

Board of Directors Meeting

Hybrid meeting (via Zoom)

1:00 pm

October 21, 2024

MVCA Boardroom

AGENDA

ROLL CALL

Declarations of Interest (written)

Adoption of Agenda

MAIN BUSINESS

1. Approval of Minutes: Board of Directors Meeting Minutes, September 9, 2024, Page 3
2. Employee Presentation: Review of Stewardship Program and Objectives, Marissa Okum & Kayla Cuddy
3. Watershed Update, Report 3448/24, Jennifer North, Page 11
4. GM Update, Report 3449/24, Sally McIntyre, Page 13

Reports rising from the *Finance and Administration Advisory Committee*

5. Job Evaluation & Implementation Plan, Report 3439/24, Sally McIntyre & Stacy Millard, Page 18
6. Salary Review, Report 3440/24, Sally McIntyre & Stacy Millard, Page 19
7. Proposed 2025 Budget Assumptions, Report 3442/24, Stacy Millard, Page 20

Report rising from the *Policy and Planning Advisory Committee*

8. Draft Land Conservation and Resource Strategy, Report 3445/24, Sally McIntyre, Page 24
9. Education Program Review, Report 3451/24, Scott Lawryk, Page 127
10. MVCA Asset Management Plan, Report 3450/24, Juraj Cunderlik, Page 192
11. Fee Schedule Update, Report 3452/24, Stacy Millard, Page 252

CONSENT ITEMS

12. Receipt of Draft Minutes (for information):
 - a. Finance and Administration Advisory Committee Meeting, September 30, 2024, Page 257
 - b. Policy and Planning Advisory Committee Meeting, October 7, 2024, Page 263

Reports rising from the *Finance and Administration Advisory Committee*

13. Staff Compensatory Benefits, Report 3441/24, Stacy Millard, Page 269
14. Appointment of 2024 Auditor, Report 3443/24, Page 271

Reports rising from the *Policy and Planning Advisory Committee*

15. LC&RS Community Surveys & Recreational Study Findings, Report 3444/24, Sally McIntyre, Page 272
16. Portage Routes: History and Use, Report 3446/24, Alex Broadbent, Page 311

ADJOURNMENT



MINUTES

Hybrid Meeting Via Zoom
and at MVCA Office

Board of Directors Meeting

September 9, 2024

MEMBERS PRESENT

Paul Kehoe, Chair
Jeff Atkinson, Vice Chair
Bev Holmes
Cathy Curry (Virtual)
Clarke Kelly (Virtual)
Dena Comley
Glen Gower
Janet Mason
Mary Lou Souter
Steven Lewis
Taylor Popkie

MEMBERS ABSENT

Helen Yanch
Roy Huetl
Allan Hubley
Allison Vereyken
Cindy Kelsey
Richard Kidd

STAFF PRESENT

Sally McIntyre, General Manager
Juraj Cunderlik, Director of Engineering
Matt Craig, Manager of Planning and Regulations
Stacy Millard, Treasurer
Scott Lawryk, Properties Manager
Alex Broadbent, Manager of IC&T
Kelly Hollington, Recording Secretary

GUESTS

RoxAnne Darling, Community Engagement Officer,
Ginawaydaganuc Village

VIRTUAL GUESTS

Lyne Trahan, Senior Advisory (Volunteer), Ginawaydaganuc Village
Karen Bisson, Executive Director/Treasurer/Operations Advisory,
Ginawaydaganuc Village
Marthe & Glen Bucci

P. Kehoe called the meeting to order at 1:00 p.m.

Declarations of Interest (Written)

Members were asked to declare any conflicts of interest and informed that they may declare a conflict at any time during the session. No declarations were received.

Agenda Review

P. Kehoe noted no additions to the agenda were received.

BOD24/09/09 - 1

MOVED BY: M. Souter

SECONDED BY: D. Comley

Resolved, that the agenda for the September 9, 2024 Board of Directors Meeting be adopted as presented.

“CARRIED”

MAIN BUSINESS

1. Approval of Minutes: Board of Directors Meeting, July 8, 2024.

P. Kehoe asked members if there were any comments or additions to the minutes. No comments were received. S. McIntyre noted that an amendment to the minutes was circulated to board members via email: Item #2: Employee Presentation: Enforcement Activity Update (Will Ernewein) “...MVCA is on par with other CAs with an average of 2-5 charges a year and roughly ~~100~~ 700 inquiries.”.

BOD24/09/09 - 2

MOVED BY: J. Mason

SECONDED BY: M. Souter

Resolved, that the minutes of the Board of Directors Meeting held on July 8, 2024 be received and approved as amended.

“CARRIED”

2. Delegation Presentation: Ginawaydaganuc Village, Roxanne Darling.

Roxanne Darling, Community Engagement Officer, from Ginawaydaganuc Village introduced herself to the board, and highlighted her membership with the MVCA board from 2018-2022. She noted the virtual attendance of Ginawaydaganuc Village board of Directors and Staff members, Lyne Trahan and Karen Bisson. She explained that the Land Acknowledgement speech that Jeff Atkinson provided at the September 2021 board of Directors meeting left a lasting impression,

she requested that he provide the same speech to open her presentation. J. Atkinson read the Land Acknowledgement statement he delivered at the board meeting that preceded the first National Day for Truth and Reconciliation.

R. Darling outlined the Ginawaydaganuc Village (GV) project, an Indigenous-led, multi-purpose eco-cultural-education centre and tourist destination planned for Algonquin territory near Almonte. She reviewed accomplishments since their establishment in 2022 and identified an opportunity to partner with MVCA. Her presentation was closed with a video recording of comments from Elder John Henri Commanda. He highlighted the importance of fostering relationships and reconciliation.

R. Darling recommended that the board pass a motion to explore a mutually beneficial partnership with GV and the possibility of a sub-committee including staff, board members and representatives from GV.

J. Mason asked if GV is working with any municipalities or other organizations on this project.

R. Darling responded that they have been coordinating with Mississippi Mills and Mayor Lowry. She noted that GV is looking for land in Mississippi Mills to establish their centre. MVCA is the first organization that they have approached. She explained that presentations are planned with Lanark County and other local municipalities.

P. Kehoe thanked R. Darling for her presentation. He explained that the information presented will be reviewed and tabled at a future board of directors meeting. P. Kehoe asked S. McIntyre to follow up on the GV presentation.

3. GM Update, Report 3433/24, Sally McIntyre.

S. McIntyre presented the GM Update. She updated the board on the ongoing work in preparation of the *Land Conservation Resource Strategy* document, due at the end of 2024. She explained that public consultation has been ongoing for the summer, including circulation of documents and surveys to all member municipalities and board members. She noted the promotion of the documents and surveys on social media, local news papers, and local libraries.

She highlighted the need for feedback from the board on the future direction of MVCA including programs and services, policies, direction and role. She will be sending the board the documents with a set of questions, drafted specifically for Board members.

Other matters she highlighted from her report included: updated regulation mapping, conservation area capital projects, monitoring system improvements, bathymetric surveys, agricultural projects, shoreline plantings, and the contract with TRCA. She also noted the invitation to the Reconciliation and Thanksgiving Harvest, and the opportunity to attend the 2024 Latornell Conference.

M. Souter asked if there is an extension for comments on the *Land Conservation Resource Strategy* surveys to September 20th. S. McIntyre responded that an extension was provided to municipal and county staff and council. She highlighted that she is interested in getting the board member's personal thoughts and unique perspectives on the *Land Conservation and Resource Strategy*. She re-iterated that she will be sending a set of unique questions on key matters to the board.

S. Lewis asked about the survey questions on recreational facilities in regards to managing marinas and the responses on this topic. S. McIntyre responded that there has been little demand for marinas in the feedback received so far. She noted that a demand for campsites/campgrounds and discussion is required on this topic. S. Lewis commented that he attempted to open a campground and that it was cost prohibitive because of permit requirements.

4. 2024 WECI Application Results and Project Awards, Report 3434/24, Juraj Cunderlik.

S. McIntyre explained that the Province changed the funding model for the Water and Erosion Control Infrastructure (WECI) program to a two-year agreement with constraints around using the funding in the same year. MVCA applied for WECI funding to support studies in Year 1 with capital works in Year 2. MVCA was denied approval for Year 1 projects but received approval for Year 2 projects. Without a source of funding for studies, MVCA would not be in a position to complete the associated capital works in Year 2. MVCA pooled funds allocated for the two studies to carry out one of the two studies in 2024 in order to access the Year 2 WECI funding to implement the capital works. S. McIntyre and J. Cunderlik will be coordinating with the Ministry of Natural Resources (MNR) on the challenges with the WECI program.

P. Kehoe commented that there is a possibility to meet with the local Member of Provincial Parliament (MPP) to discuss the WECI program and the challenges and barriers experienced in the application for funding. He asked the board for their input. M. Souter expressed her approval in meeting with the local MPP. She noted that the mayor of Mississippi Mills has been supported by the local MPP on many advocacy projects. P. Kehoe noted that members of the board nodded in agreement in regards to the opportunity for a meeting with the local MPP. He stated that the findings from this meeting will be tabled with the board in the future.

5. Kashwakamak Lake Dam Class EA – Preferred Alternative, Report 3435/24, Juraj Cunderlik.

J. Cunderlik presented the Kashwakamak Lake Dam Class EA Preferred Alternative report. He explained that the Kashwakamak Lake Dam EA is a multi-year and multi-million-dollar project. Funding was secured through the Infrastructure Canada's Disaster Mitigation and Adaptation Fund (DMAF). Funding is further supplemented by WECI funding on an annual basis. The Environmental Assessment (EA) identified 5 technical solutions/alternatives for the project.

The preferred technical solution is alternative 4--to replace the existing dam at the same location. He explained that this option will enhance existing water management of the lake. The dam will be built according to current dam safety guidelines including consideration of climate change, adding to the dam's resiliency and safety during future storm events. He highlighted that there will be no change in water levels, environment, aquatic habitat, and public or private properties associated with the updated design. Previous studies also recommended replacement of the dam at the same location.

M. Souter asked how dependent this project is on provincial funding to complete future phases. J. Cunderlik responded that the Federal government is funding 40% of the project costs, and WECl is providing an additional 30%. He highlighted that MVCA has been 100% successful in receiving provincial WECl funding for the Kashwakamak Lake Dam project.

S. Lewis asked for the price difference between options 3 and 4. J. Cunderlik responded that option 3, repairing the existing structure, has been explored and repairing the 115-year-old concrete dam is not effective due to high amounts of erosion. Repairing the dam is an extensive and expensive project and would only extend the dam's lifespan by 10 years. Replacement will result in a functioning dam for many years. S. Lewis asked for the cost of option 4. J. Cunderlik responded that project costs for option 4 are estimated at \$6 million.

S. McIntyre asked if J. Cunderlik has a ball-park cost for option 3. J. Cunderlik responded that during a risk assessment study of the dam in 2000, a cost-benefit analysis determined that there was no benefit investing in a repair as it would only extend the life of the dam by 10 years and replacement of the dam would still be required. He estimated the cost to repair at around 50% of the cost to replace. S. McIntyre summarized that the value for money analysis was in favour of alternative 4.

BOD24/09/09 - 3

MOVED BY: J. Atkinson

SECONDED BY: G. Gower

Resolved, That the Board of Directors endorse Alternative 4 as identified through the Class EA process as the preferred approach for replacing the Kashwakamak Lake Dam.

"CARRIED"

6. Summer Nature Camp Program, Report 3436/24, Scott Lawryk.

S. Lawryk presented the Summer Nature Camp Program report. He highlighted the success of the 2024 program and noted that it increased public exposure to the Mill of Kintail site. He commented that Emma Higgins, Camp Program coordinator, was instrumental in the success of the program. He summarized that the program sold out with a wait-list, generated \$34,000 in

revenue and received positive feedback from campers and parents. He reviewed the goals for the 2025 program: higher participation rates, better tailored to suit a range of ages.

G. Gower asked how the 2024 camps program was promoted and if demographics were collected. S. Lawryk responded that the program was advertised on social media including sponsored ads, in local newspapers and using posters at local community spaces. S. Lawryk explained that the demographic information was captured but it has not been analysed at this time. He noted that analysis will consider how far participants are willing to travel.

S. Lewis commented that word will spread in the community about the camps program.

J. Mason commented that a budget and cost-recovery breakdown of the 2025 program should be presented to the board. S. McIntyre responded that the cost projection of \$78,000 for the 2025 program is fully cost-recoverable and the detailed numbers will be presented with the budget. She clarified that approval today would allow for MVCA to add the 2025 program to the budget.

M. Souter commented that Almonte has a large population, there are few summer camps in the area, and that there is room to grow the program. She added that she would like to see the 2025 summer camp program in budget deliberations.

P. Kehoe suggested that the resolution should state that approval of the program is dependent on budget approval.

BOD24/09/09 - 4

MOVED BY: S. Lewis

SECONDED BY: T. Popkie

Resolved, That the Board of Directors authorize renewal of the Summer Nature Camp program at the Mill of Kintail for 2025, budget dependent.

“CARRIED”

7. Land Inventory Update, Report 3437/24, Sally McIntyre.

S. McIntyre outlined updates to the *Land Inventory* report since it was tabled in March, and items still outstanding. She stated that staff update the *Land Inventory Report* to include recent findings and will become a living document that is updated as new information is obtained and conditions change.

J. Mason noted references to *Carp Creek* that require amending to *Carp River*.

8. Financial Update – YTD June 30, 2024, Report 3438/24, Stacy Millard.

S. Millard presented the Financial Update. Year-to-date expenditures are at or below projections and revenues are on track. She explained that projections for compensation were not completed due to a significant number of leaves being replaced by consulting services. She noted the difficulty in projecting consultant costs. Projections show a surplus at the end of 2024 going into Category 2 and 3 operating reserves. She explained that MVCA applied for 10 student grants and did not receive any. Student hiring cannot be conditional upon grant approvals because approval is received after students have started their positions.

M. Souter asked if inquiries were submitted as to why funding was denied. She commented that the local libraries did not receive funding for summer students this year. S. Millard explained that the Member of Parliament has a say in the area of interest or priority for funding. The area of interest for 2024 was not in education or conservation. M. Souter suggested that MVCA contact the member of parliament to ask why funding was denied.

D. Comley commented that the member of parliament will generally identify their area of interest prior to the application date. She noted that 2024 had a focus on helping seniors. Applications can be tailored to suit the areas of interest as they change annually.

P. Kehoe noted that the student grant funding is a federal program and the MPP would be Scott Reid.

9. Auditor Update, Report 3439/24, Stacy Millard

S. Millard presented the Auditor Update report. The recommendation is to withdraw appointment with KPMG for the 2024 audit. She noted that she has reached out to municipalities and other conservation authorities for recommendation of an auditing firm for 2024, and has reached out to several of those firms.

D. Comley noted that the report says 2025 and requires amendment to read 2024.

S. Lewis asked if the firms contacted would be interested in completing the audit for 2024. S. Millard confirmed. S. Lewis expressed his dislike toward KPMG as an auditing firm. C. Curry expressed her concern regarding comments directed at KPMG. She commented that KPMG is a reputable firm and has had good experiences with them in the past at many organizations. S. Lewis apologized to C. Curry for his comments. He commented that KPMG may work better with larger organizations. P. Kehoe agreed that KPMG may work well for large organizations. He noted that in his experience, it does not go as well for smaller organizations. C. Curry added

that comments regarding the firm as a whole are not warranted when experience with a particular auditor within the organization has been negative.

BOD24/09/09 - 5

MOVED BY: S. Lewis

SECONDED BY: J. Mason

Resolved, That the Board of Directors withdraw appointment of KPMG for the 2024 Financial Audit.

“CARRIED”

ADJOURNMENT

BOD24/09/09 - 6

MOVED BY: D. Comley

SECONDED BY: S. Lewis

Resolved, That the Board of Directors meeting be adjourned.

“CARRIED”

The meeting adjourned at 2:15 p.m.

K. Hollington, Recording Secretary

REPORT**3448/24**

TO:	The Chair and Members of the Mississippi Valley Conservation Authority Board of Directors
FROM:	Jennifer North, Water Resource Technologist
RE:	Watershed Conditions
DATE:	October 11, 2024

FOR INFORMATION

Due to the above average rain amounts this year, levels and flows throughout the watershed were above historical norms for the entire summer season. The normal yearly total amount of precipitation in the Mississippi Valley Watershed is around 900 mm per year. This year, the watershed has received around 1,120 mm to date and we expect more (see Figure 1.) Flows are expected to stay slightly higher than normal as we start to drawdown the upper lakes. Table 1 provides the drawdown schedule for lakes in the watershed.

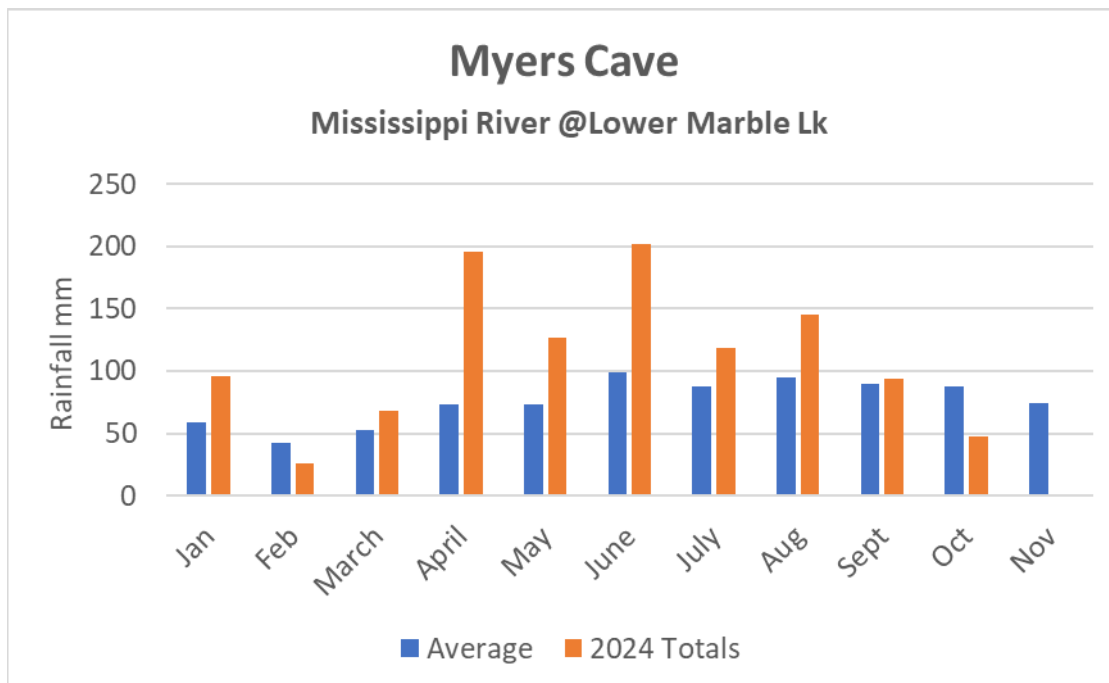
Figure 1: Average versus 2024 Rainfall, Myers Cave

Table 1: Fall Drawdown Schedule, Mississippi River Watershed

Lake / Dam	Drawdown Start Date	Drawdown End Date
Shabomeka Lake dam	Mid September	Early October
Pine Lake dam	Mid September	Late September
Mississippi Lake / Carleton Place dam	Mid September	Early October
Kashwakamak Lake dam	After Thanksgiving weekend (Mid Oct)	Early December
Mississagagon Lake dam	After Thanksgiving weekend (Mid Oct)	Mid October
Big Gull Lake dam	After Thanksgiving weekend (Mid Oct)	Mid November
Summit Lake dam	After Thanksgiving weekend (Mid Oct)	Mid October
Widow Lake dam	After Thanksgiving weekend (Mid Oct)	Mid October
Mazinaw Lake dam	After Hunting season (Mid Nov)	Mid December

Drawdowns on Shabomeka and Pine lakes are already underway. Kashwakamak, Mississagagon, Big Gull, Summit and Widow Lakes will begin next week after the Thanksgiving weekend. Water levels are expected to drop as they typically would over the next two months. The drawdown on Mazinaw Lake will start as normal in early November to account for boat traffic during hunting season, levels until then will be stabilized at normal historical levels. Mississagagon and Big Gull Lakes are expected to be at their winter holding level by early November. Kashwakamak Lake levels will stabilize in early November as the fall drawdown of Mazinaw Lake begins. Levels on Kashwakamak and Mazinaw Lakes normally reach their winter holding levels between early January and early February.

Crotch Lake is currently being held higher than the historical average for this time of year. This is due to a log lifter manufacturer test to be completed at High Falls Dam scheduled for the 16th/17th of October. The excess water from Crotch Lake will be used to sustain flows during the testing. Levels will rebound from the upper lake's drawdowns and water levels on Crotch Lake will start to increase as we start to operate the dam to refill the lake. Crotch Lake will continue to build through early January and then it will also be drawn down to provide maximum storage in the system by early to mid-March. All dams will be operated through the fall and winter to try to maintain levels within the normal operating rule curves for the structures.

REPORT

3449/24

TO:	The Chair and Members of the Mississippi Valley Conservation Authority Board of Directors
FROM:	Sally McIntyre, General Manager
RE:	GM Update
DATE:	October 15, 2024

FOR INFORMATION

INTERNAL

1. **Farm Lake Dam Condition Assessment** - The Farm Lake Dam Condition Assessment project is nearing completion. Englobe completed field inspections on September 5, 2024, including a structural review of existing dam elements and review of public safety measures. The Draft Condition Assessment Report was submitted to MVCA for review on October 11, 2024.
2. **Lanark Dam Safety Review** - The Lanark Dam Safety Review project was initiated on August 16, 2024. D.M. Wills carried out a dam condition assessment on September 19, 2024. Dam safety analysis is currently under way. The project is expected to be completed in Spring 2025.
3. **Capital Works at Conservation Areas:**
 - **Re-pointing work** on the exterior stone on the Mill of Kintail Museum and Gatehouse is now complete.
 - **Repairs to the Gatehouse** veranda will be completed by the end of this month. Replacement of the windows in the Gatehouse is scheduled for mid-November.
 - Approximately 1/5 of the **Purdon staircase** has been rehabilitated with the remainder to be completed over the next four years.
 - Almost the entire **boardwalk at Purdon** has been replaced and widened over a period of 4 years. Approximately 400 m of boardwalk is now fully accessible, with the remaining 60m to be completed next year.
4. **K&P Trail** – MVCA has received an updated Agreement of Purchase & Sale from the three counties, with an appended Lease Agreement. Staff are in the process of reviewing the terms and will be seeking legal council. Unlike a Licence of Occupancy Agreement, Lease Agreements of greater than 5-years require Ministerial approval if the site meets any of the requirements set out in legislation (which this site does.) Therefore, it will take some time to finalize this agreement, and we will be renewing our agreement with the Snow Road

Snowmobile Club for the upcoming season. Staff will return to the Board with a recommended agreement when ready.

5. **Fred Lossing Observatory Agreement** – MVCA has a five-year Licence of Occupancy Agreement with the Royal Astronomical Society of Canada to site and use observatory facilities at the Mill of Kintail. The current licence expires December 31, 2024. Staff will return to the Board in December with proposed licence rates.
6. **Renewal of Morris Island CA Licence of Occupancy** – the licence agreement with OPG and the City of Ottawa was recently renewed for a ten-year period. MVCA has had a licence at this site since the early 1980s.
7. **Mill of Kintail Museum Strategic Plan** – a survey was sent to members of the Museum Advisory Committee, which will be meeting next month to review results and to discuss the *Draft Land Conservation & Resource Strategy*.
8. **Mississippi River Watershed Plan Public Advisory Committee** – the Committee met to review and discuss the *Draft Land Conservation & Resource Strategy* the first week of October. Minutes will be distributed at the December meeting.
9. **Monitoring:**
 - **The Lake sampling** program is completed for the season. Data analysis and report writing will begin in December.
 - **Ground water** monitoring as part of the Provincial Groundwater Monitoring Network (PGMN) is ongoing using data loggers, with sampling at the well occurring every fall.
 - **Surface water** sampling under the Provincial Water Quality Monitoring Network (PWQMN) requires 2 more rounds of sampling: at the ends of October and November.
 - **Surface water** sampling in support of the City Baseline program will also wrap-up in November. MVCA is collaborating with RVCA and SNC on conducting a 5-year analysis in partnership with the City.
10. **Stewardship:**
 - **The City Stream Watch** program wrapped up field work in August. Data analysis and report writing will be completed by Spring 2025.
 - All of **ALUS Mississippi-Rideau** 2024 projects have been completed. Uptake in the program continues to increase, with 8 potential projects lined up for 2025 (dependant on funding availability and Public Advisory Committee approval). Expressions of interest will continue to be accepted into next year.
 - All 2024 **shoreline planting** projects have been completed. There are currently 7 planting sites planned for spring 2025.
 - The **TD Tree Days** planting was completed on October 5th, with 30 volunteers assisting in planting 125 trees and shrubs along Watts Creek. Stewardship staff

received excellent feedback from volunteers, with several joining the volunteer mailing list for 2025 opportunities.

- **Poole Creek Clean-up:** Stewardship staff assisted local volunteers in removing approximately 180 kg (~400 lbs) of litter from a section of Poole Creek along Sweetnam Drive. Litter included construction debris, several tires, the back bench of a van, and other large household items. This clean-up would not have been possible without the generous grant from Unsmoke Canada, which also supported our clean-up along the Mississippi River in August.

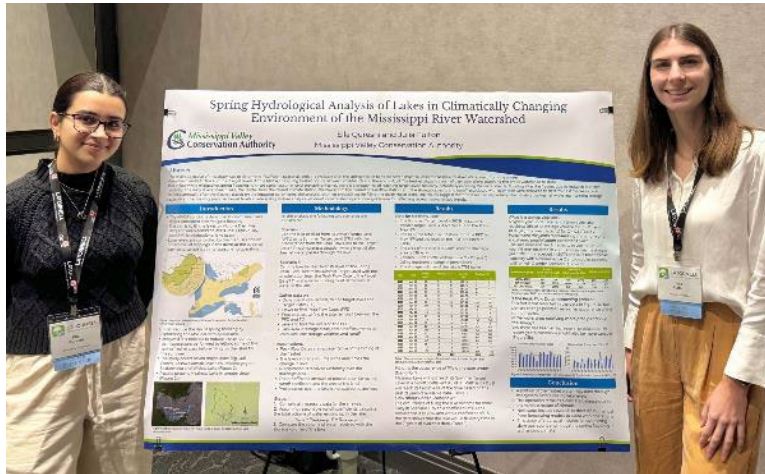
11. Operating System Windows 10 – Microsoft is discontinuing support of Windows 10 on October 14, 2025. Security updates will no longer be available and MVCA’s enterprise network and data will become more at risk for security issues such as viruses, malware, and cyber threats. Fortunately, MVCA’s transition to laptops in support of hybrid work puts us in a good position to address this matter by next October, however, this change will affect 12 desktops and 2 laptops. Accordingly, the 2025 Capital Plan will necessarily accelerate replacement of dated MVCA computers to accommodate Windows 11. Staff are pursuing cost effective purchase solutions to lessen the financial burden.

12. Internet Service at the Mill of Kintail – Last year’s 50th Anniversary and Christmas festivities highlighted the difficulty of hosting cost-recovery and fundraising events at the Mill of Kintail with poor internet service. Recent service provider improvements have improved internet speeds. In an effort to better support these types of events, staff are exploring opportunities to replace aging copper telephone lines. This would enhance delivery and allow for WiFi to be extended to the Museum and Education Centre.

13. Provincial Flood Forecasting and Warning Workshop – Juraj Cunderlik and Daniel Post delivered a presentation titled “*From Data to Decisions: Advancements in Datalogging and DPC Tools*” at the 2024 provincial flood forecasting and warning meeting in Toronto. The presentation highlighted new monitoring, DPC and engineering tools developed at MVCA to aid in our flood forecasting and warning efforts and streamline everyday work.



14. Latornell Student Poster Session – Engineering summer students Ella Qureshi and Julia Fulton recently presented a poster regarding *“Spring Hydrological Analysis of Lakes in Climatically Changing Environment of the Mississippi River Watershed”*. They did an excellent job and expressed how thankful they were to work on this important piece of research with the engineering team this past summer. See Attachment 1 to review the project and their findings.



15. Alex Ansell – MVCA’s first Resource Manager (the precursor to General Manager) is alive and well and living in Aurora Ontario. At 88 he still coaches hockey! I spoke with him over two 1.5-hour sessions to learn about the early years of MVCA and to understand the history of some of our assets and how things have changed over time. A report summarizing the conversation will be produced in future.

EXTERNAL

16. Wildfire, Climate Change, and Invasive Species Webinar - November 19, 2024, 11 a.m. This virtual conference will explore relationships between climate change, wildfires and invasive species, and solutions to the changing landscape of fire management. Register [here](#).

17. Real-time Hydrologic Forecasting – A recent Canadian Water Resources Association (CWRA) Water News magazine article explores the innovative tools that have been developed to tackle 21st-century water resource challenges. The article spotlights work achieved with partners including South Nation Conservation Authority. [Read more](#).

Spring Hydrological Analysis of Lakes in Climatically Changing Environment of the Mississippi River Watershed

Abstract

The main objective of this study was to determine if sufficient seasonal rainfall is available after the spring freshet to fill the seven major lakes in the Mississippi River Watershed, from the winter drawdown levels to the summer target levels. At the MVCA, the spring freshet occurs between mid-March and the end of April. The freshet triggers a rush of dam operations spanning the entire watershed to store this inflow while mitigating spring flooding. With an earlier occurrence of the spring freshet, there is a greater risk of reaching target levels too early, potentially exposing the watershed to flooding after the freshet due to reduced storage capacity. The daily levels of each lake, the rainfall from the closest climate station, the flows from the nearest streamflow station, and the storage capacity and runoff associated with each lake were analyzed to determine if the lakes could be filled annually after the freshet. Based on the inputted parameters, the analysis returned probabilities for filling the seven major lakes. The results suggest that the lakes can be partially filled during the freshet while maintaining storage capacity and achieving summer target levels in late spring. Future analysis will develop watershed operational guidelines for reflecting recent hydroclimatic trends.

Introduction

- The MVCA conducts dam operations to keep lake levels consistent and mitigate flooding
- The aim is to fill the lakes by Victoria Day (May 20th) and keep constant levels until Labour Day (Sep 2nd) for recreational lake users
- Lake levels are controlled by the manual addition or removal of stoplogs in the dams at the outlet of each lake, which is a time-consuming operation



Figure 1: Location of the Mississippi Valley Conservation Authority within Conservation Ontario

- Goal: Reduce the risk of spring flooding by optimizing the MVCA's dam operations
- Analyze if it is possible to reduce the amount of dam operations performed by letting some of the spring freshet pass before filling up the lakes for the summer
- The study covers seven major lakes: Big Gull, Crotch, Kashwakamak, Mazinaw, Mississagagon, Shabomeka and Widow Lake (Figure 2a)
- Results present Mazinaw Lake in greater detail (Figure 2b)



Figure 2: (a) Location of the seven major lakes of study and (b) Mazinaw Lake drainage area

Methodology

In the analysis, the following two scenarios are considered.

Scenario I:

Can the lake be filled from its Winter Target Level (WTL) to its Summer Target Level (STL) with the precipitation from the Peak Flow Date to the Target Date? This simulates a situation where most of the freshet water passes through the lake.

Scenario II:

Can the lake be filled from its level on the Spring Peak Flow Date to its Summer Target Level with the precipitation from the Peak Flow Date to the Target Date? This simulates holding most of the freshet water in the lake.

Gather data on:

- Dam operations records, to find target levels and Target Dates (TD)
- Flows, to find Peak Flow Dates (PFD)
- Precipitation, to find the total amount between the PFD and TD
- Levels, to find the levels on the PFD
- Lake area, drainage areas, and runoff estimates to calculate lake storage volumes and runoff

Assumptions:

- Peak Flow Dates are representative of the timing of the freshet
- The lake's storage volume is the area times the change in level
- Precipitation is received uniformly over the drainage area
- The runoff is the amount of precipitation times the runoff coefficient and the area of the land
- Precipitation over the lake is not subject to any loss

Steps:

1. Compile all necessary data for the analysis.
2. Assuming reasonable runoff coefficients, calculate the total volume of water ending up in the lake.

$$V_{tot\ in} = V_{land\ precip} \cdot C + V_{lake\ precip}$$

3. Compare the volume of water received with the storage volume of the lake

Results

Data for Mazinaw Lake:

- The Summer Target Level is 267.8 m.a.s.l., the Winter Target Level is 266.7 m.a.s.l. and the TD is May 18th
- The PFD, the total precipitation from the PFD to May 18th and the level on the PDF are listed in Table 1
- The area of the lake is 16.3 km² and the drainage area is 339 km²
- Chosen runoff coefficients include C = 0.1 and C = 0.5, to represent a range of possibilities
- The storage volume of the lake is 1793 ha*m

Year	PFD	Precip (mm)	Reaches STL?		Level on PFD	Reaches STL?	
			C = 0.1	C = 0.5		C = 0.1	C = 0.5
2001	Apr 16	16	N	N	267.74	N	Y
2002	Apr 20	95	N	N	267.76	Y	Y
2003	Apr 05	68	N	N	267.24	N	Y
2004	Apr 08	69	N	N	267.43	N	Y
2005	Apr 13	36	N	N	267.72	Y	Y
2006	Apr 07	124	N	Y	267.74	Y	Y
2008	Apr 22	50	N	N	267.98	Full	Full
2009	Apr 07	100	N	N	267.92	Full	Full
2010	Mar 21	131	N	Y	267.37	N	Y
2012	Mar 22	113	N	Y	267.56	Y	Y
2013	Apr 22	54	N	N	267.78	Y	Y
2014	Apr 18	120	N	Y	268.18	Full	Full
2015	Apr 24	17	N	N	267.67	N	Y
2016	Apr 06	90	N	N	267.93	Full	Full
2017	Apr 14	202	N	Y	268.03	Full	Full
2018	Apr 30	23	N	N	268.14	Full	Full
2019	Apr 23	126	N	Y	268.57	Full	Full
2020	Apr 08	157	N	Y	267.85	Full	Full
2021	Apr 01	95	N	N	267.52	Y	Y
2022	Apr 11	117	N	Y	267.65	Y	Y
2023	Apr 15	172	N	Y	267.85	Full	Full
			0%	43%		76%	100%

Table 1: Theoretical percentages of Mazinaw Lake's Summer Target Level achievement based on historical data

What is the occurrence of filling the lake under Scenario I?

Mazinaw Lake will not reach its Summer Target Level at a runoff coefficient (C) of 0.1. With a C = 0.5 it will reach its target 43% of the time based on the past 21 years of available data. (Table 1)

How about under Scenario II?

The occurrence of filling the lake become far more likely in Scenario II. With a coefficient of 0.1, the occurrence is at 76%, and with a coefficient of 0.5, the data shows that the lake would fill every time in the 21 years of available data. (Table 1)

Results

What is a typical year like?

A typical year under Scenario I shows the lake reaching 28% of its storage volume for C = 0.1 and 103% (slightly over capacity) for C = 0.5 (Table 2).

What were the years representing minimum and maximum precipitation conditions like?

The lake does not reach capacity in the minimum year (16 mm received in 2001), and, in the maximum year (202 mm received in 2017), the lake reaches half capacity with a conservative C and doubles capacity with a high C under Scenario I (Table 2).

Precipitation (mm)	Scenario I		Scenario II		Change in level (m)	
	% full from the WTL	C = 0.5	% full from the PFDL	C = 0.5	C = 0.1	C = 0.5
16 (Min 2001)	4%	16%	76%	277%	0.05	0.17
104 (Average)	28%	103%	6324%	23132%	0.31	1.14
202 (Max 2017)	55%	200%	Full	Full	0.60	2.20

Table 2: Storage capacity conditions of Mazinaw Lake in a typical year, in the minimum year (2001) and in the maximum year (2017)

Is the Peak Flow Date happening earlier?

This fact is not reflected in the data in Figure 3a, but climate change points to an earlier occurrence of the spring freshet.

Is the watershed receiving more precipitation in the spring?

Yes, there has been an increase in precipitation in recent years; conditions might also be more variable (Figure 3b).

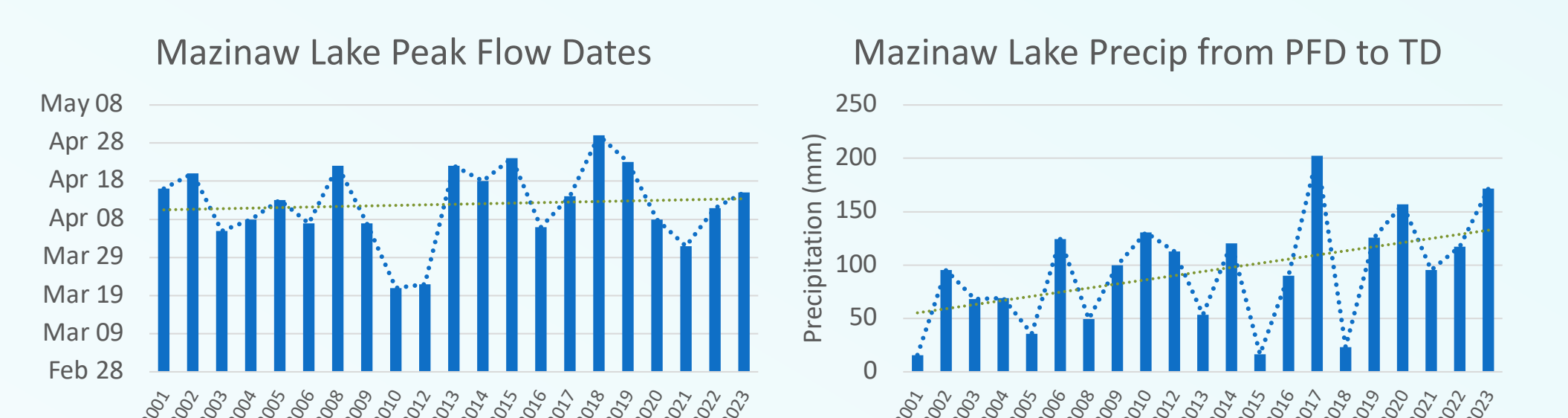


Figure 3: Mazinaw Lake (a) Peak Flow Dates and (b) Precipitation from the PFD to TD

Conclusion

- A portion of the freshet water may pass through the system before raising lake levels
- This operation remains a delicate balance due to the variable nature of climate
- Next steps include research to develop numerical flood forecasting models to assist with operations
- This study offers crucial insights for optimizing dam operations and mitigating spring flooding in a changing climate

STAFF REPORT

3439/24

TO:	Chair and Members of the Mississippi Valley Conservation Authority Board of Directors
FROM:	Sally McIntyre, General Manager and Stacy Millard Treasurer
RE:	Job Evaluation & Implementation Plan
DATE:	September 25, 2024

Recommendation:

That the Board of Directors approve the changes in job ratings as recommended.

The details of individual positions and financial implications will be discussed In Camera.

1.0 BACKGROUND

Earlier this year, Cornerstone Management Solutions Limited (Cornerstone) was retained to support MVCA in conducting Job Evaluations (JE) of the following positions that were either new or had changed significantly since previously evaluated:

- Biologist
- Environmental Planner
- Regulations Officer
- Site Supervisor
- Stewardship Coordinator
- Treasurer

The JE process uses a variety of factors to evaluate and score jobs, and to determine the appropriate salary band within MVCA's 8-tier pay scale. Staff complete Job Evaluations Questionnaires that enable the management team to assess each job against the scoring matrix. Joanne Glaser of Cornerstone facilitated the discussions and documented the decisions underlying all scores. Her report will be provided In Camera.

2.0 BUDGET IMPACTS AND IMPLEMENTATION PLAN

Of the six positions evaluated, four saw their scores increase sufficiently to push them into a new salary band. The financial impact of moving affected jobs to the new pay bands in 2025 would be \$15,000.

REPORT**3440/24**

TO:	Chair and Members of the Mississippi Valley Conservation Authority Board of Directors
FROM:	Sally McIntyre, General Manager and Stacy Millard, Treasurer
RE:	Salary Review
DATE:	September 25, 2024

Recommendation:

That the Board of Directors appoint the Executive Committee to review management compensation.

In 2020, staff were directed to carryout any future payroll market analyses in-house. A market review was recently carried out by the Treasurer to identify if MVCAs salaries pose a risk to attracting and retaining staff. Salary information was obtained from the following organizations:

- Town of Carleton Place
- Municipality of Mississippi Mills
- Township of Central Frontenac
- Tay Valley Township
- City of Pembroke
- City of Ottawa
- Rideau Valley Conservation Authority
- Cataraqui River Conservation Authority
- South Nation Conservation
- Quinte Conservation
- Thames River Conservation Authority
- Nottawasaga Conservation Authority

Some conservation authorities outside of Eastern Ontario were chosen because they have dam infrastructure and operational responsibilities that neither RVCA nor SNC have. The City of Ottawa made considerable effort to find fair comparator positions within its organization, recognizing the significant size differences between the two corporations.

The market analysis found that:

- three non-management positions are at risk due to salaries in the marketplace.
- four management positions are also below market.

The three non-management jobs underwent job evaluation and were already recommended to move to a higher pay band. If implemented, there would be no additional financial pressure associated with those positions. Management cannot review its own wages therefore, it is recommended that the Executive Committee be appointed to oversee this work. Cornerstones Management Solutions Ltd. is available to support the Executive Committee in this work.

REPORT**3442/24**

TO:	The Chair and Members of the Mississippi Valley Conservation Authority Board of Directors
FROM:	Sally McIntyre, General Manager
RE:	Proposed 2025 Budget Assumptions
DATE:	October 15, 2024

RECOMMENDATION

That the Board of Directors direct staff to develop the 2025 Budget and related documents in accordance with the following parameters:

- 1. An increase of 2.9% plus assessment growth to the Operating Levy;**
- 2. An increase of 8.5% plus assessment growth to the Capital Levy;**
- 3. An assumed assessment growth rate of 1.5%.**
- 4. A cost of living increase to the 2024 Pay Scale of 2.0%; and**
- 5. Transfer \$64,664 onto the Municipal Levy for Workforce Plan Adjustments.**

The purpose of this report is to identify operational and capital pressures, and to establish the municipal levy assumptions upon which the 2025 budget is to be developed.

1. BACKGROUND

MVCA's annual budget is set based upon the following parameters:

- Operational needs to meet program and service obligations and standards.
- The Capital Plan to manage assets in accordance with industry standards.
- Approved fees, and projected revenues through self-funded and third-party sources.
- The threshold imposed by the Board on increases to the Municipal General Levy.

As the City of Ottawa is our primary municipal funder, it has been the practice of MVCA and the Rideau Valley and South Nation conservation authorities to follow the annual budget direction set by the City, and to consult with City financial staff when deviations are required.

The City recently informed MVCA, RVCA, and SNC that a budget direction report was approved September 18, 2024 with a property tax increase of 2.9%, an assumed growth in assessment of 1.5%, and an average construction inflation rate of 2%.

2. 2025 BUDGET PRESSURES

CAPITAL

The main budget pressure for 2025 is continued building of the capital reserve to pay for planned asset renewals set out in the 10-year Capital Plan such as replacement of the Kashwakamak Lake Dam. The Plan includes a schedule of levy increases that was approved by the Board in April 2023.¹ The capital increased identified for 2025 is 8.5% plus growth. This would represent a capital levy pressure to the City of Ottawa of approximately \$62,240, with the remaining \$6,934 pressure to be shared amongst the other ten municipalities based upon their percentage assessment value. City financial staff have indicated that this amount can be accommodated under current projected increases to the 2025 Rate Budget.

OPERATING

A payroll increase of 2% is recommended based upon the August CPI rate, which is the month and source that MVCA has traditionally used for determining cost of living wage increases, which is included within the Operating Levy increase.

Workforce adjustments made in 2021 that were approved for phasing onto the Municipal Levy have an outstanding balance of \$219,327. Compensation should not be paid using Operating Reserves, therefore, it is recommended that the Board continue to phase outstanding payroll costs onto the levy as shown in Table 1. This equates to approximately a 2% increase in the Operating Levy.

Table 1: Proposed Workforce Plan Adjustment to Levy

Outstanding Compensation on Operating Reserve, 2024	\$219,327
Reduce Payroll by 1.0 FTE including benefits in 2025	(\$105,000)
Implement 2025 Job Evaluation Recommendations	\$15,000
Net Pressure 2025	\$129,327
Recommendation: 50%/50% Municipal Levy/ Op. Reserve	\$64,664

NET IMPACT

¹ Refer to Staff Report 3309/23.

The combined impact of these increases is a 7.1% increase to the Municipal Levy. Details for each municipality are shown in Table 3.

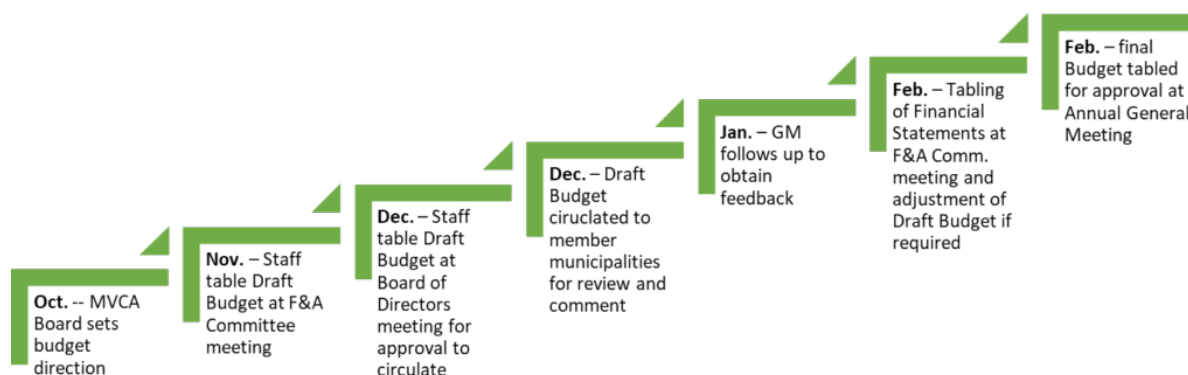
Table 2: Draft 2025 Budget Assumptions – Impact by Municipality

	Operating Levy incr.	Capital Levy incr.	Total Increase	2024 % Assessment	2025 % Assessment
Addington Highlands, Township of	\$311	\$106	\$418	.1551%	.1535%
Beckwith Township	\$1,417	\$483	\$1,901	.6921%	.6987%
Carleton Place, Town of	\$5,666	\$1,932	\$7,598	2.6708%	2.7932%
Central Frontenac, Township of	\$869	\$296	\$1,165	.4303%	.4284%
Drummond/North Elmsley, Twp. of	\$983	\$335	\$1,319	.4870%	.4849%
Greater Madawaska, Township of	\$71	\$24	\$96	.035%	.0352%
Lanark Highlands, Township of	\$2,244	\$765	\$3,010	1.108%	1.1065%
Mississippi Mills, Municipality of	\$5,691	\$1,941	\$7,632	2.783%	2.8059%
North Frontenac, Township of	\$1,825	\$622	\$2,447	.9115%	.8997%
Ottawa, City of	\$182,500	\$62,240	\$244,740	90.103%	89.9756%
Tay Valley Township	\$1,254	\$428	\$1,682	.6225%	.6183%
TOTAL	\$202,833	\$69,174	\$272,007	100%	100%

3. NEXT STEPS

Figure 1 illustrates the targeted budget process at MVCA

Figure 1: MVCA Budget Process



4. CORPORATE STRATEGIC PLAN

Implementation of the proposed 2025 budget assumptions will allow for continued progress on the following strategic goals and objectives:

Goal 1: Asset Management – revitalize watershed management activities and invest in our legislated mandate.

- a) Implement the five-year capital program.
- b) Strengthen our risk analysis and management capacity to include climate change and development impacts.
- e) Plan for the next phase of asset development and management.

Goal 3: People and Performance – support the operational transformations required to achieve MVCA’s priorities and to address legislative changes.

- a) Staff the organization to allow for: delivery of mandatory programs and services, priority projects, and fulfillment of commitments made under memoranda of understanding (MOUs) and other agreements.

REPORT

3445/24

TO:	The Chair and Members of the Mississippi Valley Conservation Authority Board of Directors
FROM:	Sally McIntyre, General Manager
RE:	DRAFT Land Conservation & Resource Strategy
DATE:	October 2, 2024

RECOMMENDATION

That the Board of Directors receive the Draft Land Conservation & Resource Management Strategy.

1.0 PURPOSE

The purpose of this report is to table the *DRAFT Land Conservation & Resource Strategy* so that it may undergo mandatory public review and be considered and approved by the Board of Directors before the end of 2024.

Text and sections in **RED** have been added or amended since the Draft Strategy was tabled at the Policy and Planning Advisory Committee.

2.0 BACKGROUND

O. Reg. 686/21 under the *Conservation Authorities Act* requires MVCA to prepare the following two strategies by the end of 2024:

- **Conservation Area Strategy** that addresses the acquisition and disposition of CA lands, the programs and services offered on those lands, and how CA lands augment any natural heritage in its jurisdiction and integrates with other provincially or municipally-owned lands.
- **Watershed-based Resource Management Strategy** that provides guiding principles and objectives to inform the design and delivery of CA programs and services, a summary of studies, monitoring and other information used to inform those decision, a compliance review of existing programs and services, and a risk analysis and mitigation plan for those services with cost estimates.

Because these two matters cannot be looked at in isolation, staff have prepared a consolidated document called a *Land Conservation & Resource Strategy* (LC&RS.) The document meets the mandatory requirements of both the above strategies.

3.0 DRAFT STRATEGY

The *LC&RS* is intended to guide the work of MVCA for the next 10-20 years, but will require the Board to approve strategic plans each term of council to set short-term objectives and priorities.

The *LC&RS* is structured as follows:

- List of Background Studies and Reports
- Background on MVCA
- Vision
- Guiding Principles
- Discussion of local and regulatory context and trends
- Discussion and policies for each program area, including:
 - Regulatory requirements informing program design and delivery
 - Goals for the Authority in delivering each program
 - Objectives on how to achieve those goals
 - Gaps & Risks to meeting those objectives
 - Mitigating Measures being undertaken or that could be pursued
 - Implementation policies to guide future activities
- Appended to meet mandatory requirements are the following:
 - List of partners and services they provide
 - Registry of Hazard events that demonstrate risk and areas of focus
 - Implementation Status of various watershed and subwatershed plans
 - Current Inventory of Programs and Services and how they are funded from the 2024 Budget
 - Summary Review of MVCA Conservation Areas

The Strategy builds on the work done in support of the 2021-2025 *Corporate Strategy Plan*, and has been under development since our legislation change and regulations were released in 2021. Specifically, staff completed the *Mississippi River Watershed Plan* and reviews of the Stewardship and Monitoring programs, with review of the Education Program drawing to a close as well as an update of the Museum Strategic Plan.

More recently, a review was completed of all watershed plans within our jurisdiction to determine the extent to which they have been implemented to enable consideration of gaps and potential risks. And, since the summer, two surveys were carried out to solicit public feedback on key issues and to better understand the current state of and demand for “conservation authority-type” services in our jurisdiction.

4.0 NEXT STEPS

Upon publication of this agenda package, the draft document will be considered “public” and the comment period can begin. Staff have meetings planned with MVCA’s Mississippi River Watershed Plan Public Advisory Committee (PAC) and Museum Advisory Committee (MAC) for the second week of October, and a Virtual Information Session is planned for October 29th. Notices will be circulated to key stakeholders, published, and promoted on social media.

The comment period will end November 22, after which staff will made edits and return to the P&P Advisory Committee for review of the final draft before it is elevated to the Board on December 9, 2024.

5.0 CORPORATE STRATEGIC PLAN

Completion of the Land Conservation Strategy will support achievement of:

Goal 1: Asset Management – revitalize watershed management activities and invest in our legislated mandate; and objectives:

- b) Strengthen our risk analysis and management capacity to include climate change and development impacts.
- c) Implement priority actions identified in the *Mississippi River Watershed Plan*.
- e) Plan for the next phase of asset development and management.

Goal 2: Community Building – engage local partners to foster connections, leverage our resources, and strengthen our “social license” to operate.

- a) Demonstrate MVCA to be a trusted, client-centered, resourceful, and helpful partner.
- b) Strengthen relationships with municipalities and community stakeholders, First Nations, the agricultural sector, developers, not-for-profits, and academia.

Attachments:

1. DRAFT Land Conservation & Resource Strategy

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 & 3	80
Appendix 5: MVCA Conservation Areas – Summary Review	82
Mill of Kintail Conservation Area (MOK)	82
Morris Island Conservation Area.....	85
Purdon Conservation Area	88
Palmerston-Canonto Conservation Area	91
Carp River Conservation Area	94
K&P Trail Conservation Area	97

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.

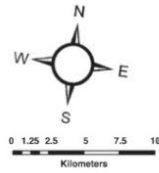
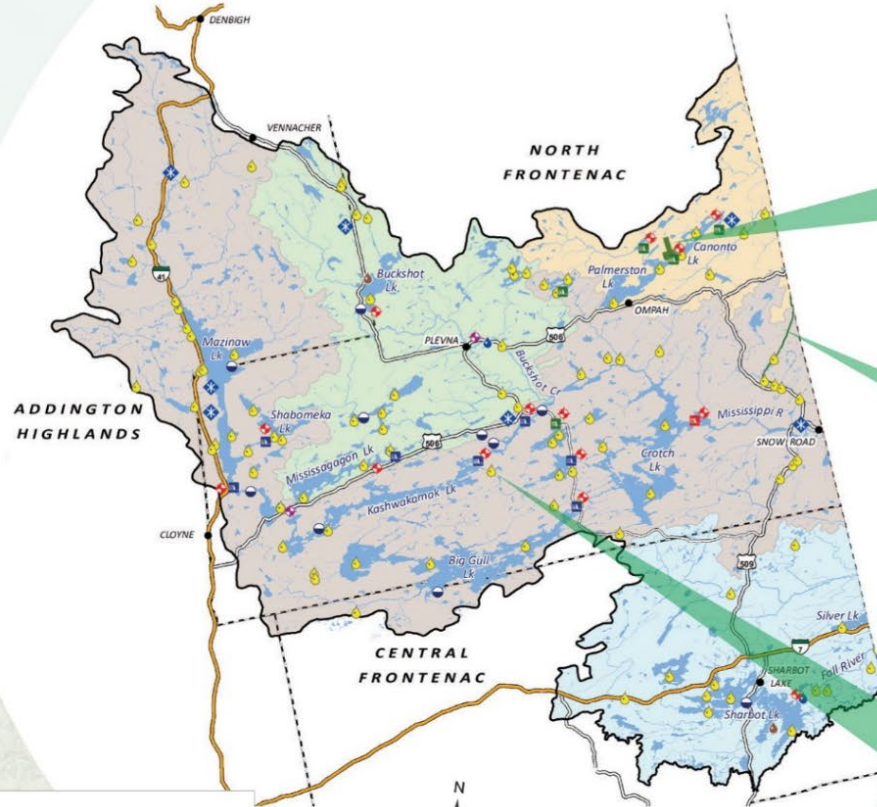
Lastly, MVCA provides stewardship and education programming, and owns and operates the Mill of Kintail Museum that houses exhibits of doctors James Naismith and R. Tait McKenzie. Public concerns around the operation of MVCA facilities have increased over time as the population of the watershed has increased 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
- MNR Dam
- OPG / Private Hydro Dam
- MVCA Snow / Ice Monitoring Sites
- Federal Stream Gauge
- MVCA Automatic Gauge
- MVCA Manual Gauge
- MVCA Monitoring Sites
- Provincial Ground Water Monitoring Network
- Provincial Water Quality Monitoring Network

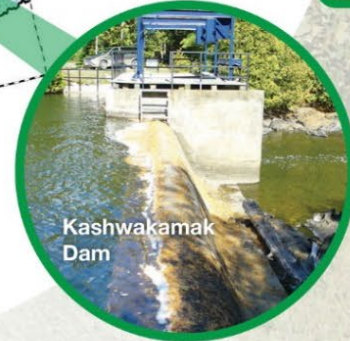
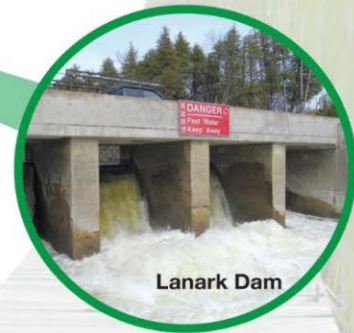
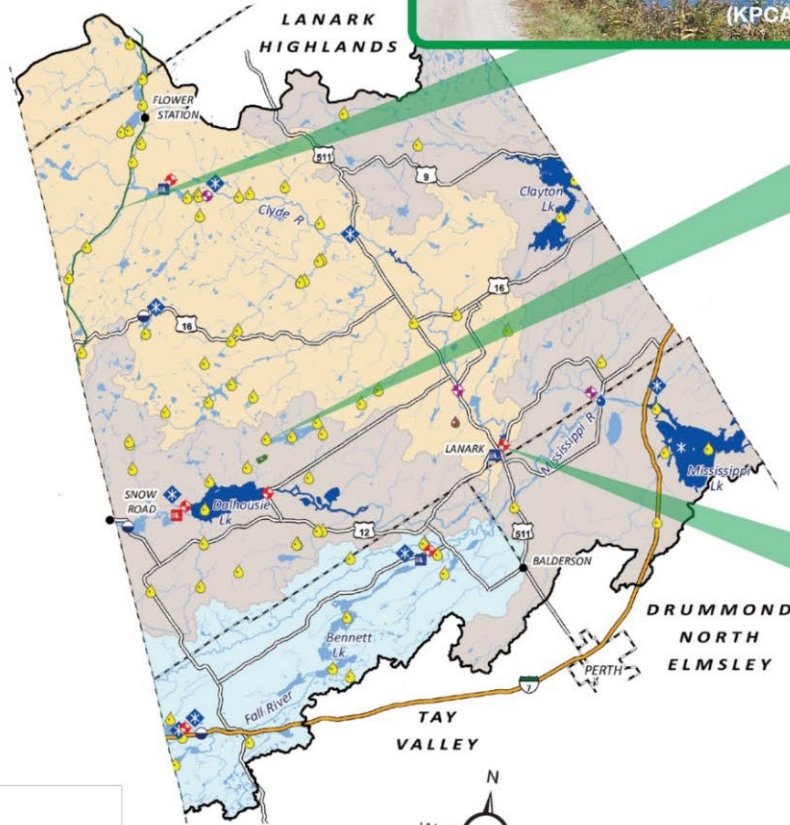


Figure 1

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

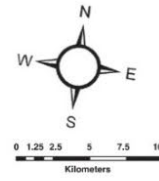
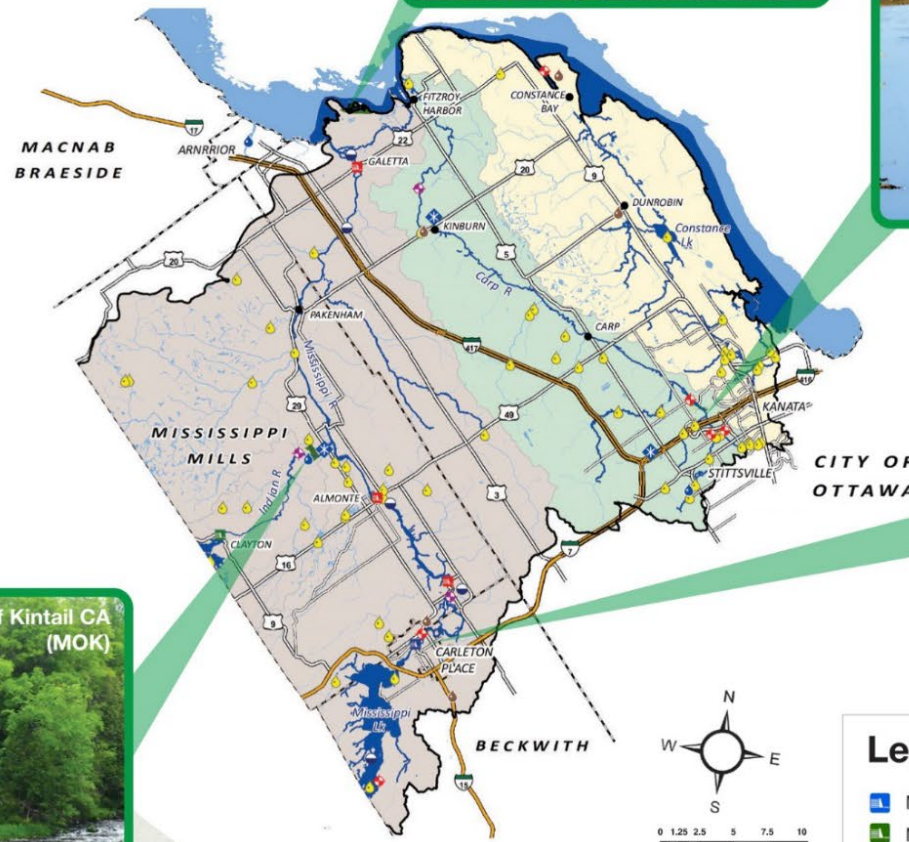
- MVCA Dam
- MNR Dam
- OPG / Private Hydro Dam
- MVCA Snow / Ice Monitoring Sites
- Federal Stream Gauge
- MVCA Automatic Gauge
- MVCA Manual Gauge
- MVCA Monitoring Sites
- Provincial Ground Water Monitoring Network
- Provincial Water Quality Monitoring Network
- Regulatory Flood Plain

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.

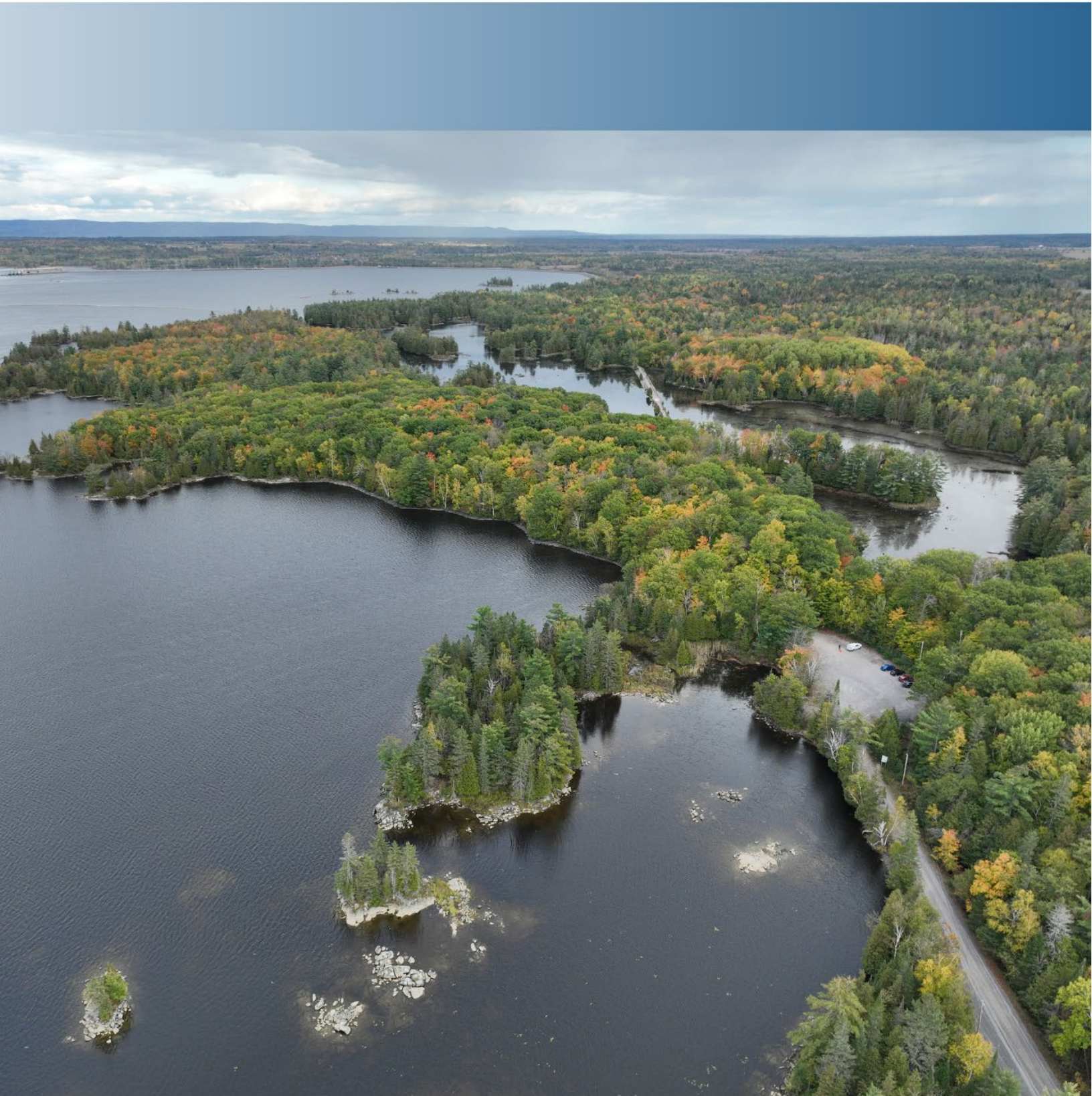
Actions to Mitigate

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.

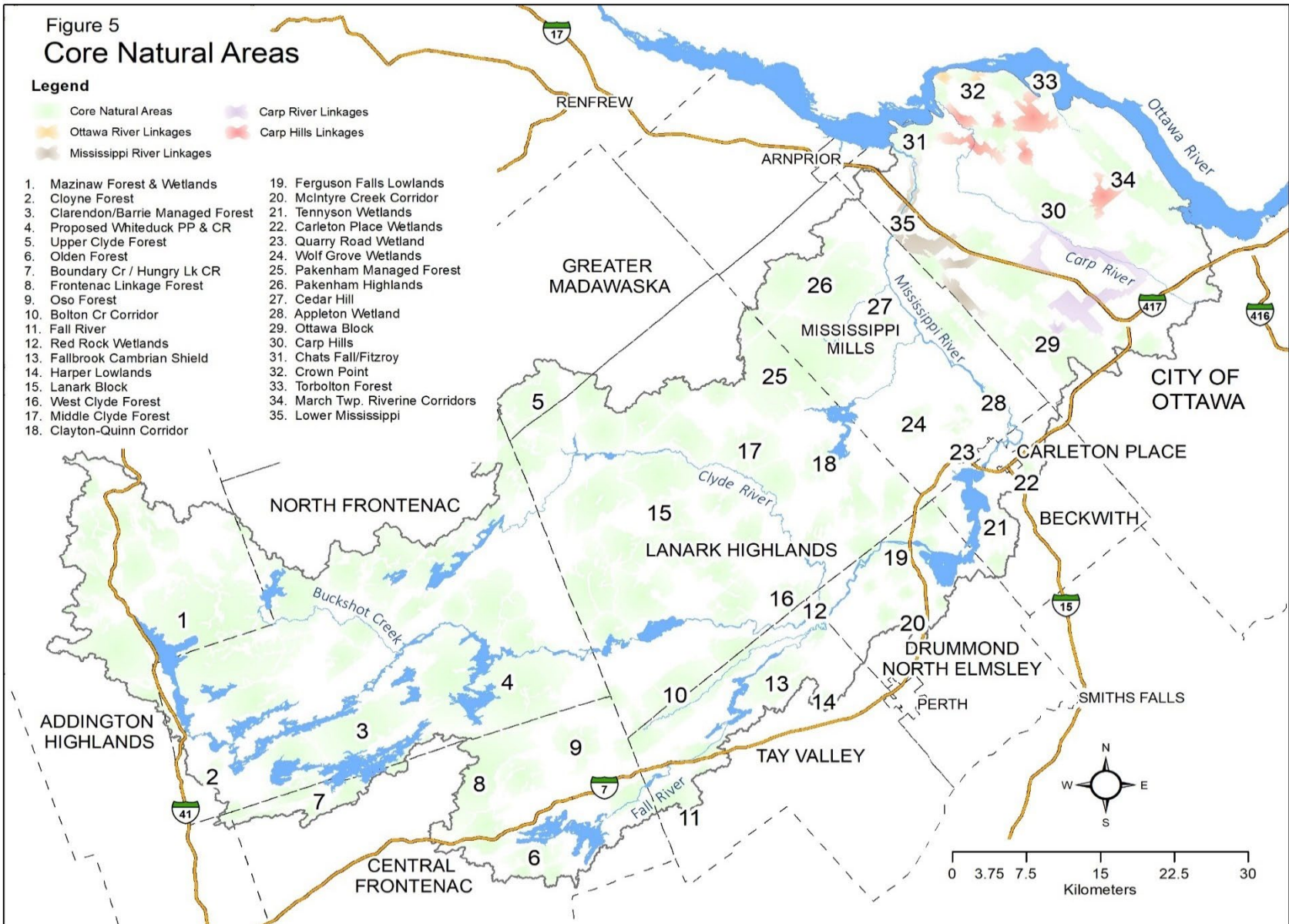
34. All conservation area objectives shall be met at a new conservation area before it is opened to the public.

Figure 5
Core Natural Areas

Legend

- Core Natural Areas
- Ottawa River Linkages
- Mississippi River Linkages
- Carp River Linkages
- Carp Hills Linkages

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Mazinaw Forest & Wetlands 2. Cloyne Forest 3. Clarendon/Barrie Managed Forest 4. Proposed Whiteduck PP & CR 5. Upper Clyde Forest 6. Olden Forest 7. Boundary Cr / Hungry Lk CR 8. Frontenac Linkage Forest 9. Oso Forest 10. Bolton Cr Corridor 11. Fall River 12. Red Rock Wetlands 13. Fallbrook Cambrian Shield 14. Harper Lowlands 15. Lanark Block 16. West Clyde Forest 17. Middle Clyde Forest 18. Clayton-Quinn Corridor | <ol style="list-style-type: none"> 19. Ferguson Falls Lowlands 20. McIntyre Creek Corridor 21. Tennyson Wetlands 22. Carleton Place Wetlands 23. Quarry Road Wetland 24. Wolf Grove Wetlands 25. Pakenham Managed Forest 26. Pakenham Highlands 27. Cedar Hill 28. Appleton Wetland 29. Ottawa Block 30. Carp Hills 31. Chats Fall/Fitzroy 32. Crown Point 33. Torbolton Forest 34. March Twp. Riverine Corridors 35. Lower Mississippi |
|---|--|



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 at 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		
	<i>Compl</i>	<i>WIP</i>	<i>On Hold</i>	<i>Cancel</i>		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

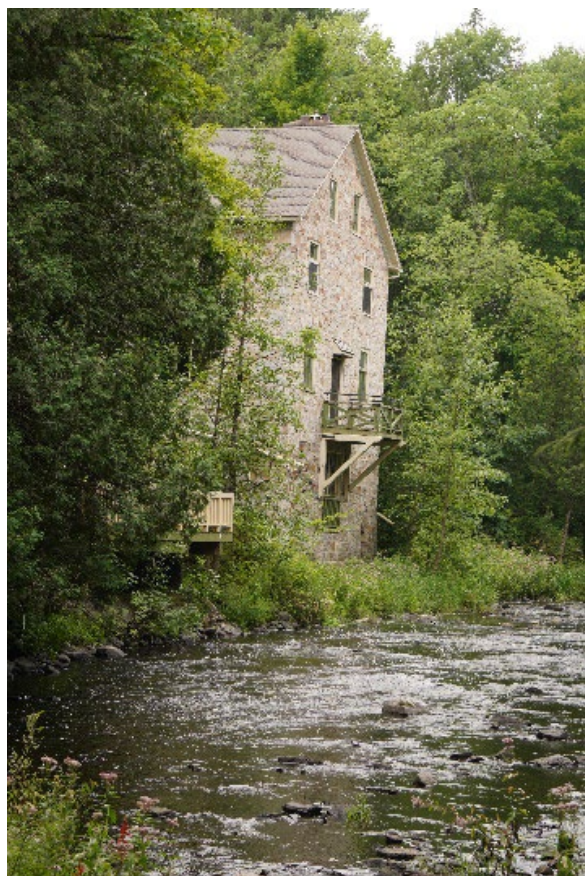
Other projects:

- 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



- Playground
- Facility rentals
- Washrooms
- Picnic areas

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

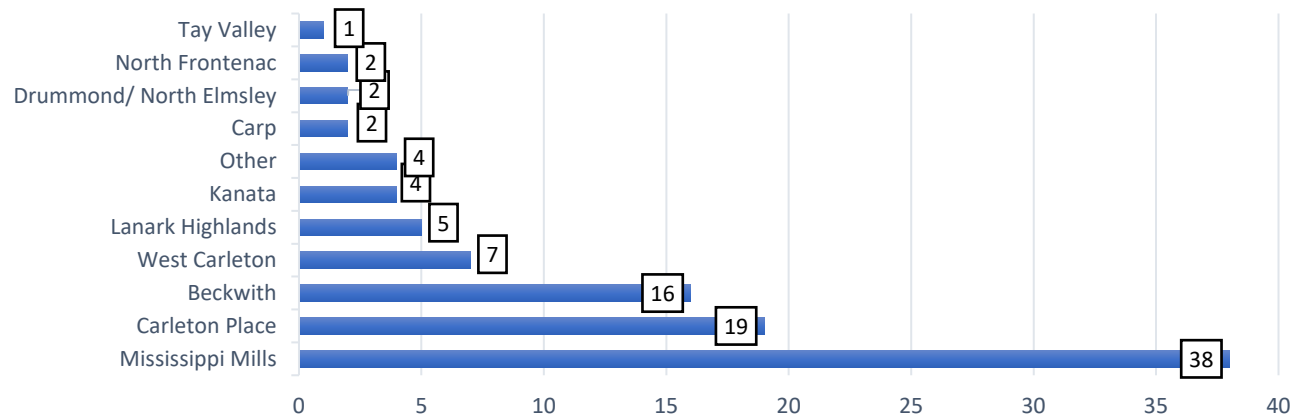
- Hiking/snowshoe trails (6 km)
- Bike trail, fitness trail, forest hike, snowshoe trail
- 4.7km of marked walking trails
- Forest Loop (2.6 km), Secrete Snow Loop (3.5 km), Trillium Trail (2.9 km), and Indian Riverside Trail
- Elevation as high as 150 m
- R. Tait McKenzie and Dr. James Naismith Museum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

	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

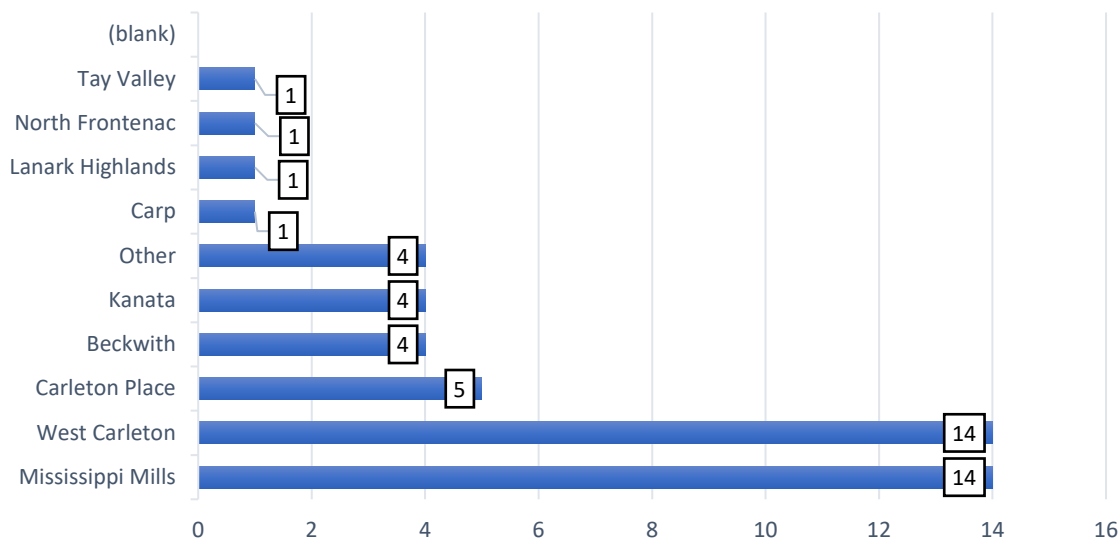
- 6 km of Nature trails (6)
- Includes boardwalk
- Paddle routes
- Wheelchair accessible facilities
- Fishing platforms
- Washrooms
- Picnic areas
- Canoe launch
- Scenic lookout
- Rest area
- Dogs allowed - on leash
- Paid parking
- Signage

	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

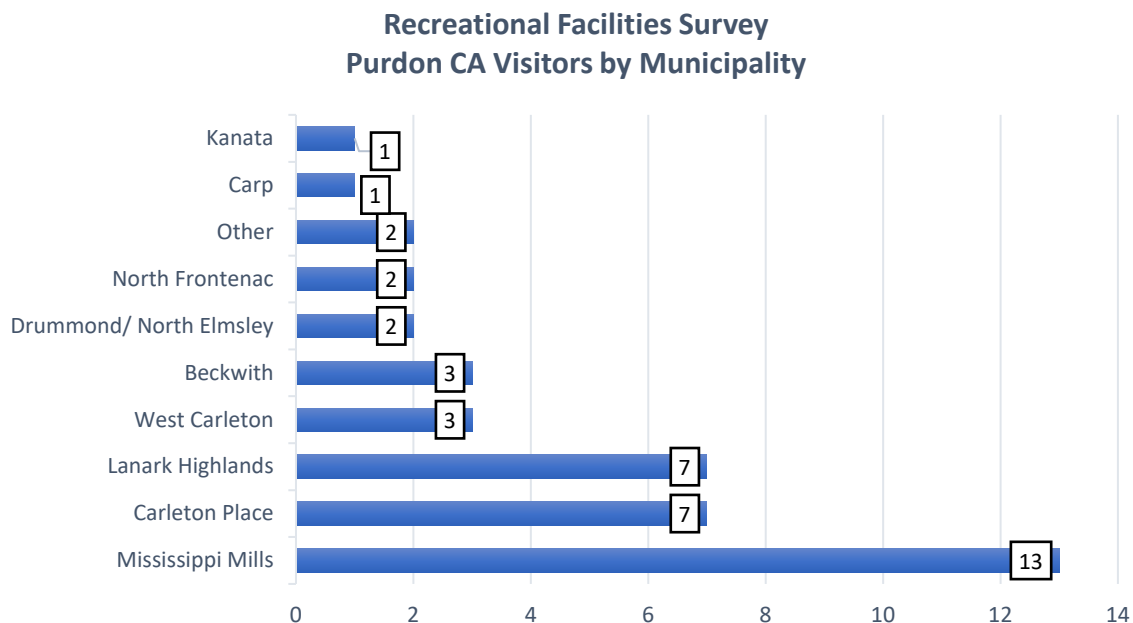
Site Features

- 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

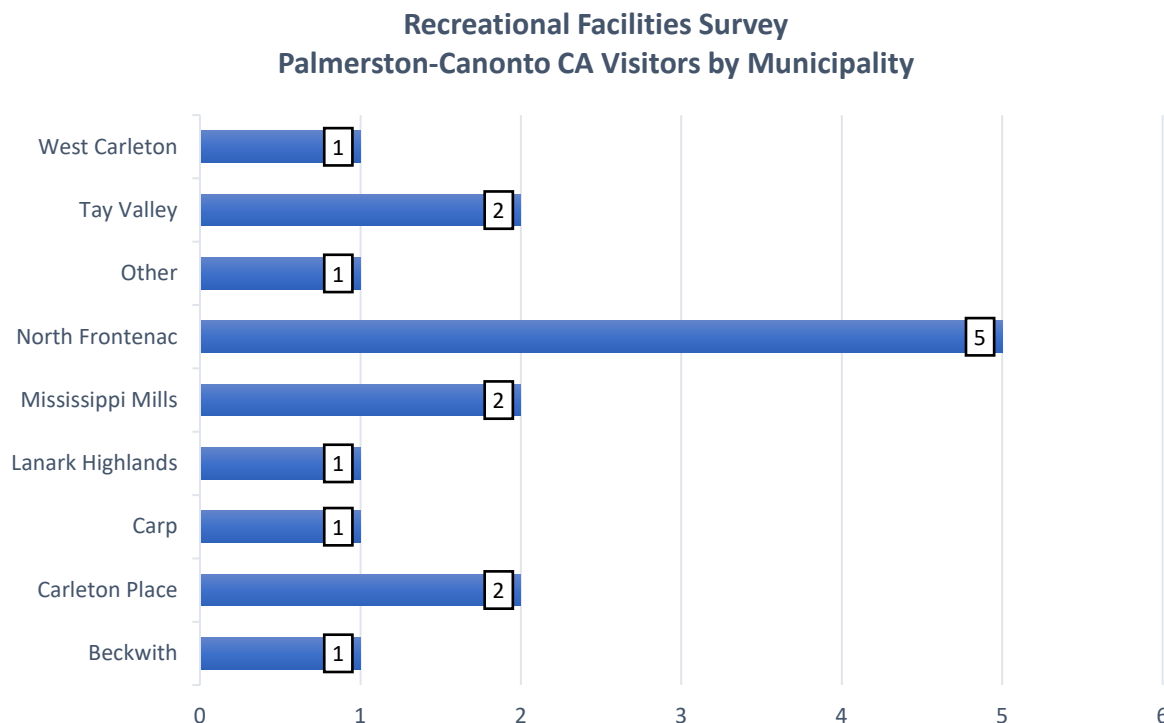
Site Features

- 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

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:

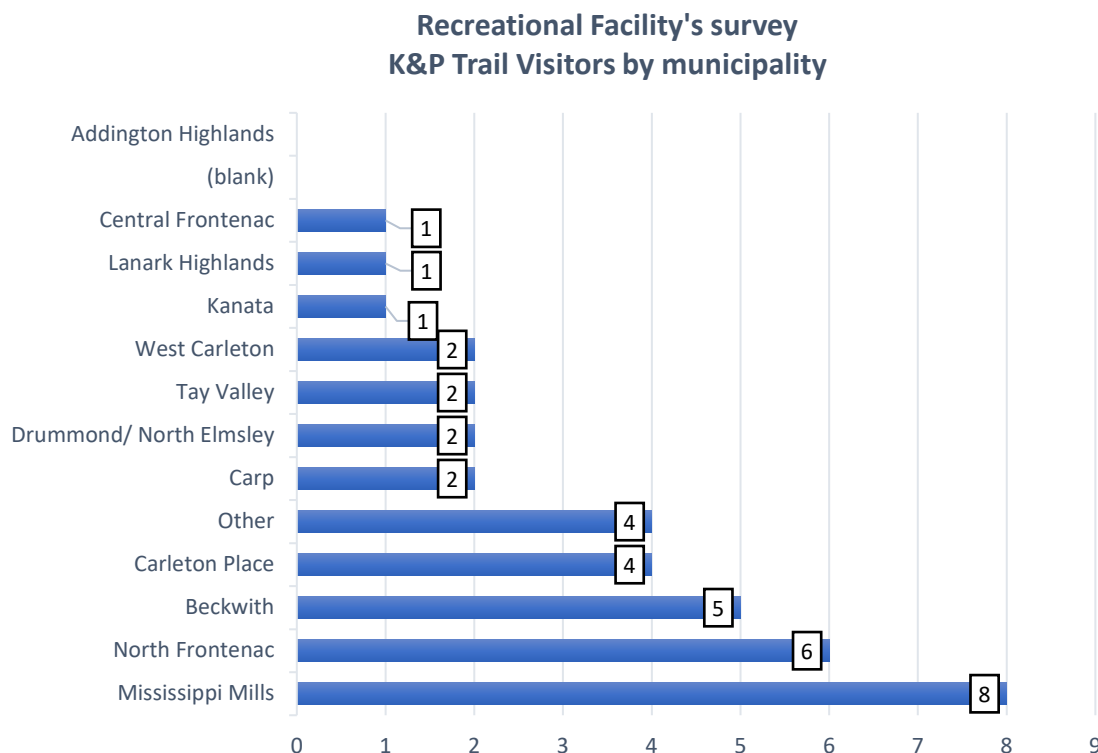
- Average 4.1/5
- Local traffic
- Mostly paved
- Good for birding

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

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

REPORT**3451/24**

TO:	The Chair and Members of the Mississippi Valley Conservation Authority Board of Directors Committee
FROM:	Scott Lawyrk, Property Manager
RE:	Education Program Review and Reinstatement
DATE:	Oct 21, 2024

RECOMMENDATION**That the Board of Directors approve reinstatement of a Nature Education Program in 2025**

1.0 BACKGROUND

Shortly after its establishment in 1968, MVCA developed an education program for school age children. The program ran through to 2020 when the pandemic caused the program to be suspended. At that time, the Board directed that further analysis be carried out prior to program reinstatement to determine:

- if MVCA could deliver the program within the financial constraints of the new regulatory environment; and
- whether the current service delivery method was the best way to achieve MVCA's strategic priorities and educational objectives.

In February of this year, staff contracted Bill Elgie¹, a former teacher and outdoor school director, to help complete a full program review, including consideration of service delivery options that considered recently implemented program and funding categories.

2.0 RESULTS OF 2024 EDUCATION PROGRAM REVIEW

The Elgie study included a review of programs offered by other Conservation Authorities, current outdoor education program offerings in and around the MVCA watershed, identification of potential programming gaps, and recommends short-term (2024-2025), mid-term (2025-2027) and long-term opportunities to reinstate an Education Program.

¹ Attachment 4.

Within the short-term recommendations for 2025, included are the offering of programs during May and June and an extension of the Summer Day Camp program to include seven-weeks.

Mid and long-term recommendations are focused around expanding programs, developing partnerships with local groups to help facilitate and enhance programming, strengthening the relationships with the local school boards (possibly through MOU's) and investing in infrastructure at the sites that would be hosting the programs.

3.0 PROPOSED 2025 EDUCATION PROGRAM PLAN

Based on the recommendations, staff have designed a program for 2025, that includes:

1. School Programming (both fieldtrips and in-class visits)
2. Guided Tours of our three flagship Conservation Areas
3. PA Day Camps
4. March Break Day Camp
5. 7-Week Summer Day Camp

The program plan includes one FTE position to help design and facilitate the year-round program, as well as the hiring of support staff to help with the day-camps. The budget is based on conservative, obtainable enrollment numbers and will allow staff to be able to focus on building quality programs that will help attract registration numbers for future years. MVCA should be known as 'THE' place to go for quality Outdoor Education in the watershed.

A key element that will differ the current iteration of the program vs. past programs will be the activities will not be strictly limited to children. Adults are just as interested, if not more so, in nature-based education programs. The Guided Tours will begin to target this demographic by engaging adults and seniors² in tailored programming around our Conservation Areas.

As well, camp services would be run on a for-profit basis to allow school and community programs to be offered at affordable rates.

4.0 HISTORICAL NUMBERS VS. 2025 TARGETS

In the last full year of the Education Program, 37 schools attended fieldtrips at the Mill of Kintail property. The 2025 plan has a conservative target of 12 schools participating in either full or half-day programming. Similarly, MVCA would have 15-20 in-schools visits in 2019. The 2025 plan has a modest budget target of eight³.

² Upwards of 30 retirement residences within the MVCA Watershed (not to mention those within close driving distance.)

³ 87 schools have catchment areas within the MVCA Watershed.

The only area with projected growth would be the Summer Day Camp program. Traditionally, the camp ran for six weeks, with 20 participants per week. This past year, the pilot project delivered 32 participants over the course of four weeks, with a waiting list. Due to the excess demand, the program budget will target 44 participants over a seven-week program.

These targets are being used to help ensure a more risk adverse budget. First year programs can take some time to establish. Staff want to ensure programs are properly designed to give full value for the registration fees, without the burden of very aggressive enrollment targets. In all cases, program capacities would exceed budgeted targets, leaving room for growth, not only in 2025, but also in future years.

5.0 FUTURE YEARS

As the Program becomes more established and there is a focus on enrollment growth in all areas, future years will see the burden be lessened, year-to-year, on the Category 3 budget line. The goal would be to have the Program completely cost recoverable by end of the 4th year (Year-end 2028⁴). Staff will continue to focus on grants and sponsorship opportunities. However, the program will be focused on user fees, rather than completely dependant on grants. Projected revenue from the Summer Camp program will help support upwards of 70% of the overall Education Program.

MVCA is required to deliver education and outreach on natural hazard risks, operation of our facilities and permitting requirements within regulated areas. Programs will be developed with key messaging on these topics.

A comprehensive Education Program Plan will be developed with following goals and objectives:

- Ensure watershed residents and users understand how the watershed functions, their role in it and allow them to make informed decisions that mitigate risks and support resource sustainability
- Made to be locally relevant
- Engaging, hands-on and FUN

6.0 CORPORATE STRATEGIC PLAN

Delivery of an Education Program support achievement of the following goal and objectives:

⁴ This is the last year of the current 5-year Programs & Services Agreement with member municipalities.

Goal 2: Community Building – engage local partners to foster connections, leverage our resources, and strengthen our “social license” to operate.

- a) Demonstrate MVCA to be a trusted, client-centered, resourceful, and helpful partner.
- b) Strengthen relationships with municipalities and community stakeholders, First Nations, the agricultural sector, developers, not-for-profits, and academia.

ATTACHMENT 1**2025 EDUCATION PROGRAM BUDGET SUMMARY****EXPENDITURES**

1 FTE Wages & Benefits	58,650.00
Support Staff Wages	34,620.00
Program Expenses	13,225.00
Administrative	2,680.00
Special Guest/ External Contractor	1,700.00
Marketing and Publicity	5,270.00
TOTAL EXPENSE	116,145.00

REVENUES

Program 1 - School Programs	4,840.00
Program 2 - Guided Tours	2,440.00
Program 3 - PA Day Camps	5,400.00
Program 4 - March Break Camp	5,625.00
Program 5 - Summer Camp	77,880.00
Grant Funding or Sponsorship	1,000.00
Cat 3 Programs and Services Agreement	20,000.00
TOTAL REVENUE	117,185.00

NET	1,040.00
------------	-----------------

APPENDIX 2**Program Outlines****❖ PROGRAM 1 – School Visitation**

Who	School and Education Centers in and surrounding watershed (80-100 individual locations) <ul style="list-style-type: none"> - Elementary and Secondary schools - Forest Schools - Homeschools
What	Customizable programs focused on: <ul style="list-style-type: none"> - Curriculum-focused games or activities - Guided hikes or stream study/water monitoring - Nature crafts - Survival skills (shelter building, orienteering)
Where	Mill of Kintail Conservation area/ Visiting Schools and Centres
When	Monday – Fridays, two main sectors: <ul style="list-style-type: none"> - January 2025 – June 2025 - September 2025 – December 2025
Staffing	1FTE, volunteers Teachers to supervise school children
Capacity	30 participants per class, 30-40~ full days of bookings

❖ PROGRAM 2 – Guided Tour Programs

Who	Target Markets (2): <ul style="list-style-type: none"> - Families with children near conservation areas (15,000+ households) - Senior centers or clubs within the watershed (28+ senior residences or recreational centers)
What	Seasonal Guided Tours: <ul style="list-style-type: none"> - Snowshoeing (daytime or evening) - Nature Walks - Themed activities: mushroom hunt, bird watching, astronomy,
Where	Mill of Kintail Conservation area Morris Island Conservation area Purdon Conservation Area

When	Weekends and evenings: January – December, year-round <i>Most popular sessions will likely be fall, snow-season (January-Feb) and late spring (flowers, birds)</i>
Staffing	1FTE, volunteers Parents in charge of supervising children, program staff welcome to support senior clients
Capacity	40 participants per booking (limiting factor: snowshoes, trail space) 20-30 separate program sessions

❖ PROGRAM 3 – PA Day Camp/Workshops

Who	Children, aged 6-12
What	Seasonal PA day camps, with rotating themes: <ul style="list-style-type: none"> - Survival - Mushrooms - Birding - Snowshoeing - Animal Tracks - And more!
Where	Mill of Kintail Conservation area
When	Monday – Fridays, 9am – 4pm PA Dates January 2025 – December 2025
Staffing	1FTE, 4 support counsellors, 8:1 ratio + volunteers welcome
Capacity	30 participants per session, 6-8 sessions (more if registration is full each time)

❖ PROGRAM 4 – March Break Camps

Who	Children, 6-12
What	Day camp focused on: <ul style="list-style-type: none"> - Cold weather survival – fire building, shelter building, bush-craft, cold-weather layering, ice safety, orienteering - Animal tracks – ‘signs of winter’ - Cold-water wildlife - Nature ID – seeds, nuts, trees

	- Indigenous ed – storytelling, spring coming
Where	Mill of Kintail Conservation area
When	Monday – Friday, 9am – 4pm March 10 th – 14 th , 2025
Staffing	1FTE, 4 support counsellors, 8:1 ratio + volunteers welcome
Capacity	25 participants, 1 session

❖ PROGRAM 5 - Summer Camps

Who	Children, 6-12
What	Day camp focused on: <ul style="list-style-type: none"> - Nature activities - Wildlife education - Stewardship and conservation topics - Connection to wild spaces - Time in the woods and water - Connecting to one another through fun, games, and the land
Where	Mill of Kintail Conservation area
When	Monday – Friday, 9am – July 2 nd – August 22 nd 2025
Staffing	1FTE, 8 support counsellors (2 teams of 3), 8:1 ratio
Capacity	350 participants over 7 weeks

Attachment 3

KEY Action Items

Education Program Plan	<ul style="list-style-type: none"> - Finalize budget for all programs (October) - Finalize Education program document (November) - Create individual program handbooks and protocols for each independent program (December) - Waivers made for programs and approved (December)
Partnerships	<ul style="list-style-type: none"> - Continue building partnerships for various areas of program support – volunteer pools, symbiotic marketing relationships, program guests, and more. - Establish mailing list of relevant community groups and organizations. - Build meaningful connections with local indigenous groups, forest schools/home schools, and senior centers.
Marketing	<ul style="list-style-type: none"> - Create monthly education program newsletter - Establish public newsletter signup protocol - Create program posters - Drop off program posters to key community locations - Drop off program posters to established partners and schools - Use free services for program promotion: community events, newspapers - Find paid media services as necessary
Sponsorship and Grants	<ul style="list-style-type: none"> - Seek sponsorship for all 2025 Summer Day Camps - Apply to relevant grants fall 2024 through winter 2025
Staffing and Hiring	<ul style="list-style-type: none"> - Establish job descriptions (counsellor and head counsellor) - Release jobs 3~ months prior to programs (January release for March camp) or sooner whenever possible - Book training sessions (2x) for new staff hires
Volunteer Program	<ul style="list-style-type: none"> - Create volunteer program framework (including ‘vetting checklist’ paperwork and code of conduct) - Release volunteer onboarding in January 2025 - Create tracking system/database for volunteers and scheduling (Excel + online calendar system)
Registrations	<ul style="list-style-type: none"> - Create efficient registration setup (using current website and Square or Quick-Links) - Open registration 3~ months prior to programs (January release for March camp) or earlier whenever possible - Open more dates and opportunities as needed, or adjust business plan as needed for less-popular programs
Inventory	<ul style="list-style-type: none"> - Monthly count and review of needed items for all programs - Monthly master count completed
Program Itineraries	<ul style="list-style-type: none"> - Ongoing – built on a monthly basis for each program - Weekly inspections and itinerary checks completed based on weather, hazards or otherwise - Reminder emails and communications released on rotational basis 2~ weeks out from major bookings and camps

MVCA EDUCATION PROGRAM REVIEW



Bill Elgie

September 26, 2024

“It seems to me that the natural world is the greatest source of excitement; the greatest source of visual beauty; the greatest source of intellectual interest. It is the greatest source of so much in life that makes life worth living.”

Sir David Attenborough

Table of Contents

<i>Executive Summary</i>	4
<i>Introduction</i>	5
<i>THE FUNDING DILEMMA</i>	8
<i>WHY ENVIRONMENTAL EDUCATION</i>	9
<i>SHOULD MVCA RESUME OFFERING OEE PROGRAMMING?</i>	11
<i>PEER STANDARD</i>	11
<i>SUPPLY VS DEMAND</i>	15
<i>PARTNER OPPORTUNITIES</i>	23
<i>SITE SUITABILITY</i>	24
<i>PROGRAM AND STAFFING MODELS</i>	28
<i>THE CASE FOR OUTDOOR ENVIRONMENT EDUCATION</i>	30
<i>RECOMMENDATIONS</i>	32
<i>ACKNOWLEDGEMENTS</i>	35
<i>APPENDIX A: KEY CONCERNS</i>	36
<i>SHAW WOODS OUTDOOR EDUCATION CENTRE</i>	54
<i>RENFREW COUNTY DISTRICT SCHOOL BOARD</i>	54
<i>Background</i>	54
<i>Proposed "Participation Agreement"</i>	54

Executive Summary

This report summarizes the investigation into whether the MVCA should reopen their Outdoor and Environmental Education (OEE) Programs. Assessment criteria included: provincial government directives to Conservation Authorities (CA); a review of Educational programming at similarly sized CAs; an examination of the schools in the MVCA watershed and where they currently go for OEE; an investigation into nature-based programming in the MVCA jurisdiction and what needs or gaps exist; what potential partners exist to aid in delivering OEE programs; and a review of the MVCA properties, facilities, and capacity to offer educational programming.

Based on my review of these assessment criteria, it is my opinion that the MVCA should begin to offer OEE programming at the Mill of Kintail. Starting with expanding the existing summer camp and offering school programming, particularly in May and June, and then expanding the OEE program to include school trips to MOK in other seasons. The MVCA should also explore the option of running day trips in school yards and possible extension of programming at other MVCA Conservation Areas. Suggested timelines and implementation strategies are included.

Introduction

How Conservation Authorities helped establish Outdoor Education in Ontario

“Conservation Authorities began to be established by municipalities and the province in the 1940s in response to severe flooding and erosion problems in Ontario”¹. As a result of Hurricane Hazel in 1954, the provincial government amended the *Conservation Authorities Act, 1946*, to “enable Conservation Authorities to acquire lands for recreation and conservation purposes, and to regulate that land for the safety of the community.”² This resulted in the creation of hundreds of new “conservation areas” across the province.

It didn’t take long for local teachers to take advantage of the opportunity that these conservation areas presented. For example, in the early 1950s, Blanche Snell and Catherine Scholem, teachers at York Memorial Collegiate, started running 3-day science, physical education and social science camps for their students in the floodplain of the Humber River.³ In his book *Significant developments in local school systems (1972)*, W.G. Fleming states that these camps inspired local school boards to look for a permanent site for Outdoor Education. At that time, school boards were restricted from purchasing land more than 5 miles from their jurisdiction. As a result, the school board partnered with the Metropolitan Toronto and Region Conservation Authority (MTRCA – now known as the TRCA), to establish the Albion Hills Conservation School in 1963. Albion Hills was the second official outdoor education centre created in Ontario, following the Toronto Island Nature School which began in 1960. Apparently then Minister of Education, Bill Davis, was on hand for the opening ceremonies⁴. Conservation



Albion Hills Grand Opening, 1963

¹ <https://conservationontario.ca/conservation-authorities/about-conservation-authorities>

² <https://conservationontario.ca/conservation-authorities/about-conservation-authorities>

³ <https://caledoncitizen.com/50-years-of-outdoor-learning-marked-at-albion-hills-field-centre/>

⁴ Significant Development in Local School Systems - W.G. Fleming (1972)

Authorities were not legally entitled to spend money for schools. The solution to this issue was to create the MTRCA Foundation, which raised the funds from voluntary sources.

In 1965, the Ontario government amended *The Schools Administrations Act*, giving school boards the ability to purchase sites outside of their school district for the purpose of creating Natural Science Schools. Following this, many municipalities began purchasing land to run their own Outdoor Education centres, such as the MacSkimming Natural Science School, developed by the Ottawa school board in 1966. School Boards across the province continued to create Outdoor Education centres during the 1970s and 1980s.

During this same time, Conservation Authorities began developing day and overnight Outdoor Education centres at their conservation areas. Although “Education” is not the principal mandate of Conservation Authorities, the presence of Conservation Areas is almost every region of the province provided a great opportunity to provide locally accessible and affordable education programs. Many school boards found partnership with Conservation Authorities to be a more cost-effective way of creating Outdoor Education experiences for their students. For example, in the 1980s and 90s, the York Region District School Board would supply seconded YRDSB teachers to the Scanlon Creek Nature Centre (LSRCA) and Toronto school boards provided seconded teachers to the Lake St. Goerge field centre (M.T.R.C.A.) By the 1980s, it appears that every Conservation Authority in Ontario offered some type of Outdoor Education programs for school and community groups.

The 1990s and early 2000s saw the beginning of significant budget cutbacks in education and their effect on Outdoor Education centres in Ontario. On the School Board side, many teachers were replaced by lower paid “technicians” at Outdoor centres. The TDSB and other boards closed board-run Outdoor centres and reduced the capacity at others. The duration and number of student trips to outdoor centres was reduced, and the waiting lists for those centres increased.

Conservation Authorities have also experienced budget cutbacks. The Provincial Government was once their principal source of funding. Today, Provincial grants and special projects account for less than 10% of Conservation Authority funding. The majority now comes from municipal levies (53%) and self-generated revenue (35%).⁵ Some Conservation Authorities have responded to reduced budgets and increasing restrictions from the Provincial Government by reducing or ceasing all Outdoor Education programming. Others have found creative ways to continue and even expand the range of Outdoor Education offerings.

⁵ <https://conservationontario.ca/conservation-authorities/about-conservation-authorities>

OUTDOOR EDUCATION & MVCA

Mississippi Valley Conservation Authority (MVCA) was established by the province in 1968, in response to requests by local municipalities. The MVCA currently operates 6 Conservation areas. The **Mill of Kintail Conservation Area (MOKCA)** was acquired by the MVCA in 1972⁶.



The **Purdon Conservation Area (PCA)** was acquired by the MVCA in 1984⁷. The **K&P Trail Conservation Area (KPTCA)**, located between Snow Road Station and Barryvale, was acquired by the MVCA in 1990⁸. The MVCA manages three other properties as Conservation Areas in partnership with the landowners: **Morris Island Conservation Area (MICA)**, **Carp River Conservation Area (CRCA)**, and **Palmerston-Canonto Conservation Area (PCCA)**.



In the late 1970s, the MVCA began offering Outdoor and Environmental Education (OEE) programs at the MOKCA. School and community group programs were run by a half-time Conservation Education Technician during the spring and fall. The Conservation Education Technician also directed a summer camp at MOKCA with the help of seasonal counselors and volunteers.

In 2008, MVCA decided to increase the Education position to from half-time to full-time.⁹ The position continued as full-time until 2020. The MVCA decided to pause all OEE programming in 2020. This report examines the issues facing the MVCA as it considers whether and how to resume offering educational programming.

⁶ <https://mvc.on.ca/museum/>

⁷ <https://mvfn.ca/exploring-the-wonders-of-purdon-conservation-area/>

⁸ <https://mvc.on.ca/wp-content/uploads/2020/08/KP-Master-Plan.pdf>

⁹ MVC "Education program analysis", 2013

THE FUNDING DILEMMA

For most Conservation Authorities, the fees charged for offering educational programming have not come close to covering the costs of offering those programs. Data from a 2013 review showed that user fees and grants for MVCA educational programs generally only covered about 1/3 of the cost of operation.¹⁰ In 2013, for example, the total expenditures for MVCA education programming were \$85,188. That year, user fees, grants and donations generated \$24, 925. The remaining amount, just over \$60,000, was covered by funds from the Levy.

Recent changes to Ontario regulations governing the operations of conservation authorities requires conservation authority activities be positioned into three categories¹¹:

- **Category 1** are mandatory services defined by the regulation. Funding municipalities are required to fully fund all Category 1 services, many of which are related to flood protection and hazard management
- **Category 2** are Municipal programs and services provided at the request of a municipality which help deliver regional services on its behalf such as erosion control near critical infrastructure, planning review, and technical support for development applications. (with municipal funding through an MOU/agreement)
- **Category 3** services are other additional services identified by the conservation authorities as providing an important benefit to the watershed, and that municipalities have agreed to financially support.

Education programming falls under category 3, along with such services as stormwater maintenance, research and water testing, sub-watershed monitoring, stewardship, invasive species control and natural & cultural heritage services. As a result, “Educational and cultural heritage programs and services would continue as long as they are funded through a conservation authority’s self-generated revenue or have support from the local municipality that funds the authority”.¹²

The effect of this regulatory change is that if Conservation Authorities choose to offer education programs, they must be either fully funded through user fees, grants, donations and funds raised by the associated *Conservation Foundation*, or the contributing municipalities must agree to financially support those programs through a Memorandum of Understanding agreement (MOU).

¹⁰ MVC “Education program analysis”, 2013

¹¹ <https://yorkpublishing.escribemeetings.com/filestream.ashx?DocumentId=35282>

¹² <https://www.ontario.ca/page/conservation-authorities>

WHY ENVIRONMENTAL EDUCATION

Conservation Authorities currently operate 38 interpretive centres in Ontario¹³. That makes them collectively the single largest provider of curriculum-based environmental education in Ontario, based on student days. I would venture that there are hundreds of thousands, in not millions of Ontario residents whose have attended field trips to nature centres at nearby conservation areas over the past 60 years. Even though education is not a key mandate for Conservation Authorities, they are the “de facto” leader in the field.

Environmental Education is needed now more than ever. Children today are spending more time than ever before indoors, on screens. According to the American CDC, children age 8-10 get an average of 6 hours of screen time a day. Children aged 11-14 are getting an average of 9 hours per day. *And that does not include time on screens for school.*¹⁴ Our children need less screen time and more “green time”.

“Today, the average child can identify over 300 corporate logos, but only 10 native plants or animals. One could say the same for adults.”¹⁵ The National Wildlife Federation (2014) states that “our kids are out of shape, tuned out and stressed out, because they’re missing something essential to their health and development: connection to the natural world.”



The value of education is a difficult thing to measure objectively. Any outdoor educator, including this author, can share dozens of personal stories to relate the transformative power of professionally facilitated nature-based learning. Fortunately, there is an increasingly large pool of academic literature supporting the wide array of benefits to students from environmental education.

¹³ <https://conservationontario.ca/conservation-authorities/environmental-education>

¹⁴ <https://www.osfhealthcare.org/blog/kids-screen-time-how-much-is-too-much/>

¹⁵ <http://etfvoice.ca/feature/creating-powerful-learning-experiences-nature-based-education>



Recent meta-analyses of decades of peer-reviewed studies by Stanford University¹⁶ and Utrecht University in the Netherlands¹⁷ both concluded that Environmental Education is a powerful way to teach students. In addition to increased environmental knowledge, research shows a strong correlation between environmental education and...

- ✓ Self-discipline
- ✓ Academic achievement
- ✓ Capacity for attention
- ✓ Critical thinking
- ✓ Reduced stress and increased patience
- ✓ Civic engagement
- ✓ Recovery from mental fatigue, crisis or psychophysiological imbalance
- ✓ Personal growth

“Environmental education is about hope and change. There is a mountain of evidence that suggests EE is a powerful way to teach students. Over 100 studies found that it provides transformative learning opportunities that bring tremendous results and engage young people in the world around them in meaningful, collaborative ways. There is no doubt that environmental education is one of the most effective ways to instill a passion for learning among students.”, Dr. Nicole Ardoin, Stanford University Graduate School of Education and Woods Institute for the Environment.¹⁸

¹⁶ <https://naaee.org/programs/eeworks/benefits-k12-students>

¹⁷ <https://www.sciencedirect.com/science/article/pii/S0272494422000275>

¹⁸ <https://naaee.org/programs/eeworks/benefits-k12-students>

SHOULD MVCA RESUME OFFERING OEE PROGRAMMING?

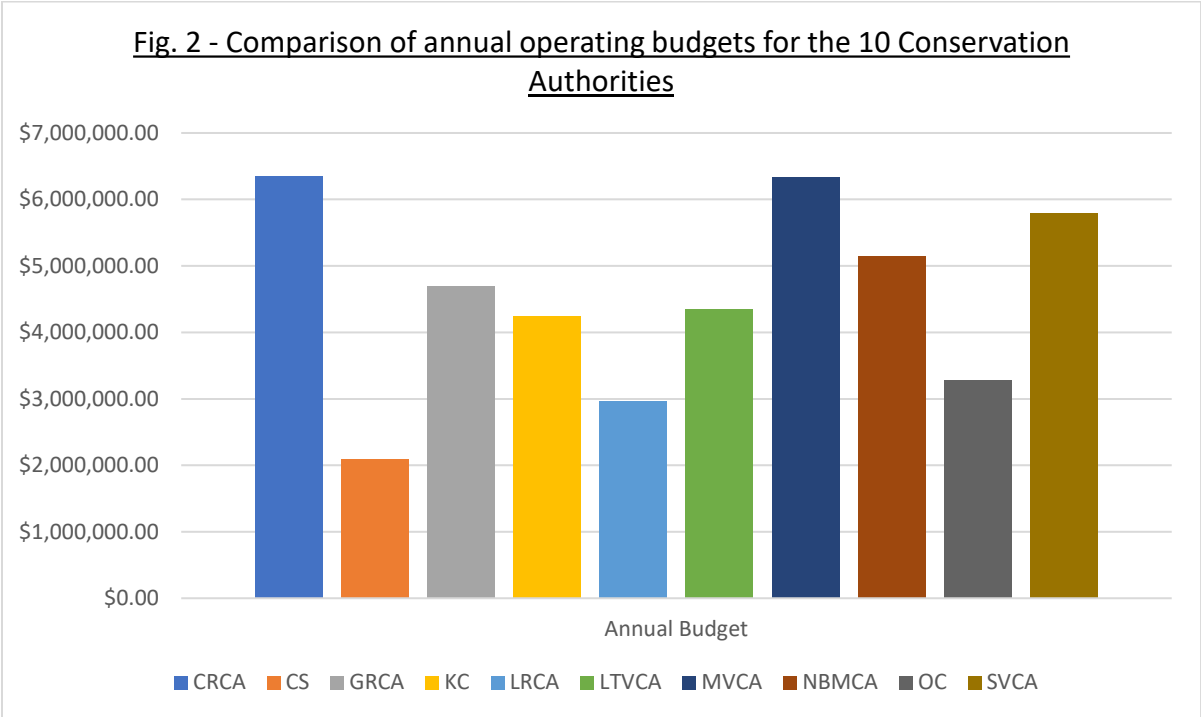
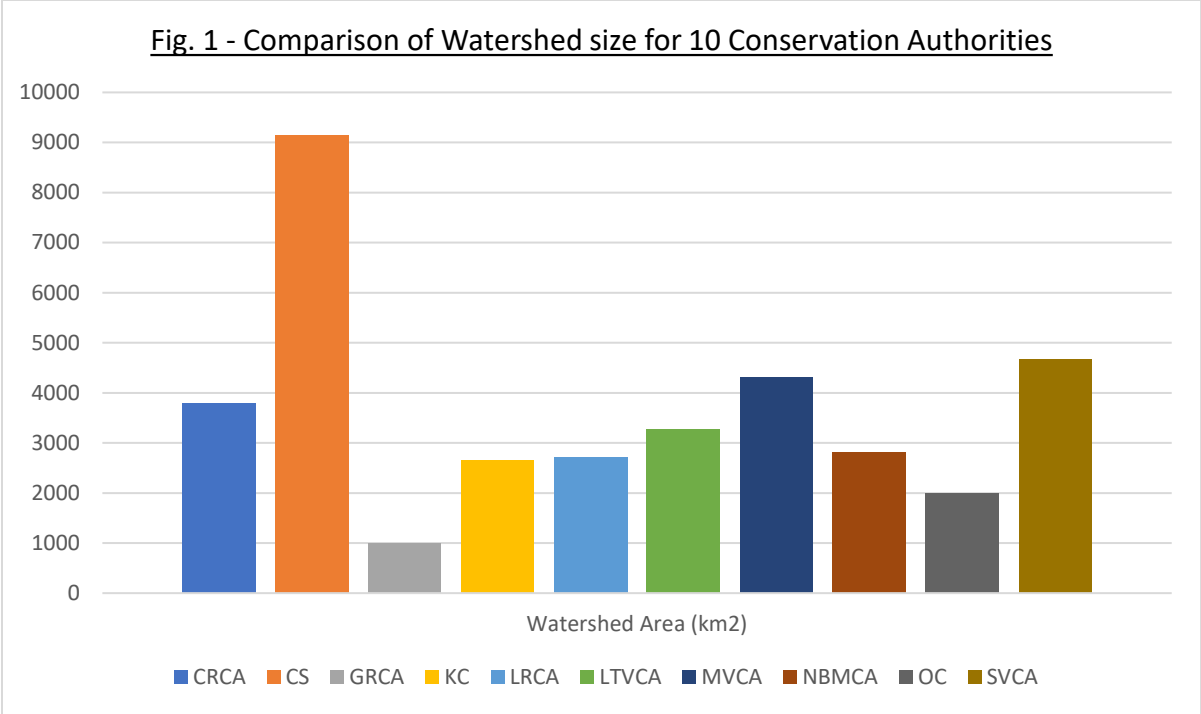
For this study, the following variables were considered:

1. **PEER STANDARD.** *What are other, comparable, conservation authorities offering in terms of educational programming?*
2. **SUPPLY VS DEMAND.** *What other organizations are offering OEE programming in or close to the MVCA watershed? Do they have excess capacity?*
3. **PARTNER OPPORTUNITIES.** *Are there organizations that might be open to partnering with the MVCA or renting space at MVCA conservation areas to run OEE programming?*
4. **SITE SUITABILITY.** How suitable are the MVCA properties and facilities for offering OEE programming?
5. **PROGRAM AND STAFFING.** What different program and staffing models are possible?

PEER STANDARD

For the purpose of this report, the Education programs of the following 10 Conservation Authorities of comparable size and scope were examined:

Conservation Authority	Watershed (km ²)	2024 Annual Operating Budget
Cataraqui River C.A. (CRCA)	3,800	\$6,348,440
Conservation Sudbury (CA)	9,150	\$2,094,213
Ganaraska Region C.A. (GRCA)	1,000	\$4,687,669
Kawartha Conservation (KC)	2,653	\$4,242,818
Lakehead Region C.A. (LRCA)	2,719	\$2,958,686
Lower Thames Valley C.A. (LTVCA)	3,274	\$4,356,094
Mississippi Valley C.A. (MVCA)	4,319	\$6,331,738
North Bay-Mattawa C.A. (NBMCA)	2,800	\$5,140,145
Otonabee Conservation (OC)	2,000	\$3,275,867
Saugeen Valley C.A. (SVCA)	4,675	\$5,784,425



RESULTS

Of the 9 comparable conservation authorities contacted:

- 5 of them currently have one or more full time staff offering outdoor education.
- 1 offers occasional OEE programming run by staff from other departments.
- 1 rents space to a third party, which offers school programs, forest school and summer camps.
- 2 currently offer little to no OEE programming.

Fig 3. Summary Chart of Educational Programming at 9 CAs

Conservation Authority	Year Round C.A.-staffed OEE	Occasional C.A.-staffed OEE	3 rd party run OEE	No OEE
Cataraqui River C.A.	✓			
Conservation Sudbury	✓			
Ganaraska Region C.A.	✓			
Kawartha Conservation		✓ ¹⁹		
Lakehead Region C.A.	✓			
Lower Thames Valley C.A.	✓			
North Bay-Mattawa C.A.			✓ ²⁰	
Otonabee Conservation				✓ ²¹
Saugeen Valley C.A.				✓ ²²

Among the 5 comparable Conservation Authorities currently employing full time OEE staff, there is still quite a lot of variation.

- Cataraqui Region CA** currently employs 1 full-time educator and 1 part-time educator (40%) who operate at two different sites. CRCA also operates a summer camp at Little Cataraqui Creek CA.
- Conservation Sudbury** currently employs 1 full-time educator and 1 full-time program assistant who operate at two different sites. They hire 7 addition staff (post-secondary students) for expanded spring programs and summer camp.

¹⁹ KC does not have assigned education staff. The Co-ordinator will find full time staff with appropriate expertise to run occasional OEE programs. In 2023, KC ran 15 education sessions for 500 students.

²⁰ The Canadian Ecology Centre, based out of Mattawa, currently rents space from NMBCA to run a Forest School, day programs for local schools and a summer camp program. NMBCA also rents space for school programs to another group called "Nature and You".

²¹ OC does not have designated education staff. Some of the full-time staff will run programs for local schools, mostly water quality education or tree planting sessions.

²² SVCA just stopped running OEE programs in 2024. In 2023 they ran OEE for 15,000 students.

- c) **Ganaraska Region CA** currently employs 3 full-time educators, and are hoping to expand to 4 educators next year. They hire addition summer staff (post-secondary students) for expanded spring programs and summer camp. During the school year they offer overnight and day programs for students from K-12.
- d) **Lakehead Region CA** currently employs 1 educator on a contract basis. She works 40 weeks a year, and has summer and December off.
- e) **Lower Thames Valley CA** currently employs 2 full-time educators and 2 part-time educators who split 50/50 between education and other duties. They operate at 2 different sites. The education program is split, with 75% of visitors coming for Indigenous Heritage visits and 25% coming for Environmental Education trips.

Fig. 4 – Comparing the 5 Conservation Area OEE programs

	CRCA	CS	GRCA	LRCA	LTVCA
Student days in 2023	4600	3478	10,000 ²³	3000 ²⁴	3586 ²⁵
Summer Camp in 2023	✓	✓	✓		
Who comes mostly?	P	P/J	P/J/I/S	J/I	P/J/I
Schoolyard programs?	Not in 2023	Yes, 88 in 2023	Rare / no	No	Rarely ²⁶
Requires levy support?	Yes	Yes	No	Yes	Yes

CONCLUSIONS

- ✓ While there is no clear “peer standard” at this time, many comparable Conservation Authorities are still choosing to offer OEE programming to a great many students, in many different ways, in spite of the changes to funding.

²³ Expected 2024 numbers.

²⁴ Estimated numbers, based on 94 class visits in 2023.

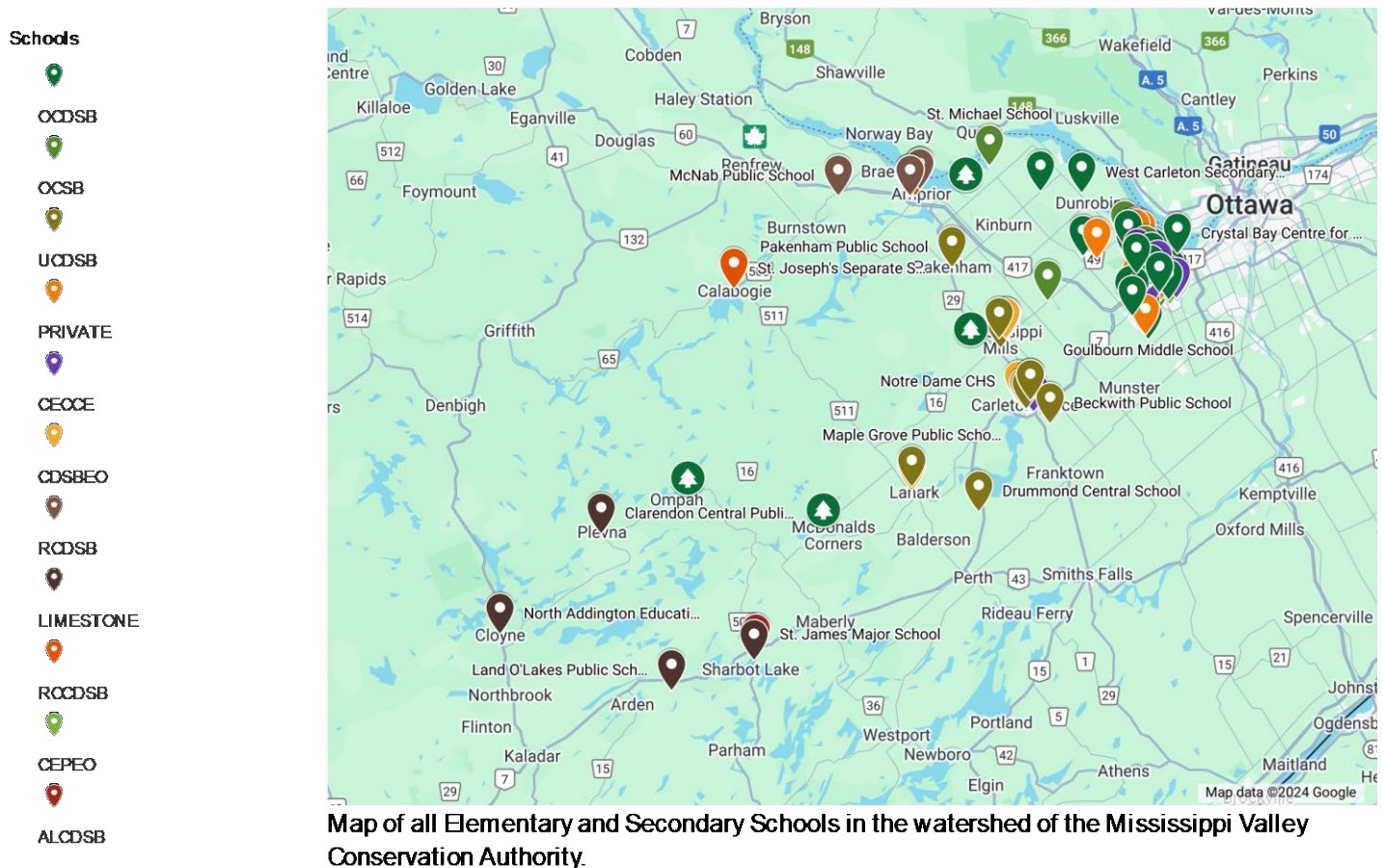
²⁵ Total student days, combining Indigenous Heritage and Environmental Education. A new site opened in fall 2023, so they expect higher numbers in 2024.

²⁶ 2 school trips in 2023.

SUPPLY VS DEMAND

There are approximately 85 schools located within the MVCA watershed. There are dozens more within a few kilometres of the watershed, particularly in the Ottawa area.

Figure 5 – Schools in the MVCA Watershed



The largest number of schools are from these school boards:

- Ottawa-Carleton District School Board (OCDSB) – 26 schools
- Ottawa Catholic School Board (OCSB) – 15 schools
- Upper Canada District School Board (UCDSB) – 11 schools
- Conseil des écoles Catholiques du Centre-Est (CECCE) – 6 schools
- Catholic District School Board of Eastern Ontario (CDSBEO) – 5 schools

Of these School Boards, only the OCDSB has its own Outdoor and Environmental Education centres: the Bill Mason Outdoor Education Centre (BMOEC) in West Carleton, and the MacSkimming Outdoor Education Centre (MOEC) in Cumberland. The other school boards rely on 3rd external providers for all their Outdoor Education field trips.

WHO PROVIDES OUTDOOR EDUCATION EXPERIENCES?

In or near the MVCA watershed, the following 5 centres offer school trips for Outdoor and Environmental Education, similar to those typically offered by conservation authorities:

a) The Bill Mason Outdoor Education Centre

The BMOEC offers curriculum linked OEE for all grades but primarily K-8. The BMOEC generally books students from the OCDSB only, although they occasionally take other schools. By September, BMOEC is generally booked solidly for the following school year. Schools can sign up for a waiting list, in case of cancellation. By June 2024, the waiting list was for 11, 676 students. Clearly, there is lots of demand and not enough supply

The OCDSB has prioritized Grade 3 and 7 classes. Any Grade 3 or 7 class, or from a high priority area, can attend the BMOEC or MOEC at no cost. Other grades have to pay to attend, but the cost is very reasonable, about \$200 / day for 1 class. If a Grade 3 or 7 class cannot get into BMOEC or MOEC because they are fully booked, *the OCDSB will cover the cost of that class attending a different Outdoor Education Centre.*

CAPACITY: Exceeded

b) YMCA Bonnenfant Outdoor Education Centre (YBOEC)

The YBOEC is an extension of YMCA Camp Bonnenfant, located on the Ottawa river, near Dunrobin. They generally offer a more recreationally focussed outdoor education, such as archery, orienteering, shelter building or high & low ropes. They mostly offer programs in May and June.

The YBOEC has one year-round part-time coordinator. They hire 10 seasonal instructors from May to August, mostly senior high school students or university students. YBOEC can currently take up to 130 students per day, although in the past, with more summer staff, they have taken up to 300 students per day.

Most trips to the YBOEC are Grade 5 – 6 classes 'end of year trips'. They also get some Grade 7 – 8 classes, and occasional High school groups, which are mostly Outdoor Education classes. In addition to school groups, they host community groups such as scouts and guides, as well as adult group retreats. Almost all of their clients are from Ottawa.

CAPACITY: Currently close to full, but with potential to upsize if they hired more spring staff.

c) Foley Mountain Outdoor Education Centre (FMOEC)

The FMOEC is located within Foley Mountain Conservation area, near Westport, and is operated and staffed by the Rideau Valley Conservation Authority. They have 1 full-time employee who splits their duties between being Site Supervisor for the Foley Mountain Conservation Area and Outdoor Education Teacher. In addition, FMOEC employs 1 Outdoor Education Assistant on an hourly contract but with mostly full-time hours. When not teaching, the Outdoor Education Assistant will also perform site work. FMOEC employs a small number of “outdoor education interpreters” (*including this author*) who can work occasional days, as needed, when they need extra teachers for staff absences or larger groups.

FMOEC offers a large variety of curriculum-linked programs for students from K-12. As one of their occasional staff, I have always been impressed by how their programs are well organized and well documented. The FMOEC offers programs year-round, but gets most of their school trips in the early fall or spring. FMOEC runs a year-round Forest School program and a Summer Day Camp. School and Community groups can book FMOEC on weekends for day and overnight camping retreats.

FMOEC has two areas on site for Outdoor education, each with heated indoor washrooms, potential indoor teaching areas for inclement weather and equipment storage.

CAPACITY: FMOEC has the capacity to take many more school groups, subject to staff availability. However, being over an hour bus ride from Ottawa limits which schools are able to visit.

d) Baxter Outdoor Education Centre (BOEC)

The BOEC is located within Baxter Conservation Area, near Kemptville, and is operated and staffed by the Rideau Valley Conservation Authority. They have 1 full-time employee who splits their duties between being Site Supervisor for the Baxter Conservation Area and Outdoor Education Teacher. In addition, BOEC employs 1 Outdoor Education Assistant on an hourly contract but with mostly full-time hours. When not teaching, the Outdoor Education Assistant will also perform site work. BOEC employs a small number of “outdoor education interpreters” who can work occasional days, as needed, when they need extra teachers for staff absences or larger groups.

BOEC offers a large variety of curriculum-linked programs for students from K-12. The BOEC offers programs year-round. They also offer a Summer Day Camp.

BOEC has one building for Outdoor education, each with heated indoor washrooms, potential indoor teaching areas for inclement weather, staff office and equipment storage.

CAPACITY: Mostly full, but could take more school groups subject to staff availability.

e) SHAW WOODS OUTDOOR EDUCATION CENTRE (SWOEC)

Shaw Woods OEC is located on 1500 acres of forest near Eganville. It is operated by a not-for-profit foundation. They employ 3 OCT certified teachers on a per diem basis, and run day trips only. They offer year-round, curriculum linked programming for students from K-12.

They Shaw Woods has a partnership with the Renfrew Public and Catholic School boards, and all of their business comes from that region. They could be open to other schools booking trips.

CAPACITY: Mostly full. Over an hour bus ride from Ottawa limits which schools are able to visit.

Fig. 6 – Comparing the 5 Outdoor Education Centres

	Bill Mason	Bonnenfont	Foley	Baxter	Shaw W
Excess Capacity	None	Small, but potential for more	Yes	Some	Minor
Taught by educators	Yes	No	Yes	Yes	Yes
Who comes mostly?	P/J/I	J/I	P/J/I/S	P/J/I	P/J/I/S
Schoolyard programs?	No	No	No	No	No
Distance from Kanata	20-25 minutes	20-25 min.	70-75 min.	30-35 in.	75-80 in.

NOTE: By comparison, Mill of Kintail Conservation area is 30-35 drive from Kanata.

WHAT DO THE SCHOOLS SAY THEY WANT?

In May 2024, a survey was sent to all 85 schools in the MVCA watershed, asking if they send classes on OEE trips, where they go, why, and what they are looking for in OEE experiences.

We received 11 responses, representing a mixture of Elementary and Secondary Schools. The results suggest that many schools are currently taking their students to local green spaces for Environmental Education, run by their own teachers. About 1/3 are going to parks, board run OEE centres or private OEE centres. Most trips are planned to support Science and Phys Ed curriculum. There appears to be an interest in doing more, and in having external “expert” staff to run programming.

Fig. 7 - Please choose the panel(s) in which you teach

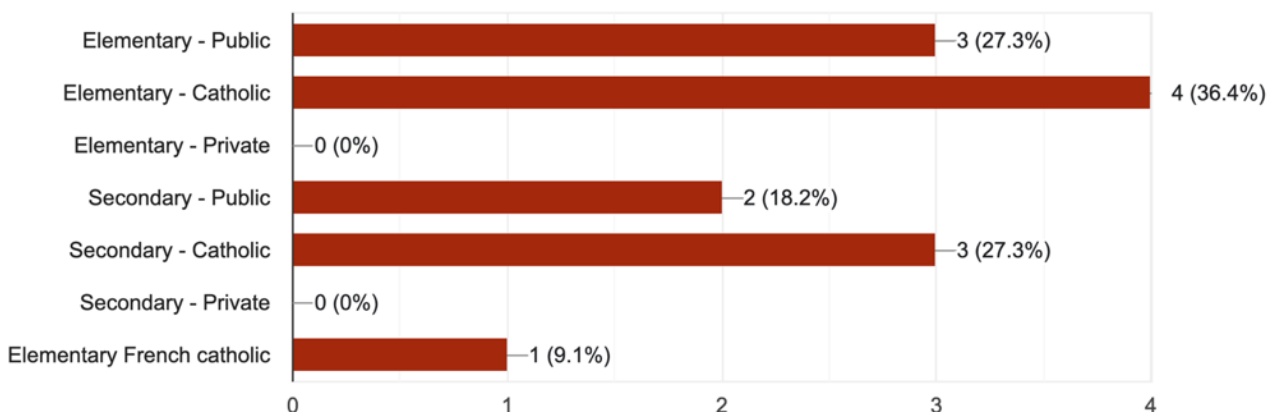


Fig. 8 - What type of Outdoor & Environmental Education field trips do you typically organize for your class(es) each year?

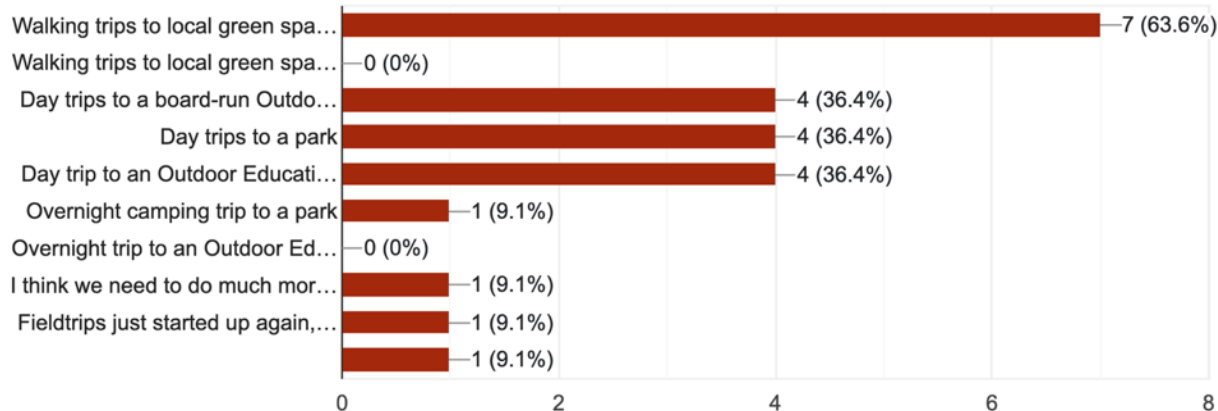


Fig. 9 - Which curricular areas are supported by your field trips?

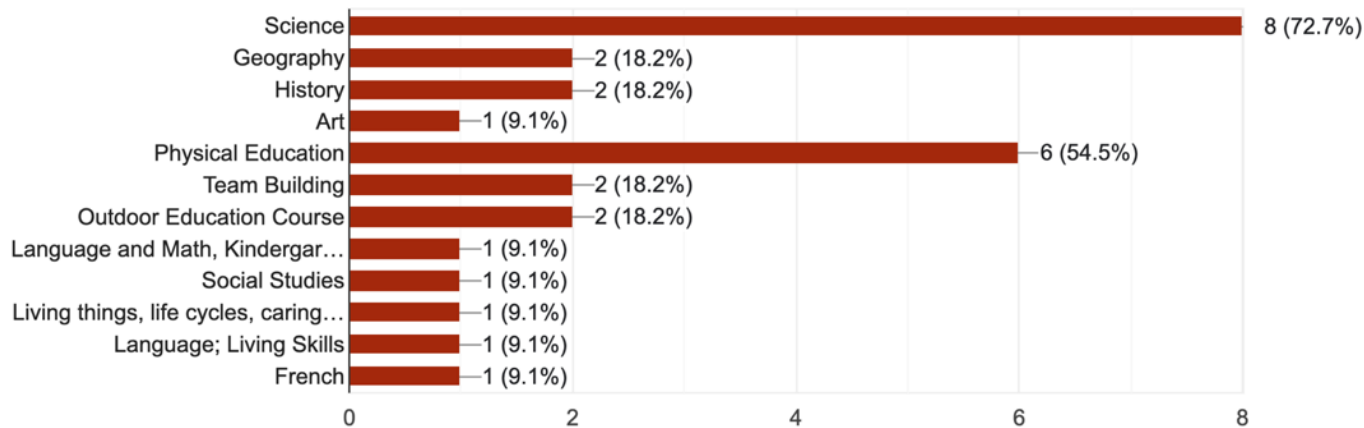


Fig. 10 - What are the non-curricular reasons for your field trips?

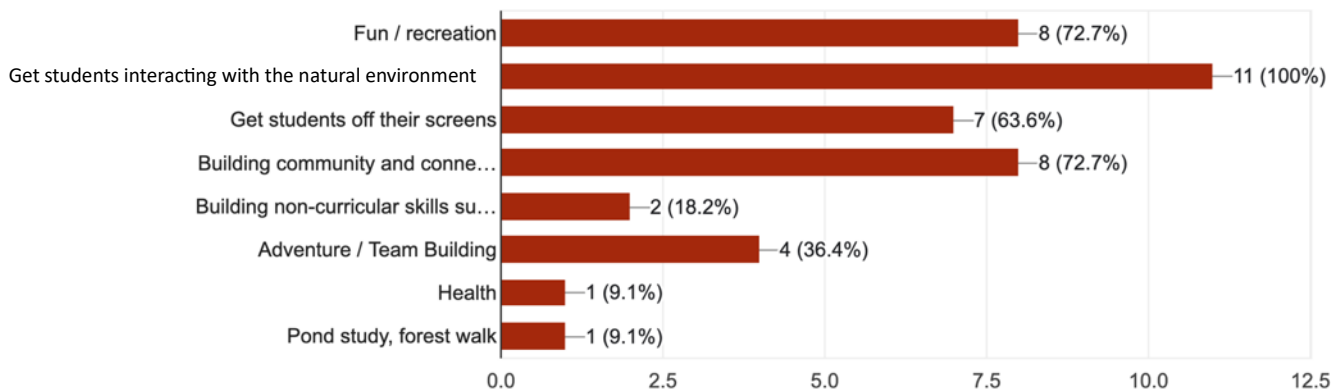


Fig. 11 - Which factors do you think the MVCA should prioritize in terms of offering Outdoor Environmental Programming?

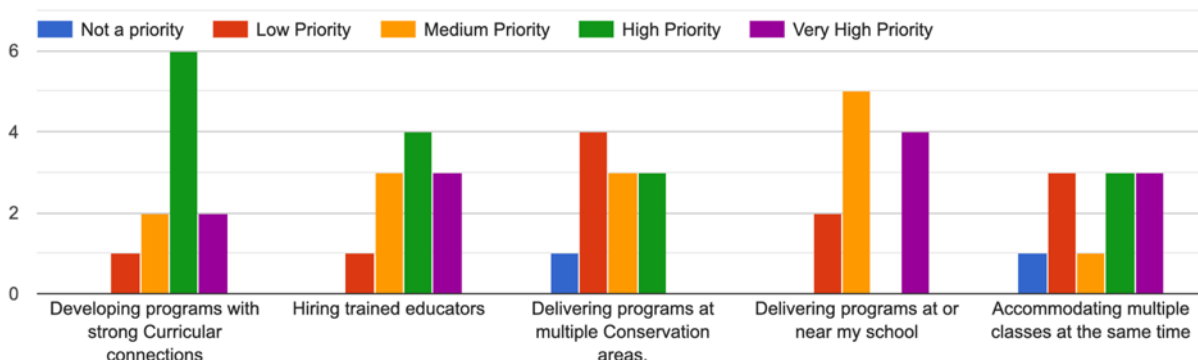


Fig. 12 - What types of programs or services would you be likely to use if offered by the MVCA?

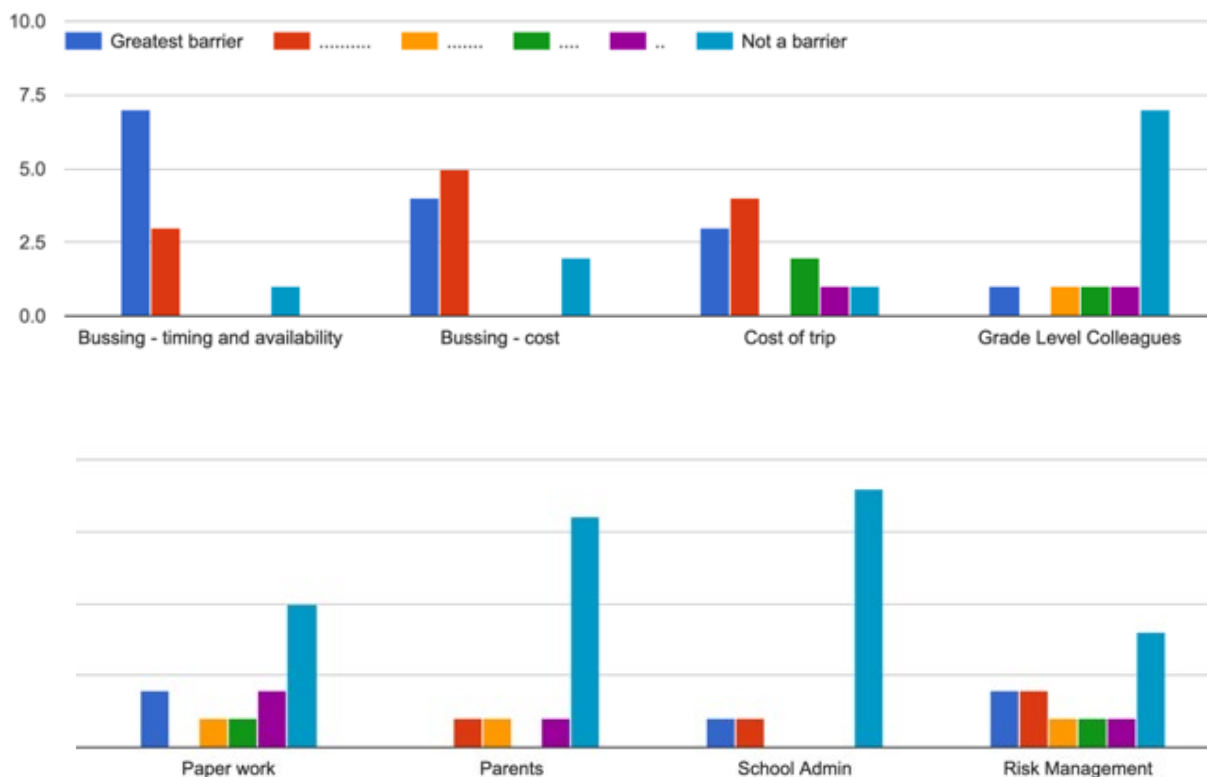


Among the “other” category listed above, comments included:

- *“I used to take my class for the field study and then stream study at the Mill of Kintail. Both were awesome and would love the opportunity to do something like that again.”*
- *“combination of preparatory content for class room use and field trip component for different subjects (e.g., indigenous traditions and environment, traditional edible plants, eco systems and habitats, etc.”*
- *“Environmental and related Career.”*
- *“We are a rural school and bussing is an issue. Staying here is easiest, but need programs that meet Sr. Curriculum.”*

Fig. 13 – What are the barriers keeping classes from going on OEE Field Trips?

Rank the following factors from the greatest barrier to the least of a barrier.



FINDINGS

Although this sample only represents 13% of the schools in the watershed, there is much to be learned from these results.

- Half the schools in the MVCA watershed are from Ottawa. The rest are a mix of suburban, small town and rural schools. The Ottawa schools generally have a much larger school population than the rural schools.
- Most respondents appear to be doing, or want to be doing OEE trips with their students
- A focus on science or PE curriculum is their main interest which aligns with MVCA.
- *100% of survey respondents are interested in getting students interacting with the natural environment.*
- Most respondents also prioritized students having fun in the outdoors, building community and getting away from their screens.
- Respondents are looking for programs at or near their schools, run by trained educators.
- Many respondents are interested in coming to conservation areas for OEE programs.
- Many respondents would be interested in having educators come to their school to offer programs for students or in-service for teachers.
- Bussing availability and cost of bussing are seen as the biggest barriers to going on trips.
- When asked where they are currently taking students for OEE trips, answers included: Baxter OEC, YMCA Camp Bonenfant, Bill Mason OEC and the Canadian Ecology Centre (located near Mattawa).
- 83% of respondents asked to be notified about future Outdoor / Environmental Education offerings by the MVCA.
- A number of respondents mentioned Indigenous learning in the comments section. Indigenous knowledge is a frequently referenced in the most recent Ontario Science curriculum. Building relationships with Indigenous Elders who could contribute to field trip experiences could significantly enhance the value of OEE experiences.

CONCLUSIONS

- ✓ *There is a clear need and demand for OEE programming in the the MVCA watershed.*
- ✓ *The large majority of the students in the watershed are from Ottawa / Carleton Place.*
- ✓ *Other organizations that offer OEE programming have some room for expanded capacity, but are limited by distance for bussing, staffing or facilities.*
- ✓ *Other organizations in the MVCA watershed are currently not offering OEE programs in or near individual school locations.*

PARTNER OPPORTUNITIES

The North Bay-Mattawa Conservation Authority ran their own OEE programming until 2012. Since then, as an alternative, they have developed an excellent relationship with the Canadian Ecology Centre (CEC), based out of Mattawa, and another much smaller organization called “Nature and You”. Both these groups rent space at NBMCA sites, primarily Laurentian Escarpment Conservation Area, to run school day trips, summer camps and Forest School programming.

The Canadian Ecology Centre is a non-profit outdoor environmental education and conference centre located near Mattawa, Ontario, 40 minutes east of North Bay. The arrangement between NBMCA and CEC works well because the CEC is big enough to have excess staff capacity, skilled enough to administer a variety of day programs and close enough for staff commute in to North Bay from their main site in Mattawa. The CEC is quite large and offers overnight school trips, teacher training and much more at their Mattawa location, so these day trips are a good way to market their main program and build brand recognition in the North Bay area.

As mentioned earlier, it is difficult to offer school day programs at a profit. Beyond a certain point, schools cannot afford to go. So, the partner group would likely have to be very cost efficient like the, and/or be a non-profit.

At present, I was not able to locate any organization near the MVCA watershed that could partner with the MVCA to offer outdoor education in a large-scale way similar to the relationship between the NBMCA and the CEC. However, there are groups that might potentially be able to collaborate with the MVCA.

Mississippi Madawaska Land Trust (MMLT)

The MMLT has “12 properties entrusted to its care, covering over 3,384 acres of land”.²⁷ The MMLT is volunteer driven, and a number of those volunteers have a background in education. The MMLT has developed a partnership with the UCDSB to develop “authentic learning experiences”, and could be open to other partnerships.²⁸ While the focus of MMLT is on its own properties, there is potential for a collaboration with MVCA, using properties from one or both organizations.

Mississippi Valley Field Naturalists (MVFN)

The MVFN have a long history of partnering with MVCA. The MVFN have an Environmental Education committee which coordinates shared projects. They currently collaborate with the MVCA for Kintail Christmas. They also collaborate with the MMLT, and have done monarch butterfly projects with schools.

²⁷ <https://www.mmlt.ca/protecting-nature>

²⁸ Based on a [conversation with Bob Stearns](#), MMLT Secretary / Treasurer, 23/02/2024

While the MVFN are all volunteers, many are current or retired teachers with significant experience. They could be useful for special projects, guest speaker roles, help with program design, staff training and other short-term commitments.

CONCLUSIONS

- ✓ At present, there does not appear to be an organization equipped to take over the operation of OEE programming at MVCA sites. However, there are local organizations with a passion for environmental education that might be willing to collaborate with the MVCA on special projects.

SITE SUITABILITY

Fig.14 – Comparison of MVCA site suitability for school OEE field trips²⁹

MVCA Properties	CRCA <i>Carp River</i>	K&PTCA <i>K&P Trail</i>	MOKCA <i>Mill of Kintail</i>	MICA <i>Morris Island</i>	PCCA <i>Palmerston-Canonto</i>	PCA <i>Purdon</i>
Washrooms	None	None	Pit Toilets; seasonal accessible flush toilets	Seasonal, accessible flush toilets	Seasonal Portable toilets	Seasonal Portable toilets
Drinking Water	No	No	Yes	No	No	No
Shelter	No	No	Yes	No	No	No
Parking	Limited	Limited	Good	Good	Limited	Good
# of Schools within 30 min	~ 150	6	25-30	11	1	7

Based on the comparison from Figure 14 (above), only **Mill of Kintail** is currently appropriate for offering most school field trips. A key limitation to the other sites is the lack of shelter, washrooms, and safe loading and unloading of students.

Mill of Kintail (MOK)

The Mill of Kintail has been used as a site for OEE for decades, so clearly it is appropriate for that usage. However, it does still have limitations. (See Appendix for more detailed SWOB of MOK site).

²⁹ Based on SWOB analyses of MVA properties, see Appendix.

MOK ASSETS	MOK LIABILITIES
<ul style="list-style-type: none"> • 380-acre property rich with biodiversity • mixed Hardwood Forest with established trails • Healthy River suitable for field science • Property maps • Program 25' X 40' (?) building/portable suitable for indoor school group and program support • Office / equipment storage area • Picnic shelter/pavilion big enough for 1 to 2 classes • Big meadow perfect for open area programs like insect searches • Beautiful museum building with possibility of museum program tours • Gatehouse with 40 X 60 (?) conference style room, washrooms, office space, storage space • Ample parking space, room for bus turnaround. • Some program equipment (Snowshoes, bug hotels, dip nets, crayons, etc) • Log Cabin - potential program space if it is structurally sound. 	<ul style="list-style-type: none"> • Distance from schools adds significant transportation cost • Sharing space with public • The education building is very small. Too small for teaching multiple classes. • Fast moving river at certain times of year. • Invasive species ex European Buckthorn • Education Centre / Portable building not winterized. • Program staff model of educator only limits trip size and type • Limited support staff for facilities issues, trail clearing etc. • Requires more flexible program staff willing to take on mixed responsibilities. • Hazard trees / branches along trails? • Can students be “off the trail”?



MOK Classroom building



MOK Pavilion



Toilets at MOK



MOK drinking fountain



Log cabin at MOK



More MOK facilities

Carp River (CRCA) is clearly the most easily accessible property. There are nearly 70 schools in the MVCA watershed within a 30-minute drive of CRCA, and I estimate another 80 in western and south western Ottawa also within 30 minutes. There are 2 schools within potential walking distance of CRCA: All Saints High School (1.5 km) and St. Gabriel School (2 km). CRCA also has an excellent trail base, accessible trails and interpretive signage.

In addition to the lack of shelter, CRCA is limited by the unavailability of washrooms, access to drinking water, poor parking for buses and lack of trees for shade. CRCA is nestled between two large subdivisions, so it is heavily used by locals for recreation. At certain times and areas within CRCA, pedestrian traffic could be a significant distraction and potentially a hazard.

While there is potential for the MVCA to invest in facilities / amenities at CRCA, the property is not owned by the MVCA which makes it harder to justify the expense. The very public nature of the area would also make securing those amenities very difficult and potentially costly.



Carp River Conservation Area



Small lookout at CRCA

Morris Island (MICA) is a beautiful site, and has the potential to be a great place for class visits. It has an excellent trail network, and many off-trail areas are mature hardwood forest, open enough for children to explore and play safely. It has good washroom facilities, but they are only available seasonally.

MICA is not currently suitable for OEE for a number of reasons, primarily the lack of shelter. It also has no infrastructure, so all program equipment and materials would have to be brought in with the group leaders every day. Being in the north-west corner of the MVCA watershed, MICA is also limited by its distance away from most schools. Only schools in Arnprior and a handful of small rural schools are located within a 30-minute bus ride of MICA. Similar to CRCA, MICA is not owned by the MVCA which makes it harder to justify investing in infrastructure.



Morris Island Causeway



Trail at Morris Island

K&P Trail, Palmerston-Canonto and Purdon are all beautiful sites with interesting features. However, they are all located quite far from most schools. Purdon has potential for senior high school or University science field trips.

CONCLUSIONS

- ✓ At present, the only MVCA operated site for school OEE field trips is the Mill of Kintail. MOK has successfully operated as an outdoor education centre for decades, and has all the infrastructure needed to support an ongoing educational program.
- ✓ Morris Island and Carp River both have potential for use as sites for future MVCA managed OEE field trips.
- ✓ Carp River has potential for developing partnerships with nearby schools for ongoing study and environmental stewardship.

PROGRAM AND STAFFING MODELS

After capital expenses, the main expense in offering Outdoor and Environmental Education programming is staff salaries. Other expenses would include site maintenance costs and program materials. Since 2008, the MVCA has opted for 1 full time Outdoor Educator operating primarily at the MOK site. Various program model options are available, such as:

- a. Year-Round, single teacher site-based model (as per prior to 2020).
- b. Year-Round, multiple teacher site-based model (with 1 full time lead teacher and addition teachers as required on a per diem basis, similar to Foley Mountain model.)
- c. Seasonal, single teacher site-based model (with 1 teacher working out of 1 site for part of the year, such as late spring, summer and early fall).
- d. Seasonal, multiple teacher site-based model (with 1 seasonal lead teacher and additional teachers as required on a per diem basis.)
- e. Occasional single or multiple teacher site-based model, where teachers are hired on a per diem basis during peak season to run programs.
- f. A Hybrid model with staffing from either a, b, c, d or e where the teacher(s) can operate either at the main site, or work remotely at other Conservation Areas, parks, schools or school yards.
- g. A fully mobile model, with staffing from either a, b, c, d or e where teacher(s) operate remotely most of the time.

DISCUSSION

It is challenging to offer school OEE visits with full cost recovery from user fees. In my interviews, I found that even programs which can accept multiple classes at a time did not generate enough income to cover the cost of full-time staff salaries, including Professional Development, staff training and benefits. The only program that came close was the Ganaraska Forest OEC. Ganaraska's OEC program does not recover costs, but that is offset by:

- Conference centre and wedding rentals of building
- Higher fee structure for Specialist High Skills Major programs
- Summer camp
- Fund raising

Dan Cooper, Director of Conservation, Lands and Stewardship for the Rideau Valley Conservation Authority, said that OEE programs at Foley Mountain and Baxter conservation areas are a great way to kickstart a positive relationship with people in the community. But to support these programs, the RVCA has had to aggressively fundraise.

Shaw Woods uses option D. They have a part-time lead teacher, who is responsible for bookings, and 2 other teachers who work on an as-needed basis. Shaw Woods OEC is a non-profit, and does not have a levy to fall back on. They have no full-time teachers, all their staff are on day rates, but they pay their teachers a per diem equivalent to a school board supply

wage. They also have a team of retired teachers who volunteer to support the program as well. Shaw Woods has developed a MOU with 3 local school boards³⁰, guaranteeing funding and a minimum number of student program days. They also aggressively seek out sponsorships, partnerships and volunteer support for governing, administration and site work.

CONCLUSIONS

- ✓ Other CAs and Outdoor Education centres are successfully operating, using different staffing models, creative program design, supportive partnerships and enthusiastic volunteer support.

³⁰ A copy of the MOU can be found in the Appendices.

THE CASE FOR OUTDOOR ENVIRONMENT EDUCATION

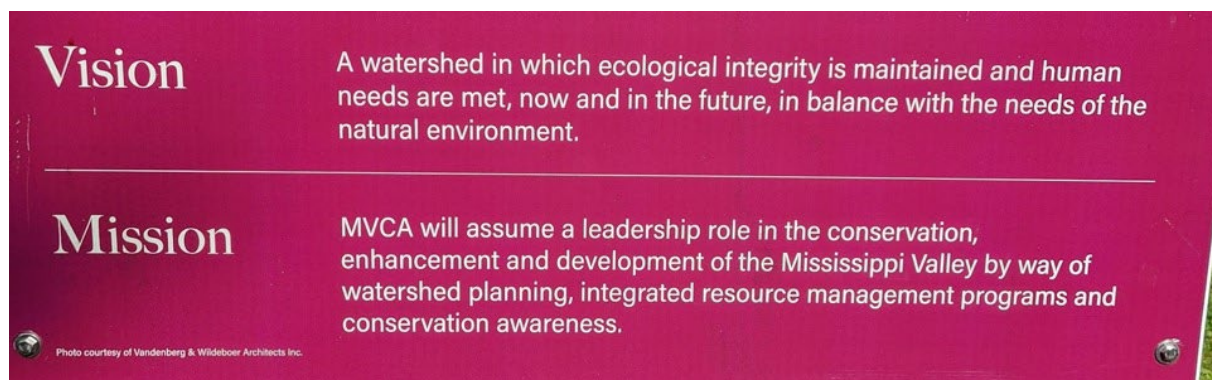
“We moved from being a part of nature to being apart from nature.”

Sir David Attenborough

I am aware that the decision about whether to offer Category 3 programs is more complicated now than ever before. Conservation Authorities can no longer decide on their own to assign Levy funds towards these efforts. Even if current municipal representatives on Conservation Authority Boards support allowing levy funds to go towards Category 3 programs such as education, there is no guarantee that future representatives will feel the same way.

The high costs of bussing coupled with historically subsidized prices for CARun education trips mean that MVCA will likely have to cross-subsidize its school program with profits from other components of its education program such as summer camps.

I believe that the call for outdoor and environmental education lies squarely in the Vision and Mission of the MVCA.



In the MVCA Mission statement above, lie the words **“A watershed in which ecological integrity is maintained, and human needs are met, now and in the future,”**. We live in an age where people spend less time outdoors than ever before. A world where the *average* 11-14-year-old child spends 9 hours per day watching screens, *outside* of school hours. Our children are growing up indoors, suffering what Richard Louv called “Nature Deficit Disorder”. These children are the future citizens we are counting on to protect the *ecological integrity of our watershed in the future*. What will impel them to do so?

One of the biggest threats to maintaining ecological integrity is *Shifting Baseline Syndrome*.³¹ This term is used to describe the phenomenon of how members of a society view the conditions in which they were raised as being normal. Because environmental degradation tends to mostly occurs slowly, acceptable thresholds for environmental conditions are continually being lowered. People start to believe that the depleted state of the environment around them is acceptable. As author J.B MacKinnon says in his book *The Once and Future World*, "If you're

³¹ <https://esajournals.onlinelibrary.wiley.com/doi/10.1002/fee.1794>

waiting for an ecological crisis to persuade human beings to change their troubled relationship with nature — you could be waiting a long, long time."

Having Conservation Areas is important, but protecting beautiful natural spaces is not enough. We need to get people into those spaces, to remind them what *normal* looks like. We need to reconnect our children (and adults) to the natural world. If our citizens don't care deeply about nature, don't see themselves as "a part of the natural world" then why will they care when another forest is paved over, or a species goes extinct?

As we see today, laws and regulations designed to protect the environment are subject to the whim of the current government. Survey consistently show that the environment is a high priority for voters, but that concern is often downplayed at election time when people choose expediency over the environment. If we are to maintain ecological integrity, in spite of Shifting Baseline and increasing disconnection from the natural world, then there is a lot of work to be done.

To be clear, I am not suggesting that outdoor and environmental education is the cure for all our society's woes. But it is perhaps, the best medicine for *Nature Deficit Disorder*. Although Education is not a core mandate of the Conservation Authority, the MVCA has set itself in "*A Leadership Role in the conservation, enhancement and development of the Mississippi Valley*". Developing a new, improved and targeted OEE program would be a great way to show that leadership.

RECOMMENDATIONS

Based on my conclusions listed in this report, I have a number of recommendations for the MVCA Board to consider. I have divided my recommendations into 3 sections: SHORT, MEDIUM AND LONG TERM.

SHORT TERM RECOMMENDATIONS (2024 – 2025)

- S1. *That MVCA begin offering Outdoor and Environmental Education programs at the Mill of Kintail in May & June of 2025.* ³² *These programs should focus on topics of natural science, which align with the educational objectives of the MVCA.* ³³
- S2. *That MVCA extend their Mill of Kintail summer camp to run until the third week in August, for a total of 7 weeks, if demand allows.*
- S3. *That MVCA either:*
 - a. *hire a part-time coordinator to develop, promote, supervise and administer spring OEE and Summer Camp programs*
 - or*
 - b. *add this task to the portfolio of an existing employee.*
- S4. *The MVCA hire summer students from May to late August, to help run both the spring outdoor education programs and the MOK summer camp. MVCA should consider applying for Federal³⁴ Canada Summer Jobs wage subsidies (CSJ) to help offset the costs of student salaries.*

Notes on Implementation Strategies

The 2024 MVCA summer camps were able to operate close to cost recovery. Adding more campers and a longer camp season seems likely to move the camp to revenue positive for 2025.

Instead of hiring counsellors for summer camp only, hire them for May – August. This will be more attractive to students who need a 4-month summer job, and are interested in going into Education as a career.

Analysis of MOK school programs prior to 2020 show that the busiest season by far was May – June. Many schools are eager for a place to go for year-end field trips. Having multiple staff to run spring OE programs would allow MVCA to accept larger group sizes. Over half the schools we survey saw “Accommodating multiple classes at a time” as a high or very high priority.

³² May & June have traditionally been the busiest periods for MOK OEE programs, with almost every day booked.

³³ See Attached document: *Ontario Curriculum Connections to MVC Mandate*

³⁴ <https://www.canada.ca/en/employment-social-development/services/funding/canada-summer-jobs.html>

CURRICULAR TARGETS

While every Ontario grade level has curricular strands that align with MVCA Educational Objectives, key grades to target for trips could include:

- A. Grade 2 Science – Focussing on “Air and Water in the Environment”
(Stream study, water cycle games, Paddle to the Sea,...)
- B. Grade 3 Science – Focussing on “Plants” and “Soil”
(Spring wildflower hikes, Photo scavenger hunt, soil studies, worm composting, tree planting...)
- C. Grade 4 Science – Focussing on “Habitats and Communities”
(Animal Instincts for Survival game, Oh Deer, Exploring forest ecosystems...)
- D. Grade 6 Science – Focussing on “Biodiversity”
(River biodiversity study using kick nets and species ID keys / “Seek” App, Who’s Been Here hikes around MOK, Invasive Species removal, tree planting, planting native species...)
- E. Grade 7 Science and Geography – Focussing on “Interactions in the Environment” and “Natural Resources”
(Terrestrial or Aquatic Ecosystem Field study at MOK, Terrestrial Succession study, Animal Instincts for Survival game, Ecosystem Orienteering, student projects for ecosystem enhancement,...)

MEDIUM TERM RECOMMENDATIONS (2024 – 2027)

- M1. The MVCA should review the spring / summer programs of 2025, with an eye towards deciding whether to expand those programs further.
- M2. That MVCA consider developing a network of trained Environmental Educators, preferably OCT qualified teachers, who could work on a per diem basis. Training for these educators could be developed in partnership with the Mississippi Valley Field Naturalists.
- M3. That MVCA consider developing a series of programs and associated “kits” for schoolyard or “neighbourhood” Outdoor and Environmental Education programs that could be run at local schools. This work could be done in partnership with the MVFN, and possibly with advice and support from other CA employees who run these kinds of programs, such as Melissa Levy at the St. Clair River Conservation Authority.
- M4. That MVCA consider using these part-time Environmental Educators to run the schoolyard-based programming. MVCA should price these trips so that the Educators can be paid a wage equivalent to that of an Occasional Teacher in nearby school boards.

- M5. Should demand increase, the MVCA should consider using these part-time Environmental Educators to run programs at MOK (or possibly other MVCA locations) as well.

Notes on Implementation Strategies

Developing program resources and materials into kits with supporting lesson plans can be time consuming and costly. Fortunately, many other Conservation Authorities have already developed excellent resources and they are more than happy to share. This can significantly reduce costly staff time.

Program equipment can also be expensive. Many items on the “wish list” might be great opportunities for donations from “Friends of the Mill of Kintail” or other interested groups. For example, River Study Kick-nets would make a great donation request, and are vital to high quality river studies.

The MVCA could learn from Shaw Woods approach to paying their Educators. By paying their educators a wage equivalent to supply teaching, they attract experienced outdoor educators interested in part-time work. That in turn leads to higher quality program experiences for the visiting classes, which builds reputation and increases school interest in trips. In my experience, the best advertising for Outdoor Education field trips is *word of mouth*.

LONG TERM RECOMMENDATIONS

- L1. That MVCA work to develop partnerships and potentially MOUs, similar to those used by Shaw Woods, with local school boards.
- L2. That MVCA fundraise to improve the infrastructure at the Mill of Kintail. Specifically, to expand and winterize the classroom building, and build winterized flush toilets.
- L3. The MVCA consider revising the resident employee position at MOK, into a Site Supervisor position that incorporates oversight of the Naismith Museum, Conservation Area management and administration of the Outdoor and Environmental Education program.

Notes on Implementation Strategies

I suggest holding off on a conversation about long term improvement to the MOK site at least until after the first season of resumed Outdoor Education programming. At that point, the MVCA should carefully consider whether an expanded Outdoor and Environmental Education program will help fulfill their Mission, Vision and Values. In my opinion, there is no better way to help protect the Mississippi Valley watershed than by building a citizenry that have a strong and caring connection to the natural spaces all around them.

ACKNOWLEDGEMENTS

It has been an honour and a delight to be able to speak with so many passionate educators, administrators and naturalists as part of this project. I have enjoyed the opportunity to explore the world of Conservation Authorities, through the words and stories of so many amazing people. I would specifically like to thank the following people for letting me interview them for this report:

Rachel Bezanson, *Education Coordinator*, Lakehead Conservation Authority

Steve Boland, *Chair*, Shaw Woods Outdoor Education Centre

Maya Brown, *Program Manager*, Bonnenfant Outdoor Centre

Dan Cooper, *Director Conservation Lands and Stewardship*, RVCA

Ken Desson, *past Member*, Carp River Conservation Area Schools Engagement sub-Committee

Isabelle Falardeau, *Enseignante classe nature*, Conseil des écoles catholiques du Centre-Est

Colleen Fast, *Supervisor - Outdoor Education*, District School Board of Niagara

Nancy Griffin, *Retired Conservation Education Coordinator*, Saugeen Valley Conservation Authority

Alison Klages, *Team Lead Communications and Education Ska-Nah-Doht Village and Museum*, Lower Thames Valley Conservation Authority

Melissa Levi, *Conservation Education Coordinator*, St. Clair River Conservation Authority

Paula Loranger, *Community Relations Coordinator*, North Bay-Mattawa Conservation Authority

Stana Luxford Oddie, *Senior Conservation Educator*, Cataraqui River CA

Laura Molson, *Manager - Corporate Services*, Saugeen Valley Conservation Authority

Brenda Reil, *Principal of Curriculum*, Catholic District School Boards of Eastern Ontario

Carolyn Snider, *Admin Support - Programs*, Kawartha Conservation

Aaron Staples, *Outdoor Education Instructor*, Ganaraska Forest Centre

Bob Stearns, *Secretary/ Treasurer*, Mississippi Madawaska Land Trust

Daniela Stuewer, *Environmental Education Program Manager*, Conservation Sudbury

Lisa Stocco, *Manager of Strategic Communications and Environmental Education*, Grand River Conservation Authority

Kevin Wallace, *Education Centres Coordinator*, Ottawa Carleton DSB

John Whiting, *past Chair*, Carp River Conservation Area Schools Engagement sub-Committee

Rebecca Whitman, *Foley Mountain Supervisor*, RVCA

Ron Williamson, *Chair of Nature Talks*, Mississippi Valley Field Naturalists

APPENDIX A: KEY CONCERNS

	+	-
<i>It is very challenging to run OEE with full cost recovery.</i>	Of the 9 similarly sized Conservation Authorities looked at, only 1 was able to run a robust OEE program without Levy support.	Many other CAs outside those 9 are able to run OEE at cost recovery. Many strategies exist for the MVCA to run OEE programs within budget restrictions.
<i>There are other providers in or near the MVCA watershed that offer OEE.</i>	Students in the MVCA watershed have other options for OEE trips, including the OCDSB Bill Mason Centre, YMCA Camp Bonnenfant, RVCA Baxter OEC and RVCA Foley Mountain OEC.	The survey results and size of waiting list at Bill Mason suggest that the demand for OEE far exceeds supply. Further, Mason and Baxter are a long way from most MVCA schools.
<i>High cost and lack of availability of quality staff</i>	The largest budget item for CA run OEE is staff. It is challenging to get high quality, experienced Outdoor Educators who will work for low wages.	Shaw Woods is able to get experienced, trained, OTC certified Outdoor Educators by matching supply teacher wages for their staff. A variety of staffing options exist to reduce costs.
<i>Schools cannot afford the price needed for cost recovery.</i>	Schools are used to expecting low cost OEE programming from CAs. Add to that the cost of bussing, which is higher than ever.	The biggest obstacle to schools is the cost of bussing, which often exceeds the fee for the program visit. The MVC has shown in the past that it is able to fundraise money to help subsidize school trips.
<i>Education is a category 3 service, and is not mandated by regulation.</i>	Category 3 services must now be self-funded by CA revenue, or by a MOU with municipalities. Generating sufficient revenue or negotiating an MOU can be challenging and time consuming.	Conservation Authorities as a group are the largest provider of Outdoor and Environmental Education programming in Ontario. The MVCA has been offering OEE at MOK for nearly 50 years, and as such is trusted and known by local residents. Many adult residents in the watershed would have attended school field trips to MOK as a child. Offering OEE programs creates a positive and lasting first impression of the conservation Authority with children and their families.

APPENDIX B: ONTARIO CURRICULUM CONNECTIONS TO MVCA MANDATE

GRADE	UNIT	CURRICULAR STRANDS
1	<p>SCIENCE</p> <p><u>B. Needs and characteristics of living things</u></p> <p><u>E. Daily and Seasonal changes</u></p>	<p>B1.2 identify actions that can be taken to contribute to a healthy environment</p> <p>B2.1 demonstrate an understanding of the natural environment as a place where living and non-living things are interconnected</p> <p>B2.2 identify the basic needs of living things, including the need for air, water, food, heat, shelter, and space</p> <p>B2.5 describe the characteristics of a healthy environment, including clean air and water and nutritious food, and how a healthy environment enables living things to meet their needs</p> <p>B2.6 describe ways in which living things provide for the needs of other living things</p> <p>E1.1 assess the impact of daily and seasonal changes on human outdoor activities, and identify innovations that enable people to engage in various activities year-round</p> <p>E1.2 assess ways in which daily and seasonal changes have an impact on society, the environment, and living things in the natural environment</p> <p>E2.3 describe the changes in the amount of light and heat from the Sun that occur throughout the day and in the four seasons</p> <p>E2.4 describe and compare the four seasons in terms of the weather, including precipitation and temperature, in their local area</p> <p>E2.5 describe changes in the appearance or behaviour of living things that are adaptations to seasonal changes</p> <p>E2.6 describe how humans prepare for, and respond to, daily and seasonal changes</p>
2	<p>SCIENCE</p> <p><u>B. Animals</u></p>	<p>B1.1 examine impacts that animals can have on society and the environment, and describe some ways in which any negative impacts can be minimized</p>

	<p><u>E. Air and Water in the environment</u></p>	<p>B1.2 assess impacts of various human activities on animals and the places where they live, and describe practices that can minimize negative impacts</p> <p>B2.5 describe adaptations, including physical and/or behavioural characteristics, that allow various animals to survive in their natural environment</p> <p>E1.1 assess the impact of human activities on air and water, taking various perspectives into consideration, including those of First Nations, Métis, and Inuit, and plan a course of action to protect the quality of the air and/or water in the local community</p> <p>E1.3 examine the availability of fresh water and drinking water around the world, and describe the impact on communities</p> <p>E2.2 identify sources of water in the natural and built environments</p> <p>E2.3 describe the stages of the water cycle, including evaporation, condensation, precipitation, and collection</p> <p>E2.5 describe ways in which living things, including humans, depend on air and water</p>
3	<p>SCIENCE</p> <p><u>B. Plants</u></p>	<p>B1.1 assess ways in which plants are important to humans and other living things, taking different perspectives into consideration, and identify ways in which humans can protect native plant species and their habitats</p> <p>B1.2 assess ways in which human activities have an impact on plants and plant habitats, and identify personal actions that they could take to minimize harmful effects and enhance positive ones</p> <p>B2.1 describe the basic needs of plants, including the need for air, water, light, heat, nutrients, and space, and identify environmental conditions that may threaten plant survival</p> <p>B2.4 describe ways in which a variety of plants adapt and/or react to their environment and to changes in their environment</p> <p>B2.5 demonstrate an understanding that most plants get energy directly from the Sun through the process of photosynthesis, which involves the absorption of carbon dioxide and the release of oxygen</p>

	<p><u>C. Forces and motion</u></p> <p><u>D. Structures</u></p> <p><u>E. Soil</u></p>	<p>B2.6 describe ways in which people, including Indigenous peoples, from various cultures around the world use plants for food, shelter, medicine, and clothing</p> <p>B2.7 describe various plants used for food, including those grown by First Nations, Métis, and Inuit, and identify local settings where these plants are grown or found</p> <p>B2.8 describe ways in which plants and animals, including humans, depend on each other</p> <p>C1.1 assess the effects of the action of forces from natural phenomena on natural and built environments, and identify ways in which human activities can reduce or enhance these effects</p> <p>D1.2 assess the environmental impact of structures built by various animals, including structures built by humans</p> <p>E1.1 assess the importance of soils for society and the environment</p> <p>E1.2 assess the impact of human activity on soils, and describe ways in which humans can improve the quality of soils and/or lessen or prevent harmful effects on soils</p> <p>E2.1 identify the living and non-living components of soil, and describe the characteristics of healthy soil</p> <p>E2.2 identify different substances that are commonly added to, or absorbed by, the soil, and describe their effects on soil health</p> <p>E2.3 examine different types of soils found in Ontario, and describe how different soils are suited to growing different types of food, including crops</p> <p>E2.4 explain the process of erosion, including its causes and its impact on soils</p>
4	<p>SCIENCE</p> <p><u>B. Habitats and communities</u></p>	<p>B1.1 assess positive and negative impacts of human activities on habitats and communities, while taking different perspectives into account</p> <p>B1.2 analyse the impact of the depletion or extinction of a species on its habitat and community, and describe possible actions to prevent such depletions or extinctions</p>

	<p><u>E. Rocks, minerals and geologic processes</u></p>	<p>B2.1 describe habitats as areas that provide organisms, including plants and animals, with the necessities of life, and identify ways in which a local habitat provides these necessities</p> <p>B2.2 describe a community as a group of interacting species sharing a common habitat, and identify factors that affect the ability of a community of plants and animals to survive in a local habitat</p> <p>B2.3 describe the relationship of organisms in a food chain, and classify organisms as producers, consumers, or decomposers</p> <p>B2.4 demonstrate an understanding of a food web as the interconnection of multiple food chains in a natural community</p> <p>B2.5 describe how animals are categorized according to their diet, and categorize various animals as carnivores, herbivores, or omnivores</p> <p>B2.6 describe structural adaptations of a variety of plants and animals and how these adaptations allow the organisms to survive in specific habitats</p> <p>B2.7 explain why all habitats have limits to the number of plants and animals they can support</p> <p>E1.1 analyse ways in which geological processes impact society and the environment</p> <p>E2.1 explain geological processes that result in the formation of igneous, sedimentary, and metamorphic rocks, using the rock cycle</p> <p>E2.2 describe the physical properties of igneous, sedimentary, and metamorphic rocks</p> <p>E2.3 classify different rocks and minerals according to their composition and physical properties, using various tests and criteria</p> <p>E2.4 describe everyday uses of rocks and minerals</p>
5	<p>SCIENCE</p> <p><u>D. Forces acting on Structures</u></p>	<p>D1.1 analyse the effects of forces from natural phenomena on structures in natural and built environments</p>

	<p><u>E. Conservation of Energy and Resources</u></p>	<p>D1.2 assess various ways in which humans mitigate impacts of forces from natural phenomena on structures in urban, rural, and remote communities</p> <p>D2.1 identify internal forces acting on a structure, and describe their effects on the structure</p> <p>D2.2 identify external forces acting on a structure, and describe their effects on the structure</p> <p>D2.3 describe forces resulting from natural phenomena that can have severe consequences for human-built structures, and identify structural features and materials that can allow such structures to withstand these forces</p> <p>D2.4 describe ways in which physical characteristics of various animal and plant species help to protect them from potentially harmful effects of forces</p> <p>E1.1 analyse long-term impacts of human uses of energy and natural resources, on society and the environment, including climate change, and suggest ways to mitigate these impacts</p> <p>E1.2 evaluate effects of various technologies on energy consumption, and describe ways in which individuals can use technology to reduce energy consumption</p> <p>E2.2 demonstrate an understanding of the law of conservation of energy, including how energy cannot be created or destroyed but can only be transformed from one form to another</p> <p>E2.3 describe how energy is stored as potential energy and transformed in a given device or system</p> <p>E2.4 demonstrate an understanding that when energy is transformed from one form to another, some energy may dissipate into the environment in the form of heat, light, and/or sound energy</p> <p>E2.5 identify renewable and non-renewable sources of energy use technology to reduce energy consumption</p>
6	<p>SCIENCE</p> <p><u>B. Biodiversity</u></p>	<p>B1.1 assess the benefits of biodiversity and the consequences of the diminishing of biodiversity</p>

		<p>B1.2 analyse a local issue related to biodiversity while considering different perspectives; plan a course of action in response to the issue; and act on their plan</p> <p>B2.4 describe ways in which biodiversity within and among communities is essential for maintaining the resilience of these communities</p> <p>B2.5 describe interrelationships within species, between species, and between species and their natural environment, and explain how these interrelationships sustain biodiversity</p> <p>B2.6 explain how invasive species reduce biodiversity in local environments</p> <p>B2.7 explain how climate change contributes to a loss of biodiversity, and describe the impact of this loss</p> <p>B2.8 describe the importance of biodiversity in supporting agriculture, including Indigenous agriculture around the world</p>
7	<p>SCIENCE <u>B. Interactions in the environment</u></p>	<p>B1.1 assess the impact of various technologies on the environment</p> <p>B1.2 assess the effectiveness of various ways of mitigating the negative and enhancing the positive impact of human activities on the environment</p> <p>B2.1 explain that an ecosystem is a network of interactions among living organisms and their environment</p> <p>B2.2 identify biotic and abiotic components in an ecosystem, and describe the interactions between them</p> <p>B2.3 describe roles and relationships between producers, consumers, and decomposers within an ecosystem</p> <p>B2.4 describe the transfer of energy in a food chain, and explain the effects of altering any part of the chain</p> <p>B2.5 describe how matter is cycled within the environment, and explain how the cycling of matter promotes sustainability</p> <p>B2.6 explain the differences between primary succession and secondary succession in ecosystems</p> <p>B2.7 explain how biotic and abiotic factors limit the number of organisms an ecosystem can sustain</p>


	<p>----- ----- GEOGRAPHY</p> <p><u>A. Natural Resources around the world</u></p>	<p>B2.8 describe how different approaches to agriculture and to harvesting food from the natural environment can impact an ecosystem, and identify strategies that can be used to maintain and/or restore balance to ecosystems</p> <p>----- -----</p> <ul style="list-style-type: none"> • describe how humans acquire, manage, and use natural resources, and identify factors that affect the importance of those resources; • use a variety of resources and tools to gather, process, and communicate geographic information about the distribution, use, and importance of natural resources; • describe positive and negative ways in which human activity can affect resource sustainability and the health of the environment.
8	<p>SCIENCE</p> <p><u>C. Fluids</u></p> <p><u>D. Systems in Action</u></p>	<p>C2.1 demonstrate an understanding of the factors that affect viscosity, and compare the viscosity of various fluids, including volumetric flow rate</p> <p>C2.7 describe how forces are transferred in all directions in fluids, including using Pascal’s law to quantify the transfer of forces in fluids</p> <p>C2.8 describe factors that affect the flow of fluids</p> <p>C2.9 describe the differences between pneumatic and hydraulic systems</p> <p>C2.10 compare how fluids are used and how their flow is regulated in living organisms and in mechanical devices or systems</p> <p>D1.1 assess the social, economic, and environmental impacts of automating systems</p> <p>D1.2 assess the impact on individuals, society, and the environment of alternative ways of meeting needs that are currently met by existing systems, taking different points of view into consideration</p> <p>D2.3 identify the various processes and components of a system that allow it to perform its function efficiently and safely</p> <p>D2.4 use the scientific terms <i>displacement</i>, <i>force</i>, <i>work</i>, <i>energy</i>, and <i>efficiency</i> to describe everyday experiences</p>

	<p><u>E. Water systems</u></p>	<p>D2.5 demonstrate an understanding of the relationships between work, force, and displacement in simple systems</p> <p>D2.6 explain the relationship between input and output forces and determine the mechanical advantage of various mechanical systems, including simple machines</p> <p>D2.7 identify ways in which energy can dissipate from mechanical systems, and describe technological innovations that make these systems more efficient</p> <p>D2.8 explain how providing information and support to consumers helps to ensure that the systems they use run safely and efficiently</p> <p>D2.9 describe technological innovations involving mechanical systems that have increased productivity in various industries</p> <p>D2.10 identify social factors that influence the evolution of a system</p> <p>E1.1 assess the social and environmental impact of the scarcity of fresh water, and propose a plan of action to help address fresh water sustainability issues</p> <p>E1.2 demonstrate an understanding of First Nations, Métis, and Inuit knowledges and values about water, connections to water, and ways of managing water resources sustainably</p> <p>E1.3 assess the impact of scientific discoveries and technological innovations on local and global water systems</p> <p>E2.1 identify the states of water on Earth’s surface, their distribution, relative amounts, and circulation, and the conditions under which they exist</p> <p>E2.2 demonstrate an understanding of a watershed, and explain its importance to water management and planning</p> <p>E2.3 explain how human activity and natural phenomena cause changes in the water table</p> <p>E2.4 identify factors, including climate change, that have contributed to the melting of glaciers and polar ice-caps, and describe the effects of this phenomenon on local and global water systems</p>
--	--------------------------------	---

		<p>E2.5 explain changes in atmospheric conditions caused by the presence of bodies of water</p> <p>E2.6 describe various indicators of water quality, and explain the impact of human activity on those indicators</p> <p>E2.7 explain how municipalities process water and manage water usage</p>
9	<p>SCIENCE</p> <p><u>A. Applications and connections</u></p> <p><u>B. Our changing world - biology</u></p> <p><u>C. Our changing world - chemistry</u></p> <p><u>E. Our changing world - earth & space science</u></p>	<p>A2.4 apply scientific literacy skills when investigating social and environmental issues that have personal, local, and/or global impacts</p> <p>B1.1 assess impacts of climate change on the sustainability of local and global ecosystems, describe local or global initiatives for combatting climate change, and identify solutions to address some of the impacts</p> <p>B2.4 investigate factors and processes, including biodiversity, air and water quality, soil health, and succession, and explain how they contribute to ecosystem sustainability</p> <p>B2.5 explain the effects of various human activities on the dynamic equilibrium of ecosystems</p> <p>C2.1 investigate properties, changes, and interactions of matter that are important for the dynamic equilibrium of ecosystems and their sustainability</p> <p>E1.3 assess ways in which technological innovations related to space observation and exploration are applied in various fields, including their contributions to sustainable practices on Earth</p> <p>E2.2 explain how the Sun's energy causes natural phenomena on Earth, and how these phenomena contribute to renewable energy production</p>
10	<p>SCIENCE</p> <p><u>D. Climate Change</u></p>	<p>D2.5 investigate, through laboratory inquiry or simulations, the effects of heat transfer within the hydrosphere and atmosphere [PR, AI]</p> <p>D2.6 investigate, through laboratory inquiry or simulations, how water in its various states influences climate patterns (e.g., water bodies moderate climate, water vapour is a greenhouse gas, ice increases the albedo of Earth's surface)</p>

11	<p>BIOLOGY</p> <p><u>B. Diversity of living things</u></p>	<p>B2.1 use appropriate terminology related to biodiversity, including, but not limited to: genetic diversity, species diversity, structural diversity, protists, bacteria, fungi, binomial nomenclature, and morphology [C]</p> <p>B2.2 classify, and draw biological diagrams of, representative organisms from each of the kingdoms according to their unifying and distinguishing anatomical and physiological characteristics (e.g., vertebrate or invertebrate organisms, vascular or nonvascular plants) [PR, AI,..]</p> <p>B2.3 use proper sampling techniques to collect various organisms from a marsh, pond, field, or other ecosystem, and classify the organisms according to the principles of taxonomy [PR, AI, C]</p> <p>B2.4 create and apply a dichotomous key to identify and classify organisms from each of the kingdoms [PR, AI,C]</p> <p>B3.1 explain the fundamental principles of taxonomy and phylogeny by defining concepts of taxonomic rank and relationship, such as genus, species, and taxonomy</p> <p>B3.2 compare and contrast the structure and function of different types of prokaryotes, eukaryotes, and viruses (e.g., compare and contrast genetic material, metabolism, organelles, and other cell parts)</p> <p>B3.3 describe unifying and distinguishing anatomical and physiological characteristics (e.g., types of reproduction, habitat, general physical structure) of representative organisms from each of the kingdoms</p> <p>B3.4 explain key structural and functional changes in organisms as they have evolved over time (e.g., the evolution of eukaryotes from prokaryotes, of plants from unicellular organisms)</p> <p>B3.5 explain why biodiversity is important to maintaining viable ecosystems (e.g., biodiversity helps increase resilience to stress and resistance to diseases or invading species)</p>
----	--	---

APPENDIX C: MVCA SWOB ANALYSES OF MVCA SITES

<p>Mill of Kintail Conservation Area</p> <p>Size:68ha Location: Mississippi Mills Master Plan Date: 2008 Other Plans:2019 Museum Strat Plan</p>   	<p>CURRENT STATE 2024</p> <p>Strengths/Attributes</p> <ul style="list-style-type: none"> ● A – Historic site/buildings ● B – Extensive trail network ● C – Popular with the public ● D – Established facilities to host events ● E – Proximity to populated area ● F – many site amenities to cater to multiple uses ● G – Intersected by watercourse <p>Weaknesses</p> <ul style="list-style-type: none"> ● A – Small Parking lot ● B – Overflow parking, weather dependent ● C – Lack of modern washroom facilities ● D – Lack of maintenance facilities/storage for larger events ● E – Security gaps for certain buildings and site locations ● F – enforcement of site rules <p>Opportunities</p> <ul style="list-style-type: none"> ● A – Potential for hosting more/larger scale events ● B – Available space for more parking ● C – Available space for sports/recreation ● D – Camp sites ● E – trail grooming for increased winter usage <p>Barriers</p> <ul style="list-style-type: none"> ● A – lack of accessible trails ● B – Terrain limits accessibility to certain areas for maintenance ● C – Accessibility issues within the buildings ● D – numerous community stakeholders with differing opinions and priorities when it comes to the property
--	---



Morris Island Conservation Area

Size: 47ha

Location: West Carleton/City of Ottawa

Master Plan Date: Dec 1987

Other Plans: Capital Improvement Plan 2007-2009



CURRENT STATE 2024

Strengths/Attributes


- A – proximity to large population
- B – proximity to large body of water
- C – wildlife/fishing
- D – varied trails/skill levels
- E – good washroom facilities

Weaknesses

- A – high cost of infrastructure
- B – no public drinking source
- C – no septic (holding tank only)
- D – lack of security infrastructure
- Outdated entrance signage




Opportunities




- A – ability to expand trail network
- B – available boat/canoe launch
- C – available picnic areas
- D – possible site for educational programming
- E – trail grooming for increased winter usage

	<p>Barriers</p> <ul style="list-style-type: none"> • A – no room for septic/season washrooms • B – unable to expand parking lot • C – narrow entrance roadway • D – leased property limits possible major projects • E – majority of landscape not conducive to accessibility • F - Lack of presence to enforce site rules
---	---

<p>Carp River Conservation Area</p> <p>Size: 31.4ha Location: Kanata Master Plan Date: Other Plans:</p>	<p>CURRENT STATE 2024</p> <p>Strengths/Attributes</p> <ul style="list-style-type: none"> • A – Located near large population base • B – Multiple partners in construction/maintenance • C – Excellent trail base • D – accessible trails • E – Interpretative signage promotes MVCA mandate <p>Weaknesses</p> <ul style="list-style-type: none"> • A – No dedicated parking • B – No washrooms • C – Lack of Trees • D – Lack of shelter and other amenities <p>Opportunities</p> <ul style="list-style-type: none"> • A – Close to schools for educational components • B – Could expand south of current location • C – Large population base for increased foot traffic • D – Provides recreation in otherwise urban centre • E – potential addition of amenities/facilities
---	---

	<p>Barriers</p> <ul style="list-style-type: none"> • A – Lack of Masterplan leads to ambiguity of MVCA involvement • B – potential of annual flooding in the Spring • C – Land is not owned by MVCA which could make investment in the property tougher
--	---

<p>Purdon Conservation Area</p> <p>Size: 25.7 ha Location: Lanark Highlands Master Plan Date: Feb, 1986 Other Plans: MNR Approved Managed Forest Plan 2006</p>   	<p>CURRENT STATE 2024</p> <p>Strengths/Attributes</p> <ul style="list-style-type: none"> • A – Strong Orchid colony • B – New Boardwalk (more accessible) • C – 2 scenic lookouts • D – 2 parking lots • E – Trails of varied terrain and skill levels <p>Weaknesses</p> <ul style="list-style-type: none"> • A – Smaller parking lots • B – Aging interpretive signage • C – Corduroy portion to Highland Trail in poor condition • D – Entrance/site signage in need of updating • E - <p>Opportunities</p> <ul style="list-style-type: none"> • A – Extended boardwalk • B – Expand lower parking lot • C – Make finger lookout more accessible • D – Upgraded signage • E – partner with Orchid Society to increase amount of orchids <p>Barriers</p> <ul style="list-style-type: none"> • A – lack of modern washroom facilities • B – no winter maintenance • C – ability to get equipment into trail network • D – Terrain and site conditions make trail creation tough
---	---

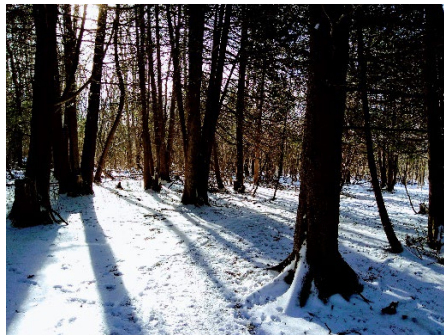
<p>Palmerston Canonto Conservation Area</p> <p>Size: 103ha Location: North Frontenac Twp. Master Plan Date: Other Plans: Lease Agreement with North Frontenac</p>   	<p>CURRENT STATE 2024</p> <p>Strengths/Attributes</p> <ul style="list-style-type: none"> • A – Beautiful lookouts and scenery • B – Extensive trail network • C – Variety of amenities onsite and close by (beach, boat launch, municipal camp sites) • D – Strong relationship with township for maintenance and operation • <p>Weaknesses</p> <ul style="list-style-type: none"> • A – Poor washroom facilities • B – limited parking and access to trails • C – Remote area (not close to populated centre) • D – MVCA lack of involvement in active management • E – Poor site and directional signage • F – Poor trail base (rough terrain) <p>Opportunities</p> <ul style="list-style-type: none"> • A – Portage trail to Canonto • B – Rock Climbing • C – Camp sites • D – Room for expansion of trail network and amenities • E – Partnership with N. Frontenac to enhance site <p>Barriers</p> <ul style="list-style-type: none"> • A - Remote • B – Terrain restricts ability to maintain site • C – Room to expand parking is limited • D – Fair distance from MVCA Office
<p>Roy Brown Park</p>	<p>CURRENT STATE 2024</p>

Size: 10ha

Location: Carleton Place

Master Plan Date:

Other Plans:



Strengths/Attributes

- A – Located within populated area
- B – Dog park
- C – Very accessible
- D – Storm Ponds attract water fowl
- E – Unique route signage (WWI)
- F – Good site signage

Weaknesses

- A – Short trail network
- B – Large portion occupied by storm water ponds
- C – prone to flooding in certain areas
- D

Opportunities

- A – Proximity to MVCA Office
- B – Partnership between CP and MVCA
- C – Educational components/amenities
- D – Viewing platform overlooking river
- E – Increased interpretive signage

Barriers

- A – potential flooding
- B – Small parking
- C – Washroom facilities not currently being used
- D – Parking and washrooms located on side of park that has least amount of use (patrons access through other locations, mostly)

APPENDIX D: ELGIE SWOB ANALYSIS OF MOK

MILL OF KINTAIL	OPPORTUNITIES	BARRIERS
CONSERVATION AREA	Partnerships with other OEE provides: MVFN, Forest Schools, School Boards, MMLT,...	EE centre is only big enough for 1 class programming, or two classes eating lunch.
	Build capacity for more programming at prime seasons.	Hard to find bussing currently.
	Develop programs with greater income generation capacity	Risk aversion by senior admin from visiting schools. Water-based programming and ticks may be hot button issues.
STRENGTHS	<i>S-O Strategies [1]</i>	<i>S-B Strategies [2]</i>
Beautiful property with diverse ecology & established trails, lots of great spaces for EE	Develop events with local boards: geocaching? Cross Country running? Field science trips?	Multiple buildings on site that could each be used as a "home base" if running multiple groups at once.
Infrastructure to support EE programming	Develop a network of seasonal part-time staff. Contract for specific periods in fall and/or spring.	There is space to consider building a multi-use facility, with the capacity to host overnight groups. (Similar to Ganaraska)
Established clients who are interested in returning.	Boards pay for portion of trip? Established practice from other CAs.	Develop risk management plan in consultation with school boards, related to river study. What would it take to get to "yes"?
Established curriculum. Program materials and resources available.	SHSM Certification programs.	
< 30 min drive for most schools in Watershed		
WEAKNESSES	<i>W-O Strategies [3]</i>	<i>W-B Strategies [4]</i>
EE building is not winterized.	Invite visiting schools to help with Invasive Species removal as part of program. Connects to Gr 4 Habitats, Gr 6 Ecosystems curriculum & HS.	Consider developing a way to designate space or "block off" certain areas during program time, to allow more free range for students?
Limited support staff for property issues such as trail clearing, building repair, snow shoveling, etc.	Revenue from rental to outside EE providers can be allotted to property/building improvement & management.	Develop clear tick policy, based on best practice by local groups.
Property is open to the public. No control over who else is around while teaching. Dogs off leash?		
Invasive species.		
River may be a hazard at flood times		

APPENDIX E: An example of a MOU between an Outdoor Education Centre and School Boards

MEMORANDUM OF UNDERSTANDING

(MOU)

BETWEEN

SHAW WOODS OUTDOOR EDUCATION CENTRE

(SWOEC)

AND

RENFREW COUNTY DISTRICT SCHOOL BOARD

(RCDSB)

Background

Over the past decade, thousands of students from RCDSB have undertaken curriculum based outdoor education at SWOEC.

A financial contribution of \$ _____ annually, has been made by RCDSB to SWOEC and this amount has remained

unchanged. Additionally, a fee of \$7.50 has been paid for each student, beyond an agreed limit of 750 annually.

Although a variety of written criteria are in place regarding facility booking, cancellation policy, student/teacher ratios, etc., there has not been a formal Participation Agreement in place. The attached letter from RCDSB has been the basis of operations for a number of years. Similar verbal agreements have been in place, with RCCDSB and CEPEO.

Proposed "Participation Agreement"

Due to corporate sponsorship and community support, SWOEC has continued to function with the originally designated financial contribution from RCDSB. Additionally, SWOEC has provided "bus subsidies" for participating schools, to help offset rising transportation costs.

It will be ten years since initiating the original financial contribution, to the mid-point of a new five year term. Accordingly, through this MOU, it is agreed to increase the annual contribution by 20%, to \$ _____ which represents approximately 2% annually over said ten year period. It is also agreed to increase the fee for student numbers beyond 750, by 20% to \$9.00.

This Memorandum of Understanding will take effect September 1, 2022 and remain in force until August 31, 2027

for RCDSB

for SWOEC

Date: _____



1270 Pembroke Street West, Pembroke ON K8A 4G4
t. 613.735.0151 | f. 613.735.6315 | www.rcdsb.on.ca
www.facebook.com/RCDSB | Twitter: @RCDSB

OFFICE OF THE DIRECTOR OF EDUCATION

June 9, 2015

Mr. Grant Dobson
Chairman
Shaw Woods Outdoor Education Centre
Box 29
Douglas, ON
K0J 1S0

Dear Mr. Dobson,

I am pleased to inform you that on Tuesday, June 2, 2015 the RCDSB passed a motion to support the Shaw Woods Outdoor Education Centre (SWOEC) with sustainable funding until August 31, 2020. Our Board will provide an annual allocation of \$25,000 to support the educational programming at your outdoor education centre.

I would also like to extend our appreciation to your Board for developing a very comprehensive strategic plan that outlines the direction and vision of the centre. Once again, we are excited about the prospects of having our students and teachers attend your centre in the coming months and learn first-hand the value of experiential learning through your outdoor education programs.

As in the past, I would recommend you invoice our Board for the funding allocation annually, preferably during the summer months and prior to August 31st. In addition, the RCDSB has the expectation that a portion of our funding (approximately \$5,000) will be used to provide free admission to a number of students from our schools.

Looking forward to a strong partnership with your organization that will further the education goals of the RCDSB.

Regards,

Roger Clarke
Director of Education
Renfrew County District School Board

cc: RCDSB Executive Council
Dave Shields, Chairperson, RCDSB
Wendy Hewitt, Vice-Chairperson, RCDSB

REPORT**3450/24**

TO:	The Chair and Members of the Mississippi Valley Conservation Authority Board of Directors
FROM:	Juraj Cunderlik, Director, Engineering
RE:	MVCA's Asset Management Plan
DATE:	October 21, 2024

Recommendation:

That the Board of Directors approve the *Asset Management Plan* attached to this report.

The purpose of this report is to obtain Board Of Directors approval for the newly developed Asset Management Plan. All Conservation Authorities are required to develop and implement an Asset Management Plan by December 31, 2024. This plan complies with Section 5 of O. Reg 686/21, which outlines the conservation authority's obligations regarding programs and services that support the operation, maintenance, repair and decommissioning of water control infrastructure.

1.0 BACKGROUND

MVCA began to prepare asset management policies and supporting documents in 2008 in anticipation of PSAB 3150 taking effect in 2009, which changed the financial accounting method for Tangible Capital Assets (TCAs) by government entities including conservation authorities.¹ Since then, MVCA has taken several steps to improve management of its assets including:

- Drafting an asset management policy and asset management strategy;
- Implementing a corporate Needs Assessment registry that is updated annually and addresses both operational and capital deficiencies and opportunities for improvement;
- Using the registry to identify priorities, inform annual work plans and budgets and to update of the 10-year Capital Plan.
- Using a 10-year Schedule of Municipal Capital Levy Increases to implement the Capital Plan.

¹ <https://www.frascanada.ca/en/public-sector/projects/gnfp-capital-assets/in-brief-psab-ed-tangible-capital-assets>

While MVCA has many tools typical of an Asset Management Plan, to date the Authority has not had a Board-approved document with that title. This document represents Version 1 of MVCA’s Asset Management Plan. It contains high level goals, objectives and policies that will apply to all MVCA TCAs, but focuses on Water Control assets in fulfilment of Section 5(2)2. of O. Reg. 686/21 under the *Conservation Authorities Act*, RSO 1990. Additional chapters will be added as resources allow.

2.0 GOALS AND OBJECTIVES

The **Goals** of the Asset Management Plan are to:

1. Ensure business continuity and public safety.
2. Establish service levels and performance expectations.
3. Optimize investments in assets for the short and long-term.
4. Provide transparency in asset management.

The **Objectives** of the Asset Management Plan are the following:

1. Assets are inventoried, monitored, and actively managed throughout their lifecycle.
2. Assets are operated and maintained in accordance with agreed upon service levels.
3. Tracking and analysis of asset history are leveraged for continuous improvement.
4. Asset additions, betterments, and disposals are transparent and affordable.²
5. Funding is available when needed to maintain business continuity and public safety.
6. Long-term asset investments take into consideration evolving conditions (e.g. regulatory, climatic, technological) and the long-term consequences of decisions being taken.

3.0 WATER CONTROL INFRASTRUCTURE WITHIN MVCA JURISDICTION

Water control structures are used to manage water levels and flows in the Mississippi River system. Most dams were originally built to maintain sufficient water levels to allow timbers to be floated downstream, but now serve various purposes including flood protection, low flow augmentation, ice management, recreational access, erosion control, and maintaining flow and level requirements for fish and wildlife habitat.

There are 24 water control structures within the MVCA’s jurisdiction (see Figure 1). Twelve of the water control structures in the Mississippi River system have a significant impact on water levels and flows, six of which are owned by MVCA:

² “Additions” is to buy or build a new asset. “Betterment” is to enhance the functionality or extend the life of an existing asset. “Disposal” is to sell, decommission, or demolish an asset.

- Shabomeka Lake Dam
- Mazinaw Lake Dam
- Kashwakamak Lake Dam
- Big Gull Lake Dam
- Mississagagon Lake Dam
- Carleton Place Dam.

Ontario Power Generation (OPG) owns the Crotch Lake Dam, and the other five operate as hydro-electric energy generating systems (High Falls, Appleton, Enerdu, Brian J. Gallagher and Galetta).

Of the remaining 12 water control structures in MVCA’s jurisdiction, five are owned by MVCA (Farm Lake, Pine Lake, Bennett Lake, Widow Lake, and Lanark Dams and the Glen Cairn flood control facility), and six are owned by the Ministry of Natural Resources (MNR) (Malcolm, Mosque, Summit, Palmerston, Canonto, and Clayton Lake Dams).

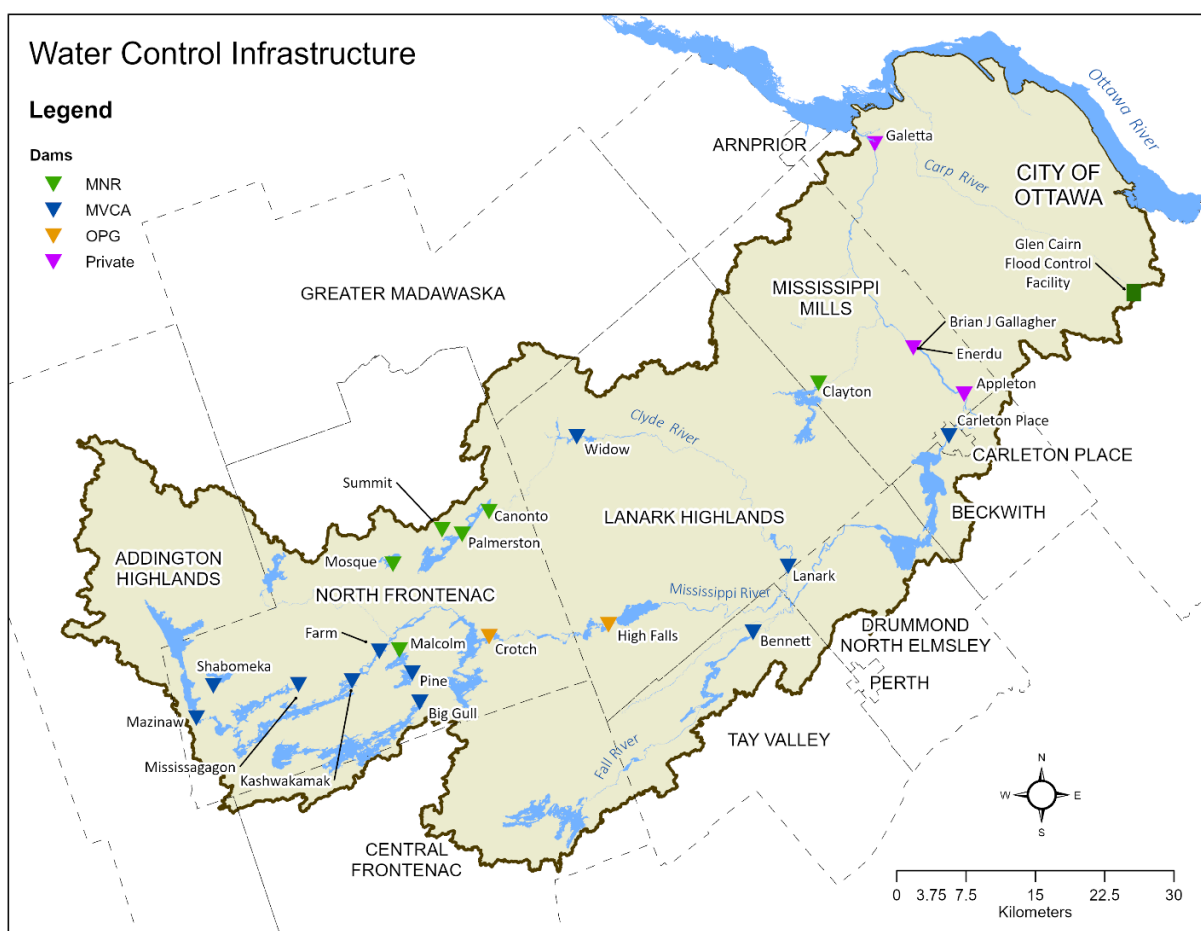


Figure 1. Water Control Structure Infrastructure in MVCA’s jurisdiction

4.0 SYSTEM MANAGEMENT AND OPERATION

MVCA uses the Mississippi River Water Management Plan (MRWMP) and provincial (Ministry of Natural Resources) and federal (Canadian Dam Association) guidelines to guide the operation and levels of service for water control infrastructure. The five objectives identified by the MRWMP include maintaining or improving aquatic ecosystem health, addressing public safety and minimizing property damage, maintaining water levels for navigation, recreation, cultural and social opportunities, recognizing power generation values, and developing public awareness. In addition, MVCA operates water control infrastructure according to O.Reg. 686/21 in the Conservation Authorities Act, which involves protecting against or mitigating flood and erosion hazards, ice management, and low water or drought response.

5.0 LEVELS OF SERVICE

It is necessary to categorize MVCA-operated dams based on their functionality and required level of service. For water control infrastructure, level of service includes dam operations, maintenance, surveillance (inspections), documentation, and studies. MVCA has limited resources for the operation, maintenance, study and renewal of water control infrastructure, so it is helpful to have pre-defined categories to prioritize activities and guide service levels. Structures are categorized into three levels of service (A, B, and C) based on the following characteristics: presence of a reservoir, whether the dam is operable, HPC, and nearby flood prone areas. Table 1 shows the categorization of MVCA-owned dams based on these characteristics. Table 2 shows how the expected level of service differs for dams in each category for a number of different aspects of documentation and operation.

Table 1. MVCA Dam Categorization

Water Control Structure	Is there a reservoir?	Is the structure operable?	Near flood-prone area?	HPC	Category
Bennett Lake Dam	Yes - Support	Yes	No	None	B
Big Gull Lake Dam	Yes – Important	Yes	No	Low	B
Carleton Place Dam	Yes – Important	Yes	Yes – Innisville, Mississippi Lake, Town of Carleton Place	Low	A
Farm Lake Dam	No	No	No	None	C
Kashwakamak Lake Dam	Yes – Important	Yes	No	High	A
Lanark Dam	No	Yes	Yes – Lanark Village	None	A
Mazinaw Lake Dam	Yes – Important	Yes	Yes – Little Marble/Marble Lake	Low	A
Mississagagon Lake Dam	Yes – Important	Yes	No	None	B
Pine Lake Dam	Yes – Support	Yes	No	None	C
Shabomeka Lake Dam	Yes – Support	Yes	No	Low	B
Widow Lake Dam	Yes – Support	Yes	Yes – Lanark Village, Cedardale	None	B

Table 2. Levels of Service

Service Level	Category A	Category B	Category C	How is this tracked?
Emergency Preparedness & Response Plan	Update annually or as deemed practical.			Date of most recent revision tracked in EPRP.
Public Safety Plan	Update periodically or following any major changes occurring at the site that are likely to affect public safety.			Date of most recent revision tracked in PSP.
Inspections	Visual inspections are completed when operating a dam. Engineering inspections are completed annually.			Inspection form completed at each inspection and filed.
Operations	Operated on an as-needed basis.		Not operational, or on an as-needed basis.	Operations and visual inspection form is completed and saved to WISKI.
Leakage	Tarps may be installed in certain circumstances (i.e. low water or drought conditions).	Tarps may be installed in certain circumstances (i.e. low water or drought conditions).	Unless severe, sluiceway seepage is not a concern.	Inspection form completed at each inspection and filed.
Complaints	Complaints will be investigated at the next scheduled inspection.			Tracked in spreadsheet form and filed.
Minor/Routine Maintenance	Painting, grass mowing, lubrication and similar completed on an annual basis.			Operations Department Work Plan and Schedule
Dam Safety Reviews	Recommended every 10 years	HPC should be reviewed every 10 years to determine whether a change in HPC is warranted. If the HPC rating increases, a DSR will be required at that time.	HPC should be reviewed every 10 years to determine whether a change in HPC is warranted. If the HPC rating increases, a DSR will be required at that time.	Capital Planning
OMS Manuals	Update on an as-needed basis or if a DSR deems it necessary.			Filed

6.0 CORPORATE STRATEGIC PLAN

Approval and implementation of the Asset Management Plan – Water Control Infrastructure supports achievement of the following Corporate Strategic goals and objectives.

Goal 1: Asset Management – revitalize watershed management activities and invest in our legislated mandate.

- a) Implement the five-year capital program.
- b) Strengthen our risk analysis and management capacity to include climate change and development impacts.
- e) Plan for the next phase of asset development and management.

Goal 3: People and Performance – support the operational transformations required to achieve MVCA’s priorities and to address legislative changes.

- a) Staff the organization to allow for: delivery of mandatory programs and services, priority projects, and fulfillment of commitments made under memoranda of understanding (MOUs) and other agreements.
- b) Monitor the quality, efficiency and impact of what we do and modify to improve operational effectiveness.

Asset Management Plan

October 2024

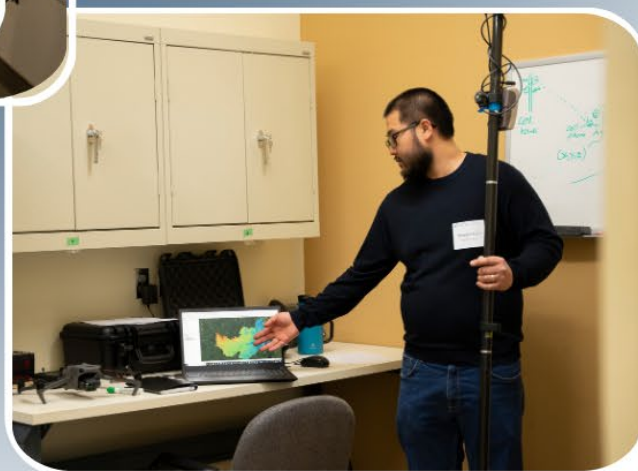


Table of Contents

1	Mississippi Valley Conservation Authority (MVCA)	1
2	Asset Management Planning (AMP)	2
2.1	Asset Management Goals & Objectives	2
2.2	Tangible Capital Assets & Asset Classes	3
2.3	Asset Registers	4
2.4	Inspection and Condition of Infrastructure	5
2.5	Asset Planning & Renewal	6
2.6	Funding	8
2.6.1	Municipal Levies	8
2.6.2	Water & Erosion Control Infrastructure Program	8
2.6.3	Other Grant Programs	9
2.6.4	Loans	9
2.6.5	User Fees	9
2.6.6	Capital Reserves	9
2.7	Plan Implementation, Review & Update	10
3	Water Control Structures	11
3.1	Water Control System Definitions	12
3.2	Water Control Structure Asset Inventory	14
3.2.1	Shabomeka Lake Dam	14
3.2.2	Mazinaw Lake Dam	15
3.2.3	Kashwakamak Lake Dam	16
3.2.4	Mississagagon Lake Dam	17
3.2.5	Farm Lake Dam	18

3.2.6	Big Gull Lake Dam	19
3.2.7	Pine Lake Dam.....	20
3.2.8	Bennett Lake Dam.....	21
3.2.9	Widow Lake Dam	22
3.2.10	Lanark Dam	23
3.2.11	Carleton Place Dam.....	24
3.2.12	Glen Cairn Flood Control Facility.....	25
3.3	System Management	25
3.3.1	Federal and Provincial Guidelines.....	27
3.3.1.1	Canadian Dam Association Guidelines.....	27
3.3.1.2	Ministry of Natural Resources Guidelines	28
3.3.1.3	Technical Bulletins	29
3.3.2	Operation, Maintenance, and Surveillance Manual	29
3.3.3	Emergency Preparedness & Response Plan.....	29
3.3.4	Public Safety Plan	30
3.3.5	Hazard Potential Classification.....	30
3.3.6	Dam Safety Review	30
3.4	System Operation	31
3.4.1	General Operating Principles	31
3.4.2	Crotch Lake.....	33
3.4.3	Objectives.....	33
3.4.4	Guiding Principles.....	34
3.5	Levels of Service	34
3.5.1	Category Definition	35

3.5.2 MVCA Dam Categorization & Service Levels..... 36

4 Future Considerations..... 39

5 References 40

Appendices

Appendix A – Board Approved Restricted Reserve Funds (2023)

Appendix B – Corporate Needs Assessment Update

1 Mississippi Valley Conservation Authority (MVCA)

The MVCA is a provincial agency established in 1968 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 jurisdiction is composed of a network of rivers, streams, rapids and lakes, and a variety of landscapes from dense forests on the Canadian Shield to densely populated urban areas within the City of Ottawa.

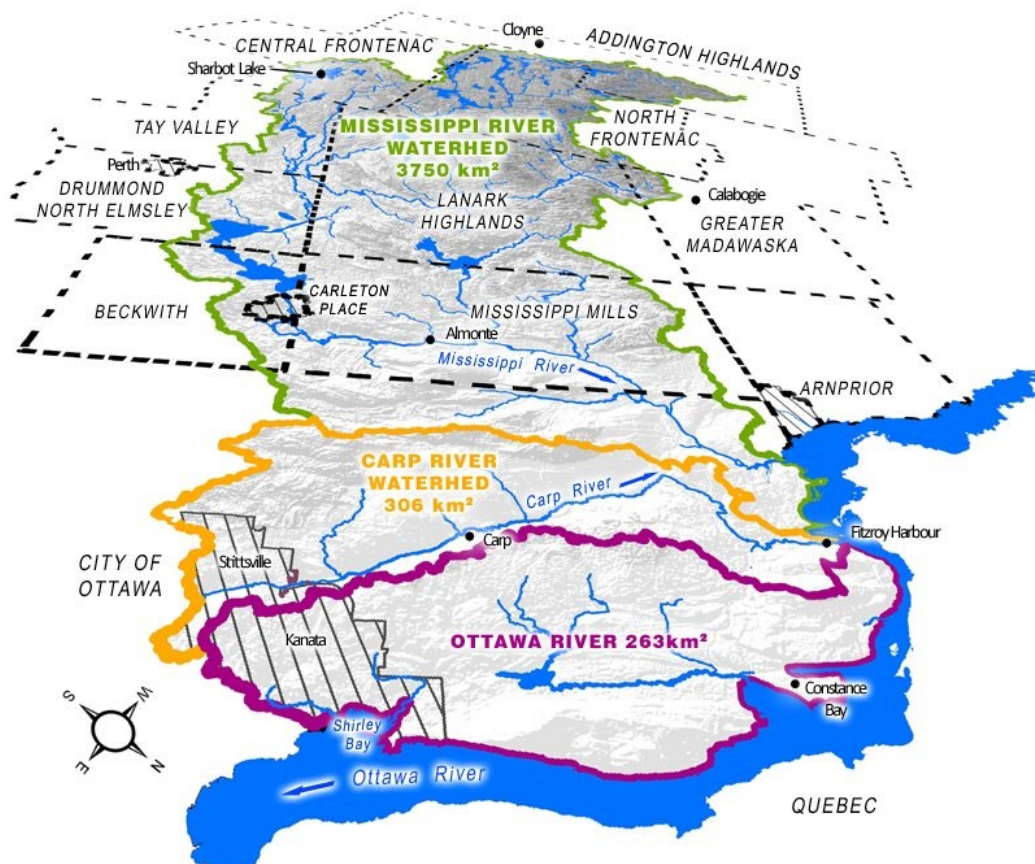


Figure 1. MVCA's Jurisdiction

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 the 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.

2 Asset Management Planning (AMP)

MVCA began to prepare asset management policies and supporting documents in 2008 in anticipation of PSAB 3150 taking effect in 2009, which changed the financial accounting method for Tangible Capital Assets (TCAs) by government entities including conservation authorities.² Since then, MVCA has taken several steps to improve management of its assets including:

- Drafting an asset management policy and asset management strategy;
- Implementing a corporate Needs Assessment registry that is updated annually and addresses both operational and capital deficiencies and opportunities for improvement;
- Using the registry to identify priorities, inform annual work plans and budgets and to update of the *10-year Capital Plan*.
- Using a 10-year Schedule of Municipal Capital Levy Increases to implement the Capital Plan.

While MVCA has many tools typical of an Asset Management Plan, to date the Authority has not had a Board-approved document with that title. This document represents Version 1 of MVCA's Asset Management Plan. It contains high level goals, objectives and policies that will apply to all MVCA TCAs, but focuses on Water Control assets in fulfilment of Section 5.(2)2. of O. Reg. 686/21 under the *Conservation Authorities Act*, RSO 1990. Additional chapters will be added as resources allow.

2.1 Asset Management Goals & Objectives

The **Goals** of the Asset Management Plan are to:

1. Ensure business continuity and public safety.
2. Establish service levels and performance expectations.
3. Optimize investments in assets for the short and long-term.
4. Provide transparency in asset management.

The **Objectives** of the Asset Management Plan are the following:

1. Assets are inventoried, monitored, and actively managed throughout their lifecycle.
2. Assets are operated and maintained in accordance with agreed upon service levels.
3. Tracking and analysis of asset history are leveraged for continuous improvement.
4. Asset additions, betterments, and disposals are transparent and affordable.³
5. Funding is available when needed to maintain business continuity and public safety.
6. Long-term asset investments take into consideration evolving conditions (e.g. regulatory, climatic, technological) and the long-term consequences of decisions being taken.

² <https://www.frascanada.ca/en/public-sector/projects/gnfp-capital-assets/in-brief-psab-ed-tangible-capital-assets>

³ "Additions" is to buy or build a new asset. "Betterment" is to enhance the functionality or extend the life of an existing asset. "Disposal" is to sell, decommission, or demolish an asset.

The following tools will continue to be used at the corporate level to manage assets under this plan:

- **Asset Registries** that list assets, acquisition details, and tracks investments and depreciation.
- Agreed upon **Service Levels** or **Performance Standards** needed to meet program requirements.
- **Operations and Maintenance Plans** that meet regulatory and industry standards.
- A corporate **Needs Assessment** registry that list deficiencies and opportunities for improvement, and prioritizes them using risk based-analysis.
- **Corporate Strategic Plan (CSP)** that sets 5-year goals and objectives.
- **CSP Implementation Plan** that identifies project and program priorities for the 5-year period.
- **Annual Work Plans** that identify priorities for the current fiscal year.
- The **10-year Capital Plan** that identifies priorities for the current and future years.
- The **Schedule of Capital Levy Increases** to sets the percent increase required to deliver the Capital Plan.

Individual program areas will develop asset-specific tools to support implementation of this plan.

2.2 Tangible Capital Assets & Asset Classes

MVCA owns/leases the following major Tangible Capital Assets⁴ (TSA) with a combined replacement value in the order of \$75-100 million:⁵

- six 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, and
- its headquarters on Hwy. #7 that houses offices, a garage, laboratories, and a work yard.

MVCA assets are divided into the following asset classes for accounting and asset management purposes:

- | | | |
|----------------------------|-------------------------|--------------------------|
| • Land | • Vehicles | • Buildings |
| • Land Improvements | • Machinery & Equipment | • Leasehold Improvements |
| • Water Control Structures | • Hardware/Software | • Furniture & Fixtures |

⁴ Tangible assets are physical assets that can be seen, touched and felt. By comparison, an intangible asset is a non-monetary asset that cannot be seen or touched. Source: <https://www.bdc.ca/>. PSAB 3150 requires MVCA is required to track and depreciate assets with a value >\$10k.

⁵ This high-level estimate excludes property value. Heritage structures are irreplaceable; therefore, this estimate assumes like for like floor space built to current standards.

2.3 Asset Registers

A review of MVCA's asset management practices was carried out in 2017, which has been updated for this Plan.⁶ MVCA maintains several asset registers which are at various stages of development and usefulness. Two registries are managed at the corporate level:

1. Tangible Capital Assets register used to implement accounting directive PSAB 3150.
2. Land Inventory prepared in accordance with O. Reg. 686/21.

The following registries are used by program areas to track assets and support decision-making:

- Water Control Structures – The Operations, Maintenance & Surveillance (OMS) Manual for each dam details its components parts and the history of the asset amongst other matters.
- Buildings - List of major structures but no tracking by subclass (e.g. cladding, roof, glazing, power lines, HVAC, private services.)
- Vehicles/Fleet – Lists items, manufactured year, make/model, key attributes, and mileage (if applicable).
- Hardware & Software – Lists all items, acquisition date, key attributes, warranties, and software on device; software is tracked by whether it is owned or SaaS, and whether it is supported; comprehensive network diagram.
- Furniture – Inventoried for insurance purposes.

The approach to tracking and managing machinery and equipment varies across the organization. For example, tools and machinery used for system operations and conservation area maintenance are inventoried with date of purchase and key details. Leased equipment (e.g. photocopier) is managed on a contract basis, but not as part of an inventory. Field monitoring equipment is tracked differently depending upon the type.

No asset registries exist for the following:

- Conservation Area Trails/Bridges/Culverts
- Conservation Area Other (e.g. privies, picnic tables, play structure)
- Off-site Road-side Signage

1. Registries will be developed and maintained for asset classes and subclasses, that documents the time and expense invested in those assets over their lifecycle, and their depreciating value.

⁶ Bolivar Philips and BluMetric Environmental Inc. *Asset Management Preliminary Study*. January 2017.

2.4 Inspection and Condition of Infrastructure

Annual or more frequent inspections and condition assessments are a regular practice at MVCA. Depending upon the scope and value of an asset, the decision to repair or replace an item may require study by external specialists. The following is a summary of key inspection and condition monitoring practices:

- Water Control Structures:
 - Visually during every log operation
 - Every spring for public and operator's and safety during annual preventative maintenance
 - Visually at least once annually by the Engineering Department
 - Dam Safety Review – carried out in order of priority
 - Condition Assessment Report – carried out in order of priority
 - In response to calls from public
- Trail/bridges/culverts:
 - Trails-every spring and fall to remove hazardous trees/limbs and to clear debris from the paths
 - Trail-following major weather events to remove hazard trees/limbs and debris and during the season as time permits
 - Culverts-in response to calls from public
 - Study of bridge over the Clyde River carried out in 2020
- Vehicles
 - Employee walk-arounds before each trip
 - Monthly inspections of vehicles, fluid levels, tires etc.
 - Maintenance is as scheduled in accordance with warranties and as required
 - Yearly undercoating of vehicles, and washing after heavy use
- Computer Hardware
 - Ongoing scanning for viruses
 - Penetration-test (internal and external) conducted in 2023
 - Annual scheduled maintenance of all desktops and laptops
 - Helpdesk support and some tracking of chronic issues
 - Study carried out in 2023 regarding server replacement options
- Major Equipment
 - Preventative maintenance (PM) agreements are in place for the HVAC and generator at HQ

With few exceptions, there are limited performance standards in place for MVCA's assets and the programs they support. This can lead to uncertainty regarding what is "acceptable" in terms of asset condition, performance, and follow-up action, as well as failures in public confidence.

2. Service standards will be set for key asset classes and subclasses.
3. Inspection and maintenance schedules will be developed and implemented for asset classes and subclasses to optimize their function and identify needs and trends in a timely and cost-effective manner.

2.5 Asset Planning & Renewal

Most MVCA assets are at least 10 years old, several are over 100 years old (dams, and heritage buildings at the Mill of Kintail.) Assets less than 10-years old are typically vehicles and equipment (e.g. gauges, drone, computer hardware.) Prior to making a significant investment in either acquiring a new asset or enhancing an existing asset, MVCA goes through several steps best described as “Adaptive Management”. This is a decision-making process that involves testing, monitoring, and evaluating, and incorporating new knowledge into asset management approaches. The continuous improvement cycle can be summarized as Plan-Do-Check-Adjust, as described below.

- **Plan:** Identify an opportunity for improvement and plan for change. Complete the necessary studies, processes, and permits before undertaking the project.
- **Do:** Implement the change at the desired scale.
- **Check:** Use data to analyze the results of the change and assess planned and unplanned inputs (cost, time etc.) and outcomes (effectiveness, acceptance, unintended consequences.)
- **Adjust:** Adjust the approach if needed, implement on a broader scale if appropriate, and begin the cycle again.

For example, MVCA tracks vehicle maintenance and repair costs and fleet usage before deciding whether to invest in a major repair on a vehicle, or to repurpose a vehicle, or to use residual value to offset the acquisition of a new vehicle, or to simply dispose of it. This is an ongoing process and allows MVCA to optimize use of and investment in its fleet.

MVCA implements this approach in several areas of its business, and is gradually implementing across the organization. The key first step is the documentation of a plan for each asset with defined service levels. This Asset Management Plan will support MVCA in the documentation of service expectations, and defining

Based upon the current condition and maintenance history of an asset, it will be added either to a current year work plan or to MVCA’s Needs Assessment Registry. Thereafter, staff follow corporate procurement policies and provincial regulations such as environmental assessment processes to buy/replace or to plan, design, and build an asset. MVCA’s asset renewal and replacement process for water control structures is shown in Figure 2. A comparable approach is used for most other assets.

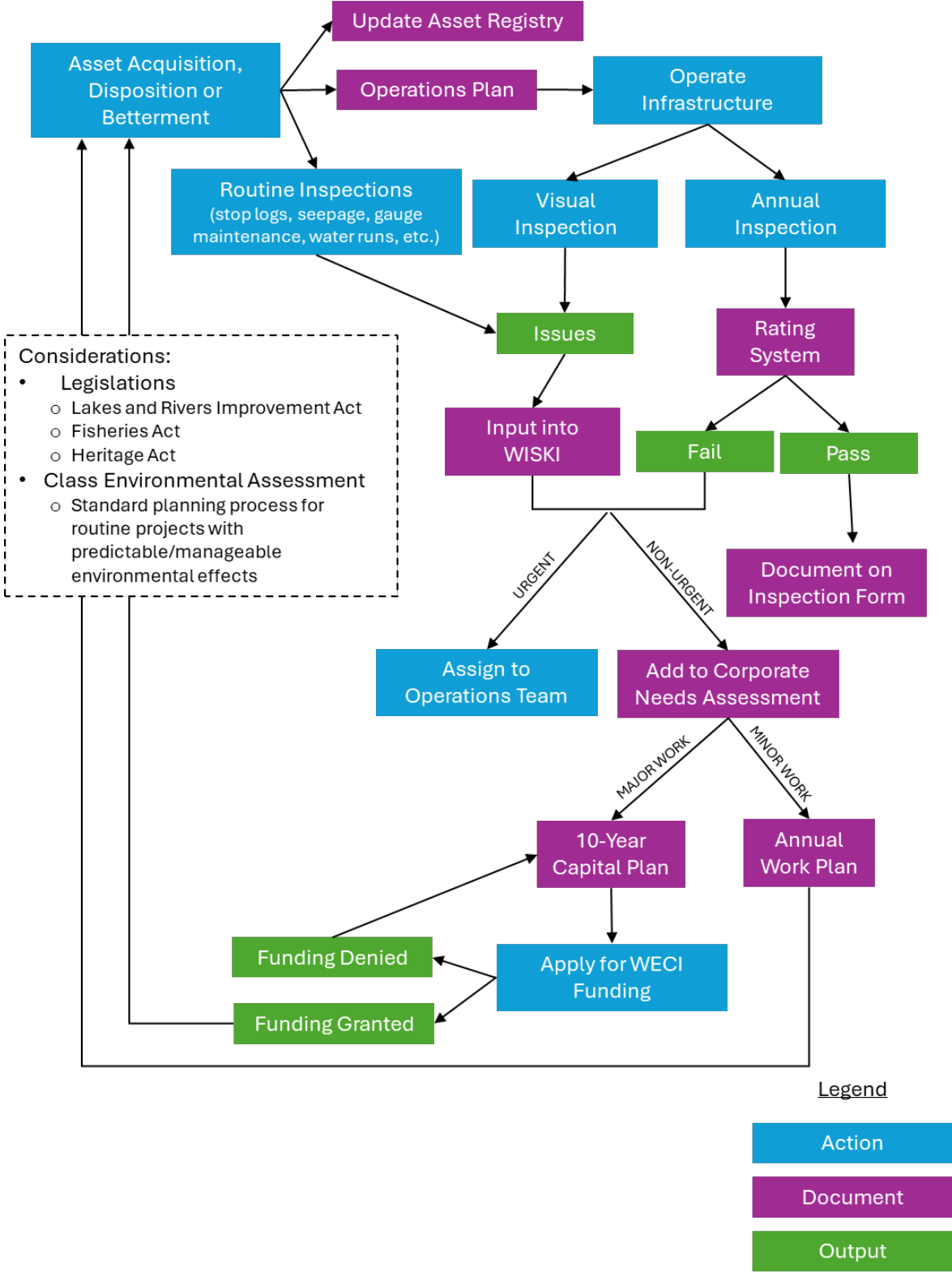


Figure 2. MVCA Asset Renewal & Replacement Process (Water Control Structures)

4. Trend analyses and predictive modeling will be used to develop and assess alternative approaches to operating and maintaining assets and for infrastructure design and purchases.
5. Where appropriate, options will be tested and assessed and applied more broadly.
6. Findings will be used to prioritize asset studies, renewal, and replacement projects in the annual Needs Assessment registry and 10-year Capital Plan.

2.6 Funding

As of 2023, MVCA received approximately 65% of its operating revenues and 75% of its capital revenues via the annual Municipal Levy which it receives from the eleven municipalities served. The balance is obtained primarily through user fees and upper-tier government grants, with some additional funds received through donations and interest earned. There are implicit limits to these funding sources, and programs must be delivered in a cost-effective manner. This Asset Management Plan will support the wise investment of resources into MVCA's assets.

2.6.1 Municipal Levies

Conservation authority programs and services are grouped into three categories that influence how activities and assets are funded by municipalities⁷:

Category 1: Mandatory programs and services, e.g. dam operations, hazard mapping and regulatory services, provincial water quality monitoring, education and outreach related to these matters, and 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 some education programs.

Annual levies are charged to municipalities according to the scope of Category 1, 2, and 3 programs delivered in their jurisdiction. Revenues for the three categories are tracked separately, and money collected for Category 1 programs cannot be reallocated to Category 2 or 3 programs. Similarly, separate capital reserves have been established to support Category 1 and Category 3 program assets.

2.6.2 Water & Erosion Control Infrastructure Program

The study and renewal of MVCA's dam infrastructure relies upon funding under the provincial Water and Erosion Control Infrastructure (WECI) Capital Investment Program for Conservation Authorities. WECI is a Ministry of Natural Resources (MNR) capital cost share program with municipalities to provide

⁷ Refer to [O.Reg. 402/22](#)

matched funding to conservation authorities for major maintenance or related studies of water or erosion control structures that are either owned or maintained by conservation authorities.

Conservation authorities are invited to submit applications for eligible projects for funding, including dams, dykes, shoreline erosion protection, and flood control channels. The program is a 50/50 cost share with the local municipality or contributors and must be completed within the fiscal year in which they are approved and funded. Applications are reviewed by a committee that determines the priorities within the following funding categories:

1. Safety Projects – repairs or studies of smaller value that are prioritized for funding. All safety projects are automatically funded.
2. Repair Projects – approximately 80% of funding is allocated annually to repairs.
3. Study Projects – approximately 20% of funding is allocated annually to studies.

Most repair and study projects at MVCA cannot proceed unless they receive funds under the WECl program as evidenced in 2024 when matching dollars were not granted for a Dam Safety Review.

2.6.3 Other Grant Programs

Many governmental and non-governmental grant programs require dollar-matching from the recipient organization so that, generally, MVCA must secure at least 50% of the funds through its own sources before it can proceed with a project. Typically, those monies would come from either the current operating revenues, or the drawing down of a capital or operating reserve. Over the period 2018-2022, MVCA made an average annual net contribution to capital reserves of ~\$168,500/year and ~\$166,400/year to the operating reserve.

2.6.4 Loans

MVCA is prohibited by legislation from securing a direct loan from a bank or other organization without the sponsorship of one of its member municipalities. Currently, MVCA has loans with the Town of Carleton Place and the City of Ottawa for the construction of the HQ and Shabomeka Dam, respectively.

2.6.5 User Fees

User fees are typically used to support operating costs and do not contribute significantly to capital reserves for capital renewal.

2.6.6 Capital Reserves

In order to meet asset renewal and replacement requirements set out in the *10-year Capital Plan*, MVCA's Board has approved a 10-year schedule of annual increases to the capital portion of the Municipal Levy. As well, in 2023 it approved targets for each of the restricted reserves:

- a) "Water and erosion control asset reserve funds should have a balance equal to or greater than 50% of the approved 8-year capital program, up to a maximum of \$500,000 per project. For

projects greater than \$500,000, add the annual cost to carry 50% of the project cost at 5% interest paid monthly, amortized over 20 years.

- b) All other reserve funds established for TCAs should have a balance equal to or greater than the approved 5-year capital program for those assets, or as specified” in Appendix A.

MVCA is not currently putting aside funds for longer term asset renewal and replacement; and the depreciation values captured in annual Financial Statements understate the liability of long-term asset replacement.

7. The 10-year Schedule of Municipal Capital Levy increases should be updated every 4-years.
8. The actual replacement value of all asset classes and subclasses should be valued where they have an estimated value >\$50,000.
9. Projected asset renewal and replacement cost requirements for the next 25 years should be calculated and an affordability assessment completed.

2.7 Plan Implementation, Review & Update

This Asset Management Plan identifies several deficiencies and requirements, and will take several years to fully implement. Priority items will be added to the next iteration of the corporate Needs Assessment and undertaken as resources allow.

Over time, some conditions will change, such as:

- Changes to MVCA’s mandate,
- Changes to MVCA’s funding mechanisms and budgets,
- Changes to governing regulations and policies,
- Population and land use changes across the watershed, and
- Evolving climatic conditions.

For this reason, periodic review and update of the Plan are required.

10. The *Asset Management Plan* will be updated at least once every 5 years.

3 Water Control Structures

Water control structures are used to manage water levels and flows in the Mississippi River system. Most dams were originally built to maintain sufficient water levels to allow timbers to be floated downstream, but now serve various purposes including flood protection, low flow augmentation, ice management, recreational access, erosion control, and maintaining flow and level requirements for fish and wildlife habitat.

There are 24 water control structures within the MVCA's jurisdiction. Twelve of the water control structures in the Mississippi River system have a significant impact on water levels and flows, six of which are owned by MVCA:

- Shabomeka Lake Dam
- Mazinaw Lake Dam
- Kashwakamak Lake Dam
- Big Gull Lake Dam
- Mississagagon Lake Dam
- Carleton Place Dam.

Ontario Power Generation (OPG) owns the Crotch Lake Dam, and the other five operate as hydro-electric energy generating systems (High Falls, Appleton, Enerdu, Brian J. Gallagher and Galetta).

Of the remaining 12 water control structures in MVCA's jurisdiction, six are owned by MVCA (Farm Lake, Pine Lake, Bennett Lake, Widow Lake, and Lanark Dams, and the Glen Cairn flood control facility), and six are owned by the Ministry of Natural Resources (MNR) (Malcolm, Mosque, Summit, Palmerston, Canonto, and Clayton Lake Dams).

All water control structures are shown in Figure 3. The most significant reservoir on the Mississippi River system with regards to flood mitigation and low flow augmentation is Crotch Lake, located in the western sub-watershed (MVCA et al, 2020). The importance of Crotch Lake is further discussed in Section 3.4.2.

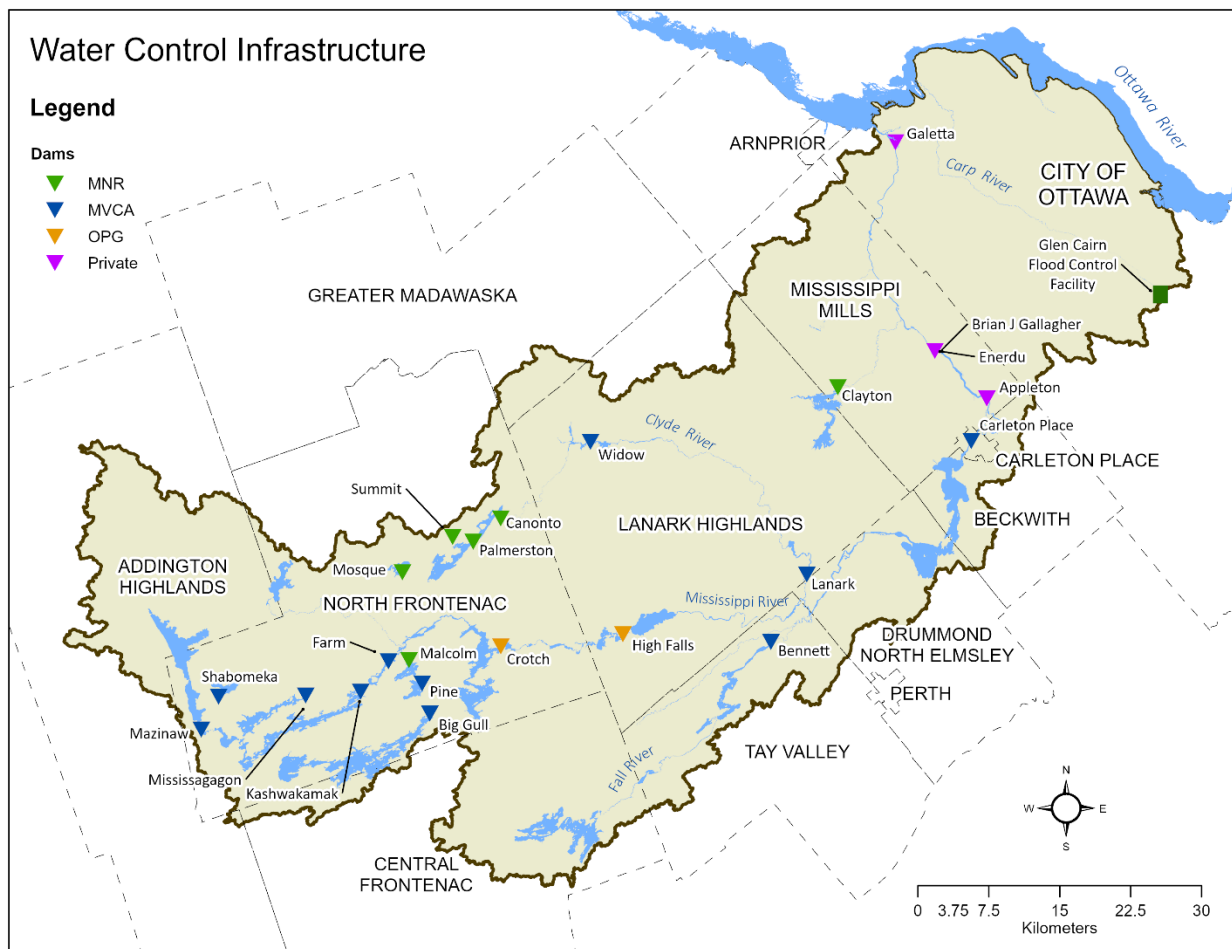


Figure 3. Water Control Structure Infrastructure in MVCA's jurisdiction

3.1 Water Control System Definitions

Abutments – the valley side or concrete wall against which a dam is constructed. The left and right abutments are defined with the observer viewing the dam looking in the downstream direction.

Dam Safety Review (DSR) – a systematic review and evaluation of all aspects of design, construction, maintenance, operation, and surveillance, and other factors, processes and systems affecting a dam's safety (Ontario MNR, 2011d).

Emergency Preparedness & Response Plan (EPRP) – describes the actions to be taken by the dam owner and operator in an emergency and assign responsibility for each action to be taken by an individual and/or a backup.

Gantry – a fixed or travelling bent-supported crane for handling heavy equipment.

Hazard Potential Classification (HPC) – determined through an assessment of the greatest incremental losses that could result from an uncontrolled release of the reservoir due to the failure of a dam or its appurtenances. Dams can be classified with an HPC of low, moderate, high, or very high.

Inflow Design Flood (IDF) – the most severe inflow flood (peak, volume, shape, duration, timing) for which a dam and its associated facilities are designed.

Mississippi River Water Management Plan (MRWMP) – documentation required by the Ministry of Natural Resources (MNR) that documents operating ranges and monitoring strategies for water control infrastructure in the Mississippi River watershed.

Mississippi River Improvement Company (MRIC) – formed in 1909 to hold title and operate dams at Crotch, Big Gull, and Kashwakamak Lakes, and later assuming maintenance and operation of Mazinaw, Shabomeka, and Mississagagon Dams. MRIC was formally dissolved in 1991 after shifting responsibilities to Ontario Hydro (Crotch Lake Dam) and MVCA (all other MRIC dams).

Public Safety Plan (PSP) – documents the existing site conditions and operational practices, as well as the identified public safety hazards, risk assessment results, recommended measures to either eliminate or mitigate the risks, and suggested practices for raising public awareness of the hazards related to the dam and its operation.

Sill – level up to which a dam can be emptied by flow through gravity.

Wing Walls – located adjacent to the abutments and act as retaining walls.



Figure 4. Dam Illustration with Key Components Labelled

3.2 Water Control Structure Asset Inventory

MVCA owns twelve water control facilities, and has contracts to operate facilities for OPG and MNR. This section only discusses the facilities owned by MVCA.

3.2.1 Shabomeka Lake Dam

The Shabomeka Lake (also known as Buck Lake) Dam, formerly an abandoned lumbering dam, was rehabilitated by Ontario Hydro Eastern Region in 1959 on behalf of the Mississippi River Improvement Company (MRIC). The dam is located in the Township of North Frontenac, on Semicircle Lake, which then flows into Mazinaw Lake, and is considered a headwater lake on the Mississippi River.



Figure 5. Shabomeka Lake Dam

Shabomeka Lake Dam is the first major water control structure in the headwaters of the Mississippi River watershed. MVCA assumed ownership and operation of the dam from MRIC in January 1991. The dam is a single bay concrete stop log structure with an earthen overflow embankment on either side of the control section. There is a total of 8 (eight) stop logs in the dam. The winch equipment consists of a 1-ton chain fall assembly on an overhead gantry system. The gantry system was engineered to also act as an overhead for fall arrest for the operators.

In 1998, extensive repairs were undertaken to the concrete surfaces of the dam, the piers were cleaned of deleterious concrete, and rebar was added, formed and re-poured. During 2021-22, MVCA carried out major reconstruction of the earthen abutments, replacement of metal works, and installation of various safety measures.

The earth embankments rehabilitation included a new cement-bentonite cut-off wall. A new emergency spillway was also constructed consisting of coarse rip-rap material within the north end of the dam.

Seepage has been and continues to be observed at the downstream end of the new emergency spillway. A non-destructive geophysical survey program was developed to delineate potential pathways of water seepage within the earth dam.

3.2.2 Mazinaw Lake Dam

The Mazinaw Lake Dam is located on Lot 31, Concession X, in the former Township of Barrie, North Frontenac. Constructed in the 1860s, its primary purpose was to maintain sufficient levels in the lake for logging. During the major floods of 1922, the dam was washed out and reconstructed the following year by the MRIC.

MVCA took over ownership and operation of the dam from MRIC in 1991 and rebuilt it in 1992. Several improvements have been made to the structure including installation of several safety measures such as an overhead gantry, gates, fencing, and new booms.



Figure 6. Mazinaw Lake Dam

The by-pass was washed out in the both the 2002 and 2019 floods; both times the fill was replaced later in the year. In general, the earth and concrete structures meet all stability criteria under normal and extreme conditions. Under the Inflow Design Flood (IDF), the earth spillway will be overtopped by about 0.2 m, but the dam structure is expected remain stable assuming all logs are pulled out of the two concrete spillways. Under this relatively minor overtopping of the earth spillway, scour of the sandy matrix between boulders could occur, which will necessitate repairs following the flood event to maintain the integrity of the structure. During overtopping, access to the dam control structure from the access road over the emergency spillway at the left abutment may not be possible. Access from the right abutment is feasible, but it is a walking-only access.

3.2.3 Kashwakamak Lake Dam

The Kashwakamak Lake Dam is in the Township of North Frontenac on the main channel of the Mississippi River and discharges to Farm Lake. The Kashwakamak Lake Dam was built in 1910 by the MRIC. In 1991, ownership and operation were transferred to the MVCA. The structure includes a small concrete saddle dam, an overflow weir spillway, and a sluiceway containing two stop log bays. The stop logs are placed and removed using manually operated chain falls as part of an overhead gantry system. There are steel handrails around the control structure and a floating safety boom upstream of the dam.



Figure 7. Kashwakamak Lake Dam

The Kashwakamak Lake Dam is one of six major dams managed to alleviate flooding and drought along the Mississippi River, protecting people, property, infrastructure, and natural ecosystems both upstream and downstream of the dam. Recreational development along the shoreline of Kashwakamak Lake includes over 500 residences/cottages and at least five marinas/resorts. There are also several wetlands around the perimeter of the lake and manòmin (wild rice) crops downstream of the dam.

The dam had undergone relatively minor repairs to the concrete surfaces until 1988, when extensive work was completed to the concrete surfaces of the weir. In 1995, MVCA undertook a repair program to reduce or eliminate the seepage around the earth embankment at the entrance to the dam. In 2000, MVCA undertook a grouting program and repairs to cracked and spalled concrete on the weir and the abutments. In 2002, the deck of the dam was replaced. In 2020, a proposed repair option was prepared by Cleland Jardine Engineering Ltd, which was not implemented. A Class Environmental Assessment was initiated in 2023 in preparation for potential reconstruction of the dam.

The proposed reconstruction project is to replace the Kashwakamak Lake Dam to mitigate the risk of dam overtopping and failure, which has been exacerbated by more frequent and severe extreme weather events. A 2022 Dam Safety Review Report completed by Hatch Ltd. states that the dam concrete structures are deteriorating and require substantial rehabilitation or replacement within the next five years. Major concrete repairs are required at the overflow structure, which has extensive spalled concrete surfaces at the upstream face and a severely deteriorated horizontal joint at the toe.

The new dam will be designed for an updated IDF and HPC to effectively address the increasing risk of failure of the existing structure. The project will incorporate future climate change considerations into the new dam design to ensure the new structure provides much needed flood protection and mitigation to the local communities, residents, businesses, and environment over the course of its service life.

3.2.4 Mississagagon Lake Dam

Mississagagon Lake Dam is located at the east end of Mississagagon Lake on Swamp Creek. It is situated approximately 15 km east of Cloyne on Lot 2, Concession IX in the Township of North Frontenac. The dam was originally built to support lumber operations in the 1860s. In 1923, it was reconstructed by the MRIC as a rock filled timber crib dam with wood sheeting on the upstream face. The sluiceway was rebuilt in 1960, and a concrete membrane was installed on the upstream face in 1973. Ownership was transferred from MRIC to MVCA in January 1991. Until 1997, dam operations were carried out by locals on a contract basis. Access to the structure is via a 0.5 km (privately owned) dirt road.



Figure 8. Mississagagon Lake Dam

Mississagagon Lake Dam is one of six key flood control structures in the Mississippi River watershed that act as storage reservoirs in the spring to alleviate flooding.

The dam is located just west of the hamlet of Fernleigh at the outlet of Mississagagon Lake. The dam has a single stop log bay containing six stop logs. The stop logs are bolted together in groups of four and two, effectively make them two stop logs.

The downstream channel is extremely shallow and vegetated most of the year. There is visible seepage along the north channel immediately below the dam.

An annual dam inspection of the Mississagagon Lake Dam identified high risk operational and public safety issues. These issues were addressed in 2023 by installing important safety measures including embankment steps and deck upgrades.

3.2.5 Farm Lake Dam

The Farm Lake Dam is located in the Township of North Frontenac. The dam was originally built in 1926 by one of the lumbering companies of that time and was rebuilt by the MVCA in 1976. The access road is privately owned and MVCA has an easement across the road. The dam is an overflow weir and therefore has no operating plan. The dam is used to sustain recreational water levels on the upstream Farm Lake. It has a drainage area of 427.9 sq km and a lake surface area of 120 ha.



Figure 9. Farm Lake Dam

The existing structure is a rock filled timber crib. The upstream face of the dam is sheathed in plywood at a 2:1 slope and has a level top 0.60 m wide. A 0.20 m flashboard was installed across the top of the crib in 1984 by MVCA. The dam varies in height and is 30.08 m long. The weir elevation is estimated to be around 248.01 m.

The wooden flashboards and plywood are repaired and replaced annually on an as needed basis. Leakage issues throughout the summer months have become a common occurrence due to the age and type of weir. Tarps are placed on the upstream plywood to better seal the structure and slow down the seepage. Continuous monitoring and repair of the leakage is needed until the structure can be replaced.

Public safety is also an issue due to easy access to the structure from a neighboring campground that uses the upstream shoreline for swimming and boating. A year-round safety boom has been in place since 1996.

3.2.6 Big Gull Lake Dam

Big Gull Lake Dam is located in the Village of Coxvale (Lot 9 Con IV Clarendon Ward, North Frontenac Township). The original lumberman dam is believed to have been constructed in the mid-1860s.

In January 1991, ownership was transferred from MRIC to MVCA. MVCA has an easement on the municipal right-of-way to access the dam per an agreement between the Townships of Clarendon and Miller, OPG and MRIC that transferred with the dam. The dam is a concrete structure consisting of two bulkhead walls, two sluiceways and a weir. The north bulkhead wall extends from the road embankment to the north pier of the control section, a length of 26.98 m. The wall is divided into two sections. Three concrete piers form the two sluices. The piers support a wooden deck, a steel pipe railing around the deck, and the stop log gantry assembly.

MVCA undertook extensive repairs to the structure in 1995, and a dam safety review was completed in 2006. A visual condition assessment of the dam was carried out in 2016 that concluded the dam was safe to operate for at least another 5 years.



Figure 10. Big Gull Lake Dam

3.2.7 Pine Lake Dam

The Pine Lake Dam is located at the outlet of Pine Lake, just south of the hamlet of Ardoch on Lot 16, Concession 4, Clarendon Ward in the Township of North Frontenac. Around 1970 the Townships of Clarendon and Miller rebuilt the Ardoch Highway and enlarged the culvert at the outlet of Pine Lake. According to residents on the lake, this had an adverse effect on the water levels on the lake. At that time, the cottagers requested that MVCA build a dam at the outlet of the lake. MVCA built a sand bag structure, which deteriorated over time and was not replaced.



Figure 11. Pine Lake Dam

In the late 1980's the residents again requested that MVCA build a more permanent structure. At that time a survey was undertaken to ensure that the majority of the residents around the lake were in favour of this proposal. The majority were in favour and in 1990 MVCA designed and built the present structure. The original operating guidelines called for the stop logs to be removed from the dam in mid-August to ensure the lake dropped enough to allow adequate cleansing of the walleye spawning beds. This was met with opposition and in 1993, following another survey of the residents, the operating guideline was changed to the present one.

Considerable problems with vandals manipulating the stop logs in 2007 resulted in larger fluctuations in water levels than are normally associated with this structure and necessitated MVC putting additional locks on the structure to prevent future problems.

When logs are out of the structure they are kept suspended in the gain by chains and locks. It should be noted that under high flows, the dam should be checked often, as levels in the channel could get high enough to be blocked by the suspended logs in the gain and cause interference with the structure's effectiveness. If this happens logs should be lifted or removed from the gains.

Over the years, seepage has continued to be an issue at this structure especially around the north embankment. There have been multiple attempts to repair the seepage around the upstream north embankment (with rock and or sandbags) and a few of these attempts have been vandalized. This seepage impacts the effectiveness of this structure to maintain stable water levels for the lake above.

In October 2016 a walkway was built between the north and south crib giving operators safer access to the far side of the dam. In summer of 2023 the crib decking was replaced as well as the winch posts. New railings were installed around the crib decking and the seepage around the north embankment was repaired.

3.2.8 Bennett Lake Dam

The Bennett Lake Dam is located at the outlet of Bennett Lake on the Fall River, on Lot 18, Concession X, in the Township of Bathurst, Lanark County. It is accessed via a 100 m private access road.

The dam was built at the request of cottage associations members from Bennett Lake and Fagan Lake in 1964 and again in 1970. In 1970, MVCA received Queens Council approval to undertake a Preliminary Engineering study to access the feasibility of constructing a dam at the outlet of the Bennett Lake. A Water Survey of Canada (WSC) gauge was installed downstream of the dam in 1970 to support analysis.



Figure 12. Bennett Lake Dam

Following the study and consultation with the cottagers, approval was given to construct the dam. MNR staff constructed the dam with MVCA staff on hand to supervise between November 1974 and April 1975 at a cost of ~\$70,000.

A condition assessment of the concrete structure was completed in 2016 that found that concrete deterioration of the center pier had progressed to the point where rehabilitation was warranted within a 5-year period.

3.2.9 Widow Lake Dam

The Widow Lake Dam is located on the Clyde River at the outlet of Widow Lake, adjacent to the French Line and east of the hamlet of Clyde Forks on Lot 16, Con 4, Lavant Ward in the Township of Lanark Highlands. Widow Lake is the last major storage basin on the Clyde River to alleviate spring flooding at Cedardale and Lanark Village.

The dam was originally built in the 1800s to support the timber trade. MVCA purchased the land from John and Grace Grew in 1974 and reconstructed the timber cribbing dam.



Figure 13. Widow Lake Dam

Engineered drawings and specifications were commissioned for replacement of the concrete decking in 2019 but upgrades were not carried out due to expiration of the funding. Work was subsequently deferred due to COVID-19 and other capital priorities.

A landowner on the west side of the dam uses the dam to access their property, which has exacerbated safety concerns at the site. Currently, the dam is blocked for use by vehicular traffic, and railings have been reinforced with safety fencing to prevent accidental falls from the dam. A dam safety review (DSR) is planned for the coming years pending receipt of WECl funding from the province.

Widow Lake Dam is a rock filled gabion basket stop log structure, which has been capped with reinforced concrete. The dam was also built to act as a bridge to allow access to the cottage on the south side of the channel. It has four sluiceways, two on the north and two on the south side of the dam. An earth island separates the control sections. There are a total of 16 logs in the structure, 4 stop logs in each of the four bays. The stop logs are removed and replaced by a portable winch system and winch pods since the dam also acts as a bridge.

Cattails are a major problem at this structure. Removal of cattail mats is difficult because there is not normally sufficient flow to pass the mass through the dam except during spring runoff. Public safety and site security are also major issues at this structure.

In 2017 a Pre-Engineering Study was conducted by Cleland Jardine Engineering Ltd and a preliminary concept for replacing deteriorated components of the dam was developed. The proposed work involved replacement of cracked concrete slabs, wood-framed laydown platforms, wood gain covers and existing handrails. In 2019, Cleland Jardine Engineering Ltd was assigned the dam rehabilitation project including design drawings, tender package and construction review. The design work and tender package was completed but the project was put on hold.

3.2.10 Lanark Dam

The Lanark Dam is located in the lower Clyde River watershed in the Village of Lanark. The dam was originally built as a grist/saw mill in the 1800's. It was rebuilt by the MVCA in 1977.

The dam has a drainage area of approximately 650 km². MVCA operates the dam to mitigate flooding upstream of the George Street bridge in the village of Lanark. The dam is also used to maintain stable water levels for recreation on the river and Kerr Lake and for fire suppression.



Figure 14. Lanark Dam

In 1998, the Clyde River experienced a severe flood. Flows exceeded the 100-year return period and peaked on April 5, 1998 at 158 m³/s.

As a result of this flood, substantial damage occurred to the Lanark Dam as the water levels receded. Levels above and below the dam were almost equal, resulting in a considerable portion of the downstream banks being under water and water over the downstream wing walls. As the levels dropped, the earth behind the gabion baskets lining the bank eroded. The banks and a major scour hole at the end of the downstream apron were repaired in the summer of 1999.

Public safety and site security at this site are an ongoing issue. Located close to the village of Lanark, the dam is used as a roadway for the neighboring truss company and is located next to a public golf course. The public can access the dam, in or on the water, both upstream and downstream of the dam. Vandalism has previously occurred. The current safety boom is a seasonal boom which has been in place pre-1990's. It is removed in the fall and replaced in the spring after high flows decrease because the anchors are not designed to withstand spring flow conditions or ice movement. MVCA intends to replace the seasonal boom with a permanent (year-round) boom and fence off the dam structure to limit public access.

3.2.11 Carleton Place Dam

The Carleton Place Dam is located in the lower Mississippi River watershed in the Town of Carleton Place. The dam was originally built in the 1820's. It was rebuilt in 1973 by the MRIC and MVCA took ownership of the dam in 1975.

The Carleton Place Dam maintains water levels for the Mississippi River in the town and has some impact on water levels on Mississippi Lake located approximately 2 km upstream of the dam. Mississippi Lake is the last major storage basin on the Mississippi River to alleviate spring flooding. There are approximately 1700 residential structures along the shores of the lake, and there is a water intake pipe located between the lake and the dam.



Figure 15. Carleton Place Dam

The dam is a concrete structure consisting of two major sections: a control section and an ogee shaped (round crested) weir. The control section consists of five sluiceways which contain a total of 48 stop logs. There are 10 stop logs in each of the first three bays and 9 in the last two bays. The stop logs are removed and replaced by a gantry system with 2-ton chain hoists that is use under normal conditions as well as a two-rail mounted crab winch system for operating under high flows. The ogee crested concrete weir spans the rest of the river for a distance of 75.15 m. A safety boom extends across the river upstream of the dam to warn boaters and swimmers of the danger.

Public safety and site security are major issues at this structure. Located in the middle of downtown Carleton Place and beside a community park, public can frequent around the dam, in or on the water, both upstream and downstream of the dam. Previous vandalism, tampering of the dam and swimming in front of the structure are an ongoing cause for concern.

A DSR was carried out in 2022, and several safety enhancements were implemented including replacement of the boom system and enhanced gates and signage.

3.2.12 Glen Cairn Flood Control Facility

The Glen Cairn Flood Control Facility is located within the Carp River watershed and owned by MVCA. It was constructed in 1979 at the request of the province and the former City of Kanata to address flooding of Glen Cairn subdivision. This detention basin is not actively operated by MVCA. There is a maintenance agreement in place with the City of Ottawa and MVCA to distinguish responsibility of cost and maintenance of this structure.



Figure 16. Glen Cairn Flood Control Facility

The detention pond area has a concrete inlet along Castlefrank Road and extends to a small concrete weir at the outlet. The pond is surrounded by a well grassed sloped embankment covered with small non-symmetrically placed rip rap along the edge of the pond.

A second inlet channel coming out of the subdivision on the east side of Terry Fox Drive is a relatively straight channel. Three large (estimated 8 foot) culverts and a 4-foot drop box culvert with bars across upstream and downstream openings carry flows from the subdivision under Terry Fox Drive.

3.3 System Management

MVCA operates water control infrastructure according to the management plan shown in Figure 17. Only about half of MVCA's structures are guided by procedures set out in the MRWMP. MVCA uses the MRWMP as well as other federal and provincial guidelines to ensure all applicable standards are met and that MVCA's management practices are updated accordingly. The federal and provincial guidelines are described in Section 3.3.1, followed by a brief description of the various documents MVCA references in operating water control structures.

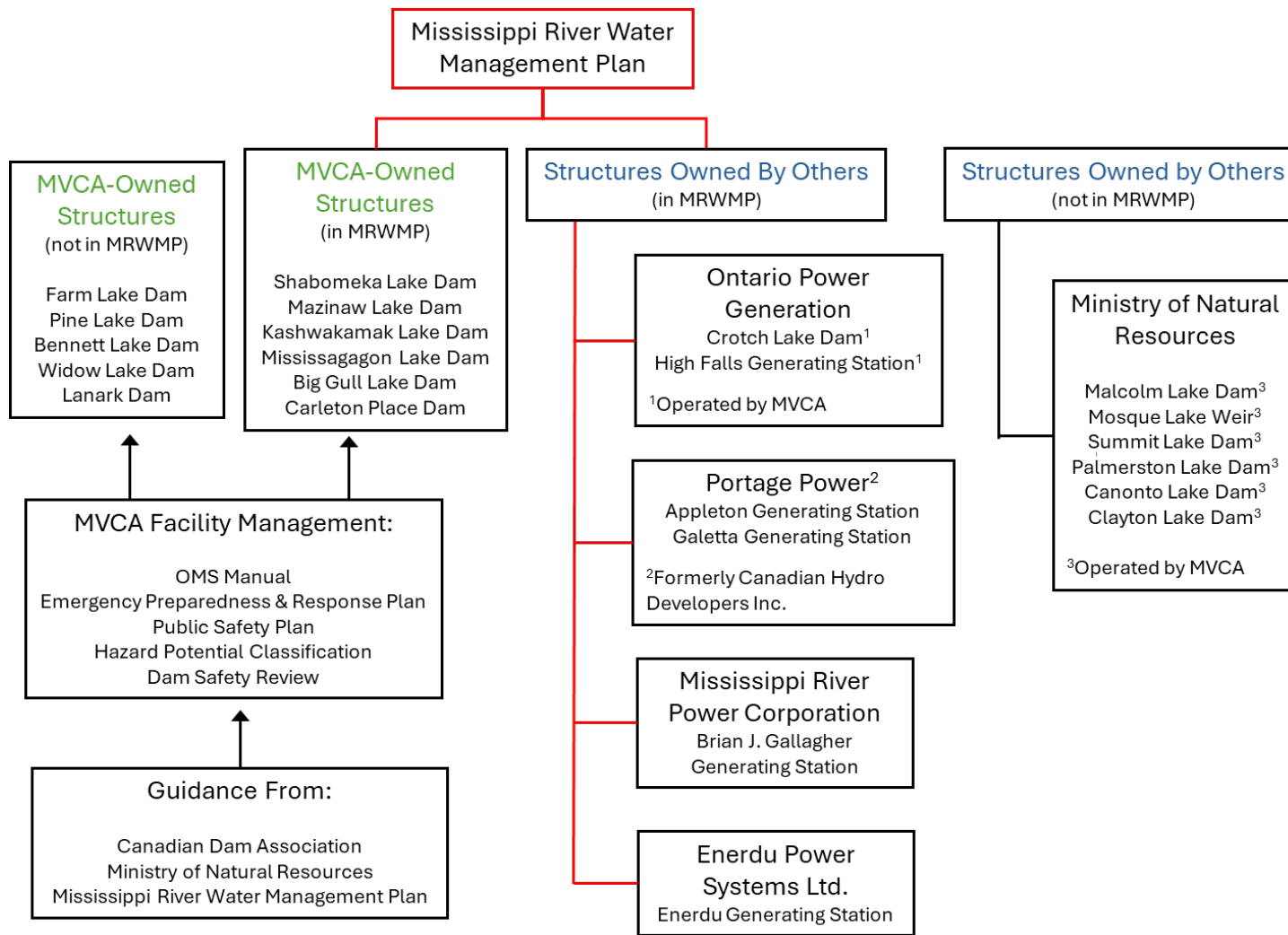


Figure 17. Guidance Documents for MVCA's Water Control Infrastructure

3.3.1 Federal and Provincial Guidelines

3.3.1.1 Canadian Dam Association Guidelines

The Canadian Dam Association (CDA) guidance documents were first published in 1995 and consist of set principles for all dams.

1. Dam Safety Management
 - The public and the environment shall be protected from the effects of dam failure, as well as release of any or all of the retained fluids behind a dam, such that the risks are kept as low as reasonably practicable.
 - The standard of care to be exercised in the management of dam safety shall be commensurate with the consequences of dam failure.
 - Due diligence shall be exercised at all stages of a dam's life cycle.
 - A dam safety management system, incorporating policies, responsibilities, plans and procedures, documentation, training, and review and correction of deficiencies and nonconformances, shall be in place.
2. Operation, Maintenance, and Surveillance (OMS) Manual
 - Requirements for the safe operation, maintenance, and surveillance of the dam shall be developed and documented with sufficient information in accordance with the impacts of operation and the consequences of dam failure.
 - Documented operating procedures for the dam and flow control equipment under normal, unusual, and emergency conditions shall be followed.
 - Documented maintenance procedures shall be followed to ensure that the dam remains in a safe and operational condition.
 - Documented surveillance procedures shall be followed to provide early identification and to allow for timely mitigation of conditions that might affect dam safety.
 - Flow control equipment shall be tested and be capable of operating as required.
3. Emergency Preparedness & Response Plan (EPRP)
 - An effective emergency management process shall be in place for the dam.
 - The emergency management process shall include emergency response procedures to guide the dam operator and site staff through the process of responding to an emergency at a dam.
 - The emergency management process shall ensure that effective emergency preparedness & response procedures are in place for use by external response agencies with responsibilities for public safety within the floodplain.
 - The emergency management process shall ensure the adequate staff training, plan testing and plan updating are carried out.
4. Dam Safety Review (DSR)
 - A safety review of the dam ("Dam Safety Review") shall be carried out periodically.
 - A qualified registered professional engineer shall be responsible for the technical content, findings, and recommendations of the DSR and report.

5. Analysis and Assessment
 - The dam system and components under analysis shall be defined.
 - Hazards external and internal to the dam shall be defined.
 - Failure modes, sequences, and combinations shall be identified for the dam.
 - The dam shall safely retain the reservoir and any stored solids, and it shall pass flows as required for all applicable loading conditions.

8. Planning, design, construction, operation, maintenance and renewal of MVCA water control structures shall reflect the principles established by the Canadian Dam Association.

3.3.1.2 Ministry of Natural Resources Guidelines

The *Lakes and Rivers Improvement Act* (LRIA) provides the MNR with the legislative authority to govern the design, construction, operation, maintenance, and safety of dams in Ontario. The MNR has provided best management practices to Ontario dam owners with guidance on the safe management of dams.

In the MNR Best Management Practices titled *Safety Reviews for Dam Owners* (Ontario MNR, 2011d), DSRs are recommended for High or Very High HPC dams. While a DSR may not be required for Low and Moderate HPC dams, a periodic review of the HPC should be completed every ten years to determine whether a change in the classification of the dam is warranted due to upstream or downstream changes in the watershed. These best management practices should be read in conjunction with the MNR's *Classification and Inflow Design Flood Criteria Technical Bulletin* (Ontario MNR, 2011a).

The MNR Best Management Practices titled *Public Safety for Dam Owners* (Ontario MNR, 2011c) states that dam owners and operators should be aware of both known and potentially significant public safety hazards associated with their structures, their operation and how it impacts the surrounding area. Once these hazards have been identified, public safety measures, commensurate with the potential hazard, should be taken to either eliminate or mitigate the hazard.

9. Dam Safety Reviews should be carried out at all water MVCA water control structures a minimum of every ten years.
10. Unless a public safety hazard can be addressed within the current fiscal year, required works shall be added to the corporate Needs Assessment registry and prioritized.
11. Public safety hazards will be eliminated or mitigated in accordance with their priority as resources allow.

3.3.1.3 *Technical Bulletins*

The LRIA technical bulletins detail MNR requirements for the location, design, construction, operation, decommissioning, removal, maintenance and safety of dams in Ontario. Links to the following bulletins can be readily found on the MNR's Dam Management website (Ontario MNR, 2011b).

- Alterations, improvements and repairs to existing dams
- Classification and inflow design flood criteria
- Dam decommissioning and removal
- Geotechnical design and factors of safety
- Location approval for dams
- Maintaining water management plans
- Seismic hazard criteria, assessment and considerations
- Spillways and flood control structures
- Structural design and factors of safety

3.3.2 **Operation, Maintenance, and Surveillance Manual**

Each MVCA dam has an Operation, Maintenance, and Surveillance (OMS) Manual. The OMS Manual includes guidance for operating, maintaining and inspecting (surveillance of) the dam in the spring, summer, fall, and winter. It also includes safety information to be considered during operations including specific hazards for each site (Ontario MNR, 2011d).

12. Every MVCA water control structure shall have an OMS Manual.

3.3.3 **Emergency Preparedness & Response Plan**

The Ontario MNR provides best management practices (BMPs) to provide Ontario dam owners with guidance on the safe management of dams. One of these BMPs is to prepare and/or review Emergency Preparedness & Response Plans (EPRPs) and response procedures. The requirements from the Ontario Dam Safety Guidelines specify that the EPRP shall describe the actions to be taken by the dam owner and operator in an emergency and assign responsibility for each action to be taken by an individual and/or a backup. The EPRP should include the operator's responsibilities for notification in the event of an emergency (including people in the immediate vicinity of the dam), the locations of equipment suppliers and materials available to the operator to assist in mitigating the effects of an emergency, details for access to the site and impacts of a potential dam failure (Ontario MNR, 2011d).

13. Every MVCA water control structure shall have an EPRP.

3.3.4 Public Safety Plan

A Public Safety Plan (PSP) documents the existing site conditions and operational practices, as well as the identified public safety hazards, risk assessment results, recommended measures to either eliminate or mitigate the risks, and suggested practices for raising public awareness of the hazards related to the dam and its operation. It does not address any other potential hazards at or around the site, whether naturally occurring or man-made which are not directly related to the dam structure or its operation. The PSP uses information obtained through staff records of public activity data collected by operators at the dam site and past incidents/inspection observations (Ontario MNR, 2011c).

14. Every MVCA water control structure shall have a PSP.

3.3.5 Hazard Potential Classification

In Ontario, dams are classified using the Hazard Potential Classification (HPC) system. The HPC is determined through an assessment of the greatest incremental losses that could result from an uncontrolled release of the reservoir due to the failure of a dam or its appurtenances. Potential losses are assessed with respect to life, property, the environment and cultural-built heritage sites at the dam site, upstream, downstream, or at other areas influenced by the dam (Ontario MNR, 2011a). Dams can be classified with an HPC of low, moderate, high, or very high. A review of the HPC should be completed every 10 years to determine whether a change in the classification of the dam is warranted due to upstream or downstream changes in the watershed (Ontario MNR, 2011d).

15. The HPC of MVCA water control structure should be reviewed at least once every 10 years.

3.3.6 Dam Safety Review

A DSR is a systematic review and evaluation of all aspects of design, construction, maintenance, operation, and surveillance, and other factors, processes and systems affecting a dam's safety. A DSR defines and encompasses all components of the "dam system" under evaluation, including the dam, spillway, foundation, abutments, reservoir, tailraces, etc. DSRs are required to demonstrate that the dam is safe, operated safely and maintained in a safe condition, and that surveillance is adequate to detect any developing safety problem. A DSR generally includes site inspection, review of all relevant documentation, and interviews with operating and maintenance staff. If safety cannot be demonstrated, the deficiency should be identified (Ontario MNR, 2011d).

3.4 System Operation

This section contains excerpts from the Mississippi River Water Management Plan (MRWMP), produced by MVCA, OPG, Portage Power⁸, Enerdu Power Systems Ltd., Mississippi River Power Corporation, and the Ontario MNR, as amended October 2020. The MRWMP includes MNR-approved operating parameters, as demonstrated in Figure 18 below. The black lines represent the maximum and minimum water levels, red lines are the target levels, and the blue line is the actual historic mean water level. No targets are specified during the springtime due to high variability of flows/levels and the different timing of freshet each year.

3.4.1 General Operating Principles

Many dams in the Mississippi River watershed were originally built to maintain enough water in the system to allow timbers to be floated downstream. With the changing conditions in the watershed, these structures are now used for flood protection, low flow augmentation, ice management, erosion control and recreation. They are also operated to maintain specific flow and level requirements for lake trout, walleye, bass, pike and other fish species. Stable levels are also required for wildlife such as loons, frogs, muskrat and beaver. Sufficient flow should also be maintained to allow hydro producers to continue operating their plants and turn a profit.

Six major lakes act as storage reservoirs in the spring to alleviate downstream flooding: Shabomeka, Mazinaw, Kashwakamak, Big Gull, Crotch and Mississagagon. Every fall, the dams are operated to drawdown the lakes to provide storage for the spring runoff. As snowmelt and spring rains occur, the lakes are gradually filled to reduce flooding downstream and reach the summer target levels for recreation and tourism. Once the runoff is over, all the dams, except for the Crotch Lake Dam, are operated and sealed (if necessary) to maintain relatively stable water levels on the lakes for recreation throughout the summer months. Throughout the summer, dams are operated if needed in advance of and after major storm events.

16. MVCA water control structures subject to the *Mississippi River Water Management Plan* will be operated in accordance with the Plan unless system conditions prevent this or if directed otherwise by the province.

⁸ Formerly known as TransAlta Renewables and Canadian Hydro Developers Inc.

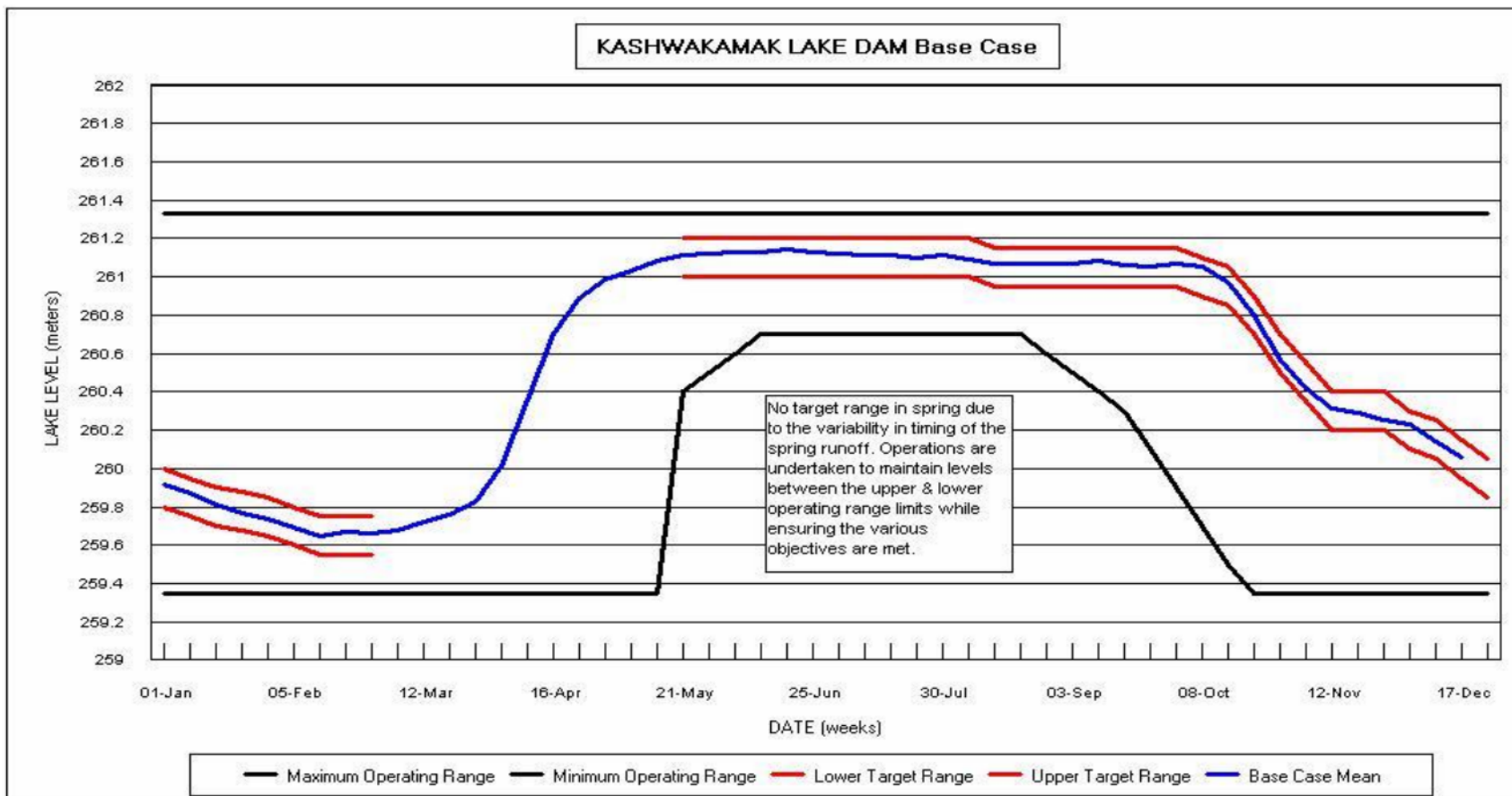


Figure 18. Kashwakamak Lake Dam Operating Guidelines

3.4.2 Crotch Lake

Crotch Lake Dam is unique as it is the only true reservoir lake on the system. From late June through early October, Crotch Lake is drawn down to ensure flows in the lower portion of the Mississippi River. Under normal conditions, approximately 60% of the flow in the river comes from Crotch Lake. Crotch Lake normally fluctuates from 2.5 to 3.5 m (depending on the amount of precipitation) over the course of the summer. Throughout the fall, as the other lakes are being drawn down, Crotch Lake is filled again while still maintaining at least a minimum average flow of 5 cms downstream of the dam. From January through March, the lake is again drawn down to perform the same low flow augmentation function over the remainder of the winter months and to maximize storage in the lake for spring.

3.4.3 Objectives

Five planning objectives were identified for the MRWMP. These objectives help define the level of service expected for each water control structure.

1. Maintain or Improve Aquatic Ecosystem Health throughout the System
 - Improve lake trout spawning success on Shabomeka and Mazinaw Lakes.
 - Maintain spring spawning opportunities for pike, walleye and bass by having steady flows or rising levels.
 - Minimize water level fluctuations as they affect aquatic and riparian wildlife.
 - Where possible, emulate the natural flow regime.
 - Improve aquatic ecosystem health by maintaining flow through the system.
 - Ensure abundance of wild rice is not reduced due to fluctuating water levels.
2. Address Public Safety and Minimize Property Damage
 - Minimize flooding throughout the system.
 - Minimize ice damage throughout the system.
3. Maintain Water Levels throughout the System for Navigation, Recreation, Cultural and Social Opportunities
 - Maintain stable water levels for navigation, including boat access only properties, throughout the recreational season and the entire system.
 - Maintain water levels suitable for access to Twin Islands and Fawn Lakes.
 - Maintain and improve recreation, and access to Wild Rice beds and Pictographs.
4. Recognize Power Generation Values from the System
 - Maintain or enhance power generation on a seasonal and daily basis.
5. Develop Public Awareness on Current Conditions
 - Explain constraints, objectives and natural processes that are considered in the operation of the Mississippi River system.
 - Foster an understanding of how the system operates.

In addition to these objectives identified in the MRWMP, MVCA operates water control infrastructure according to O. Reg. 686/21 in the Conservation Authorities Act to protect against natural hazards. This

includes operations to protect against or mitigate risks associated with erosion hazards, ice management, and low water or drought condition response.

3.4.4 Guiding Principles

The principles guiding the preparation of the MRWMP are:

1. Maximum net benefit to society – maximize net environmental, social and economic benefits derived from operation of water power facilities and associated water level control structures in terms of water flows and levels;
2. Riverine ecosystem sustainability;
3. Planning based on best available information and establishment of baseline conditions;
4. Evaluation of the need for changes to the existing water management operations for water level and flow management to address objectives and issues;
5. Planning will be without prejudice to the rights of Aboriginal people and treaty rights;
6. Public and stakeholder participation – communications and integration are paramount to this planning exercise;
7. Adaptive management – effectiveness monitoring to assist future planning. Operations may vary based on annual variations and extreme weather events. For example:
 - A cold snap in early April can dramatically change situations as runoff flows slow down and spawning may be delayed.
 - Winds and temperatures just above freezing can cause snowpack to sublimate rather than melt which reduces the water available to fill the system.
 - An early freshet leaves the system at risk from heavy rainfall events.

3.5 Levels of Service

It is necessary to categorize MVCA-operated dams based on their functionality and required level of service. For water control infrastructure, level of service includes dam operations, maintenance, surveillance (inspections), documentation, and studies. MVCA has limited resources for the operation, maintenance, study and renewal of water control infrastructure, so it is helpful to have pre-defined categories to prioritize activities and guide service levels. Structures are sorted into three levels of service (A, B, and C) based on the following characteristics: presence of a reservoir, whether the dam is operable, HPC, and nearby flood prone areas. The follow sections detail how these categories are defined, the level of service provided for each category, and a list of MVCA-owned dams and their categories. It is important that MVCA's dams are also operated according to federal and provincial guidelines, which are described in Section 3.3.1.

3.5.1 Category Definition

Dams are sorted into categories based on the following factors:

- Is there a reservoir?
 - Dams with reservoirs are drawn down in the winter to help mitigate flooding during the freshet. Reservoir dams are labelled as “important” or “support” for flood control from an operational perspective.
 - Dams without reservoirs may still be important because their operation has an immediate impact on a flood prone area.
- Is the dam operable?
 - Some dams are operable (i.e. logs can be added or removed), while others are not (i.e. weirs). Operable structures are a higher priority.
- Hazard Potential Classification
 - Dams with a higher HPC are higher priority. HPC is based on a variety of factors including losses of life, property, the environment, and cultural-built heritage sites. HPC classification can be low, moderate, high, or very high. Not all MVCA-owned dams have an HPC, in which case other factors will be relied upon for categorization.
- Flood prone areas
 - Dams near flood-prone areas are higher impact, and priority for operations, during flood events. While flooding can occur anywhere, the most susceptible areas which flood on a frequent basis are:
 - Lanark Village;
 - Cedardale and Clyde River downstream to Lanark;
 - Snow Road / Dalhousie Lake;
 - Innisville and Mississippi Lake;
 - Town of Carleton Place, Glen Isle and Appleton;
 - Town of Mississippi Mills (formerly Almonte, Pakenham);
 - Carp River – mainly villages of Carp and Kinburn; and
 - Ottawa River shoreline – mainly Constance Bay.

Table 1 provides descriptions of the criteria for each category.

Table 1. WCS Service Level Descriptions

Level of Service	Criteria Description
A	<ul style="list-style-type: none"> • All operable dams with a reservoir directly upstream that are considered “important” for flood control. • If defined, dams with an HPC of Very High or High. • All dams near a flood-prone area.
B	<ul style="list-style-type: none"> • All operable dams with a reservoir directly upstream that are considered “support” for flood control. • If defined, dams with an HPC of Moderate.
C	<ul style="list-style-type: none"> • Inoperable structures (i.e. weirs), operable structures that do not have a reservoir directly upstream, or small operable structures. • If defined, dams with an HPC of Low.

17. MVCA water control structures will be assessed and assigned a service level in accordance with the Asset Management Plan.

3.5.2 MVCA Dam Categorization & Service Levels

Table 2 shows the categorization of MVCA-owned dams based on the criteria described in Section 3.5.1.

Table 3 shows how the expected level of service differs for dams in each category for a number of different aspects of documentation and operation.

18. MVCA water control structures should be operated, maintained, assessed and documented in accordance with the service levels set out in the Asset Management Plan.

Table 2. MVCA Dam Categorization

Water Control Structure	Is there a reservoir?	Is the structure operable?	Near flood-prone area?	HPC	Category
Bennett Lake Dam	Yes - Support	Yes	No	None	B
Big Gull Lake Dam	Yes – Important	Yes	No	Low	B
Carleton Place Dam	Yes – Important	Yes	Yes – Innisville, Mississippi Lake, Town of Carleton Place	Low	A
Farm Lake Dam	No	No	No	None	C
Kashwakamak Lake Dam	Yes – Important	Yes	No	High	A
Lanark Dam	No	Yes	Yes – Lanark Village, Cedardale	None	A
Mazinaw Lake Dam	Yes – Important	Yes	Yes – Little Marble/Marble Lake	Low	A
Mississagagon Lake Dam	Yes – Important	Yes	No	None	B
Pine Lake Dam	Yes – Support	Yes	No	None	C
Shabomeka Lake Dam	Yes – Support	Yes	No	Low	B
Widow Lake Dam	Yes – Support	Yes	Yes – Lanark Village, Cedardale	None	B

Table 3. Levels of Service

Service Level	Category A	Category B	Category C	How is this tracked?
Emergency Preparedness & Response Plan	Update annually or as deemed practical.			Date of most recent revision tracked in EPRP.
Public Safety Plan	Update periodically or following any major changes occurring at the site that are likely to affect public safety.			Date of most recent revision tracked in PSP.
Inspections	Visual inspections are completed when operating a dam. Engineering inspections are completed annually.			Inspection form completed at each inspection and filed.
Operations	Operated on an as-needed basis.		Not operational, or on an as-needed basis.	Operations and visual inspection form is completed and saved to WISKI.
Leakage	Tarps may be installed in certain circumstances (i.e. low water or drought conditions).	Tarps may be installed in certain circumstances (i.e. low water or drought conditions).	Unless severe, sluiceway leakage is not a concern.	Inspection form completed at each inspection and filed.
Complaints	Complaints will be investigated at the next scheduled inspection.			Tracked in spreadsheet form and filed.
Minor/Routine Maintenance	Painting, grass mowing, lubrication and similar completed on an annual basis.			Operations Department Work Plan and Schedule
Dam Safety Reviews	Recommended every 10 years	HPC should be reviewed every 10 years to determine whether a change in HPC is warranted. If the HPC rating increases, a DSR will be required at that time.	HPC should be reviewed every 10 years to determine whether a change in HPC is warranted. If the HPC rating increases, a DSR will be required at that time.	Capital Planning
OMS Manuals	Update on an as-needed basis or if a DSR deems it necessary.			Filed

4 Future Considerations

The following recent and ongoing projects will aide in adapting to future changes and challenges in the watershed that may impact MVCA's water control infrastructure assets. This list is taken from MVCA's *Corporate Needs Assessment Update*, found in Appendix B. Additional progress and projects will be completed as funding allows.

- Carp Watershed Model Development (completed)
- Mississippi Watershed Model Development (completed)
- Carp Watershed Model Calibration (completed)
- Mississippi Watershed Model Calibration (completed)
- Prepare Natural Hazard Infrastructure Asset Management Plan (ongoing)
- Update Natural Hazard Infrastructure Operational Management Plans (ongoing)
- Update OMS Manuals (ongoing)
- Update Public Safety Plans (ongoing)
- Ice Monitoring Program/Ice Management Plan (completed)
- Develop digital forms for data collection and dam operation, inspection and maintenance (completed with ongoing improvements)
- Develop automated data QA/QC procedure (ongoing)
- Floodplain Mapping Strategy (ongoing)

Additional actions to help future-proof MVCA's water control infrastructure include:

- Including climate change modelling in dam improvement projects;
- Maintaining a robust and effective gauge network; and
- Conducting a gap analysis and addressing deficiencies (such as missing HPCs and DSRs).

Actions recommended in the *Mississippi River Watershed Plan* include:

- Engage and establish new relationships with indigenous partners through implementation of an Indigenous Engagement Plan and through ongoing engagement in watershed initiatives.
- Update the *Mississippi River Water Budget* to better evaluate water needs and use by completing the recommendations of the Mississippi-Rideau Source Protection Plan Tier 1 water budget assessment and incorporating climate change considerations.
- Update the *MRWMP* to address updated modelling and water budget work and assist in rebalancing the competing interests for the watershed's water resources where needed.
- Undertake a Water Storage Capacity and Management Study of both man-made (dams and reservoirs) and natural storage (wetlands) options and capacity.
- Enhance response planning and readiness through the Low Water Response Team to address low water response and to ensure it includes representation from all key water use sectors.
- Work with municipalities, landowners and other partners to enhance on-site retention and infiltration of water.

5 References

Bolivar Philips and BluMetric. (2017). *Asset Management Preliminary Study prepared for Mississippi Valley Conservation Authority*.

Mississippi Valley Conservation Authority (MVCA), Ontario Power Generation (OPG), Canadian Hydro, Enerdu Power Systems Ltd., Mississippi River Power Corporation, Ontario Ministry of Natural Resources. (2020). *Mississippi River Water Management Plan*.

Ontario MNR. (2011a). *Classification and inflow design flood criteria*. Retrieved from <https://www.ontario.ca/page/classification-and-inflow-design-flood-criteria>

Ontario MNR. (2011b). *Dam management*. Retrieved from <https://www.ontario.ca/page/dam-management>

Ontario MNR. (2011c). *Public safety for dam owners*. Retrieved from <https://www.ontario.ca/page/public-safety-dam-owners>

Ontario MNR. (2011d). *Safety reviews for dam owners*. Retrieved from <https://www.ontario.ca/page/safety-reviews-dam-owners>

Appendix A: Board-approved Restricted Reserve Funds (2023)

Fund Name	Purpose	Funding Source(s)	Target Balance ⁹	End Date
Category 1				
1) Building	Rehabilitation and enhancement of the HQ building and works yard.	Annual and special levy; and op surplus		n/a
2) Conservation Areas	Implementation of CA Master Plans and the rehabilitation, replacement, and enhancement of assets at CAs. ¹⁰	Annual and special levy; and op surplus		n/a
3) Information and Communications Technology	Acquisition, enhancement, rehabilitation and replacement of hardware, software and peripherals.	Annual and special levy; and op surplus		n/a
4) Priority Projects	Board-approved projects eligible for provincial grants under Section 39 of the Act. ¹¹	Above, and land dispositions	2x annual average payroll/employee ¹²	tbd
5) Sick Pay	To backfill a person on extended leave but not on long-term disability.	Operating surplus and annual levy	Annual average payroll/employee	n/a
6) Vehicles	Acquisition, rehabilitation and replacement of vehicles and related equipment (incl. boats and trailers.)	Annual and special levy; and op surplus		n/a
7) Water Control System	Acquisition, enhancement, rehabilitation and replacement of erosion and water control structures and monitoring and measurement equipment	Annual and special levy; and operating surplus		n/a
Category 2 & 3				
8) Non-passive CA Projects ¹³	Implementation of the MOK Museum Strategic Plan, and other approved Category 3 plans.	Operating surplus, grants, donations.		tbd

⁹ To be completed upon update of the 10-year Capital Plan in fall 2022.

¹⁰ With the exception of the MOK Museum building. The purpose of this fund will require update in advance of January 1, 2024.

¹¹ As of July 2022, funds in this account were obtained solely through the sale of Authority land that had been acquired using provincial funds (i.e. Glen Cairn property.) As such, use of funds in this account must be approved by the province in accordance with provincial polices.

¹² This would allow for dollar matching of grants, hiring consultants, and/or the temporary hiring of staff to complete priority projects of the organization.

¹³ Previously known as the "Museum Building & Art" reserve.

Appendix B – Corporate Needs Assessment (2023)

Table 1: Program & Services Needs / Work Plan 2021-2025

Programs and Services	Driver	Risk	Scheduled Start Date	Status	Comments
Governance and Administration					
Update Corporate Strategic Plan	Board of Directors / BMP		2021	Completed	Next update sched. for 2024
Prepare CSP Implementation Plan	Board of Directors / BMP		2021	Completed	Status report submitted in Feb. '23
Update Corporate Strategic Plan	Board of Directors / BMP		2024		
Prepare CSP Implementation Plan	Board of Directors / BMP		2025		
Prepare and submit Transition Plan	CA Reg 686/21		2021	Completed	
List & Cost Ex. & Fut. Programs & Services	CA Reg 686/21		2022	Completed	
Negotiate Cost Apportionment Agreements	CA Reg 686/21		2022	Completed	
Interim Reporting to the Province	CA Reg 686/21		2022	Completed	
Resolve Land Ownership Conflicts/Uncert.	CA Reg 686/21 and BMP		2021	WIP	Returning to court per Board direction
Prepare Conservation Area Strategy	CA Reg 686/21		2023	WIP	Due YE 2024
Prepare Watershed-based Resource Management Strategy	CA Reg 686/21		2023		Deferred to 2024. Due YE 2024.
Address Mental health / stress in workplace	Workplace health/resiliency; Strat. Plan Goal 3		2021	WIP	Ongoing implementation and monitoring
Carryout Strategic Land Disposals	Financial/Board Dir.		2021	WIP	K&P ongoing
Job Evaluation and Market Assessments	Employee attraction and retention; Strategic Plan Goal 3		2021	Completed	
Salary Scale/band review	Pay equity within organization		2023	Completed	Board approved in October
Business Automation - timesheets	CA Reg 686/21 & Corp. Rptg.		2021	Completed	

Programs and Services	Driver	Risk	Scheduled Start Date	Status	Comments
Integrate payroll and timesheet systems	Admin. BMP		2021	Completed	Tweaking of new system ongoing
Business process mapping	Admin. BMP		2021	WIP	Ongoing
Water Control Structures (WCS) and Flood Forecasting and Warning (FFW)					
Carp Watershed Model Development	Strat. Plan Goal 1 – climate ch.		2021	Completed	
Mississippi Watershed Model Development	Strat. Plan Goal 1 – climate ch.		2021	Completed	
Carp Watershed Model Calibration	Strat. Plan Goal 1 – climate ch.		2022	Completed	
Mississippi Watershed Model Calibration	Strat. Plan Goal 1 – climate ch.		2022	Completed	
Prepare Natural Hazard Infrastructure Asset Management Plan	CA Reg 686/21 and BMP		2023		Deferred to 2024. Due YE 2024.
Update Natural Hazard Infrastructure Operational Management Plans (OMS Manuals)	CA Reg 686/21 and BMP; MNRF/CDA		2022	Completed	
Update Public Safety Plans	MNRF/CDA		2021		Completion anticipated in Q1 2023
Ice Monitoring Program (Ice Management Plan)	Strat. Plan Goal 1 – climate ch.; CA Reg. 686/21		2023	WIP	Drafted and piloted in 2023. To be finalized in 2024.
Develop digital forms for data collection and dam operation, inspection and maintenance	Operational efficiency and data accessibility		2022	Completed	Ongoing work to expand into new areas and enhance/refine existing.
Develop automated data QA/QC procedure	Climate Change Adaptation		2024		
Conservation Areas / HQ Facility					
Transition Museum to new Fin. Model	Bill 108/229; CA reg 687/21		2019	Completed	Ongoing effort to enhance fundraising and make Cat. 3 P&S self sufficient

Programs and Services	Driver	Risk	Scheduled Start Date	Status	Comments
Prepare Conservation Land Inventory	CA Reg 686/21		2022	WIP	Nearing completion
Asset Management Plan – Phase 2	Strat. Plan Goal 1 – Asset Mgt.		2020	WIP	Annual program completed; need to doc. Prev. Maint. and level of service standards
Prepare CRCA Master Plan	New asset needs a Plan		2021	ON HOLD	City to lead; insufficient resources at this time.
Update MOK Master Plan	O.Reg. 687/21 (Cat. 3 elements)		2024		Needs to reflect new funding model
Undertake accessibility study of sites	Compliance monitoring/update		2024		Initial focus on MOK per Mstr Plan Update
Update MICA Master Plan	Prepared in 1987		2026		
Update Palmerston-Canonto M. Plan	Last updated 2006		2028		
Update Purdon Master Plan	Last updated 2013		2030		
Planning Review and Regulations					
Review guidelines and submission checklists for planning/permit applications	Regulation changes		2021	Completed	
Update regulation policies and procedures	Regulation changes		2021	Ph.1 Comp.	Awaiting Sec. 28 Reg. update from Prov.
Update planning policies	Regulation changes		2021	WIP	Completed wetland policy update
Update permitting documents	Regulation changes		2021	WIP	Further changes req. per Bill 23
Prepare Compliance Strategy	Regulation changes		2021	Completed	
Prepare Enforcement Strategy	Financial management		2024		
Review hazard mapping criteria	Regulation changes		2022	WIP	Drafted.
Unstable Soils Study	Regulatory changes / City of Ott		2024		
Prepare Unstable Soils Policies	Regulatory changes / City of Ott		2026		

Programs and Services	Driver	Risk	Scheduled Start Date	Status	Comments
Track and report CO service standards	Strat. Plan – Goal 2 Public Cred.		2021	Completed	Ongoing / maintenance
Implement CO service standards	Strat. Plan – Goal 2 Public Cred.		2021	Completed	Ongoing / maintenance
Cost of Service Study (P&R)	Regulatory changes		2023	WIP	Need to benchmark and adjust timesheet system to improve/refine analysis
Fee Study	Regulatory changes		2024		
Technical Studies and Watershed Planning					
WECI applications and management	Interim Financial Plan		n/a	Ongoing	
Carp Creek Erosion Control project	City of Ottawa - MOU		2020	Completed	Post-construction monitoring
Carp Flood Plain Mapping (FPM)	Strat. Plan Goal 1 – climate ch.		2020	WIP	Completion anticipated in Q1 2024
Casey Creek Flood Plain Mapping	Strat. Plan Goal 1 – climate ch.		2020	Completed	
NDMP Flood Risk Assessment	Strat. Plan Goal 1 – climate ch.		2021	Completed	
Lower Mississippi FPM Update	Strat. Plan Goal 1 – climate ch.		2021	Completed	
Watts Creek/Kizell Drain FPM	Strat. Plan Goal 1 – climate ch.		2024-25		
Upper Shirley's Brook FPM	Strat. Plan Goal 1 – climate ch.		2024-25		
Clyde River FPM	Strat. Plan Goal 1 – climate ch.		2023	WIP	Field work and model completed; mapping in progress
Upper Feedmill Creek FPM	Strat. Plan Goal 1 – climate ch.		2024		
Implement Watershed Plans	Strat. Plan Goal 1 - MRWP		2021		
Land Conservation & Acquisition Strategy	Strat. Plan Goal 1 - MRWP		2021	Initiated	
Carp River Wetland Restoration Project	Carp River Action Plan		2021	Initiated	

Programs and Services	Driver	Risk	Scheduled Start Date	Status	Comments
Implement ALUS project	Strat. Plan Goal 2 – Stakeh. Rel.		2021	WIP	designed in 2021; promoted in 2022; potential projects identified for 2023
Community/First Nations liaison	Strat. Plan – Goal 2 Rel. Bldg.		2020	WIP	Many outreach attempts made over three years without significant feedback due to capacity limits
Research / knowledge development re: watershed dynamics/climate change	Strat. Plan Goal 1 – climate ch.		2020	WIP	Mississippi Lake water quality study completion anticipated in Q2 2023
Review of wetlands in growth areas	Regulatory / Foundation		2020	WIP	
Review and update of field monitoring program	Strat. Plan – Goal 1 core mandate and Goal 2 Public Eng.		2021	WIP	
Enhance watershed reporting	Strat. Plan – Goal 2 Public Cred.		2022	WIP	
Review groundwater monitoring program	Existing sites have limited value				
Information and Communications Technology					
SOP - Computer/Internet Use	Strat. Plan – Goal 1 Asset Mgt.		2020	Completed	
Document Naming and Filing Standards	Strat. Plan – Goal 1 Asset Mgt.		2020	Completed	
File and Process - DRAPE 2019 data	Growth		2021	Completed	
ICT Plan and policies	Strat. Plan – Goal 1 Asset Mgt.		2021	WIP	
Cyber Security Review/SaaS investment	Strat. Plan – Goal 1 Asset Mgt.		2021	WIP	
Open data strategy	Strat. Plan – Goal 2 Public Eng't		2022		
Develop Network Plan	Strat. Plan – Goal 1 Asset Mgt.		2022	WIP	
MS Office 365 (cloud computing)	Staff collaboration / enhanced email security		2022	WIP	

Programs and Services	Driver	Risk	Scheduled Start Date	Status	Comments
Data Storage Strategy	Strat. Plan – Goal 1 Asset Mgt.		2022	WIP	
Phone service strategy/VOIP	Admin. BMP				
Education and Stewardship					
Develop and implement pilot stewardship program	Strategic Plan – Goal 2; MRWP		2021	Plan completed	Implementation occurring as funding allows
Conduct alternative service delivery review for education program	Bill 108/229; CA reg 687/21		2022		Requires contracted support
Pilot use of Eco Trekr	Strat. Plan – Goal 2 Public Eng't		2021	WIP	
Expand use of Eco Trekr to other sites	Strat. Plan – Goal 2 Public Eng't		2023		
Communications					
Complete update of corporate website	Strat. Plan – Goal 2 Public Eng't		2020	Completed	Updated monthly.
Prepare and implement Corporate Communications Plan – focused on relationship building and awareness of regulatory changes etc.	Strat. Plan – Goal 2 Public Eng't		2021	WIP	Public engagement requirements identified for 2023 key projects.
Prepare and implement social media plan	Strat. Plan – Goal 2 Public Eng't		2022	WIP	Completed for 2023. Updated as needed.

Table 2: Capital Work Plan 2021-2025

Capital Projects	Driver	Risk	Scheduled Start Date	Status	Comments
Water Control Structures (WCS)					
Shabomeka Dam replacement	MNRF, CDA		2021	Completed	Embankments installed January 2022, and deck and railings in November 2022.
Kashwakamak Dam Safety Review (DSR)	MNRF, CDA		2021	Completed	
Shabomeka Public Safety Measures	MNRF, CDA		2021	Completed	
Carleton Place DSR	MNRF, CDA		2022-23	WIP	Draft study completed
Carleton Place Public Safety Measures	MNRF, CDA		2023-24	WIP	Design in progress
Kashwakamak Dam Class EA	MNRF, CDA		2023-24	WIP	Project award in March 2023
Widow Dam DSR	MNRF, CDA		2024		
Widow Dam Repair Design	MNRF, CDA		2025		
Lanark DSR	MNRF, CDA		2024		
Lanark Dam Repair Design	MNRF, CDA		2025		
Farm Dam Risk Assessment Study	MNRF, CDA		2025		
Pine Dam Minor Repair	MNRF, CDA		2024		
Mississagagon Dam Minor Repair	MNRF, CDA		2024		
Flood Forecasting and Warning (FFW)					
Watershed LiDAR acquisition	Climate change adapt.		2021	WIP	flown 2021-22; data processing to be completed by May 2023
Topo-bathymetric data collection	Climate change adapt.		2021	WIP	
Expansion of monitoring network	Climate change adapt.		2021	WIP	
Depth & Flow meter acquisition (ADCP)	Climate change adapt.		2022	WIP	Equipment selection in progress
Conservation Areas / HQ Facility					

Capital Projects	Driver	Risk	Scheduled Start Date	Status	Comments
Purdon - Replace sections on Boardwalk	Safety - Lifecycle replacement		2021	WIP	Expected to be completed in 2023
HQ Sewer and water connection	Agreement with C.P.		2021	WIP	Water main being commissioned end of Nov. Anticipated connection by Summer 2023
Gate house - accessibility doors and ramps	AODA compliance		2022	WIP	Gatehouse door on back order
Replace riverside look-out	Building Code Structural concerns		2022	WIP	expected to be completed in May 2023 after ground thaw; 90% complete, waiting on railing fabrication/outcome of Mill roof
MICA Trail Bridge repairs	Safety - structural		2022	WIP	One of nine complete (largest bridge); expected to be completed July 2023
CA entrance signage- review and update for regulatory consistency	Recommendation from 3 rd party risk assessment		2022-2023	WIP	MOK complete, MICA/Purdon to begin this fall
Review CA Trails for AODA compliance and sign appropriately	Recommendation from 3 rd party risk assessment		2024		
Gatehouse – Paint ext. window/door trim			2021	Completed	
Gatehouse - Replace veranda joists and flooring	Heritage Act. Prev. Maint.		2021	Completed	
Purdon - Replace site signage	Lifecycle replacement		2022	WIP	Expected to be completed in May 2023 along with MoK renovations
MOK – Replace site signage	Lifecycle replacement		2024		
HQ - Condition Assessment	Asset management BMP		2025		
MOK Building Condition Assessment	Asset management BMP		2025		

Capital Projects	Driver	Risk	Scheduled Start Date	Status	Comments
Ed. Centre - security and access. upgrades	AODA compliance				
MOK Top up play structure wood chips	CSA Compliance		2022	Completed	
MOK Resurface roadway and parking lot	Preventative Maint. BMP		2023		
Develop MOK site Workshop	Secure Storage of Equip't		2022-2023		
Museum - Repaint windows & trim	Heritage Act		2024		
Purdon - Replace main look-out	Lifecycle replacement		2025		
MICA Signage renewal	Lifecycle replacement		2025		
Roy Brown Park - construct lookout	Park Plan / Agrt w C.P.		2025		
Education Centre - Replace siding	Prev. Maint.				
Gatehouse - Repoint stone work	Heritage Act, prev. maint.		2023		
Museum - Balcony repairs	Heritage Act				
MOK Construct flush washrooms	MOK Master Plan		2023		
K&P Trail Condition Assessment	Asset Mgt BMP				
Updates to Generator at HQ	CSA-282-15/ CSA B139-19		2023		
Vehicles & Equipment					
Vehicle purchase (Pick-up)	Lifecycle replacement		2022		Purchased Feb. 2023
Riding Lawn mower	Site maintenance		2023		
Tracks for ATV	Dam Ops		2024		
Tandem utility trailer	Dam Ops		2025	WIP	Sourcing upgraded trailer
ATV	Dam Ops				
Information and Communications Technology					
Buy/replace Computers	Growth and Lifecycle replacement			Ongoing	
Increase Storage	Growth		2021	Completed	
Integrate GIS & F.Plain reports/mapping	Transparency		2021	WIP	
Audio Visual Improvements	Remote & hybrid meetings		2021	Completed	Interim solution; does not allow for Chair to reside outside the Boardroom.
Replace Servers	Lifecycle replacement		2023/25		

Capital Projects	Driver	Risk	Scheduled Start Date	Status	Comments
Replace Plotter	Lifecycle replacement		2024	DEFERRED	May eliminate paper maps
Replace Monitors	Lifecycle replacement			Ongoing	
Data acquisition	Technical study needs			As req'd	LiDAR and DRAPE (every 5 years)
Purchase SAAS MS Exchange 365 back-up	Data management			DEFERRED	Pending outcome of Network Study

REPORT**3452/24**

TO:	MVCA Board of Directors
FROM:	Stacy Millard, Treasurer
RE:	2025 Fee Schedule Update
DATE:	October 16, 2024

RECOMMENDATION

That the Board of Directors approve Schedules D and E of the 2025 Fee Schedule as set out in this report.

The Board of Directors approves MVCA's Fee Schedules on an annual basis for implementation January 1 of the following year. Attachment 1 provides the recommended 2025 Fee Schedules D and E.

On December 28, 2022, the Minister of Natural Resources and Forestry issued a direction prohibiting conservation authorities from changing the fee amounts it charges for programs and services related to planning, development, and permitting. The provincial freeze has been extended and we do not yet know if that will continue past December 31, 2024. We will bring forward Schedules A – C for 2025 Fees to the December Board meeting, if we do not hear of an extension.

We are bringing forward Schedules D and E at this time, as they are not subject to the provincial freeze. We will be sending renewals for annual passes out in November and are starting to receive booking for weddings and rentals for 2025.

We are proposing a 4-5% increase on fees for Schedule D and E, with rounding. Proposed increases are due to our mandate to cost recover as best possible for Category 3 programs and services; and market conditions that allow us to recover those costs while having comparable fees to comparable organizations and service providers.

No increase is proposed to conservation area Day Pass rates this year.

ATTACHMENT 1:

Proposed 2025 Fee Schedules D and E

Schedule “D” – Conservation Areas, Rentals, Programs and Administration (HST is in addition to all fees unless otherwise specified)

Conservation Area Use Type	Fee
Conservation Area Use	
*Day Pass Purdon	Donation only
*Day Pass Morris Island ¹	\$7
*Day Pass Mill of Kintail ¹	\$7
Annual Pass General	\$55
Additional Car Pass ²	\$27
Lost Annual Pass	\$15
Bus Tour Groups – all sites (per person) ³	\$3
Mill of Kintail Rentals	
Cloister Area Weddings (4 Hour Minimum)	\$840
Additional Hourly	\$210
Last Minute Hourly (Less than 30 days)	\$110
Picnic Shelter & Education Centre	
Minimum 4 Hours	\$155
Additional Hourly	\$35
Gatehouse	
Minimum 4 Hours	\$265
Additional Hourly	\$65
Community Groups	50% of rental fees
Office Rentals	
Boardroom and Meeting Rooms	
Per Day	\$260
Affiliated Groups ⁴	FREE
Office Space Work Station – no service Per Month	\$110
Office Space Work Station – serviced ⁵ Per Month	\$155
Staffing Fee for Rentals	
Hourly	\$50.00

¹ HST Included.

² Seasonal Pass – only one vehicle pass be provided per annual pass.

³ HST included. This rate would apply to vehicles with a carrying capacity greater than 7 passengers.

⁴ Affiliated Groups = meetings held at MVCA where MVCA staff participation/involvement is required and the Group objectives are in-line with MVCA goals and objectives.

⁵ Serviced includes phone, internet and network support.

Administrative Tasks		Fee
Photocopies		
Per page 8.5" x 11" (Black and White)		\$0.35
Per page 8.5" x 11" (Colour)		\$1.25
Per page Faxes or Scans		\$0.33
NEW - Watershed Education		Fee
Summer Camp (Mill of Kintail) ⁶		
<ul style="list-style-type: none"> • 5-day session: 9 am – 4 pm • 4-day session: 9 am – 4 pm • Discount for extra children enrolled in the same session • Before OR After Care: 1 hour (8 am – 9 am or 4 pm – 5 pm) 		\$260 per week \$210 per week \$25/child/session ⁷ \$10/child/timeslot ⁸
PA Day Camp ⁶		
<ul style="list-style-type: none"> • 9 am – 4 pm • Before OR After Care: 1 hour (8 am – 9 am or 4 pm – 5 pm) 		\$50 \$10/child/slot ⁸
March Break Camp ⁶		
<ul style="list-style-type: none"> • 5-day session: 9 am – 4 pm • Before OR After Care: 1 hour (8 am – 9 am or 4 pm – 5 pm) 		\$225 \$10/child/slot ⁸
MVCA Staff discount – 10% on day camps		
Education Programs		
Full Day Guided Group (4.5h) (max 40 people)		
Half Day Guided Group (2h) (max 40 people)		\$450
Visit to School/Other Location (2h)		\$250
Guided Site Tours (all CA sites) ¹		\$80
<ul style="list-style-type: none"> • Adult (2h) • Child (6-17) (2h) • Family (up to 5 people) 		\$10 \$5 \$25
Information and Professional Services		
Reports	Small: 1-30 pages	\$150
Base Cost (Digital and Paper)	Medium: 31-100 pages	\$295
	Large: 100 + pages	\$450
	Minimum Processing Fee	\$65
	Administrative Rate	\$80/hr
	Field Crew (2 staff) plus mileage ⁹	\$85/hr
	Technical Rate	\$95/hr
	Professional Rate	\$115/hr
	Management Rate	\$150/hr
	Error! Bookmark not defined.	
Models – digital copies		
Hydrological Model (HEC-HMS, SWMHYMO, PCSWMM)		\$2,200 per model - plus staff time

⁶ HST exempt.

⁷ HST exempt. Discount only applies to 2nd or more child.

⁸ HST exempt. For clarity, before AND after care would cost \$20/child/day.

⁹ Mileage rate is \$0.60 per kilometre.

Hydraulic Model (HEC2, HEC-RAS)	
---------------------------------	--

Schedule "E" – Stewardship Services

Stewardship Services	Fee	Rationale
Trees and Shrubs		
Seedlings (trees and shrubs)	\$5	Average cost for bare-root stock from supplier
Potted shrubs	\$15	Average cost for potted stock from supplier (1 gal or 2 gal)
Potted Trees	\$20	Average cost for potted stock from supplier (1 gal or 2 gal)
Plugs/Wildflowers	\$3	Average cost for stock from supplier
Coco Disks	\$1	Cost from supplier



MINUTES

Hybrid Meeting Via Zoom
and at MVCA Office

Finance and Administration
Advisory Committee Meeting

September 30, 2024

MEMBERS PRESENT

Janet Mason, Chair
Roy Huetl, Vice Chair
Jeff Atkinson (Virtual)
Mary Lou Souter
Paul Kehoe
Richard Kidd (Virtual)

MEMBERS ABSENT

Allan Hubley
Allison Vereyken
Cathy Curry

STAFF PRESENT

Sally McIntyre, General Manager
Stacy Millard, Treasurer
Kelly Hollington, Recording Secretary

J. Mason called the meeting to order at 10:00 a.m.

Declarations of Interest (Written)

Members were asked to declare any conflicts of interest and informed that they may declare a conflict at any time during the session. No declarations were received.

Agenda Review

J. Mason noted that there were no additions to the agenda.

FAAC24/09/30 - 1

MOVED BY: R. Kidd

SECONDED BY: M. Souter

Resolved, that the agenda for the September 30, 2024 Finance and Administration Advisory Committee meeting be adopted as presented.

"CARRIED"

LAND ACKNOWLEDGEMENT

J. Mason noted that September 30th is the National Day of Truth and Reconciliation. She provided a Land Acknowledgement to open the meeting. She noted the Indigenous Engagement portal on the MVCA website for issues related to the watershed. She highlighted the collaboration with Indigenous communities for the Kashwakamak Lake Dam Environmental Assessment and replacement.

MAIN BUSINESS

1. Approval of Minutes: Finance and Administration Advisory Committee Meeting, March 28, 2024.

FAAC24/09/30 - 2

MOVED BY: J. Atkinson

SECONDED BY: P. Kehoe

Resolved, that the minutes of the Finance and Administration Advisory Committee Meeting held on March 28, 2024 be received and approved as presented.

“CARRIED”

2. Job Evaluation & Implementation Report, Report 3439/24, Sally McIntyre.

S. McIntyre reviewed the ongoing job evaluation process at MVCA. She noted the 6 positions that were evaluated: Biologist, Environmental Planner, Regulations Officer, Site Supervisor, Stewardship Coordinator and Treasurer. The review process involves the MVCA management team and a third-party advisor, Joanne Glaser from Cornerstone to ensure transparency and fairness. J. Glaser’s report will be tabled with the committee in-camera.

3. Salary Review, Report 3440/24, Sally McIntyre & Stacy Millard.

S. McIntyre described the market review process. The process includes comparing MVCA positions with those of similar organizations to ensure fair compensation. She highlighted that organizations with engineering and dam operations were included in the comparison. She noted that the City of Ottawa provided valuable feedback on comparable jobs within the organization.

The committee moved into in-camera discussions for items 2 and 3.

FAAC24/09/30 - 3

MOVED BY: M. Souter

SECONDED BY: R. Huetl

Resolved, That the Finance and Administration Advisory Committee move to in-camera session for discussion of the following matter:

- **Labour relations or employee negotiations.**

And further resolved, That:

- **Sally McIntyre remain in the room**

“CARRIED”

FAAC24/09/30 - 4

MOVED BY: P. Kehoe

SECONDED BY: R. Huetl

Resolved, That the Finance and Administration Advisory Committee move out of in-camera discussions.

“CARRIED”

FAAC24/09/30 - 5

MOVED BY: M. Souter

SECONDED BY: R. Huetl

Resolved, That the Finance and Administration Advisory Committee recommend the Board of Directors approve the changes in job ratings as recommended.

“CARRIED”

J. Mason explained that there is agreement that the Executive Committee will work with Cornerstone to review management compensation. Recommendations will be tabled with the Finance and Administration Advisory Committee prior to elevation to the Board of Directors. S. McIntyre noted that an affordable proposal from Cornerstone has been received.

FAAC24/09/30 - 5

MOVED BY: P. Kehoe

SECONDED BY: M. Souter

Resolved, That the Finance and Administration Advisory Committee recommend the Board of Directors appoint the Executive Committee to review management compensation.

“CARRIED”

4. Review of Compensatory Benefits, Report 3441/24, Stacy Millard.

S. Millard explained that the MVCA will be conducting a full scope review of benefits. Benefits information and employee manuals from similar organizations have been obtained for review.

J. Atkinson asked if the review is internal or if a consultant will be assisting in the process. S. McIntyre responded that there is no plan for support on this review. MVCA may seek advice on issues of complexity but are not looking to expend additional funds at this time.

5. Proposed 2025 Budget Assumptions, Report 3442/24, Sally McIntyre & Stacy Millard.

S. McIntyre discussed the proposed budget assumptions for 2025. She explained that MVCA looks to the City of Ottawa for budget direction including: rate of growth, the operating levy increase and capital levy increase. The proposed capital increase was tabled with the Board of Directors as part of the 10-year Capital Plan and Schedule of Capital Levy Increases. MVCA typically looks at the August rate of CPI to inform staff wage increases. She noted that an FTE was being deleted to ease the impact of continued phasing of workforce plan adjustment onto the levy. S. Millard reviewed the budget impact by municipality including operating and capital levy increases. She noted the total increase to the Municipal Levy would be 7.1%.

J. Mason commented that the executive committee will be reviewing management salaries, and asked if this will potentially affect the workforce plan adjustment. S. McIntyre confirmed. She explained that the results from the management compensation review will be tabled alongside the draft budget will at the Finance and Administration Advisory Committee meeting in November where members can make an informed decision on the recommendation to the Board of Directors. J. Mason commented that the proposed budget assumptions are uncertain, and there is potential for changes.

M. Souter asked if the reduction in payroll by 1.0 FTE for the amount of \$105,000 could be used to offset any future financial implications. S. McIntyre responded that it would be a decision of the Executive Committee and the Board of Directors. J. Mason highlighted that the budget assumptions provide direction to staff in the creation of the draft budget. R. Kidd asked for clarification on what motion is being passed. J. Mason clarified that the Finance and Administration Advisory Committee sends a recommendation to the Board of Directors to approve a set of assumptions that provide the envelope in which MVCA staff create a budget.

R. Kidd commented that he does not support the recommendations. He expressed concerns about the 4.4% increase in operating budget and suggested that the goal should be to lower this amount. He noted that it is difficult to justify a 4.4% increase without seeing the draft budget.

J. Mason asked members of the committee to vote on the motion. Committee members in favour include: J. Mason, R. Huetl, J. Atkinson, M. Souter and P. Kehoe. R. Kidd was opposed.

MOVED BY: J. Atkinson

SECONDED BY: R. Huetl

Resolved, That the Finance and Administration Advisory Committee recommend the Board of Directors direct staff to develop the 2025 Budget and related documents in accordance with the following parameters:

- 1. An increase of 2.9% plus assessment growth to the Operating Levy;**
- 2. An increase of 8.5% plus assessment growth to the Capital Levy;**
- 3. An assumed assessment growth rate of 1.5%.**
- 4. A cost of living increase to the 2024 Pay Scale of 2.0%; and**
- 5. A transfer \$64,664 onto the Municipal Levy for Workforce Plan Adjustments.**

“CARRIED”

6. Appointment of 2024 Auditor, Report 3443/24, Stacy Millard

S. Millard explained that at the Board of Directors cancelled the appointment of KPMG-Kingston as the 2024 auditor. She reviewed the procurement undertaken since, and recommended that MVCA use Baker Tilley REO for the 2024 Audit. She noted that Baker Tilley is local and undertakes the auditing process for both South Nation and Raisin Conservation Authorities.

J. Mason asks how the price of \$25,000, quoted by Baker Tilley, compares to MVCA’s previous auditor, Cross Street. S. Millard responded that Cross Street’s price was \$16,000 for the 2022 Audit. She noted that other Conservation Authorities are paying considerably more than \$16,000 for their audits. R. Kidd commented that the low price can be attributed to the auditor at Cross Street having years of previous experience with MVCA.

FAAC24/09/30 - 7

MOVED BY: P. Kehoe

SECONDED BY: R. Huetl

Resolved, That the Finance and Administration Advisory Committee recommend the Board of Directors appoint the firm Baker Tilley REO as the Authority’s auditor for the year 2024.

“CARRIED”

ADJOURNMENT

FAAC24/09/30 - 8

MOVED BY: P. Kehoe

SECONDED BY: J. Atkinson

Resolved, That the Finance and Administration Advisory Committee meeting be adjourned.

“CARRIED”

The meeting adjourned at 11:01 a.m.

K. Hollington, Recording Secretary

DRAFT



MINUTES

Hybrid Meeting Via Zoom
and at MVCA Office

Policy and Planning Advisory
Committee Meeting

October 7, 2024

MEMBERS PRESENT

Bev Holmes, Chair
Dena Comley, Vice Chair
Cindy Kelsey
Clarke Kelly (Virtual)
Glen Gower (Virtual)
Helen Yanch (Virtual)
Paul Kehoe
Steven Lewis
Taylor Popkie

MEMBERS ABSENT

Jeff Atkinson

STAFF PRESENT

Sally McIntyre, General Manager
Scott Lawryk, Properties Manager
Alex Broadbent, Manager of IC&T
Matt Craig (Virtual)
Kelly Hollington, Recording Secretary

GUESTS

Roxanne Darling, Community Engagement Officer,
Ginawaydaganuc Village

B. Holmes called the meeting to order at 10:03 a.m.

Declarations of Interest (Written)

Members were asked to declare any conflicts of interest and informed that they may declare a conflict at any time during the session. No declarations were received.

Agenda Review

There were no additions or amendments to the agenda.

PPAC24/10/07 - 1

MOVED BY: D. Comley

SECONDED BY: T. Popkie

Resolved, that the agenda for the October 7, 2024 Policy and Planning Advisory Committee Meeting be adopted as presented.

“CARRIED”

MAIN BUSINESS

1. Approval of Minutes: Policy and Planning Advisory Committee Meeting, June 19, 2024.

PPAC24/10/07 - 2

MOVED BY: T. Popkie

SECONDED BY: C. Kelsey

Resolved, that the minutes of the Policy and Planning Advisory Committee Meeting held on June 19, 2024 be received and approved as printed.

“CARRIED”

2. Delegation Presentation: Ginawaygaganuc Village – RoxAnne Darling, Community Engagement Officer.

RoxAnne Darling provided a presentation to the Committee about the proposed Ginawaydaganuc Village (GV), an indigenous-led, multi-purpose, eco-cultural education centre proposed to be sited in Mississippi Mills. R. Darling suggested the formation of an Indigenous Advisory Committee to facilitate a partnership with MVCA. She highlighted the importance of advancing land stewardship and reconciliation. She proposed the possibility of using MVCA land for the proposed cultural centre. She noted that GV is looking for a letter of support from the MVCA Board of Directors.

G. Gower asked where GV is at with the municipality of Mississippi Mills; and if GV has specific land in mind for the centre. R. Darling responded that GV has received a letter of support from Mayor Lowry. She explained that GV does not have any land at this time but has vetted several properties for the centre. She noted that the properties were expensive. G. Gower asked if GV is looking at any existing Conservation Authority property; and if GV plans to own the land or to lease the land. R. Darling explained that it is too early to determine a model and that GV is open to all possibilities and suggestions.

P. Kehoe commented that the presentation is a high-level discussion and requires details to understand what GV is looking for. He asked R. Darling to provide a more in-depth explanation of what the role and scope of the proposed Indigenous engagement committee. R. Darling commented that collaboration could be as simple as collaborating on the development of signage at the conservation areas and events/celebrations. P. Kehoe expressed concerns regarding the commitment of time required and the limited resources available to both MVCA Staff and the Board. R. Darling suggested that the committee would meet twice before the end

of 2024 and quarterly meetings starting in 2025. P. Kehoe expressed concerns regarding the lack of formal consultation with other indigenous communities/groups and the potential for one or more groups to object to MVCA working exclusively with GV on this initiative.

G. Gower asked if MVCA has a policy for approaching proposals for partnerships or land transfers. S. McIntyre responded that MVCA does not currently have policies. *The Land Conservation and Resource Strategy* (Item 5) includes policy regarding land acquisitions and disposals and how assets are managed. She noted that the draft document also includes policies regarding special events and First Nations engagement. The direction of the policies is at the discretion of the Board of Directors. Any long-term arrangements/agreements will be tabled with the Board for approval.

G. Gower expressed concerns regarding a lack of mandate for the proposed committee. He asked how other Conservation Authorities approach Indigenous Engagement and if Indigenous Engagement committees are common. S. McIntyre responded that it not common to have a designated committee but it varies across the province. She noted that South Nation Conservation Authority has invited various First Nations Groups and Métis to meet at an annual forum. This meeting is used as a mechanism to allow any self-identified group that wants to engage with the Conservation Authority to attend and participate. G. Gower commented that the Policy and Planning Advisory Committee is the appropriate committee for discussions regarding collaboration with Indigenous communities/groups. He also asked for an in-depth, formal proposal of what GV is looking for and the expected involvement from the committee, board and MVCA staff.

D. Comley highlighted the opportunity for partnership between GV and MVCA in regards to education or land use. She expressed concerns regarding the lack of mandate and purpose. She also asked for a formal proposal document to be created and shared. She asked what GV wants in the letter of support from MVCA. R. Darling responded that she will provide a sample letter to S. McIntyre to share with the committee for reference. She added that she will be reaching out to all local municipalities for support and input. She confirmed that the Policy and Planning Committee requires a formal proposal document to move forward. She highlighted that GV wants to remain open to suggestions.

G. Gower asked if MVCA staff can review Conservation Authorities and the policies surrounding engagement with Indigenous communities to gain an understanding of best practices and how to improve MVCA Indigenous Engagement. S. McIntyre acknowledged and accepted that direction.

B. Holmes commented that the GV project has not been tabled with Mississippi Mills council. She highlighted the importance of tabling a formal request with municipal council. She asked if there have been formal discussions with treaty or non-treaty indigenous communities within

the watershed. R. Darling responded that elders working with GV have shared information with other communities and have received verbal support. She noted plans for outreach to the Algonquins of Ontario and Pikwàkanagàn First Nation. She noted that no formal letters of support have been received from other indigenous communities/groups. B. Holmes expressed concerns regarding the lack of formal commitment from other indigenous communities. She asked if GV has a formal governance model. R. Darling responded that GV has a formal governance model that she will share with S. McIntyre. B. Holmes asked if GV plans to register as a formal community with the federal government. R. Darling responded that GV is not one recognized group and that the process to register is complex.

S. Lewis asked if GV has looked into cost-recovery strategies. R. Darling responded that she will pass on the strategic plan to S. McIntyre to provide to the committee for reference. She added that GV has been approved for a small grant for a feasibility study to determine the infrastructure costs. She noted that draft conceptual designs of the community have been produced by architect Douglas Cardinal. GV has applied for a \$14 million-dollar grant from Indigenous Services Canada. She noted that costs-recovery strategies of the GV community include a restaurant, small hotel, and education courses.

3. Delegation Presentation: Climate Network Lanark – Gordon Harrison, Advisor & Doreen Donald, Director.

The presenters were unable to attend the Policy and Planning Advisory Committee at this time.

4. LC&RS Community Surveys & Recreational Study Findings, Report 3444/24, Sally McIntyre.

This matter was dealt with as part of Agenda item 5.

5. Draft Land Conservation & Resource Strategy, Report 3445/24, Sally McIntyre

S. McIntyre presented on both item 4 and 5. She reviewed the corporate strategic planning process and associated documents. She reviewed the mandatory elements of the *Conservation Area Strategy* and *Watershed-based Resource Management Strategy* policy documents. She reviewed the public consultation process of the *Land Conservation and Resource Strategy (LC&RS)* including feedback received from the *Discussion Paper Survey* and *Recreational Facilities Survey*. She reviewed MVCA programs and services and their associated goals, objectives and policies.

B. Holmes commented that quiet, seclusion and privacy is an important feature at the Conservation Areas due to increasing development within the local towns.

B. Holmes asked if MVCA is coordinating with the municipalities and hydro producers along the Mississippi River. S. McIntyre responded that Ottawa area hydro producers meet annually to assess conditions and discuss the spring freshet but there is no formal meeting for the

Mississippi River watershed hydro producers. She noted that MVCA shares information with member municipalities.

D. Comley commented that she thought MVCA was close to 100% cost recovery for education programs and services. S. McIntyre responded that MVCA was close to 100% cost recovery for the summer camps, but if the Education and Outreach program is expanded the target cost recovery rate of 85% would be appropriate because not all education and outreach is user pay.

G. Gower asked if the statistics surrounding conservation areas and population include MVCA owned and leased properties. S. McIntyre responded that the statistics include MVCA owned and leased land as well as surrounding lands that met the definition of "Conservation Area Type". G. Gower asked about the public consultation process for the *Draft Land Conservation and Resource Strategy*. S. McIntyre responded that the draft document will be publicised for public review and advertised in local papers and on MVCA social media. The document will also be shared with key stakeholders within the watershed. G. Gower suggested the addition of an executive summary to the *LC&RS* due to its length and complexity. He commented that funding challenges should also be highlighted in the document. S. McIntyre agreed to add both.

D. Comley asked if MVCA updates the public consultation contact list to include individuals that submitted comments. S. McIntyre responded that individuals that submitted comments or responses would be included in the public consultation contact list.

S. Lewis asked if MVCA has any vacant lands that they could sell or develop. S. McIntyre responded that the vacant land that MVCA owns are within the floodplain and are sterilized properties and selling is not a feasible option, except to the municipality. She commented that there is an opportunity to develop the properties for modest canoe route purposes but otherwise, they are not developable.

P. Kehoe asked for clarification on land donation to MVCA. He asked if MVCA still refers land donations to the Mississippi Madawaska Land Trust (MMLT). S. McIntyre confirmed that land donations are referred to MMLT, but most are not actioned due to the financial constraints and mandate of the land trust.

S. McIntyre noted that MVCA is required to manage portage routes around MVCA dam structures but has no obligations to portage routes otherwise.

S. McIntyre noted that the *Draft LC&RS* will be distributed to all MVCA staff for review.

PPAC24/10/07 - 3

MOVED BY: P. Kehoe

SECONDED BY: D. Comley

Resolved, That the Policy and Planning Advisory Committee recommend that the Board of Directors receive the Draft Land Conservation & Resource Management Strategy, complete with an executive summary.

“CARRIED”

6. Portage Routes: History and Use, Report 3446/24, Sally McIntyre & Alex Broadbent

The portage routes article was provided to the committee for information.

ADJOURNMENT

PPAC24/10/07 - 4

MOVED BY: S. Lewis

SECONDED BY: T. Popkie

Resolved, That the Policy and Planning Advisory Committee meeting be adjourned.

“CARRIED”

The meeting adjourned at time 12:01 p.m.

K. Hollington, Recording Secretary

REPORT**3441/24**

TO:	The Chair and Members of the Mississippi Valley Conservation Authority Board of Directors
FROM:	Stacy Millard, Treasurer
RE:	Review of Staff Compensatory Benefits
DATE:	October 15, 2024

FOR INFORMATION

As a member of Conservation Ontario, MVCA pools group benefits with other conservation authorities to achieve overall cost savings compared to operating an individual plan. Mosey & Mosey Benefit Consultants manages and coordinates insurance renewals on behalf of the group, and markets the plan every 5 years to ensure competitive rates and plan coverage. Current insured benefits are summarized in Attachment 1, with costs varying amongst conservation authorities based upon actual usage.

In addition to insured benefits, there are several Board-approved policies that have a financial value and that vary amongst organizations (see below.) Staff have asked questions regarding several of these policies in recent years and we are aware of differences amongst organizations.

- Hours of work
- Time off in lieu
- Vacation allowance
- Annual merit increases / bonuses
- Alternate work arrangements
- Paid holidays
- Parental benefits
- Office closure late December
- Professional training/conferences
- Short and long-term disability benefits

A comprehensive review of policies influencing gross compensation was last undertaken in 2015. The purpose of this report is to inform the Board of a project commencing this fall to review the full scope of benefits with an intent to table findings in 2025. The review will help to assess the needs of the current workforce, potential costs, and the approaches being taken by others in the marketplace to adjust to changes.

Attachment 1: MVCA Insured Benefits

MVCA provides you with the following benefits:

- Extended Health Care for you and your dependents
- Dental for you and your dependents
- Employee Life – 2 times annual basic earnings, to a maximum of \$300,000
- Dependent Life - \$10,000 spouse and \$5,000 each child
- Accidental Death & Dismemberment - 2 times annual basic earnings, to a maximum of \$300,000
- Long-term Disability – 70% of your monthly basic earnings, to a maximum of \$5,000. Amounts in excess of \$5,000 require proof of good health.
- Employee Assistance Program for you and your dependents

A dependent includes:

- A legally married spouse;
- A person of the same or opposite sex, with whom the employee has co-habitated for a minimum of 12 months, and publicly represented as his/her spouse;
- Children and your spouse's child under age 21;
- A child enrolled full time in a recognized post secondary institution until the age of 25
- A child that become handicapped before the limiting age, if the child is incapable of financial self-support because of a physical or mental disability.

You have the option to elect employee optional life or spousal optional life insurance. Optional benefits are employee paid through payroll deductions.

Employee optional life insurance:

- Coverage available in units of \$10,000, to a maximum of \$250,000
- If applying within 31 days of satisfying your waiting period, you qualify for the first \$30,000 of coverage without a Statement of Health. Any amounts over \$30,000 will require a Statement of Health to be completed and approved. If you apply after 31 days of satisfying your waiting period, a Statement of Health is required to be completed and approved for all amounts of coverage.
- Terminates at age 65 or earlier retirement

Spousal optional life insurance:

- Coverage available in units of \$10,000, to a maximum of \$250,000
- Statement of Health must be completed and approved for all amounts of coverage
- Terminates when the employee retires or reaches age 65, or when the spouse reaches age 65, whichever is earlier

You have the option to elect critical illness for your family. Employee paid through payroll deductions.

Critical Illness - Guaranteed Issue:

- Minimum \$10,000 guaranteed issued for employees and spouses if applying within 31 days of completing their Life and LTD waiting period
- \$5,000 for each child (only available in conjunction with the enrollment of employee and/or spouse)

Critical Illness - Evidence Plan:

- Maximum of \$90,000 with medical evidence of insurability

REPORT**3443/24**

TO:	The Chair and Members of the Mississippi Valley Conservation Authority Board of Directors
FROM:	Stacy Millard, Treasurer
RE:	Appointment of 2024 Auditor
DATE:	October 15, 2024

RECOMMENDATION

That the Board of Directors appoint the firm of Baker Tilley REO as the Authority's Auditor for the year 2024.

BACKGROUND

The Board cancelled the appointment of KPMG-Kingston as the auditor for the 2024 fiscal year, requiring a renewed search for an Auditor.

PROCUREMENT

A request for proposal was issued to three firms who were identified through discussions with other conservation authorities. Discussions with the three firms addressed in detail the division of responsibilities between MVCA staff and the Auditor. Based on overall review for price, service provided, and location of firm, the recommendation is to retain Baker Tilley REO, Carleton Place office.

The price quoted by Baker Tilley for 2024 is \$25,000, which will include audit reporting letters, drafting of the financial statements and notes, preparation of a registered charity return and presentation at the board meeting. The other two quotes came in at \$33,500 and \$42,000 plus tax.

REPORT**3444/24**

TO:	The Chair and Members of the Mississippi Valley Conservation Authority Board of Directors
FROM:	Sally McIntyre, General Manager
RE:	LC&RS Community Surveys & Recreational Study Findings
DATE:	October 2, 2024

FOR INFORMATION

The purpose of this report is to provide the results of two surveys conducted during the period July-September 2024 to answer the following questions:

- *What direction do people think MVCA should go with future programs and services, particularly in relation to land management?*
 - This survey provided respondents with the *Discussion Paper* and *Current State Report* and asked their thoughts on key issues.
- *What conservation authority-type facilities are available and in use today, are they meeting demand, and what role could MVCA play going forward?*
 - This survey provided respondents with a list of known facilities within MVCA's jurisdiction and asked questions regarding their use, preferred amenities, and demand.
 - This survey was part of a broader review of conservation area-type services available within the watershed and examination of how service levels have changed, and whether current facilities are meeting demand. Note, this is being issued in draft form as there are inconsistencies in some data.

NEXT STEPS

Staff will provide survey results to member municipalities, the counties, Ontario Parks and local recreational tourism groups and initiate discussions on how MVCA may support communities in meeting current and future demand for walking/hiking trail services in the watershed.

CORPORATE STRATEGIC PLAN

Completion of the Land Conservation Strategy will support achievement of:

Goal 2: Community Building – engage local partners to foster connections, leverage our resources, and strengthen our “social license” to operate.

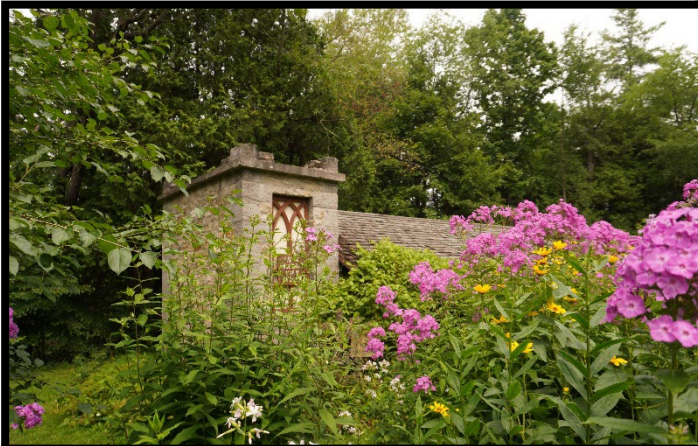
- a) Demonstrate MVCA to be a trusted, client-centered, resourceful, and helpful partner.
- b) Strengthen relationships with municipalities and community stakeholders, First Nations, the agricultural sector, developers, not-for-profits, and academia.

Attachments:

1. *Summary of Discussion Paper Survey Results, October 2024*
2. *DRAFT Recreational Facilities Study: Summary Report, October 2024*

Summary of Discussion Paper Survey Results

Land Conservation and Resource Strategy

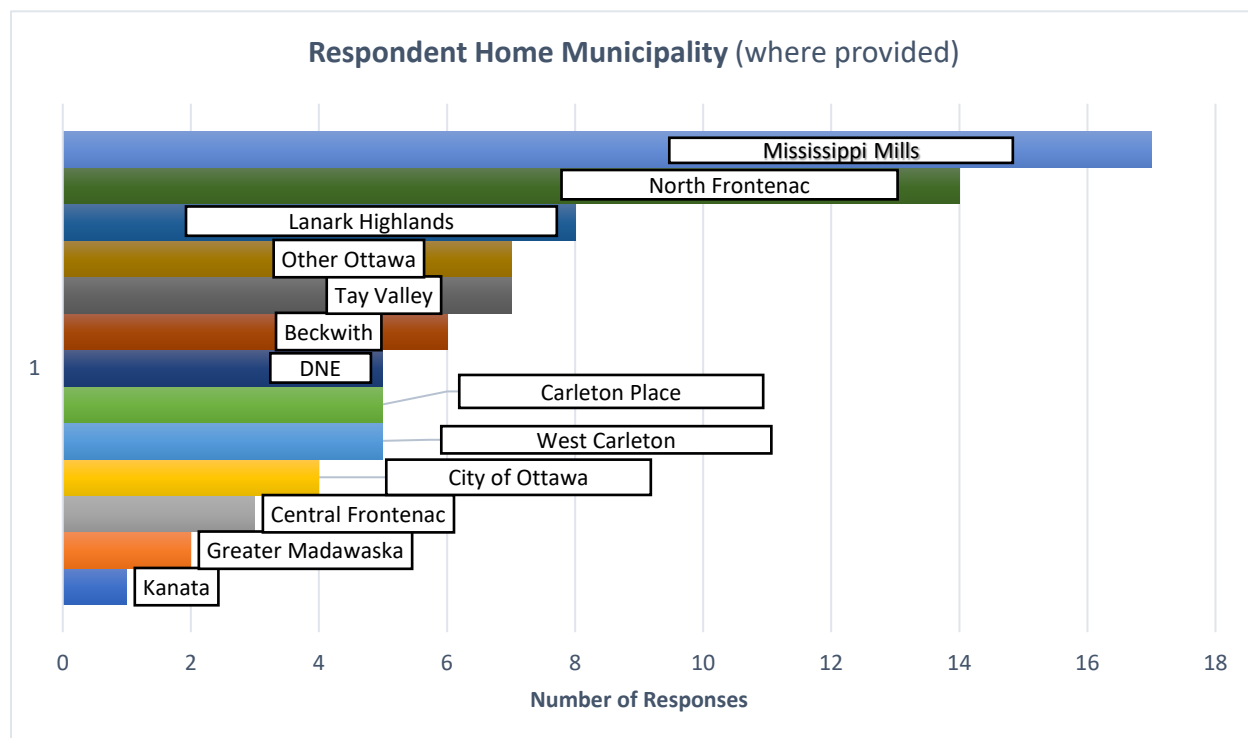


Contents

Overview	3
1. Land Conservation	4
Comment Trends	4
Snapshot of Comments.....	5
2. Acquiring More Land	6
Comment Trends	6
Snapshot of Comments.....	7
3. Facility Types	8
Comment Trends Q. a).....	8
Snapshot of Comments Q. a)	9
Comment Trends Qs. b) and c)	10
Snapshot of Comments Qs. b) and c).....	11
4: Permitted Uses	13
Comment Trends Qs. a) and b)	14
Snapshot of Comments Qs. a) and b)	14
Comment Trends for Q. c)	15
5: Dam Properties	17
Comment Trends Regarding Dam Properties	19
Snapshot Comments Regarding Dams.....	20
Written Submissions	21

Overview

1. 84 submissions in total.
2. Surveys were received from the following (where declared):
 - Municipality of Mississippi Mills
 - City of Ottawa
 - Algonquins of Ontario Consultation Office
 - Friends of Lanark Highlands
 - Dalhousie Lake Association
 - National Capital Commission
 - Lanark County Arts & Heritage
 - Middleville & District Museum
 - Smiths Falls Heritage House Museum
 - Lanark Museum
 - Lanark County Museums Association
 - Briarbrook Brookside Morgan’s Grant Community Association
 - NetZeroPLUS Canada
 - Lake Mississagagon Association
 - Heritage Almonte
 - Ennis Maple Products
 - Mississippi Lakes Association
 - Mississippi Valley Field Naturalists
 - Canonto Lake Property Owners Association
 - Climate Network Lanark
 - Ducks Unlimited Canada
 - Ebbs Bay Property Owners Association
 - Landowners, Cottagers, Farmers
3. A majority of respondents were from Mississippi Mills, North Frontenac, and City of Ottawa.



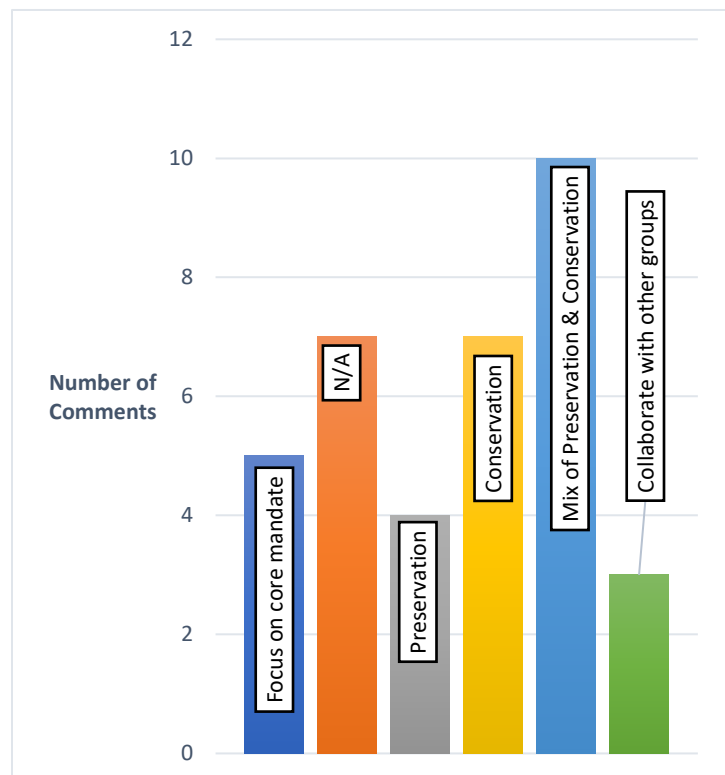
1. Land Conservation

Question: Where do you think MVCA should focus its land conservation efforts?

- a) Preserving land to protect hydrological or ecological functions, with limited public use.
 - b) Conserving land to protect its hydrological or ecological functions, while providing for some public use.
 - c) A mix of conservation and preservation properties is appropriate.
- 52% of respondents felt a mix of conservation and preservation properties is appropriate.
 - 31% respondents felt that MVCA should focus on conserving land to protect its hydrological or ecological functions, while providing for some public use.
 - 11% of respondents felt that MVCA should focus on preserving land to protect hydrological or ecological functions, with limited public use

Comment Trends

- 28% of the comments highlight a mix of conservation and preservation properties.
- 19% of the comments highlight the importance of conserving land to protect its hydrological or ecological functions, while providing for some public use.
- 14% of comments mention focusing on core mandate and/or current properties.



Snapshot of Comments

1. Conservation purposes to reduce overuse, waste or harm to the natural environment. The MMLT, and NCC own preserved lands throughout area, and Lanark County owns over 11K acres of County forest with public access available to some or most of these lands.
2. Conservation Authorities mandate more aligned with conservation than preservation. Conservation is also more consistent with their status as municipally-funded agencies. If municipalities want to identify preservation as a policy objective, then they have other tools available to them to achieve that objective. Moreover, other agencies and organizations focus on preservation.
3. MVCA lands also preserve/conserves indigenous (Algonquin) unceded territory and cultural resources (such as archeological resources) other values and areas where rights-based harvesting activities are conductive. This should be acknowledged, promoted, and enhanced through direct involvement and participation by indigenous communities/members in decision-making processes.
4. The ecological condition and situation of the land should determine its conservation vs. preservation strategy. Note that MMLT and DUC hold land that serve both functions. Part of a property may have a hiking trail near the road, but the interior is off-limits to the general public.
5. Conservation is a nature-based solution to climate change and serves to reduce biodiversity loss. Community engagement with the natural world offers incredible mental, physical, emotional, intellectual benefits (cultural ecosystem services). Nature engagement is the bedrock of long-term conservation support from the community. Human and planet health are interdependent and it is increasingly important to nurture both. Dr. Dalal Hannah of Carleton's work focuses on freshwater conservation science, a good fit for MVCA's work.
6. Conserving and protecting land within the watershed shall be the key mandate of MVCA. All management strategies shall be based on maintaining the ecological integrity of open lands, forests, water including smallest streams, creeks, wetlands, rivers and lakes, all which hold a natural bearing on the watershed. Establishing regulatory boundaries to define jurisdiction of MVCA, including flood plain mapping based upon a twenty-year outlay, is necessary. Some alterations of this boundary by man-made structures may be permitted for some non-residential development as long as it doesn't impinge upon the natural integrity of the watershed. Within these boundaries are many existing natural and man-made structures which deserve conservation and protection actions. These can be controlled by MVCA in conjunction with other agencies. Therefore, I agree that all three OPTIONS for Land Conservation within the watershed be observed. I think this can be observed with the cooperation of local Land Trusts, municipalities concerned and local and local organizations such as fish and game, Naturalist Clubs and Friends of. MVCA should divest itself of any holdings that are not directly connected to the watershed.
7. The distinction between conservation vs preservation can result from the nature of the property and its geographic context. Urban properties are key for ecosystem services and people's mental health, while upper watershed lands can focus on protecting ecosystem values. I don't think there is a need for a choice. I would none the less invite you to align your definition of conservation and protection of land to those of the Pan Canadian Standard for Protected and Conserved areas, so the lands you secure can be accounted as part of Canada's 30x30 goal.
8. Suggest important to do both since people will support the environment if they can interact with it in an appropriate way. Also need to provide some privacy for nature to do its thing.

2. Acquiring More Land

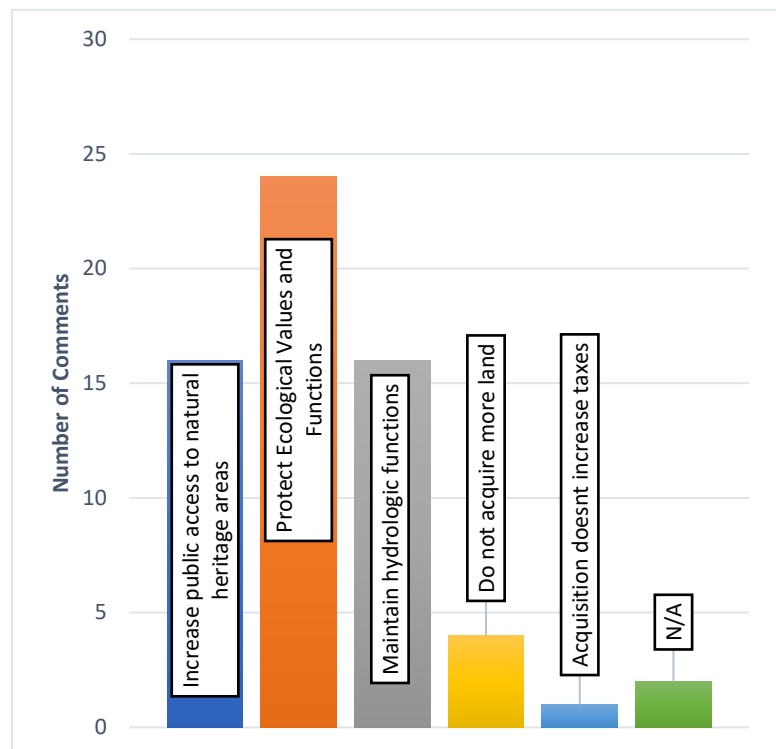
Question: Should MVCA acquire more land or enter into other agreements over the next 20 years to:

- increase public access to natural heritage areas?
- protect ecological values and functions?
- maintain hydrologic functions in the watershed?

- 46% said MVCA should acquire land to protect ecological values and functions.
- 26% said MVCA should acquire land to protect hydrologic functions.
- 20% said MVCA should acquire land to increase public access to natural heritage areas.

Comment Trends

- 38% of comments mention the protection of ecological values and functions.
- 25% of comments mention maintaining hydrologic functions in the watershed.
- 26% of comments mention increasing public access to natural heritage areas.



Snapshot of Comments

1. The CA should not acquire new land through purchase or lease. The CA is not responsible for recreation; suggesting so is inappropriate creep of mandate. Management and or stewardship agreements, conservation easements may be appropriate. With the gap in capital/infrastructure funding currently being navigated by municipalities (AND the MVCA itself), acquiring new lands is inappropriate and cannot be funded by municipalities (paying for acquisition, O&M costs).
2. The options above should not be exclusive. Although maintenance of hydrologic functions is the primary mandate of CAs, they can also play a role in increasing public access and protecting ecological values and functions. Properties that serve all three functions would be a priority. The CAs can play an important role in providing for public access and ecological protection in rural areas where municipalities are limited in their ability to secure parkland by provincial regulations or lack of development that triggers parkland dedication.
3. See comment 1 for reference to protection of Indigenous (Algonquin) values. Increasing access for public should also first be seen as increasing opportunities for Indigenous peoples, who respectfully deserve to be referred to as separate from the general public. Incorporation of and management to enhance Indigenous rights-based activities and access should be a priority for consideration in each area of the discussion paper. Having public access to a large portion of MVCA is important, as long as it does not pose a risk of being detrimental to the values and functions these lands protect.
4. Acquisition via other than purchase agreements recognizing that legal, environmental and operational obligations of MVCA for stewardship and management of assigned lands. Must recognize level of effort for due diligence in acquiring lands and whether approach will be opportunistic/organic growth (as opportunities present themselves) or targeted/active based aligned with MVCA Strategic Plan
5. All of the above depending on the situation. However, I don't believe that MVCA should acquire land, but rather work through other conservation land holders to target certain properties and to support their acquisitions. Using the Morris Island and the CRCA model, MVCA could work with DUC or NCC to acquire and then "manage" one of their properties for public access. This approach makes the best use of each organization's skills and resources.
6. Increasing public access to such sites with a low impact model (Morris Island) allows human enjoyment, preservation of the ecology and watershed systems of the areas acquired
7. MVCA can, or possibly should, strive to acquire any additional lands but only if such lands are directly related to the Mississippi Watershed area and have ecological or hydrologic values. I agree that MVCA can evaluate other offered lands in order to refer the request to other agencies such as LAND Trust, municipalities etc.
8. I consider a balance is necessary between protecting ecological values and services with passive access to green and blue space, which is very relevant in equity purposes as man people and new comers who do not own cottages have limited options to access beaches, water, rivers and forests.
9. Primary focus should be to preserve and protect ecological areas. Hydrologic function can be maintained within current capacity but needs to be planned and operated well, purchasing more land if and when needed due to lack of existing capacity or infrastructure to balance function. Public access should be 3rd priority however natural heritage should be sought for protection if in jeopardy or threatened by loss or integral features.

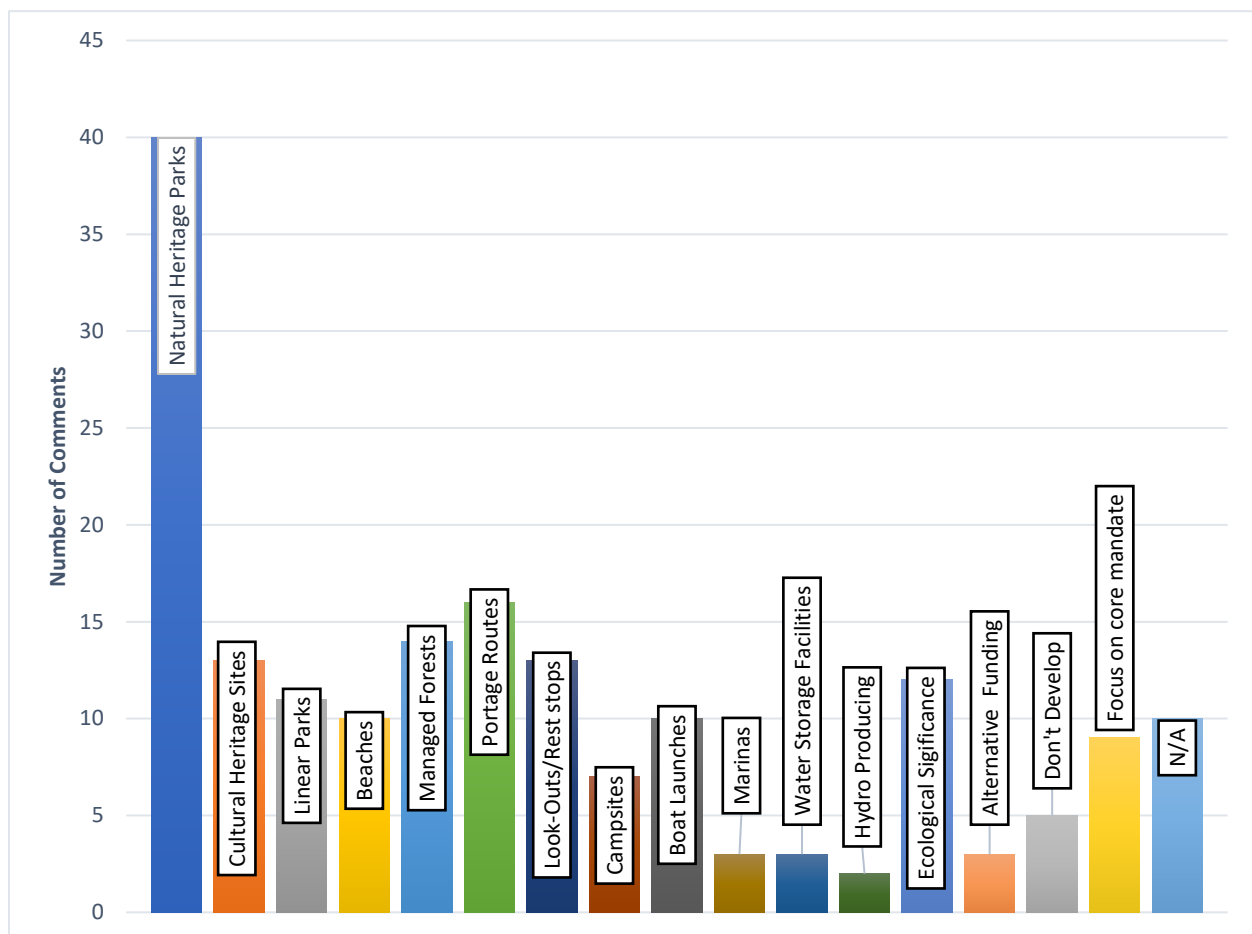
3. Facility Types

Question a) What type of facilities do you think MVCA should develop over the next 10-20 years?

NOTE: This was an open-ended question with no fixed list.

Comment Trends Q. a)

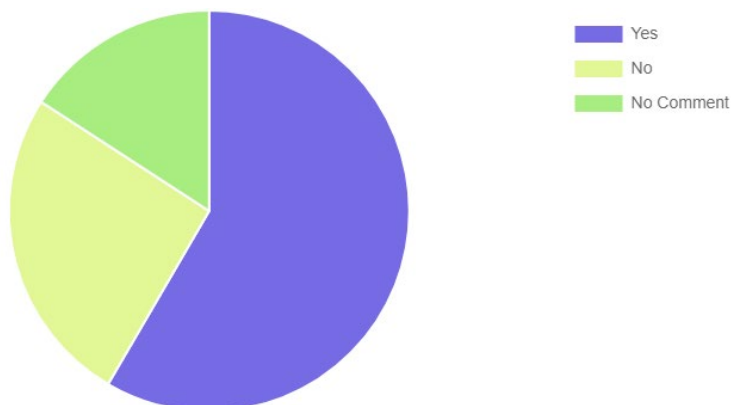
- 22% of comments mention/support Natural Heritage Parks.
- 9% of comments mention portage routes.
- 8% of comments mention managed forests.
- 7% of comments mention properties/facilities with ecological significance for protection and or education purposes
- 7% of comments mention lookouts/rest-stops



Snapshot of Comments Q. a)

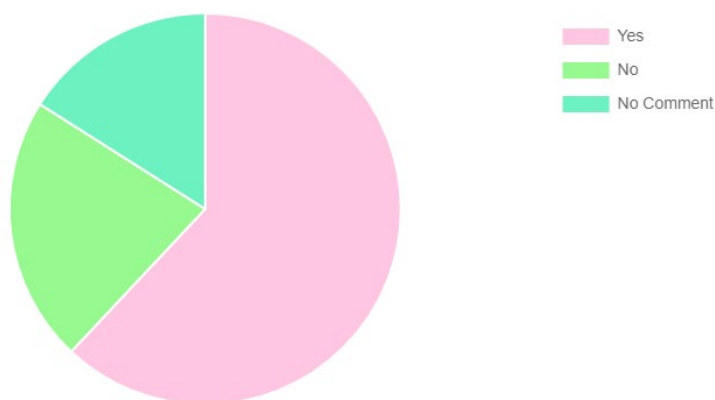
1. The CA should not develop new facilities of the next 10-20 years, unless they generate revenue. The CA should focus on core responsibilities and work in partnership with organizations on anything they take on to ensure proper financial strategies are in place
2. Assuming that the restriction on use of staff for "programming" does not include maintenance, the MVCA could continue to develop and operate passive use facilities that do not require continuous staffing. This could include natural heritage parks, some cultural heritage sites, scenic lookouts, rest stops, boat launches, etc....
3. On their trails open up washroom facilities, open for winter sport, warm up huts or ability to camp all year round.
4. Portage trails, and easement to provide access to water bodies and water routes, campsites and increased camping opportunities. Signage/information kiosks sites at access points should be established and maintained and include and promote Algonquin history within the information.
5. Low-impact trails, lookouts, and water access sites. Anything more ambitious should be undertaken in collaboration with Townships or Counties so that costs, risks and benefits are shared.
6. Given the current crises facing our health system and the potentially powerful therapy Nature offers, MVCA is encouraged play an important role in offering nature experiences, educational opportunities etc. with a mix of sites from interior forest to look-outs and rest stops, urban and rural, recreational and contemplative. All the while ensuring diverse habitat is well stewarded.
7. More natural heritage parks where suitable and where adds to developing public understanding and buy-in for the role of MVCA and protection.
8. Lands in the watershed that are worthy of preservation because of unique ecological and environmental habitat as well as service to wetlands. Some lands should be protected, not logged or used for regular public access. 2. More lands for educational use with public access
9. These are broad categories, but the development of sites that can also be used to generate income to support the MVCA operations would seems to be progressive process. This could wed a positive mix with the operation of low impact sites as well.
10. Linear parks, managed forests, natural heritage parks. As a rule I am not sure CA should be in the business of cultural heritage - except where there are exceptional structures or historic features - Mill of Kintail is a good example, Crawford Lake in Halton is another. In a perfect world a partnership with the province/municipality would be ideal to run these - but I recognize no one really has \$\$ to pay. CAs should not be in the business of marinas, beaches, camp sites etc.
11. Natural Heritage Parks in conjunction with property acquisition and re-naturalization with access to the public where sustainable.
12. With climate change, hydrological infrastructure to maintain, support, enhance/monitor volume is key for all. Community relies on CA for this role. Priority should be given to capacity followed by environmental and ecological preservation, protection, enhancement. Human use of CA land is lowest priority.

Question b) Do you think MVCA should transfer the museum collection and its management to a heritage organization?



54% of respondents support the transfer of the museum collection and its management to a heritage organization. 27% disagree.

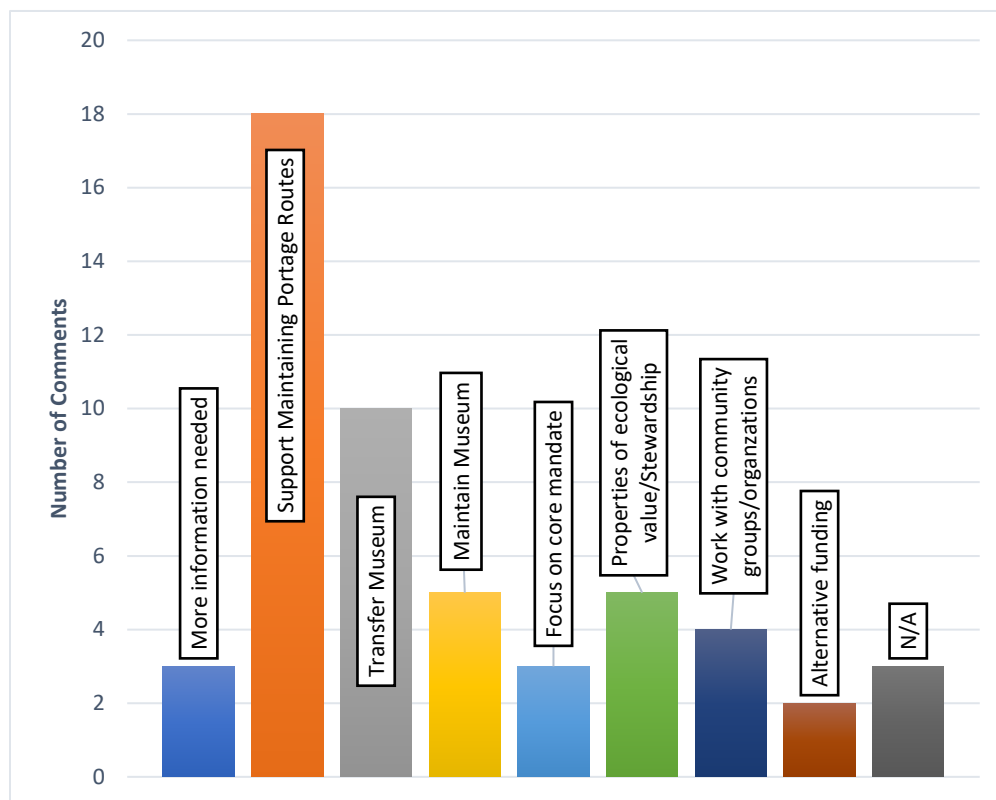
Question c) Do you think there is a role for MVCA in managing portage routes?



60% of respondents feel that there is a role for MVCA in managing portage groups. 25% disagree.

Comment Trends Qs. b) and c)

- 34% of comments support MVCA maintaining portage routes.
- 19% of comments mention support in transferring the museum collection.
- 9% of comments support MVCA maintaining museum collection.
- 9% of comments mention a focus on stewardship and/or protection of properties with ecological value.
- 7% of comments mention cultural heritage sites.



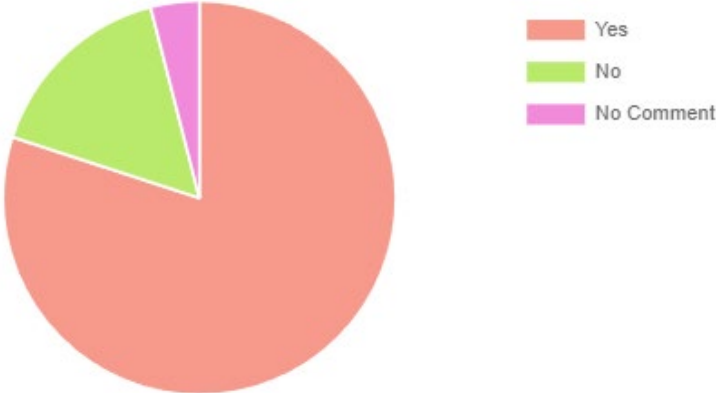
Snapshot of Comments Qs. b) and c)

1. Management of portage routes could fall within the MVCA portfolio because these routes can have impacts in regulated areas equivalent to some forms of development. A badly situated or managed portage route can result in substantial ecological degradation.
2. Indigenous artifacts should be curated by indigenous peoples if repositories and capacity in available within communities to curate these resources. If not, the most local museums should be utilized or partnered with to manage the museum collections. Portage routes are part of the cultural identity of the landscape and promote the human functional element of lands managed and operated by MVCA. It makes sense that portage values within the MVCA lands/jurisdictional areas are managed by MVCA.
3. divesting/transfer of cultural assets is appropriate but will be a challenge without a source of funding for recipient organization to manage/maintain the asset. Portage routes between waterways within MVCA jurisdiction makes great sense.
4. Lanark County Arts & Heritage urges MVCA to invest in Mill of Kintail Museum and the associated the R. Tait McKenzie and Dr. James Naismith Museum and collections. They are vital to preserving the history of this area, and on top of that, they are vital to the tourism industry in Lanark County. Having them located in the park creates a true destination.

5. I think the Mill and collection is the main tent pole in MVCA outreach and education and profile in the community—so retaining control of that is key. Canoe routes: if MVCA didn't manage, would they cease to be suitable for use—if so, maybe MVCA to manage; if not....
6. Type of facilities MVCA should own, or manage or have jurisdiction of in conjunction with other jurisdictions, listed sites, as long as they are connected to our watershed. Questionable are Purdon, K&P, camp grounds, marinas, supervised beaches, look-outs and rest stops outside the watershed MVCA should maintain property of Mill of Kintail but must seek other agencies to manage it. Canoeing is a most valuable asset for the municipalities. It would be great if MVCA or the relevant municipalities owned the properties where portages are necessary, but they don't.
7. I think with the terrible cuts to CAs you need to put your money into conserving as much accessible land as possible, not improving accessibility. If funding improves, sure portage routes would be nice
8. It is very difficult for anyone but the MVCA to develop boat & canoe launches on the sides of rivers and lakes. Volunteer groups could be used to manage & maintain the routes, with MVCA oversight & funding.
9. Yes, museums should be under the purview of museum, archives, and library professionals. I would recommend for the transfer of these responsibilities to another organization. This would enable MVCA to focus on conservation-oriented mandates.
10. No individual municipality in the rural areas would be willing to spend the money needed for a museum, cultural site. Especially as visitors would come from many different areas. The Mill of Kintail would probably be in private hands. Re canoe routes. Needs a coordinated approach which means ca is best suited to do this.

4: Permitted Uses

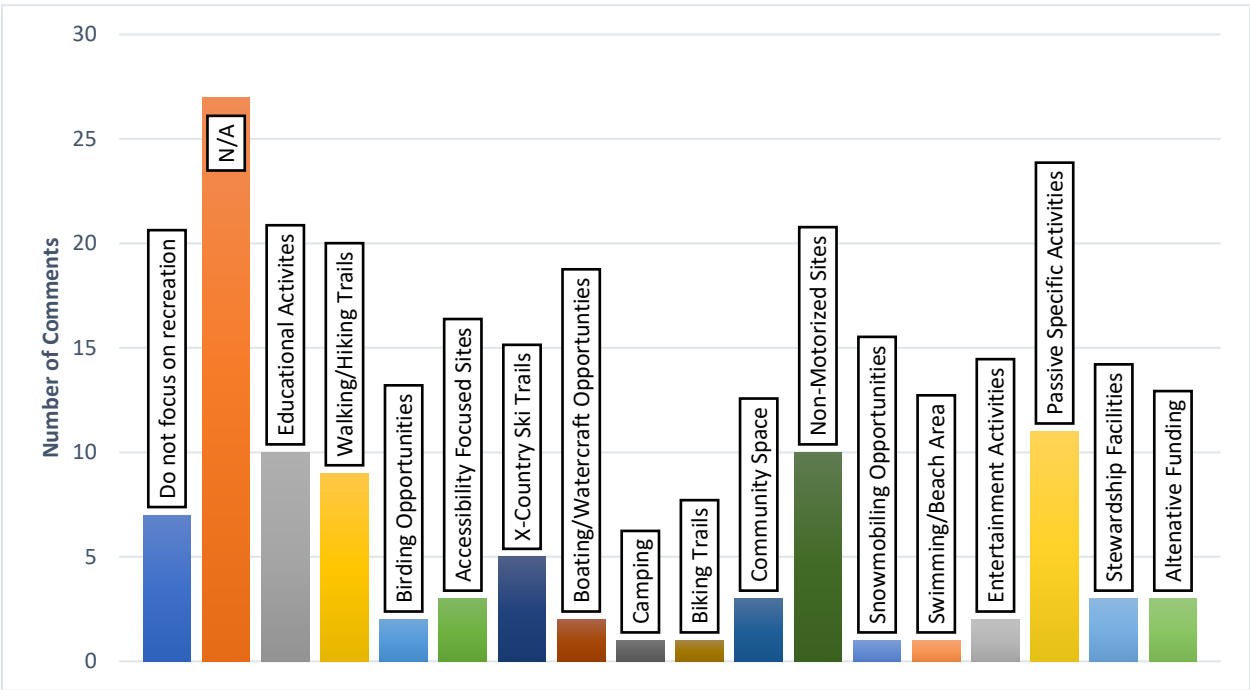
Question a) Are you supportive of the current mix of passive and active recreational activities at MVCA sites?



84% of respondents are supportive of the current mix of passive and active recreational activities at MVCA sites. 12% are not supportive of the current mix.

Question b) Are there specific passive or active recreational activities you think MVCA should investigate at one or more of its existing sites?

NOTE: This was an open-ended question with no fixed list.



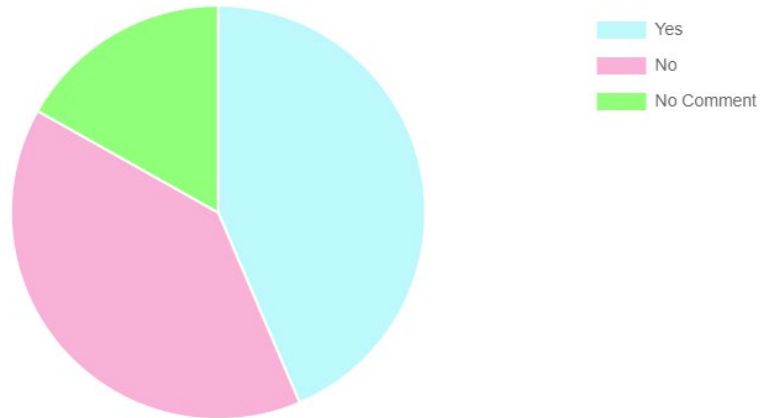
Comment Trends Qs. a) and b)

- 11% of comments mention specifically passive recreational activities.
- 10% of comments mention prohibiting motorized vehicles (i.e. no snowmobiles, no boat motors, no dirt bikes).
- 10% of comments mention educational opportunities & activities.
- 27% of comments are no comment/not applicable/unclear.
- 9% of comments mention walking/hiking trails.

Snapshot of Comments Qs. a) and b)

1. With any activities there should be consideration given to means of generating income from activities to be at least revenue neutral should be strongly encouraged.
2. Not for motorized vehicles and events that require parking for large groups as many locations require drive in access. Winter activities for Snowshoeing and skiing would help get people outside to enjoy the four seasons. Partnerships with groups and businesses for rentals, amenities and complimentary services are needed. Do what you do well and let others support the MVCA
3. Any activities that support active mobility, provide opportunities to connect with nature and/or have a low environmental impact.
4. MVCA should provide walking trails suitable to all level of walkers simply to aid people in living healthy lifestyles. MVCA should provide activities that suit both individuals and groups wanting more active and competitive. MVCA should be promoting greater outdoor activity year around for all ages from young children to seniors.
5. The above list is excellent. MVCA could concentrate on the passive side with private partnerships leading on the active recreation. An open mind to opportunities that present themselves would be most appropriate. There is local interest in trails for horseback riding and it can be managed to minimize habitat damage.
6. Except for motorized uses such as ATVs and snowmobiles and motor boats. Also, very careful prescribed guidelines for non-conservation facilities that emphasize their connection to nature. Basketball courts and summer camps etc. should ideally be on municipal or private property not MVCA land, but current facilities should continue with a focus on connecting them to the land and providing nature
7. Perhaps a biological history booklet of the current hiking trails at the conservation areas. including facts about how the land was shaped and what can be found there now.
8. Mostly passive with some centers for learning if we don't teach the importance it will not last over the next generations.

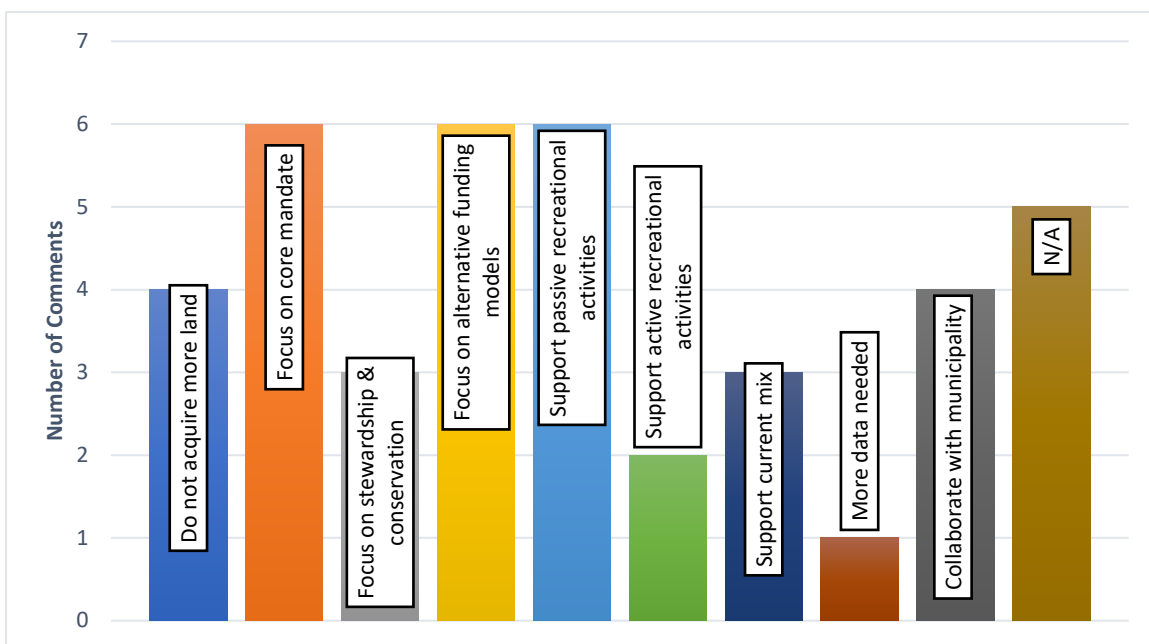
Question c) Do you think MVCA should consider acquiring one or more properties where a broader range of active recreational activities could be provided?



37% of respondents believe that MVCA should consider acquiring one or more properties where a broader range of active recreational activities could be provided. 48% disagree.

Comment Trends for Q. c)

- 15% of comments mention supporting alternative funding models
- 16% of comments mention supporting passive recreational activities
- 15% of comments mention that MVCA should focus on core mandate.
- 13% of comments are no comment/unclear/not applicable

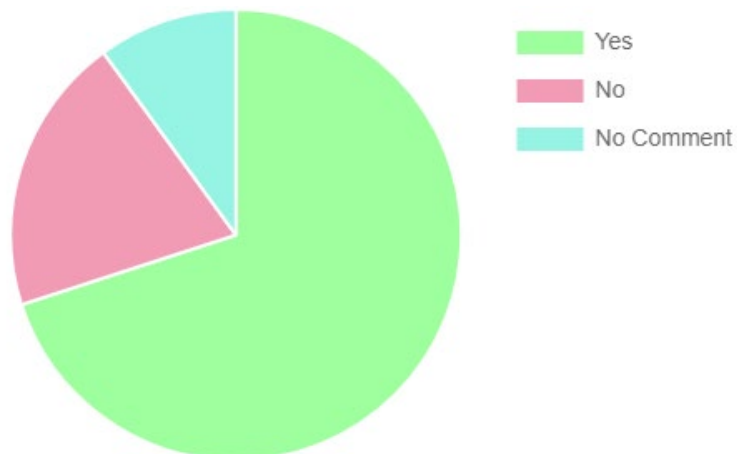


Snapshot of Comments Q. c)

1. In general, the acquisition of properties for active recreational activities (i.e. programmed activities or activities requiring continuous, direct staff oversight) appears inconsistent with the mandate for the CAs established by the Province. However, such acquisitions and activities might be appropriate on a cost-recovery basis where municipal services are not available.
2. But it would have to be an exceptional/unique opportunity due to its natural assets. Collaboration with Townships or Counties should be considered so that costs, risks and benefits are shared, and that continuing operational costs and benefits are shared.
3. That is a qualified "no" as I think MVCA should play to their strengths (natural heritage, biodiversity etc) but using active recreation as a lure to get individuals out into nature and away from their screens could be beneficial - a way to get individuals to love nature and in turn support your conservation work.
4. I support the current use of passive and active recreational activities providing financial support from MVCA is kept to a minimum. Support will include safety, grass cutting where relevant. I don't support MVCA doing ice rinks, grooming cross-country trails and other specialized activities unless such activities are revenue neutral. In fact, with careful planning, all facilities could be operated on a revenue neutral basis. MVCA's core mandate should be care and control of the watershed.

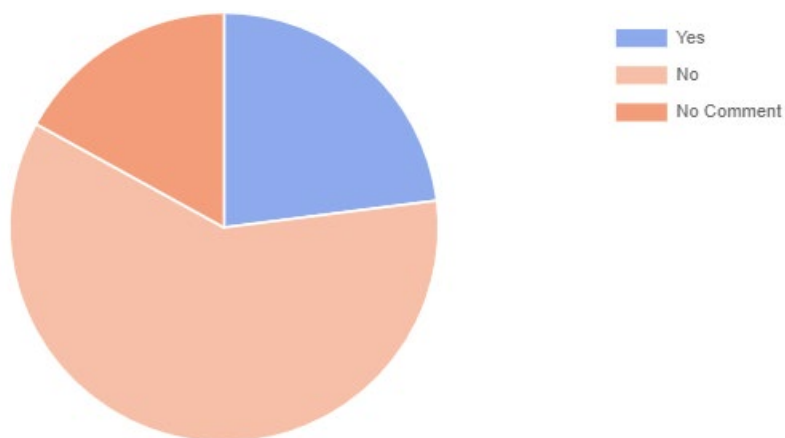
5: Dam Properties

Question a) Should MVCA permit hydro development at a dam where feasible and cost effective?



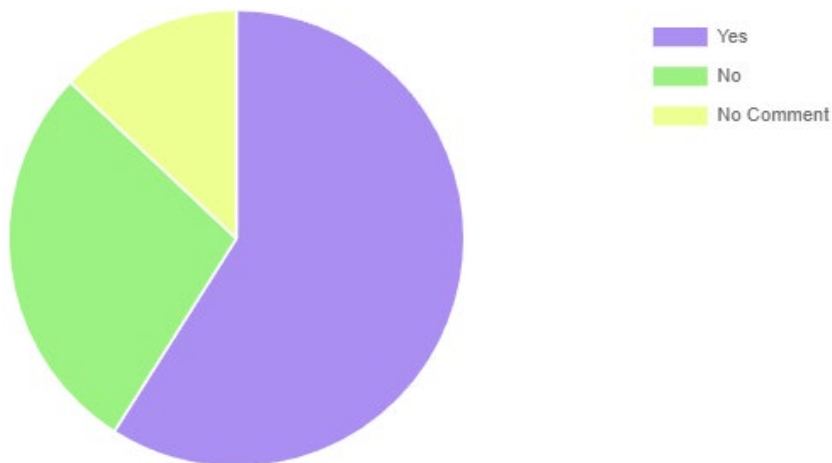
70% of respondents believe that MVCA should permit hydro development at a dam where feasible and cost effective. 18% disagree

Question b) Should MVCA build or assume ownership of facilities whose primary purpose is hydro power generation?



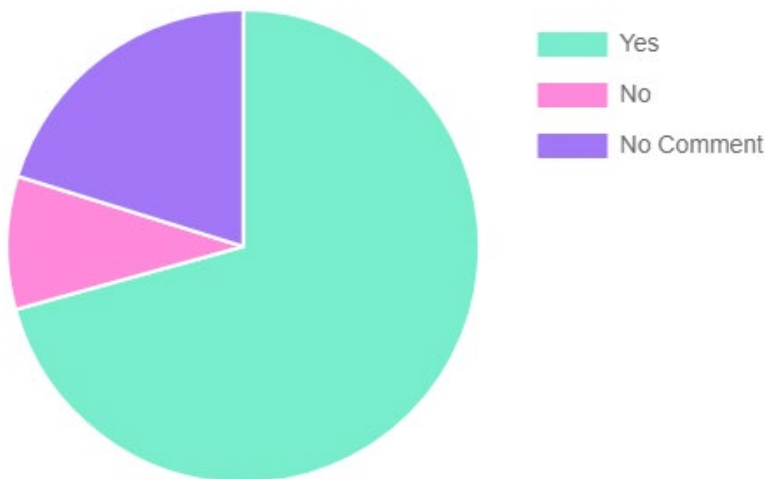
18% of respondents support building or assuming ownership of facilities with the primary purpose of hydro power generation. 64% disagree.

Question c) Should MVCA build or assume ownership of facilities whose primary purpose is to maintain recreational water levels?



57% of respondents believe that MVCA should build or assume ownership of facilities whose primary purpose is to maintain recreational water levels. 30% disagree.

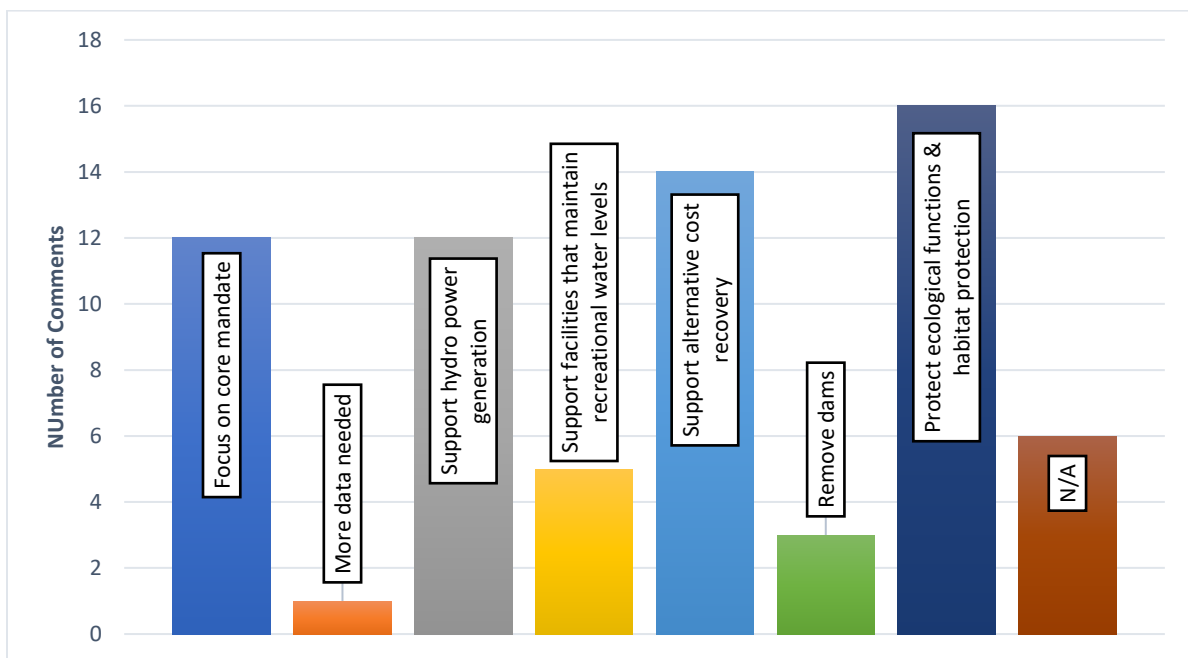
Question d) Should MVCA have different management and cost recovery approaches depending on the primary function of a dam?



73% of respondents believe that MVCA should have different management and cost recovery approaches depending on the primary function of a dam. 8% disagree. 19% had no comment.

Comment Trends Regarding Dam Properties

- 23% of comments mention protection of ecological functions/features and/or habitat protection
- 20% of comments mention support of alternative cost recovery approaches regarding dam properties
- 18% mention that MVCA should focus on core mandate.
- 17% support hydro power generation



Snapshot Comments Regarding Dams

1. Before hydroelectric generation is being considered as a revenues generation to support MVCA ownership, operation, and maintenance of its dam facilities, MVCA should first consider the removal of dams whose primary role is to support recreation and where invasive species management will not be affected. Hydroelectric generation and the damming of rivers within Algonquin Territory is the prime reason why the American eel are almost all but extirpated. If fish safe small-scale hydroelectric opportunities are desired, or inevitable, then revenue-sharing partnerships with Algonquin communities will be required for these hydro-producing dams.
2. Hydro, only if it causes no, or manageable, ecological damage. Loss of a natural asset would require careful consideration and community support in light of the economic benefit; b) Only if it is profitable, same as 4b), i.e. income should be used to support activities considered appropriate by the Board and communities that are not funded by the Province; c) Only if a suitable arrangement can be made with the Township benefiting due to sustained property values and taxation; and, d) Where the purpose is flood and flow control that is in MVCA's remit it should largely carry the cost from Provincial funding, where the purpose is power generation costs should be recovered.
3. Hydro is green so hydro dams, managed with water levels in mind is a good thing. But maybe MVCA would best be as a supporting partner or owner. Managing water levels should not just be for recreation but to address needs of a healthy watershed. And then of course there is the role dams can play is flood relief, a growing and recurring climate change issue.
4. I don't agree that primary purpose of dams should be for recreational levels, even though political aspects such as recreation and personal property designs have been the driving force for dam controls over the years. I know that this political control comes about because your Board is made up of politically elected councilors. I feel strongly that MVCA's primary purpose should be watershed management for safety and security RE: Hydro Development - yes, providing dam is feasible, cost effective and environmentally sound. There are several commercial models of small hydro generators which can be built to add power to our Provincial grid. Perhaps MVCA could invest in this type of development as a fund raiser. Public input is necessary here. Points in a) apply here. Same with assuming ownership of a currently operating facility. I would not suggest this type of activity should be very high on your priority list.
5. While I'm all for a re-naturalization of waterbodies, watersheds etc. the reality is that some of these dams have created enhanced or additional fish and wildlife areas. Raising of water levels is NOT only for recreational use. Many shallow water spawning areas would not exist if it wasn't for the dam controlling levels. Where a benefit is joint: fish - wildlife – man, these structures should be maintained. I believe most of these existing ones would fit that.
6. With climate change flood mitigation is even more important. Recreation levels or a constant water level are important for both aquatic life and cottagers. Who knows and can manage the watershed better than the CA?
7. Suggest enable hydro where feasible with focus on wildlife e.g., eel ladders, fish ladders, etc. Suggest low impact hydro could provide funding to be used by the CA.
8. Focus on core responsibility but partner with energy generating and renewable energy agencies wherever possible as an economic driver for CA that can provide funding for core services. Absolutely this should be a key partnership for MVCA.

Written Submissions

Detailed comments were received from the following individuals:

- Lucy Carleton, Member of the Mill of Kintail Museum Advisory Committee
- Kathryn Jamieson, Chairperson, Lanark County Arts & Heritage
- Gray Merriam, PhD, Professor Emeritus (Landscape Ecology)
- Tom Cowie, Hiawatha First Nation
- Benjamin Labbe, Nation Huronne-Wendat

Key Comments:

- Support MVCA maintaining the Mill of Kintail museum collection
 - The museum is an important community asset.
 - Public/community space for recreational activities
 - Increases tourism
- Consider partnering, collaborating and consulting with other organizations within the watershed.
- Stewardship and educational opportunities at the Mill of Kintail and MVCA's other Conservation
- Focus on the sustainability of lands and waters

DRAFT
Recreational
Facilities Study:
Summary Report

Land Conservation and Resource Strategy



BACKGROUND

Provincial regulations require MVCA to plan and develop its properties while considering the lands, programs and services available from other organizations within our jurisdiction.

...how the lands owned and controlled by the authority may,

- i. augment any natural heritage located within the authority's area of jurisdiction, and*
- ii. integrate with other provincially or municipally owned lands or other publicly accessible lands and trails within the authority's area of jurisdiction.*

Section 10. (1) 3. of O. Reg. 686/21

This study was carried out to answer the following questions:

- What walking/hiking, camping, and boat launch facilities are available in the watershed?
- What amenities do those sites provide?
- Which properties are getting used the most?
- Are the popular facilities meeting the needs of the community?
- What do people value about those sites?
- Are more conservation area "type" facilities needed, and if so what should they focus on?

The study had three components:

1. Desktop review of existing hiking, camping, and boat launch facilities in the watershed.
2. Comparison of current facility availability versus data collected by MVCA in 1982, and Master Plans carried out between 1972 and 1989.
3. Survey of the public regarding their hiking, camping and boat launch use.

The following sections summarize the findings of this study.

NOTE: there are inconsistencies in some data that are being reviewed. The document and analyses will be finalized once data inconsistencies are resolved.

Table 3: Linear Trails	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	
Trans Canada Trail - Ottawa Valley Recreation Trail ^{xi}	Y								Y		Y		Y	Y									
Trans Canada Trail - Lanark Link ^{xi}	Y								Y		Y												
Trans Canada Trail - Carleton Place Trailway ^{xi}	Y								Y		Y												
Trans Canada Trail - Ottawa Carleton Trailway ^{xi}	Y										Y												
Tay Havelock Trail ^{xii}	Y	Y									Y		Y	Y									
Ottawa Valley Rail Trail ^{xiii}	Y							Y			Y		Y	Y									
Riverside Trail, Almonte ^{xiv}	Y	Y	Y	Y							Y		Y										
Riverwalk Trail, CP ^{xv}	Y	Y	Y								Y												
Riverside Park Trail, CP ^{xvi}	Y	Y					Y	Y			Y		Y			Y				Y			

Table 4: Municipal, Provincial & Federal Sites	Walking Trail	Parking	Washrooms	Signage	Fees	Camping	Boat Launch	Museum	Accessible	Rentals	Dogs Allowed	Picnic Areas	Biking Trail	ATV Trail	Education	Fishing	Lookout	Boardwalk	Canoing	Playground	Beach	Hunting	
Pinhey's Point ^{xvii}	Y	Y	Y	Y				Y			Y	Y											
Carp Hills ^{xviii}	Y												Y										Y
Sheila McKee Park ^{xix}	Y	Y									Y							Y			Y		
South March Highlands Conservation Forest ^{xx}	Y	Y		Y							Y		Y										
Kizell Pond Natural Reserve ^{xxi}	Y	Y									Y		Y										
Torbolton Forest ^{xxii}	Y	Y		Y									Y										
NCC Greenbelt - Shirley's Bay, Watt's Creek ^{xxiii}	Y																						
Mississippi Lake National Wildlife Area/Bird Sanctuary ^{xxiv}	Y	Y	Y				Y					Y											
Bon Echo Provincial Park ^{xxv}	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y		Y	Y	Y		Y		Y	Y	
Fitzroy Harbour Provincial Park ^{xxvi}	Y	Y	Y	Y	Y	Y	Y			Y	Y	Y	Y			Y			Y	Y	Y		
Silver Lake Provincial Park ^{xxvii}	Y	Y	Y	Y	Y	Y	Y			Y	Y	Y	Y			Y			Y	Y	Y		
Sharbot Lake Provincial Park ^{xxviii}	Y	Y	Y	Y	Y	Y	Y			Y	Y	Y	Y			Y			Y		Y		
Marsh Trail ^{xxix}	Y	Y	Y																				
Roy Brown Park Trail ^{xxx}	Y			Y							Y	Y	Y										
Crotch Lake ^{xxxi}	Y	Y		Y		Y	Y				Y		Y			Y			Y				

Big Gull Lake ^{xxxii}		Y		Y	Y	Y					Y				Y			Y			
Kashwakamak Lake ^{xxxii}		Y		Y	Y	Y					Y				Y			Y			

1982 to 2024 Comparison

Tables 5 provides DRAFT 2024 metrics where data was available.

Table 5: Key Metrics of Recreation Facilities, 2024	Trails (km)¹	Area (ha)²	Camp Sites
Mill of Kintail CA	7.6	62.0	-
Morris Island CA	6.0	47.0	-
Purdon CA	1.7	26.0	-
Palmerston-Canonto CA	4.4	95.7	-
Carp River CA	4.0	32.0	-
K&P Trail CA	35.0	95.0	-
Blueberry Mountain	4.7	506.0	-
High Lonesome Nature Reserve	8.5	80.1	-
Marble Woodlands	3.7	80.1	-
Poole Family Nature Sanctuary	2.0	44.5	-
Trans Canada Trail - Ottawa Valley Recreation Trail	28.7	-	-
Trans Canada Trail - Lanark Link	4.2	-	-
Trans Canada Trail - Carleton Place Trailway	6.8	-	-
Trans Canada Trail - Ottawa Carleton Trailway	23.3	-	-
Tay Havelock Trail	22.0	-	-
Ottawa Valley Rail Trail	62.5	-	-
Riverside Trail, Almonte	7.5	-	-
Riverwalk Trail, CP	1.9	-	-
Riverside Park Trail, CP	0.5	-	-
Pinhey's Point	3.5	35.0	-
Carp Hills	10.0	1,000	-
Sheila McKee Park	2.0	47.0	-
South March Highlands Conservation Forest	15.2	450.0	-
Kizell Pond Natural Reserve	3.0	19.0	-
NCC Greenbelt – Shirley's Bay and Watt's Creek	29.6	862.0	-
Mississippi Lake National Wildlife Area / Bird Sanctuary	3.0	300.0	-
Bon Echo Provincial Park	17.0	8,294.0	623.0
Fitzroy Harbour Provincial Park	3.0	198.4	406.0
Silver Lake Provincial Park / Marsh Trail	0.5	43.2	148.0

¹ Trail kilometers rounded to the nearest tenth decimal place.

² Area hectareage rounded to the nearest tenth decimal place.

Table 5: Key Metrics of Recreation Facilities, 2024	Trails (km)¹	Area (ha)²	Camp Sites
Sharbot Lake Provincial Park	1.7	80.0	194.0
Roy Brown Park Trail, CP	2.1	10.6	-
North Frontenac Parklands - Crotch Lake, Big Gull Lake, Kashwakamak Lake	11.3	-	-
Torbolton Forest	30.0	260	
	366.9	12,667.7	1,487.0

Population Change

The following population assumptions were made to allow for the comparison of current versus historical levels of services:

- 1988 population: 80,000³
- 2023 population: 264,000⁴

This represents a population growth rate of approximately 228% over 35 years, or an average of 5% per year.

DRAFT Analysis

Tables 6 through 10 compare current facility data against data collected by MVCA in 1982 and from Master Plans completed between 1972 and 1989. For each metric, a service level is provided based upon the estimated population of the watershed at the time the data was collected.

Table 6: Provincial Parks - campsites	Bon Echo	Sharbot Lake	Silver Lake	Fitzroy
1982-1989	530 ⁵	185 ⁶	170 ⁷	251 ⁷
2024	623 ⁸	194 ⁹	148 ¹⁰	406 ¹¹

Total Campsites circa 1980s = 1,136 or 70 persons/campsite

Total Campsites 2024 = 1,371 or 193 persons/campsite

³MVCA Annual General Reports for 1988.

⁴ MNR Development and Hazard Policy Branch. Apportionment Data for 2025. August 2024.

⁵ Bon Echo Provincial Park Management Planning Background Information & Issues, 1988.

⁶ Sharbot Lake Provincial Park Management Plan. November 1988.

⁷ MVCA Recreation Study, 1982.

⁸ Ontario Parks, Bon Echo Provincial Park, 2024.

⁹ Ontario Parks, Sharbot Lake Provincial Park, 2024.

¹⁰ Ontario Parks, Silver Lake Provincial Park, 2024.

¹¹ Ontario Parks, Fitzroy Provincial Park, 2024.

Table 7: Provincial Parks - area (ha)	Bon Echo	Sharbot Lake	Silver Lake	Fitzroy	Pinhey's Point
1977-1989	6,644 ⁵	69 ⁶	32 ⁷	185 ¹²	31 ¹³
2024	8,294 ⁸	80 ⁹	43 ¹⁰	198 ¹¹	35 ¹⁴

Total Ha. Provincial Parks circa 1980s = 6,961 or 11.5 persons/ha.

Total Ha. Provincial Parks 2024 = 8,650 or 30.5 persons/ha.

Table 8: Conservation Areas - area (ha)	Mill of Kintail	Morris Island	Purdon	Carp River	Palmerston-Canonto
1979-1988	62 ¹⁸	47 ¹⁸	18 ¹⁸	-	107 ¹⁸
2024	62 ¹⁵	47 ¹⁵	26 ¹⁵	32 ¹⁵	96 ¹⁵

Total Ha. Conservation Areas circa 1980s = 234 or 342 persons/ha.

Total Ha. Conservation Areas 2024 = 263 or 1,004 persons/ha.

Table 9: Conservation Areas - trails (km)	Mill of Kintail	Morris Island	Purdon	Carp River	Palmerston-Canonto	K&P
1982-1990	7.0 ¹⁶	9 ¹⁹	1.2 ¹⁷	-	1.5 ¹⁸	40.0 ¹⁹
2024	7.6 ¹⁵	6.0 ¹⁵	1.7 ¹⁵	4.0 ¹⁵	4.4 ¹⁵	35.0 ¹⁵

Total Km. of CA Trails circa 1980s = 58.7 or 1,363 persons/km.

Total Km. of CA Trails 2024 = 58.7 or 4,497 persons/km.

Table 10: Hiking Trails in watershed (km)	Total
Circa 1980s	200 ²⁰
2024	367

Total KM of Trails circa 1980s = 200 or 400 persons/ha.

Total KM of Trails 2024 = 367 or 719 persons/ha.

¹² Fitzroy Provincial Park Management Plan, 1984.

¹³ Pinhey Heritage Park Master Plan Study, 1977.

¹⁴ <https://ottawa.ca/en/arts-heritage-and-events/museums-and-historic-sites/pinheys-point-historic-site#>
Accessed October 9, 2024.

¹⁵ <https://mvc.on.ca/conservation-areas/> Accessed October 9, 2024.

¹⁶ Mill of Kintail Master Plan, 1988.

¹⁷ Purdon Conservation Area Master Plan, February 1986.

¹⁸ MVCA Annual General Reports for 1988.

¹⁹ MVCA Annual General Reports for 1990.

²⁰ Estimated based on available historical data.

Existing “Conservation Area-Type” Land in the Watershed, 2024

The following DRAFT estimates are based upon available GIS data for sites with known hiking/walking trails.

Conservation Area-type Lands in Jurisdiction	Ha
Provincial Parks and Conservation Reserves	9,185
MVCA	358
MMLT	711
Baird Trail	36
Greenbelt and Ottawa Land	2,413
Total	12,703
Watershed size	435,322
% of jurisdiction	5%
2023 Population	264,000
Population/ha.	21 per/ha.

Recreational Facilities Survey

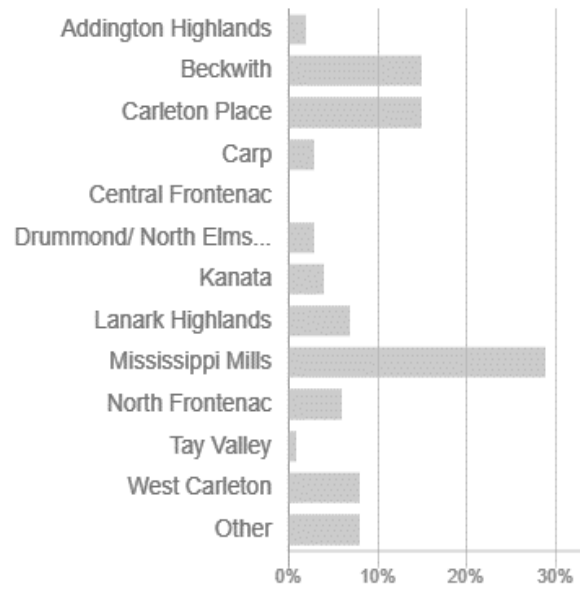
Overview

MVCA developed and distributed a survey to gain an understanding of the recreational facility needs within the Mississippi River watershed. The survey included a list of 34 local sites and asked questions about individual’s use, favourite features and satisfaction.

A total of 198 surveys were completed. Results were analyzed where a minimum of 25 responses were received to a question.

Who participated?

- 29% were from Mississippi Mills
- 15% were from Carleton Place
- 15% were from Beckwith Township



1 Survey Demographics Chart

- 47% were born between 1946-1964 (Boomer),
- 33% were born between 1965-1967 (Gen. X)
- 14% were born between 1980-1994 (Millennial).

Highlights: Recreational Habits & Needs

Respondents throughout the watershed participate in walking/hiking activities more often than boating/watercraft activities and tent camping. The survey results showed that in the past 5-years:

- 92% of respondents have been walking/hiking
- 82% of respondents have participated in boating/watercraft activities
- 32% of respondents have participated in tent camping

Regarding their usage:

- 87% of respondents do not belong to a club or group that organizes activities.
- 98% have easy access to a car for outdoor recreation activities.

Regarding the need for more facilities:

- 53% of respondents agreed and 35% disagree that more facilities are needed in the watershed to support walking/hiking activities.
- 44% of respondents agree and 41% disagree that more facilities are needed in the watershed to support boating and other watercraft activities.
- 57% of respondents agree and 28% disagree that more facilities are needed in the watershed to support tent camping.

Comments Received

Improve accessibility.

- Public washroom facilities needed.
- Increased and updated signage needed.
- Parking access.
- Improved access to trails.
- Seating/Rest Areas.
- Lighting on trails.

Partner with other organizations.

Dog Policies.

- There are mixed opinions on dog policies, with some wanting more off-leash areas and others emphasizing the need for dogs to be on-leash for safety.

Facilities and Maintenance

- More staff/funds required for increased maintenance (hazard removal)

Recreational Opportunities

- More walking/hiking trails.
- Extend and improve current trails.
- Need for boat launches/access points for kayaks/canoes.
- Better upkeep of the current launches

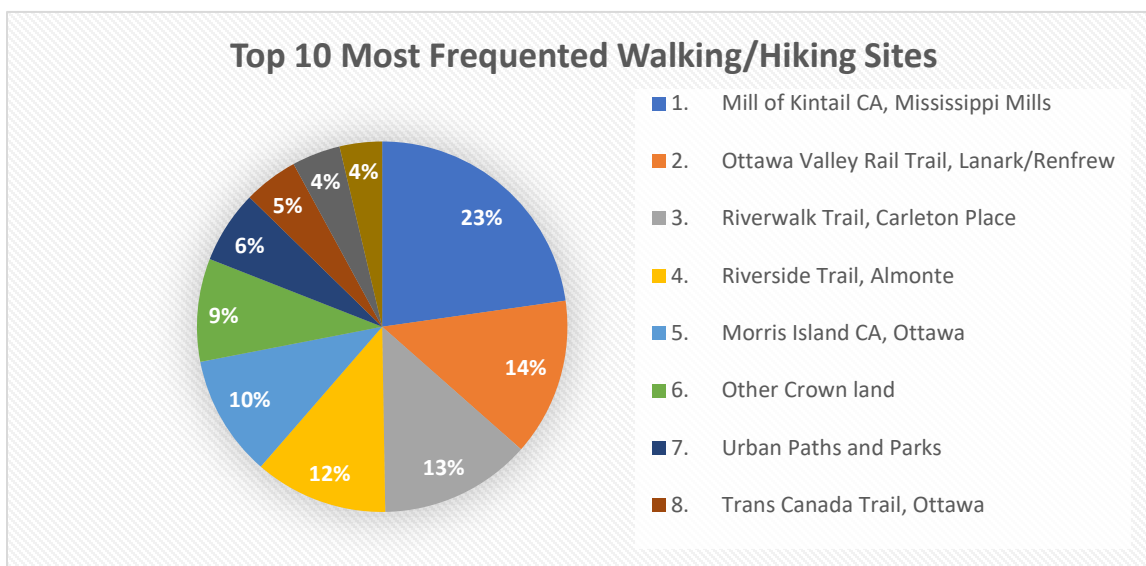
Non-motorized craft/activities with low impact on the environment.

Tent camping facilities need better upkeep

- Litter/Garbage issues.

Highlights: Walking/Hiking Sites

The most popular sites for walking/hiking activities were the Mill of Kintail Conservation Area, the Riverwalk Trail in Carleton Place, the Ottawa Valley Rail Trail and Riverside Trail in Almonte.



The sites most frequently identified as a “top-three most frequented” property for walking and hiking activities were:

1. Mill of Kintail Conservation Area
2. Ottawa Valley Rail Trail
3. Riverwalk Trail in Carleton Place
4. Riverside Trail in Almonte
5. Morris Island Conservation Area
6. Crown land
7. Urban paths/parks.

The majority of respondents use these sites 2-6 times per year with the exception of the Ottawa Valley Rail Trail (OVRT) and Urban Paths/Parks that are used multiple times per week.

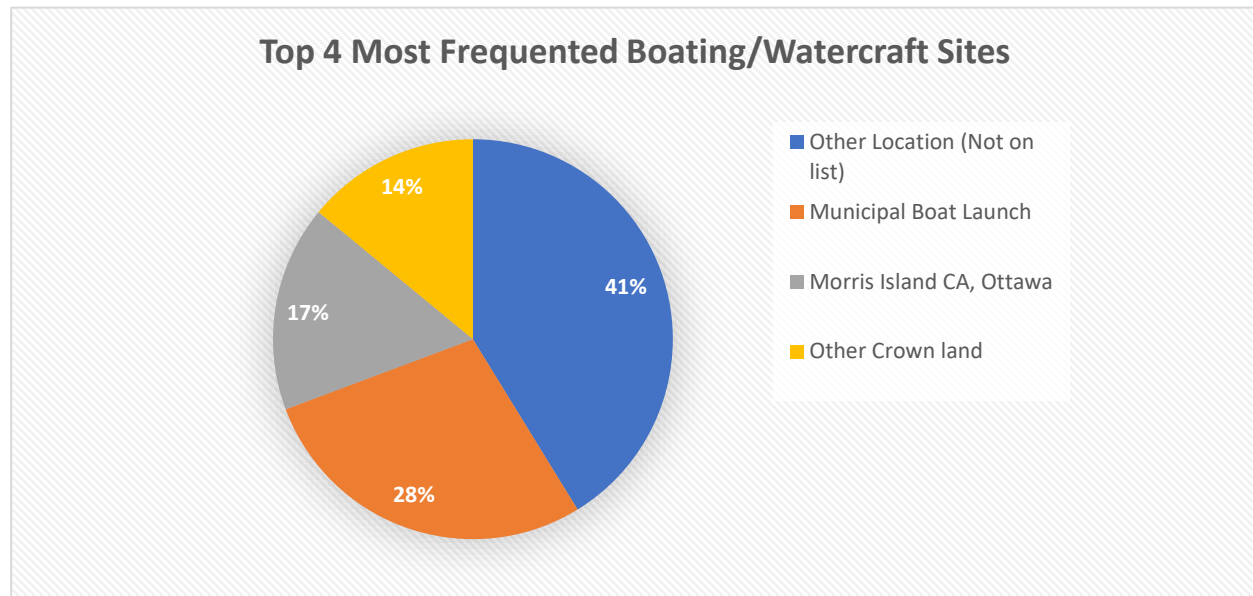
Respondents believe that public use of the top 10 walking/hiking sites has increased over the past five years.

Features that respondent identified as most important at the top 10 walking/hiking sites were:

- Drive from home less than 30 minutes,
- Presence of water features
- Quiet/seclusion/privacy
- Variety of trail routes and distances
- Easy parking access
- One or more vistas/look-outs
- Dogs on leash permitted on the trails
- Wildlife viewing opportunities
- Trails with challenging terrain

Top 10 walking/hiking sites have a high level of satisfaction with the majority of respondents. The majority of respondent's satisfaction with these sites has stayed the same (pre and post COVID-19) over the past five years.

Highlights Boating/Watercraft Sites



The most popular sites for boating and watercraft activities were Crown Land, Morris Island, various municipal boat launches, and numerous other locations throughout the watershed that included private docks at cottages.

The most popular locations identified for boating and watercraft activities were:

- | | |
|--------------------------|-----------------|
| 1. The Mississippi River | 4. Clayton Lake |
| 2. Mississippi Lake | 5. Clyde River |
| 3. The Ottawa River | 6. Tay River |

The most popular locations of municipal boat launches were:

- | | |
|------------------------------------|---------------------|
| 1. Mississippi Lake, | 4. Almonte |
| 2. Mississippi River | 5. Kashwakamak Lake |
| 3. Locations within Carleton Place | |

Crown Land most often used by respondents for boating/watercraft activities is within Lanark County, followed closely by North Frontenac Parklands. For water access:

- Many sites “not listed” in the survey were used more than 10 times per year
- Municipal boat launches were typically used 4-9 times per year
- Morris Island and Crown Land are typically used less than 4 times per year

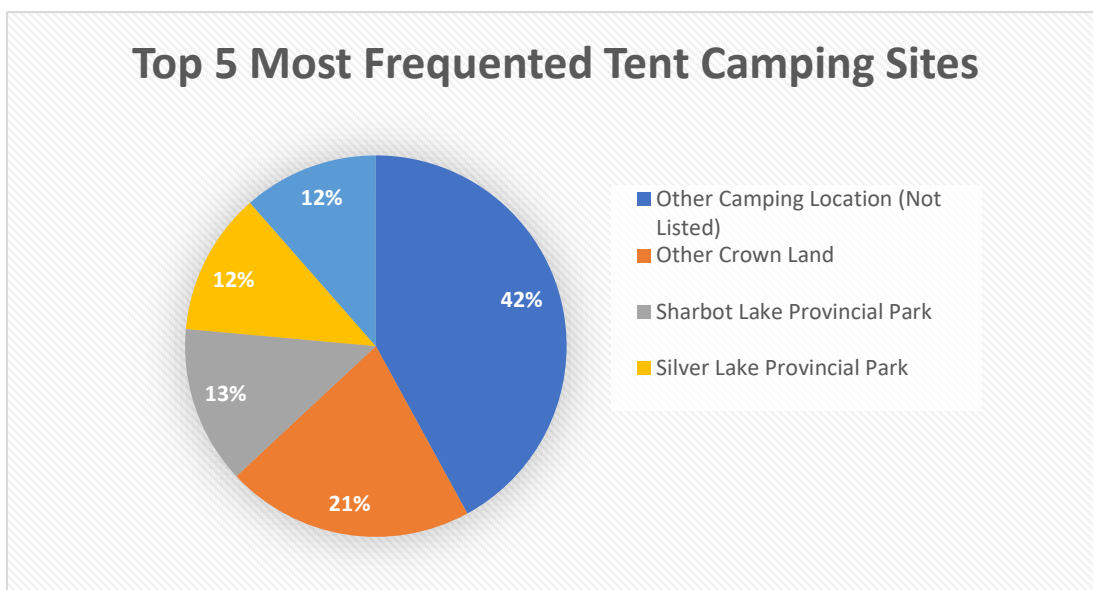
Respondents believe that public use of these most frequented sites has increased over the past five years.

Common important features identified by respondents for the top 4 boating/watercraft sites were:

1. The waterbody is not overused,
2. The waterbody has islands or other interesting landscapes,
3. The waterbody is easily navigated,
4. Drive from home less than 30 minutes; and
5. Limited shoreline development of the waterbody.

Respondents are either satisfied or very satisfied with the top 4 boating/watercraft sites. Their level of satisfaction has stayed the same (pre and post COVID-19) over the past five years.

Tent Camping Sites



The most popular sites for tent camping were:

1. Locations “not listed” in the survey,
2. Crown land,
3. Sharbot Lake Provincial Park,
4. Silver Lake Provincial Park; and
5. Fitzroy Harbour Provincial Park.

Other popular sites identified by respondents were:

- Bon Echo Provincial Park
- Algonquin National Park
- North Frontenac Parklands
- Charleston Lake

On average, respondents use the top 5 tent camping sites less than 4 days per year. However, those using Crown Land tend to stay more than 8 days per year during the open season.

The majority of respondents believe that public use has increased at camping sites over the past five years.

Common important features identified by respondents for the top 5 most frequented tent camping sites include:

1. The property has affordable campsites,
2. The property has well defined campsites,
3. Drive from home less than 90 minutes; and
4. The property is largely in a natural state.

The top 5 tent camping sites have a high level of satisfaction, with the majority of respondents being either satisfied or very satisfied. The majority of respondent's stated that their level of satisfaction has stayed the same over the past five years (pre and post COVID-19).

ⁱ <https://mvc.on.ca/conservation-areas/mill-of-kintail/> Assessed October 9, 2024.

ⁱⁱ <https://mvc.on.ca/conservation-areas/morris-island/> Assessed October 9, 2024.

ⁱⁱⁱ <https://mvc.on.ca/conservation-areas/purdon/> Assessed October 9, 2024.

^{iv} <https://mvc.on.ca/conservation-areas/palmerston-canonto/> Assessed October 9, 2024.

^v <https://mvc.on.ca/conservation-areas/carp-river/> Assessed October 9, 2024.

^{vi} <https://mvc.on.ca/conservation-areas/kp/> Assessed October 9, 2024.

^{vii} <https://www.lanarkhighlands.ca/lh-discover/outdoor-activities/trails> Assessed October 9, 2024.

^{viii} <https://www.mmlt.ca/protecting-nature/our-protected-properties/high-lonesome-nature-reserve> Assessed October 9, 2024.

^{ix} <https://www.mmlt.ca/properties/marble-woodlands> Assessed October 9, 2024.

^x <https://www.mmlt.ca/properties/poole-family-nature-sanctuary> Assessed October 9, 2024.

^{xi}

https://tctrail.ca/? g|=1%2A7gz153%2A up%2AMQ..%2A ga%2AMTQ1MjMzMTA0MC4xNzI0MDgxNzkz%2A ga_Z63TFVPQJ6%2AMTcyNDA4MTc5MS4xLjEuMTcyNDA4MTgyMS4wLjAuMTQzMjY1OTg0NQ Assessed October 9, 2024.

^{xii} <https://www.lanarkcounty.ca/en/tourism/parks-trails.aspx#County-Trails> Assessed October 9, 2024.

^{xiii} <https://www.ottawavalleytrail.com/> Assessed October 9, 2024.

^{xiv} <https://www.mississippimills.ca/en/explore-and-play/riverwalk.aspx> Assessed October 9, 2024.

^{xv} <https://www.lanarkcounty.ca/en/tourism/parks-trails.aspx#Community-Trails> Assessed October 9, 2024.

^{xvi} https://www.tripadvisor.ca/Attraction_Review-g887227-d14902497-Reviews-Riverside_Park-Carleton_Place_Ontario.html Assessed October 9, 2024.

^{xvii} <https://ottawa.ca/en/arts-heritage-and-events/museums-and-historic-sites/pinheys-point-historic-site#section-54d84e1d-d5bf-42ba-af7c-b36e38b597d4> Assessed October 9, 2024.

^{xviii} <https://ottawa.ca/en/living-ottawa/environment-conservation-and-climate/conservation-areas#section-5a696ed5-3e4b-4196-ab34-19d50a0aa0de> Assessed October 9, 2024.

^{xix} <https://www.alltrails.com/trail/canada/quebec/sheila-mckee-nature-trail> Assessed October 9, 2024.

^{xx} <https://ottawa.ca/en/living-ottawa/environment-conservation-and-climate/conservation-areas#section-34ca60c8-98e9-47c6-b8ac-68190a3ccabe> Assessed October 9, 2024.

^{xxi} <https://www.alltrails.com/trail/canada/ontario/kizell-pond-trail> Assessed October 9, 2024.

- xxii <https://ottawa.ca/en/living-ottawa/environment-conservation-and-climate/conservation-areas#section-5a44a7e8-8efa-4b2c-abc3-94a69a1ff7d7>
- xxiii <https://ncc-ccn.gc.ca/places/hiking-and-walking-greenbelt> Assessed October 9, 2024.
- xxiv <https://www.canada.ca/en/environment-climate-change/services/migratory-bird-sanctuaries/locations/mississippi-lake.html> Assessed October 9, 2024.
- xxv <https://www.ontarioparks.ca/park/bonecho/activities> Assessed October 9, 2024.
- xxvi <https://www.ontarioparks.ca/park/fitzroy> Assessed October 9, 2024.
- xxvii <https://www.ontarioparks.ca/park/silverlake> Assessed October 9, 2024.
- xxviii <https://www.ontarioparks.ca/park/sharbotlake> Assessed October 9, 2024.
- xxix <https://www.alltrails.com/trail/canada/ontario/marsh-trail--3> Assessed October 9, 2024.
- xxx <https://www.alltrails.com/trail/canada/ontario/roy-brown-park> Assessed October 9, 2024.
- xxxi <https://www.northfrontenacparklands.com/our-parklands/campsites-maps/crotch-lake/> Assessed October 9, 2024.
- xxxii <https://www.northfrontenacparklands.com/our-parklands/campsites-maps/>

REPORT**3446/24**

TO:	The Chair and Members of the Mississippi Valley Conservation Board of Directors
FROM:	Alex Broadbent, IC&T Manager and Sally McIntyre, General Manager
RE:	Portage Routes: History and Use
DATE:	October 3, 2024

FOR INFORMATION

MVCA is required to ensure safe passage around its water control structures and is responsible for maintaining portage routes at Authority structures. In the early days of the organization, MVCA also played a significant role in the establishment and maintenance of portage routes in key areas of the Mississippi River. While MVCA has not actively maintained portage sites for roughly 15 years, many of the sites established in the 1970s continue to be used and MVCA still receives calls from users and property owners today.

The attached article on their history and use was prepared because “Portage Routes” were the second most requested service identified in the recent *Discussion Paper Survey* behind “Natural Heritage Parks”. As well, they were identified as an opportunity to collaborate with First Nations as a meaningful action towards reconciliation. The article is intended to provide background to any discussions the Board may have on this matter.

CORPORATE STRATEGIC PLAN

Completion of the Land Conservation Strategy will support achievement of:

Goal 2: Community Building – engage local partners to foster connections, leverage our resources, and strengthen our “social license” to operate.

- a) Demonstrate MVCA to be a trusted, client-centered, resourceful, and helpful partner.
- b) Strengthen relationships with municipalities and community stakeholders, First Nations, the agricultural sector, developers, not-for-profits, and academia.

Attachment

- *Portage Routes of MVCA: Their History and Use*

Portage Routes of MVCA: Their History and Use

ALEX BROADBENT, MVCA

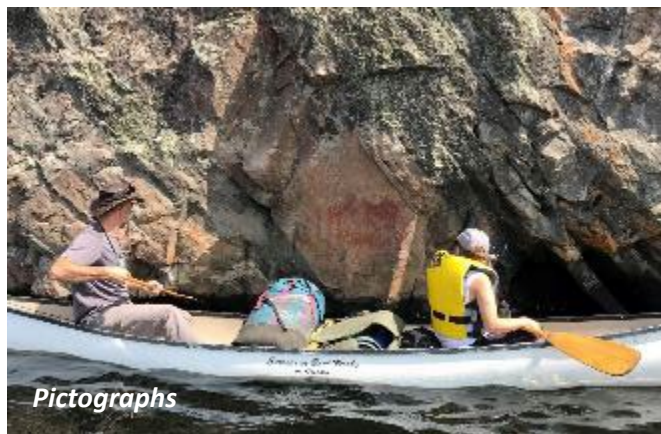
OCTOBER 2024

An Ancient Travel Route

Anishinaabe people say that Bon Echo Rock on Mazinaw Lake was a great rendezvous point long before European settlements reached the Mississippi River watershed. The cliff top at Mazinaw Lake was a sacred place, and Algonquin peoples retain and value this ancestral link to their past.

More than 260 painted images attest to the significance of this place and the storytelling technique of the people who created them. The red ochre images depict human and animal figures, as well abstract and geometric symbols.

Pictographs are place-markers linked to travel rituals and are signs of human occupation on the landscape. The Mazinaw pictographs, attest to a tradition that is at least 2,000 years old.¹ Some estimates place them as far back as 5,000 BCE.²



These pictographs and artifacts found along the Mississippi River confirm it to be an ancient travel route perhaps as old as the pyramids of Egypt.

Lumbermen's Feud of 1882

French fur traders travelled the Ottawa and Mississippi rivers and connected with the Algonquin of this area around 1670.³ The Mississippi River watershed remained relatively untouched by settlers until the 1850s when they began to clear the land and harvest the great forests of towering pines to send them downriver using timber slides.

In fact, Canada's *Navigable Waters Protection Act* is said to have its origins due to the "Lumbermen's Feud" of 1882 between Mississippi River lumber mill barons Peter McLaren and Boyd Caldwell.⁴ The story goes that McLaren owned a lumber mill on the upper Mississippi River and, to push his logs downstream, he constructed a series of timber slides on the Mississippi and some of its tributaries. His rival, Boyd Caldwell, sought to take advantage of McLaren's work and attempted to drive his logs through the same slides. A feud entailed, which ended in court.

¹ Aubert et al. 2004; Rajnovich 1994:41

² The Mazinaw Pictographs were designated a national historic site of Canada in 1982, the largest

rock art site on the southern Canadian Shield and the only major pictograph site in southern Ontario.

³ <https://www.ottawariver.org/pdf/07-ch2-5.pdf>

⁴ https://en.wikipedia.org/wiki/McLaren_v_Caldwell

Caldwell made the claim that no single person can own the navigable rights of a river, and that he was fully justified in his actions. Caldwell's successful claim established the principle in Canadian law that waterways are open to all, and that private interests cannot refuse passage to anyone if the waterway is navigable.



Several of MVCA's dams are located at former timber slides or mills along the Mississippi and Clyde rivers.

Mississippi River Canoe Route

The Mississippi River Canoe Route extends from Bon Echo Provincial Park on Mazinaw Lake to the Ottawa River—just over 200 kilometres. Along the way, it traverses countless rapids and falls, through forested banks, lowland swamp, rolling farmland and

country hamlets. Portages are necessary at several locations due to dangerous or impassible sections of the river. It is likely that most portage routes in the early years were informal and evolved over time as trees fell, erosion occurred, and land was developed.

In 1910, the Mississippi River was the first canoe route to be promoted in *Canada's Book of Recreational Canoe Routes*.⁵

Provincial Assessment and Funding

When MNR crews surveyed the Mississippi River watershed in 1969 they found that “the high potential for canoe routes has not been developed except in the western end of the Authority.”⁶

Over the years that followed, the MVCA received provincial funding to sign-up and work with landowners to establish portages: “Portage trails on the Mississippi River from Dalhousie Lake to Playfairville have been completed across private land through the co-operation and courtesy of the landowners who include Mr. W. Hall, Mr. W. Duncan, Mr. J. Playfair, Mr. N. Wall and General H. Meuser. Signs and waste disposal barrels have been erected at the portages to protect the natural environment of the river.”⁷

In 1975, signs and fireplaces were installed at several locations, and several additional sites were examined for their potential as portages or for overnight camping. The

⁵ [The Happy Camper: Canoeing Canada's Mississippi River, Part 1 – Explore Magazine \(explore-mag.com\)](http://www.explore-mag.com)

⁶ <https://mvc.on.ca/wp-content/uploads/2021/04/mvc-repot-1970-v1-WEB.pdf>

⁷ MVCA 1973 Annual Report.

“brochures which were printed in 1975 have received wide distribution and the Authority has received many comments on the quality of the routes.”

By 1976, MVCA’s role was focused on publications and promotion of the canoe route while “the two Districts of the Ministry of Natural Resources will be responsible for a large part of the maintenance of the route.”⁸

Sign, Sign, Everywhere a Sign

MVCA continued to promote the canoe route, and performed occasional maintenance of portage markers and fallen tree removal for over 30 years. These activities discontinued around 2008 when the Township of North Frontenac assumed land management of Crown properties, and as more canoeists took on portage maintenance throughout the system.

Today, MVCA still has a large visual presence along the Mississippi River Canoe Route not only at our dams and gauge sites, but also due to our many historic portage signs throughout the river system.

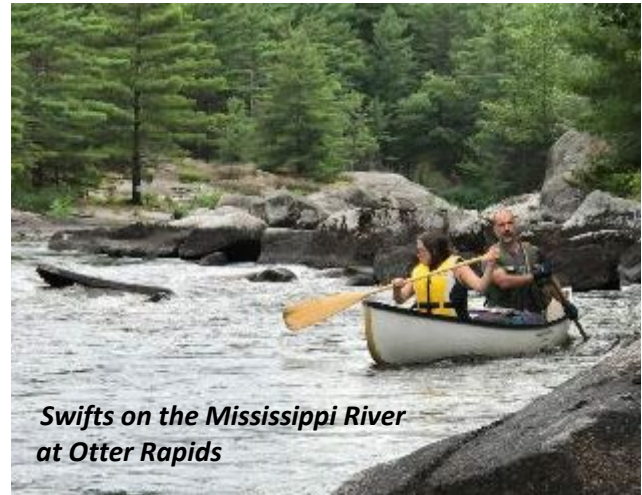


MVCA sign circ 1990s

⁸ MVCA 1976 Annual Report.

Big Gull Loop & Whitewater Opportunities

The upper Mississippi River and its reservoir lakes are enjoyed by way of the Big Gull Loop, which connects canoeists back to their starting point by exiting Crotch Lake and navigating small creeks to Gull Big, Shoe Pack and Kashwakamak Lakes.



Swifts on the Mississippi River at Otter Rapids

Adventurous white-water enthusiasts can experience the true wilderness of the river between Crotch Lake and Miller Lake. While rugged in parts, the white water eventually turns into swifts as the river passes from Crown land to Patent land and camping opportunities are reduced to private operations.

The middle reach of the Clyde River is also popular with white-water canoeists when levels are high. The Clyde River is navigable for 44 km from Widow Lake to its outlet at the Mississippi River. Where portages don’t exist, it is travelled using a “*stay with the river*” method and techniques of “*lining and wading*” are used.

Not So Calm on the Carp River

Paddling the Carp River provides excellent opportunities for day trips. Certain sections can only be paddled during high water levels, and can be challenging due to downed trees and low bridge clearances. The final reach below Carp Road to the Ottawa River provides white water conditions during the spring freshet.

Manoomin

Manoomin, “good berry”, or wild rice, is culturally significant to First Nations. It is found in abundance on Mud Lake downstream of the community of Ardoch that has harvested it for generations.

Portages

Portage or portaging is the practice of carrying water craft or cargo over land. On the Mississippi River it is generally around



Wild rice on Mud Lake



Derecho Damage at Side Dam Rapids, 2007

an obstacle in the river such as a dam or rapid.

Portages are dynamic and adjust to the changing environment, downed trees, beaver floods and may have high and low water accesses. Most of the portages of the upper reaches of the river are located within the Crown land shoreline allowance. Below Crotch Lake, portages start to be found on private land as shoreline allowance have not been preserved. Portages on private land have been a source of contention in some places.

MVCA provides for and maintains portages at our water control structures where active and historic use is known.

Mapping & Promotion

The Mississippi River Canoe Route is promoted in various publications, the most popular being *A Paddler's Guide to Ontario's Lost Canoe Routes* by Kevin Callen, 2002.

The Mississippi River Canoe Route is also actively promoted on several websites and community forums including [Mississippi Valley Field Naturalist](#) and [MyCCR.com](#).