Chemawawin Cree Nation

Chemawawin Cree Nation Environmental Management Plan

October 2025

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1. Introduction to the EMP

1.1. Purpose

An Environmental Management Plan (EMP) is a practical framework designed to address the environmental priorities of Chemawawin Cree Nation (CCN). This EMP provides a way for leadership, staff, and community members to work together to implement sustainable development principles in the community and the long-term care of their lands and resources. It lays out clear goals, actionable steps, and strategies that align with the Nation's values and vision for environmental stewardship. By braiding together traditional knowledge with modern environmental practices, the EMP ensures that the decision-making reflects CCN's unique cultural, ecological, and economic needs.

The EMP builds on the foundation of the Framework Agreement on First Nations Land Management, which CCN signed onto in 1996, and the Chemawawin Land Code, implemented in 2010. The Framework Agreement requires the creation of an environmental protection regime, which can consist of an EMP and Environmental Protection Laws. The EMP will equip CCN with tools to manage environmental risks, address ongoing challenges, and protect their lands for future generations.

As part of CCN's broader approach to environmental protection, the EMP fulfills multiple roles. It provides guidance for creating and enforcing environmental laws, policies, and administrative processes. It assists departments within the Nation to coordinate their efforts and functions alongside existing community management plans to ensure an integrated, wholistic approach to sustainable land management. By focusing on the community's goals and shared responsibilities, the EMP supports CCN's efforts to balance environmental health, cultural preservation, and economic opportunities.

As a living document, the EMP will guide decision-making, monitor environmental conditions, and coordinate implementation efforts across policies, departments, and agreements. By integrating the EMP into CCN's governance system, the Nation ensures that environmental management is not treated in isolation, but as a vital part of community wellbeing, cultural continuity, and self-determination.

This EMP was developed with assistance from Narratives Inc.

1.2. Document Control

Document control is a means of keeping track of documents, procedures, and processes to ensure that the correct and most up-to-date versions are accessible to everyone. Document control is important given that environmental legislation, best management practices, procedures, and roles and responsibilities can change over time and the EMP must be updated and amended accordingly.

The following document control measures will be implemented for this EMP:

1. Include a date, version number, and sign-off name on all documents.

2. Review and revise documents as outlined in the Revision History section.
3. Remove and appropriately destroy/recycle all out-dated documents.
4. Maintain an electronic and paper copy of the EMP within the Lands Management team

1.3. Amendments and Review

A review of the EMP is a crucial step in determining the success and effectiveness of the EMP. The EMP will be reviewed on an ongoing basis and updated as implementation actions are completed. A comprehensive review will be conducted by the Lands Manager at least once every five years (or earlier, if necessary).

Key aspects of the EMP review will include, but are not limited to:

1. Reviewing and updating community context and background information.
2. Reviewing and updating environmental concerns and issues, as new ones may be identified.
3. Reviewing and updating environmental management priorities.
4. Conducting a performance summary for the management actions contained in the EMP to determine implementation progress and identify any outstanding actions. Determine if outstanding actions are still relevant and needed.
5. Reviewing identified listed funding sources to identify what sources are still applicable, still available, or are obsolete.
6. Conducting a review of environmental incidents to determine if and how these incidents can be mitigated in EMP amendments.
7. Review other plans, policies, and procedures drafted and implemented after the EMP to determine alignment between the documents and processes.

The EMP for CCN is shaped by the Nation's values, cultural traditions, and vision for the future, as identified in the CCN Land Relations Plan. The vision and guiding principles reflect the foundation of the plan, ensuring it addresses environmental issues in a way that aligns with the community's priorities and long-term goals. The vision for a vibrant community has been shaped by community leadership, elders, youth, and community members and a comprehensive review of the Nation's history, its laws, and other important documents. The community vision is shown in Figure 1.

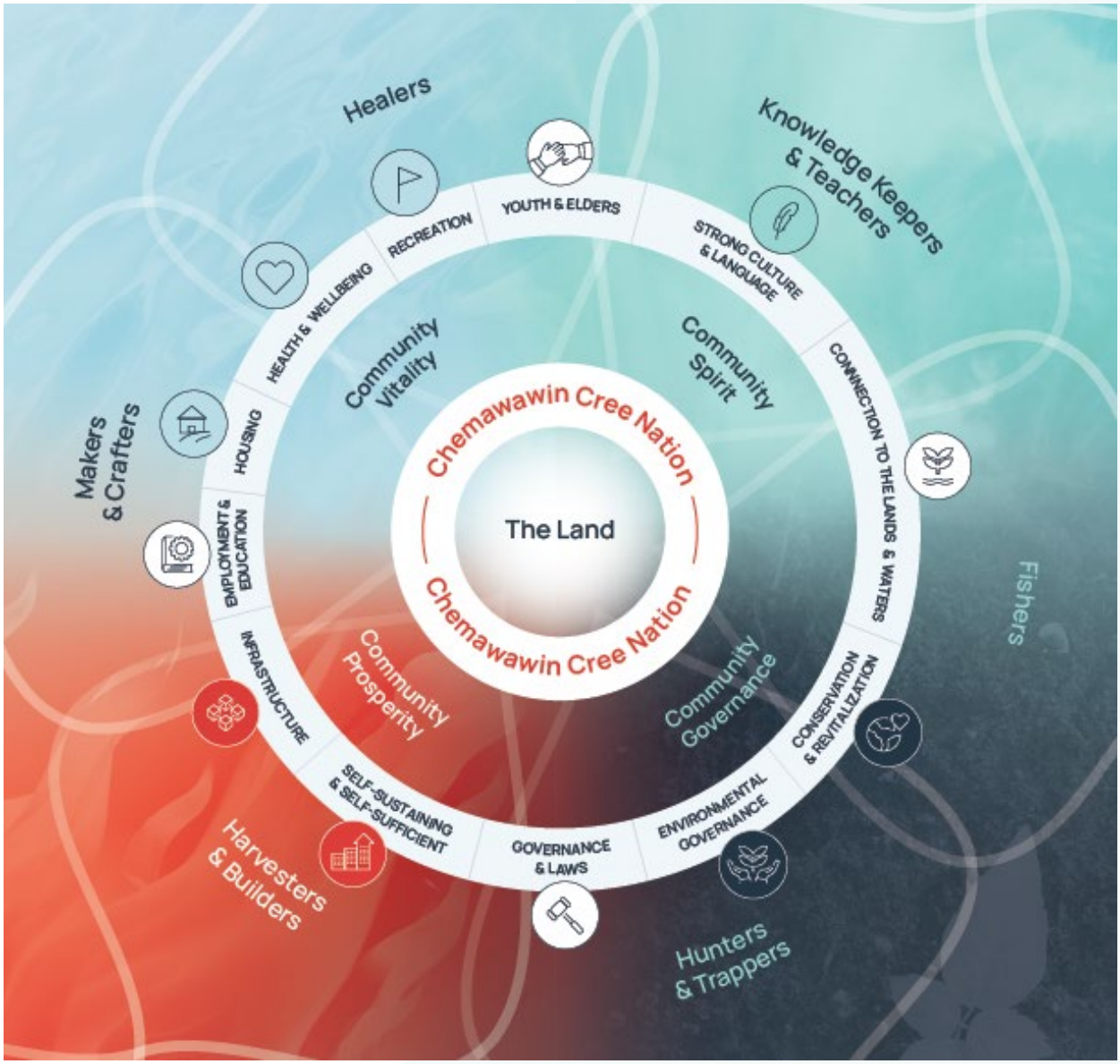


Figure 1. Chemawawin Cree Nation community vision.

As shown in the vision, here are four foundations of CCN that support a vibrant community:

Community Vitality: Healthy and safe communities, filled with life and vibrant people that have the capabilities to lead a fulfilling life in a community that supports these pursuits.

Community Stewardship: A close relationship with the land enables sustainable lands and water-based practices and supports a thriving community. This also connects to how a community governs itself and its lands.

Community Spirit: A community whose traditions, customs, language and culture are vibrant and at the centre of life in the community. Here, people feel strong connections to their roots, their history, and their culture.

Community Prosperity: A community that is self-sufficient, and provides for itself and its members, and have a healthy sustainable relationship with the lands and waters.

Within these foundations are 12 guiding principles. Of these twelve, the following six will guide the Nation through its environmental management:

- **Strong Culture & Language** – Prioritizing Cree language education for youth, protecting spaces for land-based activities, and protecting sacred sites and ceremonial spaces. Honoring and preserving the history of Old Post.
- **Conservation & Revitalization** – Implementing sustainable resource practices to protect and restore traditional lands, waters, and wildlife.
- **Environmental Governance** – Asserting jurisdiction over traditional territory through co-management agreements and resource-based revenue generation. Developing land relations plans and implementing laws, permits, and protocols to strengthen sovereignty.
- **Governance & Law** – Strengthening governance systems with transparent and consistent laws, protocols, and procedures to assert control over lands and resources.
- **Infrastructure** – Ensuring safe drinking water and wastewater services while exploring sustainable energy solutions to reduce costs.
- **Connection to Lands and Waters** – Promoting food security and cultural revitalization through traditional activities like fishing, hunting, and community gardening.

The EMP also takes guidance from other areas, including:

1. **Respect for Indigenous Knowledge:**

The EMP is built on the understanding that Indigenous knowledge is essential to effective environmental stewardship. Rooted in generations of lived experience, this knowledge reflects the deep and sacred connection CCN has with its lands and waters. By weaving together the traditional practices and cultural values alongside modern scientific approaches, the EMP ensures that decisions are not only well-informed but also respectful of CCN's heritage and way of life. This approach recognizes that the community history and relationship with the land and waters are central to creating solutions that are practical and meaningful.

2. **Sustainable Development:**

The EMP is guided by the principle of finding balance, ensuring that protecting the environment goes hand-in-hand with supporting economic and social growth. Sustainable development means making choices today that will allow future generations to thrive. This principle ensures that natural resources are used responsibly, and that development respects the land and the community's cultural traditions. The EMP prioritizes solutions that protect the environment and improve the well-being of CCN, creating a foundation for regeneration and long-term resilience.

3. **Precautionary Principle:**

The precautionary principle reflects the belief that it is better to prevent harm to the environment than to face the consequences later. For CCN, the health of the land, waters, and ecosystems is deeply tied to the well-being of the community. Environmental harm does not occur in isolation—it affects the people, their livelihoods, and their cultural and spiritual connection to the land. By prioritizing caution in the face of uncertainty, the EMP seeks to address potential risks before they cause harm, protecting both the environment and, therefore, the people who depend on it. This principle ensures thoughtful, forward-looking decisions that support the long-term health of the land and the community alike.

2. Background Context

2.1. Regulatory Setting

CCN is a signatory member of the Framework Agreement and implemented Land Code in 2010. The Nation's Land Code replaces forty-four (44) lands-related provisions under the *Indian Act (R.S.C., 1985, c. I-5)* and allows CCN to exercise inherent rights, re-build governance and social systems, and develop laws to govern over their lands. The Chemawawin Cree Nation Land Code establishes the Nation's jurisdiction over land use management and environmental protection.

The EMP establishes a comprehensive environmental protection regime within CCN's broader governance structure, connecting traditional governance systems with operational planning tools. Environmental governance at CCN is grounded in its inherent responsibility as protectors of the land, water, air and all living beings. Environmental protection is not only a regulatory obligation, but also a cultural and spiritual duty tied to the Nation's identity and guided by traditional knowledge, laws and relationships to land. The EMP will align with CCN's internal laws, codes, bylaws, and any established permitting processes, while also identifying where cross-jurisdictional coordination is required with provincial or federal governments.

Environmental decision-making is implemented through a layered governance structure that includes community leadership, technical committees, land governance authorities, and partner agreements. This authority is supported by:

- **The Chemawawin Cree Nation Land Code (2010)**, which affirms the Nation's right to make and enforce environmental laws on reserve lands under the Framework Agreement on First Nation Land Management.
- **The Comprehensive Forebay Agreement (2004)**, which mandates cooperative environmental planning and management within the Cedar Lake Resource Management Area (RMA) alongside provincial and hydro interests.
- **Chemawawin Cree Nation Citizenship Code**, which defines membership and community inclusion, influencing environmental consultation and stewardship roles.

CCN's environmental governance structure is supported and influenced by a range of internal and external policies laws and agreements, as discussed in the Policy and Regulations sections within the Environmental Priorities sections of this report.

2.2. Jurisdiction

The EMP applies to the CCN Reserve Lands managed under the Land Code. CCN has a total land base of 11,788 acres (4,771 ha) over three main reserves. The Nation also has 25 parcels of registered reserve territory. The lands and waters across CCN's territory are sacred, and the relationship to each area should be uniquely preserved and nurtured now and into the future.

While the EMP in intended as a policy and strategy document that is applicable to reserve lands, CCN holds Rights, Title, and Interests across their traditional territory that spans far beyond the reserve boundaries. In these areas, the EMP enables strategies and recommendations for ensuring sustainable environmental goals and actions that the Nation will work towards. These areas will also be considered in all decision-making related to environmental management as CCN has specific administrative and planning goals for their traditional territory as the territory is a zone of active monitoring interest. This includes:

- **Cedar Lake Resource Management Area (RMA)** – Majority of Cedar Lake and surrounding lands co-managed by the Cedar Lake Resource Management Board (RMB) as guided and established by the Comprehensive Forebay Agreement in 2004.
- **Cedar Camp Registered Trapline (RTL)** – established as a subsection of the Camperduck RTL in 1954, this trapping area is recognized as territory historically used by CCN.

CCN's reserve lands, the RMA, and the Cedar Camp RTL are shown in Map 01.

To develop a robust and comprehensive, environmental management regime, the EMP considers other jurisdictional approaches. Provincial legislation has been referenced in the EMP to demonstrate the types of legislation that other jurisdictions have in place to protect their lands. Federal legislation has been referenced as CCN Lands are subject to federal legislation. The intent of the EMP is to be aligned to federal, provincial and municipal laws, as applicable. However, the EMP may be more stringent in select areas. Collaboration with local jurisdictions will be necessary given the complexity of ecosystems and environmental issues, many of which extend beyond reserve boundaries, such as air pollution or flooding.

2.3. Roles and Responsibilities

The success of the EMP is contingent on all CCN staff, and anyone operating on CCN Lands, understanding and upholding their respective roles and responsibilities detailed in the EMP. The following section describes the key roles and responsibilities for those associated with the successful implementation and maintenance of the EMP. The key roles and responsibilities are noted in Table 1.

Table 1: Roles and Responsibilities.

Role	Responsibility
Chief and Council	Chief and Council hold the central governance role over the Nation's lands, as outlined in the Land Code. They are the final approving authority of the EMP.
Lands Advisory Committee	The Lands Advisory Committee (LAC) will implement and oversee the EMP. They are responsible for communicating the EMP goals and actions to staff, the community, and others. The LAC will prepare the budget to implement strategic environmental initiatives on an annual basis, including staffing and training recommendations.
Membership	Membership is to provide input and participate in community engagement processes related to the EMP. They are to inform Leadership and/or staff of environmental concerns and report activities that are not consistent with the EMP to the appropriate authority. Membership is to adhere to the legislation and policies set out in the EMP.
Third Parties	All other third parties (contractors, visitors, lease holders, commercial tenants, etc.) must adhere to the policies and protections laid out in the EMP.

The EMP is intended to be a living document, updated over time as new knowledge, technologies, and community priorities evolve. It will also serve as a guide for other planning documents including land use planning, resource development assessments, and emergency preparedness plans and act as a foundation for further policy development and environmental lawmaking.

2.4. Tools, Resources, and Assets

CCN has cultivated a strong foundation of tools, resources, and assets to support effective environmental management. These include collaborative partnerships, community-led programs, and technical resources that enable evidence-based decision-making, long-term planning, and stewardship rooted in both western scientific and traditional knowledge systems.

2.4.1. Collaborative Partnerships

CCN works with several strategic partners to support environmental governance and implementation of stewardship programs. These partnerships, listed in **Error! Reference source not found.**, provide technical expertise, funding, policy coordination, and shared responsibilities for managing lands and waters.

Table 2. Partnerships in Collaborative Environmental Management

Partner	Role in Environmental Management
Resource Management Board (RMB)	Co-governance body under the Forebay Agreement; coordinates land use planning and environmental monitoring in the RMA alongside CCN and provincial representatives.
First Nations Land Management Resource Centre (LABRC)	Technical and funding support for development and implementation of the EMP and land management tools under the Framework Agreement.
Manitoba Hydro	Provides funding and support through the Comprehensive Forebay Agreement; partners with CCN in shoreline monitoring and community-based programming through the Cedar Lake Community Projects (CLCP).
Province of Manitoba	Coordinates environmental and natural resource regulations in the Cedar Lake Resource Management Area (RMA); co-governs through the Resource Management Board (RMB).
Federal Agencies (e.g., Environment and Climate Change Canada, Impact Assessment Agency of Canada)	Provide technical and regulatory oversight on issues such as species at risk, water quality, environmental emergencies, and contaminated sites.

2.4.2. Community Programs and Initiatives

CCN leads several environmental initiatives and programs, listed in Table 3, designed to embed stewardship within the community and build local capacity for environmental governance.

Table 3: Community Programs and Initiatives

Program/Initiative	Function and Impact
Cedar Lake Community Projects (CLCP)	A community-based initiative supported by Manitoba Hydro. Activities include shoreline clean-up, debris removal, monitoring, and land stewardship efforts within the RMA and around reserve lands.
Marine Stewardship Council Sustainable Fishery Certification	Awarded to CCN for sustainable practices related to stock health, overall environmental impact, and effective management.
Environmental Monitors Program	Trained community members monitor environmental conditions, conduct land-use surveys, collect conservation data, and support environmental education. Environmental Monitors play a key role in implementing the EMP.
Traditional Knowledge Integration	Elders, Knowledge Keepers, and land users are actively involved in identifying environmental values, monitoring indicators, and guiding culturally aligned land use practices.
Youth and Elder Engagement Programs	Community-based learning initiatives that support intergenerational knowledge transfer and land-based learning in partnership with schools and cultural programming.

3. Nation & People

3.1. About Chemawawin Cree Nation

The name Chemawawin means "fishing with two canoes across from one another, pulling a net." Connection to the waters and fishing as a way of life has been a constant through the Nation's history. Since Time Immemorial, the Mushkekowuk (Swampy Cree) and Asinīskāwiyiniwak (Rocky Cree) have cared for and lived on the shores and waters of Kisiskâciwan-sîpî (Saskatchewan River) and Cedar Lake. Abundant fish and wildlife sustained the Cree, making up an important part of the Nation's heritage, identity, and economic prosperity.

The people of CCN who cared for and occupied lands known as the 'Old Post', hunted, fished, trapped, and operated a mill, supplying lumber to the region. The people of CCN lived respectfully with the environment with the belief that connection to land is physical, spiritual, and intellectual.

CCN's governance systems and social structure have been challenged over time. The people of Chemawawin signed onto Treaty #5 in 1867, along with other Saulteaux and Swampy Cree Tribes of Northern Manitoba whose traditional territories covered most of what is now known as central and northern Manitoba. In April of 1960, CCN was asked to surrender territory and be relocated to make way for the Grand Rapids Hydro Project. The Nation opposed, observing the agreement's similarities to the treaty, and the potential impacts of the agreement, and the project on future generations.

After the Grand Rapids Hydro Project resulted in a devastating flood event, the community of CCN was forced to relocate from the eight (8) traditional settlements of 'Old Post' to Chemawawin 2 in 1962. Chemawawin 2 remains the primary settlement of CCN today. The flooding greatly disrupted the activities of commercial fishers and destroyed beaver and muskrat habitats. Trapping became increasingly unproductive, and over time, many people were forced to give up trapping altogether. Similarly, hunting moose became more difficult along the flooded shorelines of Cedar Lake.

CCN entered into an agreement with the Province of Manitoba and Manitoba Hydro called the *Comprehensive Forebay Agreement*. This agreement applies to the Cedar Lake Resource Management Area (RMA), which includes a land base of 928,962 acres (3,759.83 km^2) and encompasses the surrounding lands and waters of Cedar Lake, and part of the Saskatchewan River System. The *Comprehensive Forebay Agreement* signifies a step in addressing the adverse effects and impacts resulting from the Grand Rapids Generating Station by Manitoba Hydro.

In 2010, CCN ratified a Land Code to re-gain control over its lands and resources before being relocated from the Old Post. The Land Code enables CCN to make decisions about how lands use and management is conducted on their lands, including the right to create new policies and laws.

3.2. Culture and Traditional Economies

CCN has a longstanding cultural and economic relationship with their land and resources, deeply rooted in traditional practices and environmental stewardship. The traditional economies of CCN have focused on natural resource bases, such as fishing and timber harvesting, and the people of CCN relied on fishing, hunting, trapping, and gathering for sustenance and trade. The commercial fishery in Cedar Lake has been an important part of the Nation's economy since it first opened in the 1930s. Despite the challenges and closures of the fishery due to flooding, more than 80 fishers had participated in the fishery. Economic sustainability is closely tied to traditional land use, with policies emphasizing food security, traditional harvesting, and land-based activities. Through their governance structure and environmental policies, CCN prioritizes cultural preservation, responsible resource management, and the protection of their lands and waters for future generations.

Despite displacement, the community continues to uphold and restore their connection to the land through resource management, cultural practices, and governance under their Land Code. Traditional ecological knowledge plays a vital role in guiding land stewardship, with key roles such as healers, knowledge keepers, fishers, hunters, and trappers ensuring the transmission of knowledge across generations. Sacred sites, including 'Old Post,' are protected as places of cultural significance, healing, and learning.

As of 2022, CCN has approximately 2,132 registered members with the Nation's rate of growth being consistent with estimated growth rates of Indigenous populations within the Province of Manitoba and across Canada. CCN is the primary employer for community members, with about 75% of the employed labour force working in band administration or band-run community services.

3.3. Environmental Baseline

An environmental baseline is a detailed description of the current environmental conditions within the territory. It includes information on key elements such as air and water quality, soil health, wildlife and plant species, land use, and cultural heritage sites. This baseline serves as a point of comparison to identify and measure any changes or impacts that may result from future activities. Establishing an environmental baseline is essential for informed decision-making, effective environmental monitoring, and the development of meaningful mitigation strategies. It ensures that the natural and cultural values of the land are clearly understood and respected from the outset of any project.

CCN lies within the Cedar Lake Ecodistrict, within the Mid-Boreal Lowland Ecoregion of the Boreal Plains Ecozone, shown in Map 02. This zone is characterized by fragmented jack pine forests, and interspersed bog and wetland complexes and experiences frequent droughts, and forest fires, further contributing to the fragmented forest cover. The Cedar Lake RMA is within the Saskatchewan River Forest Management Unit, shown in Map 03. Other notable characteristics of the local ecosystem include shoreline erosion, loss of wetlands, and habitat destruction resulting from the flooding following implementation of the Grand Rapids generating station. The region around Cedar Lake was previously home to Eastern White Cedar forests, however their population was significantly affected by the flooding. An overview of the land classifications in the EMP Planning Area can be found in Map 04.

3.3.1. Aquatic Ecosystems, Surface Water, and Groundwater

Water is fundamental to human and environmental health, and the identity, well-being, cultural practices, and future development of CCN. Cedar Lake is a large, shallow lake, covering approximately 1,353 km^2. It is part of the Hudson Bay drainage basin in western Manitoba along the Saskatchewan River, west of Lake Winnipeg and north of Lake Winnipegosis, near the Saskatchewan border. The lake is roughly 64 km long and 51 km wide at its widest point. It is considered a shallow and turbid lake with a mean depth of 5.8 m and a maximum depth of 10 m in the main basin. The lake is rich in fish species like walleye, northern pike, and whitefish, and supports diverse wildlife in its surrounding wetlands and boreal forest.

The Grand Rapids generating station was completed in 1968, with the first unit opened in 1964. The construction of the generating station altered the lake's morphology and mercury levels increased in Cedar Lake. The increased mercury concentrations, resulting from flooding, bioaccumulated in multiple fish species present, with Northern Pike, Walleye, Sauger, Bass, Perch, Sunfish, and Goldeye, all being found to contain level of mercury above safe concentrations (0.5 parts per million) in 1971 (Government of Manitoba, 1979). Although mercury levels have since declined, and other water quality parameters such as alkalinity are shown to be stable, other concerns exist for Cedar Lake. In 2019, the Canadian Kraft Paper Mill released 23,000 litres of black liquor, an acutely lethal effluent, into the Saskatchewan River less than 100km upstream from where the river deposits into Cedar Lake (Government of Canada, 2019). The effects of the spill are unknown, however black liquor is known to deplete dissolved oxygen in waterbodies, which can be lethal for fish.

Figure 2. Zebra mussels. Copyright Adobe Stock 87500277: Enhanced Licensing.

Additional concerns for Cedar Lake include the introduction of aquatic invasive species (AIS) including zebra mussels (Figure 2), spiny waterfleas, and black algae, as well as the protected Lake sturgeon in the region classified as endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Cedar Lake is currently part of a provincial control zone to prevent the spread of AIS.

Groundwater is the primary drinking water source for CCN, from wells developed in 1997 following the contamination of petroleum hydrocarbons (PHC) in the previous wells in the late 1980's. There are concerns that the current wells are operating below their rated capacity and not recharging as they once did. Frequent replacement of well pumps due to sediment and iron debris is also an issue.

3.3.2. Wildlife

Many wildlife species are fundamentally important to CCN, shaping their culture, providing sustenance and economic opportunities, and playing vital ecological roles. Notable wildlife species in the CCN territory include moose, woodland caribou, and various fur-bearing animals such as beaver, muskrat, mink, river otter, coyote, red fox, Canada lynx, and wolverine. The community recognizes the threats to wildlife, and the concern for species at risk.

Figure 3. Atihk (Caribou, Rangifer tarandus caribou), a provincially and federally threatened species. Copyright Adobe Stock 642159919: Enhanced Licensing.

In additional to the boreal population of woodland caribou, which is listed as threatened both provincially and federally, the following mammals, birds, and fish are considered to be at risk in the area:

- **Mammals:** Little brown bat (endangered), northern long-eared bat (endangered), wood bison (threatened), wolverine (special concern);
- **Birds:** Piping plover (endangered), trumpeter swan (endangered), canada warbler (threatened), chimney swift (threatened), common nighthawk (threatened), olive-sided flycatcher (threatened), short-eared owl (special concern), eastern whip-poor-will (threatened), bank swallow (threatened), barn swallow (threatened), golden-winged warbler (threatened), rusty blackbird (special concern);
- **Fish:** Lake sturgeon (endangered by COSEWIC).

3.3.3. Vegetation

The vegetation within the EMP Planning Area has historically supported the community of CCN by providing food and medicines and bringing families together for berry and medicine picking. Supporting a variety of species, the region is primarily wetlands, with stands of coniferous forests, mixed wood, and broadleaf forests.

Vegetation in the Mid-Boreal Lowland Ecoregion is characterized by mixed boreal forest featuring medium to tall stands of various tree species, including black spruce, trembling aspen, balsam poplar, alder, willow, and jack pine. In the Cedar Lake Ecodistrict, jack pine is most common due to the dryness of the area. The terrain of this ecoregion is mostly flat, low-lying, and slowly draining, characterized by extensive wetlands and wetland species. These wetlands, mainly constituted of fens and muskeg, are covered with tamarack and stunted black spruce trees. Historically, this region was also home to eastern white cedar forests, but these have been significantly affected by flooding caused by Manitoba Hydro. The Pas Moraine Ecodistrict features mainly bog and fen vegetation such as sphagnum moss, alder, sedges, and brown moss, feather moss, swamp birch, and tamarack, with some black spruce stands present.

The ground cover includes mosses, lichens, minor grasses, and herbs (Smith, et al., 1998). Cedar Lake is also home to abundant medicines including Weegas (rat root), which is used to treat colds, sinus infections and as a versatile supplement to support the immune system and fight disease. Other medicines include seneca and red clover (Yaremko, 2018).

The Cedar Lake RMA region also supports a variety of shrubs such as blueberry, bearberry, raspberry, and rock cranberry (Smith, et al., 1998). Community members from CCN also noted that rhubarb once grew throughout the Chemawawin forests, and families would transplant those plants, along with others such as strawberries, into their gardens (Yaremko, 2018). Berries were used to make jams and jellies to store for later use. Families would go berry picking in the bush and along the shorelines (Yaremko, 2018). Berry picking areas along the shoreline were noted to be lost when Cedar Lake was flooded by Manitoba Hydro (Yaremko, 2018). Several plant species are also listed as species of concern, many of which are wetland sedge species, attesting to the impacts of the loss of wetlands.

Figure 4. Cedar Lake shoreline, Narratives Inc, August 7, 2023.

3.3.4. Soils

In the Mid-Boreal Lowland Ecoregion, the soils feature well to imperfectly drained clay and loamy tills, along with glaciolacustrine (glacial in origin) deposits. Imperfectly drained clay has intermediate drainage. Loamy tills have high water retention, which retains nutrients for plant growth. In the Cedar Lake Ecodistrict, limestone bedrock is dominant. The Cedar Lake Ecodistrict soil types allow wetland vegetation to grow where soils with high water retention are present. Areas with more soil foundations, such as limestone bedrock, are more suitable for infrastructure. On Cedar Lake, a majority of the soil composition on the north shore is a well-draining loam with the southern shore having scattered deposits of poorly draining peat and loam at varying depths. At the current community site of Easterville, the land is mainly bedrock and stone, with some dispersed forested areas.

Figure 5. Cedar Lake ecosystem, Narratives Inc, August 7, 2023.

3.3.5. Air Quality

Limited information is available on current air quality in the region, however, some concerns for quality revolve around temporary impacts such as dusts from construction activities. Another major concern is the potential for reduced air quality due to nearby wildfires which have been increasing in occurrence due to climate change.

3.3.6. Climate Change

Climate projections for the CCN region indicate rising temperatures under both high and low emission scenarios, as modeled by the Climate Atlas of Canada. Both summer and winter temperatures are expected to increase, with the annual mean temperature rising significantly, particularly under a high-emission scenario. Annual precipitation is also projected to increase; however, variability may lead to periods of both higher overall precipitation and increased drought risk. The number of days with extreme heat is expected to rise, especially in high-emission scenarios. These changes are likely to heighten the risk of wildfires, severe thunderstorms, flash flooding, hail, and tornadoes. In particular, the increased occurrence of warm nights may contribute to more frequent and severe forest fires. Additionally, the number of extreme cold days is projected to decline.

Climate Change will also have impacts on the built environment and human life impacts. Increased temperatures create human health hazards for housing and other buildings not equipped with air conditioning. Increased heat can have impacts on the lifespan of infrastructure such as roads (e.g. high heat can soften pavement, which can then be damaged by heavy vehicles travelling on it). Increased precipitation and moisture can create better environments for household mold, while also creating issues for drainage on overland flooding damaging homes and other buildings. Risk of increased drought will further exacerbate existing issues with the well water recharge areas, potentially reducing access to clean drinking water. Further research is required to fully understand the breadth of impacts of climate change on CCN. This research will aid the Nation in developing strategies for adapting to climate change and mitigating its effects.

4. Environmental Priorities

This section outlines the Environmental Management Priority Areas, identified for Chemawawin lands and waters based on background research and literature review, staff and community engagements, and workshops to guide environmental management planning. The Environmental Management Priority Areas are as follows:

1. Aquatic, Vegetation, and Wildlife Species
2. Waste and Wastewater Management
3. Cultural Heritage and Sacred Areas
4. Environmental Emergencies
5. Land and Water Contamination
6. Land Use Management

Each of the Priority Area sections are broken down as follows:

1. **Issues and Concerns** – The environmental issues and concerns on CCN reserve lands and across their traditional territory. Issues and concerns were identified through a background materials review and a workshop with CCN Leadership and the Lands Advisory Committee.
2. **Policy and Regulations** – An overview of the legislative requirements put forth by CCN, as well as relevant federal and provincial regulations. The policies and regulations outlined in these sections often may apply to multiple Priority Areas, as they are designed to mitigate adverse impacts on the biophysical environment. While not all regulatory regimes are applicable on reserve, they may be applicable on the lands and waters outside the boundaries.
3. **Management Goals and Actions** – This section addresses the issues and concerns through **Management Goals** (MG) and **Management Actions** (MA). The goals are presented as objectives that CCN wants to achieve, while the actions represent the step to achieve the goals. Each MG and MA has an ID code to denote where it is a goal or action, the priority area, and a number. If multiple actions are required to achieve a Management Goal, a letter is assigned to the ID number.

4.1. Aquatic, Vegetation, and Wildlife Species

This priority area encompasses the aquatic, plant, and wildlife species present within the EMP Planning Area. Vegetation includes all plant life found in the region, such as medicinal plants, trees, berries, and aquatic vegetation. Wildlife refers to terrestrial species inhabiting the area, including moose, caribou, and beaver. Invasive species are non-native plants or animals introduced to the ecosystem, potentially disrupting its natural balance. Aquatic species encompass organisms that spend at least part of their lifecycle in water, including fish, aquatic insects, and amphibians.

Habitat loss and changes through human activities such as development and land clearing are a primary concern for species in the ecosystem. Changes and habitat loss can come in the form of water contamination and eutrophication, shoreline erosion and submersion, cumulative development impacts, and habitat fragmentation amongst others. Invasive species outcompete native species leading to population decline, alongside increased disease and predator encroachment.

4.1.1. Issues and Concerns

Issues and concerns related to aquatic, plant, and wildlife species are outlined in Table 4 to inform environmental management.

Table 4. Concerns and Issues - Aquatic, Plant, and Wildlife Species

Concern and Issues	Details	How is this currently addressed?
Declining fish health	• Methylmercury, a highly toxic form of mercury, readily bioaccumulates in fish, posing a threat to the health of those who consume them. • Heightened mercury levels led to a closure of the Cedar Lake commercial fishery between 1970 and 1973 and had severe economic consequences on CCN. • Mercury levels declined 12 to 14 years after the historic flooding of the land but there is a lack of data as no mercury sampling being done at this time. • Fish have been noted to be sick in Cedar Lake, with red spots and lumps on their bodies. • The Kraft black liquor spill in 2019 causes concern for the health of aquatic species and habitat.	Specific actions to be determined.
Blue-Green Algae	• Blue-green algae affects water quality, impacting fish health and increasing mortality rates. • Green slime, potentially related to blue green algae, has been found on fishing nets, which hinders their quality and usage.	Specific actions to be determined.
Invasive Species	• Zebra mussels are major concern first confirmed in 2021. This species impacts the health of waterbodies and aquatic species, as well as infrastructure. • Spiny water flea was detected in the Easterville harbour in 2020. This flea both harms native fish and their food sources	Cedar lake is provincially designated a control zone against the further spread of

Concern and Issues	Details	How is this currently addressed?
	• Jack pine budworm is an invasive insect infesting the RMA since 2015 and destroys jack pine foliage leading to increased tree mortality and economic forestry industry consequences. • Wild boar have been sighted in the CCN area, which can wreak havoc on the environment and community.	zebra mussels which requires watercraft and fishing industry to follow specific guidelines and rules.
Limited Tree Cover	• The lack of tree cover exacerbates several environmental issues, including land erosion, soil stability, and wind protection. • This concern can be attributed to both the historical flooding as well as commercial and fire use tree cutting.	Minimizing soil disturbance and salvage logging by implementing the Operational Guidelines.
Specified Species at Risk: Boreal Woodland Caribou	• Woodland caribou are a species with a High Conservation Value (HCV) and are highly susceptible to environmental changes and disturbances. • Populations have been trending downwards due to increased predation, climate change, habitat destruction, poor forestry practices and forest fragmentation.	Protected as Threatened under *The Endangered Species and Ecosystems Act, C.C.S.M. c. E111* and the federal *Species at Risk Act (S.C. 2002, c. 29)*. These Acts protect species and promote their resurgence through multiple prohibitions to harming or killing said species.
Declining Population of Moose	• Population declines of moose through changing predator-prey dynamics, habitat loss and alteration, historic overhunting and poaching. • Moose are important to CCN as both their cultural identity. Declining populations means practices such as hunting are impacted, which may threaten food security.	Game Hunting Area (GHA) 14 prohibits all moose hunting under a Conservation Closure. The Province of Manitoba has recently reduced the

Concern and Issues	Details	How is this currently addressed?
		number of moose hunting licenses available in GHA 10 and GHA 15A.
Increasing Wolf Populations	• Wolf population on the rise due to following previously extirpated migrating Bison into the region. • Wolf predation to continue to lower at risk moose and caribou populations.	CCN is in talks with experts and the province on a potential wolf management plan that could include relocation or culls.
Declining Population of Furbearers	• Muskrats, martens, beavers, lynx, and wolverines have faced and continue to face population declines due to flooding and habitat degradation. • A lack of data and population uncertainty hinders informed conservation and management efforts.	Specific actions to be determined.
Declining Population of Waterfowl	• Historic flooding conditions and climate change has affected migratory patterns • Waterfowl are often caught in fishing nets.	Specific actions to be determined.
Habitat Disruption	• Habitats are being fragmented through forestry practices, road construction and community/infrastructure development, which causes concern for many species.	Riparian zone protection through buffer zones (working near water bodies standard operations procedure).
Historical Impacts of Flooding	• Extensive habitat disruption of Cedar Lake through flooding led to submerged landscape, shoreline erosion and debris, and altered water quality that is continuing to have lasting effects on the ecosystem.	Specific actions to be determined.

Concern and Issues	Details	How is this currently addressed?
Vegetation Clearing	• Trees and vegetation are being removed for development, which causes concern for vegetation coverage and habitat disruption. Vegetation plays an important role in the habitats of local wildlife, and poor forestry management and herbicide use is harming vegetation. • Damaged vegetation is less able to fill its role in protecting against shoreline erosion and improving water quality.	Right-of-way clearing project category in the Environmental Assessment Screening Form. Minimizing size of landings to reduce the clearing of residual trees and vegetation. Implemented and improved forestry practices and monitoring.
Traditional Medicines	• Concern for the availability and health of medicinal plants across the territory. • Noted decreases in amount of fireweed and red willow in the region	Specific actions to be determined.

4.1.2. Policy and Regulations

Table 5 outlines the relevant policies, legislation, and regulations on aquatic, plant, and wildlife species at local, provincial, and federal levels, providing guidance for environmental management.

Table 5. Policy and Regulations - Aquatic, Plant, and Wildlife Species

Jurisdiction	Policy and Regulations
CCN	*Comprehensive Forebay Agreement* prescribes the Cedar Lake RMB with regulating resource management and land use plans including prescribing areas of land or bodies of waters for purposes of regulating use and activities thereon, and recognizing and preserving areas of ecological, cultural or historical significance.
	CCN Forest Management and Operation Procedures provides policies aligned with habitat restoration and protection during forestry operations by protecting in-block drainage areas and understory growth through minimal disturbance guidelines.
Provincial	*The Water Protection Act* (*C.C.S.M. c. W65)* defines watercraft and control zone regulations to prevent AIS distribution and provides Tier II Water Quality Objective standards for pollutants under the *Manitoba Water Quality Standards, Objectives, and Guidelines*
	The Wildlife Act (C.C.S.M. c. W130) governs activities related to wildlife conservation and specifically addresses fur and fur-bearing harvest in the province. *Moose Conservation Closure Regulation 122/2011* under *The Wildlife Act* addresses declining moose populations by implementing hunting closures in specific Game Hunting Areas (GHAs) across Manitoba. A map of GHAs and moose conservation closures can be found in Map 05.
	The Endangered Species and Ecosystems Act (C.C.S.M. c. E111) protects and enhance the survival of endangered and threatened species. It is illegal to kill, harm, harass, capture, or interfere with these species or destroy their habitat.

	Forest Management and Operating Procedures (FMPOP) provides frameworks for sustainable forestry practices, replanting, and timber harvesting within traditional territories.
Federal	*Canadian Environmental Protection Act (S.C. 1999, c. 33)* includes regulations on the release of various pollutants into the environment.
	Species at Risk Act (S.C. 2002, c. 29) protects and enhance the survival of endangered and threatened species. It is illegal to kill, harm, harass, capture, or interfere with these species or destroy their habitat.
	Impact Assessment Act (S.C. 2019, c. 28, s. 1) requires consideration for adverse environmental impacts on surface waters, groundwater and soil prior to applicable land development activities.
	Sustainable Fisheries Framework (2009) implements local ecosystem specific fish stock monitoring policy.
	Migratory Bird Convention Act (S.C. 1994, c. 22) prohibits the discharge of oil, oil waste, or other harmful substances into waters or areas frequented by migratory birds
	Fisheries Act (*R.S.C., 1985, c. F-14)* prohibits the release of harmful substances into fish-bearing waters or water connected to fish-bearing waters. The Act protects all fish and fish habitats, prohibiting the harmful alteration, disruption, or destruction of fish habitat and prohibits the killing of fish by means other than fishing.

4.1.3. Management Goals and Management Actions

Environmental management goals and actions for aquatic, plant, and wildlife species are outlined in Table 6.

Table 6. Management Goals and Management Actions - Aquatic, Plant, and Wildlife Species

ID#	Management Goals (MG) and Management Actions (MA)
MG-SP-01	Protect, manage, and support the recovery of aquatic and terrestrial species of importance and/or at risk (such as sturgeon, medicines, moose, caribou, and various furbearers), their habitats, and other sensitive areas.
MA-SP-01A	Develop an Environmental Protection Law to protect species at risk, sensitive habitats, and to address concerns of lands and waters contamination. This can be done in conjunction with the Land Relations Plan.
MA-SP-01B	Develop a Conservation Plan to ensure the ongoing protection of species of importance, species at risk and sensitive lands.
MA-SP-01C	Conduct a vegetation survey, including tree coverage, to identify local plant species and medicines present within the Cedar Lake RMA, and reforestation needs, for integration into the Cedar Lake Resource Management Plan and develop a centralized system for storing and tracking monitoring data (species sightings, water samples, hazard reports, etc.).
MA-SP-01D	Identify aquatic and terrestrial species of importance and at risk, such as vegetation, fish, waterfowl, and mammals and assess their populations and their threats (eg. Habitat fragmentation, increased wolf predation, forestry, contaminants, etc.).
MA-SP-01E	Facilitate information-sharing initiatives between CCN, neighboring communities, and Province of Manitoba hunting authorities to regarding wildlife data.
MG-SP-02	Control and prevent the spread of invasive species.
MA-SP-02A	Conduct a study on invasive species, such as zebra mussels and jack pine budworm, to determine their presence and spread.

MA-SP-02B	**Develop an invasive species response strategy as part of the broader Conservation Plan, including a public information campaign.**
MG-SP-03	Support a healthy population of fish in Cedar Lake.
MA-SP-03A	Conduct a stock assessment of fish in Cedar Lake to ensure the continued health of the Cedar Lake Fishery.
MA-SP-03B	Create a platform for collecting and assessing aquatic and terrestrial species presence, sightings, and populations to inform monitoring and management.
MA-SP-03C	Conduct a background study on Manitoba Hydro's Coordinated Aquatics Monitoring Program (CAMP) water quality data in Cedar Lake and the related impacts on fisheries within the Lake.
MG-SP-04	Protect waterbodies and riparian areas that provide habitat for plant and animal species.
MA-SP-04B	Identify degraded natural landscapes—including areas affected by flooding, erosion, and at-risk riparian zones—and develop appropriate protection or restoration plans in alignment with the Land Relations Plan and government regulations.
MA-SP-04C	Monitor nutrient loading and blue-green algae growth in Cedar Lake and develop response strategies.

4.2. Waste and Wastewater Management:

Waste management includes the collection, transport, recovery, and disposal of waste. Solid waste is any trash or garbage produced from a number of sources that is non-hazardous including biodegradable and recyclable materials. Concerns include waste disposal grounds capacity, and improper waste disposal. Hazardous household waste includes any hazardous materials such as flammable liquids or batteries, generated by the household and contribute to improper disposal.

Waste Treatment includes wastewater, a polluted form of water that includes sewage. Wastewater can be generated from a variety of human activities, domestically from the household or from industry and development. Wastewater is also generated in the form of stormwater, the runoff mixture after heavy rain or snow. Common concerns are need for improved infrastructure to prevent land and water contamination and eutrophication.

4.2.1. Issues and Concerns

Issues and concerns related to waste and wastewater are outlined in Table 7 to inform environmental management.

Table 7. Issues and Concerns - Waste and Wastewater Management

Concern and Issues	Details	How is this currently addressed?
Overcapacity and non-compliance of Waste Disposal Ground (WDG)	• The WDG is overcapacity and poses a risk to the environment and to human health. • The WDG has been non-compliant with its operating permit since 1993.	Specific actions to be determined.
Waste Management Practices	• Sources show WDG's waste dumping environment has minimal material segregation which makes managing waste streams ineffective and increases contamination. • Hazardous construction and demolition waste is illegally disposed of as it requires specialized handling and disposal.	Proper disposal and handling methods are in the Community Development Plan.
Need for Improved Water Infrastructure	• Water treatment plan is currently operating 20% beyond its 20-year lifespan's capacity. • Outdated and failing equipment including malfunctioning pumps, leaky pipes and	Well replacement and rehabilitation, piped water expansion, wastewater system

Concern and Issues	Details	How is this currently addressed?
	faulty hydrants may lead to operational disruptions, water loss and increased maintenance costs. • Bedrock preventing piped infrastructure to Sewage lagoon for large portion of community as only 39% of homes are services by piped infrastructure.	upgrade locations being proposed. Wastewater for non-piped infrastructure is currently hauled in and out by truck. Multi-unit developments reduce piped water service costs.

4.2.2. Policy and Regulations

Table 8 outlines the relevant policies, legislation, and regulations on waste and wastewater at local, provincial, and federal levels, providing guidance for environmental management.

Table 8. Policy and Regulations - Waste and Wastewater Management

Jurisdiction	Policy and Regulations
CCN	*CCN Land Relations Plan* restricts development until adequate remediation has been achieved. See page 8
Provincial	*Public Health Act (C.C.S.M. c. P210)* regulates the operation and modification of various wastewater collection systems
	Environment Act (C.C.S.M. c. E125) mandates the assessment and licensing of wastewater generated through municipal and industrial developments
	Manitoba Water Quality Standards, Objectives, and Guidelines under *The Water Protection Act (C.C.S.M. c. W65)* Sets standards for wastewater in regards to total suspended solids (TSS), carbonaceous biochemical oxygen demand (CBOD), pathogens, ammonia, nutrients (nitrogen and phosphorus) and others. A site-specific assessment may result in more stringent effluent quality criteria or the inclusion of limits for other parameters
	The Waste Reduction and Prevention (WRAP) Act (C.C.S.M. c. W40) has requirements that support the reduction and prevention of waste in the province.

	Hazardous Waste Regulation, (M.R. 195/2015) establishes basic hazardous waste management standards for generators, carriers and receivers. The regulation ensures that hazardous waste is appropriately identified and handled safely to protect human health and the environment.
Federal	*Fisheries Act (R.S.C., 1985, c. F-14)* prohibits the discharge of harmful substances into fish-bearing waters or waterbodies connected to fish-bearing habitats
	Canadian Environmental Protection Act (S.C. 1999, c. 33) regulates the release of various pollutants into the environment.
	The Migratory Bird Convention Act (S.C. 1994, c.22) prohibits the discharge of oil, oil waste, or other harmful substances into waters or areas frequented by migratory birds
	The Impact Assessment Act (S.C. 2019, c. 28, s. 1) requires evaluating potential adverse environmental impacts from solid and hazardous waste before carrying out certain land development activities.
	Canada-wide Strategy for the Management of Municipal Wastewater Effluent (the Strategy) puts forward minimum National Performance Standards that address pollutants common to most wastewater discharges, and provides a mechanism to develop and manage site-specific Effluent Discharge Objectives.

4.2.3. Management Goals and Management Actions

Environmental management goals and actions for waste and wastewater management are outlined in Table 9.

Table 9. Management Goals and Management Actions - Waste and Wastewater Management

ID#	Management Goals (MG) and Management Actions (MA)
MG-WW-01	Protect drinking water sources.
MA-WW-01A	Develop a Source Water Protection Law to protect drinking water sources.
MA-WW-01B	Implement mitigation measures to ensure that development does not: Contribute pathogenic organisms, deleterious chemicals or nutrients to a drinking water source; or increase the turbidity of a drinking water source.
MA-WW-01C	Creation of a monitoring program for early identification of water contamination, and monitoring of water quality during development.
MA-WW-01D	Create a water system migration measures study and report that consider buffer zones, monitoring programs, chemical storage regulation, runoff controls, nutrient management plans, riparian planting, stormwater management, erosion controls, and incident response plans.
MG-WW-02	Improve drainage to minimize overland flooding.
MA-WW-02A	Identify high-risk areas for overland flooding
MA-WW-02B	Evaluate stormwater management solutions to mitigate flooding in identified high-risk areas.
MA-WW-02C	Develop and prioritize drainage improvement projects, such as culverts, retention ponds, or enhanced grading, to manage water flow effectively.

MG-WW-03	**Identify and remediate/restore hazardous lands and contaminated sites, including contaminated sites and former dumping areas.**
MA-WW-03A	Conduct site assessments and risk evaluations to identify hazard lands, assess contamination levels, and determine necessary remediation actions. Update the status of APECs in an online database.
MA-WW-03B	Develop a remediation strategy to prioritize and address soil remediation, waste removal, and strategies to restore affected sites.
MA-WW-03C	Integrate remediated areas into long-term land use plans and establish monitoring programs to prevent future contamination and ensure site stability.
MG-WW-04	Refine waste management program to better handle WDG overcapacity and community disposal non-compliance.
MA-WW-04A	Develop an Illegal Dumping and Spill Response Law.
MA-WW-04B	Develop a community waste awareness campaign that includes how to support households who may require help, including through public education
MA-WW-04C	Engage with province to develop or renew waste collections / mitigation agreement.
MG-WW-05	Ensure adequate water distribution and wastewater removal infrastructure and on-site services across the community.
MA-WW-05A	Develop an Operations and Maintenance Plan to ensure that CCN's piped services remain in a good state of repair.
MA-WW-05B	Within the Operations and Maintenance Plan, develop a strategy for long term waste reduction and the safe and efficient removal of waste and wastewater.

4.3. Cultural Heritage and Sacred Areas:

Cultural heritage refers to any place or object of aesthetic, architectural, historical, scientific, social or spiritual value or significance. Cultural heritage includes the practices, representations, expressions, knowledge, skills, as well as the instruments, objects, artifacts and cultural spaces that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. This section outlines the issues affecting cultural heritage and sacred areas, and provides a framework for protecting them through policy, education, and culturally informed land management.

4.3.1. Issues and Concerns

Issues and concerns for cultural heritage and sacred areas species are outlined in Table 10 to guide environmental management.

Table 10. Issues and Concerns - Cultural Heritage and Sacred Areas

Concern and Issues	Details	How is this currently addressed?
Risk of Disturbance during Development	• Construction activities pose threat to buried archaeological sites. • A significant challenge lies in the lack of comprehensive identification and documentation of cultural heritage sites within the CCN. This knowledge gap makes it difficult to accurately assess potential impacts during development planning and increases the risk of inadvertent disturbance or destruction. • Contractors and developers lack awareness and sensitivity regarding the importance of cultural heritage protection.	Forms include inquiry into cultural elements of land use to emphasize careful planning and assessment. No development should occur near heritage sites without community approval through a Ratification Vote.
Loss of Burial Records	• CCN's loss of burial records due to a fire has led to uncertainty about burial locations, which has led to difficulties in planning cemetery expansion and development.	Specific actions to be determined.
Sacred Site Contamination	• Old equipment, fuel, and items regularly left at the Old Post site. Gas and Oil found dumped at sacred sites by fishermen.	Specific actions to be determined.

4.3.2. Policy and Regulations

Table 11 outlines the relevant policies, legislation, and regulations on cultural heritage and sacred areas at local, provincial, and federal levels, providing guidance for environmental management.

Table 11. Policy and Regulation – Cultural Heritage and Sacred Areas.

Jurisdiction	Policy and Regulations
CCN	*Chemawawin Cree Nation Land Code* includes provisions for the protection of heritage sites.
	Land Relations Plan outlines the mapping and registration of cultural sites.
Provincial	*Heritage Resources Act (C.C.S.M. c. H39.1)* requires permits for activities that could affect heritage sites, including excavation, alteration, disturbance of human remains outside of cemeteries
Federal	*Impact Assessment Act (S.C. 2019, c. 28, s. 1)* requires the integration of Indigenous knowledge and considerations of adverse environmental impacts on the biophysical environment and resources, cultural and heritage resources, and Indigenous cultural practices and rights prior to applicable land development activities.
	Fisheries Act (R.S.C., 1985, c. F-14) was amended in 2019 to provide new provisions and stronger protections to support the sustainability of fisheries for future generations. The new Act provides protection for all fish and fish habitat, requires that Indigenous knowledge that is provided informs habitat decisions, and provides increased focus on habitat restoration and rebuilding fish stocks.
	Species at Risk Act (S.C. 2002, c. 29) identifies species at risk and prohibits harm, harassment and capturing of any listed species as well as damage to or destruction of their residence and critical habitat, as identified in species recovery plans.

	Impact Assessment Act (S.C. 2019, c. 28, s. 1) provides protections on physical and cultural heritage, use of lands and resources for traditional purposes, or anything of historical, archaeological, paleontological, or architectural significance to an indigenous group, their culture, or their knowledge.

4.3.3. Management Goals and Management Actions

Environmental management goals and actions for cultural heritage and sacred areas are outlined in Table 12.

Table 12. Management Goals and Management Actions - Cultural Heritage and Sacred Areas.

ID#	Management Goals (MG) and Management Actions (MA)
MG-CH-01	Assess the cumulative effects of past activities, including: • The forced relocation of CCN to Easterville • The Grand Rapids Hydroelectric Development Project • The 2019 Canadian Kraft Paper Industries Mill spill • Direct psychosocial impacts to the community • The connection to land, water, spirituality, and the physical environment.
MA-CH-01A	Engage with Elders and Knowledge Keepers to gain understanding of the relationship to the land in the past and present.
MA-CH-01B	Enhance programming and activities throughout CCN that promotes connections to the land, water, and culture.
MA-CH-01C	Seek opportunities for funding to support the assessment of cumulative effects of past activities.
MG-CH-02	Protect sacred sites, burials, and cultural use areas.
MA-CH-02A	Develop a Cultural and Natural Heritage Protection Law and a Trespassing Law.

MA-CH-02B	Identify, map, and register important cultural and heritage sites in the community to ensure these areas are protected from activities that may cause damage, harm, or disturbance. Identified sites should be registered using a Public Interest Application.
MA-CH-02C	Create buffers such as trees, bushes, and other landscaping features around important cultural areas to protect them from potentially conflicting adjacent development.
MA-CH-02D	Integrate sacred site protections into land use policies and procedures.
MA-CH-02E	Establish a cultural monitoring protocol for development activities where Elders have an opportunity to participate in site assessments to ensure protocols are respected.
MA-CH-02F	Conduct a community education and awareness campaign to raise awareness and importance of sacred sites.
MG-CH-03	Remediate sacred sites.
MA-CH-03A	Conduct environmental site assessments to identify contamination levels, sources, and required remediation measures at sacred sites such as Old Post.
MA-CH03B	Establish and enforce policies to prevent future dumping, including designated disposal areas, community education, and stricter monitoring of activities at Old Post.
MG-CH-04	Celebrate and enhance cultural areas in CNN.
MA-CH-04A	Connect important cultural areas to the community through wayfinding measures (e.g. signage, “gateways”, etc.) and through accessible active transportation networks (e.g. walking paths, bike trails, etc.).
MA-CH-04B	Enhance public areas with landscaping, signage, public art, and programming, as is appropriate to the site.

4.4. Environmental Emergencies:

Environmental emergencies—such as wildfires, floods, and spills—pose increasing risks to the health and safety of CCN, especially as climate change intensifies the frequency and severity of these events. These emergencies can damage infrastructure, disrupt traditional land use, and threaten community well-being. Environmental emergencies regard sudden on-set disasters or incidents resulting from natural, technological or human- induced factors that cause or are likely to cause significant environmental damage or loss. This section focuses on understanding the risks, strengthening emergency preparedness, and developing proactive strategies to build resilience through community planning, capacity-building, and intergovernmental collaboration.

4.4.1. Issues and Concerns

Issues and concerns related to environmental emergencies are outlined in Table 13 to inform environmental management.

Table 13: Issues and Concerns - Environmental Emergencies

Concern and Issues	Details	How is this currently addressed?
Wildfires	• The frequency and intensity of wildfires is increasing, with forestry operations, debris burning practices, and climate change acting as potential ignition sources. • There are insufficient fire suppression resources. • Post fire forest fragmentation is a major source of habitat disruption and limits wildlife.	Forest Fire Preparedness through community Emergency Preparedness Plan. Implemented and improved fire management practices.
Climate Change: Impacts on water resources, traditional practices, and forests	• Climate change will exacerbate existing water resource challenges. Warmer temperatures and altered precipitation patterns could further impact water levels, quality, and availability. • Forest health and composition will be impacted by altering growing conditions, increasing susceptibility of trees to diseases and pests and shifting tree distribution.	Forestry operations within CCN to adhere to FMPOP.

Concern and Issues	Details	How is this currently addressed?
Climate Change: Extreme weather events and increased precipitation	• Changing precipitation patterns heightens the risk of flooding, drought, and extreme weather patterns which would negatively impact water quality and overall ecosystem health.	RMA plan currently in development includes a climate risk assessment.
Climate Change: Impact on Wildlife	• Disruption of traditional hunting, trapping, and fishing practices due to historical flooding and ongoing climate change impacts.	Specific actions to be determined.

4.4.2. Policy and Regulations

Table 14 outlines the relevant policies, legislation, and regulations on environmental emergencies at local, provincial, and federal levels, providing guidance for environmental management.

Table 14: Policy and Regulations - Environmental Emergencies

Jurisdiction	Policy and Regulations
CCN	*Land Relations Plan* includes a provision for addressing environmental emergencies such as accidental spills, to ensure response in a safe and timely manner
Provincial	*The Environment Act (C.C.S.M. c. E125)* regulates when emergency environmental action may need to be taken.
Federal	*Emergency Management Act (S.C. 2007, c. 15)* outlines federal responsibilities for managing emergencies.
	Canada Water Act (R.S.C., 1985, c. C-11) provides a framework for collaboration among federal, provincial, and territorial governments on water resource management.
	Canadian Environmental Protection Act (S.C. 1999, c. 33) - *Environmental Emergency Regulations* Requires emergency response plans and aim to improve industry's capacity to manage environmental emergencies at facilities. Owners or operators handling listed substances must submit an environmental emergency plan to Environment Canada and report any spills.
	Impact Assessment Act (S.C. 2019, c. 28, s. 1) requires consideration of Canada's climate change obligations and commitments and assess how proposed development projects may be affected by climate change.

4.4.3. Management Goals and Management Actions

Environmental management goals and actions for environmental emergencies are outlined in Table 15.

Table 155: Management Goals and Management Actions - Environmental Emergencies

ID#	Management Goals (MG) and Management Actions (MA)
MG-EE-01	Improve environmental emergency preparedness.
MA-EE-01A	Conduct a climate risk assessment to understand the impacts of climate change on flora, fauna, lands, and residents of CCN, and to inform key indicators for regular climate monitoring.
MA-EE-01B	Create an Environmental Emergencies Response Plan with response protocols and training opportunities
MA-EE-01C	Coordinate with external agencies and partners through relationship building and mutual aid agreements to increase preparedness
MG-EE-02	Increase resiliency of forests and reduce wildfire potential.
MA-EE-02A	Conduct a review of historic forest fires in the Cedar Lake RMA to determine areas burned, state of regrowth, management needs, and areas of concern.
MA-EE-02B	Develop and implement a forest management strategy that incorporates climate adaptation, controlled burns, and fire resilient tree planting, engaging with the NFMC.
MG-EE-03	Increase wildfire preparedness amongst residents.
MA-EE-03A	Conduct a fire suppression resources assessment to determine community wildfire preparedness and needs.
MA-EE-03B	Create an education campaign with resources for dispersion amongst community members and hold community engagement session(s) on wildlife preparedness.
MG-EE-04	Build capacity in climate change adaptation.
MA-EE-04AA	Update development guidelines to integrate climate considerations into land-use planning.
MA-EE-04B	Enable climate change resilience through traditional knowledge, food sovereignty initiatives, and land-based practices.

MA-EE-04C	Promote low-carbon and sustainable energy practices.

4.5. Land and Waters Contamination:

Contamination refers to the presence or release of harmful substances into the environment—whether through spills, leaks, dumping, emissions, or improper disposal. These substances can move through soil, water, or air and may pose risks to the environment, public health, and community safety. Contamination may occur above or below ground and includes any activity that introduces hazardous materials in ways that violate environmental standards or threaten ecosystem and human well-being.

4.5.1. Issues and Concerns

Issues and concerns related to land and waters contamination are outlined in Table 16 to guide environmental management.

Table 16: Issues and Concerns - Land and Waters Contamination

Concern and Issues	Details	How is this currently addressed?
Areas of Potential Environmental Concern (APEC)	• Several APECs have not been remediated, causing concern for further contamination.	APECs are remediated on an on-going basis.
Water Pollution and Contamination	• Major sources of contamination include Industrial pollution from Kraft Paper mill spill in 2019, wastewater lagoon capacity and nutrient loading, and WDG overcapacity. • The Kraft black liquor spill in 2019 continues to cause concern for the health of Cedar Lake and the aquatic species within. • Fishermen dumping garbage, fish processing waste, and leaving nets in the water while working.	Kraft was fined under the *Fisheries Act (R.S.C., 1985, c. F-14)*. No specified actions on clean-up have been identified. Riparian zone protection through buffer zones (working near water bodies standard operations procedure).

Concern and Issues	Details	How is this currently addressed?
Soil Erosion and Sedimentation	• Forestry practices contribute to unstable soils, and soil rutting and puddling from heavy equipment. • Implications of this are water quality degradation, infrastructure damage (clogging culverts and drainage ditches) and loss of soil productivity for agricultural yields.	Specific actions to be determined.
Fuel, Oil, and Antifreeze Storage and Releases	• Fishermen have been noted to dump oil and gas in the waters and shorelines, and sometimes at sacred areas. • Multiple APECs (APEC-A, 1, 22, and 23) are highlighted as sources of fuel and oil contamination. • These forms of contamination threaten the health of the soils, waters, wildlife, and the community members they come into contact with.	Spill response procedures through EMSP.
Pesticide/Herbicide Impacts	• Heavy glyphosate uses from forestry and agricultural activities that require special licensing have potential to cause heavy damage to soils, habitats, plants and wildlife.	Specific actions to be determined.
Improper Waste Disposal	• Fish waste is noted to be disposed of in Cedar Lake. • Garbage such as tires, bikes, and boat equipment, has been dumped in Cedar Lake and on the shorelines. Fishermen are also leaving their nets in the water. • Households are dumping their waste grease into their yards.	Specific actions to be determined.

4.5.2. Policy and Regulations

Table 17 outlines the relevant policies, legislation, and regulations on contamination of land and waters at local, provincial, and federal levels, providing guidance for environmental management.

Table 17: Policy and Regulations - Land and Waster Contamination

Jurisdiction	Policy and Regulations
CCN	*Chemawawin Cree Nation Land Code* grants the Council the power to make laws regarding environmental assessment and protection including the regulation and control of activities that could lead to land and water contamination.
	Land Relations Plan provides a framework for land use, development, and environmental protection on CCN lands. See page 8
Provincial	*Environmental Accident Reporting Regulation* under the *Dangerous Goods Handling and Transportation Act (C.C.S.M. c. D12)* defines when to report environmental accidents concerning dangerous goods.
	Water Protection Act (C.C.S.M. c. W65) outlines the importance of high-quality water in sustaining all ecological processes, life-support systems and food production, and is paramount to the environmental, economic and social well-being of Manitoba
Federal	*Fisheries Act (R.S.C., 1985, c. F-14)* prohibits the release of harmful substances into fish-bearing waters or waters connected to fish-bearing habitats.
	Canadian Environmental Protection Act (S.C. 1999, c. 33) regulates the release of various pollutants into the environment.

	Migratory Bird Convention Act (*S.C. 1994, c. 22)* Prohibits the discharge of oil, oil waste, or other harmful substances into waters or areas frequented by migratory birds.
	Impact Assessment Act (S.C. 2019, c. 28, s. 1) requires consideration of adverse environmental impacts on surface waters, groundwater, and soil before conducting applicable land development activities.
	Canadian Council of Ministers of the Environment (CCME) Canadian Soil Quality Guidelines (CSQGs) provide science-based targets for the quality of aquatic and terrestrial ecosystems.
	CCME Canada-Wide Standards (CWS) for Petroleum Hydrocarbons (PHCs; Tier 1 Levels for CL/IL and RL/PL land uses) establish remedial standards for soil and subsoil to protect human and environmental health.

4.5.3. Management Goals and Management Actions

Environmental management goals and actions for land and waters contamination are outlined in Table 18.

Table 18. Management Goals and Management Actions - Land and Waters Contamination

ID#	Management Goals (MG) and Management Actions (MA)
MG-LW-01	Protect groundwater and aquifers.
MA-LW-01A	Develop a Water Protection Law and groundwater protections standards that conform to and enhance the *Waters Protections Act*.
MA-LW-01B	Identify, map, and store aquifer data for the RMA.
MA-LW-01C	Implement groundwater's protections changes within CCN's development processes and advocate to ensure groundwater's protections are implemented by those who operate within the RMA.
MG-LW-03	Expedite remediation of contaminated sites.

MA-LW-03	Draft and implement a Contaminant Remediation and Prevention Plan and establish clear protocols to effectively respond to and remediate accidental spills and contamination events.
MA-LW-03B	Develop a centralized system for storing and tracking monitoring data (species sightings, water samples, hazard reports, etc.), and track contamination incidents to inform remediation and potential sources.
MA-LW-03C	Equip and train responders to respond to contamination incidents and spills.
MG-LW-04	Protect against contamination on land and in waterbodies.
MA-LW-04A	Monitor water quality in Cedar Lake (eg. Water entering from the Saskatchewan River) to identify changes and/or potential contaminants.
MA-LW-04B	Assess current levels of waste on land and identify locations to inform remediation needs.
MA-LW-04C	Develop educational materials regarding proper disposal of wastes such fuel, oil, fishing waste, household waste and other contaminated materials. Identify enforcement mechanisms to encourage proper waste disposal.
MG-LW-05	Protect Cedar Lake against soil erosion.
MA-LW-05A	Identify and prioritize high-risk areas and activities to guide restoration planning.
MA-LW-05B	Develop a shoreline restoration and remediation plan to support the rehabilitation of shorelines, and remediate the impacts from previous erosion.

4.6. Land Use Management:

Land development involves altering the natural landscape through activities such as grading, excavation, construction, habitat clearing, and paving. These changes may include the movement of soil or the installation of surfaces that prevent water absorption, like roads or buildings. While land development supports essential community needs—providing space for housing, infrastructure, and recreation—it can also impact ecosystems, water flow, and cultural sites if not carefully managed. For CCN, this applies to works completed by members, CCN government projects, and/or third-party developers. Existing infrastructure in CCN is shown in Map 06.

4.6.1. Issues and Concerns

Issues and concerns related to land use management are outlined in Table 19 to inform environmental management.

Table 19. Issues and Concerns - Land Use Management.

Concern and Issues	Details	How is this currently addressed?
Limited Implementation of Land Management Processes	• Land Relations Plan (LRP) lacks enforcement mechanisms. • A critical gap between planning and implementation exists. • Outdated records and unexecuted land registration processes reveal areas for crucial improvement • Limited information on APEC remediation status which can continue to do harm as contaminated sites.	LRP implementation and Land Registry Updates.
Overland Drainage Issues	• Increased development may lead to concerns about overland drainage which may increase costs and place restrictions on development. • Poor drainage can lead to increased surface runoff, carrying pollutants and sediments into water bodies	LRP implementation – flooding risks mitigation strategies.

Concern and Issues	Details	How is this currently addressed?
Population Growth and Development Pressure	• Population growth puts strain on areas that are already of concern, cause water supply and quality issues, push the WDG over capacity, increase demand on infrastructure, and push the wastewater lagoon over capacity.	LRP implementation – Sustainable Development Practices.
Chemawawin 3 Leaseholds lack land use management and monitoring.	• Lack of specific leasehold regulations, monitoring and enforcement mechanisms, and environmental protection measures.	No specified action. Implicit potential direction from the LRP.

4.6.2. Policy and Regulations

Table 20 outlines the relevant policies, legislation, and regulations on land use at local, provincial, and federal levels, providing guidance for environmental management.

Table 20. Policy and Regulations - Land Use Management.

Jurisdiction	Policy and Regulations
CCN	*Chemawawin Land Code* outlines the management of CCN land.
	Land Relations Plan provides a framework for land use, development, and environmental protection on CCN lands.
Provincial	*Heritage Resources Act (C.C.S.M. c. H39.1)* requires permits for activities affecting heritage lands.
	Comprehensive Forebay Agreement prescribes the Cedar Lake RMB with regulating resource management and land use plans including prescribing areas of land or bodies of waters for purposes of regulating use and activities thereon, and recognizing and preserving areas of ecological, cultural or historical significance.
Federal	*Fisheries Act (R.S.C., 1985, c. F-14)* Protects all fish and fish habitats, prohibiting the harmful alteration, disruption, or destruction of fish habitat.
	Species at Risk Act (S.C. 2002, c. 29) identifies species at risk and prohibits harming, harassing, or capturing listed species. It also protects their residences and critical habitats as identified in species recovery plans.
	Impact Assessment Act S.C. 2019, c. 28, s. 1 requires consideration of potential adverse environmental impacts and associated assessments before conducting land development activities specified in the Act
	First Nations Land Management Act (S.C. 1999, c. 24) enables First Nations to develop their own laws about land use, the environment and natural resources, and take advantage of cultural and economic development opportunities

4.6.3. Management Goals and Management Actions

Environmental management goals and actions for land use are outlined in Table 21.

Table 21. Management Goals and Management Actions - Land Use Management.

ID#	Management Goals (MG) and Management Actions (MA)
MG-LU-01	Protect wildlife from the impacts of land use management activities.
MA-LU-01A	Collect data and local knowledge on wildlife and species-at-risk population data collection and to identify frequent wildlife road crossing areas and gather concerns about land use interactions with wildlife.
MA-LU-01B	Incorporate mitigation measures to protect wildlife in future land use planning, such as through the creation of wildlife corridors.
MG-LU-02	Increase resiliency against flooding and storm events.
MA-LU-02A	Asses soil composition and drainage capacity by conducting a geotechnical assessment of the soil types in the community and assess drainage of infrastructure and built environments.
MA-LU-02B	Undertake community flood mapping through historical flood data, climate projections, and elevation models to determine areas prone to overland flooding, water pooling, or groundwater upwelling.
MA-LU-02C	Create a drainage strategy to improve drainage in both natural and built environments.
MA-LU-02D	Develop sewage lagoon buffering standards for adequate development buffering.

MG-LU-03	Sustainably manage housing developments in relation to population growth.
MA-LU-03A	Identify housing priorities and pressing issues.
MA-LU-03B	Conduct a population and development projection study needs to accurately assess housing needs and current capacity.
MA-LU-03C	Create a housing strategy to inform housing and community development.
MA-LU-03D	Determine and create a retainer list of providers offering technical expertise.
MA-LU-03E	Develop leasehold regulations, monitoring and enforcement mechanisms, and environmental protection measures for Chemawawin 3
MG-LU-04	Reduce environmental impacts of infrastructural developments
MA-LU-04B	Conduct a review of the Environmental Assessment Process and identify gaps. Develop subsequent Environmental Assessment Process and associated Land Law(s) to support the Environmental Protection regime.
MA-LU-04C	Create a database for development applications, process, mitigation measures and lands records database with archival and current data.
MA-LU-04D	Establish cooperation agreements with the Province of Manitoba to promote sustainable development practices.
MA-LU-04E	Identify gaps in current lands monitoring processes and develop enforcement mechanisms.
MA-LU-04F	Create and implement a guide to sustainable development for applicants
MA-LU-04H	Develop a Planning, Development, and Servicing Law.

5. Glossary of Terms

AIS: Aquatic Invasive Species

APEC: Areas of Potential Environmental Concern

CAMP: Coordinated Aquatic Monitoring Program

CCME: Canadian Council of Ministers of the Environment

CCN: Chemawawin Cree Nation

CLCP: Cedar Lake Community Program

COSEWIC: Committee on the Status of Endangered Wildlife in Canada

CSQGs: Canadian Soil Quality Guidelines

CWS: Canada-Wide Standards

EMP: Environmental Management Plan

EMSP: Environmental Management Systems Procedures

ESA: Environmental Site Assessments

FMPOP: Forest Management and Operating Procedures

GHA: Game Hunting Area

HCV: High Conservation Value

IBA: Important Bird Areas

LAC: Lands Advisory Committee

LABRC: First Nations Land Management Resource Centre

LRP: Land Relations Plan

PHC: Petroleum Hydrocarbons

RMA: Resource Management Area

RMB: Resource Management Board

RTL: Registered Trapline Area

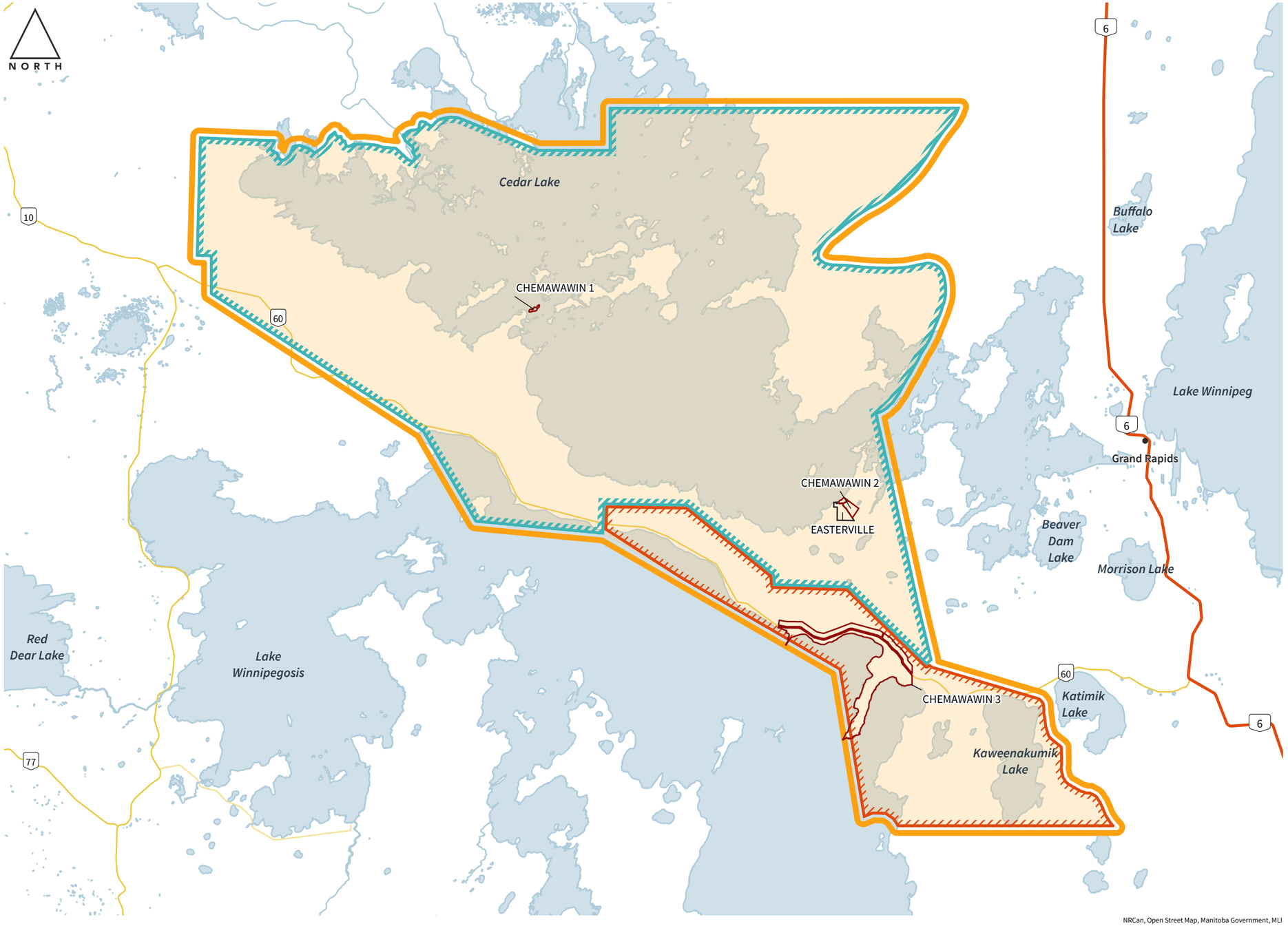
WDG: Waste Disposal Grounds

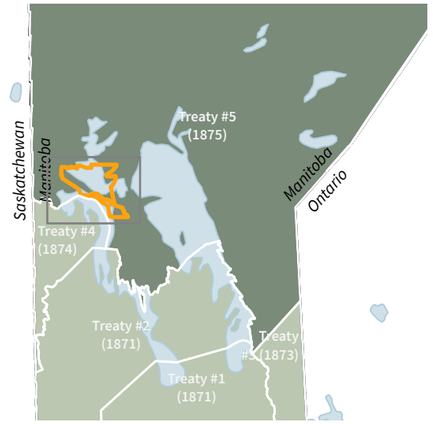
6. Revision History

Document Version	Date of Revision	Name or Editor	Summary of Revisions Made
1	August 6, 2025	Heather Webb	Updates based on LABRC comments.
2	October 29, 2025	Heather Webb	Updates based on LABRC comments.

Additional Notes:

Maps





LEGEND

EMP Planning Area

- Cedar Lake Resource Management Area
- Cedar Camp Registered Trapline Area
- Chemawawin Cree Nation
- Community of Easterville

Road

- Provincial Trunk Highway
- Provincial Highway
- Provincial Road

Waterbody

Watercourse

0 2.5 5 10 15 20 km

NAD 1983 UTM Zone 14N 1:500,000

NRCan, Open Street Map, Manitoba Government, MLI

Chemawawin Cree Nation

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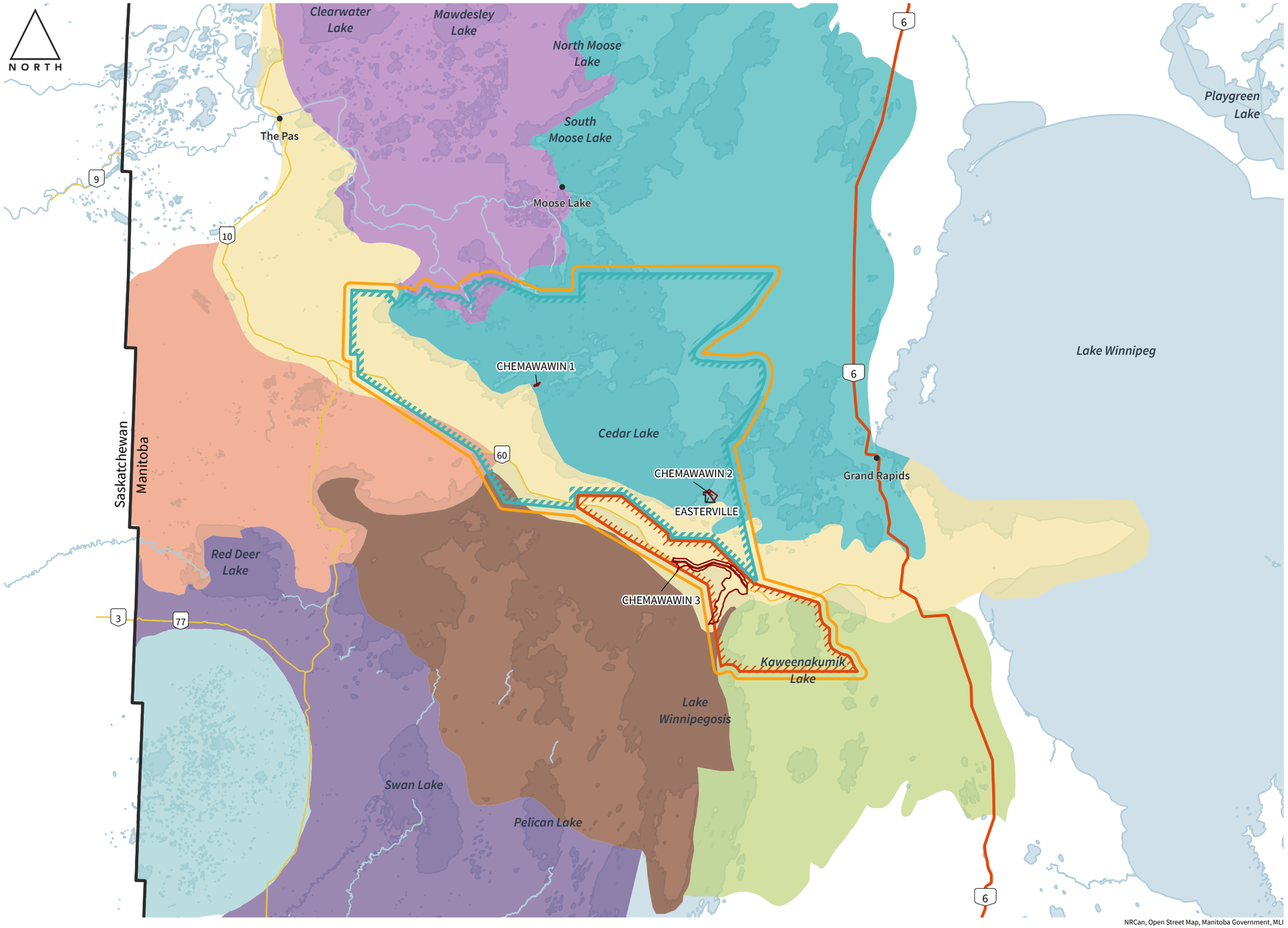
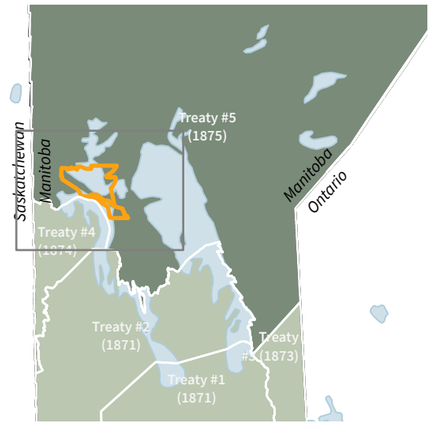
Map 01 - Environmental Management Plan Planning Area





LEGEND

EMP Planning Area

- Cedar Lake Resource Management Area
- Cedar Camp Registered Trapline Area
- Chemawawin Cree Nation
- Community of Easterville

Mid-Boreal Lowland Ecoregion

- 666 - Cedar Lake Ecodistrict
- 667 - Summerberry Ecodistrict
- 668 - The Pas Moraine Ecodistrict
- 672 - Overflowing River Ecodistrict
- 674 - Pelican Lake Ecodistrict
- 675 - Chitek Lake Ecodistrict
- 714 - Porcupine Hills Ecodistrict
- 717 - Swan Lake Ecodistrict

0 5 10 20 30 40 km

NAD 1983 UTM Zone 14N 1:900,000

NRCan, Open Street Map, Manitoba Government, MLI

Map 02: Ecoregion and Ecodistricts

Chemawawin Cree Nation

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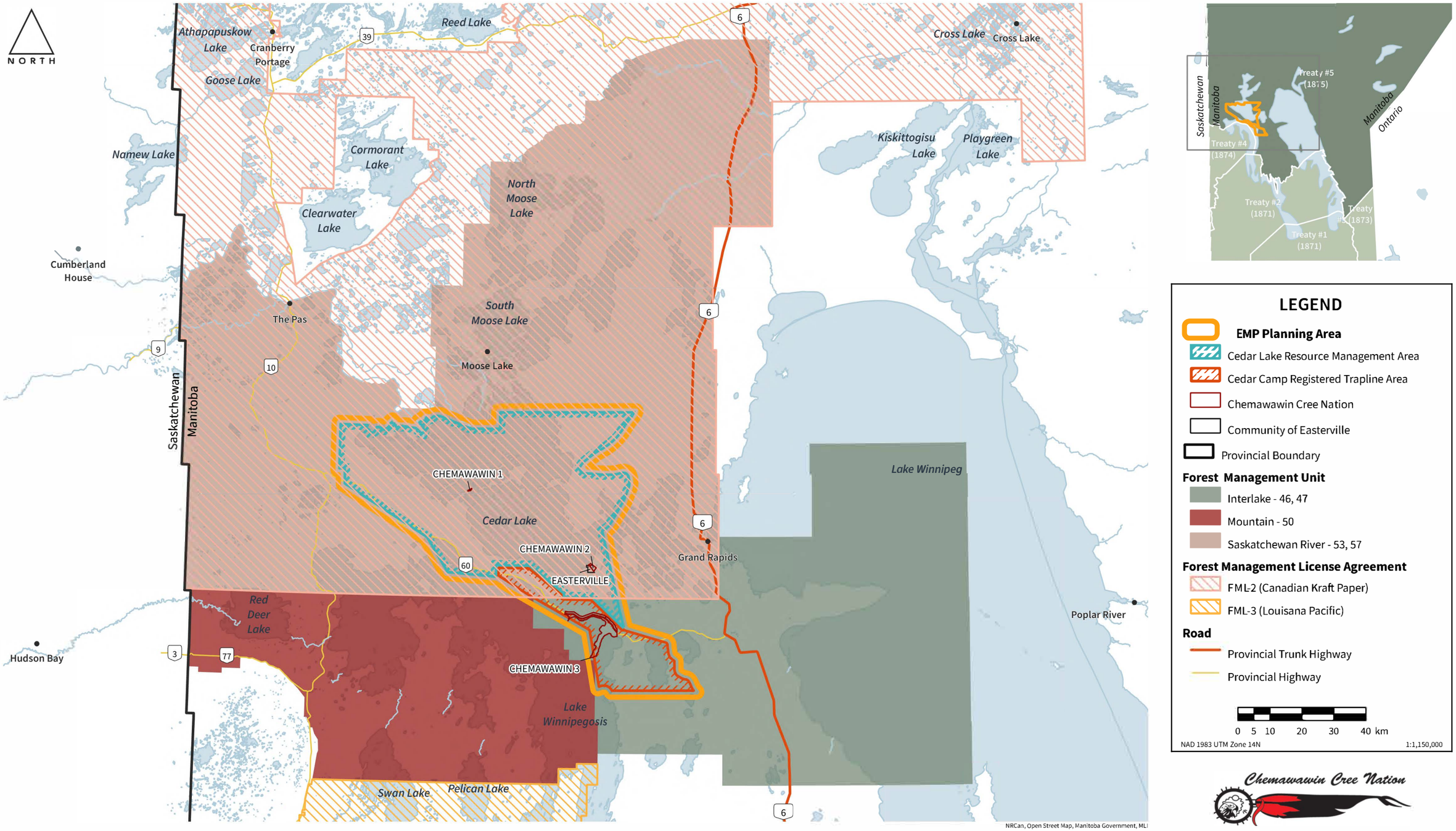

Map 03: Forest Management Units and License Agreement Areas

Chemawawin Cree Nation

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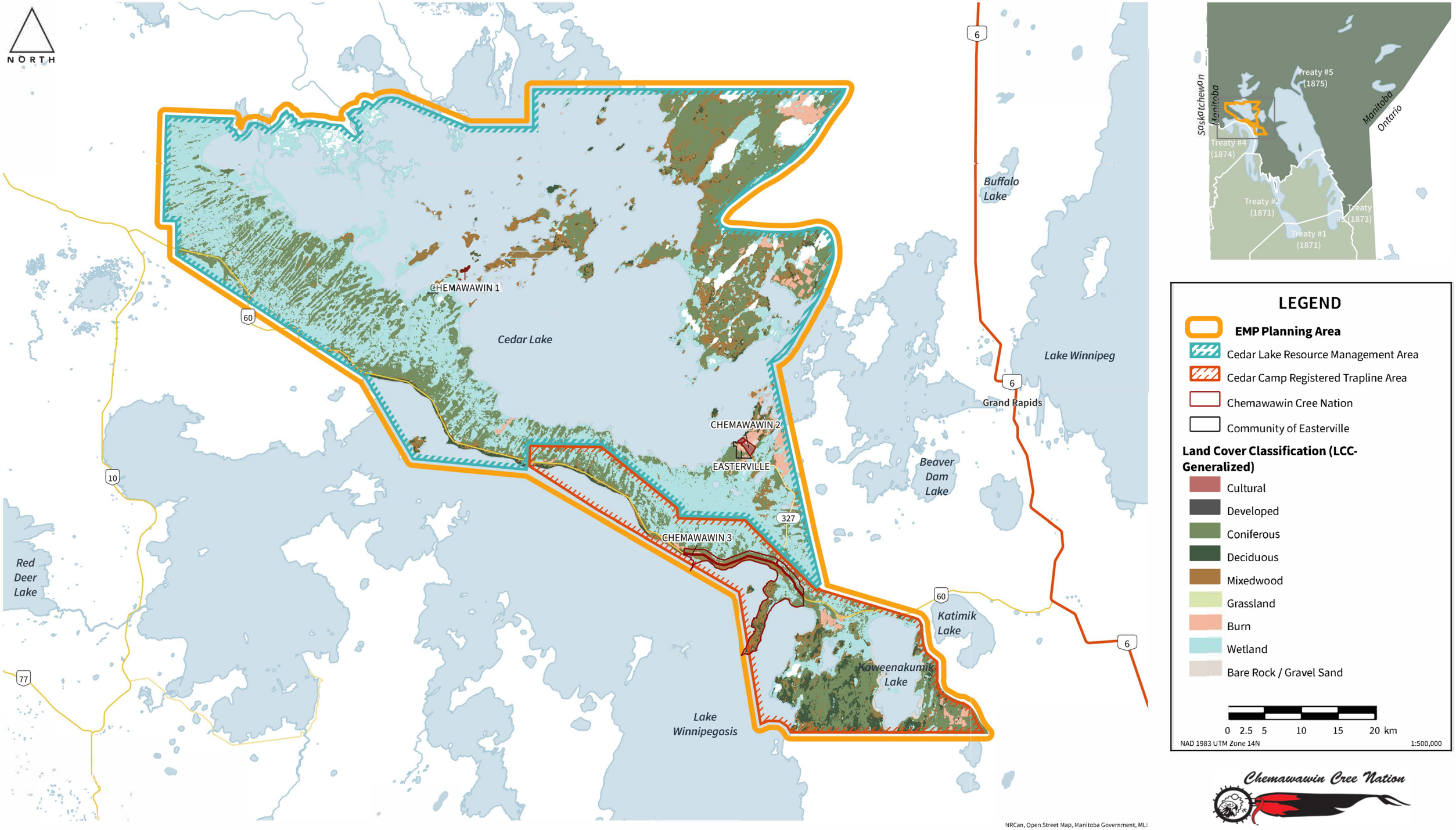

Map 04: Land Cover Classifications

Chemawawin Cree Nation

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NORTH

GHA 8

GHA 10

GHA 11

GHA 14

GHA 15A

Cedar Lake

Buffalo Lake

Lake Winnipeg

Red Deer Lake

Lake Winnipegosis

Beaver Dam Lake

Katimik Lake

Kaweenakumik Lake

CHEMAWAWIN 1

CHEMAWAWIN 2

CHEMAWAWIN 3

EASTERVILLE

Grand Rapids

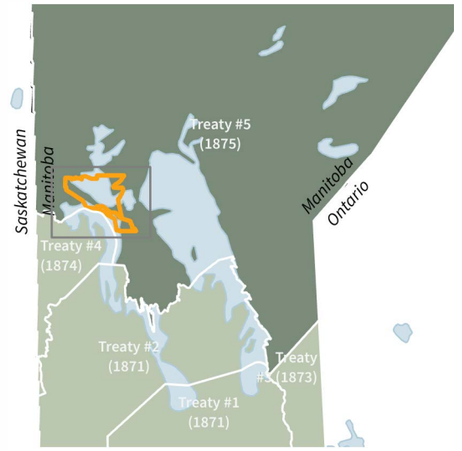
6

60

10

77

327



LEGEND

EMP Planning Aea

- Cedar Lake Resource Management Area
- Cedar Camp Registered Trapline Area
- Chemawawin Cree Nation
- Community of Easterville

Wildlife Management Areas

- Red Deer Wildlife Management Area

Game Hunting Area (GHA)

- GHA 8
- GHA 10
- GHA 11
- GHA 14
- GHA 15A
- Moose Conservation Closure (2022)

0 5 10 20 30 km

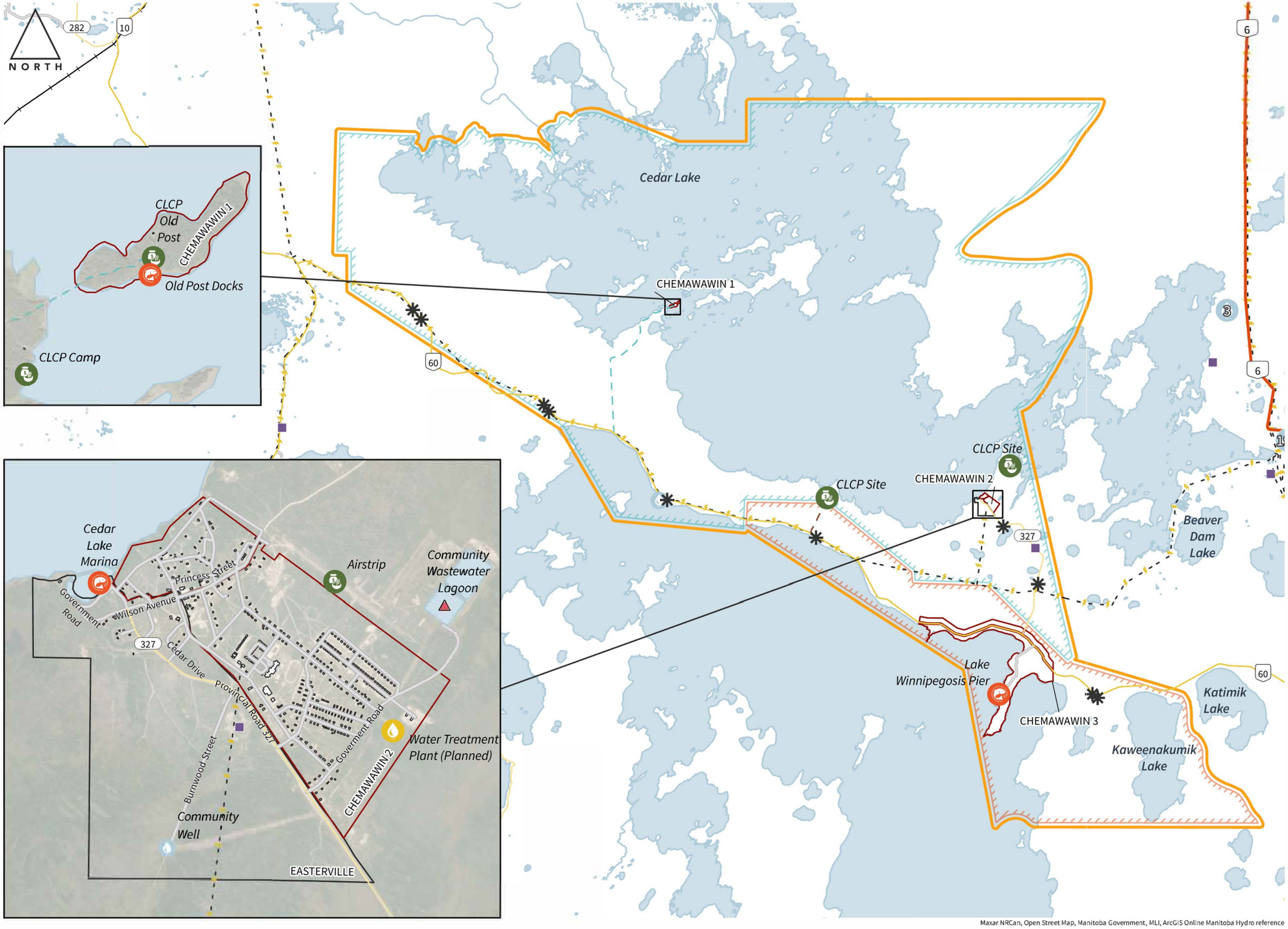
NAD 1983 UTM Zone 14N 1:500,000

NRCan, Open Street Map, Manitoba Government, MLI

Chemawawin Cree Nation

narratives

Map 05: Game Hunting Areas and Wildlife Management Areas



Maxar NRCan, Open Street Map, Manitoba Government, MLI, ArcGIS Online Manitoba Hydro reference

Chemawawin Cree Nation

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Map 06: Existing Infrastructure