



GROWTH & DEVELOPMENT

Mississippi River Watershed Plan Discussion Paper Series

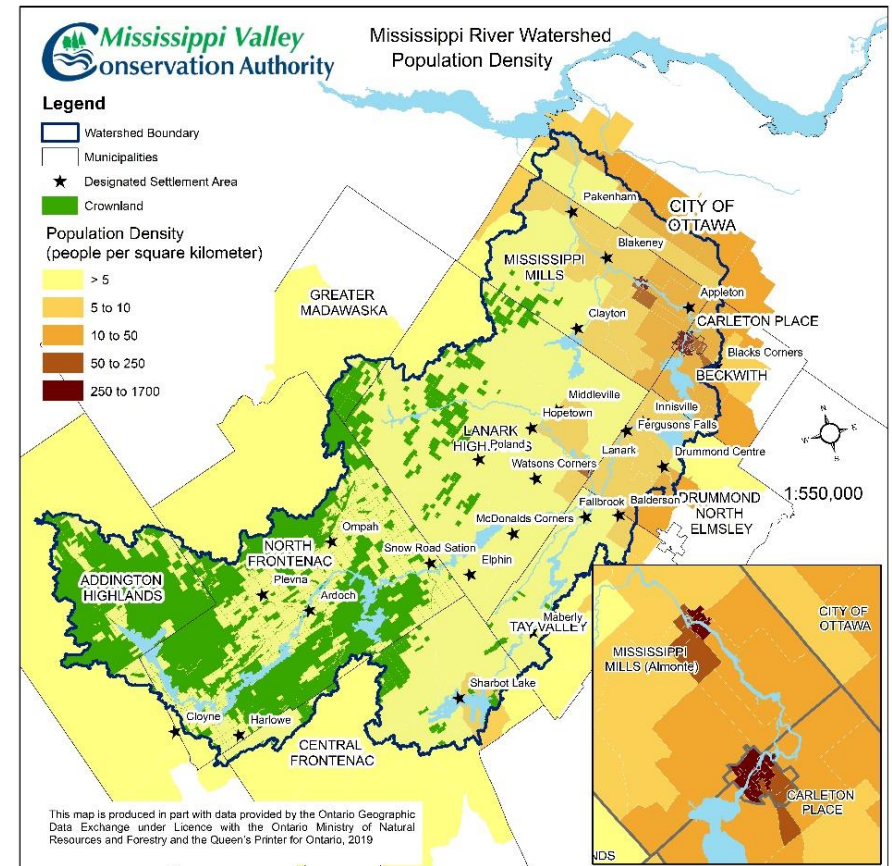
GROWTH & DEVELOPMENT IN THE MISSISSIPPI WATERSHED

Before European settlement, most of the watershed was woodland and wetland. During the 1800s, much of the watershed was cleared for lumber, and to make way agriculture, mining, and settlement. Today, the western watershed with its rugged Canadian shield retains most of its forest cover and wetlands, while the east is characterized by urban and rural settlement and agricultural lands, with relatively few wetlands and forests remaining.

KEY FACTS:

- As of 2016, the watershed had a population of approximately 42,425, with more than half residing in Carleton Place (25%) and Mississippi Mills/Almonte (30%).
- Carleton Place and Almonte continue to attract growth to and around them. The population of Drummond/North Elmsley and Mississippi Mills are projected to increase by 60% between 2016 and 2038, and Carleton Place and Beckwith Township to almost double over the same period.
- Local municipal Official Plans designate ‘Settlement Areas’ where future growth is to be directed. Of those, only Carleton Place and Almonte have municipal water and sewer systems. All other settlement areas and rural residents, representing roughly two-thirds of the population, rely on private septic systems with either a private well or surface water-intake.
- There are over 8,500 waterfront properties in the watershed. In the east, most are year-round homes. In the west, cottages predominate, with a steady rate of conversions to permanent use.

[See our Waterfront Property Discussion Paper.](#)



- Much of the upper watershed is Crown-owned land. The Province is currently in the process of establishing a new provincial park around Crotch and Fawn Lakes, and parts of Pine and Big Gull Lakes; reviewing a Forest Management Plan; and is in land claim negotiations with First Nations.

GROWTH & DEVELOPMENT - CHALLENGES

Managing growth and development involves a complex balancing of economic, social, and environmental objectives. Municipalities, the Province, and Conservation Authorities (CAs) share responsibility for protecting life and property from flooding, erosion, and hazard lands; providing for safe drinking water and sewage disposal; and managing and protecting natural features, systems, and fish and wildlife. **Service delivery coordination** is an ongoing challenge to ensure that development review processes are timely, effective, and balanced.

Development of roads, buildings, driveways and parking lots has **significantly reduced infiltration** of precipitation and snowmelt in some areas. Instead of soaking into the ground and replenishing the groundwater supply, runoff is often directed quickly off-site through eaves troughs and roadside ditches. These practices can increase flooding of agricultural lands, erosion, and the transport of soil and contaminants into receiving water bodies.

Stormwater can be a major cause of urban and rural flooding when runoff overwhelms the capacity of drainage systems such as storm sewers and roadside ditches. Stormwater runoff is also a major source of water pollution, particularly road salt. [See our Municipal Infrastructure Discussion Paper](#) for opportunities and potential actions related to stormwater management.

Wetlands provide an essential service in storing water during wet periods and slowly releasing it during dry periods, easing the impacts of

flooding and droughts. Studies show that wetlands left in their natural state can reduce the cost of flood damage by 29% in rural areas and 38% in urban areas¹. They also play a significant role in the recharging of aquifers.

These “ecological services” are generally poorly understood and therefore undervalued. For this reason, regulatory tools and planning policies alone have proven inadequate in protecting wetlands, particularly in areas experience development pressures. Since European settlement, an estimated 65% of wetlands in the eastern watershed have been drained or filled.

Impacts to natural systems through the removal of riparian buffers, remnant forests and other natural features can lead to increased soil erosion, impairment of water quality, reduced terrestrial and aquatic habitat, and impaired ecological functioning. Forest and riparian cover in the east is nearing the minimum thresholds for a healthy environment recommended by Environment Canada².

Urban expansion and land use intensification in rural areas can also impact **water quality**. The *Mississippi-Rideau Source Protection Plan* (MRSPP) addresses drinking water threats for the municipal water services but does not address private services. The plan identifies extensive areas of Highly Vulnerable Aquifer throughout the watershed. Settlement areas (villages, hamlets, etc.) with high concentrations of private septic systems and wells may be particularly vulnerable to well

¹ Moudrak, *et al.* 2017. The University of Waterloo Intact Centre on Climate Adaptation (ICCA).

² Environment Canada. 2013. *How Much Habitat is Enough, 3rd Edition*. Env Canada. Toronto, Ontario.

contamination. For example, Lanark Village has a documented history of private well contamination from local septic systems.

Outside of designated settlement areas, particularly south of Carleton Place, on-going estate lot development on private services poses

GROWTH & DEVELOPMENT - OPPORTUNITIES

Quantification and awareness raising of the “ecological services” provided by **wetlands, riparian zones, and forests** coupled with stewardship programming could assist the public and decision-makers to understand and improve management and protection of natural resources.

On-site storage through Low impact development (LID) could significantly reduce the amount of stormwater discharged to the river and its tributaries in built-up areas (both urban and rural estate lot development). Assets such as vegetated bioswales, infiltration pits, permeable pavement, and rain gardens can all “slow the flow” and reduce the impacts of flooding and water pollution while providing resiliency in the event of a drought. There is opportunity through the planning/development review process to implement LIDs as part of new development design. There is also opportunity to work directly with landowners in applying LID retrofits to new and existing development through stewardship initiatives.

A **Water Budget** was prepared in 2009 that provides a high-level assessment of water supply and demand in the watershed. While the study identified no major issues with supply, it revealed several gaps in groundwater data and water takings information, and did not consider

potential risks to groundwater availability and quality, agricultural drainage, and municipal stormwater management.

the potential impacts of climate change. Comprehensive assessment of potential impacts on municipal and private infrastructure will require a review of data needs and collection, and development of a model that can run different climate scenarios.

Both the **Carleton Place** Water Purification Plant and Wastewater Treatment Plant are slated for expansion to accommodate growth. Ideally, update of the water budget and climate model are completed prior to the planning and design of these municipal works to allow for consideration of study findings. **Mississippi Mills** built a new wastewater treatment facility in Almonte in 2012 that is designed to accommodate growth up to 2031.

Groundwater data collected from landowners for development review and monitoring programs could be used to conduct larger scale analyses. The Mississippi Valley and Rideau Valley conservation authorities are collaborating to develop a centralized repository to make this data more readily available and usable for assessment purposes.

PARTNERS IN GROWTH & DEVELOPMENT MATTERS

Many organizations have an interest in growth and development. In addition to engaging area municipalities and provincial agencies, the Mississippi Valley Conservation Authority (MVCA) has been working with a Watershed Public Advisory Committee (PAC) made up of representatives from key communities in the watershed including: agriculture, development, forestry, hydro producers, lake associations, tourism and the general public. Other potential partners include the following:

- Counties of Addington Highlands, Frontenac, and Lanark
- Canada Water and Wastewater Association (CWWA)
- Ontario Good Roads Association (OGRA)
- Association of Municipalities of Ontario (AMO)

35 DRAFT ACTIONS

MVCA has identified 35 potential actions designed to address the goals and objectives identified through the watershed planning process. A much longer list was reviewed and culled in consultation with the Watershed PAC. The following actions are relevant to municipal infrastructure. To see all 35 draft actions visit: <https://mvc.on.ca/watershedplan/>

Action 1: Extend the role of the MVCA **Public Advisory Committee** (PAC) for the implementation and updating of the Watershed Plan.

Action 6. Update the Mississippi River Water Budget to better evaluate water needs and use by completing the recommendations of the MRSPP Tier 1 budget assessment and incorporating climate change considerations. *This may include:*

- *Survey (voluntary) partners from all sectors on a regular basis to maintain up to date information on water use, water needs, and water availability.*
- *Work with the Town of Carleton Place to ensure both the projected growth and proposed expansions of its water and wastewater facilities can address water supply/demand, and quality requirements.*

Action 8. Improve the groundwater monitoring program to meet MVCA and municipal source water protection requirements. *This may include:*

- *Assess groundwater information to determine information needs and gaps, and work with MECP to address.*
- *Establish a centralized system of collecting and consolidating groundwater data collected through the subdivision review process.*

Action 12. Work with municipalities, landowners and other partners to quantify, value and protect wetlands as hydrologic and natural assets.

Action 14. Work with municipalities, landowners and other partners to enhance on-site retention and infiltration of water.

Action 20. Support municipalities in assessing and enhancing stormwater management in new and existing developments. *This may include:*

- *Inventory catchment areas lacking, or requiring upgraded, stormwater management facilities and work with municipalities to determine best management practices and retrofit solutions for existing stormwater facilities that are deficient in meeting current quantity and quality objectives.*
- *Promote and participate in the development of master stormwater drainage plans, to address quantity and quality control, for the rural settlement areas where high growth is projected and/or already occurring.*
- *Recommend municipal Official policy for coordinated stormwater planning for concentrated rural settlement.*
- *Promote implementation of Low Impact Development practices in the design of new developments and retrofits to existing development.*

Action 25. Set measurable environmental targets. *This may include:*

- *Work with municipalities to achieve zero loss in wetland area and function.*
- *Through MVCA plan review/advisory services, continue to support municipalities in protecting natural heritage features and systems, and promote municipal policy to include Environment Canada 2013 targets for wetland and forest cover.*
- *Align monitoring and reporting to track progress against environmental targets.*

Action 26. Continue to offer Septic Approval and Re-Inspection Programs for municipalities and encourage all municipalities to

implement septic re-inspection programs in high priority area such as waterfront and rural settlement areas

Action 27. Continue to support municipalities in actions prescribed by the Mississippi-Rideau Source Protection Program. *This may include:*

- *Review and update the Mississippi-Source Protection Plan to address climate change impacts.*
- *Ensure significant Groundwater Recharge Areas (SGRAs) are identified and protected in municipal Official Plan policies.*
- *Review the implementation/effectiveness of the MRSP best practices guidelines and education/outreach initiatives with respect to rural areas.*
- *Determine whether a rural servicing assessment may be beneficial in determining potential risk to private well water supplies (quantity and quality).*

Action 28. Work with municipalities and the Ministry of Natural Resources & Forestry (MNRF) to improve application and coordination of regulatory tools for the protection of water quality.

Action 29. Value the ecosystem services and climate resiliency provided by natural asset features and functions (wetlands, woodlands, etc.).

Action 30. Work with municipalities and public agencies to improve the application and coordination of regulatory tools for the protection of wetlands, riparian areas, woodlands and natural systems.

Action 31. Support counties and municipalities in fulfilling Provincial Policy Statement (PPS 2020) requirements for Natural Heritage Systems.