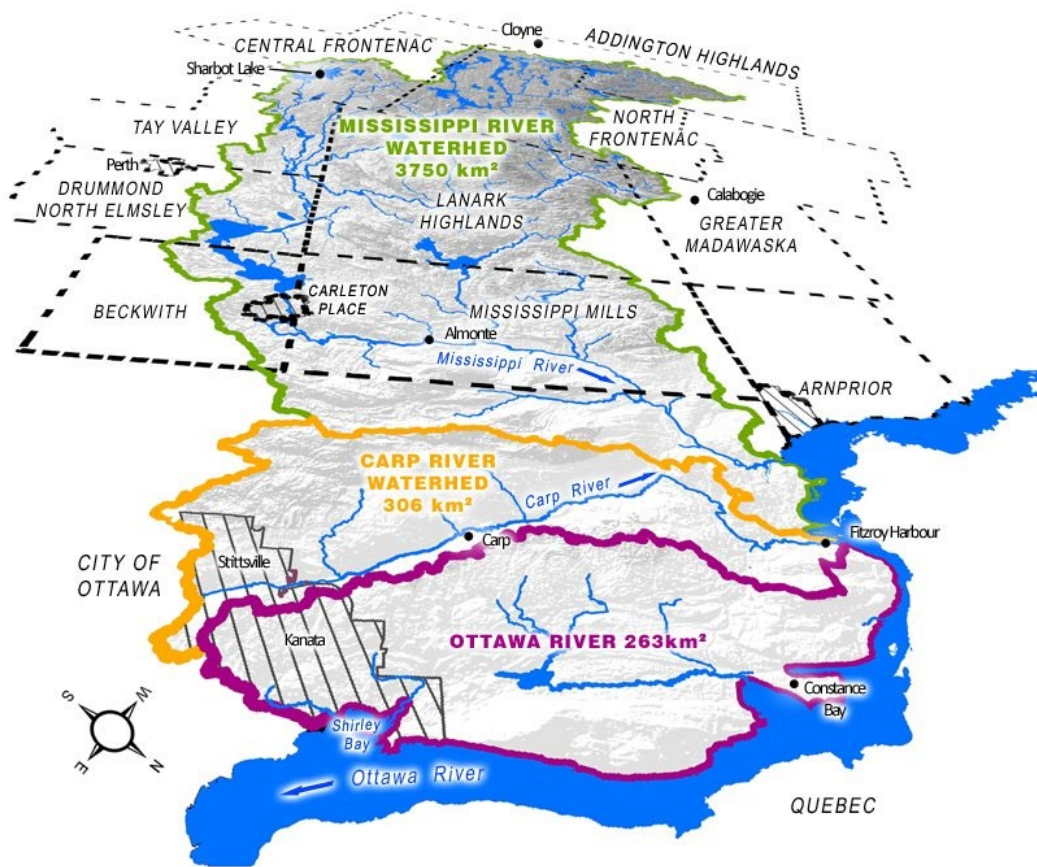
The *Land Conservation & Resource Strategy* is based upon the findings and recommendations of several studies, surveys, and reports completed since amendment of the *Conservation Authorities Act* in 2019, including:

- Implementation Report under the *Mississippi River Water Management Plan*, 2019
- Dam Safety Reviews, Condition Assessment Reports, and updated Hazard Classification studies carried out at one or more of MVCA's 12 water and erosion control structures
- *Backgrounders 1-4 on MVCA's Physical Environment, People and Property, Natural Systems, and Asset Management*, 2019-2020
- *Discussion Papers* focused on: *Agriculture, Forestry, Growth & Development, Municipal Infrastructure, Natural Systems, Tourism, Water Management and Waterfronts*, 2021
- *Mississippi River Watershed Plan*, 2021
- *Corporate Strategic Plan and Implementation Plan*, 2021
- *Carp River Conservation Area Background Report*, 2023
- *Carp Action Plan*, Prepared by MVCA, May 2015
- *Upper Poole Creek Restoration Plan*, Prepared by MVCA, December 2019
- *Upper Poole Creek Subwatershed Study*, Marshall, Macklin, Monaghan, 2000
- *Land Conservation Strategy: Results of Consultation*, 2024
- *2024 Recreational Survey Results*, 2024
- *Local Portages: Their History, Use, and Potential*, 2024
- *Stewardship Plan*, 2021 and 2021-2023 pilot
- *Natural Systems Monitoring & Reporting: Program Review and Update*, 2023
- *Review of Natural Heritage Values*, 2022-24
- *Municipal Category 2 & 3 Business Case*, 2023
- *Municipal Program and Services Agreements*, January 1, 2024
- *Review of Regional Outdoor Recreational Facilities*, 2024
- *Current State Report*, 2024
- *Discussion Paper: Land Conservation Strategy*, 2024
- *Review of the Education Program*, 2024
- *Registry of Hazardous Events*, 2024
- *Technical Memo on History of Flood, Drought, and Erosion Events*, 2024
- *Technical Memo on Portage Routes within MVCA's Jurisdiction*, 2024
- *Implementation of an Indigenous Engagement Plan*, 2020-2022
- *Implementation of public engagement plans that included briefings of municipal and county councils, public notices, virtual information sessions, social media campaigns, and outreach to various stakeholders, and online surveys over the period 2019-2024.*

Mississippi Valley Conservation Authority (MVCA)



Mississippi Valley Conservation Authority
 is a public agency established by the Province of Ontario in 1968.
 Our purpose is to “further the conservation, restoration, development
 and management of natural resources” in the Mississippi and Carp
 watersheds, and portions of the Ottawa River watershed. Our
 programs and services are delivered in accordance with the
[Conservation Authorities Act, RSO 1990 \(CA Act\)](#).



MVCA is governed by a Board of Directors consisting of representatives from the eleven municipalities we serve, and a provincially appointed Agricultural Representative. Municipalities fund MVCA based upon their assessed property value within the watershed, with the City of Ottawa the largest contributor. MVCA charges fees for facility rentals, permits, and other services; and applies for grants from upper tier governments and charitable organizations to support program delivery.¹

¹ Visit www.mvc.on.ca for more information on Mississippi Valley Conservation Authority.

Vision

Watershed stakeholders working together to foster a sustainable landscape where ecological integrity is maintained, natural hazards are mitigated, and nature can be enjoyed and appreciated by all.



I. A Shared Understanding

This document is founded on the following guiding principles:

- 1) **Watersheds are a shared resource.** The management and use of natural resources in one part of the watershed impacts others in terms of flooding and erosion, drought management, the health and abundance of flora and fauna, and water quality.
- 2) **Climate change is real.** We must adapt, and mitigate it where possible.
- 3) **Collaboration is necessary** to ensure the wise management of natural resources and to mitigate and adapt to the impacts of climate change.
- 4) **Coordination is necessary** to ensure that priorities are addressed, avoid duplication of effort, and ensure the wise use of technical expertise and financial resources.
- 5) **Informed decision-making requires quality information, business processes, and governance.** The collection, analysis, and sharing of information and effective community engagement are fundamental to hazard management and sustainable natural resource management.
- 6) **Decisions taken today should be sustainable for seven generations.** This ancient Haudenosaunee (Iroquois) philosophy says that the decisions we make today should result in a sustainable world seven generations into the future.² Where good data does not exist, a cautionary approach should be taken.
- 7) **MVCA has regulatory obligations.** The Province of Ontario requires MVCA to administer a permitting system to protect people and property from natural hazards, to act on its behalf in the review of planning applications, to support municipalities in the protection of drinking water supplies and drought response, and to provide flood forecasting and warning to the communities it serves.
- 8) **MVCA facilities provide local economic benefits.** Facilities managed by MVCA help to protect the community from natural hazards and attract people to the region. Investment in these assets, programs, and services benefits local municipalities and residents.
- 9) **MVCA is a community partner.** MVCA supports achievement of local land stewardship, and community recreational and educational needs by managing lands for conservation and delivering community-based programs and services in partnership with others.
- 10) **MVCA is accountable to the communities it serves.** Decisions regarding the scope of MVCA programs and services and the methods used to fund them must be done in consultation with member municipalities, First Nations, and benefiting communities.

MVCA works with and depends upon many other organizations. See [Appendix 1](#) for details.

² Source: <https://www.ictinc.ca> "What is the Seventh Generation Principle?" accessed September 10, 2024.

2. Context

This section describes key conditions and influences on the landscape and the scope of MVCA’s assets and jurisdiction.



Natural Hazards

When European settlement began west of Ottawa in the early 1800s, surveyors and settlers made observations about the land, forests, and rivers. Their comments³ reflect the natural landscape of the watershed and the conditions under which we continue to use and develop land.

- 1817 re: Beckwith – clay, sand, gravel and rock; re: Drummond – swampy
- 1820 re: Lavant – rocky hills terminate in swamp and marsh, but grow good ash and cedar
- 1822 re: Fitzroy – more good land than poor; re: Mississippi and Clyde rivers – provide ideal mill sites; re: Tolbolton – very fine land
- 1857 re: Mississippi River – drownings and dam failure at Cross Lake⁴ due to flooding
- 1864 re: Addington and Frontenac Roads – spots of arable soil are not numerous
- 1870 re: Mississippi River – drownings and bridges destroyed near Lanark and Almonte by flooding

Major **flooding** continues to occur at increasing frequency, with flood damage closely aligned to the degree of development within flood plains:

- Mississippi River: 1929, 1960, 1963, 1998, 2002, 2014, 2019
- Clyde River: 1947, 1960, 1998, 2014, 2019
- Ottawa River: 1974, 1975, 1976, 2017, 2019
- Carp River: 2014, 2019

Erosion associated with the natural dynamics of riverine systems, soil and bedrock conditions, and land management practices are concentrated along Cody Creek, Indian Creek and the lower portions of both the Carp River and the Mississippi River.

Droughts can have a dramatic effect on the watershed and were most recently experienced in 1998-1999, 2011-2012, 2016 and 2018. Such events can deplete groundwater resources, leave some tributaries dry such as Constance Creek, Shirley's Brook, can compromise the quantity and quality of water available for the Town of Carleton Place, and impact irrigation systems of farmers and other local businesses.

A *Registry of Hazard Events* can be found in [Appendix 2](#).

MVCA has prepared floodplain mapping for the Ottawa River, the Carp River and its tributaries, the Indian River, the Clyde River downstream of Joes Lake, the Constance Creek and its tributaries, and the Mississippi River downstream of Innisville and at Dalhousie Lake. Other areas are unstudied and further work is needed to delineate areas of unstable slopes and soils. In most areas of the watershed, work proceeds as grants becomes available from the federal government. The City of Ottawa has supported floodplain and erosion mapping work in its jurisdiction since 2012. MVCA recently entered into a third agreement with the City to prepare flood and erosion mapping.

³ [MNR. MVC Report History, 1970](#); and [MNR. MVC Report Volume 1, 1970](#).

⁴ Now known as Crotch Lake.

Assets & Operations

MVCA owns and operates:

- four conservation areas,
- twelve water control structures,
- a variety of properties that were acquired to mitigate flood and erosion losses,
- an extensive monitoring network to collect and transmit weather, soil, and riverine and lake conditions to fulfill its flood forecasting and warning responsibilities and to inform system operations, planning and design; and
- its headquarters on Hwy. #7 that houses offices, a garage, laboratories, and a work yard.

The replacement value of MVCA assets is in the order of \$75-100 million.⁵ Most water control structures are in fair to good condition but require ongoing maintenance and upgrades to meet current provincial and federal standards. Significant work was carried out at Shabomeka Lake Dam in 2021-22, major public safety improvements were made at Carleton Place Dam in 2023, improvements at Lanark Dam are planned for 2025, and the replacement of Kashwakamak Lake Dam is planned for 2026-27. Most conservation area assets are in good condition, with notable exceptions along the K&P Trail due to funding cuts shortly after its acquisition.

MVCA also:

- has two conservation areas on properties owned by the City of Ottawa,
- operates six water control structures on behalf of the Ministry of Natural Resources,
- operates two water control structures on behalf of Ontario Power Generation (OPG),
- manages county forests on behalf of the County of Lanark,
- has a Stewardship Agreement with Ontario Heritage Trust to manage a portion of the Appleton Wetland; and
- maintains the forest walk at Roy Brown Park on behalf of the Town of Carleton Place.

MVCA delivers several programs under delegated authority from the province including:

- Provincial groundwater monitoring,
- Provincial surface water monitoring,
- Permitting under Section 28 of the *Conservation Authorities Act*; and
- Planning development reviews on behalf of the Ministry of Natural Resources.

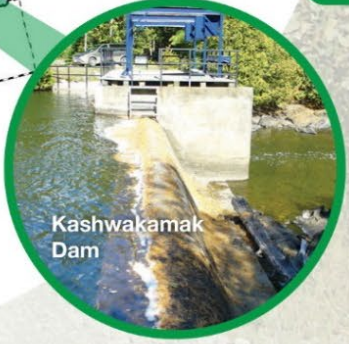
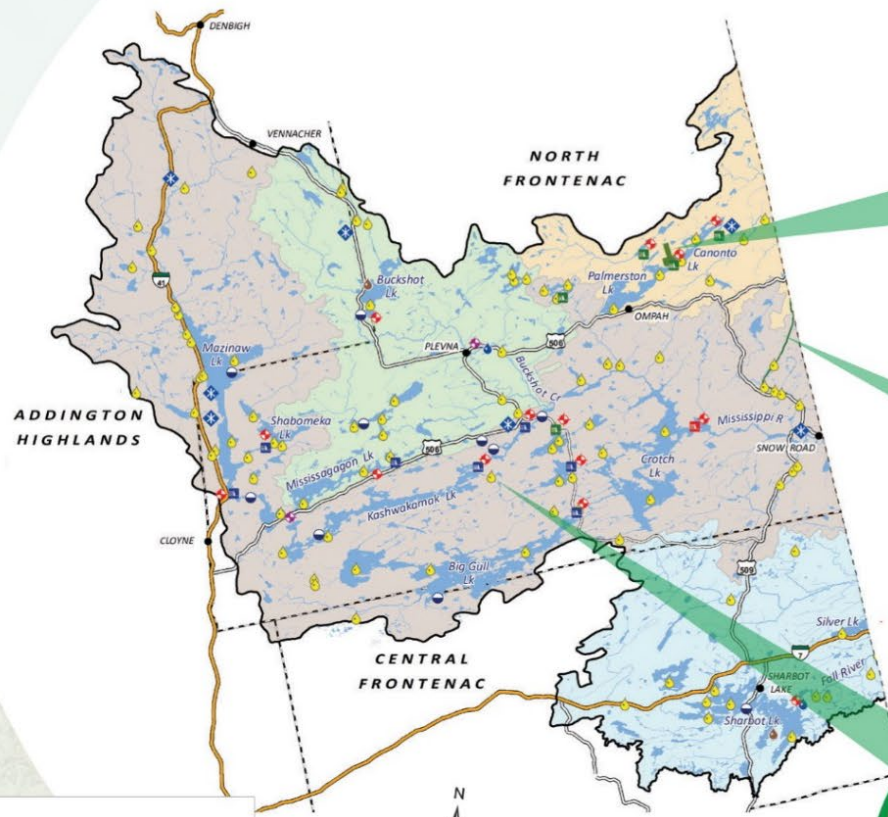
Lastly, MVCA provides stewardship and education programming, and owns and operates the Mill of Kintail Museum that houses exhibits of doctors James Naismith and R. Tait McKenzie. Public concerns around the operation of MVCA facilities have increased over time as the population of the watershed has increased and those affected by riverine environments and the impacts of development have grown; and as funding models have changed that support program delivery. See Figures 1, 2, and 3 that show the location of key assets within the watershed

⁵ High level estimate excludes property value. Heritage structures are irreplaceable, therefore, this estimate assumed like for like floor space built to current standards.

The Upper Watershed

WOODED UPLANDS

The upper watershed has picturesque Canadian Shield and mixed forests that contain deep clear cold water lakes and a network of wetlands. This area is home to cold water fish, turtles, loons, moose and many more sensitive species.



Legend

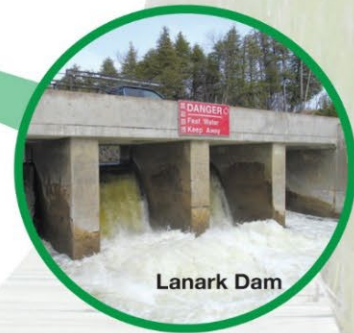
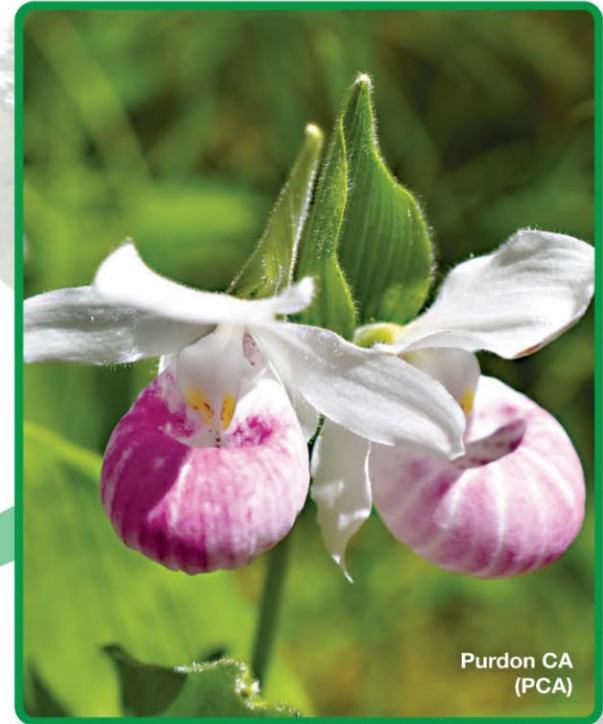
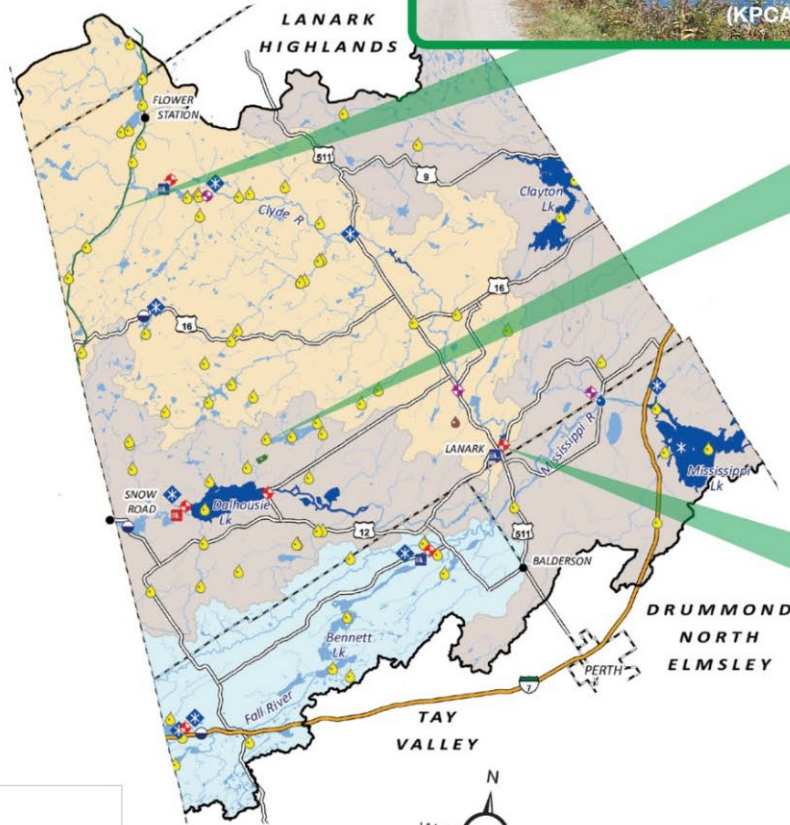
MVCA Dam	MVCA Manual Gauge
MNR Dam	MVCA Monitoring Sites
OPG / Private Hydro Dam	Provincial Ground Water Monitoring Network
MVCA Snow / Ice Monitoring Sites	Provincial Water Quality Monitoring Network
Federal Stream Gauge	
MVCA Automatic Gauge	

Figure 1

The Middle Watershed

TRANSITION ZONE

The Fall River and Clyde River subwatersheds transition from the Canadian Shield to lowland environments. Areas of glacial till provide groundwater springs that supply cold water lakes and creeks. Warm water lakes support sport fishing; and large wetlands provide nesting and resting habitat for migrating waterfowl.



Legend

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|----------------------------------|---|
| MVCA Dam | MVCA Monitoring Sites |
| MNR Dam | Provincial Ground Water Monitoring Network |
| OPG / Private Hydro Dam | Provincial Water Quality Monitoring Network |
| MVCA Snow / Ice Monitoring Sites | Regulatory Flood Plain |
| Federal Stream Gauge | |
| MVCA Automatic Gauge | |
| MVCA Manual Gauge | |

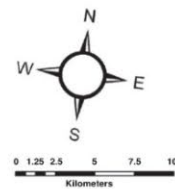
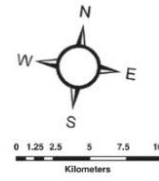
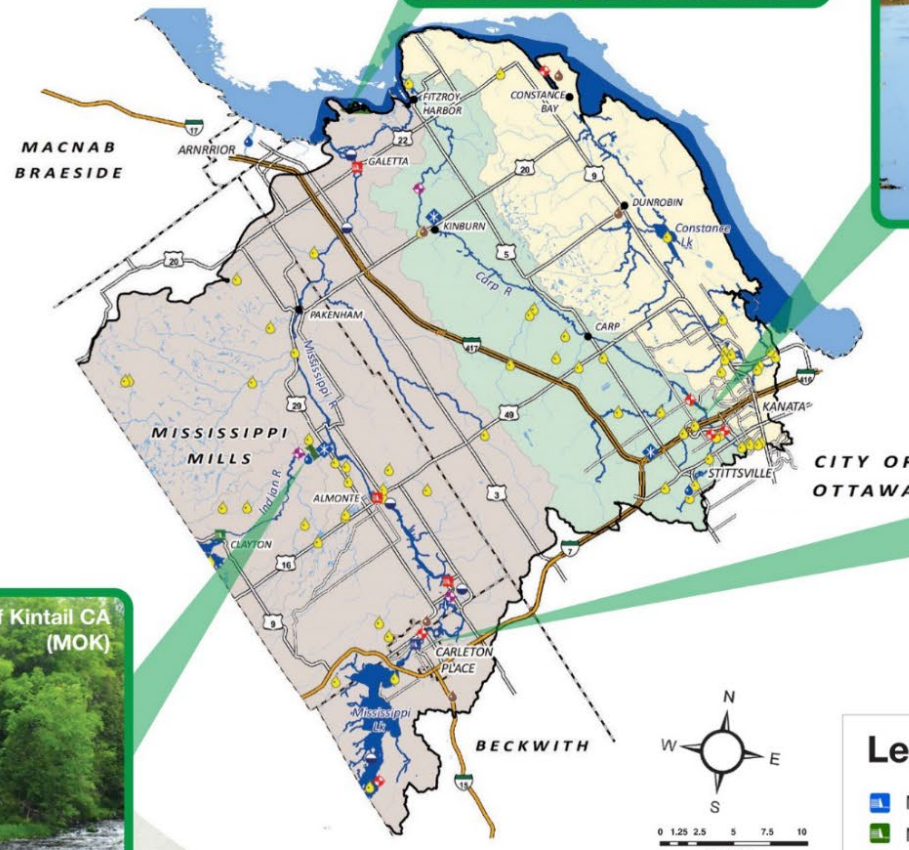


Figure 2

The Lower Watershed

AGRICULTURAL / URBAN

This area is characterized by farmland that is gradually being consolidated, or developed for residential settlement. Remnant wetlands and upland forests provide critical habitat for song birds and amphibians, while also providing base water flow to local creeks and rivers.



Legend			
	MVCA Dam		MVCA Monitoring Sites
	MNR Dam		Provincial Ground Water Monitoring Network
	OPG / Private Hydro Dam		Provincial Water Quality Monitoring Network
	MVCA Snow / Ice Monitoring Sites		Regulatory Flood Plain
	Federal Stream Gauge		
	MVCA Automatic Gauge		
	MVCA Manual Gauge		

Figure 3

Wetlands

“Some of the ecosystem services provided by wetlands include water filtration, flood mitigation, erosion reduction, nutrient cycling, groundwater recharge/discharge...”⁶

MVCA’s jurisdiction is approximately 4,345 km² of which 568 km² or 13% is considered to be wetland (marshes, swamps, bogs, and fens)⁷. Table 1 shows the distribution of wetlands amongst our eleven municipalities and the percentage of wetlands subject to regulation. Regulated wetlands in the watershed can be viewed by visiting our website⁸.

Table 1: Total Wetlands and Percentage Regulated in MVCA’s Jurisdiction

Municipality	Total Wetlands within MVCA (ha.)	% Subject to Regulation
Addington Highlands	3,160	28%
Beckwith	1,860	95%
Carleton Place	30	95%
Central Frontenac	5,455	87%
Drummond North Elmsley	4,040	97%
Greater Madawaska	395	30%
Lanark Highlands	15,730	92%
Ottawa	9,450	95%
Mississippi Mills	3,570	90%
North Frontenac	9,605	60%
Tay Valley	3,485	93%
TOTAL	56,780	-

Conservation authorities were delegated responsibility for regulating the development of wetlands in 2006. MVCA commenced regulation of Provincially Significant Wetlands (PSWs) in 2006, and in 2017 extended regulations to include wetlands “greater than 0.5 ha that are hydraulically connected.”

Since assuming regulatory responsibilities in 2006, the most significant enforcement expenditures have been to prevent the destruction of wetlands in close proximity to urban areas and along highway corridors. Most landowners have no intention of draining and filling their wetlands, but may if the perceived commercial value of the land is great enough.

⁶ Province of Ontario, MNRF. 2017. [A Wetland Conservation Strategy for Ontario 2017-2030](#)

⁷ To learn the differences in wetland types, refer to: <https://www.ontario.ca/page/wetland-conservation>

⁸ <https://camaps.maps.arcgis.com/apps/webappviewer/index.html?id=70831905961e470988262c7a703a56af>

Natural Resource Management

Natural resource management occurs at all levels of government. A key resource management tool used by conservation authorities is the Watershed Plan. The plan identifies key natural resources, their value, and how they should be managed. As well, it identifies existing and projected threats and how they can be mitigated. The following watershed plans have been prepared within MVCA's jurisdiction:

- *Carp River Subwatershed/Watershed Plan, 2004*
 - *Carp Action Plan, May 2015*
- *Upper Poole Creek Subwatershed Plan, 2000*
- *Watts Creek/ Shirley's Brook Subwatershed Plan, 1999*
- *Mississippi River Watershed Plan, 2021*

MVCA conducted a review in 2024 to determine the extent to which these watershed plans had been implemented.⁹ As well, MVCA runs an annual lake monitoring program, and produces a watershed report card every five years that summarizes how the health of natural resources within the watershed is changing over time.¹⁰ As of the 2023, no directional trends had been observed within the watershed. Monitoring results indicate consistently good to excellent grades for surface and ground water quality, and forest and wetland cover. The following are findings from the 2023 Report Card.

- **Water Quality:** parameters have fluctuated higher or lower than thresholds but there are no discernable trends.
 - **Surface Water:**
 - A (Excellent) grade in the west and central areas of our jurisdiction.
 - B (Good) in the lower reaches on the Indian River and the Mississippi River.
 - D (Poor) in the urban and agricultural areas of the Carp River watershed and tributaries of the Ottawa River.
 - **Groundwater:**
 - The Dunrobin site has an F (Poor) grade due to elevated chloride caused by the geologic history of the area rather than due to modern contamination.
- **Forest Cover and Wetland Cover:** Most destruction occurred pre-regulation and changes at the subwatershed level are not statistically significant.
 - **Forest Cover** grades range from A (Excellent) in the west, to a B around Mississippi Lakes, to C grades for the lower Mississippi River, the Carp River, and the Ottawa Tributaries.
 - **Wetland Cover** varies from A grades in the west, The Indian River, and the Ottawa Tributaries, to B grades in the Clyde subwatershed, the lower Mississippi River, and the Carp River.

⁹ Refer to [Appendix 3](#) for detail.

¹⁰ Visit our website to view recent Report Cards and Lake Monitoring reports: <https://mvc.on.ca/reports/>

Growth

When MVCA was established in 1968 the population of the watershed was ~31,600. By 1988, the population had more than doubled to ~80,000.¹¹ As of 2023, the watershed population was just under 264,000¹²—tripling in 40 years, largely due to expansion and extension of highways 417 and 7, and municipal water and sewer systems. Considerable land was drained and filled to enable this development with consequent impacts on natural resources and riverine environments.

Pressures from population growth will continue. From 2018 to 2046, Ottawa is projected to increase by 402,000 persons for a population of almost 1,410,000 persons by 2046.¹³ An estimated 10-15% of that growth will occur within MVCA’s jurisdiction for upwards of 40,000-60,000 people. Similarly, Beckwith Township, Mississippi Mills, and the Town of Carleton Place have seen fantastic growth in recent years. Population projections published by the County of Lanark County in 2018 predict significant growth within the watershed.

Table 2: Historical and Projected Population by Municipality to the Year 2038¹⁴

Municipality	2016 Census	2038 County Council	Increase
Beckwith	7,644	14,262	87%
Carleton Place	10,644	20,964	97%
Drummond North Elmsley	7,773	12,549	61%
Mississippi Mills	13,163	21,122	60%
Lanark Highlands	5,338	7,507	41%
Tay Valley	5,665	7,097	25%

For MVCA, consideration must be given to the potential impact of growth on the following:

- Pressures to build within or adjacent to natural hazards and wetlands and evolving drainage and hydrological conditions;
- Pressures on surface water as a drinking water source and impacts on dam operations;
- Pressures on existing conservation areas with impacts on both natural and built assets; and
- Pressures on natural systems and for MVCA to assist in their protection.

It remains to be seen whether population growth or climate change have the greater impact on local water resources and management. However, it is already clear that population growth is having an impact on the demand for passive recreational space, and that there is continued need to protect natural assets that provide ecological and hydrological services.¹⁵

¹¹ MVCA Annual General Reports for the years 1968 and 1988.

¹² MNR Development and Hazard Policy Branch. *Apportionment Data for 2025*. August 2024.

¹³ <https://ottawa.ca/en/living-ottawa/statistics-and-demographics/growth-projections-ottawa-2018-2046#section-26e79cf6-0a3c-4ab0-92fe-6a0c44150b93>

¹⁴ OPA#8 - Population projections for the County of Lanark and allocations to local municipalities to the year 2038.

¹⁵ Findings of the Recreation Survey and the Land Conservation Survey conducted in Q3 2024.

Climate Change

Studies conducted by MVCA have identified the following risks from the impacts of climate change within our jurisdiction:

- Increased risk of flooding due to more frequent and/or intense rainfall events and extra-tropical storms. These events cause saturation of soils and plants and the inability of natural and manmade systems to uptake and store surplus moisture.
- Increased risk of earlier or multiple spring thaws that could:
 - destabilize winter ice and poses risk to winter recreation activities (ice fishing, skating etc.)
 - increase shoreline erosion/damage
 - prevent achievement of target water levels on lakes that could undermine individual surface water intakes of waterfront properties
- Increased risk of low flow periods and droughts that could undermine:
 - water quality and quantity available to Carleton Place
 - individual surface water intakes of waterfront properties
 - lake levels and recreational tourism
 - groundwater recharge
 - irrigation systems used by farmers and golf courses
- Increased risk of hazardous and nuisance algae blooms due to changes in water temperatures and levels which may increase:
 - risks to water quality
 - risk to boating and swimming activities
- Increased risk of frazil ice formation clogging municipal and private surface water intakes and water control structures.
- Increased risk of forest cover loss due to invasive species. Depending on scope and location this could exacerbate heating effect, reduce shade access, increase wet weather run-off and soil erosion.
- Increased risk of forest fires with potential loss of private and public assets, and increased run-off and risk of localized flooding.

Predictive models developed by MVCA allow for greater extremes in weather, however, floodplain mapping is still required to delineate the floodplain and regulatory setbacks based upon the historical 1:100-year event. MVCA is working with federal and provincial agencies to update regulatory standards to reflect future as opposed to past conditions.

Regulatory Powers & Limitations

MVCA has two main regulatory powers under the *Conservation Authorities Act* to:

- **Restrict land development** in and adjacent to regulated natural hazards, streams and rivers, and wetlands, and to issue permits where safe to do so (Section 28)
- **Appoint officers and enforce** requirements of the *Conservation Authorities Act* (Section 30)

28.1 (1) An authority may issue a permit to a person to engage in an activity specified in the permit that would otherwise be prohibited (if):

- (a) the activity is not likely to affect the control of flooding, erosion, dynamic beaches or unstable soil or bedrock;
- (b) the activity is not likely to create conditions or circumstances that, in the event of a natural hazard, might jeopardize the health or safety of persons or result in the damage or destruction of property; and
- (c) any other requirements that may be prescribed by the regulations (i.e. wetlands)

30.1 An authority may appoint officers...

30.2 (1) An officer...may enter any land situated in the authority's area of jurisdiction...

(2) The power to enter land under subsection (1)...does not authorize the entry into a dwelling or other building situated on the land....

(4) An officer who enters land...may...

1. Inspect any thing that is relevant...
2. Conduct any tests, take any measurements, take any specimens or samples...
3. Ask any questions that are relevant to the inspection to the occupant...

(6) An officer who enters land under this section may be accompanied and assisted by any person with such knowledge, skills or expertise as may be required for the purposes of the inspection.

30.3 (1) An officer may obtain a search warrant under Part VIII of the *Provincial Offences Act* in respect of an offence under this Act.

30.4 (1) An officer appointed under section 30.1 may make an order requiring a person to stop engaging in or not to engage in an activity...

Every conservation authority is required to identify, map and develop policies to guide permitting activities based upon local conditions and risks. Permit decisions may be appealed to the Regulations Committee of MVCA's Board of Directors. Ministerial Zoning Orders (MZOs) can be used by the province to direct conservation authorities on permitting matters where a development is deemed to be of provincial interest.

Financial Limitations

MVCA is primarily funded by municipalities, then via grants and contributions, and lastly by user fees and interest earned. The 2024 Budget forecasted that municipal levies would cover approximately 69% of the annual operating budget and 50% of the capital budget. MVCA must respect the financial constraints facing its municipal funders in developing and implementing programs and services.

This is achieved, in part, through recent provincial regulations that divide conservation authority programs and services into three categories:¹⁶

Category 1: Mandatory programs and services, e.g. dam operations, hazard mapping and regulatory services, provincial water quality monitoring, commenting on planning applications on behalf of the province.

Category 2: Municipal programs and services, e.g. septic approvals/inspections, natural systems monitoring and planning.

Category 3: Programs and services that further the purposes of the Act, e.g. lake and property stewardship programs, citizen science and education programs.

Municipalities are only required to financially support Category 1 programs and services. This is done via an annual Municipal Levy.

If a municipality wants MVCA to deliver a service on its behalf (Category 2), or to contribute to a program that benefit its residents (Category 3), it can do so either through a fee-for-service contract, or a Programs & Services Agreement (PSA).

All eleven municipalities in the watershed agreed to support the following programs for the period January 1, 2024 to December 31, 2028, and signed PSAs with MVCA:

- Category 2: Natural System Monitoring and Watershed Planning
- Category 3: Stewardship Program, Education Program, and Visitor Services at the Mill of Kintail

The 5-year PSAs prescribe that no greater than 14% of MVCA's Operating Levy and 2% of the annual Capital Levy be allocated towards the delivery of these programs. Some municipalities opted to also enter into individual contracts with MVCA to deliver programs in their specific jurisdiction.

Within each program there is a need to optimize resource use and to focus on achieving corporate objectives. This Land Conservation & Resource Strategy is designed to document program objectives, current gaps and risks, and policies governing future actions so that limited funds can be targeted to address matters of greatest value to MVCA and the communities it serves.

¹⁶ Refer to [O.Reg. 402/22](#)

3. Programs & Services

Mississippi Valley Conservation Authority manages properties and facilities that serve multiple generations. The programs and services we deliver must consider the short and long-term requirements of the assets and the communities we serve.

This section of the report:

- **outlines current legislative and regulatory requirements,**
- **set goals and program objectives,**
- **identifies service delivery gaps and risks,**
- **lists actions to mitigate gaps and risk, and**
- **provides policies to guide short and mid-range planning and service delivery.**



3.1. Hazard Management



Hazard Management

Mandate: *Programs and services related to the risk of natural hazards*

Section 21.1 of *Conservation Authorities Act*.

Mandatory Programs & Services per O. Reg. 686/21:

- Identify wetlands, river and stream valleys, unstable soils and bedrock.
- Assess, manage and mitigate risks and study the potential impacts of climate change.
- Study, map, and educate public on the risks.
- Provide flood forecasting and timely warning services, document flood events, and provide support services.
- Maintain a stream flow monitoring network that, at a minimum, includes stream flow gauges available as part of the provincial-federal hydrometric network.
- Ensure that the authority satisfies its duties, functions and responsibilities to administer and enforce the provisions of Parts VI and VII of the Act.

Part VI: No person shall carry on the following:

- Activities to straighten, change, divert or interfere in any way with the existing channel of a river, creek, stream or watercourse or to change or interfere in any way with a wetland.
- Development activities in areas that are within the authority's area of jurisdiction and are: hazardous lands, wetlands, river or stream valleys.

Part VII: Appoint officers for the purposes of ensuring compliance with this Act and the regulations.

MVCA water management assets are generally classified as follows:

- **Dams:** barrier of flow that can be operated to raise and lower water levels.
- **Weirs:** barrier of flow with a fixed elevation that cannot be actively operated.
- **Reservoirs:** a large natural or artificial lake used as a source of water supply.
- **Gauge station:** equipment used to measure and transmit water levels, flows, soil and weather conditions.
- **Models:** tools used to calculate runoff and predict water levels and flows.

Related assets include:

- **Federal gauge stations:** equipment used by Environment & Climate Change Canada (ECCC) to measure and transmit water levels, flows, and weather conditions.
- **MNR facilities:** structures owned by the Ontario Ministry of Natural Resources.
- **OPG facilities:** structures owned by Ontario Power Generation (crown corporation).
- **Private power generation facilities:** weirs and dams operated by other hydro power generators.

Flood Forecasting & Warning (FFW)

Goal

- Watershed users receive timely and accurate information and warnings regarding watershed conditions and how to protect themselves and their property.

Objectives

- The gauge network is reliable and provides accurate real-time data regarding conditions at key locations across MVCA's jurisdiction.
- Data meets industry quality standards, allows for short and long-term analysis, and is easy to access, use, and share.
- Watershed models allow for reliable predictive analysis and optimal system operation.
- Municipalities receive quality drought response coordination and emergency planning support.
- Local communities understand how their watershed functions, systemic risks, how they can be mitigated, and how to prepare for and respond to natural hazards including drought.
- Queries are responded to in accordance with MVCA's *Customer Service* policy.

Gaps & Risks

- There are insufficient gauge stations in the upper Mississippi River watershed with additional work also required in the Carp River watershed.
- Not all existing gauge stations and structures have accurate vertical elevation benchmarks.
- Large areas of the Mississippi watershed have yet to be studied and modeled, which limits the accuracy of MVCA's watershed model as a predictive tool for operational and warning purposes.
- Federal and provincial grant programs to support field investigations, model development, and mapping are not available every year and often change in focus, value, and duration, which interferes with work and resource planning.
- Greater consistency is needed in the implementation of business processes for:
 - a. the production and release of water condition advisories and warnings.
 - b. tracking and analysis of public queries regarding water levels and conditions.
 - c. annual outreach to municipalities regarding flood and drought conditions and preparedness.
- There is a continual need to remind people of systemic risks and of the need to mitigate and be prepared for them.

Actions to Mitigate

- Continue to improve and expand the gauge network as resources allow.
- Continue to undertake bathymetric and other field surveys of priority areas as internal resources allow to enhance application success where grant project-delivery timelines are tight.
- Continue to apply for funding to improve the watershed model.
- Continue to undertake bathymetric and other field surveys of priority areas as internal resources allow to enhance application and project delivery success where grant project-delivery timelines are tight.
- Enhance public education and outreach (see Section 4).

Policies

- A minimum of two staff members shall be capable of monitoring the system and issuing notices at all times.
- A System Surveillance Strategy will be developed to guide the design and management of the monitoring network, update facility benchmark information, and prioritize future investments.
- QA/QC procedures will be documented and reviewed and audited periodically to ensure consistent implementation and currency with industry standards.
- All new or updated watershed models used for regulatory purposes shall undergo third-party review.
- Annual updates should be provided to municipal partners every winter regarding the short and long-term forecast in preparation for the freshet and projected summer conditions.
- Public queries shall be tracked and regularly analyzed to identify trends and inform remedial action.
- An Education Plan will be developed and implemented to increase awareness and understanding of how watersheds function, water management, and natural hazards and how to mitigate them.

Regulatory Mapping & Program Administration

Goals

1. Development does not occur in regulated areas unless properly assessed and permitted.
2. MVCA is considered to be a fair and responsive regulator.

Objectives

3. Regulatory maps are prepared in accordance with provincial requirements and updated in response to development pressures, changes in regulations, land use and the impacts of climate change.
4. Regulatory maps are updated annually and published on MVCA's website.
5. Historical data is readily available to support discussions with applicants and decision-making.
6. Site specific information and permits are used to adjust regulatory mapping where warranted.
7. The review of planning and permit applications consistently meet regulated timelines and industry standards.
8. Policy guidelines are kept current to address regulatory changes, and evolving watershed conditions and industry practices.
9. Queries are responded to in accordance with MVCA's *Customer Service* policy.
10. Complaints and reports of infractions are managed in a fair and transparent manner.
11. Compliance promotion and enforcement activities are timely, effective, and affordable.

Gaps & Risks

12. MVCA's regulatory responsibilities are unknown or misunderstood by many.
13. There is ongoing risk of duplication of effort and gaps between regulatory agencies in the application of development controls in wetlands and areas of natural hazards.
14. There is a lack of corporate knowledge on some matters due to staff turn-over and because many studies and permit and planning files exist in hard copy only, or are filed inconsistently.
15. Regulations governing the preparation of floodplain mapping and regulatory limits have yet to be updated to consider the aggregated impacts of watershed development and climate change.

Actions to Mitigate

16. Continue to work with land use planning and watershed partners to clarify roles and responsibilities and to adapt business processes and policies to new regulations, legislation, and changes to Ontario's Wetland Evaluation System (OWES).
17. Continue to expand and update hazard mapping and the watershed model as resources allow.
18. Continue to prepare maps that illustrate future climate scenarios and future watershed development.
19. Share climate scenario mapping with municipal planning, water and wastewater, roads, and emergency services departments to support infrastructure and land use planning and emergency preparedness.
20. Continue to advise provincial and federal governments on how regulations could be adapted.
21. Enhance public education and outreach (see Section 4).

Policies

22. All studies, permits, as-builts, and compliance and enforcement records should be digitized and managed for easy retrieval to support discussions with applicants, longitudinal studies, and assessment of program effectiveness.
23. Field data shall be collected during unusual events and findings documented in accordance with MVCA's Flood Manual to support communications, model calibration and mapping updates.
24. A Hazard Mapping Strategy should be prepared to inform short and mid-term studies, confirm mapping priorities, and support annual regulatory reporting requirements.
25. All property owners affected by new or expanded regulatory limits on hazard maps shall receive direct mail notification during the public comment period.
26. The Registry of Natural Hazards should be updated annually to capture mid to large events and their impacts to support risk communications and corporate knowledge continuity.
27. Planning and permit application fees should cost recover a minimum of 90% of development review and associated administrative costs.
28. Field surveys, modeling and mapping studies, should be recovered through user fees.
29. Compliance monitoring and enforcement are Category 1 costs that should be cost recovered where possible.

Assets & Operations

Goal

1. Water management activities consistently mitigate the impacts of natural hazards.
2. MVCA is a trusted asset manager and operator of the Mississippi River system.

Objectives

3. Water management assets are operated and maintained in accordance with provincial and federal regulations, the *Mississippi River Water Management Plan*, and MVCA's *Asset Management Plan and Operations, Maintenance & Surveillance (OMS)* manuals.
4. The *10-year Capital Plan*, municipal levies, and upper-tier government grants allow for timely development, renewal and replacement of water management assets, and the development and update of watershed models.
5. Asset renewal considers the impacts of development, climate change, environmental, social and financial impacts, and the historical rights and the current and future needs of First Nations and others.
6. MNR and OPG view MVCA as the operator of choice for their assets within the Mississippi River watershed.

Gaps & Risks

7. Funding of Ontario's Water & Erosion Control Infrastructure (WECI) grant program has not increased in ~20 years and provides insufficient time to tender and implement projects.
8. There is an affordability ceiling on municipal levies that limits the building of capital reserves to deliver more than the current 10-year capital plan, and only with the support of long-term loans.
9. There is insufficient understanding by the general public of how the watershed functions and the limits of MVCA's ability to provide ideal conditions across the watershed.
10. Communications and reporting are inconsistent between MVCA and MNR, OPG, and private power generators.

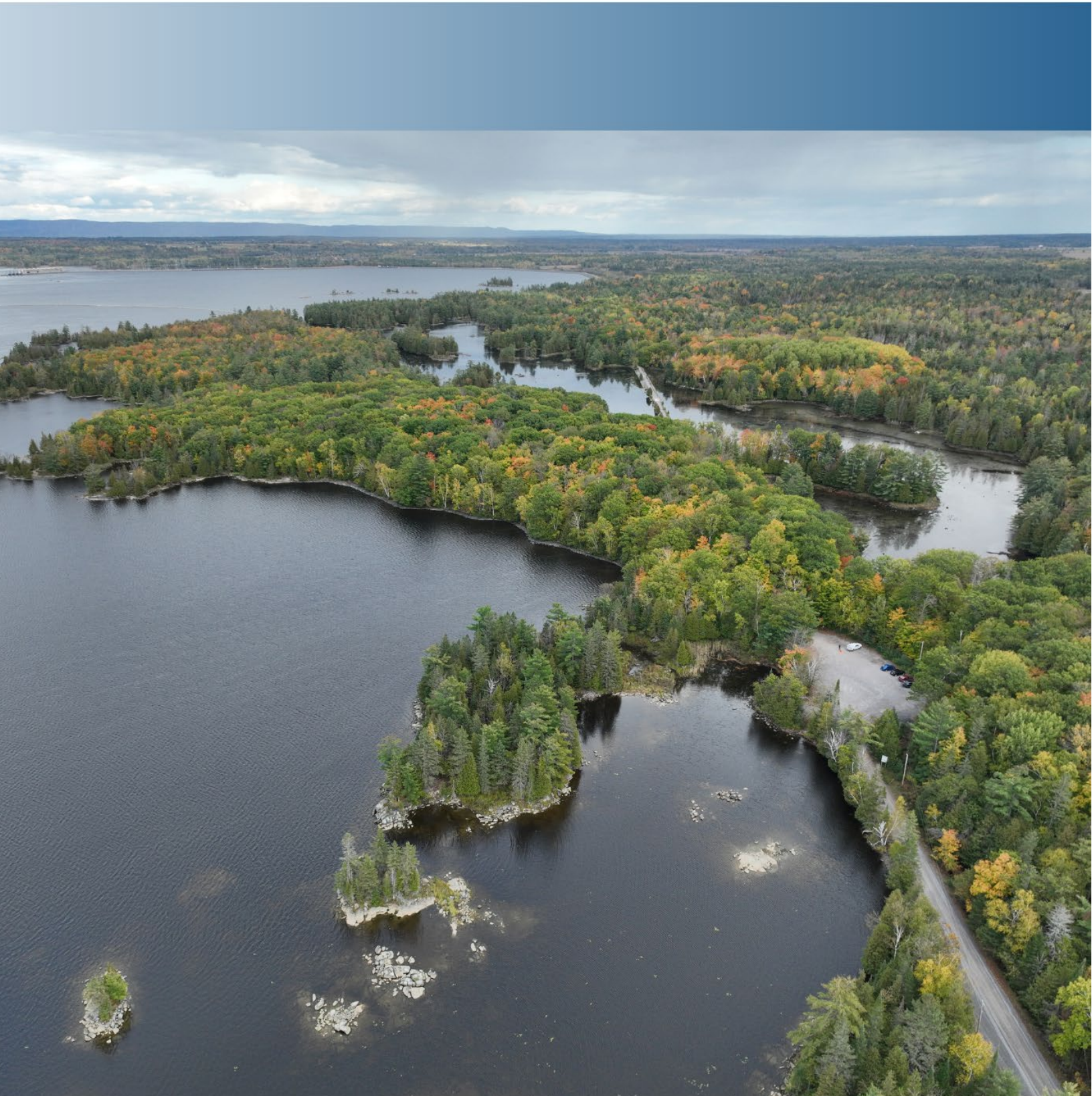
Actions to Mitigate

11. Continue to monitor asset conditions, prioritize needs, and undertake corrective works as resources allow.
12. Continue to petition federal and provincial decision-makers for more consistent and user-friendly grant programs that allow for reliable funding streams and realistic implementation timelines.
13. Enhance public education and outreach (see Section 4).
14. Formalize communications and reporting with MNR, OPG, and private power generators.

Policies

16. The OMS manual for an asset shall be updated at least annually to document inspection findings, operational incidents, and changes arising from capital improvements or procedural changes.
17. The *10-year Capital Plan* will be updated annually, and the *Schedule of Municipal Capital Levy Increases* updated at least once every four years.
18. Communication and reporting expectations will be documented and monitored to ensure timely sharing of information and coordinated planning between MVCA and its service delivery partners.

3.2. Land & Resource Conservation



Land & Resource Conservation

Mandate: *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.*

Section 21.1 of *Conservation Authorities Act*.

Mandatory Programs & Services per O. Reg. 686/21:

- Conserve, protect, rehabilitate, establish, and manage natural heritage located within the lands owned or controlled by the authority.
- Maintain any facilities, trails or other amenities that support public access and recreational activities in conservation areas and that can be provided without the direct support or supervision of staff.
- Provide for fencing, signage, patrolling and any other measures to prevent unlawful entry.
- Prepare and update a Conservation Area Strategy.
- Prepare and maintain a Land Inventory.

Land owned, leased, or subject to other legal agreement by MVCA is classified as follows:

- **Conservation Area:** sites used for primarily for passive recreation.
- **Conservation Preserve:** sites managed for natural hazard or natural heritage protection.
- **Water & Erosion Control Sites:** land used to mitigate flooding or erosion including dams, ponds, shorelines and wetlands, easements, and monitoring stations.
- **Administrative:** primary purpose is for offices, works yard, garage, or material stores.

Within a property, land use is classified as follows:

- **Passive use:** includes trails, parking lots and other basic park infrastructure.
- **Cultural use:** includes buildings and other facilities used by MVCA for a variety of uses, and includes the Mill of Kintail Museum.
- **Natural area:** areas left largely in a natural state that may also be managed for maple syrup, forestry, or GHG mitigation purposes.
- **Enhancement area:** land managed to offset damage elsewhere in MVCA's jurisdiction.
- **Water management:** includes structures, access easements, boom anchor sites, parking and staging areas, and upstream safety signage.
- **Portage:** area designated to provide safe passage around a dam or weir.

Other land is classified as follows:

- **Public:** land owned by the Crown, a crown corporation, a county or municipality.
- **Private:** land owned by others, even if in public use, e.g. Land Trust property.

General

Goal

1. The natural resources of the Mississippi, Carp, and Ottawa river watersheds are managed sustainably for the enjoyment and welfare of current and future generations.
2. Land ownership and management are used as tools for reconciliation with First Nations.

Objectives

3. MVCA's *Land Inventory* is current and meets regulatory requirements.
4. MVCA's land holdings meet the evolving mandate and needs of the organization.
5. MVCA has free and clear title or legal agreements for all properties owned or used by the Authority for the delivery of programs and services.
6. Every property owned by or under agreement with MVCA has a board-approved plan.
7. The influence and participation of First Nations is evident at all MVCA properties.

Gaps & Risks

8. There are gaps in corporate knowledge regarding historical purchases, agreements, and contractual obligations. In some cases, there are no documented agreements.
9. Most land transfers to MVCA did not include legal surveys registered on title. Meets and bounds descriptions are in some cases no longer relevant due to subsequent land development.
10. In some cases, property boundaries provided by Teranet and Ontario's Crown Land Policy Atlas are inconsistent with MVCA's R-Plan records.

Actions to Mitigate

11. Continue research to identify and understand rationale for historical purchases, and obligations under current agreements.
12. Continue the review of land transfer documents and related drawings to clarify and register land titles.
13. There is no Master Plan for the Palmerston-Canonto and Carp River conservation areas or any of the conservation preserves; and all other master plans are at least 10 years old.

Policies

14. MVCA will work with First Nations to understand historical land uses and injustices, ecological and hydrological processes, and to identify opportunities for reconciliation through land conservation and management.
15. A plan will be prepared and implemented to address gaps in legal surveys and legal titles, including easements, and to register such in the Land Registry or Land Titles office.
16. Land holdings will be reviewed annually to assess the need for land acquisition or disposal at least once every four years.
17. All land disposals and acquisitions shall occur in accordance with the *Forestry Act*, the *Conservation Authorities Act*, regulations and guidelines, and in accordance with the policies of this Strategy.
18. Revenues derived from land disposals shall be managed and used in accordance with the *Conservation Authorities Act* and regulations and guidelines thereunder.
19. MVCA shall not expend greater than market value for the acquisition of any property.
20. MVCA will review property Master Plans at least once every ten years, and update them as needed.
21. MVCA shall not enter into Conservation Easement agreements except as a condition of a Board-approved stewardship program, with the easement not to exceed 10-years.
22. MVCA may enter into Partial Takings or Direct Conveyance where deemed by the Board of Directors to be in the interest of the Authority.¹⁷
23. Changes in ownership and easements shall be surveyed and registered on title within 1-year.
24. MVCA will report on changes to the *Land Inventory* at the Annual General Meeting.
25. MVCA may enter into service agreements to deliver conservation land management services to other public and conservation organizations as follows:
 - a. Municipal: via the Programs & Services Agreement and a Special Levy.
 - b. Other Public or Conservation Organization: via Stewardship Agreement, Forest Management Agreement, or other contract that shall not exceed 5-years.

¹⁷ For more information visit: <https://www.orlandconservation.ca/video-partial-taking-or-conservation-severance>

Conservation Areas

A summary of the attributes, gaps and use of existing conservation areas is provided in [Appendix 5](#).

Goal

1. Conservation areas provide opportunities for walking, hiking, and solitude in a natural setting and contribute to the quality of life and sustainability of the watershed.
2. Conservation areas are accessible to all.

Objectives

3. MVCA conservation areas:
 - a. are large natural spaces with walking/hiking trails of varying length and difficulty that allow for at least 1-hour's passive recreation.¹⁸
 - b. are attractive, affordable and safe.
 - c. provide parking, comfort stations, rest spots/shelters, and waste facilities.
 - d. provide at least one wheelchair accessible trail and comfort station.
 - e. provide excellent directional and interpretive signage that includes local cultural, Indigenous, and scientific information.
 - f. reserve at least 90% of the property as a natural area.
4. A conservation area-type park is available within a 30-minute drive of all watershed residents.¹⁹
5. There is 15 ha of conservation area-type parkland for every 1,000 residents in the watershed.²⁰
6. Other conservation trails:
 - a. Walking/hiking trails on conservation lands within the watershed are maintained to a high standard.
 - b. MVCA optimizes use of knowhow and equipment by supporting municipal, county, and conservation organizations for the maintenance of walking/hiking trails in the watershed.

Gaps & Risks

7. Sustainable funding for continued operation of the Mill of Kintail Museum.
8. The Mill structure cannot provide a climate-controlled environment for sensitive museum artifacts.
9. It is cost prohibitive to maintain the K&P Trail to the same standard found elsewhere on the trail.
10. Directional and interpretive signage is of variable quality amongst conservation areas.

¹⁸ A brisk walk is 4-5km/hour. Source: <https://www.ccohs.ca/oshanswers/psychosocial/walking.html>

¹⁹ For measurement purposes, conservation area lands would include equivalent types of properties owned by other organizations such as the NCC Greenbelt which has the equivalent of two conservation areas within the watershed.

²⁰ Ibid. The average amount of large park space accessible to residents in the GTA (excluding Toronto) is ~12.5 ha. Source: [Greenbelt Foundation Large parks community Needs Analysis & Planned Parkland Inventory: Technical Report](#). January 2022. Various standards were used for defining accessible, with a 30-minute drive being considered the least accessible.

11. Some sites have components that meet current accessibility design standards, but none of the conservation areas have a verified accessible route for visitors with mobility issues.
12. There is no accessible toilet serving the Education Centre, Picnic Shelter and Cloister at the Mill of Kintail; and the only other property with accessible toilets is Morris Island CA.
13. Unmet demand for passive recreational space as evidenced by heavily used and impacted greenspaces and crown lands with overflowing parking; and recreational survey results.
14. Prohibitive cost of land acquisition to establish new conservation areas.

Actions to Mitigate

15. Transfer sensitive artifacts to the Gate House climate-controlled archive on a permanent basis.
16. Continue to investigate opportunities to transfer management of the museum collections to another organization.
17. Proceed with transfer of the K&P Trail to local counties.

Policies

18. The Mill of Kintail Museum is a community asset and cultural attraction. MVCA will operate the museum while seeking another organization to assume management of collections.
19. MVCA will seek funding and work with the accessibility community to review and improve site accessibility at its conservation areas.
20. Signage standards will be developed, and implemented as resources allow.
21. Master Plans will be developed for all sites, and reviewed at least once every 10 years.
22. In addition to the basic amenities set out in the Conservation Area Objectives, Table 3 identifies the land uses and Programs & Services that may be offered at MVCA conservation areas.
23. Privately-run special events that exceed 1-days' duration and any activity not identified in Table 3 shall require General Manager approval prior to contract execution.
24. Any new third-party easement on MVCA land shall be approved by the Board of Directors and should not exceed 5-years. Easement renewals may be approved by the General Manager.
25. MVCA may support conservation organizations in its jurisdiction by assisting with trail maintenance on a cost recovery basis.
26. A demand analysis will be undertaken to identify existing and projected areas of the watershed requiring additional conservation areas.
27. Acquisition of lands from the province and local municipalities and counties will be prioritized over land donations for the establishment of new conservation areas.
28. New sites will be developed as grants become available to support installation of accessible washrooms, with a minimum grant level of 50% of projected costs.

Table 3: Permitted Land Uses and Programs & Services at MVCA Conservation Areas	Carp River	K&P	Mill of Kintail	Morris Island	Palmerston- Canonto	Purdon
<i>Category 1</i>						
Geocaching and orienteering ²¹		X	X	X	X	
Snowshoeing	X	X	X	X	X	X
Self-directed educational facilities and demonstration sites	X	X	X	X	X	X
Habitat enhancements	X	X	X	X	X	X
Hydrological and ecosystem monitoring	X	X	X	X	X	X
On-leash dog walking	X	X	X	X	X	X
Off-leash dog run			X	X		
Cross country skiing		X	X	X		
Mountain biking		X				
Snowmobiling		X				
ATVing		X				
Canoe/kayak/boat launch		X		X	X	
Unsupervised swimming		X		X	X	
Forest management			X	X	X	X
Native plant/tree nursery			X			
Sap and fruit collection			X			
<i>Category 3</i>						
Education programs incl. seasonal camps			X			
MVCA-led special events ²²	X	X	X	X	X	X
Other special events ²²		X	X	X	X	
Education Center and Gate House rentals ²³			X			
Cloister and Picnic Shelter rentals ²³			X			
Museum			X			
Observatory ²³			X			
Community workshop ²³			X			
Heavy vehicle use for forest extraction ²³		X				

²¹ With restrictions to limit impacts on natural areas.

²² An “event” is an activity that requires significant staff time to deliver or supervise and that could cause significant damage to the site or cause significant discomfort to adjacent landowners if not managed appropriately.

²³ By license agreement only.

29. MVCA Conservation Areas will be funded as follows:

a. Operations:

- i. Category 1: via the Municipal Operating Levy and user fees with a target revenue ratio of 90:10.
- ii. Education & Outreach Program, which is a combination of Category 1 and 3 programming, via the Municipal Operating Levy and Other Sources with a target revenue ratio of 15:85 on an annualized basis. (See Section 4 for details).
- iii. Category 3: via the Municipal Operating Levy, user fees, and grants and donations with a target revenue ratio of 20:50:30 on an annualized basis.
- iv. Revenues from Annual Passes should be allocated to support delivery of Category 1 programs and services.
- v. Day-pass revenues at the Mill of Kintail should be allocated to support delivery of Category 3 programs and services at the Mill of Kintail. All other Day Pass revenues should be allocated to support delivery of Category 1 programs and services.

b. Capital Works:

- i. Category 1 assets: via the Municipal Capital Levy.
- ii. Existing Category 3 assets: will be maintained and renewed to ensure their structural integrity and allow for safe occupation and use with no greater than 2% of the annual Municipal Capital Levy allocated to this purpose unless permitted by a Programs & Services Agreement.
- iii. New Category 3 assets: will be commissioned at the discretion of the Board in consultation with member municipalities, with future revenue streams confirmed in contracts executed in advance of construction.

c. Land acquisition:

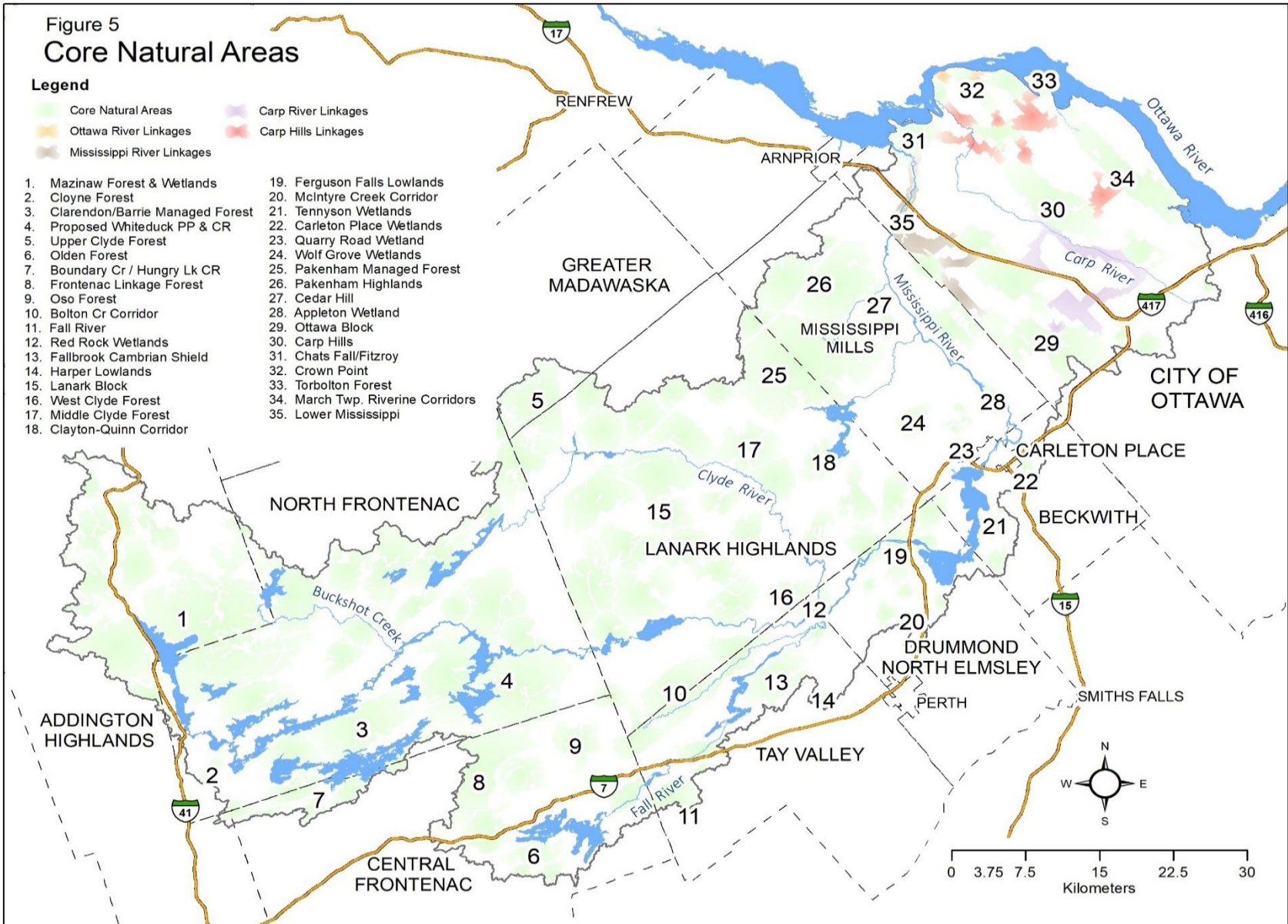
- i. Via Lease, License of Occupancy, or other agreement with the Crown, municipal or county partner, or other conservation or public organization at a cost not be onerous (e.g. \$5/year) and be payable via Category 1 revenues.
- ii. Via Fee Simple:
 1. Land costs shall be covered using cash donations, grants, the donation of land, or a combination of these. Where deemed to be in the interest of the Authority, the Board of Directors may allocate Category 1 funds towards land costs, which shall not exceed 25% of the appraised market value.
 2. Administrative costs such as legal fees and taxes will be paid via Category 1 revenues.

30. New conservation areas should meet all the following criteria:

- a. Lie within one of the Core Natural Areas (CNA) or Linkages identified on Figure 5.
- b. Be a minimum of 40 ha. of primarily mature habitat.
- c. Be accessible via a road that receives year-round maintenance.

- d. Have power supply at the property line.
 - e. The location and site conditions allow for achievement of Objectives 3, 4 and 5.
31. Desirable attributes that would enhance the attractiveness of a site are the following:
- a. Lake or river access.
 - b. Scenic views.
 - c. Unique ecological feature(s) within the watershed.
 - d. Availability of existing amenities in good condition.
 - e. Proximity to an existing MVCA property, or land designated for conservation or park purposes by the Crown, crown corporation, public entity or conservation organization.
 - f. Proximity to a public trail and the Eastern Ontario trail network.
 - g. Land provides erosion control or serves a hydrological function.
32. Proposed acquisitions shall be considered as follows:
- a. Staff identify the need for additional conservation lands and receive Board direction to identify acquisition opportunities and/or grants for that purpose.
 - b. Staff assess a proposed site(s) against the above mandatory criteria and desired attributes.
 - c. Where a site is deemed suitable by staff, a business case is submitted to the Board of Directors In-Camera that includes a concept plan that demonstrates how the site can meet Conservation Area Objectives and identifies notable attributes.
 - d. The Board of Directors either denies or approves the acquisition in-principle, or provides other direction to staff.
 - e. Prior to execution of an acquisition agreement, staff will secure the following:
 - iii. Market valuation
 - iv. Title search
 - v. Legal survey
 - vi. Environmental Site Assessment (ESA) for hazardous materials, and
 - vii. Grant and other funding agreements.
 - f. Where the Board of Directors has approved in-principle the acquisition of a property, and staff have secured the above documents, the Executive Committee may approve the acquisition agreement where time constraints do not allow for approval by the full Board.
33. Prior to undertaking works at a new conservation area, staff shall:
- a. conduct a survey of the natural resources and features on the site;
 - b. prepare a report delineating areas to be protected;
 - c. prepare a detailed site plan and implementation schedule; and
 - d. obtain approval to proceed from the Board.
34. All conservation area objectives shall be met at a new conservation area before it is opened to the public.

Figure 5
Core Natural Areas



Conservation Preserves

Goals

1. Eliminate risk of future losses in areas at high risk of natural hazards.
2. No net loss of ecological and hydrological services in the watershed.

Objectives

3. MVCA conservation preserves:
 - a. Sterilize undevelopable land to mitigate future flood and erosion damage and losses; or
 - b. Manage an area of natural heritage value on behalf of a third-party; or
 - c. Mitigate the impacts of land development elsewhere in the watershed; or
 - d. Protect or develop natural carbon sinks using GHG-reduction funding mechanisms.

Gaps & Risks

4. Buy-out programs do not exist for primary residential dwellings located within the floodplain.
5. Regulation policies require wetland offsetting agreements where applicable. Offsetting is best undertaken relatively close to the site of ecological/hydrological impact. Sites will most likely be required in the lower watershed to accommodate offsetting and support ecological restoration. However, there is limited affordable land available for offsetting in the lower watershed. There are carbon-rich areas of ecological and hydrologic significance under threat of degradation and development in the lower watershed.

Actions to Mitigate

6. Continue to encourage upper-tier governments to supplement “like for like” funding with “buy-out” grants for those with four-season homes within the floodplain or high erosion areas.
7. Continue to discuss opportunities for establishing offsetting sites with the City of Ottawa.
8. Continue to review GHG funding mechanisms and implementation models being used by other conservation authorities.

Policies

9. MVCA will continue to manage existing conservation preserves that provide flood and erosion control or natural heritage conservation located at:
 - a. Cedardale on the Clyde River;
 - b. Glen Cairn on the Carp River; and
 - c. Appleton on the Mississippi River.

10. MVCA should work with local municipalities to identify and assess existing publicly owned land for the purpose of providing suitable hydrological and ecological offsetting opportunities.
11. MVCA should explore opportunities under the Canadian GHG Offset Credit System and other mechanisms to secure revenues to protect or enhance natural carbon sinks within the watershed.
12. The acquisition of Conservation Preserves will be funded as follows:
 - a. For Flood and Erosion Control:
 - i. Land costs shall be borne by upper levels of government and/or insurers.
 - ii. Administrative costs such as legal fees and taxes may be funded using Category 1 revenues.
 - b. Stewardship: on a 100% cost-recovery basis via a Stewardship Agreement not to exceed 5-years duration; or a cost-recovery model approved by the Board of Directors.
 - c. Wetland Offsetting: on a 100% cost-recovery basis under an approved Offsetting Agreement that shall be no less than 5-years duration; or other cost-recovery model approved by the Board of Directors.
 - d. Carbon Offsetting: on a 100% cost-recovery basis under an agreement executed in accordance with federal regulations; or other cost recovery model approved by the Board of Directors.
13. Programs and services delivered at Conservation Preserves shall be in accordance with funding programs, site specific agreements, and the policies of this Strategy.

Water & Erosion Control Infrastructure Land Objectives

1. Water and Erosion Control Infrastructure (WECI) lands allow for:
 - a. The construction, maintenance, operation, and renewal of water and erosion control structures such as dams and weirs and include parking and materials storage.
 - b. The installation and maintenance of booms, fencing, signage and other safety measures.
 - c. Safe passage around a structure, which may include a portage route.
 - d. The installation and maintenance of monitoring and communication devices to support weather, soil, snow and ice, and riverine system monitoring and remote data access.
 - e. Unfettered legal access to all the above.

Policies

2. Land for MVCA Water and Erosion Control Infrastructure may be acquired as follows:
 - a. Land Use permit from the Crown in accordance with provincial fees that may be paid using the Municipal Levy;
 - b. Easements secured from public entities that should not exceed \$5/year and may be paid using the Municipal Levy.
 - c. Easements secured from private entities that shall be fair and reasonable, approved by the Board, and may be paid using the Municipal Levy.
 - d. Fee Simple:
 - i. Where the primary purpose of the structure is for flood or erosion control or natural resource protection:
 1. Land costs should be borne 50% by the Municipal Capital Levy or Reserve, and 50% by the Province.
 2. Administrative costs such as legal fees and taxes may be funded using revenues obtained via the Municipal Levy.
 - ii. Where the primary purpose of the structure is to maintain recreational water levels:
 1. Land acquisition costs should not be borne by MVCA.
 2. Administrative costs such as legal fees and taxes may be funded using revenues obtained via the Municipal Levy.
3. MVCA will seek to secure and register easements agreements at all existing WECI sites.
4. MVCA will confirm and register legal boundaries of existing WECI properties.
5. Changes in ownership and easements shall be surveyed and registered on title.

Administrative Land

Objective

1. Administrative lands provide space for conducting the business of the Authority and include: offices, meeting space, a boardroom, workshop and works yard, garage, material stores, parking and picnic areas, stormwater, water and wastewater facilities, and site security and fire protection systems.

Policies

2. MVCA's administrative building on Highway 7 was secured through a loan from the Town of Carleton Place that will be paid in full by 2040 via the Municipal Levy.
3. The property is currently on private services and will be connected to public water and wastewater systems when they become available.
4. MVCA may allow others to share tenancy of the site or building for a fee or in exchange for a service of equivalent or greater value. Tenancy agreements shall not exceed 5-years and may be executed at the discretion of the General Manager.
5. Tenancy agreements in excess of 5-years require approval by the Board of Directors.
6. Tenants may use MVCA office equipment on a cost recovery basis only.
7. Rental of the Boardroom, washrooms, and kitchenette will be at the discretion of the General Manager.

3.3. Source Water Protection



Source Water Protection & Monitoring

Conservation authorities support municipalities and the province in monitoring and protecting drinking water supplies. MVCA is part of the Mississippi-Rideau Source Protection Region, which is administered on a day-to-day basis by the Rideau Valley Conservation Authority.

Mandate:

Programs and services related to the authority's duties, functions and responsibilities:

- *as a source protection authority under the Clean Water Act, 2006; and*
- *under an Act prescribed by the regulations (specifically):*
 - *implementation and enhancement of the provincial groundwater monitoring program*
 - *implementation and enhancement of the provincial stream monitoring program*
 - *development and implementation of a watershed-based resource management strategy*

Section 21.1 of *Conservation Authorities Act*
and Section 12 of *O. Reg. 686/21*

Goals

1. MVCA demonstrates value for money in delivering system monitoring and resource management services to the province and municipalities.

Objectives

2. Samples are collected, handled, and shipped in accordance with required procedures.
3. Provincial monitoring activities are leveraged to support local municipal monitoring objectives.
4. Provincial resource management work is leveraged to support local municipal watershed management objectives.
5. The Board of Directors understands its separate and distinct role as a Source Protection Authority.

Gaps & Risks

6. Most municipalities within the watershed do not have municipal drinking water supplies and do not receive the same level of support in protecting their water supplies as those that are subject to the *Clean Water Act*.
7. CA regulations prevent use of Category 1 revenues to investigate and support municipalities in protecting surface and groundwater supplies at a watershed level.
8. There is a lack of awareness of the cumulative and downstream effect of leaking septic facilities on drinking water quality, the health of the river system, and recreational tourism.
9. There are concerns regarding the limited number and suitability of existing provincial groundwater monitoring stations in MVCA's jurisdiction.

Actions to Mitigate

10. Continue to support municipalities by sampling a wider range of monitoring sites and for a broader spectrum of variables in accordance with Category 2 Program & Services Agreements (PSAs).
11. Continue to support municipalities with administration of Section 8 of the *Ontario Building Code* in accordance with Category 2 PSAs.
12. Continue to publish and share monitoring results with municipalities and the public.

Policies

13. Provincial monitoring programs will serve as the platform upon which local monitoring objectives are met in accordance with Category 2 PSAs.
14. Monitoring program results shall be published annually.
15. The *Natural Systems Monitoring & Reporting* program should be reviewed and updated as least once every five years.
16. Watershed and subwatershed plans and background studies will be pursued as resources permit.
17. A *State of the Watershed Report Card* should be produced at least once every 5 years.
18. MVCA should proactively share monitoring and watershed information with First Nations.

3.4. Category 3 Programs & Services



Education & Outreach

As noted in previous sections, MVCA is required to deliver education and outreach on:

- natural hazard risks
- operation of our facilities, and
- permitting requirements within regulated areas.

Common messages underlying these matters are the following:

- rivers and dams are parts of a watershed
- watersheds have dynamic ecosystems and hydrological processes
- what we do on the land can alter those processes, and
- those changes can impact the safety and welfare of ourselves and others.

A comprehensive Education and Outreach Program is needed that achieves public awareness of mandatory messages within a broader understanding of watersheds and how they function. All 11 municipalities have signed a Category 3 Programs & Services Agreement (PSA) to support a more comprehensive education program within the financial limits of the agreement.

Goals

1. Watershed residents and users:
 - a. understand how the watershed functions and their role in it.
 - b. make informed decisions that mitigate risks and support resource sustainability.
2. MVCA is a partner of choice for education and community engagement.

Objectives

3. Locally relevant, useful, and accessible by all.
4. Targeted by audience and location.
5. Engaging, hands-on, and fun.

Gaps & Risks

6. Insufficient effective communications regarding natural hazards and MVCA's mandate.
7. Unmet demand for school age education on natural hazard and natural heritage matters.

Policies

8. MVCA will develop and deliver an Education & Outreach Plan.
9. The Education & Outreach Plan will be reviewed at least once every four years.
10. Services should be funded in accordance policy 2. B 29. a. ii.

Stewardship

Stewardship programs support landowners and residents in making changes on the land that improve natural resource management. MVCA began to deliver stewardship services in 1983 with delivery of a reforestation program for private landowners. Today, our 2021 *Stewardship Plan*²⁴ divides MVCA's jurisdiction into three geographic areas, each with specific objectives and focus. The following are current services offered under this program:

- ALUS Lanark-Ottawa
- Shoreline Naturalization Program
- City Stream Watch Program
- Green Acres Program
- Ottawa Rural Clean Water Program
- Support to lake associations

All 11 municipalities have signed a Category 3 Programs & Services Agreement (PSA) to support continuation of the stewardship program within the financial limits of the agreement.

Goals

1. The protection of water quality, wetland cover, forest cover, and other environmental features by working with watershed landowners to make meaningful improvements to their properties and practices.

Objectives

2. Shoreline habitat enhancement
3. Stream and river restoration
4. Wetland protection and recovery
5. Enhanced forest management
6. Increased public knowledge of land management practices for watershed health
7. Community engagement in ecosystem monitoring and reporting
8. Invasive species identification and removal

Gaps & Risks

9. Demand exceeds funding for several stewardship programs.
10. Demand exceeds resource capacity for community engagement and invasive species removal.

²⁴ View details: https://mvc.on.ca/wp-content/uploads/2021/11/2021-10-25-2021_Stewardship_Plan_FINAL.pdf

Policies

11. The *Stewardship Plan* will be reviewed at least once every four years.
12. Stewardship program results should be published annually.
13. Services will be delivered in accordance with Category 3 Programs and Services Agreements and any ancillary contract agreements.

Visitor Services

This program is unique to the Mill of Kintail Conservation Area, which was purchased and developed because of the cultural values at the property. The site is home to the following:

- Mill of Kintail Museum that celebrates the lives of R. Tait McKenzie and James Naismith and is host to “Tea on the Lawn” organized each summer by the Ramsay Women’s Institute.
- Fred Lossing Observatory with programs run by the Royal Astronomical Society of Canada.
- A workshop operated by the Naismith Men’s Shed.
- The Gate House that houses meeting space and is used by local community groups such as the Mississippi Valley Field Naturalists, local scouts and guiding groups, artists, and others. The Gate House also has a climate-controlled room for storage of museum artifacts.
- The “Cloister” and Picnic Shelter that are rented for weddings and other special events.
- The Education Centre that was purpose-built in the early 1970s for MVCA’s education program.
- Playground for tots and youth
- Basketball court
- Hiking trails and other areas for leisure and nature appreciation

All 11 municipalities have signed a Category 3 Programs & Services Agreement (PSA) to support continued visitor services within the financial limits of the agreement.

Goals

1. Sustainable management of the property and buildings for current and future generations.
2. A top-10 destination in Lanark County.

Objectives

3. Increase all-season level of service, including education, cultural appreciation, and both guided and self-guided outdoor recreation opportunities, for local residents and visitors to the region.
4. Encourage the appreciation of local cultural history through programming and activities.
5. Broaden the sources and amounts of revenue from activities that complement the primary functions of the site to financially support core programs.

6. Strengthen relationships with the community at large.

Gaps & Risks

7. Some archival material and exhibits require special care that cannot be accommodated within the Mill building, which is a heritage structure and requires special care itself.
8. Dogs off-leash are a perennial problem that requires periodic education and enforcement.
9. As an ungated unsupervised site, there are challenges with unpaid parking/user fees.
10. Revenue sources for the Museum are unreliable and do not provide for capital renewal.
11. Most museum exhibits are dated and require update.
12. WIFI at the Cloister, Education Centre and Picnic Shelter are limited.
13. There are no accessible and year-round washrooms serving the Cloister, Education Centre and Picnic Shelter, which limits the type and size of events that can be hosted at the site.

Policies

14. Update the *Mill of Kintail Master Plan*.
15. Visitor Services program results should be published annually.
16. Services will be delivered in accordance with Category 3 Programs and Services Agreements and any ancillary contract agreements.

Appendices



Appendix I: Watershed Partners

First Nations

MVCA's jurisdiction includes land subject to treaties with Indigenous peoples: Treaty 27, the Williams Treaty, and the Crawford purchases of 1783. Our jurisdiction also includes traditional and unceded territory of the Algonquin Anishinaabeg people. "First Nations have a special relationship with the earth and all living things in it. This relationship is based on a profound spiritual connection and inherent responsibility to Mother Earth that guides First Nations Peoples to practice reverence, humility, and reciprocity."²⁵ MVCA is committed to working with First Nations for the health and betterment of all.

Flood Forecasting & Water Management

- Water management along the Mississippi River and its tributaries is a collaborative effort of MVCA, the Ministry of Natural Resources, Ontario Power Generation, Enerdu Power, Mississippi River Power Corporation, and Portage Power.
- Environment & Climate Change Canada coordinates water management on the Ottawa River and has gauge stations at various locations within MVCA's jurisdiction.
- The province uses data supplied by MVCA and other organizations to forecast snow run-off and short to mid-term weather conditions.
- Municipalities manage local stormwater quality and quantity through planning approvals and the design and maintenance of municipal drains.

Hazards Management

- Federal and provincial ministries have baseline surficial geology maps and similar resources that are used by MVCA where more detailed local studies have not been carried out.
- Municipal Official Plans and Zoning-laws and the consideration of applications under the *Planning Act* are to be consistent with the *Provincial Planning Statement, 2024* that directs development away from natural hazards.
- Municipalities circulate planning applications to MVCA for review of potential hazards; and notify landowners when a permit may be required from the Authority. Municipalities collaborate with MVCA by requiring applicants to complete technical studies that will support both planning and permit reviews and mitigate delays in approval processes.

²⁵ <https://afn.ca/environment/environmental-protection-climate-action>

Protection and Management of Wetlands & Other Natural Resources

- Legislation is in place at the provincial and federal level for the protection of species at risk, and both levels of government have processes for studying and listing/delisting species. Both operate species recovery plans and stocking programs. The province also manages natural resources through the monitoring of forests and species, the administration of forestry and pits and quarry licences, and hunting and fishing licenses.
- The province maintains a database of Provincially Significant Wetlands (PSWs), but no longer makes final determinations regarding a wetland's significance. Municipalities are responsible for reviewing and either accepting or challenging wetland assessments completed under *Ontario's Wetland Evaluation System (OWES)*, 2022. The current edition of OWES does not award points based upon the presence of species at risk.
- Municipal Official Plans and Zoning-laws and the consideration of applications under the *Planning Act* are to be consistent with the *Provincial Planning Statement, 2024* that directs development away from wetlands and significant natural resources.
- Several organizations have acquired wetlands and other land of ecological or hydrologic value, with the following operating within MVCA's jurisdiction: the National Capital Commission, Canadian Wildlife Service, Ducks Unlimited Canada, Mississippi Madawaska Land Trust, and the Nature Conservancy of Canada, and the County of Lanark through its county forest program.
- Several organizations conduct species inventories and habitat surveys to support local land use planning and scientific studies or work with decision-makers for habitat protection including: Friends of the Carp River, Friends of Carp Hills, Friends of Stittsville Wetlands, Climate Network Lanark, Mississippi Field Naturalists, and the Madawaska Field Naturalists.

Drinking Water Source Protection

- Municipalities have lead responsibility for the protection of municipal drinking water supplies. This includes administration of the *Ontario Building Code* for the prevention of ground and surface water contamination from municipal and individual wastewater systems.
- Local health units test public beaches and issue warnings regarding unsafe bacterial levels; and provide water testing services for those on private well systems.
- The provincial Ministry of Environment Conservation and Parks monitors trends in surface water quality and responds to spills and hazardous algae blooms.

Outdoor Recreation

- Federal and provincial crown land, parks, and greenbelt comprise approximately 25% of MVCA's jurisdiction. Both levels of government also operate boat launches, and the province approximately 748 camp sites.

- Municipalities own and manage local linear pathways and active recreational facilities such as sports fields. Municipalities also operate and maintain boat launches, and in some cases manage camp sites. The County of Lanark has mostly unmaintained trails on its properties.
- The for-profit sector provides camp sites, trailer parks, and cottage rentals, boat launches, rentals, and marinas, and outdoor recreation opportunities, mostly on a season basis.
- The not-for-profit sector primarily operate as clubs to facilitate activities like snowmobiling, ATVing, and mountain biking. Both the Snow Road Snowmobile Club and the Ottawa Valley ATV Club have assisted MVCA with maintenance of the K&P Trail.
- Individual land owners support some activities through short-term agreements that allow limited access and use of their properties by club members.

Stewardship and Education

- MVCA's stewardship program-delivery costs are almost entirely funded by grants from the City of Ottawa, ALUS Canada, private companies, and philanthropic organizations.
- RVCA has been a long-term partner that delivers large-scale tree-planting in MVCA's jurisdiction.
- Lake Associations are MVCA's eyes and ears regarding local conditions, and help to communicate information to their membership.
- School boards and individual schools and teachers, including retirees, have volunteered their time to support development of the Carp River Conservation Area signage, a mobile learning app, and to help rebuild MVCA's education program.
- Our Watershed Plan Public Advisory Committee comprises people from across the watershed interested in achieving improvements through stewardship and education.

Visitor Services

- As noted previously, several organizations make regular use of the Mill of Kintail Conservation Area and, in some cases, help with upkeep of the property.
- Our Museum Advisory Committee is comprised of people knowledgeable in the history of the Mill of Kintail property and lives of R. Tait McKenzie and James Naismith and are looked to help support continued operation of the museum and its artifacts.

Appendix 2: Registry of Hazard Events

DRAFT September 2024

Research into historic events, their timing, scope and impacts is ongoing. This Registry will be updated as more information is collected and details confirmed.

Flooding

The flood of 2019 was one of the largest floods recorded on the Mississippi River. The flood affected almost every watercourse within the Mississippi River watershed from the headwaters of the system in Addington Highlands Township to the outlet of the river into the Ottawa River at Galetta.

The Clyde River is a major tributary of the Mississippi River and was identified as one of MVCA’s highest flood risk areas in the 2022 [Flood Risk Assessment Study](#). The Clyde River has experienced many flood events in recent years including 1998, 2005, 2008, 2014, 2017 and 2019. Because major rainfall during the 2019 event was concentrated in the upper watershed of the Mississippi River, the Carp River experienced less severe flooding.

The flood of 1998 was the most significant for the MVCA in terms of directing and coordinating flood response for the local municipalities.

Event	Flood Damage Centre	Key Impacts
2019, Mississippi River, Ottawa River	Most of the watershed. Disruptions from Dalhousie to Mississippi Lake - Communities of Almonte, Pakenham Fitzroy Harbour, and Constance Bay. Mazinaw Dam spillway washout	Mississippi River- The 2019 flood was similar to the 1998 flood event, although the extremes were more extreme in the western portion of the watershed than in 1998. In particular, the Mazinaw Dam spillway washed-out and had to be repaired. Ottawa River- Water levels reached 30 cm higher than the 2017 flood event. Ottawa called a state of Emergency for the Ottawa River. There were two deaths, and 6,000 homes were flooded or in

Event	Flood Damage Centre	Key Impacts
		imminent danger. ²⁶ Transportation infrastructure closed. As a result of province-wide impacts, there was an investigation that led to development of the provincial Ontario's Flooding Strategy in 2020.
2017 Ottawa River	Constance and Buckham's Bay	Prolonged periods of rain coupled with snowmelt. Considered the 'Flood of the Century' only to be surpassed two years later. Not as severe flooding along the Mississippi river as it peaks earlier than the Ottawa River.
2017 summer Mississippi River (Dalhousie Lake)	Dalhousie Lake to Sheridans Rapids – Mississippi Lake to some extent	Intense rainfall coupled with upper reservoirs at storage capacity resulting in flooding.
2014 Mississippi & Clyde Rivers	Typical flood prone areas	Above average snow pack into the month of April followed by above average rainfall caused significant flooding throughout the watershed. Event did not reach records hit in 1998 or 2002.
2009 Carp River	Suburban Glen Cairn -stormwater backup leading to flooding basements	Under design/capacity of stormwater collection system – Described as 1:100-year storm. Glen Cairn community has experienced two floods prior to this event.
2002 – Mississippi River	Upper Watershed to Dalhousie Lake Shabomeka Dam embankment overtopped Mazinaw Dam Spillway washout.	June 2002, severe storm over 4 days produced 140 - 200 mm rain in western portion of watershed. Almost every log in every dam was removed over the course of a week to deal with the excess water and caused record high levels in most of the upper lakes.

²⁶ Source: [Ottawa River reached peak level in 2019 — a look back - The Weather Network](#)

Event	Flood Damage Centre	Key Impacts
1998 Clyde River - Mississippi River	Communities of Cedardale and Lanark Village, Dalhousie Lake, Mississippi Lake, Almonte, Pakenham Widow Lake Dam overtopped Lanark Dam and High Falls Dam had extensive washouts.	Intense rainfall coupled with snow melt – resulted in state of Emergency for Lanark Village and Mississippi Lake – numerous road closures, evacuations, military aid. The significant ice storm earlier in the year left massive amounts of ice on ground and deforestation impacting the severity of the flooding.
1974 - 1976	Ottawa River nears historic peaks.	1976 - maximum daily discharge at Appleton reported at 236 CMS – This is approaching 100-year flood event, fifth highest recorded flow
1960 Clyde River Mississippi River	Ottawa Citizen article - Description rivals the 1998 event road washouts topping of Lanark village bridge	Sixth highest recorded flow at Appleton.
1929 Mississippi River	Southern Ontario, April 5-9, 1929. Widespread flooding caused damages and flooded roads and railways	Maximum daily discharge at Appleton reported at 260 CMS

Drought

In all watercourses, aquatic habitat is affected to some degree depending on the severity and duration of the drought event. Other impacts include groundwater levels that are dependent on recharge from infiltration of precipitation. Droughts can impact the water levels in many local aquifers, especially those that don't have abundant recharge rates which can deplete groundwater being pumped out of local wells. Livestock farmers can have difficulty providing water for their animals, and crop farmers and golf courses that rely on streams, ponds, and ground sources may be unable to provide adequate irrigation. Safe boating on the Mississippi River system, as well as on uncontrolled lakes, can be jeopardized by lower water levels.

Mississippi River

- In the river below Crotch Lake to Galetta Crotch Lake, our largest reservoir is used to augment flows downstream during the summer months. In drought conditions, normally 90% of the water in the lower reach of the system comes from Crotch Lake during the summer months.
- Flow out of Mississippi Lake is reduced which can affect the quality and quantity of the water supply for the Town of Carleton Place.

Clyde River

- Tributaries can have no flow and main channel can be reduced to disconnected pools, wetlands can dry up - all of these can negatively affect aquatic and terrestrial species' populations, potentially for years to come.

Small Tributaries to the Mississippi River (including Buckshot creek, Fall River, Indian River)

- Flows can be reduced leaving exposed streambed and reduced habitat – exacerbated by beaver dam construction where a dam creates a pond but reduces or eliminates flow downstream.

Carp River

- flows can be reduced to zero leaving exposed streambed and reduced habitat – exacerbated by beaver activity.
- Tributary streams can have no flow – also exacerbated by beaver activity.

Ottawa River

- The Ottawa River is a major system responding mainly to climatic conditions in northeastern Ontario and western Quebec. To have a significant impact, dry conditions would have to extend over a very large area. Municipal water supplies taken from the Ottawa River are a small portion of the flow and have not been at risk during previous drought events in the Mississippi watershed.

Tributaries to the Ottawa River

- All of these streams can be reduced to minimal to no flow and aquatic habitat can be severely limited.

Event	Duration	Key Impacts
2018	<p>04-07-18 - Watershed Conditions statement - low water</p> <p>19-07-18 – Level I Minor Drought declaration</p> <p>03-12-18 conditions return to normal</p>	<p>The watershed received average rainfall for the month of August and September and more than 50 mm across the watershed in early October. This has resulted in the precipitation indicator for drought to be now out of a drought status. Due to temperatures still being above average however, and soil moisture conditions still appearing to be in a deficit, the flows in the smaller tributaries (Buckshot Creek, Clyde, Indian and Fall Rivers) have not responded to the rainfall. Based on the flows in those tributaries and along the Mississippi River itself, Level I / Minor drought conditions still persisted into Dec.</p>
2016	<p>26-May-16 Watershed Conditions statement - low water</p> <p>20-Jun-16 – Level I Minor Drought declaration</p> <p>30-Jun-16- Level I Minor Drought upgraded to Level II Moderate Drought</p> <p>11-Aug-16- Level II Moderate Drought upgraded to Level III Severe Drought</p> <p>14-Dec-16- Drought downgraded from Severe to Moderate</p> <p>Jan 2017- conditions return to normal</p>	<p>Watershed Conditions</p> <ul style="list-style-type: none"> • Virtually all smaller tributaries dried up. • Most swamps were completely dry. • Multiple reports of dry wells. • Most municipalities had water bans in place except the City of Ottawa. <p>Municipal systems</p> <p>CA’s and Municipal water users (i.e. Town of Perth, Smiths Falls and Carleton Place) met to discuss current conditions and what potential impacts / concerns there may be if this progresses into next year.</p> <p>Mississippi Mills had sediment issues with some of their wells.</p> <p>Carleton Place had seen an increase in organics (sediment) in their water. More algae were observed in 2016 due to higher water temperatures. Due to the lack of water more backwashes of the system are needed, using the already low water supply. It was also noted that low flows bring a higher amount of beaver activity, causing disruptions in water supply.</p>

Event	Duration	Key Impacts
		<p>Power producers</p> <p>The Mississippi River Power Company indicated that their Almonte generating station has been shut down the past 3 months and producing no power.</p> <p>Continuing Level 3 status could impact ecological factors such as, amphibians and fish shortages from going into the winter months with dry streambeds.</p>
2012	<ul style="list-style-type: none"> • Low water conditions began the middle of July, 2011. • First declared Low Water Condition Level I June 1, 2012 • Declared Level II on July 17, 2012 and remain there until Nov 15, 2012. 	<p>Watershed Conditions</p> <ul style="list-style-type: none"> • Virtually all smaller tributaries dried up. • Most swamps were completely dry. • One reported dry well, no reported fish kills. • Mississippi Mills issued a water ban for July and August.
1998/99	In the fall of 1998 to the summer of 1999.	Southwestern and parts of eastern Ontario experienced an extended period of low rainfall and high temperatures. These were the lowest water levels and driest soil conditions recorded for several decades. The Ontario Low Water Response Plan (OLWRP, 2001) was prepared in response to deal with low water conditions.

Erosion

Known land slides on the lower Indian and Lower Cody Creeks. Only aware because of landowner reporting, and has little affect to property. Due to slumping or undercutting. Most erosion is located in deep defined stream channels characterized by silty clay soils (ancient glacial), found in tributaries of the lower Mississippi River between Blakeney and Pakenham. Many creeks/ivers are actively meandering and this hazard is regulated where Flood Plain Mapping exists.

Event	Erosion	Key Locations
August 2024	Carp River	Washed out culverts in Carp watershed due to the large rain event from the remnants of Hurricane Debby.
1980	Ottawa River	McClaren's Landing - A landslide occurred resulting in the loss of a dwelling and a major portion of a residential lot. The Township of West Carleton requested the MVCA to assess the conditions of the slope and determine possible remedial action.

Cattle erosion exists in many areas in the lower Mississippi and lower Carp River watersheds. This was abated in some areas under a provincial cost share program Clean Up Rural Beaches, managed by the Conservation Authority.

Appendix 3: Status of Watershed and Subwatershed Plans, 2024

DRAFT February 14, 2024

Activity / Recommendation	Status				Comments	Category		
	Compl	WIP	On Hold	Cancel		1	2	3
Carp River Subwatershed/Watershed Plan, 2004								
Assess impacts of floodplain modifications resulting from stream restoration works along upper Carp from Glen Cairn Pond to Richardson Side Road	X				MVCA completed an update to the Carp River floodplain mapping in July 2024. There has been limited monitoring on restoration works in regard to habitat enhancements. During the surveying process for the floodplain mapping update, some siltation around crossings was observed.	X		
Undertake Floodplain Mapping for Carp River, Poole Creek, and Feedmill Creek downstream of Highway 417	X				Floodplain mapping updates were completed in 2024 for the Carp River, 2017 for Feedmill Creek, and 2015 for Poole Creek.	X		
Carp River Corridor Plan: Restore upper Carp River to riverine wetland with floodplain features and recreational trail system (approximately 5000 m)	X				The Carp River Corridor Restoration Plan, per the Carp River Subwatershed/Watershed Plan notes the Carp River Corridor is located between Hazelden Road and Richardson Side Road. This work has been completed as part of the restoration works and permitted by MVCA under W15/55 and W16/137. The Carp River Conservation Area provides a trail system	X		
Protect stream corridors along Carp (100 m), Poole (80 m) (downstream of Hazeldean Road) and Feedmill (70 m) downstream of Queensway	X				Protection through land ownership by MVCA and the City of Ottawa in areas of Poole Creek from Hazeldean Road at Sweetnam Drive to Maple Grove Road. The City of Ottawa owns portions of Feedmill Creek adjacent to Minto's Arcadia Development and the Tanger Outlets. The City of Ottawa and MVCA both own portions of the Carp River from the Glen Carin Detention Basin to the 417.	X		
Restore lower reaches of Poole and Feedmill Creek to riparian wetland systems contiguous with Carp River Corridor plan (approximately 1000 m)		X			Plans exist in the Carp River Restoration Plan for the restoration of the lower reaches of Poole and Feedmill Creeks. Some work identified in the Feedmill Creek Stormwater Management Criteria Study, Prepared by JFSA in association with Coldwater Consulting Ltd., dated April 30, 2018, which is a City of Ottawa initiative.			X
Conduct EIS on all Category 2 features (see detailed description in Section 8.4.3) - woodlands contiguous with Level 1/2 riparian corridors, features in low/moderate recharge,				X	Implemented through development review, or other relevant studies as administered by the City of Ottawa.			

Activity / Recommendation	Status				Comments	Category		
	Compl	WIP	On Hold	Cancel		1	2	3
adjacent lands (30 or 120 m setbacks) - applies only to development applications								
A stewardship/education program to promote protection and regeneration of Category 3 areas (see detailed description in Section 8.4.3) to a natural state. A stewardship/education program to promote protection and enhancement of Category 1 areas (see detailed description in Section 8.4.3)		X			MVCA rotates monitoring through all the sub-watersheds within the City of Ottawa boundaries. MVCA produces a report on each subwatershed identifying opportunities for stewardship through the City Stream Watch Program . The Feedmill Creek Stormwater Management Criteria Study, Prepared by JFSA in association with Coldwater Consulting Ltd., dated April 30, 2018 provides additional stewardship initiatives.			X
Review current aggregate operations in Feedmill headwaters and review opportunities to augment baseflows in both Feedmill and Poole. Confirm that rehabilitation plan devotes restoring significant lands to natural state		X			Work in progress related to the expansion of the floodplain mapping update for Feedmill Creek.		X	
Protect valley and stream corridors along upper Carp, Poole and Feedmill Creeks (See Section 8.2)		X			Work is being completed as funds are available, some work completed to date along Upper Poole Creek.			X
Maintain key functions of valley and stream corridors in Hazeldean and Unnamed Tributaries		X				X		
Program emphasis on reducing flooding impacts on agricultural lands through stream restoration, wetland/forest protection measures as described below		X			Carp River Floodplain Mapping was updated in July 2024, Carp River Restoration works completed between Hazeldean Road and Richardson Side Road.	X		
Stream restoration using natural channel design and engineered natural channel measures along 15.4 km of priority 1 tributaries and 13 km of priority 1 Carp River segments		X			Carp River Restoration Project included the re-alignment and restoration of the mainstream between Hazeldean Road and Richardson Side Road (approx. 5.5km) and the construction of seven off-line habitat ponds within the Carp River corridor.	X		
Control livestock access restrictions and installation of alternate watering sources on livestock operations in priority 1 subwatersheds and along priority 1 Carp River segments		X			To date, one farm along the Carp River, one farm along Huntley Creek (Priority 1) and one farm along a Priority 2 Creek, have been provided funding through the Rural Clean Water Program to restrict livestock from water and to provide them with an alternative watering source. Still many active farms along the Carp River and Priority 1 and 2 Creeks that need to be targeted with this program. Rural Clean Water Program initiatives can continue move this recommendation forward.			X

Activity / Recommendation	Status				Comments	Category		
	Compl	WIP	On Hold	Cancel		1	2	3
Riparian zone plantings along 24.2 km of priority 1 tributaries and 9 km of priority 1 Carp River segments		X			16 landowners along the Carp River have participated in a planting program (Rural Clean Water Program, Private Land Forestry Program or MVCA Shoreline Naturalization program) involving planting along the shoreline (3.1 km on west side of river, 2.5km planted on east side of river). 12 landowners along a Priority 1 Creek have participated in a planting program, of the 12, 9 have had some planted along the shoreline (app. 4.1km of shoreline has been planted on the west side of creeks and 4.6km has been planted on the east side of creeks). TOTAL: Carp River: approx. 2.8km/9km planted, Priority 1 tributaries: app. 4km/24.2km planted.			X
Riparian plantings along 18.2km of priority 2 streams		X			Private Land Forestry Program - one landowner along Priority 2 creek nearest the Ottawa River, planted 500 trees, but only 200m of their 550m shoreline is planted. TOTAL: 0.2km/18.2km planted.			X
Implement conservation land management practices on about 4500 ha of priority 1 and about 2500 ha of priority 2 agricultural lands to reduce soil erosion		X			Three landowners (one on Carp River and two on Unnamed Priority 1 Creek C) have participated in the Rural Clean Water Program to reduce soil erosion on farms (cropping practices, erosion control, fragile land retirement).			X
Site specific erosion control measures (livestock access control, instream/roadside grade controls, streambank stabilization) in priority 2 streams		X			One landowner on Priority 2 stream beside Corkery Creek has participated in the Rural Clean Water Program to restrict livestock from water.			X
Implement non -structural BMP's on all farmsteads on priority 1 and 2 agricultural lands, beginning with those operations contributing directly to priority 1 and 2 tributaries and priority 1 Carp River segments (approximately 50 farms)		X			Options available through Rural Clean Water program.			
Implement structural BMP's on all farmsteads contributing directly to priority 1 tributaries and priority 1 Carp River segments (approximately 20 farms)		X			According to Carp River Watershed Study these are what need to be implemented: Structural manure/feedlot storage and handling BMPs such as: covered storage facilities solid and liquid storage facilities, runoff storage facilities. One landowner on Priority 2 subwatershed participated in Rural Clean Water program and improved manure storage/ wastewater/ treatment in 2009-2010, OMAF Ministry Strategies and Priorities is to provide technical support to help farmers addressing problems before they are regulated under the Nutrient Management Act. Options available through Rural Clean Water.			

Activity / Recommendation	Status				Comments	Category		
	Compl	WIP	On Hold	Cancel		1	2	3
Implement the eight elements of the City's Groundwater Management Strategy		X			Source Protection administered by the City of Ottawa.	X		
Develop the groundwater management strategy to address potential contaminant sources and source protection.		X			As outlined in the Carp River Watershed Study: initiate a septic system inspection program and repair/replace faulty systems (covered under groundwater program). This has been completed with Rural Clean Water Program; 19 landowners have had a septic system repair/replacement since the Carp River Watershed Plan was created in 2006.	X		
Implement Rural BMP's on agricultural lands in high/moderate recharge (priority 1 and 2 agricultural areas)				X	According to the Carp River Watershed Study some examples are: Municipal source control practices, infiltration facilities, urban retrofitting, buffer zones, aquatic habitat restoration, stream restoration/natural channel design, terrestrial habitat restoration/reforestation, wetland creation, public education, erosion and sediment control during construction, groundwater recharge and baseflow protection, source protection plans, livestock access control, fertilizer/manure management (on-field measures), fertilizer/manure management (streamside measures), manure/feedlot storage and handling (structural and non- structural), fragile land management, road side ditch and drain maintenance using natural channel design principles, milkhouse waste management, pesticide storage and management, irrigation management replace fault septic systems.			
Develop a more detailed record of actual water takings from surface and groundwater supplies	X				MOE partnered with Conservation Ontario and provided actual water taking statistics (per annum), as available on OPEN PORTAL (Ontario Partner Environmental Network) (as of 2013).			
Require hydrogeological investigations for land development proposals (MOE Guideline D5-5)				X	Implemented through City of Ottawa Development Review.			
Protect Category 1 Areas (see detailed description in Section 9.2.3.2) - Centres of Ecological Significance, candidate ANSI's, High NESS Areas, natural features in high recharge areas, wetlands, riparian corridors.		X			Implemented through City of Ottawa Development Review. Protected under Greenspace Master Plan: High NESS significant wetlands are protected, high ANSI and NESS areas are protected (Carp River, Feedmill Creek and Poole Creek riparian corridor). These areas are considered under land use designations that are Natural Environment Area and Significant Wetlands South and East of the Canadian Shield in the Greenbelt, plus Urban Natural Features and Major Open Space elsewhere in the urban area. Lands designated Significant Wetlands and Natural Environment Area are publicly owned. Most of the lands designated as Urban			X

Activity / Recommendation	Status				Comments	Category		
	Compl	WIP	On Hold	Cancel		1	2	3
					Natural Features and Major Open Space are publicly owned and the designation restricts development. Area protected under Official Plan: Hazeldean Road to Richardson side road under Carp River Restoration Policy. Nothing on Centres of Ecological Significance or 'Category 1 areas'.			
Conduct EIS on all Category 2 features (see detailed description in Section 9.2.3.2) - woodlands contiguous with Level 1/2 riparian corridors, features in low/moderate recharge, adjacent lands (30 or 120 m setbacks) - applies only to development applications				X	Implemented through City of Ottawa Development Review.			
Undertake a stewardship/education program to promote protection and regeneration of Category 1 areas to a natural state (see detailed description of Category 3 areas in 9.2.3.2)		X			Implement programs through Rural Clean Water and Shoreline Naturalization and Tree Planting Program.			X
Identify and protect valley and stream corridors adjacent to all classified streams in Municipal planning and/or zoning schedules to ensure their protection as land use change occurs		X			Implemented through City of Ottawa Development Review.	X		
Implement a stewardship program to encourage buffer plantings adjacent to all classified streams to reduce sediment loadings to streams		X			Shoreline Naturalization Program exists and is available to landowners. Need to increase awareness of these programs as many areas would benefit from riparian plantings.			X
Recreational trail system				X	Future Plans: Carp River Remediation Project has 1.4 km of trails planned. Identified in City of Ottawa Official Plan and the Greenspace Master Plan.			
Environmental Monitoring Program		X			MVCA monitors the water levels and rainfall recordings of Carp River. City of Ottawa monitors water quality, MVCA completes baseline monitoring on selected sites in partnership with the City of Ottawa. City Stream Watch program for Carp River. Ottawa Riverkeeper now monitors the Carp River as of 2013; volunteers are testing for phosphate, nitrate, nitrite, pH levels and dissolved oxygen each month. E-fishing, benthics, etc. completed for Carp River.		X	
Carp Action Plan, May 2015								
The Action Plan was developed to support the findings of the Carp River Subwatershed Study.					As identified in the Carp River Subwatershed Watershed Study, most of the recommendations of the Subwatershed Plan must			

Activity / Recommendation	Status				Comments	Category		
	Compl	WIP	On Hold	Cancel		1	2	3
					take into consideration the cooperation, consent and environmental stewardship of the landowner. Additional funding is required to move forward with initiatives of the Carp Action Plan. The Shell grant which funded the initial works completed under the Carp Action Plan, expired in 2015.			
Blockage Removal					Two high and one medium priority blockages completed in the fall of 2019, funded by a DFO grant. Three medium priority blockages addressed by the Friends of the Carp River in winter 2015. A low priority blockage was partially removed in winter 2014 by the Friends of the Carp River. MVCA completed a low priority blockage removal in fall of 2013.			
Shoreline Plantings					High priority planting completed as part of DFO funding on Diefenbunker site spring 2014. Three low priority plantings completed on the west bank, in spring 2014. One low priority planting completed with the Kinburn Community Association and West Carleton Scouts in the fall of 2014.			
City Stream Watch					Ongoing through annual rotation.			
Upper Poole Creek Subwatershed Plan, 2000								
Continue reviewing and approving stormwater management plans for development proposals.		X			Review of stormwater management plans is implemented through development review, by both the City of Ottawa and MVCA.	X		
Endorse the Upper Poole Creek Subwatershed Plan	X				The Upper Poole Creek Subwatershed Study, prepared by Marshall, Macklin, and Monaghan, was approved by Council in 2000.			
Complete riparian/buffer plantings and encourage landowners to leave uncut strip along the creek.		X			Six public sites have been planted with 286 trees and shrubs by MVCA staff since 2013. MVCA partnered with TD Friends of the Environment to plant an additional public site with 150 trees and shrubs using the help of 25 volunteers. Additionally, 75 plants were given away to 20 participating private landowners along UPC in 2020.			X
Place in-stream habitat structures to create fish habitat in areas that are deficient.	X				Two existing lunkers were fixed and four half-log structures were installed in 2015. A new lunker was installed in 2019.			X
Review and approve Environmental Impact Statements, which should be submitted for any proposed development within 120m of the boundary of Upper Poole Creek Wetland.		X			Implemented through City of Ottawa development review. Permitting, permission is required from MVCA and potential review of technical studies.			

Activity / Recommendation	Status				Comments	Category		
	Compl	WIP	On Hold	Cancel		1	2	3
Extend regulatory fill line mapping to include the Upper Poole Creek Wetland based on the need to preserve the hydrologic function of the wetland.	X				MVCA regulatory fill line mapping was updated in 2015.	x		
Establish a pilot program to monitor effectiveness of differing Glossy Buckthorn control methods.		X			Several events have been held by MVCA staff with volunteers to remove invasive species, focusing on Glossy Buckthorn, Multiflora Rose, and Garlic Mustard. Staff will continue hosting volunteer removals over the coming years. No pilot program focused on testing and monitoring different Glossy Buckthorn control methods has been launched.			x
Control beaver activity in reaches below the Upper Poole Creek Wetland.		X			Two beaver dams causing flow issues were removed in 2014. No deterrents have been implemented by MVCA.			x
Implement a monitoring program to assess the abundance or location of cold-water indicator species.		X			Several sites along Poole Creek have been electro-fished in 2009, 2014, 2018, 2019, 2021, and 2023. There is a need for more consistent sampling, based on staff and funding availabilities.			X
Implement a benthic monitoring program.		X			Benthic monitoring along UPC has taken place in 2018, 2019, 2020, 2022, and 2023. Sampling will continue on a yearly basis when possible.			X
Implement a water quality and temperature monitoring program.		X			In typical years, 3-4 sites are sampled each ice-free month through the City Baseline monitoring program. Temperature loggers are launched at three sites and record temperatures at 15 minutes intervals in June, July, and August. Further monitoring takes place on a rotational basis through the City Stream Watch Program (CSW). Upper Poole Creek was last monitored through CSW in 2018 and will be on the rotation again in 2024.		X	
Implement volunteer-led programs to engage the public.		X			Several volunteer events have taken place at Poole Creek, including volunteer clean-up events in 2022 and 2023 and invasive species removals in 2019, 2020, and 2023. City Stream Watch has also operated with the assistance of volunteers. City Stream Watch and other volunteer events will continue to run over the coming years.			X
Educate local landowners on best management practices.		X			Education has been provided through various outreach efforts, such as City Stream Watch, tree giveaways, and other volunteer events. MVCA also partnered with EnviroCentre to set up booths on stormwater management for Poole Creek residents in 2019.			X

Activity / Recommendation	Status				Comments	Category		
	Compl	WIP	On Hold	Cancel		1	2	3
Watts Creek / Shirley's Brook Subwatershed Plan, 1999								
Regeneration and management plans prepared to target priority areas. Planting to be coordinated by MVCA/MNR programs emphasizing landowner, community group and associations, involvement and participation. Education campaigns and tax incentives for improved forest management		X			MVCA's stewardship programs include Shoreline Planting Program, Green Acres, City Stream Watch, Ottawa Rural Clean Water Program - supporting Forest Management Plans, Watercourse Buffers, Windbreaks, etc. Shirley's Brook Tributary 2 realignment, habitat enhancements and plantings completed in accordance with the Kanata North Environmental Management Plan/Community Design Plan/Master Servicing Study. Tax incentive for forest management through City of Ottawa.			X
Rehabilitation plans prepared to target priority areas. Channel stabilization and planting to be coordinated by MVCA/MNR programs emphasizing landowner, community group and associations, involvement and participation.		X			MVCA's stewardship programs include Shoreline Planting Program, Green Acres, City Stream Watch, ORCWP- supporting Forest Management Plans, Watercourse Buffers, Windbreaks, etc. Tributary 2, Realignment, habitat enhancements and plantings completed in accordance with the Kanata North Environmental Management Plan/Community Design Plan/Master Servicing Study.			X
Revise and/or update previous flood line mapping Identify hazardous lands as Hazard Prone Areas within OP land use schedules. Define erosion hazards (i.e., slope stability).	X				Floodplain mapping was updated for Shirley's Brook in 2017. Tributary 2 has been realigned to a 40m corridor and is to be zoned EP though realignment areas in Kanata North, in accordance with the Kanata North Environmental Management Plan. Shirley's brook to be re-mapped in accordance with holding provision conditions in Kanata North (realignment completion, pond construction, etc.).	X		
Protect groundwater recharge zones. Subwatershed watch programs coordinated by Kanata and MVCA that emphasize landowner, community groups and associations involvement, participation and incorporation of urban/rural BMPs.		X			MVCA's stewardship programs include Ottawa Rural Clean Water Program - supporting Well Decommissioning, Manure Storage and Treatment, Nutrient management plan/precision farming, etc.			X
OMAFRA/MVCA/MNR staff to provide educational, technical assistance to farmers and rural community emphasizing principles of land stewardship. Landowners to be responsible for initiatives.		X			MVCA's stewardship programs include Shoreline Planting Program, Green Acres, City Stream Watch, Ottawa Rural Clean Water Program - supporting Forest Management Plans, Watercourse Buffers, Windbreaks, etc. Other provincial programs such as the Canadian Agricultural Partnership.			X
Preparation and submission of Storm Water Management Plans by Developers in conformance with Subwatershed Planning		X			Implemented through development review by City of Ottawa and MVCA. 80% TSS removal required. MVCA previously reviewed water quality requirements during development review but, given	X		

Activity / Recommendation	Status				Comments	Category		
	Compl	WIP	On Hold	Cancel		1	2	3
study. SWM Plans to adhere to MOE/MNR manual of practice, Municipal and MVCA standards and guideline requirements. Subwatershed Monitoring					Bill 23 this review has since been transferred to City's scope of review. Subwatershed monitoring through City Stream Watch and PWQMN.			
Municipally driven initiatives to retrofit existing urban areas with SWMPS. Restrict/regulate surface water withdrawals (e.g. for golf courses). Prepare an inventory of the existing urban storm drainage system to identify the "micro-drainage" system associated with existing development areas. Improve storm water management in existing developed areas where existing controls are inadequate. Promote source control for storm water management. Update municipal Design Manual and standards pertaining to drainage. Review existing municipal maintenance programs.		X			MVCA supports municipalities through the development review and Section 28 permitting. MVCA's scope of review now focuses on stormwater quantity matters. MVCA provided input to City's Stormwater Management Strategy.		X	

Appendix 4: Inventory of MVCA Programs and Services & Funding, 2024 Budget

Operating Summary: Category I

Category 1	BUDGET		2024 REVENUE (Draft Proposed)					
	2023 (Approved)	2024 (Draft Proposed)	Municipal Levy	Reserve Fund	Provincial/Federal Grants	Fee for Service	Other Revenue	Total Revenue
Watershed Management								
Technical Studies	\$1,010,463	\$847,078	\$529,907	\$25,000	\$147,671	\$140,500	\$4,000	\$847,078
Planning & Regulations	\$1,090,109	\$1,003,375	\$708,375	\$0	\$0	\$280,000	\$15,000	\$1,003,375
Subtotal	\$2,100,573	1,850,453	\$1,238,282	\$25,000	\$147,671	\$420,500	\$19,000	\$1,850,453
Flood and Erosion Control								
Flood Forecasting & Warning	\$247,357	\$224,771	\$224,771	\$0	\$0	\$0	\$0	\$224,771
Dam Operations & Maintenance	\$260,809	\$257,359	\$201,564	\$0	\$0	\$55,795	\$0	\$257,359
Subtotal	\$508,166	\$482,130	\$426,335	\$0	\$0	\$55,795	\$0	\$482,130
Conservation Areas								
Conservation Areas	\$416,511	\$298,613	\$235,696	\$32,917	\$0	\$25,000	\$5,000	\$298,613
Technical Studies	\$0	\$71,856	\$71,856	\$0	\$0	\$0	\$0	\$71,856
Subtotal	\$416,511	\$370,468	\$307,551	\$32,917	\$0	\$25,000	\$5,000	\$370,468
General/Corporate Services								
Subtotal	\$1,108,512	\$1,129,772	\$844,903	\$138,869	\$0	\$10,000	\$136,000	\$1,129,772
TOTAL	\$4,133,762	\$3,832,823	\$2,817,071	\$196,786	\$147,671	\$511,295	\$160,000	\$3,832,823

O.Reg. 686/21 defines mandatory Category 1 programs and services, and O.Reg. 402/22 sets out how they and corporate (general) services are to be recovered.

Operating Summary: Category 2 & 3

Category 2	BUDGET		2024 REVENUE (Draft Proposed)					
	2023 (Approved)	2024 (Draft Proposed)	Municipal Levy	Reserve Fund	Provincial/ Federal Grants	Fee for Service	Other Revenue	Total Revenue
Watershed Management								
Monitoring & Watershed Planning	\$0	\$296,536	\$178,536	\$0	\$50,000	\$68,000	\$0	\$296,536
Subtotal	\$0	\$296,536	178,536	\$0	\$50,000	\$68,000	\$0	\$296,536

Category 3	BUDGET		2024 REVENUE (Draft Proposed)					
	2023 (Approved)	2024 (Draft Proposed)	Municipal Levy	Reserve Fund	Provincial/ Federal Grants	Fee for Service	Other Revenue	Total Revenue
Stewardship								
Stewardship	\$213,078	\$159,521	\$51,996	\$0	\$10,000	\$97,525	\$0	\$159,521
Education								
Education	\$15,000	\$61,170	\$19,970	\$0	\$6,000	\$25,200	\$10,000	\$61,170
Visitor Services								
Visitor Services	\$163,121	\$192,289	\$72,623	\$0	\$23,445	\$74,000	\$22,221	\$192,289
TOTAL	\$391,199	\$412,981	\$144,590	\$0	\$39,445	\$196,725	\$32,221	\$412,981

O.Reg. 687/21 defines Category 2 programs and services and sets out how they and Category 3 programs and services are to be cost recovered.

Capital Budget	BUDGET		2024 REVENUE (Draft Proposed)					
	2023 (Approved)	2024 (Draft Proposed)	Municipal Levy	Reserve Fund	Provincial/ Federal Grants	Fee for Service	Other Revenue	Total Revenue
Capital Budget								
Category 1								
WECI Capital Projects	\$327,160	\$295,000	\$98,925	\$36,075	\$150,000	\$0	\$0	\$285,000
Conservation Areas	\$231,000	\$78,250	\$58,250	\$0	\$0	\$0	\$20,000	\$78,250
Corporate Projects	\$470,000	\$891,850	\$86,850	\$90,000	\$0	\$0	\$715,000	\$891,850
Tech. Studies - Capital	\$97,750	\$149,375	\$124,375	\$50,000	\$0	\$0	\$0	\$174,375
Debt Repayment	\$312,417	\$344,922	\$309,510	\$35,412	\$0	\$0	\$0	\$344,922
Category 3								
Mill of Kintail	\$0	\$30,000	\$13,835	\$16,165	\$0	\$0	\$0	\$30,000
TOTAL	\$1,438,327	\$1,789,397	\$691,745	\$212,652	\$150,000	\$0	\$735,000	\$1,789,397

Water & Erosion Control Infrastructure (WECI) projects:

- Lanark Dam
- Farm Lake Dam – Safety Assessment
- Widow Lake Dam (WECI)
- Kash Lake Dam EA (DMAF/WECI)

Conservation Area projects:

- Purdon Boardwalk
- Purdon Stairs
- Mill of Kintail – Workshop Building
- Mill of Kintail Washrooms
- Morris Island Improvements
- Category 3:
 - Mill of Kintail Museum & Gatehouse stonework
 - Gatehouse – veranda joists & flooring

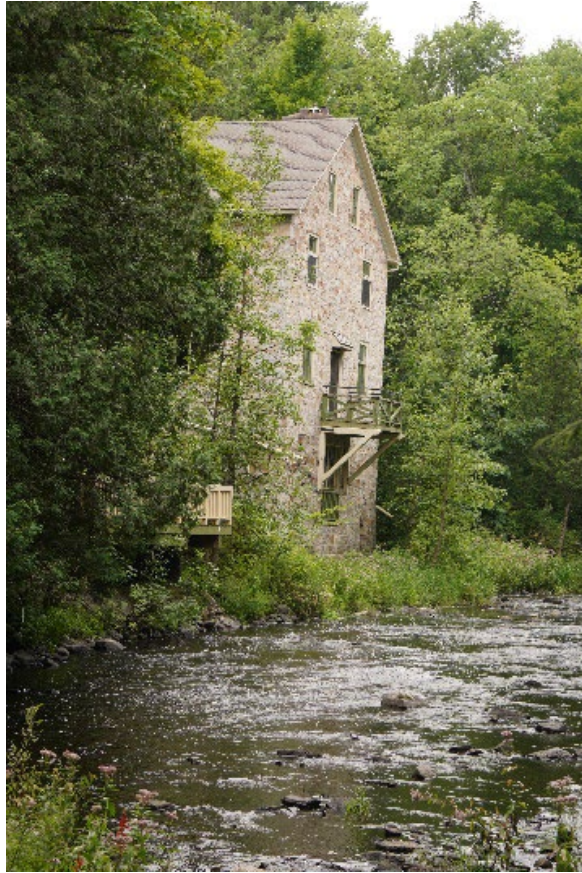
Other projects:

- Gauge network
- Trimble system
- MVCA FFW System model
- DRAPE data purchase
- AV equipment purchase

Appendix 5: MVCA Conservation Areas – Summary Review

Mill of Kintail Conservation Area (MOK)

Municipality of Mississippi Mills



Size: 68 ha

Tenure: Purchased 1972

Master Plan: 2008

Other:

- *Museum Strategic Plan, 2019*
- Lease agreement with Fred Lossing Observatory, operated by the Ottawa chapter of the Royal Astronomical Society of Canada
- Lease agreement with Men’s Shed

Site Features

- Hiking/snowshoe trails (6 km)
- Bike trail, fitness trail, forest hike, snowshoe trail
- 4.7km of marked walking trails
- Forest Loop (2.6 km), Secrete Snow Loop (3.5 km), Trillium Trail (2.9 km), and Indian Riverside Trail
- Elevation as high as 150 m
- R. Tait McKenzie and Dr. James Naismith Museum
- Education programs/ Summer day camps
- Wheelchair accessible half basketball court
- Covered shelter
- Dogs allowed - on leash
- Paid Parking

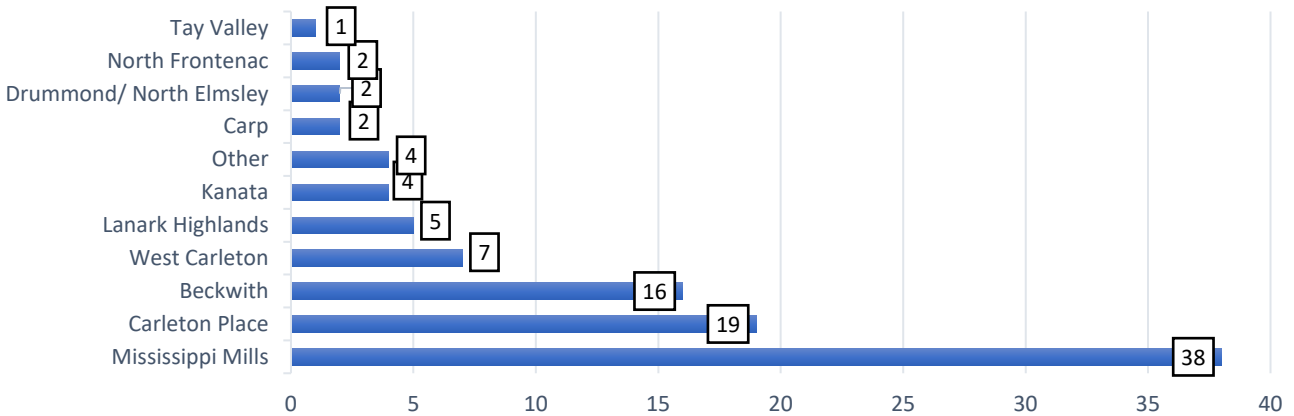
- Playground
- Facility rentals
- Washrooms
- Picnic areas

	Walking Trail	Parking	Washrooms	Signage	Fees	Camping	Boat Launch	Museum	Accessible Area	Rentals	Dogs Allowed	Picnic Areas	Biking Trail	ATV Trail	Education	Fishing	Lookout	Boardwalk	Canoeing	Playground	Beach	Hunting
Mill of Kintail	Y	Y	Y	Y	Y			Y		Y	Y	Y	Y		Y					Y		

RECREATIONAL FACILITIES SURVEY FINDINGS

- 134 of 210 survey respondents said they had gone walking/hiking at the Mill of Kintail Conservation Areas in the past five years. The following chart shows where site visitors lived (when provided).

Recreational Facilities Survey - Mill of Kintail Visitors by Municipality



- Most respondents use the Mill of Kintail 2-6 times per year for walking/hiking activities.
- Most respondents believe that public use of the Mill of Kintail has stayed the same or increased in the past 5 years.
- All respondents said they were either satisfied or very satisfied with the Mill of Kintail; and that their satisfaction level had stayed the same over the past 5 years.
- The most common valued attributes identified for walking and hiking at the MOK were:
 - less than 30-minute drive from home
 - presence of water features
 - quiet/seclusion/privacy
 - easy parking access
- Other Survey Comments:
 - Dogs should be on leash / lots of off-leash dogs
 - Continued maintenance appreciated

REVIEWS FROM TRIP ADVISOR AND ALL TRAILS:

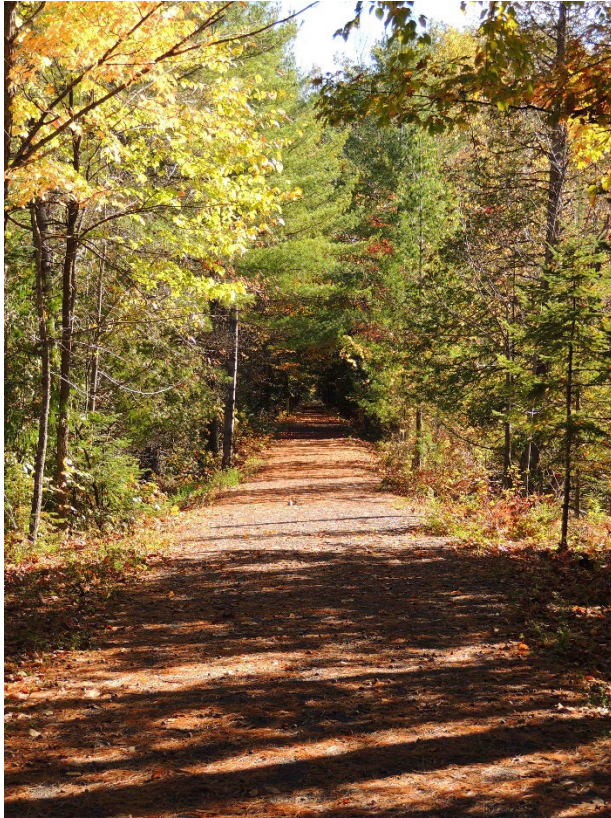
- Average 4.6/5
- Well maintained
- No phone reception, download maps
- Easy terrain
- Slippery in winter
- Quiet
- Negative views on parking/entrance fee
- Trails sometimes closed
- Often dogs off leash

STAFF SWOB ANALYSIS: Mill OF KINTAIL CA

Strengths	Weaknesses	Opportunities	Barriers
<ul style="list-style-type: none"> • Historic site/buildings • R. Tait McKenzie and Dr. James Naismith Museum • Extensive hiking/snowshoeing trail network • Popular with the public • Established facilities to host events • Playground & Half Basketball Court • Proximity to populated area • Many site amenities to cater to multiple uses • Intersected by watercourse • Fully operational and staffed 	<ul style="list-style-type: none"> • Small Parking lot • Overflow parking, weather dependent • Lack of modern washroom facilities • Lack of maintenance facilities/storage for larger events • Security gaps for certain buildings and site locations • Enforcement of site rules • Largest use is over a two-week period 	<ul style="list-style-type: none"> • Potential for hosting more/larger scale events • Available space for more parking • Available space for sports/recreation • Camp sites • Trail grooming for increased winter usage • Potential for volunteer involvement • Potential for more educational programs 	<ul style="list-style-type: none"> • Lack of accessible trails • Terrain limits accessibility to certain areas for maintenance • Accessibility issues within the buildings • Numerous community stakeholders with differing opinions and priorities when it comes to the property

Morris Island Conservation Area

City of Ottawa



Size: 47 ha

Tenure: 10-year lease agreement with City of Ottawa and OPG

Master Plan: 1987

Other:

Capital Improvement Plan 2007-2009

Site Features

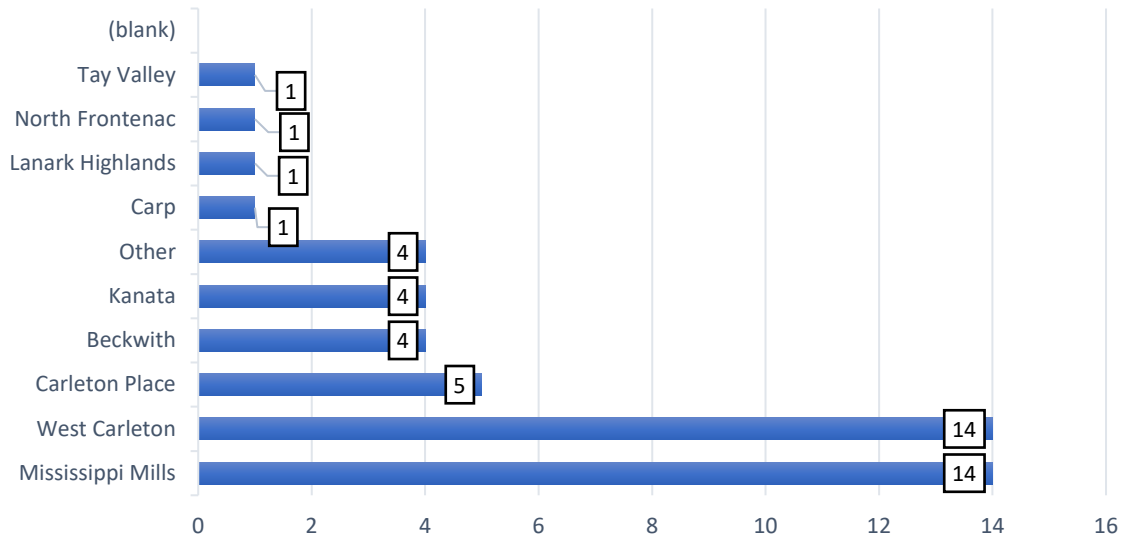
- 6 km of Nature trails (6)
- Includes boardwalk
- Paddle routes
- Wheelchair accessible facilities
- Fishing platforms
- Washrooms
- Picnic areas
- Canoe launch
- Scenic lookout
- Rest area
- Dogs allowed - on leash
- Paid parking
- Signage

	Walking Trail	Parking	Washrooms	Signage	Fees	Camping	Boat Launch	Museum	Accessible Area	Rentals	Dogs Allowed	Picnic Areas	Biking Trail	ATV Trail	Education	Fishing	Lookout	Boardwalk	Canoeing	Playground	Beach	Hunting
Morris Island	Y	Y	Y	Y	Y				Y		Y	Y				Y	Y	Y	Y			

RECREATIONAL FACILITIES SURVEY FINDINGS

- 66 of the 210 survey respondents said they had gone walking/hiking at Morris Island Conservation Areas in the past five years. The following chart shows where site visitors lived (when provided).

Recreational Facilities Survey - Morris Island Visitors by Municipality



- Most respondents use Morris Island 2-6 times per year for walking/hiking activities.
- Most respondents believe that public use of Morris Island has increased over the past five years.
- Common features that are valued when using Morris Island for walking/hiking activities include:
 - presence of water features,
 - less than 30-minute drive from home,
 - a variety of trail routes and distances; and
 - easy parking access.
- All respondents said they were either satisfied or very satisfied with Morris Island CA; and most said that their satisfaction level had stayed the same over the past 5 years.

Other Survey Comments:

- Crowded/Busy
- Garbage left behind
 - Off-leash dogs; suggestion for fenced off-leash area

REVIEWS FROM TRIP ADVISOR AND ALL TRAILS:

- Average 4.5/5
- Some say not totally accessible
- Liked causeway and saw otters
- Trails shaded by trees
- Big parking lot
- Easy trails
- Well maintained, marked trails
- #2 of 2 things to do in Fitzroy Harbour

STAFF SWOB ANALYSIS: MORRIS ISLAND CA

Strengths	Weaknesses	Opportunities	Barriers
<ul style="list-style-type: none"> • 6 km of multi-use trails with varied difficulty • Accessible portion of trail • Canoe Launches • Proximity to large population • Proximity to large body of water • Wildlife • Fishing platform • Picnic areas • Good washroom facilities • Accessible washroom facility 	<ul style="list-style-type: none"> • High cost of infrastructure • No public drinking sources • No septic (holding tank only) • Lack of security infrastructure • Outdated entrance signage 	<ul style="list-style-type: none"> • Ability to expand trail network • Available boat/canoe launch • Available picnic areas • Possible site for educational programming • Trail grooming for increased winter usage 	<ul style="list-style-type: none"> • No room for septic/seasonal washrooms • Unable to expand parking lot • Narrow entrance roadway • Leased property limits possible major projects • Majority of landscape not conducive to accessibility • Lack of presence to enforce site rules

Purdon Conservation Area

Township of Lanark Highlands



Size: 25.7 ha

Tenure: Purchased 1988

Master Plan: 1986

Other:

MNR Approved Managed Forest Plan 2006

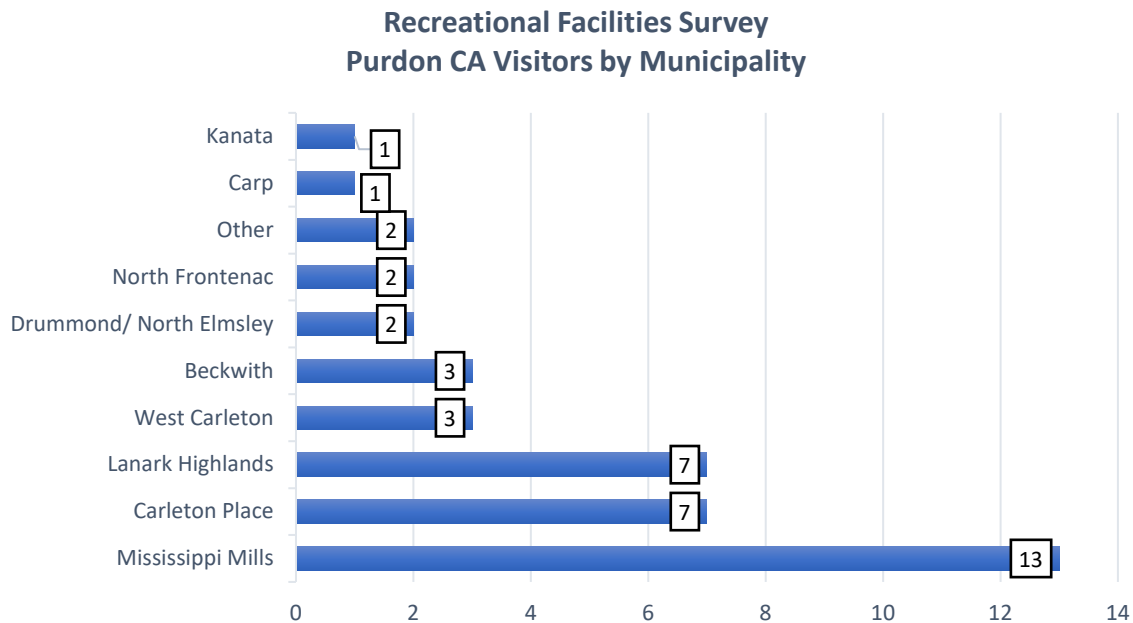
Site Features

- Trails:
 - 400 m Orchid Trail (accessible boardwalk)
 - 1.3 km Ted Mosquin Highland Trail Loop (not accessible)
- Wheelchair accessible outhouse
- Donations accepted
- Parking
- Scenic lookout
- Rest area
- Dogs allowed - on leash

	Walking Trail	Parking	Washrooms	Signage	Fees	Camping	Boat Launch	Museum	Accessible Area	Rentals	Dogs Allowed	Picnic Areas	Biking Trail	ATV Trail	Education	Fishing	Lookout	Boardwalk	Canoeing	Playground	Beach	Hunting
Purdon CA	Y	Y		Y					Y		Y	Y					Y	Y				

RECREATIONAL FACILITIES SURVEY FINDINGS

- 60 of the 210 survey respondents said they had gone walking/hiking at Purdon Conservation Areas in the past five years. The following chart shows where site visitors lived (when provided).



- Only 6 respondents identified Purdon Conservation Area as one of the 3 sites they frequented the most in the past 5 years, therefore survey findings regarding satisfaction etc. are not considered statistically reliable.

REVIEWS FROM TRIP ADVISOR AND ALL TRAILS:

- Average 4.5/5
- Well maintained and signposted
- Lady slippers were beautiful
- Longer trail is not accessible for strollers
- Stairs to lookout

STAFF SWOB ANALYSIS: PURDON CA

Strengths	Weaknesses	Opportunities	Barriers
<ul style="list-style-type: none"> • Renowned colony of the Showy Lady Slipper (Cypripedium reginae) • 1.7 km of trails of varied terrain and skill levels • 345 m of recently widened boardwalk with side barrier to enhance accessibility • Wheelchair accessible outhouse • 2 scenic lookouts • 2 parking lots • Picnic area • Interpretive signage • Wetland with characteristics of a swamp, fen and a bog 	<ul style="list-style-type: none"> • Smaller parking lots • Aging interpretive signage • Corduroy portion to Highland Trail in poor condition • Entrance/site signage in need of updating • Largest use is over a two-week period in mid-June 	<ul style="list-style-type: none"> • Extend boardwalk • Expand lower parking lot • Make finger lookout more accessible • Upgrade signage • Partner with Orchid Society to increase amount of orchids 	<ul style="list-style-type: none"> • Lack of modern washroom facilities • No winter maintenance • Ability to get equipment into trail network • Terrain and site conditions make trail creation tough

Palmerston-Canonto Conservation Area

Township of North Frontenac



Size: 103 ha

Tenure: Purchased 1971

Master Plan: n/a

Other

O&M lease agreement with North Frontenac
Capital Improvement Plan 2007-2009

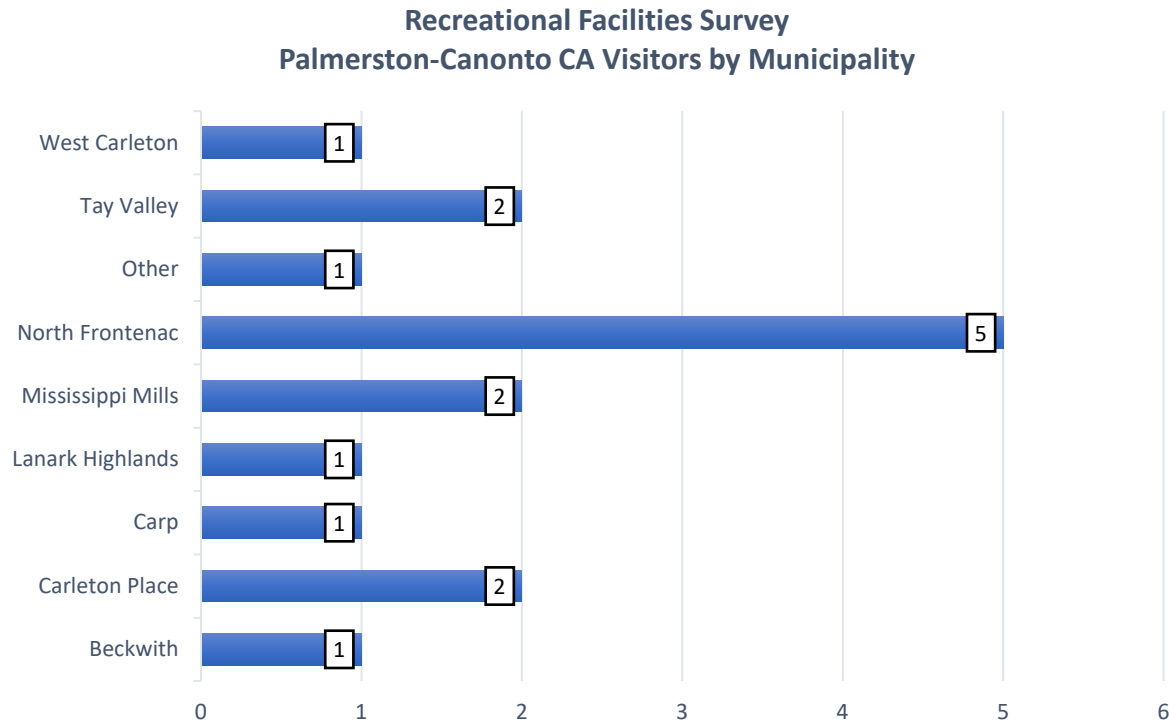
Site Features

- 7 Hiking trails (300 m to 1 km in length)
- Parking
- Outhouse
- Beach
- Rest building
- Lakeview and Vista Lookouts

	Walking Trail	Parking	Washrooms	Signage	Fees	Camping	Boat Launch	Museum	Accessible Area	Rentals	Dogs Allowed	Picnic Areas	Biking Trail	ATV Trail	Education	Fishing	Lookout	Boardwalk	Canoeing	Playground	Beach	Hunting
Palmerston-Canonto CA	Y	Y	Y	Y												Y						

RECREATIONAL FACILITIES SURVEY FINDINGS

- 31 of the 210 survey respondents said they had gone walking/hiking at Palmerston-Canonto Conservation Areas in the past five years. The following chart shows where site visitors lived (when provided).



- Only 10 respondents identified Palmerston-Canonto Conservation Area as one of the 3 sites they frequented the most in the past 5 years, therefore survey findings regarding satisfaction etc. are not considered statistically reliable.

REVIEWS FROM ALL TRAILS:

- Average 4.4/5
- Well-marked
- Nice lookout
- Some rocky and muddy parts
- Fall is the best time to visit

STAFF SWOB ANALYSIS: PALMERSTON-CANONTO CA

Strengths	Weaknesses	Opportunities	Barriers
<ul style="list-style-type: none"> • 5 km of extensive hiking trail network • Beautiful lookouts and scenery • Variety of amenities onsite and close by (beach, boat launch, municipal camp sites) • Strong relationship with township for maintenance and operation 	<ul style="list-style-type: none"> • Poor washroom facilities • Limited parking and access to trails • Remote area (not close to populated centre) • MVCA lack of involvement in active management • Poor site and directional signage • Poor trail base (rough terrain) 	<ul style="list-style-type: none"> • Portage trail to Canonto • Rock Climbing • Camp sites • Room for expansion of trail network and amenities • Partnership with N. Frontenac to enhance site 	<ul style="list-style-type: none"> • Remote • Terrain restricts ability to maintain site • Room to expand parking is limited • Fair distance from MVCA Office

Carp River Conservation Area

City of Ottawa



Size: 31.4 ha

Tenure: Licence of Occupancy with City of Ottawa, 2020

Master Plan: n/a

Other:

CRCA Background Report, 2021

Site Features

- Paved walking trails
- Bridges over water
- Benches
- Habitat pond
- Signage
- Osprey nest tower
- EcoTrekr interactive learning app

	Walking Trail	Parking	Washrooms	Signage	Fees	Camping	Boat Launch	Museum	Accessible Area	Rentals	Dogs Allowed	Picnic Areas	Biking Trail	ATV Trail	Education	Fishing	Lookout	Boardwalk	Canoeing	Playground	Beach	Hunting
Carp River CA	Y			Y					Y		Y	Y			Y							

RECREATIONAL FACILITIES SURVEY RESULTS

- 25 of the 210 survey respondents said they had gone walking/hiking at Carp River Conservation Areas in the past five years. The following chart shows where site visitors lived (when provided).



- Only 6 respondents identified Palmerston-Canonto Conservation Area as one of the 3 sites they frequented the most in the past 5 years, therefore survey findings regarding satisfaction etc. are not considered statistically reliable.

Reviews from All Trails:

- Average 4.1/5
- Local traffic
- Mostly paved
- Good for birding

STAFF SWOB ANALYSIS: CARP RIVER CA

Strengths	Weaknesses	Opportunities	Barriers
<ul style="list-style-type: none"> • 4 km paved pathway encircling naturalized areas of the Carp and stormwater facility. • Located near large population base • City maintains day-to-day O&M responsibilities • Excellent trail base • Interpretative signage highlights unique development and MVCA partnership 	<ul style="list-style-type: none"> • No on-site or dedicated parking • No washrooms • Lack of trees • Lack of shelter and other amenities 	<ul style="list-style-type: none"> • Close to schools for educational components • Could expand south of current location • Large population base for increased foot traffic • Provides recreation in otherwise urban centre • Potential addition of amenities/ facilities 	<ul style="list-style-type: none"> • Lack of Masterplan leads to ambiguity of MVCA involvement • Potential of annual flooding in the Spring • Land is not owned by MVCA which could make investment in the property tougher

K&P Trail Conservation Area

Greater Madawaska, Lanark Highlands, North Frontenac and Central Frontenac



Size: 35 km (Snow Road to Barryvale)

Tenure: Purchased 1990

Master Plan: 1991

Other:

Seasonal lease agreement with Snow Road Snowmobile Club

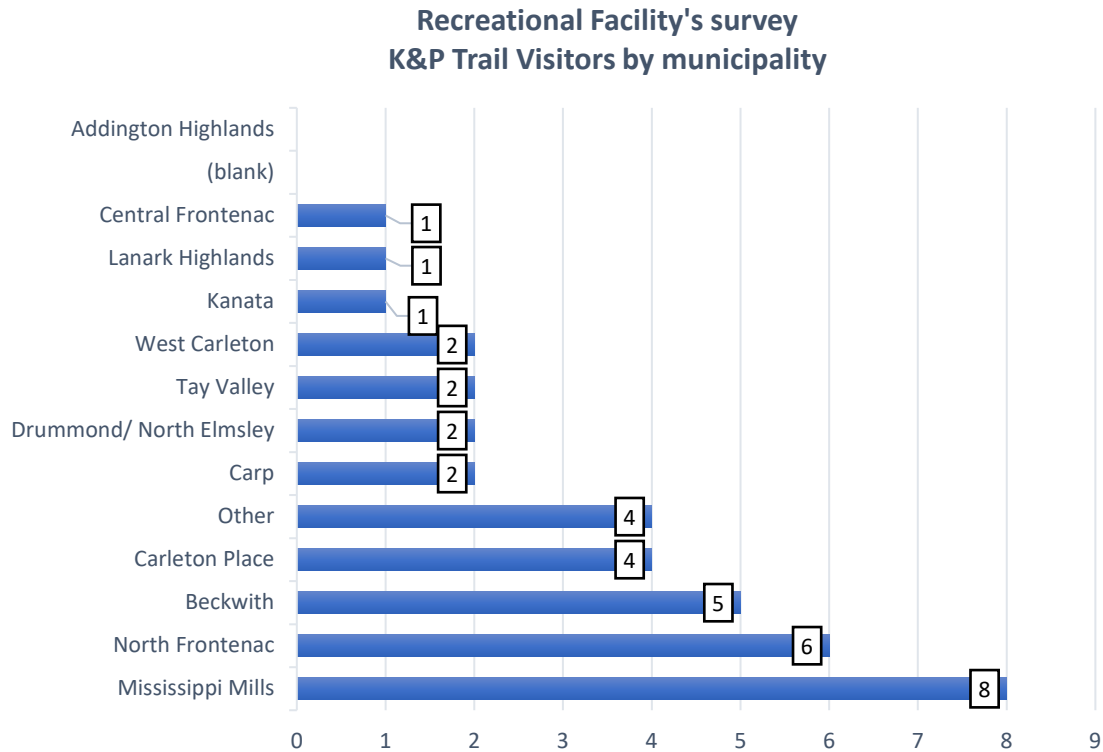
Site Features

- No fees
- 40 km multi-use trail (incl. snowmobile and ATV)
- Multiple access points
- Links to larger K&P Trail network

	Walking Trail	Parking	Washrooms	Signage	Fees	Camping	Boat Launch	Museum	Accessible Area	Rentals	Dogs Allowed	Picnic Areas	Biking Trail	ATV Trail	Education	Fishing	Lookout	Boardwalk	Canoeing	Playground	Beach	Hunting	
K&P Trail	Y	Y		Y							Y		Y	Y	Y								

RECREATIONAL FACILITIES SURVEY FINDINGS

- 52 of the 210 survey respondents said they had gone walking/hiking at K&P Trail Conservation Areas in the past five years. The following chart shows where site visitors lived (when provided).
- The Lanark Highlands segment was the most often used for walking/hiking and boating/watercraft activities, followed by Frontenac portions, and then Renfrew portions.



- Only 16 respondents identified K&P Trail Conservation Area as one of the 3 sites they frequented the most in the past 5 years, therefore survey findings regarding satisfaction etc. are not considered statistically reliable.

REVIEWS FROM ALL TRAILS AND ONTARIO BIKE TRAILS:

- Average 4.4/5
- Toward Kingston, not well maintained
- Easy paved sections, some gravel
- Lots of wildlife
- Good for biking

STAFF SWOB ANALYSIS: K&P TRAIL CONSERVATION AREA

Strengths	Weaknesses	Opportunities	Barriers
<ul style="list-style-type: none"> • Multi-use recreational trail used for hiking, biking, ATVing, and snowmobiling • Incredible scenery/variety of scenery • Allows access to public properties • Access to various communities • Excellent recreational trail • Partnering organizations help with work/maintenance 	<ul style="list-style-type: none"> • Some sections in poor condition • Limited/No parking • No washroom facilities • No rest area • Rules and regulations tough to enforce • Speed and weight limits in effect pending further improvements to Clyde River Bridge 	<ul style="list-style-type: none"> • Transfer to counties as part of their trail network • Work with local partnering organizations to improve trail conditions • Local landowners could help maintain sections 	<ul style="list-style-type: none"> • Expensive upkeep • Non-recreational vehicle use • Flooding in low lying areas • Most of the trail is a fair distance from MVCA office • Resources make it impossible to properly supervise/maintain the trail