

MVCA Land Conservation Strategy: Current State Report

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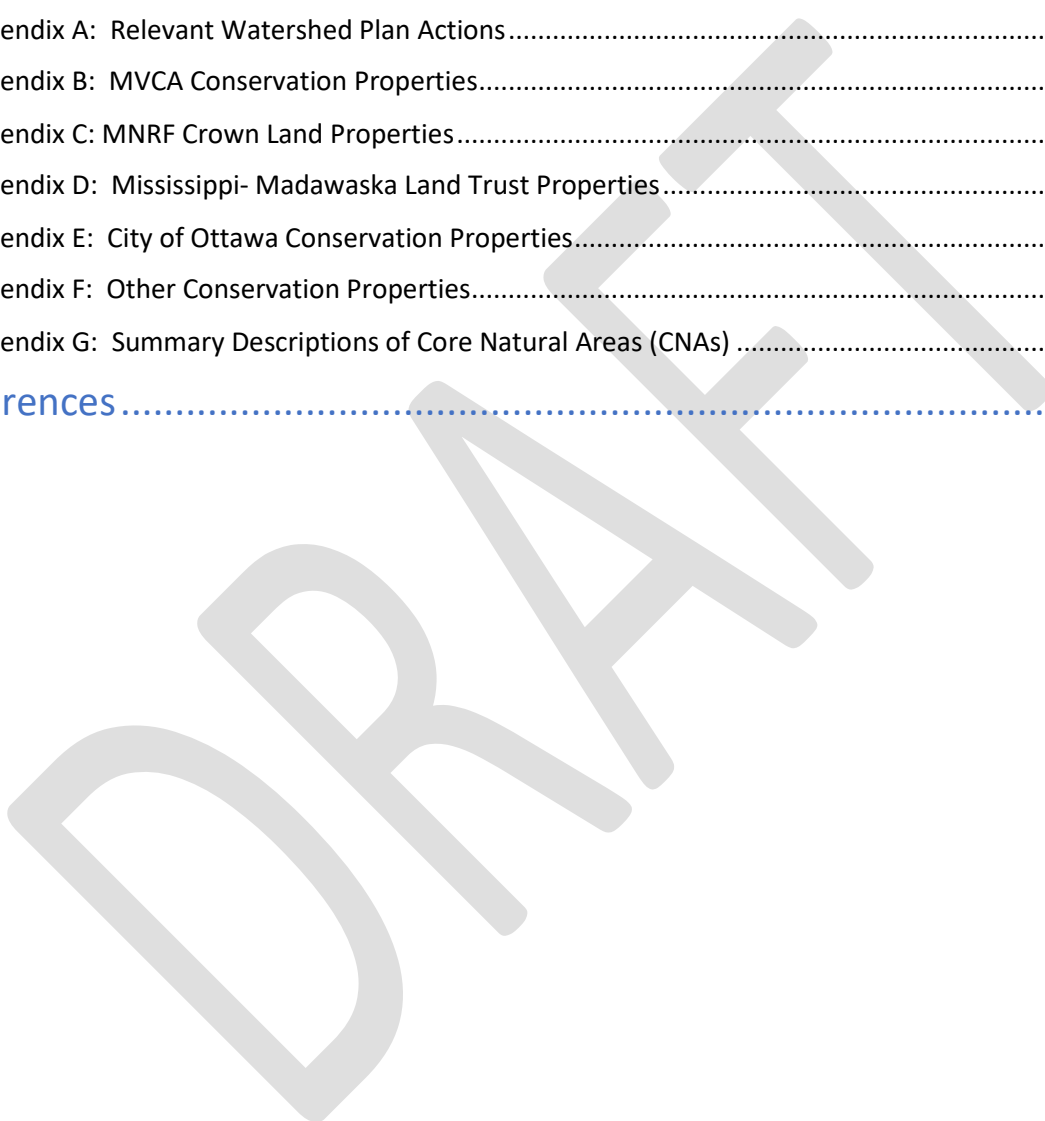
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We can never have enough of Nature. We must be refreshed by the sight of inexhaustible vigor, vast and Titanic features, the sea-coast with its wrecks, the wilderness with its living and its decaying trees, the thunder cloud, and the rain which lasts three weeks and produces freshets. We need to witness our own limits transgressed, and some life pasturing freely where we never wander.

Henry David Thoreau



1.0 Introduction

1.1 Purpose

Mississippi Valley Conservation Authority (MVCA) is preparing a Land Conservation Strategy to guide the acquisition, use, and disposal of land owned by MVCA, areas leased by MVCA, and land with easements or permits in favour of MVCA. The strategy will also facilitate coordination with other public agencies and NGOs, and inform delivery of stewardship programs to support private landowners. The Strategy is to be completed by the end of 2024 in accordance with O. Reg. 686/21.¹ This document is one of two that were prepared to support consultations in advance of drafting the strategy:

Discussion Paper

The Discussion Paper provides key information and poses questions to obtain comments regarding:

- What role should MVCA play in land conservation within its jurisdiction?
- Should MVCA acquire more land for conservation purposes?
- What type of facilities should MVCA operate?
- What type of uses should MVCA permit at its Conservation Areas?
- How should MVCA approach the acquisition and use of water control structures?

Current State Report

This document is intended as a reference document, and provides more information regarding matters outlined in the Discussion Paper. It addresses not just MVCA assets but also the context within which MVCA plans and operates its facilities including:

- regulatory jurisdiction and activities of others operating within the conservation, recreation, cultural heritage, and natural hazard management space,
- pressures on the landscape from growth and the demand for recreational facilities,
- hydrologic and ecological values within the watershed, and
- short and long-term management of water control structures.

1.2 MVCA's Land Interests

Over its 56-year history, MVCA has acquired and leased land and obtained easements for one or more of the following purposes:

- To preserve and manage natural heritage and/or cultural resources.
- To provide passive and/or active recreational opportunities for the public.
- To access, operate, maintain, rehabilitate and replace water control structures.
- To install erosion control structures.
- To install, operate, and maintain system monitoring equipment.
- To remove frequently and seriously impacted structures from the flood plain.

¹ <https://www.ontario.ca/laws/regulation/210686>

Today, MVCA:

- Owns 12 water control structures
- Has contracts with OPG and MNRF to operate a further 8 facilities
- Owns a detention pond and significant segments of the Carp River
- Owns 4 conservation areas
- Leases land for a further 2 conservation areas
- Owns several small waterfront properties on the Clyde River and Mississippi River
- Has easement and license of occupation agreements associated with the above properties and for numerous monitoring sites across the system.

Interests in these properties largely occurred on an opportunistic basis and in response to requests from the province or a member municipality. While MVCA adopted an interim policy regarding property donations in 2016², there is no guiding master plan defining MVCA's land management role relative to other public, private, and civil society organizations, or that sets goals and objectives for:

- the development and management of conservation areas
- the development and management of facilities to manage natural hazards
- managing donations and sales offers for conservation lands, dams and other structures
- managing legacy assets that no longer align with recent provincial regulations³

A policy document is needed that informs the Authority's long-term vision for land ownership and management that addresses how land may be used to support delivery of the current mandate of conservation authorities, which is to:

- Identify and manage natural hazards (erosion, flooding, drought, and unstable slopes, soils and rock.)
- Protect drinking water by supporting implementation of the *Clean Water Act*, 2006.
- Further the conservation, restoration, development and management of natural resources.

1.3 Strategic Planning Process

The Land Conservation Strategy is being developed in the following phases:

- February: An Asset Inventory was prepared that confirmed the scope of assets to be considered (refer to Figures 1 and 2.)
- March-June: The Discussion Paper and Current State Report were prepared to support public engagement.
- July-August: Public Consultation regarding potential policy directions.
- September: The Land Conservation Strategy will be drafted.
- October: The Board of Directors will consider the Draft Strategy.
- October-November: Public Consultation regarding the Draft Strategy.
- December: The Board of Directors will consider the Final Strategy for approval.

² Refer to Minutes of April 2016 P&P Committee and approved by the Board of Directors May 2016.

³ <http://www.ontario.ca/laws/regulations/210687>

Figure 1

Conservation Lands and Trails

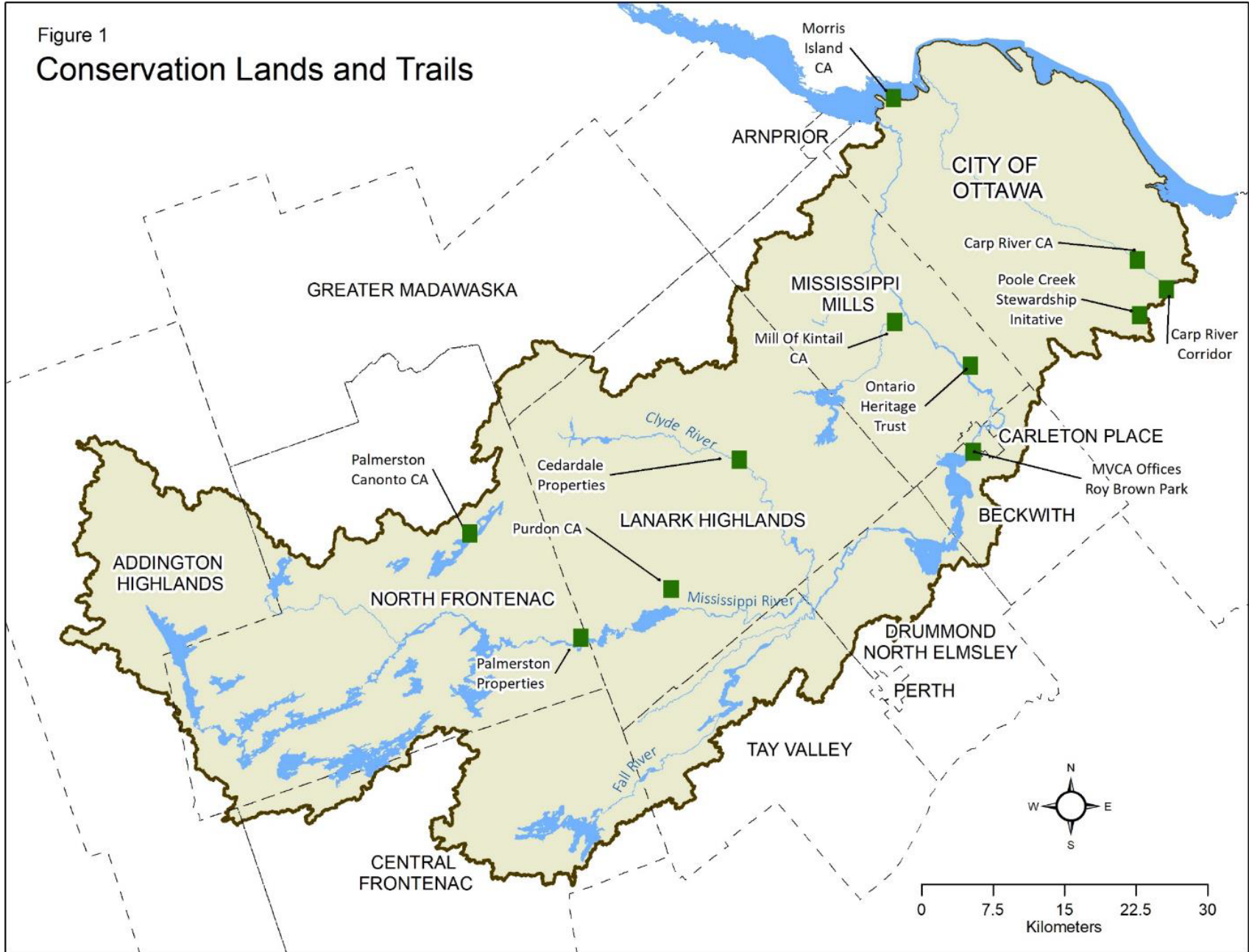
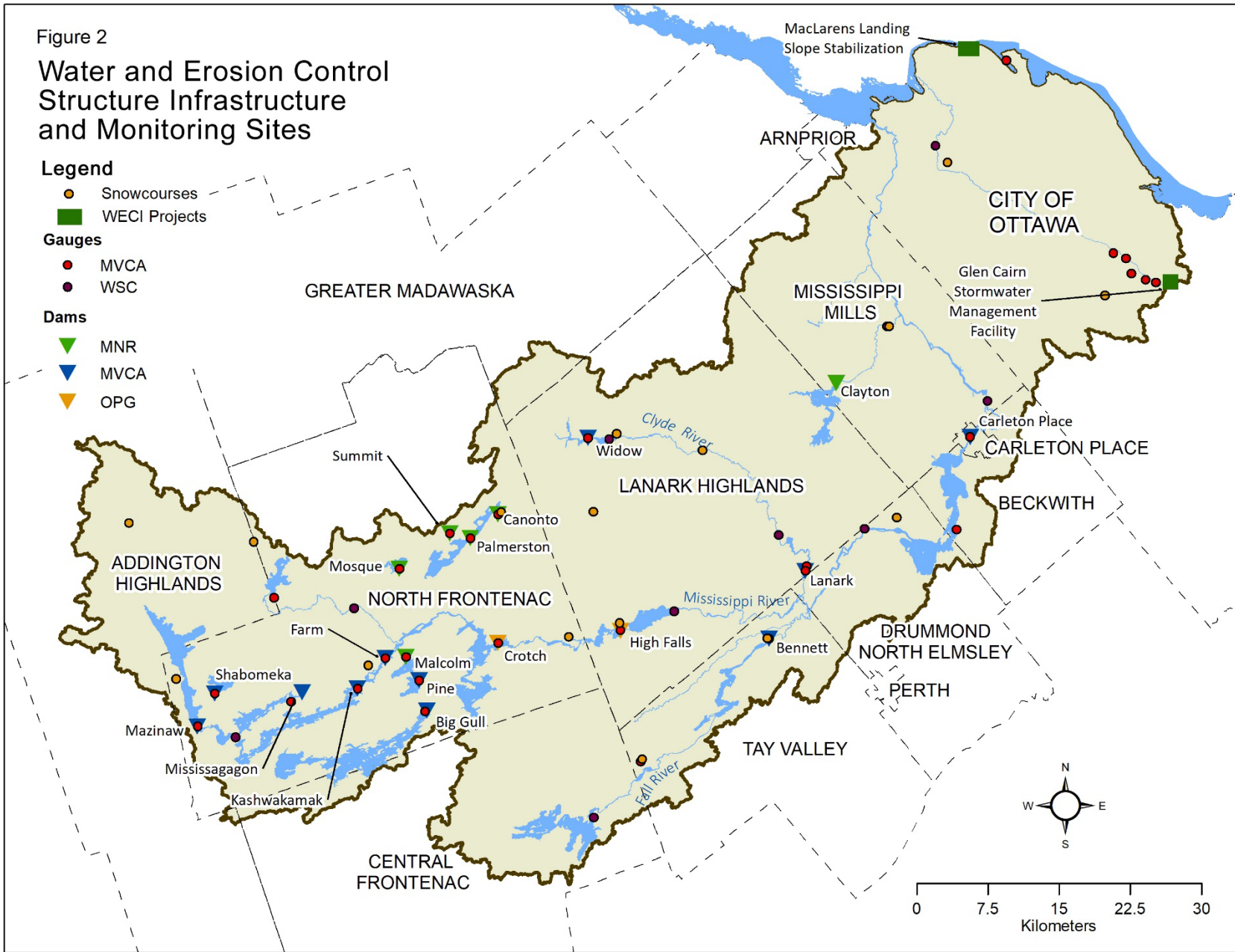


Figure 2

Water and Erosion Control Structure Infrastructure and Monitoring Sites

Legend

- Snowcourses
- WECEI Projects
- Gauges**
 - MVCA
 - WSC
- Dams**
 - ▼ MNR
 - ▼ MVCA
 - ▼ OPG



2.0 MVCA Policy & Program Context

MVCA operates in accordance with a number of policy and planning documents, including:

- Corporate Strategic Plan & Implementation Plan: sets 5-year goals, objectives, and targets (2021-2025)
- 10-year Capital Plan: identifies major investments in conservation areas, dams, and other infrastructure required to support program delivery (e.g. fleet and computers.)
- Master Plans for each of the conservation areas.
- *Mississippi River Water Management Plan*, that governs operations of key control structures in the watershed.
- Operational Plans for each of the water control structures that MVCA operates.
- Stewardship Plan
- Natural Systems Monitoring & Reporting Plan
- Ice Monitoring Strategy
- Mississippi River Watershed Plan

The following are summaries of key MVCA policies and current conditions that influence land management decisions.

2.1 Mississippi River Watershed Plan

In 2021, MVCA approved a [Watershed Plan](#) for the Mississippi River system that was developed through consultation with watershed municipalities, as well as groups and individuals representing a broad cross section of interests. The Watershed Plan highlighted the importance of natural systems and functions provided by wetlands, forested areas, and groundwater recharge areas in mitigating both floods and droughts and building resiliency to climate change and development impacts. The Plan recommended 35 actions, including:

Develop a Land Conservation Strategy to mitigate flood, erosion and other natural hazards, and to support the ecological services provided by natural systems.

MVCA's Land Conservation Strategy is being developed to meet the objectives set out in regulation and as conceived in the Watershed Plan.⁴ Refer to Appendix A for other relevant watershed plan actions.

2.2 Existing Conservation Areas Plans & Conditions

The following plans are in effect, but several are dated and require update.

- *Purdon Conservation Area Master Plan, 1986*
- *A New Management Plan for the Showy Lady-slipper Orchid, 2006*
- *Morris Island Conservation Area Master Plan, 1987*
- *K&P Trail Conservation Area Management Plan, 1991*
- *Mill of Kintail Master Plan, 2011*

⁴ Though not an MVCA document, the Authority is also considering matters identified in the City of Ottawa's Carp River Watershed, completed in 2004.

- *Mill of Kintail Museum Strategic Plan, 2019*

The following property descriptions state whether there are “active”⁵ recreational programs and services on site and, therefore, subject to a 5-year funding agreement with member municipalities. Refer to Appendix B for more details and a recent analysis of each site.

Palmerston-Canonto Conservation Area (PCCA)

This was the first property purchased by MVCA to establish a conservation area, in 1971. The site comprises trails, rest spots, and toilets. There is no Master Plan on record, and there is no active recreational programming at this site. MVCA has a revolving 10-year lease agreement for the Township of North Frontenac to operate and maintain the property. At times, a local community group has also supported site maintenance; and MVCA has carried out stewardship projects with area residents to enhance the beach. The Township of North Frontenac has a standing agreement with MVCA to acquire the beach once property ownership matters with adjacent owners are resolved.

There is a history of unauthorized use of an old sand pit on the property.

Mill of Kintail Conservation Area (MOK)

This property was purchased in 1972 and comprises trails, meeting facilities, a museum, parking, and washrooms, and hosts a combination active and passive programs and services. Specifically, the Museum, Gate House, Education Centre, Picnic Shelter, and Cloister are Category 3 structures, and the services offered in association with them defined as active recreation.

MVCA has a 5-year agreement with its member municipalities to continue to support delivery of Category 3 programs and services at this site. MVCA also receives annual grants from the province and from the Municipality of Mississippi Mills to support museum operations, however, neither grant has been adjusted over time to address the impacts of inflation or can be relied upon in the long-term. Similarly, it cannot be assumed that other municipalities will continue to support delivery of Category 3 programming at this site when the current agreement expires.

Update of the MOK Master Plan is needed to address the new funding model and the outcome of this Land Conservation Strategy project. Update of the MOK Museum Strategic Plan is to be completed this year.

Purdon Conservation Area (PCA)

This property was bought in 1988 and has no active recreational programming at this site. The property comprises trails, lookouts, parking lots, and toilets. The Showy Lady-slipper orchids at PCA live in a constructed habitat that was developed by the previous owner Joe Purdon. MVCA is currently in discussions with subject matter experts to discuss how to manage the site over the next 10-15 years to improve orchid health and abundance.

⁵ A site is considered to provide active recreational programs and services if they require a staff member to be present on site or involve structures that do not meet provincial regulatory definitions/limits. Passive recreational (Category 1) programs and services are fundable by the Municipal Levy. Active recreational (Category 2) programs and services must be self-funded or be subject to an agreement with one or more municipalities for financial support.

K&P Trail (K&P)

The decommissioned rail trail was bought by MVCA in 1990. There is no active recreational programming at this site. MVCA acquired ~35km of the K&P Trail in 1990 from the Agricultural Rehabilitation and Development Directorate of Ontario (ARDA), a division of the former Ontario Ministry of Agriculture & Food (OMAF) on an as-is basis. Currently, much of the trail is in rough condition and cannot be accessed by cars during certain times of year. MVCA is working with the counties of Lanark, Renfrew, and Frontenac to transfer ownership of the trail so that it can be brought up to the same standard as, and integrated with other county rail trails. Survey work and several quit claims will be required to enable land transfer under the *Land Titles Act*.

Safety barriers on the bridge over the Clyde River were replaced in partnership with the Snow Road Snowmobile Club the winter of 2021-22, and MVCA enters into an annual agreement with the Club to permit winter grooming along MVCA's section of the trail. Additional works at the bridge are required, and speed and weight limit are in effect until those works are completed.

Over the years, MVCA has issued Temporary Use Permits to lumber companies to use the trail to access woodlots (Crown and private). Companies are required to reinstate the trail to equal or better condition.

MVCA prohibits the creation of new entrances along the trail and, in particular, land severances that assume vehicular access from those property to the trail.

Morris Island Conservation Area (MICA)

This site was developed in partnership with the City of Ottawa in the 1980s and comprises trails, a parking lot, and washrooms, and provides passive recreational opportunities only.

The south half of this property is owned by the City of Ottawa and the shore lands by OPG. MVCA and the City of Ottawa have a joint 10-year lease agreement with OPG to use its property for the conservation area. MVCA has a separate 5-year License Agreement with the City of Ottawa to operate and maintain the conservation area on these lands. Rotating leases have been in effect since the late 1980s.

MVCA regularly allows research and habitat enhancement projects to occur at this property. At times there have been challenges with unauthorized use of the property that have required enforcement action. Historically, residents in the adjacent community supported maintenance and operation of the washrooms, however that ceased during COVID.

Carp River Conservation Area (CRCA)

This site was developed as part of the Carp River Restoration Project⁶ and is owned by the City of Ottawa. MVCA's 5-year License of Occupation only provides for naming rights and limited rights to develop educational and conservation structures (e.g. signage and viewing stations) and to host educational events without need of a permit. Currently, the site has a paved walkway, with signs and habitat enhancements installed by MVCA.

In 2022, MVCA prepared a Background Report to support development of a Master Plan for the site. The City of Ottawa has agreed that development of a Master Plan is desirable, but has been unable to dedicate

⁶ <https://friendsofthecarpriver.com/carp-river-restoration-area-2016-present/>

resources to that work. The MVC Foundation has donated funds to allow for site enhancements including installation of an osprey tower in 2023.

Other Conservation Lands

There is no policy framework to direct management of vacant properties in MVCA's portfolio and only an interim policy governing the acquisition of new land. Some properties were divested or decommissioned following provincial funding cuts in the mid-1990s⁷ and no further acquisitions were made since. Currently, any offers to acquire new properties through donation or purchase are assessed and referred to the Mississippi Madawaska Land Trust, Ontario Heritage Trust, or to the local municipality. A recent offer to purchase a vacant MVCA property has been deferred until the Land Conservation Strategy has been completed.

2.3 Existing Water & Erosion Control Structures

During its first two decades, MVCA built or assumed ownership of the following water control facilities, largely in response to requests and recommendations from the province and member municipalities:

Carleton Place Dam: acquired from Ontario Hydro at its request in 1973 following dam restoration. Today, the primary function of the dam is to maintain recreational water levels on Mississippi Lake and secondarily for flood control and maintaining levels for the Town's and private surface water intakes.

Widow Lake Dam: rebuilt defunct dam and acquired adjacent property from a private owner in 1974. Today the dam is used primarily for flood mitigation and secondarily to provide fish spawning habitat.

Bennett Lake Dam: built and acquired in 1975 at the request of Tay Valley Township and the local cottage association to maintain recreational water levels.

Farm Lake Dam: rebuilt and acquired by MVCA in 1976 at the request of North Frontenac Township to maintain recreational water levels on Farm Lake.

Lanark Dam: rebuilt and acquired by MVCA in 1977 at the request of Lanark Highlands Township. Today the primary function of the dam is for flood mitigation and secondarily to maintain recreational water levels on Kerr Lake.

Glen Cairn Flood Control Facility: constructed by MVCA in 1979 at the request of the province and the former City of Kanata to address flooding of Glen Cairn subdivision.

Pine Lake Dam: built and acquired by MVCA in 1990 at the request of North Frontenac Township. Today the dam's primary function is to maintain recreational water levels on the lake, and secondarily for flood mitigation.

⁷ Riverside properties at Five Arches Bridge and at Gemmill Park in Mississippi Mills were sold; and picnic and campsites along the K&P were closed.

MVCA subsequently agreed to assume ownership of five dams in 1990 from the Mississippi River Improvement Company (MRIC)⁸. All are located in North Frontenac Township, provide reservoir capacity in the upper watershed, and are managed in accordance with *Mississippi River Water Management Plan (MRWMP)*⁹:

- Shabomeka Lake Dam
- Mazinaw Lake Dam
- Kashwakamak Lake Dam
- Big Gull Lake Dam
- Mississagagon Lake Dam

Most ownership and easement documents related to MVCA's 11 dams and the detention pond do not include registered reference plans completed by a licensed surveyor. MVCA began discussions with the Township of North Frontenac in 2020 to resolve easement matters in proximity to the Shabomeka and Mazinaw dams. Work lands in proximity to Kashwakamak and Lanark dams.

All control structures provide for the raising and lowering of water levels on the lakes, with implied flooding rights on all affected shoreline properties. There may be a need to adjust upper and lower levels in future depending upon how the impacts of climate change affect weather patterns and natural hazards.

MVCA relies upon 50% funding from the province to complete major studies and capital works at all of its dam. Dams that primarily operate for flow augmentation (as opposed for flood control) tend to score lower and are less likely to receive funding during the annual call for grant applications. The province does not provide funding for new structures unless they replace or allow for the replacement of an existing structure.

Currently, MVCA has had agreements to operate six MNRF dams¹⁰ and 2 OPG dams¹¹, however, those contracts have evolved over time.

MVCA also supported the former West Carleton Township with a major erosion control project on the Ottawa River in the community of McLaren's Landing. There appear to be residual easement rights on some but not all of the residential waterfront properties.

The following structures are discussed in greater detail due to ongoing or short-term initiatives.

Shabomeka Lake Dam

An as-built survey was completed post reconstruction of the dam embankments and installation of the safety boom to delineate the extent of MVCA land interests and in fulfillment of an easement agreement with the Township of North Frontenac.

MVCA currently in discussions with Ontario Parks regarding reinstatement of the historic portage route along the south side of the dam structure.

⁸ Ontario Hydro had a controlling interest in MRIC at the time of the sale.

⁹ This a provincially approved document that governs dam operations and sets target water levels on specified lakes.

¹⁰ Mosque, Summit, Palmerston, Canonto, Malcom, and Clayton.

¹¹ Crotch and High Falls.

Mazinaw Lake Dam

Registered Plan delineating MVCA easements were approved by former Barrie Township but never registered on title. In June 2020, the Township of North Frontenac agreed to enter into an easement agreement and to have legal plans registered on title. Work on this stalled during COVID and needs to resume.

Kashwakamak Lake Dam

Replacement of the dam is planned for 2026-27. Clarification of ownership and easement rights is ongoing in support of replacement of this structure in 2026.

Lanark Dam

Clarification of ownership and easement rights has commenced in support of capital improvements planned for 2025.

Glen Cairn

The City of Ottawa has an agreement with MVCA to operate this facility on behalf of the Authority. The City has informed MVCA of encroachments (unapproved trails) on both City and MVCA lands in the vicinity of Nairn Park in the adjacent subdivision. MVCA and the City will be collaborating to resolve encroachments while determining how best to address the linear pathway needs of the community.

Widow Lake

The property west of the dam is privately owned and there are access rights across the dam that have been challenging to manage, particularly as the dam has deteriorated. There are also water control issues at this site to be examined that may affect the design and location of this dam in future.

2.4 10-year Capital Plan

The focus of the MVCA's Capital Plan is on maintaining and replacing existing assets only. It does not provide for the acquisition of new properties or the creation of new assets (dams or conservation areas.) There is no reserve fund for the acquisition of land. See Table 1 for excerpts from the most recent 10-year Capital Plan.

Each year, MVCA updates a needs-risks matrix to support project prioritization, financial planning, and update of the 10-year Capital Plan. Prioritization of works at dams is based upon annual inspections and a variety of studies including Dam Safety Reviews (DSRs) and Condition Assessment Reports. At conservation areas, the investigation of specific assets such as the museum roof and gate house stone work are used to inform annual work plans and capital planning.

An Asset Management Strategy is to be prepared in 2024 for all water and erosion control structures in accordance with O. Reg. 686/21, which will be used to inform future updates of the 10-year Capital Plan. The Strategy will be drafted to allow for its expansion to include conservation areas and other assets over time. Ultimately, the Capital Plan could provide for a sinking fund for future acquisitions.

Table 1: MVCA 10-year Capital Plan (Structures & Conservation Areas)

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10 Yr Total
Water Control Structures											
Shabomeka Lake Dam	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$35,178	\$36,936	\$155,133	\$227,247
Mazinaw Lake Dam	\$0	\$0	\$0	\$0	\$0	\$0	\$100,507	\$35,178	\$147,746	\$0	\$283,430
Kashwakamak Lake Dam	\$120,000	\$115,500	\$110,250	\$173,644	\$3,152,719	\$3,310,355	\$0	\$0	\$0	\$0	\$6,982,468
Big Gull Lake Dam	\$0	\$0	\$0	\$0	\$0	\$0	\$100,507	\$35,178	\$147,746	\$0	\$283,430
Mississagagon Lake Dam	\$0	\$5,250	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,250
Farm Lake Dam	\$0	\$0	\$11,025	\$0	\$0	\$0	\$0	\$0	\$73,873	\$775,664	\$860,562
Pine Lake Dam	\$0	\$5,250	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,250
Carleton Place Dam	\$280,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$280,000
Lanark Dam	\$0	\$78,750	\$27,563	\$115,763	\$0	\$0	\$0	\$0	\$0	\$0	\$222,075
Widow Lake Dam	\$0	\$78,750	\$55,125	\$405,169	\$0	\$0	\$0	\$0	\$0	\$0	\$539,044
Bennett Lake Dam	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$105,533	\$36,936	\$155,133	\$297,602
Glen Cairn Detention Basin	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
MacLarens Landing	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Project Management	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Preventative Maintenance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Proposed Debt Repayment	\$35,412	\$35,412	\$35,412	\$35,412	\$77,340	\$77,340	\$77,340	\$77,340	\$77,340	\$95,046	\$623,394
Subtotal	\$435,412	\$318,912	\$239,375	\$729,987	\$3,230,059	\$3,387,695	\$278,354	\$288,405	\$520,577	\$1,180,976	\$10,609,752
Conservation Areas											
Mill of Kintail - Visitor Services	\$113,500	\$0	\$22,050	\$0	\$60,775	\$31,907	\$13,401	\$84,426	\$0	\$0	\$326,059
Mill of Kintail CA	\$30,000	\$97,350	\$16,538	\$11,576	\$0	\$0	\$0	\$0	\$14,775	\$0	\$170,238
Purdon	\$18,000	\$66,675	\$31,421	\$11,576	\$12,155	\$21,697	\$0	\$0	\$0	\$23,270	\$184,794
K&P Trail	\$0	\$2,100	\$2,205	\$2,315	\$8,509	\$40,841	\$2,680	\$2,814	\$0	\$0	\$61,464
Morris Island	\$5,000	\$15,750	\$11,025	\$11,576	\$12,155	\$0	\$0	\$7,036	\$29,549	\$7,757	\$99,848
Roy Brown Trail	\$0	\$21,000	\$5,513	\$5,788	\$6,078	\$0	\$0	\$7,036	\$0	\$7,757	\$53,170
Subtotal	\$166,500	\$202,875	\$88,751	\$42,832	\$99,672	\$94,445	\$16,081	\$101,311	\$44,324	\$38,783	\$895,574
TOTAL	\$601,912	\$521,787	\$328,126	\$772,819	\$3,329,731	\$3,482,140	\$294,435	\$389,716	\$564,900	\$1,219,759	\$11,505,326

3.0 Municipal Policy & Program Context

3.1 Parks & Recreation

Most municipalities within MVCA’s jurisdiction have policies related to the provision of public open space, active recreational facilities, and community meeting space within their Strategic Plans, Official Plans or Parks & Recreation Plans. Common themes amongst municipal policy documents in MVCA’s jurisdiction include the following:

- Support active living regardless of age and ability (including providing fully accessible sites.)
- Provide safe, efficient and enhanced recreational facilities, trails and parks.
- Maintain and increase public access to waterbodies.
- Expand local trail network and increase connectivity to other trails and recreational sites (e.g. Trans Canada Trail, Rideau Trail, Glen Tay to Havelock Trail, Provincial Parks)
- Develop a land acquisition policy.
- Develop a Parkland classification system.
- Employ shared-service delivery for cost efficiency.
- Develop cash-in-lieu
- Protect the natural environment, rural integrity, and manage the impacts of climate change.

All municipalities in the watershed have local parks and some have linear trails and/or operate boat launches. However, there are relatively few large municipal properties dedicated to conserving natural heritage values and providing passive recreation within the watershed. Notable exceptions *within* the watershed include:

- Blakeney Park and Gemmill Park in Mississippi Mills
- Pinewood Memorial Forest in Drummond North Elmsley
- Mississippi Riverwalk Trail, Carleton Place
- Carp Hills Nature Reserve and trails, Torbolton Forest, Trillium Woods, South March Highlands Conservation Forest, Sheila McKee Park, Kizell Wetland, and Kemp Woodland in the City of Ottawa.¹²
- The partnership between North Frontenac and MNRF to operate and maintain campsites on Crown land in the vicinity of Crotch Lake.

Some municipalities own community facilities and rent or lease them to community groups such as McDonald’s Corners and Elphin Recreation and Arts in Lanark Highlands. In other cases, community facilities are owned, operated and maintained by local volunteer organizations such as McDonald's Corners Agricultural Hall.

3.2 Heritage Facilities

There are eight heritage facilities in the watershed: MVCA’s Mill of Kintail Museum, the Central Frontenac Railway Museum, Archives Lanark, Pinhey’s Point Historic Site, the Carleton Place and Beckwith Heritage Museum, Middleville & District Museum, the North Lanark Regional Museum, and the Mississippi Valley Textile

¹² Refer to Appendix E for details.

Museum. While some are located on municipally-owned land, all except the MOK Museum are operated by the Ontario Heritage Trust or local civic organization, largely on a volunteer basis.

In addition to land and facility-space, some municipalities also provide grants to heritage organizations. In recent years, MVCA has received a grant from the Municipality of Mississippi Mills that has supported the hiring of students to help operate the museum (~6.5 % of the annual budget.)

The MVCA service delivery model is unique within the watershed in that the museum is not managed by an independent board with its own financial accounting. While the MOK museum also relies on user fees and donations to support operations, museum staff are employees of MVCA and approximately 37.5 % of the annual museum operating budget is secured through a 5-year agreement with the 11 municipalities in the watershed.

3.3 Natural Heritage & Natural Hazard Lands

Municipalities play an important role in natural hazard management and the protection of natural heritage values. Until recently, the Province was responsible for the identification and mapping of natural heritage features such as Provincially Significant Wetland, Areas of Natural and Scientific Interest, Provincially Significant Woodlands. Through recent changes to the Provincial Policy Statement¹³ and supporting documents such as the Ontario Wetlands Evaluation System 2022¹⁴ those responsibilities have been transferred to municipalities.

Municipal official plans and zoning by-laws are required to control development on or adjacent to natural heritage and hazard areas, with most municipalities within MVCA's jurisdiction requiring the following:

Construction Setbacks:

- 30 m from the highwater mark or 15m from the flood line, whichever is greater.
- 120 m from a provincially significant wetland or 50 m of a locally significant wetland.

Vegetative Buffers:

- The retention and/or establishment of mature tree cover and native shrubs and vegetative cover on lands within 15 m of a highwater mark of a water resource.

Some municipalities¹⁵ have additional requirements to ensure consistent application of these policies, such as:

- One (1) access corridor not greater than 7 metres in width passing through the natural vegetated buffer shall be permitted to provide an access between the main use of the land and the waterfront activity area;
- A pathway within the access corridor not greater than 2 metres in width is permitted provided it is constructed of permeable material. Permeable materials include permeable interlocking concrete pavers, plastic or concrete grid systems, decking, or material deemed satisfactory to the Township;
- Stairs for access to the shoreline are permitted with a maximum width of 2 metres;

¹³ <https://www.ontario.ca/page/provincial-policy-statement-2020>

¹⁴ <https://www.ontario.ca/files/2023-02/mnrf-pd-rpdpb-ontario-wetlands-evaluation-system-southern-manual-2022-en-2023-02-02.pdf>

¹⁵ Policy samples taken from North Frontenac Zoning By-law.

- Pruning of trees for viewing purposes is permitted;
- Removal of dead or diseased trees for safety reasons is permitted; (f) Stumps should be retained wherever possible;
- Clearcutting is prohibited in this area; however selective cutting is permitted in the area commencing at a point 15 metres inland from the high water mark up to 30 metres from the highwater mark;
- Additional tree removal shall only be permitted where trees are marked for removal by a Licensed Tree Marker, Registered Professional Forester or Certified Arborist.

Policies vary amongst municipalities based upon the degree to which natural heritage systems have been studied and there is support their protection through regulation. Regardless of the degree of regulation, these types of policies allow municipalities to mitigate runoff, erosion, and the degradation of water quality while maintaining wildlife habitat around lakes and along shorelines.

Some municipalities use significant natural areas and hazard lands to create passive trail systems such as the linear Mississippi Riverside Park in the Town of Carleton Place and South March Highlands Conservation Forest in the City of Ottawa. Similarly, this was a key objective during development of the Carp River Restoration Plan that saw areas north and south of Hwy. 417 designed for passive recreational use during planning of the new riverine and stormwater management system.

Municipalities may also carry out carrying capacity studies of their inland lakes to determine if phosphorous levels meet or exceed provincial water quality guidelines (see section 5.1.) The following lakes in MVCA's jurisdiction are designated as "at capacity" within the municipal official plans: Buckshot, Kishkebus, Little Green, Mosque, Shabomeka, Sharbot, and Silver.

Finally, municipalities play an important role in protecting wildlife corridors through the planning and construction of roads. Wildlife-Vehicle Collisions (WVCs) have significant socio-economic, traffic safety and environmental costs. In 2012, costs were estimated to be as high as \$200 million annually, and were rising as Ontario's road network increased. Municipalities help to mitigate one of the largest causes of wildlife mortality and motor vehicle accidents by ensuring that wildlife barriers and crossings are provided during new construction.¹⁶

3.4 Municipal Shoreline Allowances

In the 1950s, the Province subdivided and sold waterfront cottage lots throughout the region, and transferred a 20-metre wide shore road allowance around many lakes to municipalities to provide for shared lake access. Some municipalities allow adjacent landowners to purchase "shore road allowance" to connect their private cottage lots to the shore.

This practice is problematic where lots about a lake that is subject to water level changes due to dam operations. MVCA has implicit flood rights associated with the Mississippi River Water Management Plan and the extent to which municipalities allow the sale and encroachment onto the shoreline allow may constrain system operations and adaptation of operations to address the impacts of climate change.

¹⁶ Source: https://tirf.ca/wp-content/uploads/2017/01/WildlifeVehicle_Collision_Deliverable1_Eng_6.pdf

Depending upon the location and scales of these sales, they can impede public access to public water bodies, compromise opportunities for future linear pathways, and impact shoreline habitat and access by wildlife.

3.5 Stormwater Infrastructure

Generally, municipalities in Eastern Ontario do not own or operate riverine flood control structures such as those operated by MVCA. Historically, that was not the case, and some of MVCA's structures were acquired from local municipalities.

Today, municipalities primarily own and operate stormwater facilities and maintain roadside ditches and culverts. They are also responsible for the maintenance and management of communal agricultural drainage systems approved under the *Drainage Act*. Changes in the design, construction and maintenance of those facilities can impact receiving streams, waterbodies, and MVCA facilities. For this reason, MVCA reviews and in some cases requires permits under the *Conservation Authorities Act* for the construction, alteration, and decommissioning of stormwater infrastructure.

Surface versus Riverine Flood Management¹⁷

Surface flooding occurs when large storms exceed the capacity of a community's drainage system¹⁸ to convey water, and can result in flooding of streets and low-lying areas. This type of flooding can be far removed from a creek or waterbody and have limited relationship to water levels on lakes and rivers. For example, a community that experiences a summer thunder storm can have significant surface flooding while nearby lakes and rivers are at their lowest levels.

Surface flooding is more common in older communities that were not designed to today's standards or that relied on creeks and other drainage pathways that no longer exist. Municipalities are responsible for ensuring that new developments are graded and have *stormwater management* controls to manage frequent wet weather events.

Riverine flooding occurs when rivers and streams exceed the capacity of their channels to convey flows, resulting in water overtopping the banks and flowing into adjacent areas. This typically occurs where there has been inappropriate filling of low-lying areas such as the draining and development of wetlands, and an increase in impervious surface area that is not adequately mitigated by stormwater management practices. It is MVCA's responsibility to mitigate riverine flooding by controlling development that would limit a river's ability to function as a dynamic system and convey water without damage to nearby buildings and infrastructure during major weather events.¹⁹

¹⁷ Source: https://wiki.sustainabletechnologies.ca/wiki/Flood_mitigation#Pluvial_.28Surface.29_flooding

¹⁸ Stormwater, combined, and partially separated sewer pipes, manholes, roadside ditches, ponds and pump stations.

¹⁹ MVCA is mandated to control development to ensure that riverine systems can safely convey a 1:100 regulatory event. The building of retaining walls is an example of structures that prevent a river system from operating as a dynamic system within a larger meander belt.

4.0 County Policy & Program Context

4.1 Trails & Forests

The counties of Lanark, Frontenac, and Renfrew have a shared interest in developing former rail beds into an integrated high-quality trail network. In Lanark County, a Trails Sub-Committee was established to manage, plan, and coordinate development of a sustainable and environmentally responsive trail network.²⁰ Key elements of the existing rail trail network include:

- Ottawa Valley Recreational Trail (OVRT) – 296 km running from Smiths Falls to Renfrew to Mattawa.
- K&P Trail – 180 km between Kingston and Renfrew.
- Central Frontenac Trailway – 46 km running west-east through the Township to Fall River Road.
- Tay-Havelock Trail – 25 km between Glen Tay and Fall River Road.
- Ottawa-Carleton Trailway – 23 km between Ottawa and Highway 7.
- Carleton Place Trailway – 6 km between Highway 7 and Carleton Place

Not all of these trails are owned by the counties, and as noted previously, MVCA is in discussions with the three counties to sell its section of the K&P Trail.

Both the counties of Lanark and Renfrew have extensive forests. Lanark County has just over 4,000 h. of forests with in MVCA's jurisdiction, and developed and maintains a short trail system through the Baird forest near Lanark Village with the support of community volunteers. MVCA plans and administers harvesting at Lanark County forest sites.

4.2 Natural Heritage & Stormwater Management

All counties²¹ have a role in land use planning approvals and have policies governing the protection of natural heritage features, mitigation of natural hazards, and stormwater management. Because many small municipalities have insufficient resources to undertake comprehensive studies, some counties have completed or begun work on Natural Heritage studies to support lower tier planning and the identification and protection of lakes and river corridors, wetlands, forests, and ANSIs within their jurisdiction. Both the counties of Lennox & Addington and Frontenac have completed these studies, and the County of Lanark has begun work on this.

Most counties also have a role in stormwater management as it relates to development approvals falling within their jurisdiction. For example, most applications for subdivision approval are administered at the county level, which assume responsibility for ensuring appropriate stormwater design and management on behalf of the local municipality. Generally, the local municipality will assume responsibility of stormwater infrastructure after the planning approvals are complete.

²⁰ Source: <https://www.lanarkcounty.ca/en/county-government>

²¹ While the counties of Frontenac and Lanark lie almost entirely within the jurisdiction of one or more conservation authorities, the northern quadrant of the County of Lennox and Addington (L&A) as well as almost the entirety of Renfrew County do not. Consequently, Renfrew County and areas of L&A consult with MNRF rather than the conservation authority for the management of natural hazards.

Like municipalities, county governments play an important role in protecting wildlife by implementing wildlife barriers and crossings into the design and construction of roadways.

5.0 Provincial Policy & Program Context

5.1 Land Conservation

The Province of Ontario is involved in land conservation and resource management in a number of capacities, including:

- Setting land use planning laws, policies and guidelines
- Protecting species at risk
- Supporting the evaluation of lake carrying capacity
- Ownership and management of Crown Land
- Negotiation with Indigenous Peoples in the resolution of land claims
- Administration of Tax Incentive Programs
- Forestry and Fishing

Land Use Planning

The Ministry of Municipal Affairs and Housing (MMAH) is responsible for administration of the *Planning Act*, which includes development of provincial policy and guidelines related to its implementation. Recently, the province amended the Ontario Wetland Classification System document that altered scoring systems and methodologies. This has and will have a profound impact on the protection of wetlands in Ontario. Currently, the Provincial Policy Statement²² is under review with further changes anticipated²³ that may impact the conservation of land and natural resource management.

Species at Risk

The provincial *Endangered Species Act*²⁴ is designed to identify and protect species at risk as well as the habitats they occupy. Implementation of the *Planning Act* is tied to this legislation through requirements for landowners to carry out site-specific investigations to determine the presence of species at risk and their habitats, and to take appropriate mitigating measures.

Lakeshore Capacity Assessments

The province developed a model and guidebook²⁵ to support municipalities in carrying out lakeshore capacity assessment of inland lakes on Ontario's Precambrian Shield. The objective of the tool is to limit the release of phosphorus to inland lakes on the Precambrian Shield by controlling shoreline development. High levels of phosphorus in lake water promotes eutrophication — excessive plant and algae growth, resulting in a loss of water clarity, depletion of dissolved oxygen and a loss of habitat for species of coldwater fish such as lake trout.

²² <https://files.ontario.ca/mmah-provincial-policy-statement-2020-accessible-final-en-2020-02-14.pdf>

²³ <https://ero.ontario.ca/notice/019-8462>

²⁴ <https://www.ontario.ca/laws/statute/07e06>

²⁵ <https://www.ontario.ca/document/lakeshore-capacity-assessment-handbook-protecting-water-quality-inland-lakes>

Crown Lands

The province owns ~1,125 km² of Crown land within MVCA's jurisdiction or approximately 26% of the watersheds. Most crown land is located in the headwaters of the Mississippi River with fewer parcels located in lowlands area off the Shield.

Crown land includes large tracts of natural land, shore lands and the beds of most lakes and rivers that are managed under the *Public Lands Act*²⁶ by the Ministry of Natural Resources (MNR). Individual sites are managed in accordance with a land use policy report/plan with varying levels of detail and land preservation. There are six crown land use designations²⁷:

1. Recommended Provincial Park – once designated, an area can be regulated as a provincial park under the *Provincial Parks and Conservation Reserves Act*.²⁸ Some subclassifications (e.g. recreation) permit a broad range of activities while other subclassifications (e.g. nature reserve and wilderness) have a narrower range of permitted activities. There are five Provincial Parks in MVCA's jurisdiction: Bon Echo (natural environment), Sharbot Lake (recreational), Silver Lake (recreational), Fitzroy (recreational) and Burnt Lands (nature reserve).
2. Recommended Conservation Reserve - once designated, an area can be regulated as a conservation reserve under the *Provincial Parks and Conservation Reserves Act* (PPCRA). There is one existing and one proposed reserve in MVCA's jurisdiction: Hungry Lake Conservation Reserve and the proposed Crotch Lake (Whiteduck) Reserve.
3. Forest Reserve – are protected for their natural heritage and special landscapes where there is a pre-existing interest or tenure under the *Mining Act* or *Aggregate Resources Act*, and activities authorized under these Acts can continue to take place.
4. Provincial Wildlife Area - are managed for wildlife and to provide opportunities for outdoor recreation, particularly hunting and wildlife viewing.
5. Enhanced Management Area (EMA) - EMAs are established to provide more detailed land use policy in areas with special features or values.²⁹ A wide variety of resource and recreational uses can occur in EMAs. There are 2 EMAs in MVCA's jurisdiction: Mazinaw (Bon Echo Park) EMA and Crotch Lake EMA.
6. General Use Area (GUA) – This classification applies to most Crown land in the watershed. Specific policies for individual GUAs are established through local Crown land use planning and are to reflect an area's land use attributes and context. Most of these properties are managed in accordance with the *Mazinaw-Lanark Forest Management Plan* (see section 5.2).

Many lakes in the upper watershed are still surrounded by large tracts of crown land that serve as natural recreational areas and, by default, limit shoreline development and density around lakes. O.Reg. 161/17 allows

²⁶ <https://www.ontario.ca/laws/statute/90p43>

²⁷ <https://www.ontario.ca/document/guide-crown-land-use-planning/part-ii-provincial-policies-crown-land-use-designations-120-overview-crown-land-use-designations>

²⁸ <https://www.ontario.ca/laws/statute/06p12>

²⁹ Five subcategories: Natural Heritage, Recreation, Remote Access, Fish and Wildlife, Great Lakes Coastal Areas.

some public occupancy and the construction of specifically listed structures without permit on many of these areas. Anything falling outside the regulation is subject to review and approval by the MNRF.

Land Claims

In 1991, the governments of Canada, Ontario and the Algonquins of Ontario (AOO) began negotiations to settle the Algonquin land claim,³⁰ which included creation of Whiteduck Provincial Park (Natural Environment Class) in the area of the Crotch Lake Conservation Reserve. Consultations initiated in 2020 resulted in an alternate proposal to add part of the subject lands to the Hungry Lake Conservation Reserve instead.

The lands now being assessed as an addition to Hungry Lake Conservation Reserve have ecological, historical, cultural and spiritual importance to the Algonquins of Ontario. This proposal is being evaluated as a Category B project under the Algonquin Land Claim Declaration Order made under the *Environmental Assessment Act*.³¹ The proposed additions to Hungry Lake Conservation Reserve will depend on the successful negotiation of a final agreement to resolve the Algonquin Land Claim.

Tax Incentives

The MNRF administers a Conservation Land Tax Incentive Program (CLTIP) and a Managed Forest Tax Incentive Program (MFTIP) to encourage private property owners to conserve and stewards of natural areas on their properties.

- The CLTIP encourages and supports the long-term private stewardship of Ontario's provincially important natural areas. Portions of private property that have eligible natural heritage features may qualify for a 100% property tax exemption.³²
- The MFTIP encourages and supports good forest management by giving a property tax reduction to eligible landowners who prepare and follow an approved Managed Forest Plan.³³

5.2 Forestry and Fishing

Mazinaw-Lanark Forest Management Plan

The 2021-2031 *Mazinaw-Lanark Forest Management Plan*³⁴ covers a third of Eastern Ontario, and is significant in the protection of natural heritage values in the watershed due to the amount of crown land subject to it. The current plan contains the following management objectives:

1. Move towards a more natural forest landscape pattern and distribution.
2. Move towards a more natural forest landscape structure and composition.
3. Increase knowledge and understanding of tree genetic material that may be better adapted to future climates in the Mazinaw-Lanark Forest.
4. Maintain wildlife habitat for forest-dependent provincially and locally featured species.

³⁰ <https://www.ontario.ca/page/algonquin-land-claim>

³¹ <https://www.ontario.ca/laws/statute/90e18>

³² <https://www.ontario.ca/page/conservation-land-tax-incentive-program>

³³ <https://www.ontario.ca/page/managed-forest-tax-incentive-program>

³⁴ https://nrip.mnr.gov.on.ca/s/published-submission?language=en_US&recordId=a0z3g000000ofS9AAI

5. Maintain wildlife habitat for forest-dependent species at risk with known occurrences on the Mazinaw-Lanark Forest.
6. Ensure the successful renewal of harvested stands (naturally or artificially) to the most silviculturally appropriate species and tended until management standards or Free To Grow/Establishment is met, using the most appropriate and cost effective methods to achieve.
7. Maintain Red Oak across the Landscape.
8. Continually improve forest management operations.
9. Provide the levels of access to adequately carry out forest operations.
10. Provide a sustainable, continuous, and predictable wood supply from the forest that will meet the current recognized industrial demand of the forest.
11. Harvest a sustainable and continuous wood supply from the forest that will meet the current recognized industrial demand of the forest.
12. Minimize loss of Crown productive forest to infrastructure development thereby maintaining harvest levels and related community well-being.
13. Provide opportunities for First Nation and Metis involvement in forest management planning
14. Encourage and support the participation of the Local Citizens Committee in the development of the Forest Management Plan.

Fish Sanctuaries

The province has established five Fish Sanctuaries in the watershed, which are “No fishing” zones from March 1 to Friday before the second Saturday in May.

- Crotch Lake and Mississippi River - Palmerston Township, from Sidedam Rapids to north shore of Skull Island including McLean’s Bay
- Dalhousie Lake and Mississippi River - Dalhousie Township, within a 300 m radius of the bridge of the Township road crossing the Mississippi River where it enters Dalhousie Lake
- Indian River and Clayton Lake - within a 300 m radius of the Command Bridge crossing the Indian River where it enters Clayton Lake (Lanark Township)
- Mississippi River - Drummond Township, from 240.8 m west of Main Street in Innisville to Mississippi Lake
- Mississippi River - Pakenham Township, between the falls in the Town of Almonte and upstream side of bridge on Lanark County Road 20

The watershed is also home to a provincial fish culture stations and community hatcheries that is used to stock several lakes and streams in the watershed.

6.0 Federal Policy & Program Context

The federal government is signatory to several international agreements related to the protection of species at risk, migratory birds and their habitats; climate change mitigation and adaptation; and the conservation biological diversity. It is also a major landowner within the City of Ottawa portion of MVCA’s jurisdiction, and owns the Mississippi Lake National Wildlife Area (NWA)³⁵, home to the Mississippi Lake Bird Sanctuary. The

³⁵ <https://www.canada.ca/en/environment-climate-change/services/national-wildlife-areas/locations/mississippi-lake.html>

NWA is managed in accordance with the *Canada Wildlife Act* and *Wildlife Area Regulations*. The primary purpose of NWAs is to protect and conserve wildlife and wildlife habitat, and prohibit activities that could interfere with the conservation of wildlife.

Convention on Biological Diversity

In 2022, the Government of Canada announced conservation goals to “reverse the decline in biodiversity, better fight climate change, and maintain a strong, sustainable economy” at the 15th Conference of the Parties (COP15) to the United Nations Convention on Biological Diversity.³⁶ A key outcome of the conference was the “30 by 30” target³⁷, an international commitment to protect at least 30 percent of the world's lands and waters by 2030. The federal government has committed to conserving a quarter of Canada’s lands and a quarter of its oceans by 2025, and is working toward conserving 30% by 2030.

Habitat Targets

In 2013, Environment Canada published environmental targets for wetland and forest cover in areas off the Precambrian (Canadian) Shield:³⁸

- Wetland cover: the greater of 10% of each major watershed and 6% of each subwatershed, or 40% of the historic wetland coverage, should be protected or restored.
- Forest cover: 30% forest cover at the watershed scale (high risk approach); 40% forest cover (medium risk approach); and 50% equates (low risk approach)
- Forest interior: a minimum of 10% interior forest should exist within a given watershed.
- Riparian forest: a minimum of 75% of stream length be naturally vegetated with a minimum 30 m wide naturally vegetated adjacent-lands area on both sides of the stream.

This approach is suitable for settled agricultural landscapes but does not transfer well to the Shield, which covers most of MVCA’s watershed. The Shield area has growing urban areas, cottages and second homes infills and severance, in addition to forestry, mining and recreation activities. In this region, a reasonable approach may be to consider how to actively manage linkages and areas of contiguous forest and wetland and assess how much of the landscape can be disturbed before there are substantive ecological effects.

7.0 Natural Infrastructure & Ecosystem Services

Natural infrastructure (or natural assets) refers to land, water, air, and natural features and processes that support human life. Ecosystem services refer to the benefits we derive from those assets and processes.

In the current context, natural infrastructure refers to shorelines, wetlands, forests, and ground water recharge and discharge areas. And, ecosystem services refer to the food and drinking water, natural water storage, flood and drought mitigate, and erosion control that those natural assets provide a local and watershed scale, as well as mental and physical health opportunities and benefits.

³⁶ <https://www.unep.org/un-biodiversity-conference-cop-15>

³⁷ <https://www.un.org/sustainabledevelopment/blog/2021/07/a-new-global-framework-for-managing-nature-through-2030-1st-detailed-draft-agreement-debuts/>

³⁸ Source: “How Much Habitat is Enough?” *Guideline* (ECCC, 2013)

Shorelines

Lake levels rise and fall according to the seasons, recent weather, and the operation of water control structures. All lakefront properties require a setback of land within which nothing interferes with or will be damaged by these fluctuations. Limiting shoreline development is essential to ensuring that the Water Management Plan for the Mississippi River can be implemented as designed and evolve over time to address changing climatic conditions. Where these lands are in public ownership, they should stay in public ownership.

Groundwater Recharge Areas

Groundwater recharge areas are associated with gravel deposits and other soil features that allow a significant amount of rain and snowmelt to easily infiltrate and replenish shallow and deep aquifers. Those aquifers supply water to rural residents and businesses, and municipal communal well systems in Almonte and Carp. The Mississippi-Rideau Source Water Protection Program found these areas to be sparsely scattered across the watershed, covering about 9% of the total watershed area, with wetlands representing about one third of significant groundwater recharge areas.

Wetlands and Forests

Wetlands, forested areas, and lands identified as groundwater recharge and discharge areas all perform water management functions and their development can have both local and watershed level impacts. Wetlands are scientifically recognized as providing a key function in mitigating flood, erosion and drought impacts. “A wetland as small as two hectares can retain water runoff from an area 70 times its size, significantly reducing flood damage”.³⁹ Forests regulate precipitation, evaporation and water flows by slowing floodwaters, stabilizing land and preventing erosion. Both wetlands and forests provide a number of ecological services including:

- Improving water quality: As water moves slowly through a wetland, pollutants, excess nutrients and sediments can settle to the bottom or be filtered out by wetland plants instead of entering surface and groundwater systems. Forests also act as natural water filters, removing pollutants and other impurities before they reach streams, rivers, and other water sources.
- Replenishing groundwater: Wetlands and forests connected to underground sources of water retain surface water, rainwater, or snow melt that seeps into the ground. They provide time for water to filter down and recharge aquifers and replenish groundwater.
- Providing shade and local cooling effects: Incoming energy from the sun is converted into energy for wetland and forest plants or evaporation instead of heat, thus reducing the impact of extreme heat events which are also becoming more frequent and intense due to climate change. They provide shade and cools the surrounding environment (especially helpful for reducing heat island effect in urban areas).
- Producing oxygen and absorbing carbon: The sequestration of carbon reduces greenhouse gas concentrations in the atmosphere and helps to mitigate climate change.
- Supporting biodiversity: Forests and wetlands have the ability to support high levels of biodiversity that support the food chain in turn the agri-food sector.

³⁹ Office of the Auditor General of Ontario, 2022.

Natural Infrastructure by Subwatershed

MVCA's jurisdiction has two distinct physiographic regions: the Canadian Shield in the west and the Ottawa-St. Lawrence Lowland Basin in the east.

- The "Shield" area has a hummocky topography with thin soil cover, rock outcroppings, and many lakes and small wetland scattered throughout.
- The "Lowlands" area is flatter with more soil and fertile lands.
- A transition area between the two physiographic regions runs through the south part of Lanark Highlands, Mississippi Lake and the center of Mississippi Mills.

The geography of these areas significantly impacts run-off and flood control in each region. Tables 2 and 3 provide key characteristics of the "Shield" and "Lowlands" subwatersheds in MVCA's jurisdiction. Several small Ottawa River tributaries are grouped into one "subwatershed" area.

Table 4 shows that most subwatersheds within MVCA's jurisdiction do not meet federal targets for wetland cover and various types of forest cover set out in Section 6.0. Sound management of what remains is needed for these natural assets to maintain their ecological services and functions.

The degree to which the natural assets within each subwatershed are managed to retain their ecological services will impact long-term water management locally and downstream.

Table 2: On-Shield Subwatersheds

Subwatershed/ Watershed	Area (Sq.Km.)	Description/Features	Wetland and Forest (% Cover)			
			Wetland	Forest	Interior Forest	Riparian Forest
Upper Mississippi	1028	<ul style="list-style-type: none"> • Canadian shield topography with low population density but high amount of waterfront (cottage country) development • has most of the lakes and all available storage for stream flow regulation • most water management occurs here 	11.9	86.8	39.7	56.5
Central Mississippi	395	<ul style="list-style-type: none"> • Canadian shield topography with pockets of arable land and low population density • has the High Falls dam hydroelectric generating system (OPG) • flooding issues on Dalhousie Lake 	14.5	78.8	27.7	52.6
Lower Mississippi (on shield)	423	<ul style="list-style-type: none"> • the lower part of the system that is on the Canadian Shield with rural development and relatively low population density • has the Pakenham Hills and Clayton-Taylor Lakes 	17.7	72.8	23.8	47.9
Clyde River	663	<ul style="list-style-type: none"> • Canadian shield topography with low population density but high amount of waterfront (cottage country) development • has a number of small lakes but no storage/reservoir capacity 	11.2	81.9	32.5	55.8
Fall River	485	<ul style="list-style-type: none"> • Canadian shield topography with pockets of arable land and low population density • has several large lakes and Bolton Creek. • is essentially an uncontrolled system 	16.4	72.9	17.3	47.9

Sources: MVCA 2023 Watershed Report Card and Mississippi River Water Management Plan

Table 3: Lowlands Subwatersheds

Subwatershed/ Watershed	Area (Sq.Km.)	Description/Features	Wetland and Forest (% Cover)			
			Wetland	Forest	Interior Forest	Riparian Forest
Carp River Watershed	306	<ul style="list-style-type: none"> • St Lawrence Lowland topography with mix of farmland and rural development in the north, and urban development in and around Kanata and Stittsville in the south • uncontrolled system • highly urbanized headwaters, broad floodplain areas downstream 	9.3	32.4	7.7	23.3
Ottawa River Tributaries	282	<ul style="list-style-type: none"> • St. Lawrence Lowlands topography with a mix of rural development, urbanized development and high-density waterfront development along the Ottawa River • several watercourses outlet directly to Ottawa River including: Constance Ck, Shirley’s Brook, Watts Ck, Kizell Drain • uncontrolled systems 	14.4	37.1	6.8	24.0
Mississippi Lake	300	<ul style="list-style-type: none"> • Mississippi River system on the transition zone between the Shield and Lowlands • higher population density due to Mississippi Lake and vicinity to Carleton Place and Hwy 7 corridor • has Mississippi Lake, the largest, most developed lake and the largest flood damage centre 	25.1	44.1	11.4	34.1
Lower Mississippi (off shield)	454	<ul style="list-style-type: none"> • St. Lawrence Lowlands topography with mix of farmland and rural development, urbanized development in and around Carleton Place and Almonte and waterfront development along the river. • is the lower part of the Mississippi River system with a pronounced river valley downstream of Almonte • has most of the hydroelectric production 	9.2	29.8	6.3	29.9

Sources: MVCA 2023 Watershed Report Card and Mississippi River Water Management Plan

Table 4: Federal⁴⁰ Wetland and Forest Targets vs. Actual at Subwatershed Scale

Subwatershed / ECCC Targets	Wetland	Forest	Interior Forest	Riparian Forest
	>6% subwatershed >10% watershed scale	>30%	>10%	>75%
Carp River Watershed	9.3	32.4	7.7	23.3
Ottawa River Tributaries	14.4	37.1	6.8	24.0
Mississippi Lake	25.1	44.1	11.4	34.1
Lower Mississippi (off shield)	9.2	29.8	6.3	29.9

8.0 Hydrological and Ecological Conservation

As shown in Figure 3, approximately 32,540 ha of woodlands, wetlands, and other lands are protected for conservation and associated recreational purposes within the watershed by MVCA and others.⁴¹ However, the land between is under increasing pressure as land development continues and more people discover this area as represented by travel times shown in Figure 4. Ongoing road extensions, widening, and the introduction of divided highways is reducing travel times making more remote areas of the watershed accessible to urban dwellings seeking recreational opportunities as well as cottages and year-round housing opportunities.

Continued efforts are needed by all levels of government, individual landowners, MVCA and other conservation minded organizations to protect natural heritage hydrological and ecological functions within the watershed.⁴²

⁴⁰ Source: "How Much Habitat is Enough?" Guideline (ECCC, 2013)

⁴¹ Refer to Appendices B to F for a summary of conservation properties within MVCA's jurisdiction. Note, this excludes approximately 106,332 ha of Crown Land designated for general use.

⁴² The "conservation of land" under *Conservation Authorities Act* means maintaining or natural features and ecological functions and hydrological functions, within the watershed (Conservation Ontario, 2008.) This includes all aspects of the physical environment, be it terrestrial, aquatic, biological, botanic or air and the relationship between them (611428 Ontario Ltd. vs. Metropolitan Toronto and Region Conservation Authority). Source: <https://trca.ca/planning-permits/glossary/#C>

Figure 3

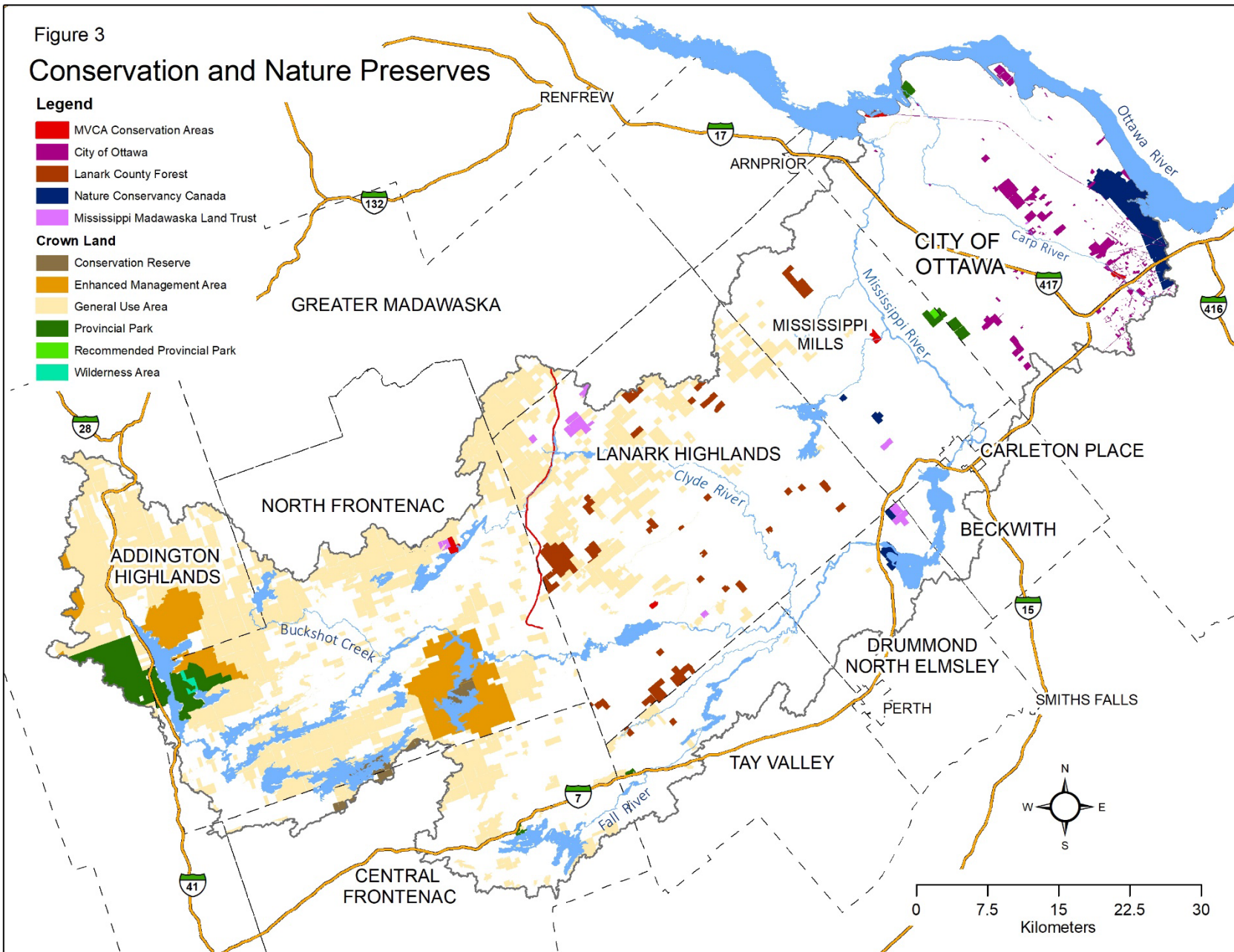
Conservation and Nature Preserves

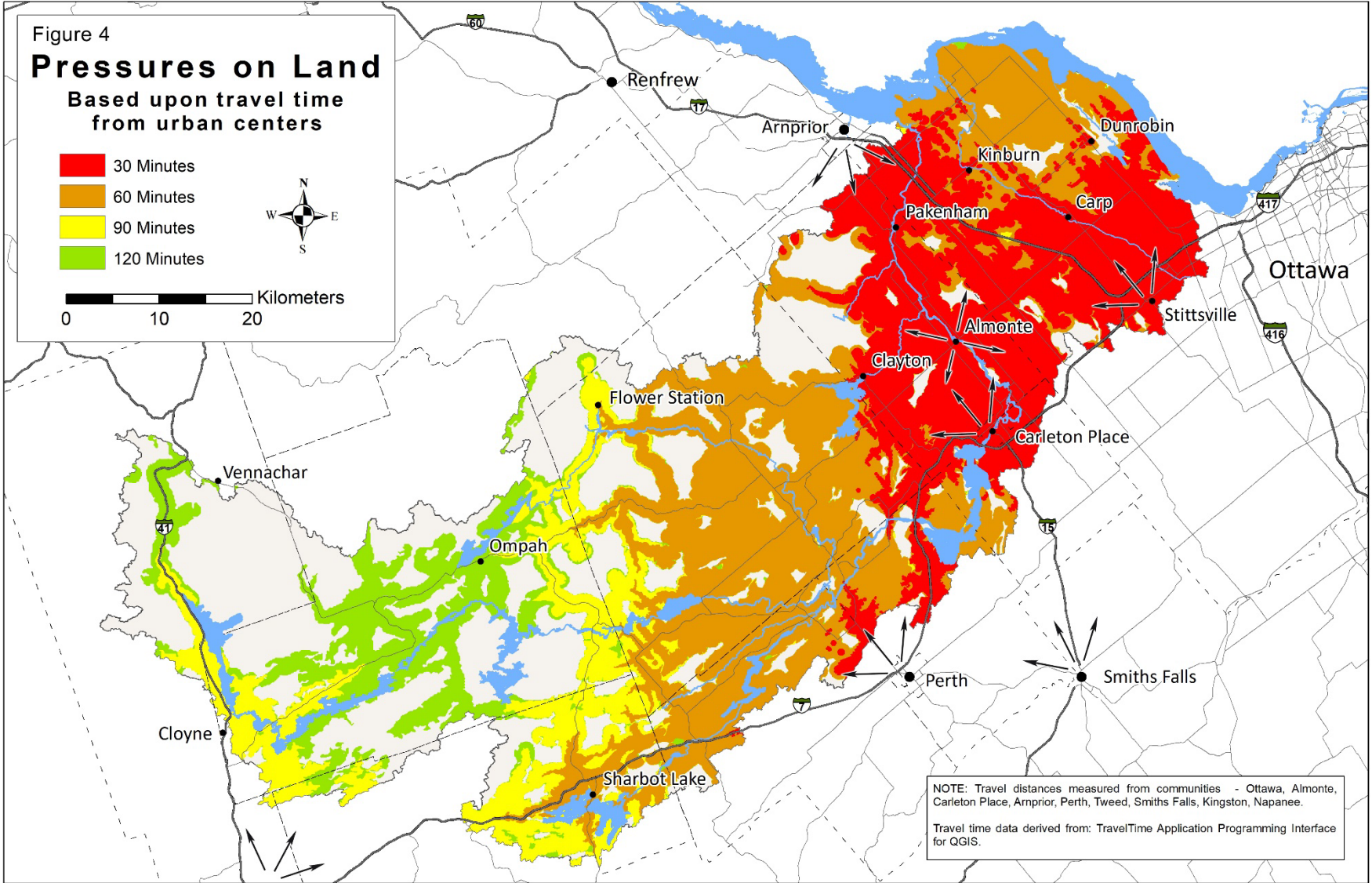
Legend

- MVCA Conservation Areas
- City of Ottawa
- Lanark County Forest
- Nature Conservancy Canada
- Mississippi Madawaska Land Trust

Crown Land

- Conservation Reserve
- Enhanced Management Area
- General Use Area
- Provincial Park
- Recommended Provincial Park
- Wilderness Area





8.1 Core Natural Areas (CNA)

Figure 5 identifies large areas of natural interior habitat and significant riverine linkages within the watershed. For this project the following parameters were used:⁴³

- **Interior habitat:** contiguous areas of wetland or forest setback 100m from hard, human-created edges (e.g., roads, railways) where the interior habitat was:
 - On Shield > 640 ha.
 - Off Shield (Lowlands) >140 ha.
- **Riverine linkages:** natural shoreline environment along a river that generally extends over 100 meters inland over several kilometres of riverfront that join two or more larger areas of wildlife habitat.

Other features of significance that have not been captured here include the following:

- Provincially significant wetlands
- Wetland complexes
- Unevaluated wetlands >30 ha
- Forest canopy age:
 - On Shield >120 years (old forest)
 - Off Shield (Lowlands) >100 years
- Hydrological linkages (100m either side of 2nd order watercourse⁴⁴)
- Terrestrial linkage (1 km-wide minimum and wider)
- Areas of Natural and Scientific Interest
- On-shield only: marble present or likely wolf corridor
- Off-shield only: Karst known or inferred

These areas represent the best opportunity to collaborate with others for natural heritage protection. See Appendix G for summary descriptions of the areas identified in Figure 5.

8.2 Other Corridors & Linkages

Corridors are linear features that allow movement between various features.

- **Natural Linkages** such as rivers, stream valleys, and escarpments allow for the safe movement of wildlife between different landscapes for foraging, reproduction, and colonization, and facilitate interbreeding of plants and animals and maintenance of viable populations.

⁴³ Within the City of Ottawa, [Schedule C-11-A](#) of the *Official Plan* was used to identify key areas.

⁴⁴ Headwater streams, which are at the highest elevation in the watershed, are first-order streams. When two first-order streams join they become a second-order stream. And when two second-order streams join they form a third-order stream. Source: <https://agriculture.canada.ca/en/environment/resource-management/managing-water-sustainably/understanding-watersheds>

- Man-made Corridors such as transportation routes, utility corridors, and fence rows can act as barriers to wildlife migration between natural landscapes and interrupt those linkages. However, these impacts can be significantly mitigated through smart design and construction.

Re-establishment of natural linkages can aid to support biodiversity and a healthy watershed. For example, a man-made corridor like a decommissioned railbed can evolve into a semi-natural corridor such as the K&P Trail. And, a utility corridor such as Hydro One transmission corridors can be semi naturalized and maintained to support trails like the Meadoway in the GTA.⁴⁵

8.3 Conservation Partners & Initiatives in Eastern Ontario

As noted above, a number of Natural Heritage System Projects have already been undertaken that cover parts of the MVCA Watershed.⁴⁶ These projects have produced mapping to support a range of goals, from the broad landscape scale of the A2A Collaborative, to the finer property level scale of the Mississippi Mills/Mississippi Valley Field Naturalists project. While sharing many of the same broad principles and objectives, each of these initiatives had different goals and used different information and criteria to identify and define the boundaries of the natural heritage systems.

Mississippi Madawaska Land Trust Mapping

The MMLT accepts qualified lands through gift or purchase to be managed by them as Nature Sanctuaries. It also enters into conservation easements with landowners to legally restrict future development. It is the mission of the Mississippi Madawaska Land Trust (MMLT) “to legally protect and steward these private lands which have ecological, biodiverse, aesthetic and cultural value, while at the same time fostering engagement with wilderness”. The MMLT has produced mapping using GIS, to identify potential priority areas for acquisition and agreements. Such areas were identified as large areas of natural interior habitat (cores) within the watershed, based on forest and wetland cover. Interior habitat was defined as wetland or forest 100m from hard, human-created edges (e.g., roads, transmission lines, railway lines).

Town of Mississippi Mills Natural Heritage Concept Plan

Prepared by the Tineke Kuiper – the Mississippi Valley Field Naturalists (MVFN) in collaboration with the Town of Mississippi Mills and the Mississippi Valley Conservation Authority, the goal of this plan was to prepare Natural Heritage System Mapping, for inclusion in the Official Plan. It met with public opposition and wasn’t approved for use in the OP.

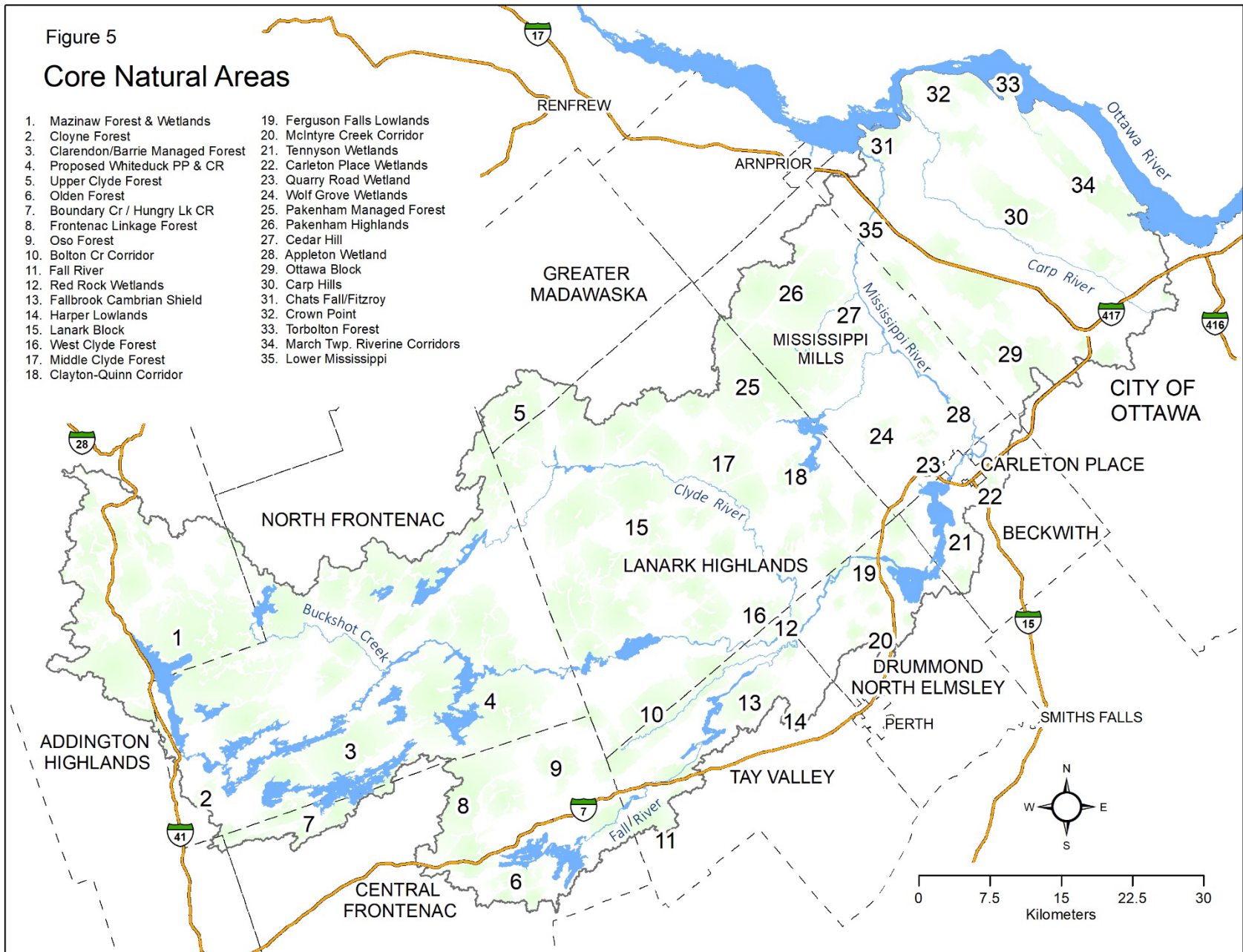
⁴⁵ <https://themeadoway.ca/2020/03/13/game-changer-hydro-corridor/>

⁴⁶ Specific land holdings can be found in Appendix xx. Note, the appendices exclude urban parks and beaches as those sites are generally manicured and not in a natural state.

Figure 5

Core Natural Areas

- | | |
|------------------------------------|-----------------------------------|
| 1. Mazinaw Forest & Wetlands | 19. Ferguson Falls Lowlands |
| 2. Cloyne Forest | 20. McIntyre Creek Corridor |
| 3. Clarendon/Barrie Managed Forest | 21. Tennyson Wetlands |
| 4. Proposed Whiteduck PP & CR | 22. Carleton Place Wetlands |
| 5. Upper Clyde Forest | 23. Quarry Road Wetland |
| 6. Olden Forest | 24. Wolf Grove Wetlands |
| 7. Boundary Cr / Hungry Lk CR | 25. Pakenham Managed Forest |
| 8. Frontenac Linkage Forest | 26. Pakenham Highlands |
| 9. Oso Forest | 27. Cedar Hill |
| 10. Bolton Cr Corridor | 28. Appleton Wetland |
| 11. Fall River | 29. Ottawa Block |
| 12. Red Rock Wetlands | 30. Carp Hills |
| 13. Fallbrook Cambrian Shield | 31. Chats Fall/Fitzroy |
| 14. Harper Lowlands | 32. Crown Point |
| 15. Lanark Block | 33. Torbolton Forest |
| 16. West Clyde Forest | 34. March Twp. Riverine Corridors |
| 17. Middle Clyde Forest | 35. Lower Mississippi |
| 18. Clayton-Quinn Corridor | |



Land Conservancy for Kingston, Frontenac, Lennox & Addington

The LC-KFLA have produced “Natural Heritage Plan for the Land Conservancy for Kingston, Frontenac, Lennox and Addington” with a land acquisition strategy.⁴⁷ “The general philosophy for constructing the Plan was first, to identify features that should be included based on their significance to the natural heritage of the region. Second, the Plan identified a certain width of lands adjacent to the feature: the most appropriate place to identify building blocks on protected areas that would be most likely to improve their size, configuration, and connectivity, and thus increase their viability.” The report includes mapping identifying LC-KFLA priority areas.

County of North Frontenac Natural Heritage Study

A study undertaken by the County of Frontenac, the Natural Heritage Study (NHS)⁴⁸ is a comprehensive evaluation of natural heritage features such as wetlands, forest cover, and wildlife habitat at a regional scale across the County, and includes the mapping of a connected system of these features. The mapping is accompanied with policy recommendations that can be used by planners to protect significant natural features from development. This comprehensive regional review of natural heritage mapping and policies set a foundation for the natural heritage policies of the first draft of the County Official Plan.

City of Ottawa

Ottawa has identified a natural heritage system comprised of a variety of significant natural features, associated contributing features and connecting linkages. This system was defined as part of the comprehensive Official Plan Review process culminating in an Official Plan Amendment (OPA 76) approved in 2009. The definition includes new local criteria for the determination of “significance” for natural heritage features such as woodlands and valleylands.

Sustaining What We Value

Sustaining What We Value is a community-based planning project, in the area of the Township of South Frontenac, Lanark, Leeds and Grenville Counties designed for local residents to help sustain the natural environment across the landscape.⁴⁹ The project was led by a partnership that included: the Eastern Ontario Model Forest, St. Lawrence Islands National Park, the Frontenac Arch Biosphere Reserve, the United Counties of Leeds and Grenville, Ontario Nature, Environment Canada and the Ontario Ministry of Natural Resources. It identified and mapped natural heritage features and the connections between them. It produced a data package that includes spatial data, project reports and presentation materials.

The data has been made available to inform and support:

- land use planning and resource management decision-making
- strategic priorities for stewardship and restoration projects
- priorities for conservation land acquisitions

⁴⁷ https://naturallyla.ca/wp-content/uploads/2022/10/Lennox_and_Addington_NHS_Final-report-Revised-August-2022_Compressed.pdf

⁴⁸ <https://frontenac.civicweb.net/FileStorage/11D6A62B698B4B499A1E723C3965B8D5-12-12-19%20Sustainability%20-%20Natural%20Heritage%20Study%20F.pdf>

⁴⁹ <https://geohub.lio.gov.on.ca/documents/lio::sustaining-what-we-value-a-natural-heritage-system-for-the-frontenac-lanark-leeds-grenville-area-of-eastern-ontario/about>

- priorities for inventory programs and research projects

Algonquin to Adirondacks Collaborative (A2A)

A mapping project that builds on the Sustaining What We Value’s mapping work in Eastern Ontario. It identifies connected natural habitat between the Adirondack Park in New York State and Algonquin Provincial Park in Ontario.⁵⁰

The goal of this project was: to create a habitat connectivity mapping tool that will support land conservation, stewardship activities, land use planning, and other conservation efforts by planning authorities, conservation groups, community organizations, and residents in the A2A region.

A connectivity mapping project (2013-2014) with the Ontario Ministry of Natural Resources, expanding on the Sustaining What We Value maps, with the same methodology, to include the entire A2A region.

Nature Conservancy of Canada – Great Lakes Blueprint

Presents an ecoregional assessment of the terrestrial biodiversity of the Canadian portion of the Great Lakes ecoregion. It entailed a GIS based analysis of representation and gaps in existing protected areas. The project included an assessment of biodiversity targets. The mapping was derived based on a “course-filter biodiversity analysis” to assess highest scoring examples of ecological systems (using FRI mapping on the Canadian Shield) and “fine-filter” targets for species and vegetation communities of conservation concern (based on NHIC data). It divided Southern Ontario and the Canadian Shield into two study areas.

The Land Between (regional scale)

The Land Between (TLB) is a conservation organization that was initiated to research the natural and ecological features of a region believed to be an ecotone extending across central Ontario from the Frontenac Arch in the east to Georgian Bay and Southern Parry Sound.⁵¹ Their work extended to include mapping areas of high biodiversity and opportunity “with assessment for feasibility of stewardship, securement and restoration. TLB work with land trusts, municipalities, and stewardship groups.

Stewardship and Other Effective Area-based Conservation Measures (OECM)

Recognizing that large areas of land and shoreline are privately owned in Canada, the federal government has adopted “a model for how people can manage and steward the land sustainably, in ways that allow nature to thrive, achieving the same biodiversity results as a protected area.

“Other Effective area-based Conservation Measures” (OECM) is an internationally recognized classification applied to land and water, *other than a regulated protected area*, which are stewarded for the conservation of biodiversity and associated ecosystem services. These areas are intended to achieve long-term and effective conservation of biodiversity, even when the land is managed for different purposes.

They are described as

⁵⁰ <http://www.a2acollaborative.org/mapping.html>

⁵¹ <https://www.thelandbetween.ca/>

Appendices

Appendix A: Relevant Watershed Plan Actions

The following is a selection of Actions contained in the *Mississippi River Watershed Plan* that are most relevant to the development of a Land Conservation Strategy.

Actions/Strategic Directions	Implementation Considerations and Options
<p>GD1 (Growth & Development): Work with all partners to continue to support environmentally sustainable growth for risk mitigation and the protection of watershed values and features.</p> <p>Partners: All partners and stakeholders listed throughout this Plan</p>	<p>Key tools for environmental sustainability are:</p> <ul style="list-style-type: none"> • the protection of wetlands, for natural storage and other benefits • riparian buffers along all waterways including natural features (lakes, rivers, streams), and manmade features (municipal and agricultural drains) • the 30 metre setback from normal high water mark for structural development and hardened surfaces • the promotion of low impact development measures (LIDs) • the protection of natural features and systems
<p>WM3 (Water Management): Undertake a Water Storage Capacity and Management Study that considers both man-made (dams and reservoirs) and natural storage (wetlands) options and capacity.</p> <p>Partners: MVCA (Lead) Universities</p>	<ul style="list-style-type: none"> • Undertake an analysis of climate impacts on existing storage capacity. • Natural storage component could be done in-house or as a research collaboration with the academic community.
<p>WM7 (Water Management): Work with municipalities, agriculture and development communities, landowners and other partners to quantify, value and protect wetlands as hydrologic and natural assets.</p> <p>Partners: MVCA, Municipalities Universities DEVEL and AGRI, Indigenous Peoples, NGOs (Shared leadership roles)</p>	<ul style="list-style-type: none"> • Explore collaborations with academic community to undertake ecological/environmental valuation research. • Explore federal funding opportunities to support valuation research relative to climate change resiliency.
<p>NS1 (Natural Systems): Develop a Land Conservation Strategy to mitigate flood, erosion and other natural hazards, and to support the ecological services provided by natural systems.</p>	<ul style="list-style-type: none"> • Work with the province, municipalities, agricultural community, development and forestry communities, and other owners of large land holdings in maintaining and improving climate and ecosystem resilience through:

Actions/Strategic Directions	Implementation Considerations and Options
<p>Partners: MVCA (Lead) MNRF Municipalities, Canadian Wildlife Service, Agriculture, Development and Forestry Communities, Indigenous Peoples, Land Trusts Other Conservation Groups</p>	<ul style="list-style-type: none"> • programs and incentives (including tax incentives) for woodland protection and reforestation, • wetland protection and creation, and • low impact development, with a focus on enhancing on-site retention and infiltration of water. <ul style="list-style-type: none"> • Work with municipalities and stewardship groups to improve and increase the recognition and protection of natural heritage (woodlots, waterways and wetlands) within the watershed, with special attention to agricultural and high growth areas. • Assist municipalities by preparing comprehensive Natural Heritage Systems Mapping of Ecoregion 6E to address Provincial Policy Statement (PPS, 2020) requirements, on a fee for service basis. • Adopt a Natural Heritage Strategy for the east Lowlands area to achieve minimum targets: wetland cover of greater than 30%, forest cover of greater than 30%, and forest interior greater than 10%. • Work with MNRF to identify crown holdings within the watershed that are flagged for potential sale, and develop strategies to ensure the protection of crown natural assets. • Support the promotion of land trusts as a means of protecting natural features and systems.
<p>NS2 (Natural Systems): Encourage and support studies that quantify the ecosystem services and climate resiliency provided by natural asset features and functions (wetlands, woodlands, etc.).</p> <p>Partners: MVCA, Universities Provincial and Federal Agencies</p>	<p>Environmental valuations can take many forms including:</p> <ul style="list-style-type: none"> • watershed modelling assessments to quantify water storage services provided by wetlands; • nutrient modelling to quantify nutrient assimilation services provided by wetlands, riparian buffers and different land uses; • forest cover assessments to quantify carbon sequestering services.
<p>NS3 (Natural Systems): Work with municipalities and public agencies to improve the application and coordination of regulatory tools for the protection of wetlands, woodlands and natural systems.</p> <p>Partners: MVCA MUNCI MNRF MECF OMAFRA</p>	<ul style="list-style-type: none"> • Support counties and municipalities in fulfilling Provincial Policy Statement (PPS 2020) requirements for Natural Heritage Systems. This could entail collaboration on a mapping product. • Encourage municipalities, through their Official Plans, to set measurable environmental targets for environmental features based on Environment Canada “How Much Habitat is Enough, 2013” guidelines. • Work with municipalities to determine and implement strategies, policies and measures that support stronger

Actions/Strategic Directions	Implementation Considerations and Options
Shared leadership roles relative to legislative responsibilities	implementation and compliance with the 30 metre water setback and shoreline vegetated buffers, for the protection of a natural riparian area and aquatic habitat.

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Appendix B: MVCA Conservation Properties

Name (date acquired)	Location	Size	Activities & Amenities and other Details
K&P Trail CA (1990)	75 km trail between Kingston and Sharbot Lake - MVCA only owns 30 km section between Snow Road Station and Berryville	30 km	<ul style="list-style-type: none"> • Multiuse trail used for hiking, biking, ATVing, snowmobiling <p>Active disposition:</p> <ul style="list-style-type: none"> • In the process of being sold to the Counties of Lanark, Frontenac and Renfrew
Mill of Kintail CA (1972)	Town of Mississippi Mills- North of Almonte 2854 Concession 8 Ramsay;	68 Ha	<ul style="list-style-type: none"> • Hiking/snowshoeing trails • R. Tait McKenzie and Dr. James Naismith Museum • Education programs and summer day camps • Volunteer opportunities • Playground • Facility rentals <p>Ongoing ownership and management as a Conservation Area One of MVCA's key assets. Site include the R. Tait McKenzie and Dr. James Naismith Museum</p>
Palmerston - Canonto CA (1971)	North Frontenac Twp. - Northeast of Ompah Trail site - 1153 Arcol Road, North Frontenac Township,	105 Ha	<ul style="list-style-type: none"> • Hiking trails (5 km) <p>Ongoing ownership by MVCA - leased to the Township of North Frontenac who operate/ manage/maintain the CA</p>
	Beach Site - 1195? Arcol Road,		<ul style="list-style-type: none"> • Beach with picnic and washroom facilities <p>Active disposition – in the process of being sold to the Township of North Frotenac</p>
Purdon CA (1988)	Lanark Highlands Twp. - North of McDonalds Corners, west of Watsons Corners Dalhousie 8th Concession	25 Ha	<ul style="list-style-type: none"> • Hiking trail (1.7 km) • Fully accessible boardwalk • Wheelchair accessible outhouse • Parking and picnic area • Focus on orchid colony with interpretive signage <p>Ongoing ownership and management as a Conservation Area; primary focus on maintaining and showcasing orchid colony</p>

Appendix C: MNRF Crown Land Properties

Name <i>(MNRF code and designation, where applicable)</i>	Location	Size (ha)	Uses and Other Details
Bon Echo Provincial Park <i>(P8e natural environment class)</i>	North Frontenac Twp. - south end of Mazinaw Lake	6629	Includes campground. Contains largest concentration of Indian rock painting (pictographs). Protects a large and representative sample of southern Canadian Shield.
Burnt Lands Provincial Park <i>(P47 Nature Reserve Class)</i>	Mississippi Mills and Ottawa - east of Almonte	516	Supports diversity of plant and animal species, many of which are provincially or regionally rare. https://www.ontario.ca/page/burnt-lands-provincial-park-management-statement
Burnt Lands Recommended Provincial Park <i>(P47a)</i>	Mississippi Mills and Ottawa - east of Almonte	476	Passive day use activities are permitted. Some use of the area for hiking and nature appreciation. No official trails, through many incidental trails are evident and firebreaks throughout the properties. A Park Management Plan will be prepared. ATVing, horseback riding, and sport hunting will not be permitted. A section of a snowmobile trail crosses the property as an “unauthorized use” and will need to be assessed.
Fitzroy Provincial Park <i>(P4444 Recreational Class)</i>	Fitzroy, Ottawa, - on Ottawa River at Carp River outlet	185	Campground, beach, picnicking, nature trails, boating and day use.
Sharbot Lake Provincial Park <i>(P356 recreational class)</i>	Central Frontenac Twp. – on Sharbot and Black Lakes	80	Campground, picnicking, nature trail, boating and day use.
Silver Lake Provincial Park <i>(P416 recreational class)</i>	Tay Valley Twp.	43	Campground, beach, picnicking, nature trail, boating and day use.
Crotch Lake Conservation Reserve (C2)	North Frontenac Twp.	374	Permitted activities: fishing, hunting, recreation trails, snowmobiling (on trail), horseback riding, existing private camps existing commercial tourism. Not permitted: commercial timber harvest, hydro generation and power development.

Name <i>(MNR code and designation, where applicable)</i>	Location	Size (ha)	Uses and Other Details
Hungry Lake Conservation Reserve (C3)	Central Frontenac, North Frontenac Twp.	3518	<p>Sale of lands not permitted, except for minor dispositions supporting existing uses.</p> <p>Permitted activities: fishing, hunting, recreation trails, snowmobiling (on trail), horseback riding, existing private camps.</p> <p>Sale of lands is not permitted, except for minor dispositions in support of existing uses.</p>
Crotch Lake Enhanced Management Area (E1a remote access)	North Frontenac Twp.	7766	<p>Permitted activities: aggregate extraction, commercial timber harvest, hydro generation and power development fishing, hunting, recreation trails, snowmobiling (on trail), horseback riding, existing private camps existing commercial tourism.</p> <p>Sale of lands may be permitted for permitted uses, not for creation of cottage lots.</p>
Mazinaw Lake Enhanced Management Area (E6a remote access)	North Frontenac Twp.	3883	<p>While year round access by two-wheel drive limited, the area is used extensively by the forest industry, fur harvesters, hunters, anglers and snowmobiles.</p> <p>Permitted activities: aggregate extraction, commercial timber harvest, hydro generation and power development, fishing, hunting, recreation trails, snowmobiling (on trail), horseback riding, existing private camps existing commercial tourism.</p> <p>Sale of lands may be permitted for permitted uses, not for creation of cottage lots.</p>

Appendix D: Mississippi- Madawaska Land Trust Properties

Name	Location	Uses and Other Details	Size (Ha)
Blueberry Mountain at cliffLAND (Conservation Easement)	Lanark Highlands Twp.	Conservation Easement Agreement. Nature trails through variety of habitats from pine and hemlock ridges, cedar groves, scenic outcrops, waterfalls, creeks, ponds, marshes, and a bog that hosts abundant wild cranberries. Numerous different species considered uncommon in Lanark County, sparse, or rare and species-at-risk.	505
Byrne Big Creek Nature Reserve (Closed to public)	Lanark Highlands Twp.	Donated to MMLT. Closed to the public. Most of the property is part of McCulloch’s Lake Provincially Significant Wetland. The most ecologically sensitive among the properties in MMLT’s property portfolio.	40
Clydelands (Conservation Easement – restricted access)	Lanark Highlands Twp.	Conservation Easement Agreement. Public access/use is restricted. Among the most rugged, wild and natural in all of the county. It is traversed by the Middle Branch of Clyde Creek which flows through a broad rock strewn valley bounded on its sides by several 200 to 250 foot domed rocky hills with many near vertical cliffs.	40
High Lonesome Nature Reserve	Mississippi Mills (Pakenham)	Donated to MMLT. In the Pakenham Hills and within the Pakenham Mountain Provincially Significant Wetland Complex. Trails through regenerating upland forest, meadows and wetlands. Opportunities to observe varied habitats and wildlife. It is MMLT’s management plan to proactively restore the degraded areas to their natural state.	80
Keddy Nature Sanctuary (Conservation Easement – restricted access)	Drummond/North Elmsley Twp.	Conservation Easement Agreement. Public access/use is restricted. It protects 35% of the Scotch Corners Provincially Significant Wetland and contributes critical ecosystem services to the Mississippi watershed. Located in the natural corridor stretching from Pakenham Mountain to Mississippi Lake, it will contribute to climate change mitigation.	214
Marble Woodlands	Mississippi Mills, Lanark Co	Nature trails and over 250 species of plants, 20 species of insects, 4 species of reptiles and amphibians, 20 species of birds, and 7 species of mammals were identified during the initial property assessment. Several have been identified as at-risk or of special interest.	80
Poole Family Nature Sanctuary	Drummond/North Elmsley Twp.	Donated to MMLT. A high-quality example of rolling forested ecosystems of the Canadian Shield. The forest is Significant Woodland and the open wetlands are part of the Scotch Corners Provincially Significant Wetland Complex. Twenty-three plant species rare or sparse in the region and seven Species at Risk have been found. Adjoins Keddy Nature Sanctuary to the northwest.	45
Rose Hill Nature Reserve	Addington Highlands, County of Lennox & Addington	Land acquired because of its high wilderness value. With passive management, it expected to become a showcase of rich habitats, especially for threatened and endangered species. The property lies along the centre of the important Algonquin to Adirondack corridor—a biological highway/natural linkage that is significant at the continental scale.	145

Name	Location	Uses and Other Details	Size (Ha)
Salamander Forest (Conservation Easement – restricted access)	Drummond/North Elmsley Twp.	Conservation Easement Agreement. Public access/use is restricted. Salamander Forest protects part of the provincially significant Scotch Corners Wetland Complex and is a regional height of land and the source for creeks draining into Mississippi Lake.	64
Whaleback Woodland Reserve (restricted access)	Carp area, West Carleton, Ottawa	Land acquisition. Public access/use is restricted. Part of the Carp Hills Candidate Life Science Area of Natural and Scientific Interest (ANSI) and is designated Regionally Significant. Important to the protection of the Carp Hills which comprise almost 10,000 acres of environmentally significant forests, wetlands, and rock barren uplands and provides habitat to several species at risk.	6

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Appendix E: City of Ottawa Conservation Properties

Name and Designation (where applicable)	Location	Size (ha)	Uses and Other Details
Morris Island Conservation Area	Ottawa River near Fitzroy Harbour, West Carleton, Ottawa	47	<p>Jointly owned by City of Ottawa and Ontario Power Generation (OPG). Managed by MVCA as a Conservation Area through a Vacant Land Lease with City of Ottawa dated March 2018 and in effect until Aug 31, 2038</p> <ul style="list-style-type: none"> • Wheelchair accessible facilities • Nature trails and interpretive signage • Fishing platforms • Washrooms • Picnic areas
Carp River Conservation Area	West Carleton, Ottawa	31	<p>License of Occupation Agreement with City of Ottawa signed in 2018 and renewed in 2020 - in effect until 2025.</p> <ul style="list-style-type: none"> • 4 km “River Walk” • Interpretive signage
South March Highlands Conservation Forest	Kanata North, Ottawa	457	<p>Within the larger South March Highlands forest and natural environment area. It is located immediately adjacent to and within the urban and developing area in Kanata. The forest is one of the most ecologically significant and diverse areas in the City of Ottawa. It also provides opportunities for recreational use, such as hiking and mountain biking.</p>
Carp Hills Municipal Nature Reserve	Carp area, West Carleton, Ottawa	1000	<p>The City of Ottawa owns large tracts of natural lands in the Carp Hills, for the purposes of environmental protection and outdoor recreation. The Carp Hills are a local outcropping of the Canadian Shield, with a mosaic of rock barrens, beaver ponds and mixed woods. Uses include: hiking, mountain biking, snowmobiling, snowshoeing, cross-country skiing and hunting.</p>
Torbolton Forest	Constance Bay, West Carleton, Ottawa	260	<p>The natural area is within the Constance Bay Sand Hills, which is a provincially significant dune forest complex - tall red, white and jack pine and red oak. Attractions include walking, horseback riding, cycling, skiing and snowmobiling</p> <p>Torbolton Nordic Ski Club maintains approximately 30 km of ski trails through-out the Torbolton Forest and around the peninsula</p> <p>The snowmobile trail, which runs down the centre of the forest, is marked and groomed and requires the use of a West Carleton Snowmobile Trails Association trail pass.</p>

Trillium Woods	Kanata North, Ottawa	134	Attractions include walking with accessible pathways, hiking, dog-walking, jogging, skiing, snowshoeing, and mountain biking. Trail connection to the South March Highlands trails north of Terry Fox Road.
Kemp Woodland	Stittsville, Ottawa	9	The Kemp Woodlot is a 9 ha mature cedar forest in Stittsville that is well over 100 years old. The natural area is along the Trans-Canada Trail and there are informal trails in the natural area.
Sheila McKee Memorial Park	Dunrobin, West Carleton, Ottawa	tbc	Escarpment along the Ottawa River's shore. The rocky shore's special qualities include waterfalls in summer, ice formations in winter; miniature evergreen trees and some very old evergreens growing out of the steep cliffs. 2 km hiking trail providing walking and pedestrian access to the Ottawa River <ul style="list-style-type: none"> The City, through purchase of service arrangements with the Kanata Nordic Ski Club, also supports the grooming of cross country ski trails at the park
Kizell Wetland	Kanata North, Ottawa	tbc	The provincially significant Kizell wetland, which includes the area known as the beaver pond, has been integrated into the community of Kanata Lakes. Pathways have been developed on both sides of the wetland for hiking, dog walking, jogging, skiing, snowshoeing

Appendix F: Other Conservation Properties

Owner/ Operator	Name and Designation <i>(where applicable)</i>	Location	Landscape Type(s)	Uses and Other Details	Size (ha)
Environment and Climate Change Canada	Mississippi Lake National Wildlife Area & Mississippi Lake Migratory Bird Sanctuary	Drummond/ North Elmsley Twp.	forest, lakeshore and wetland	Designated to protect habitat for staging waterfowl. Day use only. Activities limited to seasonal recreational boating from the boat launch and sport fishing. These activities are prohibited between Sept 15 and Dec 15 except for directly accessing Mississippi Lake to provide a safe, undisturbed refuge for staging migratory waterfowl.	307
Lanark County	Lanark County Community Forest sites	Lanark Highlands, Mississippi Mills and DNE	pine plantations, other forested lands, wetland, etc.		Approx 4000
North Frontenac Township	North Frontenac Dark Sky Preserve	North Frontenac Twp.	night sky		

Appendix G: Summary Descriptions of Core Natural Areas (CNAs)

1. Mazinaw Forest & Wetlands , Twps of North Frontenac & Addington Highlands	Key Features	
<p>This core natural area is approximately 28,530 ha. and is primarily owned by the Crown. Most of the area is part of the larger Mazinaw Lanark Managed Forest.</p> <p>Roughly 80% of the area is forested, with over 20% of old growth forest. Another ~16% of this area is covered by swamps and other types of wetlands. It also includes over 600 ha of open water.</p> <p>Sensitive cold-water habitat: include; McCauseland Lake, Mazinaw Lake, Mississagagon Lake, Kishkebus Lake, Shabomeka Lake, Buckshot Lake, Blue Lake, and Donnelly Creek.</p> <p>CA Stewardship Sites: There have been 66 Lake Tree Day participants and 2 shoreline plantings in association with the Mazinaw Blue Lakes Committee.</p> <p>Community Associations: Mazinaw Lake Association, Buckshot Lake Association, Shabomeka Lake Association, Mississagagon Lake Association, and Friends of Bon Echo Provincial Park.</p> <p>Existing Parks and Recreation: Bon Echo Provincial Park</p> <p>Observed species include:</p> <p>cold water fish: Lake Trout, Lake White Fish, Lake Herring, Rainbow Trout</p> <p>Keystone species; wolves, moose, and black bears</p> <p>This area has also been identified as quality habitat for the following species: Algonquin Wolf, Five-lined Skink, Peregrine Falcon, Blanding’s Turtle, Evening Grosbeak, Least Bittern, Monarch, Redheaded Woodpecker, Wood Thrush.</p>	Main Land Use	Forest & wetland
	% Open Water	2%
	Cold Water Habitat	Yes
	% Crown/Public/Trust	81%
	% Agricultural	<1%
	% Pits or Quarry	<1%
	Primary OP Design.	Crown Land
	Secondary Design.	Rural
	Dominant Tree Cover	Deciduous
	Approved PSW	n/a
Approved ANSI	n/a	
Proposed ANSI	n/a	
2. Cloyne Forest , Twp of North Frontenac	Key Features	
<p>This core natural area is approximately 490 ha. with over 60% in private ownership.</p> <p>Roughly 68% of the area is forested, and 29% is covered by swamps and other types of wetlands it also includes over 10 ha of open water. Over 17% of the forested area is old growth.</p>	Main Land Use	Forest & wetland
	% Open Water	3%
	Cold Water Habitat	No

<p>Existing Parks and Recreation:</p> <p>CA Stewardship Sites:</p> <p>Community Associations:</p> <p>Observed species include:</p> <p>Keystone species; wolves, moose, and black bears</p> <p>This area has also been identified as quality habitat for the following species: Eastern Whippoorwill, Eastern Wood-Pewee, Wood Thrush, Evening Grosbeak, Monarch, Redheaded Woodpecker, Wood Thrush, bats.</p>	% Crown/Public/Trust	37%
	% Agricultural	<1%
	% Pits or Quarry	<1%
	Primary OP Design.	Rural
	Secondary Design.	Crown Land
	Dominant Tree Cover	Deciduous
	Approved PSW	n/a
	Approved ANSI	n/a
	Proposed ANSI	n/a

3. Clarendon/Barrie Managed Forest, Twps of North Frontenac & Central Frontenac	Key Features	
<p>This core natural area is approximately 5,342 ha. and is primarily owned by the Crown.</p> <p>Roughly 73% is forested with over 20% of old growth forest remaining. Another ~24% of the area is swamps and other wetlands, including over 300 ha of open water.</p> <p>Sensitive cold-water habitat in the area: Big Gull Lake</p> <p>CA Stewardship Sites: There have been 110 Lake Tree Day participants in this area on Big Gull Lake and Kashwakamak Lake.</p> <p>Community Associations: Kashwakamak Lake Association, Big Gull Lake Association, and Malcolm-Ardoch Lake Association.</p> <p>Existing Parks and Recreation: North Frontenac Parklands</p> <p>Observed species include:</p> <ul style="list-style-type: none"> • Cold-water fish; Lake Whitefish, Lake Herring, etc. • Keystone species; moose, and black bears 	Main Land Use	Forest & wetland
	% Open Water	3%
	Cold Water Habitat	Yes
	% Crown/Public/Trust	89%
	% Agricultural	<1%
	% Pits or Quarry	<1%
	Primary OP Design.	Crown Land
	Secondary Design.	Mineral
	Dominant Tree Cover	Deciduous
	Approved PSW	1
Approved ANSI	n/a	

This area has also been identified as quality habitat for the following species: Five-lined Skink, Blanding’s Turtles, Snapping Turtle, Evening Grosbeak, Least Bittern, Monarch, Redheaded Woodpecker, Wood Thrush, bats.	Proposed ANSI	n/a
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4. Proposed Whiteduck Provincial Park & Conservation Reserve, Twp of North Frontenac	Key Features	
<p>This core natural area is approximately 15,312 ha and is primarily owned by the Crown.</p> <p>Roughly 82% of the area is forested, and another 15% is swamp and other wetlands. It also includes over 300 ha. of open water.</p> <p>Sensitive cold-water habitat in the area: Black Creek</p> <p>Existing Parks and Recreation: North Frontenac Parklands</p> <p>Community Associations:</p> <p>CA Stewardship Sites:</p> <p>Observed species include:</p> <ul style="list-style-type: none"> Keystone species; moose, and black bears <p>This area has also been identified as quality habitat for the following species: Five-lined Skink, Wood Thrush, Snapping Turtle, Painted Turtle, Blanding’s Turtle, bats, Evening Grosbeak, Least Bittern, other forest birds, Redheaded Woodpecker, Monarch, Wood Thrush.</p>	Main Land Use	Forest & wetland
	% Open Water	3%
	Cold Water Habitat	Yes
	% Crown/Public/Trust	61%
	% Agricultural	<1%
	% Pits or Quarry	<1%
	Primary OP Design.	Crown Land
	Secondary Design.	Mineral
	Dominant Tree Cover	Deciduous
	Approved PSW	n/a
Approved ANSI	n/a	
Proposed ANSI	n/a	

5. Upper Clyde Forest, Twps of North Frontenac, Lanark Highlands & Greater Madawaska	Key Features	
<p>This core natural area is approximately 15,258 ha and is primarily owned by the Crown with ~142 ha. owned by a Land Trust.</p> <p>Roughly 83% of the area is forested, with over 30% of old growth forest remaining. Around 15% of the area is swamp and other wetlands and includes over 200 ha. of open water.</p>	Main Land Use	Forest & wetland
	% Open Water	2%
	Cold Water Habitat	Yes
	% Crown/Public/Trust	66%

<p>The area includes the Joe’s Lake PSW and the following ANSIs: Summit Lake (Life Science, Provincial), Summit Lake (Life Science, Provincial), Plevna Cedar Swamp (Life Science, Regional) and Palmerston Lake (Life Science, Provincial)</p> <p>Sensitive cold-water habitat in the area: Grindstone Lake, Mosque Lake, Palmerston Lake, Summit Lake, and Graham Creek</p> <p>Community Associations: Palmerston Lake Association, Canonto Lake Association, Mosque Lake Association, and Grindstone Lake Association.</p> <p>Existing Parks and Recreation: Palmerston-Canonto Conservation Area, North Frontenac Parklands</p> <p>CA Stewardship Sites: There have been 30 Lake Tree Day participants across Palmerston and Canonto Lakes and 10 shoreline plantings in this area.</p> <p>Observed species include:</p> <ul style="list-style-type: none"> • Cold-water fish species: Lake Trout, Lake Herring, Rainbow Trout • Keystone species; Moose, Black Bear <p>This area has also been identified as quality habitat for the following species: Five-lined Skink, Blanding’s Turtle, other turtles, bats, Evening Grosbeak, Least Bittern, Eastern Whippoorwill, Monarch, Redheaded Woodpecker, Wood Thrush.</p>	% Agricultural	<1%
	% Pits or Quarry	<1%
	Primary OP Design.	Crown Land
	Secondary Design.	Rural
	Dominant Tree Cover	Deciduous
	Approved PSW	1
	Approved ANSI	4
	Proposed ANSI	n/a

6. Olden Forest, Twp of Central Frontenac	Key Features	
<p>This core natural area is approximately 1,517 ha. and is primarily privately owned.</p> <p>Roughly 73% of the area is forested, and another 21% is swamp and other wetlands. It also includes over 20 ha. of open water and over 8 ha. of meadow thicket.</p> <p>Sensitive cold-water habitat in the area: Sharbot Lake</p> <p>Community Associations: Sharbot Lake Property Owners Association</p> <p>Existing Parks and Recreation:</p> <p>CA Stewardship Sites: There have been 43 Lake Tree Day participants around Sharbot Lake.</p>	Main Land Use	Forest & wetland
	% Open Water	6%
	Cold Water Habitat	Yes
	% Crown/Public/Trust	17%
	% Agricultural	<1%
	% Pits or Quarry	<1%
	Primary OP Design.	Rural

<p>Observed species include:</p> <ul style="list-style-type: none"> • Cold-water fish; Lake Whitefish, Lake Herring, Lake Trout • Keystone species; moose, and black bears <p>This area has also been identified as quality habitat for the following species: Wood Thrush, Snapping Turtle, Blanding’s Turtle, bats, Least Bittern, Evening Grosbeak, Monarch, Redheaded Woodpecker, Short-eared Owl, Wood Thrush, forest birds.</p>	Secondary Design.	Crown Land
	Dominant Tree Cover	Deciduous
	Approved PSW	n/a
	Approved ANSI	n/a
	Proposed ANSI	n/a

7. Boundary Cr / Hungry Lk CR, Twps of Central Frontenac	Key Features	
<p>This core natural area is approximately 3,596 ha. and is primarily designated Rural Lands. Roughly 65% of the area is forested (3% old growth), and another 34% covered by swamps and other types of wetlands. It also includes about 12 ha of open water.</p> <p>The area includes the following ANSIs: Harlowe Bog (Life Science, Regional) and Hungry Lake Barrens (Life Science, Provincial).</p> <p>There has been 13 Tree Planting Projects through RVCA and 12 ORCWP Projects in this area.</p> <p>Existing Parks and Recreation: North Frontenac Parklands</p> <p>CA Stewardship Sites: 30 Lake Tree Day Participants (Big Gull)</p> <p>Community Associations: Big Gull Lake Association</p> <p>Sensitive cold-water habitat in the area: Big Gull Lake</p> <p>Observed species include:</p> <ul style="list-style-type: none"> • cold water fish: Burbot, Lake Herring, Lake Whitefish • Keystone species: Bear, Moose, Deer <p>This area has also been identified as quality habitat for the following species: Blanding’s Turtle, Evening Grosbeak, Least Bittern, Monarch, Redheaded Woodpecker, Wood Thrush.</p>	Main Land Use	Forest & wetland
	% Open Water	<0%
	Cold Water Habitat	No
	% Crown/Public/Trust	34%
	% Agricultural	<0%
	% Pits or Quarry	<0%
	Primary OP Design.	Rural
	Secondary Design.	Mineral
	Dominant Tree Cover	Deciduous
	Approved PSW	n/a
	Approved ANSI	2
	Proposed ANSI	n/a

8. Frontenac Linkage Forest, Twp of Central Frontenac	Key Features	
<p>This core natural area is approximately 7,249 ha with over 60% in private ownership.</p> <p>Roughly 73% of the area is forested and another 22% is swamp and other wetlands. It also includes over 90 ha. of open water.</p> <p>Sensitive cold-water habitat in the area: Sharbot Lake and White Lake.</p> <p>The area also includes the Hungary Lake Barrens (Life Science, Provincial) ANSI. The White Lake Fish Hatchery is within this area.</p> <p>Existing Parks and Recreation: Sharbot Lake Provincial Park is nearby.</p> <p>Community Associations: Sharbot Lake Property Owners Association</p> <p>CA Stewardship Sites:</p> <p>Observed species include:</p> <ul style="list-style-type: none"> • Cold-water fish; Lake Whitefish, Lake Herring, Lake Trout • Keystone species; moose, and black bears <p>This area has also been identified as quality habitat for the following species: <i>Five-lined Skink</i>, <i>Blanding's Turtles</i>, <i>Snapping Turtle</i>, Least Bittern, Evening Grosbeak, Monarch, Redheaded Woodpecker, Short-eared Owl, Wood Thrush, <i>bats</i>.</p>	Main Land Use	Forest & wetland
	% Open Water	4%
	Cold Water Habitat	Yes
	% Crown/Public/Trust	39%
	% Agricultural	<1%
	% Pits or Quarry	<1%
	Primary OP Design.	Rural
	Secondary Design.	Crown Land
	Dominant Tree Cover	Deciduous
	Approved PSW	n/a
	Approved ANSI	1
	Proposed ANSI	n/a

9. Oso Forest, Twp of Central Frontenac	Key Features	
<p>This core natural area is approximately 1,400 ha and is primarily privately owned.</p> <p>The majority of the area is forested (82%), and another 15% is swamp and other wetlands. It also includes over 15 ha. of meadow thicket and over 6 ha. of open water.</p> <p>Sensitive cold-water habitat in the area: Black Creek is cool-warm</p> <p>Existing Parks and Recreation:</p>	Main Land Use	Forest & wetland
	% Open Water	2%
	Cold Water Habitat	Yes
	% Crown/Public/Trust	9%
	% Agricultural	1%

<p>Community Associations:</p> <p>CA Stewardship Sites:</p> <p>Observed species include:</p> <ul style="list-style-type: none"> Keystone species: <p>This area has also been identified as quality habitat for the following species: Blanding’s Turtle, Five-lined Skink, Evening Grosbeak, Least Bittern, Monarch, Redheaded Woodpecker, Wood Thrush, bats, other forest birds. xx</p>	% Pits or Quarry	<1%
	Primary OP Design.	Rural
	Secondary Design.	Mineral
	Dominant Tree Cover	Deciduous
	Approved PSW	n/a
	Approved ANSI	n/a
	Proposed ANSI	n/a

10. Bolton Creek Corridor, Twps of Lanark Highlands, Tay Valley, & Central Frontenac	Key Features	
<p>This core natural area is approximately 7,400 ha. with over 80% of the land in private ownership and includes Bolton Creek, Paul’s Creek and Long Sault Creek.</p> <p>The area is roughly 1/3rd swamp wetlands with the balance primarily forested. The area includes the Bolton Creek PSW and approximately 350 ha Old Growth forest.</p> <p>Existing Parks and Recreation:</p> <p>CA Stewardship Sites:</p> <p>Community Associations:</p> <p>Sensitive cold-water habitat in the area: Bolton Creek, Paul’s Creek and Long Sault Creek.</p> <p>Observed species include:</p> <p>cold water fish: Burbot, Brook Trout</p> <p>Keystone species: Black Bear, deer</p> <p>This area has also been identified as quality habitat for the following species: Blanding’s Turtle, bats, Evening Grosbeak, Least Bittern, Monarch, Redheaded Woodpecker, Short-eared Owl, Wood Thrush.</p>	Main Land Use	Forest & wetland
	% Open Water	~1%
	Cold Water Habitat	Some
	% Crown/Public/Trust	17%
	% Agricultural	<1%
	% Pits or Quarry	<1%
	Primary OP Design.	Rural
	Secondary Design.	Mineral
	Dominant Tree Cover	Deciduous
	Approved PSW	1
Approved ANSI	n/a	
Proposed ANSI	n/a	

11. Fall River, Twps of Central Frontenac & Tay Valley	Key Features	
<p>This core natural area is approximately 3332 ha and is primarily privately owned.</p> <p>Roughly 69% is forested, and another 22% is swamp and other wetlands. It also includes over 23 ha. of meadow thicket and over 7 ha. of open water.</p> <p>The area includes the Upper Fall River PSW and the Little Mud Lake Wetland. It also includes the Maberly Bog Candidate Life Science ANSI .</p> <p>Community Associations: Sharbot Lake Property Owners Association, and Silver Lake Association, Bennett and Fagan Lake Association</p> <p>Existing Parks and Recreation: Silver Lake Provincial Park.</p> <p>Sensitive cold-water habitat in the area: Silver Lake</p> <p>CA Stewardship Sites: There has been 1 tree planting project through RVCA in this area, plus 24 of Lake Tree Day participants around Silver Lake.</p> <p>Observed species include:</p> <ul style="list-style-type: none"> • Cold-water fish: Lake Trout, Lake Whitefish, Lake Herring • Keystone Species: Black Bear, Deer <p>This area has also been identified as quality habitat for the following species: Blanding’s Turtle, Grey Ratsnake, Monarch, Snapping Turtle, bats, Least Bittern, Evening Grosbeak, other forest birds, Monarch, Redheaded Woodpecker, Short-eared Owl, Wood Thrush.</p>	Main Land Use	Forest & wetland
	% Open Water	8%
	Cold Water Habitat	No
	% Crown/Public/Trust	3%
	% Agricultural	1%
	% Pits or Quarry	<1%
	Primary OP Design.	Rural
	Secondary Design.	Mineral
	Dominant Tree Cover	Deciduous
	Approved PSW	2
	Approved ANSI	n/a
	Proposed ANSI	1

12. Red Rock Wetlands, Tay Valley Township	Key Features	
<p>This core natural area is approximately 1,060 ha and lies where the Clyde River and Fall River discharge to the Mississippi River. It is off-shield almost 2/3rds wetland including the Playfairville Mud Lake Wetland Complex. Over 80% of the land is in private ownership, and there remains ~ 80 ha. of Old Growth forest.</p> <p>Existing Parks and Recreation:</p>	Main Land Use	Wetlands & Forest
	% Open Water	13%
	Cold Water Habitat	No
	% Crown/Public/Trust	13%
	% Agricultural	~1%

<p>CA Stewardship Sites:</p> <p>Community Associations: Lanark Fish and Game Club</p> <p>Observed species include:</p> <p>Keystone species:</p> <p>This area has also been identified as quality habitat for the following species: Blanding’s Turtle, other turtles (snapping, musk), amphibians, least bittern, Evening Grosbeak, Least Bittern, Monarch, Redheaded Woodpecker, Short-eared Owl, Wood Thrush.</p>	% Pits or Quarry	<1%
	Primary OP Design.	Sign. Wooded Area
	Secondary Design.	Rural
	Dominant Tree Cover	Deciduous
	Approved PSW	1
	Approved ANSI	n/a
	Proposed ANSI	n/a

<p>13. Fallbrook Cambrian Shield, Tay Valley Township</p> <p>This core natural area is approximately 2,160 ha of which ~17% is wetlands including the Bennett Lake PSW. There is approximately 180 ha. of Old Growth forest in this area.</p> <p>Existing Parks and Recreation:</p> <p>CA Stewardship Sites: 24 Lake Tree Day giveaways, 3 shoreline plantings, 1 Tree Planting Project</p> <p>Community Associations: Bennett and Fagan Lake Association</p> <p>Sensitive cold-water habitat in the area: Limekiln Creek is cool water habitat</p> <p>Observed species include:</p> <p>Keystone species: Bear, Deer</p> <p>This area has also been identified as quality habitat for the following species: Blanding’s Turtle, Evening Grosbeak, Least Bittern, other forest birds, bats, Monarch, Redheaded Woodpecker, Short-eared Owl, Wood Thrush.</p>	Key Features	
	Main Land Use	Forest & wetland
	% Open Water	~3%
	Cold Water Habitat	No
	% Crown/Public/Trust	0%
	% Agricultural	2%
	% Pits or Quarry	<1%
	Primary OP Design.	Rural
	Secondary Design.	Mineral
	Dominant Tree Cover	Deciduous
	Approved PSW	1
	Approved ANSI	n/a
Proposed ANSI	n/a	

14. Harper Lowlands , Tay Valley Township	Key Features	
<p>This core natural area is approximately 350 ha of which a third is wetlands. The balance is primarily forest with roughly an equal split of deciduous and coniferous species. This area is distinct from the CNA 13 in that it is off shield and provides different habitat opportunities.</p> <p>Existing Parks and Recreation:</p> <p>CA Stewardship Sites: 2 tree planting projects</p> <p>Community Associations:</p> <p>Observed species include:</p> <p>Keystone species:</p> <p>This area has also been identified as quality habitat for the following species: Blanding’s Turtle, Evening Grosbeak, Least Bittern, Monarch, Redheaded Woodpecker, Short-eared Owl, Wood Thrush.</p>	Main Land Use	Forest & Wetland
	% Open Water	~2%
	Cold Water Habitat	No
	% Crown/Public/Trust	0%
	% Agricultural	~1%
	% Pits or Quarry	<1%
	Primary OP Design.	Natural Heritage
	Secondary Design.	Rural
	Dominant Tree Cover	Mixed
	Approved PSW	n/a
	Approved ANSI	n/a
	Proposed ANSI	n/a

15. Lanark Block, Twp of Lanark Highlands	Key Features	
<p>This core natural area is approximately 18,736 ha with over 70% in private ownership. It also has over 900 ha. of public land.</p> <p>Roughly 78% of the area is forested, and another 20% is swamp and other wetlands. It also includes over 300 ha. of open water and over 60 ha of meadow thicket.</p> <p>The area includes the Stump Lake PSW, McCulloch’s Mud Lake PSW and the Joe’s Lake PSW. The area also includes the Snow Road Station Esker (Life Science, Earth Science, Provincial) ANSI.</p> <p>Community Associations: Dalhousie Lake Association, Patterson Lake Cottage Association, Robertson Lake Association.</p>	Main Land Use	Forest & wetland
	% Open Water	2%
	Cold Water Habitat	Yes
	% Crown/Public/Trust	30%
	% Agricultural	<1%
	% Pits or Quarry	<1%
	Primary OP Design.	Rural

<p>Existing Parks and Recreation: Purdon Conservation Area</p> <p>Sensitive cold-water habitat in the area: Mosquito Creek and Easton’s Creek. CA Stewardship Sites: There have been 40 Lake Tree Day participants and 2 shoreline plantings in this area.</p> <p>Observed species include:</p> <ul style="list-style-type: none"> • Cold water fish: Brook Trout, Burbot • Keystone species: Black Bear, Deer, Turkey <p>This area has also been identified as quality habitat for the following species: Five-lined Skink, Evening Grosbeak, bats, Least Bittern, Monarch, Short-eared Owl, Wood Thrush, other forest birds.</p>	Secondary Design.	Crown Land
	Dominant Tree Cover	Deciduous
	Approved PSW	3
	Approved ANSI	1
	Proposed ANSI	n/a

16. West Clyde Forest, Twp. of Lanark Highlands	Key Features	
<p>This core natural area is almost 2,700 ha., lies between Highway 511 and the Clyde River, and is approximately 98% in private ownership. It is on-shield and almost 1,900 ha is forested with an equal split of coniferous and deciduous trees, including ~700 ha. Old Growth. Easton’s Creek provides cold water habitat.</p> <p>Existing Parks and Recreation: Baird Trail</p> <p>CA Stewardship Sites:</p> <p>Community Associations: Lanark Fish and Game Club</p> <p>Sensitive cold-water habitat in the area: Easton’s Creek</p> <p>Observed species include:</p> <p>cold water fish: Burbot</p> <p>Keystone species: Black Bear, Deer</p> <p>This area has also been identified as quality habitat for the following species: Evening Grosbeak, Least Bittern, Monarch, Redheaded Woodpecker, Short-eared Owl, Wood Thrush.</p>	Main Land Use	Forest
	% Open Water	3%
	Cold Water Habitat	Yes
	% Crown/Public/Trust	2%
	% Agricultural	<1%
	% Pits or Quarry	<1%
	Primary OP Design.	Rural
	Secondary Design.	Urban
	Dominant Tree Cover	Mixed
	Approved PSW	n/a
	Approved ANSI	n/a
Proposed ANSI	n/a	

17. Middle Clyde Forest, Twps of Lanark Highlands & Greater Madawaska	Key Features	
<p>This core natural area is approximately 10,252 ha. with over 70% in private ownership. 509 ha. of this area is owned by a Land Trust.</p> <p>Roughly 84% is forested, and another 15% is swamp and other wetlands. It also includes over 100 ha. of open water and over 39 ha. of meadow thicket.</p> <p>The area includes the Joe’s Lake PSW,</p> <p>Sensitive cold-water habitat in the area: Green Lake</p> <p>Existing Parks and Recreation: Blueberry Mountain</p> <p>Community Associations:</p> <p>CA Stewardship Sites:</p> <p>Observed species include:</p> <ul style="list-style-type: none"> • cold water fish: Brook Trout, Rainbow Trout, Brown Trout • Keystone species: Beaver, Moose <p>This area has also been identified as quality habitat for the following species: Snapping Turtle, Blanding’s Turtle, <i>bats</i>, Evening Grosbeak, Least Bittern, Monarch, Redheaded Woodpecker, Short-eared Owl, Wood Thrush, other forest birds.</p>	Main Land Use	Forest & wetland
	% Open Water	1%
	Cold Water Habitat	No
	% Crown/Public/Trust	28%
	% Agricultural	<1%
	% Pits or Quarry	<1%
	Primary OP Design.	Rural
	Secondary Design.	Crown Land
	Dominant Tree Cover	Deciduous
	Approved PSW	1
	Approved ANSI	n/a
	Proposed ANSI	n/a

18. Clayton-Quinn Corridor, Twps of Lanark High., Drummond N. Elm., Miss. Mills, Beck.	Key Features	
<p>This core natural area is almost 5,100 ha. of forest and wetlands, and almost 730 ha. of Old Growth forest. The area includes portions of County of Lanark Forest, as well as:</p> <ul style="list-style-type: none"> • Clayton-Taylor Lake PSW • Gillies Lake-Kerr Lake PSW • Ramsbottom Lake PSW. <p>Existing Parks and Recreation:</p>	Main Land Use	Forest & wetlands
	% Open Water	9%
	Cold Water Habitat	No
	% Crown/Public/Trust	9%
	% Agricultural	~1%
	% Pits or Quarry	<1%

<p>CA Stewardship Sites: 6 tree planting projects 2 shoreline plantings</p> <p>Community Associations:</p> <p>Observed species include:</p> <p>Keystone species:</p> <p>This area has also been identified as quality habitat for the following species: Blanding’s Turtle, Evening Grosbeak, Least Bittern, Monarch, Redheaded Woodpecker, Short-eared Owl, Wood Thrush.</p>	Primary OP Design.	Rural
	Secondary Design.	Mineral
	Dominant Tree Cover	Mix
	Approved PSW	3
	Approved ANSI	n/a
	Proposed ANSI	n/a

19. Ferguson Falls Lowlands, Twps of Lanark Highlands & Drummond North Elmsley	Key Features	
<p>This core natural area is over 3,700 ha. and lies at the inlet to Mississippi Lake. It is mostly privately owned and comprises several important natural features including over 800 ha. Old Growth forest and:</p> <ul style="list-style-type: none"> • Steward Lake-Haley Lake PSW, McEwen Bay PSW, and Scotch Corners Wetland Complex. • Innisville Wetlands (Life Science ANSI), Perth Blueberry Bog (Candidate ANSI). <p>Significant nature reserves in the area include:</p> <ul style="list-style-type: none"> • The Mississippi Lake Migratory Bird Sanctuary (Federal) at McEwen Bay, and • Poole Family Nature Sanctuary and Blue Heron Wetlands (Mississippi Madawaska Land Trust.) <p>Existing Parks and Recreation: Ferguson’s Falls canoe launch</p> <p>Community Associations: Mississippi Lakes Association</p> <p>CA Stewardship Sites: 2 tree planting projects, 2 shoreline plantings</p> <p>Observed species include:</p> <p>Keystone species: Fisher, Black Bear</p> <p>This area has also been identified as quality habitat for the following species: Blanding’s Turtle, Evening Grosbeak, Least Bittern, Monarch, Redheaded Woodpecker, Short-eared Owl, Wood Thrush.</p>	Main Land Use	Wetlands
	% Open Water	4%
	Cold Water Habitat	No
	% Crown/Public/Trust	~1%
	% Agricultural	~1%
	% Pits or Quarry	<1%
	Primary OP Design.	Rural
	Secondary Design.	Urban
	Dominant Tree Cover	Deciduous
	Approved PSW	3
	Approved ANSI	1
	Proposed ANSI	1

20. McIntyre Creek Corridor, Twp. of Drummond North Elmsley	Key Features	
<p>This core natural area is ~440 ha. of primarily wetland swamp and includes Blueberry Marsh PSW. All of this area is privately owned.</p> <p>Existing Parks and Recreation: Creek outlets at the Mississippi Lake National Wildlife Area</p> <p>Community Associations: Mississippi Lakes Association</p> <p>CA Stewardship Sites:</p> <p>Observed species include:</p> <p>Keystone species:</p> <p>This area has also been identified as quality habitat for the following species: Blanding’s Turtle, Evening Grosbeak, Grey Ratsnake, Least Bittern, Monarch, Short-eared Owl, Wood Thrush.</p>	Main Land Use	Swamp Wetland
	% Open Water	0%
	Cold Water Habitat	No
	% Crown/Public/Trust	0%
	% Agricultural	<1%
	% Pits or Quarry	<1%
	Primary OP Design.	Rural
	Secondary Design.	Urban
	Dominant Tree Cover	Deciduous
	Approved PSW	1
	Approved ANSI	n/a
	Proposed ANSI	n/a

21. Tennyson Wetlands, Beckwith Township	Key Features	
<p>This core natural area is just over 1,000 ha. and is roughly 50% swamp wetland including the Black Creek PSW. The area is off-shield and has a remnant area of Old Growth forest. All of this area is privately owned.</p> <p>Existing Parks and Recreation:</p> <p>Community Associations: Mississippi Lakes Association</p> <p>CA Stewardship Sites:</p> <p>Observed species include:</p> <p>Keystone species: Osprey, Black Bear</p>	Main Land Use	Swamp Wetland
	% Open Water	<1%
	Cold Water Habitat	No
	% Crown/Public/Trust	0%
	% Agricultural	~2%
	% Pits or Quarry	<1%
	Primary OP Design.	Rural

<p>This area has also been identified as quality habitat for the following species: Blanding’s Turtle, Least Bittern, Evening Grosbeak, Least Bittern, Monarch, Redheaded Woodpecker, Short-eared Owl, Wood Thrush.</p>	Secondary Design.	Agriculture
	Dominant Tree Cover	Mix
	Approved PSW	1
	Approved ANSI	n/a
	Proposed ANSI	n/a

22. Carleton Place Wetlands, Beckwith Township & Town of Carleton Place	Key Features	
<p>This core natural area is almost 250 ha. and an equal mix of wetland and forest. All of this area is privately owned.</p> <p>Existing Parks and Recreation: Beckwith Trail</p> <p>CA Stewardship Sites:</p> <p>Observed species include:</p> <p>Keystone species:</p> <p>This area has also been identified as quality habitat for the following species: Blanding’s Turtle, Least Bittern, Evening Grosbeak, Least Bittern, Monarch, Redheaded Woodpecker, Short-eared Owl, Wood Thrush.</p>	Main Land Use	Wetland & Forest
	% Open Water	<1%
	Cold Water Habitat	No
	% Crown/Public/Trust	0%
	% Agricultural	~1%
	% Pits or Quarry	<1%
	Primary OP Design.	Rural
	Secondary Design.	Agricultural
	Dominant Tree Cover	Deciduous
	Approved PSW	n/a
	Approved ANSI	n/a
	Proposed ANSI	n/a

23. Quarry Road Wetland, Municipality of Mississippi Mills	Key Features	
<p>This core natural area is ~530 ha. of predominantly deciduous forest, of which there is a small area of Old Growth forest. All of this area is privately owned.</p> <p>Existing Parks and Recreation:</p> <p>CA Stewardship Sites: 1 tree planting project</p> <p>Observed species include:</p> <p>Keystone species: Fisher, Black Bear, Northern Pike</p> <p>This area has also been identified as quality habitat for the following species: Blanding’s Turtle, Evening Grosbeak, Least Bittern, Monarch, Redheaded Woodpecker, Short-eared Owl, Wood Thrush.</p>	Main Land Use	Forest & Wetland
	% Open Water	<1%
	Cold Water Habitat	No
	% Crown/Public/Trust	0%
	% Agricultural	~2%
	% Pits or Quarry	<1%
	Primary OP Design.	Rural
	Secondary Design.	Agriculture
	Dominant Tree Cover	Deciduous
	Approved PSW	n/a
	Approved ANSI	n/a
	Proposed ANSI	n/a

24. Wolf Grove Wetlands, Twp of Mississippi Mills	Key Features	
<p>This core natural area is approximately 804 ha. and is primarily designated Rural Lands. Roughly 85% of the area is forested, and another 15% covered by swamps and other types of wetlands. This area includes the Wolf Grove PSW Complex.</p> <p>Existing Parks and Recreation:</p> <p>CA Stewardship Sites: 1 Tree Planting Project</p> <p>Community Associations:</p> <p>Sensitive cold-water habitat in the area: Wolf Grove Creek</p>	Main Land Use	Forest & wetland
	% Open Water	<0%
	Cold Water Habitat	No
	% Crown/Public/Trust	11%
	% Agricultural	<0%
	% Pits or Quarry	<0%
	Primary OP Design.	Rural

<p>Observed species include:</p> <p>cold water fish: mottled sculpin</p> <p>Keystone species: Black Bear, turtles</p> <p>This area has also been identified as quality habitat for the following species: Blanding’s Turtle, Evening Grosbeak, Least Bittern, Monarch, Redheaded Woodpecker, Short-eared Owl, Wood Thrush.</p>	Secondary Design.	Signif. Woodlands
	Dominant Tree Cover	Deciduous
	Approved PSW	1
	Approved ANSI	n/a
	Proposed ANSI	n/a

25. Pakenham Managed Forest , Twps of Mississippi Mills & Lanark Highlands	Key Features	
<p>This core natural area is approximately 11,855 ha. and is primarily designated Rural Lands. Roughly 71% of the area is forested, and another 26% covered by wetlands. It also includes over 276 ha of open water.</p> <p>The area includes the Pakenham Highlands PSW Complex and the Clayton-Taylor PSW Complex.</p> <p>Existing Parks and Recreation:</p> <p>CA Stewardship Sites: 2 Shoreline Plantings</p> <p>Community Associations:</p> <p>Observed species include:</p> <p>Keystone species: Great Blue Heron, Osprey, Black Bear</p> <p>This area has also been identified as quality habitat for the following species: Blanding’s Turtle, Evening Grosbeak, Least Bittern, Monarch, Redheaded Woodpecker, Short-eared Owl, Wood Thrush.</p>	Main Land Use	Forest & wetland
	% Open Water	2%
	Cold Water Habitat	No
	% Crown/Public/Trust	20%
	% Agricultural	<0%
	% Pits or Quarry	<0%
	Primary OP Design.	Rural
	Secondary Design.	Crown
	Dominant Tree Cover	Deciduous
	Approved PSW	2
	Approved ANSI	n/a
	Proposed ANSI	n/a

26. Pakenham Highlands, Twp of Mississippi Mills	Key Features	
<p>This core natural area is approximately 6,710 ha. and is primarily designated Rural Lands.</p> <p>The area includes the Pakenham Highlands PSW Complex. Roughly 74% of the area is forested (1% old growth), and another 26% covered by swamps and other types of wetlands. It also includes about 2 ha of open water.</p> <p>Existing Parks and Recreation: Pakenham Ski Hill, High Lonesome Nature Reserve MLT property</p> <p>CA Stewardship Sites: 2 Tree Planting Projects</p> <p>Observed species include:</p> <p>Keystone species: Osprey, Great Blue Heron, Black Bear</p> <p>This area has also been identified as quality habitat for the following species: Blanding’s Turtle, other turtles, amphibians, Evening Grosbeak, Least Bittern, Monarch, Redheaded Woodpecker, Wood Thrush.</p>	Main Land Use	Forest & wetland
	% Open Water	<0%
	Cold Water Habitat	No
	% Crown/Public/Trust	6%
	% Agricultural	<0%
	% Pits or Quarry	<0%
	Primary OP Design.	Rural
	Secondary Design.	Mineral
	Dominant Tree Cover	Deciduous
	Approved PSW	1
	Approved ANSI	n/a
	Proposed ANSI	n/a

27. Cedar Hill, Twp of Mississippi Mills	Key Features	
<p>This core natural area is approximately 449 ha. and is primarily designated Rural Lands.</p> <p>Roughly 76% of the area is forested (5% being old growth), and another 24% covered by wetlands.</p> <p>Existing Parks and Recreation:</p> <p>CA Stewardship Sites: 1 Shoreline planting</p> <p>Community Associations:</p> <p>Sensitive cold-water habitat in the area: Indian Creek is cool-warm habitat</p> <p>Observed species include:</p>	Main Land Use	Forest & wetland
	% Open Water	<0%
	Cold Water Habitat	No
	% Crown/Public/Trust	11%
	% Agricultural	<0%
	% Pits or Quarry	<0%
	Primary OP Design.	Rural

<p>Keystone species: Black Bear</p> <p>This area has also been identified as quality habitat for the following species: Blanding’s Turtle, Evening Grosbeak, Least Bittern, Monarch, Redheaded Woodpecker, Short-eared Owl, Wood Thrush.</p>	Secondary Design.	Agriculture
	Dominant Tree Cover	Coniferous
	Approved PSW	n/a
	Approved ANSI	n/a
	Proposed ANSI	n/a

28. Appleton Wetland, Twp of Mississippi Mills	Key Features	
<p>This core natural area contains the Appleton PSW, is approximately 598 ha. and is primarily designated Provincially Significant Wetland. Roughly 80% of the area is covered by swamps and other types of wetlands. It also includes about 109 ha of open water and the Appleton Swamp (Candidate Life Science) ANSI.</p> <p>Existing Parks and Recreation: Mississippi Mills playground and boat launch</p> <p>CA Stewardship Sites: There has been 1 Tree Planting Project</p> <p>Community Associations:</p> <p>Sensitive cold-water habitat in the area:</p> <p>Observed species include:</p> <p>cold water fish:</p> <p>Keystone species: turtles, forest birds</p> <p>This area has also been identified as quality habitat for the following species: American Eel, Blanding’s Turtle, Least Bittern, Monarch, Short-eared Owl.</p>	Main Land Use	Wetland
	% Open Water	18%
	Cold Water Habitat	No
	% Crown/Public/Trust	<0%
	% Agricultural	<0%
	% Pits or Quarry	<0%
	Primary OP Design.	PSW
	Secondary Design.	Agriculture
	Dominant Tree Cover	Deciduous
	Approved PSW	1
	Approved ANSI	1
	Proposed ANSI	n/a

29. Ottawa Block, Twp of Mississippi Mills & City of Ottawa	Key Features	
<p>This core natural area is approximately 10,830 ha. and is primarily designated Rural Lands. Roughly 59% of the area is forested (15% old growth), and another 27% covered by swamps and other types of wetlands. It also includes about 17 ha of open water.</p> <p>The area includes the Goulbourn, Huntley, Manion Corners Long Swamp, the East Burnt Lands, and the Corkery Creek Wetland Complexes. It also includes the following ANSIs: Manion Corners Long Swamp Fen (Life Science, Provincial), Panmure Alvar (Candidate, Life Science, Regional), Highway 17 Fossils (Earth Science, Provincial), Marathon Forest (Candidate, Life Science, Provincial) and Burnt Lands Alvar (Life Science, Provincial).</p> <p>The Goulbourn Wetland is headwaters to the cool-cold Poole Creek and contains Brown Trout (by MNRF). This area has been identified as providing a possible fen habitat for species such as the Bugbean Buckmoth.</p> <p>Existing Parks and Recreation: City of Ottawa Park Corridors, Trans-Canada Trail</p> <p>CA Stewardship Sites: 27 Shoreline plantings</p> <p>Community Associations: Friends of Stittsville Wetlands</p> <p>Sensitive cold-water habitat in the area: Poole Creek</p> <p>Observed species include:</p> <p>cold water fish: Brown Trout, Mottled Sculpin</p> <p>Keystone species: Fisher, Black Bear</p> <p>This area has also been identified as quality habitat for the following species: Blanding’s Turtle, other turtles, bats, Bugbean Buckmoth, Evening Grosbeak, Least Bittern, Peregrine Falcon, Redheaded Woodpecker, Short-eared Owl, Wood Thrush, meadow and forest birds.</p>	Main Land Use	Forest & wetland
	% Open Water	<0%
	Cold Water Habitat	Yes
	% Crown/Public/Trust	9%
	% Agricultural	1%
	% Pits or Quarry	<0%
	Primary OP Design.	Rural
	Secondary Design.	Mineral
	Dominant Tree Cover	n/a
	Approved PSW	5
	Approved ANSI	4
	Proposed ANSI	n/a

30. Carp Hills, City of Ottawa	Key Features	
<p>This core natural area is approximately 5,303 ha. and is primarily designated Rural Lands. Roughly 65% of the area is forested (3% old growth), and another 30% covered by swamps and other types of wetlands. It also includes about 7 ha of open water.</p>	Main Land Use	Forest & wetland
	% Open Water	<0%
	Cold Water Habitat	No

<p>The area includes the Carp Hills Wetland Complex, the Kilmaurs Marsh, and South Marsh Highlands Wetland. It also includes the following ANSIs: South March Highlands (Candidate, Life Science, Provincial), Carp Hills (Candidate, Life Science, Regional) and Carp Barrens (Candidate, Life Science, Provincial).</p> <p>This area has been identified as providing a possible fen habitat for species such as the Bugbean Buckmoth.</p> <p>Existing Parks and Recreation: Carp Hills and South March Highlands City of Ottawa Conservation Area.</p> <p>CA Stewardship Sites: 20 Tree Planting Projects and 28 ORCWP Projects</p> <p>Community Associations: Friends of the Carp River</p> <p>Observed species include:</p> <p>Keystone species: Osprey, Fisher, Black Bear</p> <p>This area has also been identified as quality habitat for the following species: Blanding’s Turtle, Least Bittern, Bugbean Buckmoth, Evening Grosbeak, Least Bittern, Monarch, Peregrine Falcon, Short-eared Owl, Wood Thrush.</p>	% Crown/Public/Trust	25%
	% Agricultural	<0%
	% Pits or Quarry	<0%
	Primary OP Design.	Rural
	Secondary Design.	Urban
	Dominant Tree Cover	n/a
	Approved PSW	3
	Approved ANSI	3
	Proposed ANSI	n/a

31. Chats Fall/Fitzroy, City of Ottawa	Key Features	
<p>This core natural area is approximately 1,923 ha. and is primarily designated Rural Lands. Roughly 64% of the area is forested (4% old growth), and another 17% covered by swamps and other types of wetlands. It also includes about 95 ha of open water.</p> <p>The area includes the Morris Island Wetland Complex. It also includes the following ANSIs: Lavergne Bay Shores (Candidate, Life Science, Regional), Morris Island Conservation Area (Candidate, Life Science, Provincial), Mississippi Snye Wetland (Candidate, Life Science, Provincial).</p> <p>Existing Parks and Recreation: Fitzroy Provincial Park, Morris Island Conservation Area</p> <p>CA Stewardship Sites: 2 Tree Planting Projects, and 16 ORCWP Projects</p> <p>Community Associations: Galetta Community Association</p> <p>Observed species include:</p> <p>Keystone species: Osprey, forest birds, turtles</p>	Main Land Use	Forest & wetland
	% Open Water	5%
	Cold Water Habitat	No
	% Crown/Public/Trust	21%
	% Agricultural	1%
	% Pits or Quarry	1%
	Primary OP Design.	Rural
	Secondary Design.	Urban
	Dominant Tree Cover	n/a
	Approved PSW	1

This area has also been identified as quality habitat for the following species: American Eel, River Redhorse, Blanding’s Turtle, Map Turtle, Evening Grosbeak, Least Bittern, Monarch, Peregrine Falcon, Short-eared Owl, Wood Thrush.	Approved ANSI	3
	Proposed ANSI	n/a

32. Crown Point, City of Ottawa	Key Features	
<p>This core natural area is approximately 1,580 ha. and is primarily designated Rural Lands. Roughly 68% of the area is forested (8% old growth), and another 17% covered by swamps.</p> <p>Existing Parks and Recreation: Camp Capital</p> <p>CA Stewardship Sites: 2 Tree Planting Projects, 1 ORCWP Project</p> <p>Community Associations: Constance and Buckham’s Bay Community Association</p> <p>Observed species include:</p> <p>Keystone species: Forest Birds</p> <p>This area has also been identified as quality habitat for the following species: Blanding’s Turtle, Evening Grosbeak, Least Bittern, Monarch, Short-eared Owl, Wood Thrush.</p>	Main Land Use	Forest & wetland
	% Open Water	<0%
	Cold Water Habitat	No
	% Crown/Public/Trust	<0%
	% Agricultural	<0%
	% Pits or Quarry	<0%
	Primary OP Design.	Rural
	Secondary Design.	Mineral
	Dominant Tree Cover	n/a
	Approved PSW	n/a
	Approved ANSI	n/a
	Proposed ANSI	n/a

33. Torbolton Forest, City of Ottawa	Key Features	
<p>This core natural area is approximately 300 ha. and is primarily designated Rural Lands. Roughly 92% of the area is forested, and another 3% covered by wetlands. The area also includes the Constance Bay Sandhills (Earth Science, Provincial) ANSI.</p> <p>Existing Parks and Recreation: Torbolton Forest City of Ottawa Conservation Area</p>	Main Land Use	Forest & wetland
	% Open Water	n/a
	Cold Water Habitat	No
	% Crown/Public/Trust	69%

<p>CA Stewardship Sites: 1 Tree Planting Project, 17 Shoreline Plantings, 9 ORCWP projects</p> <p>Community Associations: Constance and Buckham’s Bay Community Association</p> <p>Observed species include:</p> <p>Keystone species: Osprey, Black Bear, pine forest birds</p> <p>This area has also been identified as quality habitat for the following species: Blanding’s Turtle, Evening Grosbeak, Least Bittern, Monarch, Short-eared Owl, Wood Thrush, bats.</p>	% Agricultural	<0%
	% Pits or Quarry	<0%
	Primary OP Design.	Rural
	Secondary Design.	Urban
	Dominant Tree Cover	n/a
	Approved PSW	1
	Approved ANSI	n/a
	Proposed ANSI	n/a

34. March Twp. Riverine Corridors, City of Ottawa	Key Features	
<p>This core natural area comprises three riverine corridors: Constance Creek, Shirley’s Brook, and Watt’s Creek, which has cold-cool headwaters. The area is approximately 5,300 ha of which almost 1,600 ha is forested and over 2,100 ha are wetlands. Of the roughly 50% owned by the Crown, most is owned by the federal government and lies within the National Capital Commission’s Greenbelt.</p> <p>Roughly 34% of the area is forested (2% old growth), and another 46% covered by swamps and other types of wetlands. It also includes about 193 ha of open water. The area includes the Stony Swamp Wetland Complex, Mud Pond PSW, and Constance Creek PSW. It also includes the following ANSIs: Shirley’s Bay (Life Science), Campbells Quarry (Earth Science), Eagleson S. Corners (Earth Science), Constance Creek Wetland (Life Science), and a Candidate Life Science ANSI at Stony Swamp.</p> <p>Existing Parks and Recreation: the NCC green belt, Sheila McKee Memorial Park, Phiney's Point, Bonnenfant YMCA Outdoor Education Centre aka Camp Otonabee, and the Ottawa River Canoe Club.</p> <p>CA Stewardship Sites: 13 Tree Planting Projects and 12 ORCWP projects</p> <p>Community Associations:</p> <p>Sensitive cold-water habitat in the area: The headwaters’s of Watt’s Creek are cold-cool habitat, Shirley’s Brook also has some cold-cool habitat.</p> <p>Observed species include:</p>	Main Land Use	Forest & wetland
	% Open Water	4%
	Cold Water Habitat	Yes
	% Crown/Public/Trust	51%
	% Agricultural	3%
	% Pits or Quarry	1%
	Primary OP Design.	Urban and Rural
	Secondary Design.	Environmental
	Dominant Tree Cover	n/a
	Approved PSW	3
Approved ANSI	4	
Proposed ANSI	1	

<p>cold water fish: Burbot</p> <p>Keystone species: Osprey, Fisher, Black Bear</p> <p>This area has also been identified as quality habitat for the following species: Bugbean Buckmoth, Blanding's Turtle, Evening Grosbeak, Least Bittern, Monarch, Peregrine Falcon, Short-eared Owl, Wood Thrush.</p> <p>Other features of note: the presence of the Department of National Defence Connaught Range at the outlets of Shirley's Brook and Watt's Creek.</p>		
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<p>35. Lower Mississippi, Twp of Mississippi Mills & City of Ottawa</p>	<p>Key Features</p>	
<p>This core natural area is approximately 405 ha. Roughly 32% of the area is forested (17% old growth), and another 35% covered by swamps and other types of wetlands. It also includes about 65 ha of open water.</p> <p>Existing Parks and Recreation: Canoe launch at Highway 17.</p> <p>CA Stewardship Sites: 1 Shoreline Planting, 3 ORCWP projects, 3 Tree Planting Projects</p> <p>Community Associations: Kinburn Community Association is nearby</p> <p>Observed species include:</p> <p>Keystone species: Deer, Bear, Northern Pike</p> <p>This area has also been identified as quality habitat for the following species: River Redhorse, American Eel, Blanding's Turtle, Evening Grosbeak, Least Bittern, Monarch, Redheaded Woodpecker, Short-eared Owl, Wood Thrush,</p>	<p>Main Land Use</p>	<p>Forest & wetland</p>
	<p>% Open Water</p>	<p>16%</p>
	<p>Cold Water Habitat</p>	<p>No</p>
	<p>% Crown/Public/Trust</p>	<p><0%</p>
	<p>% Agricultural</p>	<p>7%</p>
	<p>% Pits or Quarry</p>	<p><0%</p>
	<p>Primary OP Design.</p>	<p>Mineral</p>
	<p>Secondary Design.</p>	<p>Rural</p>
	<p>Dominant Tree Cover</p>	<p>n/a</p>
	<p>Approved PSW</p>	<p>n/a</p>
<p>Approved ANSI</p>	<p>n/a</p>	
<p>Proposed ANSI</p>	<p>n/a</p>	

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