

## EXECUTIVE SUMMARY

# Mississippi River **Watershed Plan** July 2021






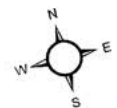
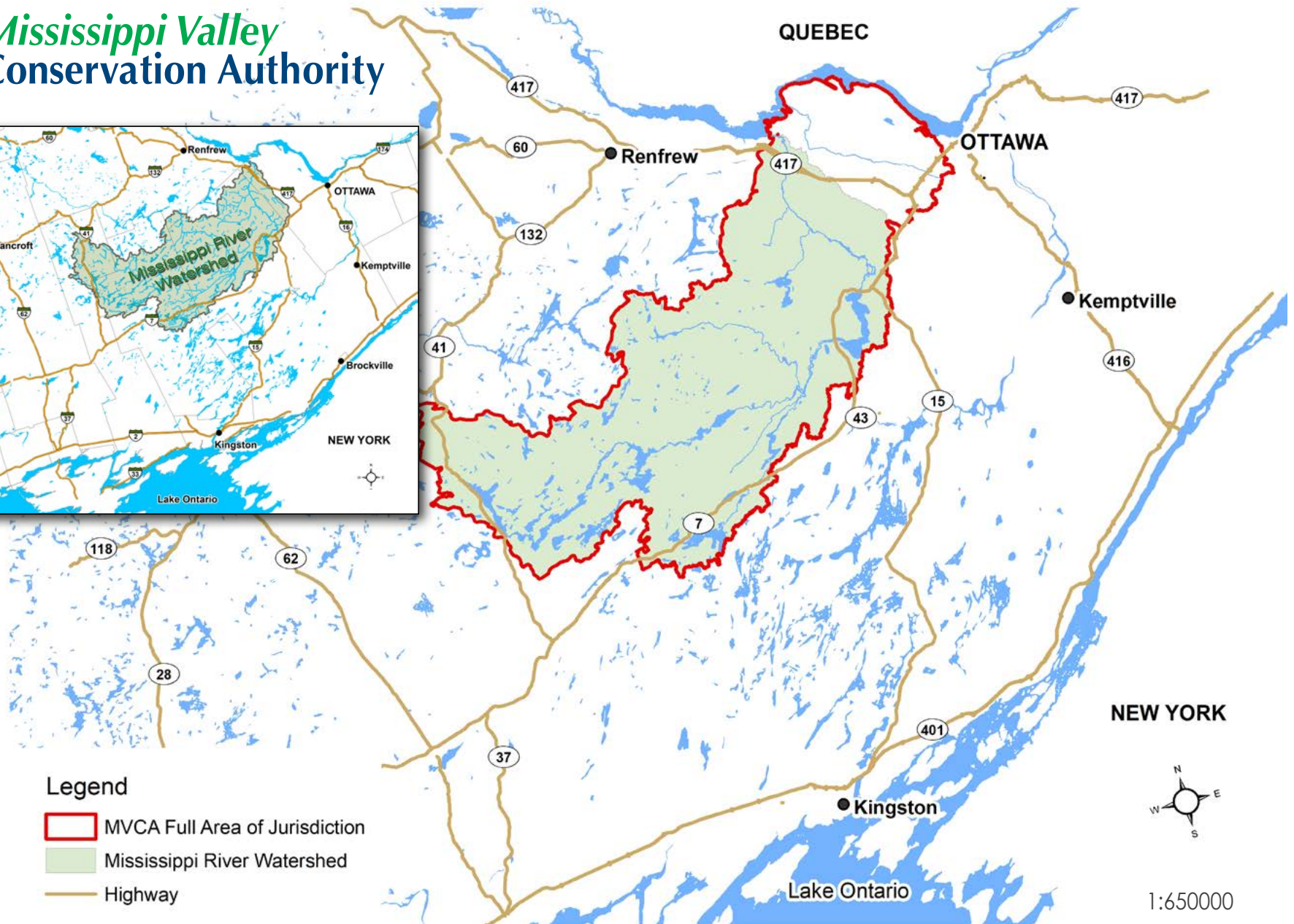


# Mississippi River Watershed Map



## Legend

-  MVCA Full Area of Jurisdiction
-  Mississippi River Watershed
-  Highway



1:650000

Integrated Watershed Management is the process of managing human activities and natural resources on a watershed basis considering social, economic and environmental factors to manage watershed resources sustainably.

## Executive Summary

As one of the largest river systems in eastern Ontario, the Mississippi River watershed covers 3,765 km<sup>2</sup> of land, spans 11 municipalities, and supports over 42,000 year-round residents and many seasonal residents. Located on the geographic transition between the Canadian Shield to west and the St. Lawrence Lowlands to the east, the watershed exhibits a diversity of landscapes. The Shield area features a network of lakes, rivers, streams and small wetlands within forested cottage-country and crown-owned lands. The Lowlands area features a larger river valley situated amongst agricultural, rural and urban land uses.



Ragged Chutes

The natural assets of the watershed offer numerous ecosystem services to those who live, work and play within its landscapes. They provide drinking water; replenish wetlands and groundwater; and support agriculture, forestry, hydro-electric power, recreation and tourism. The watershed also supports vast communities of plants, animals, birds, fish and other organisms.

The watershed is facing the stresses of climate change, urban growth, aging or inadequate infrastructure, and related challenges with flooding and droughts, impairment of water quality and impacts to natural features and systems. Maintaining and enhancing the watershed's natural resources is critical to ensuring resiliency to climate change and the impacts of urban growth. This requires an integrated approach that brings together stakeholders as well as rights holders from across the watershed to develop and implement strategies that are aimed at achieving a sustainable and resilient system.

Given their broad resource management mandate and areas of jurisdiction,



conservation authorities play a coordinating role in watershed planning and management. In keeping with this role, the Mississippi Valley Conservation Authority (MVCA) worked in cooperation with watershed municipalities, residents, government organizations, non-governmental organizations, and representatives from the agriculture, development, environment, forestry, hydropower producers, lake communities and special interest groups, to prepare this Watershed Plan.

Section 1 of the Mississippi Watershed Plan describes the planning process, Section 2 provides an overview of the watershed, and Section 3 presents the strategic plan, structured around eight broad themes and program areas: Integration and Collaboration, Climate Change, Growth and Development, Water Management, Natural Hazards, Water Quality, Natural Systems; and Education and Outreach. For each of the eight themes, the plan presents: goals and objectives, challenges, and strategic actions for addressing those challenges and goals. The plan also identifies the agencies and stakeholders that will need to work collaboratively to implement the recommended strategies.

Mississippi River



Throughout the watershed planning process, in discussion and consultation with our many partners in watershed management, there emerged several recurring priorities for determining the strategic actions:

- **Collaboration between MVCA and its watershed residents, economic communities, and partner organizations**, to work towards mutually beneficial results in the management of water and watershed features and functions.
- **Robust water management infrastructure (dams) with operating regimes** sufficiently adapted to respond to climate change impacts.
- **Resilience to flooding and drought** by building on the provision and protection of the natural water storage features and functions, like wetlands and infiltration.
- Management of **growth and development** to provide for **sustainable water use and availability**.
- **Sharing** with our many partners in the **protection**, monitoring and stewardship of **natural features and systems**.

Once implemented, the strategies will need to be monitored, reported on, and updated to adapt to changing land use, new or increasing stressors, new information and/or different management approaches. This adaptive management approach will allow this Watershed Plan to be a living document that can be revisited and updated to reflect the changing needs of the watershed.

An MVCA public presentation



## Summary of Watershed Plan Strategic Actions

### Theme: Integration and Collaboration

**Goal:** To collaborate with watershed partners in promoting an integrated and consistent approach to the health and management of the watershed and water resources.

- Extend the role of the MVCA Public Advisory Committee (PAC) for the implementation and updating of the Watershed Plan.
- Undertake meaningful engagement and establish new relationships with Indigenous partners through implementation of an Indigenous Engagement Plan and through ongoing engagement in watershed initiatives.
- Continue to collaborate with and promote collaboration among lake associations through networking groups, direct partnerships and stewardship programs.

### Theme: Climate Change

**Goal:** To increase our resiliency and adaptive response to climate change.

- Apply a climate change lens to all strategic directions within this Plan.

### Theme: Growth and Development

**Goal:** To support environmentally sustainable growth and economic development.

- Work with all partners to continue to support environmentally sustainable growth for risk mitigation and the protection of watershed values and features.

Crotch Lake Dam



## Theme: Water Management

**Goal:** To use and manage both surface water and groundwater wisely to meet current and future needs under normal and extreme conditions.

- Prepare a Mississippi River Watershed Model incorporating historical, near real-time, and projected future hydro-climatic data, based on up to date information and science.
- Update the Mississippi River Water Budget to better evaluate water needs and use and incorporate climate change considerations.
- Undertake a Water Storage Capacity and Management Study that considers both man-made (dams and reservoirs) and natural storage (wetlands) options and capacity.
- Update the Mississippi River Water Management Plan to build on modelling, water budget and storage assessments completed under the previous three actions.
- Develop and implement an Asset Management Plan for the water control structures.
- Improve the MVCA hydrometric (water level and flow monitoring) network, to enhance automated monitoring capabilities and overall efficiency.
- Work with municipalities, agriculture and development communities, landowners and other partners to quantify, value and protect wetlands as hydrologic and natural assets.
- Work with municipalities, agriculture and development communities, and other landowners and partners to enhance on-site retention and infiltration of water.
- Enhance response planning and readiness through the Low Water Response Team and ensure it includes representation from all key water use sectors. (CA responsibility falls under Ontario Low Water Response Strategy).
- Support Hydro Producers and municipalities in undertaking an Ice Risk Assessment where deemed beneficial.



### Theme: Natural Hazards

**Goal:** To minimize risks to human life and property due to flooding, erosion, and unstable slopes and soils.

- Maintain up to date hazard mapping to identify and map flood and erosion risk areas, including effects of climate variability and change.
- Work with MNRF to assess and update the current floodplain standard (100 Year), policies, and floodproofing measures.
- Work with municipalities to undertake a roadway flood vulnerability assessment to: identify flood prone roadways and properties potentially impacted by unsafe access; and to develop a strategy to address properties potentially impacted by unsafe access.
- Develop methodologies for identifying and mitigating potential risks associated with unstable slopes and unstable soils throughout the watershed.
- Support waterfront property owners in implementing adaptive management measures to address potential impacts of variable water levels.

River bank erosion hazard





River Monitoring



**Theme: Water Quality**

**Goal:** To sustain or improve current water quality for all users.

- Continue to support the Ministry of Environment, Conservation and Parks (MECP) Provincial Water Quality Monitoring Network (PWQMN) in collecting baseline surface water quality data.
- Improve the groundwater monitoring program to meet municipal and private source water protection needs.
- Continue to support municipalities in actions prescribed by the Mississippi-Rideau Source Protection Program.
- Support municipalities in assessing and enhancing stormwater management in new and existing developments.
- Work with municipalities and the province to improve application and coordination of regulatory tools for the protection of water quality, shoreline and riparian areas.
- Continue to offer Septic Approval and Re-Inspection Programs for municipalities and encourage all municipalities to implement septic re-inspection programs in high priority areas such as waterfront and rural settlements.
- Review existing and potential environmental monitoring programs and identify opportunities for improvement/collaboration.
- Continue annual analysis and reporting of water quality conditions.

### Theme: Natural Systems

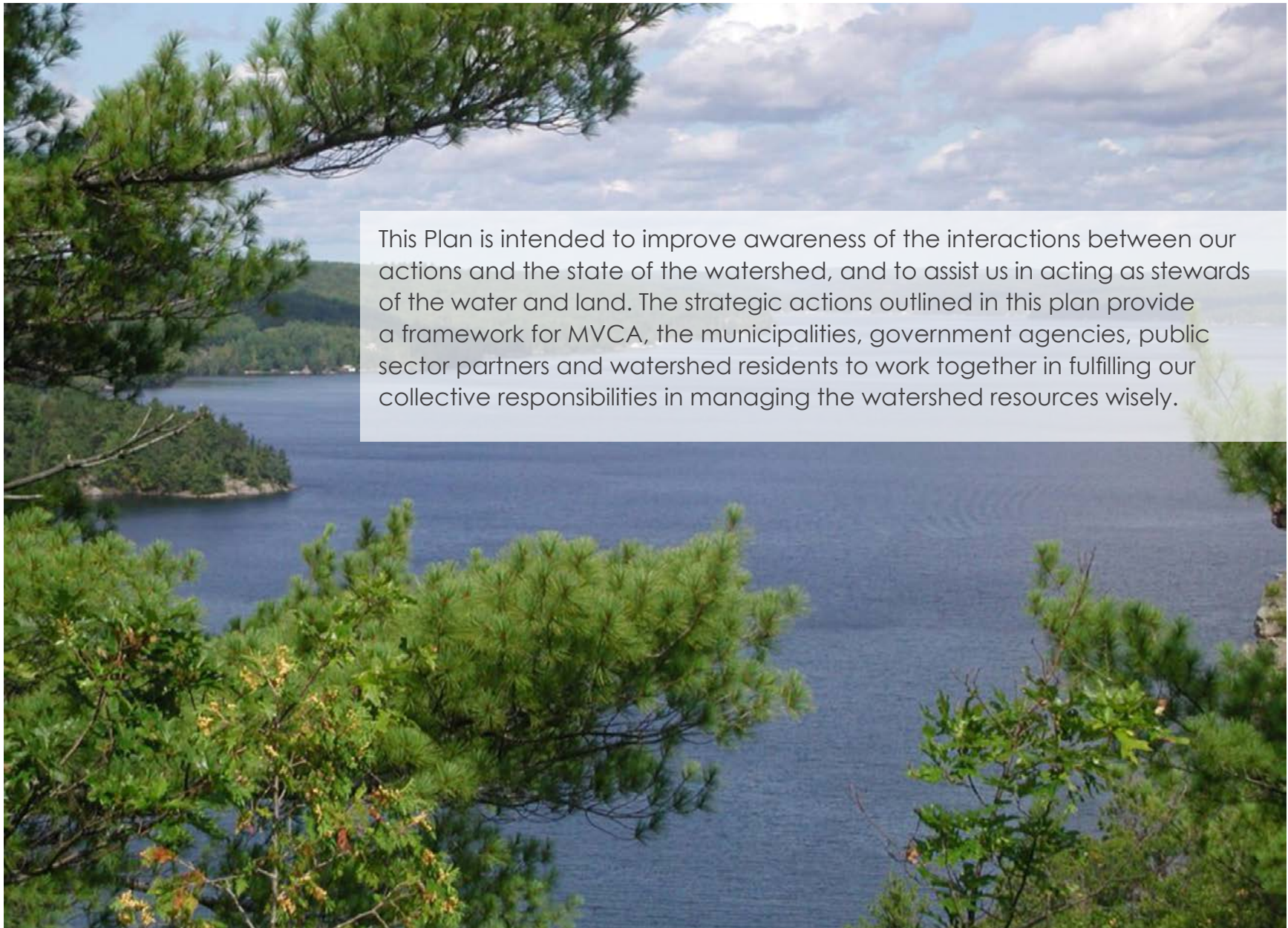
**Goal:** To maintain, enhance, or restore natural features and systems for all users.

- Develop a Land Conservation Strategy to mitigate flood, erosion and other natural hazards, and to support the ecological services provided by natural systems.
- Encourage and support studies that quantify the ecosystem services and climate resiliency provided by natural asset features and functions (wetlands, woodlands, etc.).
- Work with municipalities and public agencies to improve the application and coordination of regulatory tools for the protection of wetlands, woodlands and natural systems.

### Theme: Education and Outreach

**Goal:** To support learning and environmental stewardship.

- Develop and implement a 3-Year MVCA Stewardship Program Pilot for hazard mitigation, climate change resiliency, and the protection of water quality, wetland cover, forest cover, and other environmental features and functions.
- Work with the Indigenous Communities to understand and educate the greater public about the interconnectedness of the Indigenous Communities and this land and the importance of their inclusion in protecting and preserving it.
- Develop and implement an MVCA Communications Strategy in support of mandatory programs and services.
- Develop and implement an MVCA Education Strategy.



This Plan is intended to improve awareness of the interactions between our actions and the state of the watershed, and to assist us in acting as stewards of the water and land. The strategic actions outlined in this plan provide a framework for MVCA, the municipalities, government agencies, public sector partners and watershed residents to work together in fulfilling our collective responsibilities in managing the watershed resources wisely.





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