

Environmental Management Plan

Version 1.0
September 24, 2019



Shawanaga First Nation

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Cover artwork by: Wilmer Misquadis, Community Member.



Glossary

Areas of Potential Environmental Concern (APECs)

The area on, in, or under a property where one or more contaminants are potentially present, as determined through the phase one environmental site assessment. This is defined under *Ontario Regulation 153/04* of the Environmental Protection Act.

Best Management Practices (BMPs)

A method or technique, or series of methods and techniques, found to be the most effective and practicable means in achieving an objective (e.g., preventing pollution, protecting wildlife) while making optimum use of resources.

Canadian Environmental Assessment Act, 2012

This act, which is administered by the Canadian Environmental Assessment Agency (CEAA), the Canadian Nuclear Safety Commission and the National Energy Board (NEB), focuses on major projects and their environmental effects on areas of federal jurisdiction and as a result of federal decisions associated with a project.

Canadian Environmental Protection Act, 1999

This act, which is administered by Environment and Climate Change Canada (ECCC), is part of Canada's broader legislative framework aimed at preventing pollution and protecting the environment and human health.

Capital Planning Study (CPS)

A study to assess and budget resources for the future of an organization's long-term plans. For a community, this might include assessing current community infrastructure systems, and budgeting for new roadways, housing lots and community buildings.

Crown-Indigenous Relations and Northern Affairs Canada

One of two departments of the government of Canada with responsibilities relating to Aboriginal peoples in Canada, including the First Nations, Inuit, and Métis.

Economic Development Plan (EDP)

A comprehensive and detailed plan that identifies the existing and future economic development opportunities within a community, and where and how the development should occur.



Environmental Assessment (EA)

The process by which the anticipated effects on the environment of a proposed development or project are measured. If the likely effects are unacceptable, design measures or other relevant mitigation measures can be taken to reduce or avoid these effects.

Environmental Management Plan (EMP)

An operational manual to be used by a community or organization to manage activities that have the potential to impact the environment and health of people on their lands.

Environmental Remediation

Environmental remediation refers to the removal and/or risk management of pollution or contaminants from environmental media such as soil, groundwater, sediment, or surface water.

Environmental Site Assessment (ESA)

An investigation to determine the environmental condition of property at a given time and any environmental liabilities for the property holder or a prospective buyer/lessor.

Environmental Stewardship

The responsible use and protection of the natural environment, by all those whose actions affect the environment, through conservation and sustainable practices.

Environmental Stewardship Guidelines and Strategies (ESGs)

A set of step-by-step instructions based on identified community values that describes the activities necessary to complete tasks in compliance with environmental and industry regulations, provincial/federal laws, and an organization's performance and efficiency standards.

First Nation Land Management Act (FNLMA)

This was enacted by Canada in 1999 to ratify and bring into effect the Framework Agreement on First Nation Land Management.

Fisheries Act

This act contains two key provisions on the conservation and protection of fish habitat essential to sustaining freshwater and marine fish species. The Department of Fisheries and Oceans (DFO) administers section 35, which states *"No person shall carry on any work, undertaking or activity that results in serious harm to fish that are part of a commercial, recreational or Aboriginal fishery, or to fish that support such a fishery."* Environment and Climate Change Canada administers section 36 of the Act, which prohibits the deposit of deleterious substances of any kind in water



frequented by fish or on the shore, beach, or bank of any water or on the beach between high and low water marks.

Framework Agreement on First Nations Land Management (Framework Agreement)

The purpose of the Framework Agreement was to recognize the inherent right of First Nations to control their lands and resources without government interference. The Framework Agreement (signed in 1996; amended December 13, 2018), ratified by Canada through the First Nations Land Management Act in 1999, enables participating First Nations to opt out of land management sections of the Indian Act to establish their own land codes to manage reserve lands and resources.

Groundwater

Water that is found below ground in the soil or in pores and crevices in rock.

Indigenous Services Canada

One of two departments of the government of Canada with responsibilities relating to Aboriginal peoples in Canada, including the First Nations, Inuit, and Métis.

Land Use Plan (LUP)

A plan made up of various disciplines (i.e., housing, waste management, current/future developments) that efficiently assesses the use of lands and resources in a particular community, according to their goals for social, economic and environmental developments and makes recommendations for the future use of land, based on community, environmental, and economic considerations..

Petroleum Hydrocarbons (PHCs)

The name given to a very broad range of chemicals that comprise oil and products refined from oil, such as gasoline and diesel.

Potentially Contaminating Activity (PCA)

A use or activity that is occurring or has occurred in the study area that may cause contamination (e.g., to soil and groundwater).

Shawanaga First Nation Land Code (The Land Code)

This Land Code was developed pursuant to the Framework Agreement on First Nation Land Management and the First Nation Land Management Act (FNLMA). Under this code, Shawanaga



First Nation Council is responsible to develop laws related to the development, conservation, protection, management, and administration of our lands. Our Land Code is tailored to reflect our beliefs, customs, traditions, and expectations. Our land code provides increased protection for reserve lands and unconditionally recognizes our rights, powers, and privileges of managing our lands.

Soil

Substrate that includes clay, silt, sand, gravel, cobbles, boulders, or peat.

Soil Management

An integral part of land management that focuses on differences in soil types and soil characteristics to define specific interventions that are aimed to enhance the soil quality for the land use selected.

Species at Risk (SAR)

A plant or animal species listed as extirpated, endangered, threatened, or special concern.

Species at Risk Act (SARA)

This Act is a key federal government commitment to prevent wildlife species from becoming extinct and secure the necessary actions for their recovery. It provides legal protection of wildlife species, their habitat, and the conservation of their biological diversity on federal lands or areas under federal jurisdiction. The Act also provides for the recovery of SAR and encourages the management of other species to prevent them from becoming at risk.

Standard Operating Procedure (SOP)

A set of step-by-step instructions compiled by an organization to help workers carry out routine operations. SOPs aim to achieve efficiency, quality output, and uniformity of performance, while reducing miscommunication and failure to comply with industry regulations.

Stormwater

Large quantities of surface water runoff resulting from heavy rainfalls or snow melt.

Stormwater Management

Management practices help to minimize the impact of stormwater runoff flowing into lakes and streams, and reduce the strain that stormwater places on infrastructure.



Surface Water

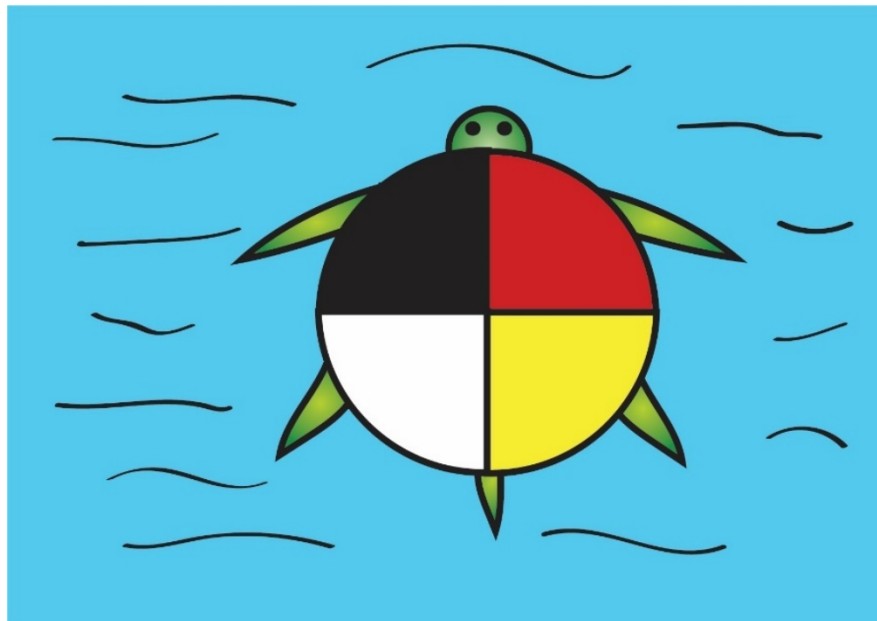
Surface water refers to water flowing across or accumulating on the ground surface, as a result of precipitation processes (e.g., rainfall, snowmelt) or groundwater coming to the surface. As water accumulates on a surface, it begins to flow towards surface water bodies such as creeks, streams, lakes, ditches, or installed storm sewer systems or reservoirs.

Valued Environmental Components

Aspects of the natural and human environment that are considered to have traditional, scientific, ecological, economic, social, cultural, archaeological, historical or other importance, that may have the potential to be affected by a project or development, and its activities. They provide the foundation for this EMP.

Wastewater

Used water discharged from homes, businesses, industries, commercial activities and institutions which is directed to treatment plants. Wastewater can include sewage, and other household, commercial waters.



Artwork by: Carissa Geroux Pawis, Community Member.



1.0 Introduction

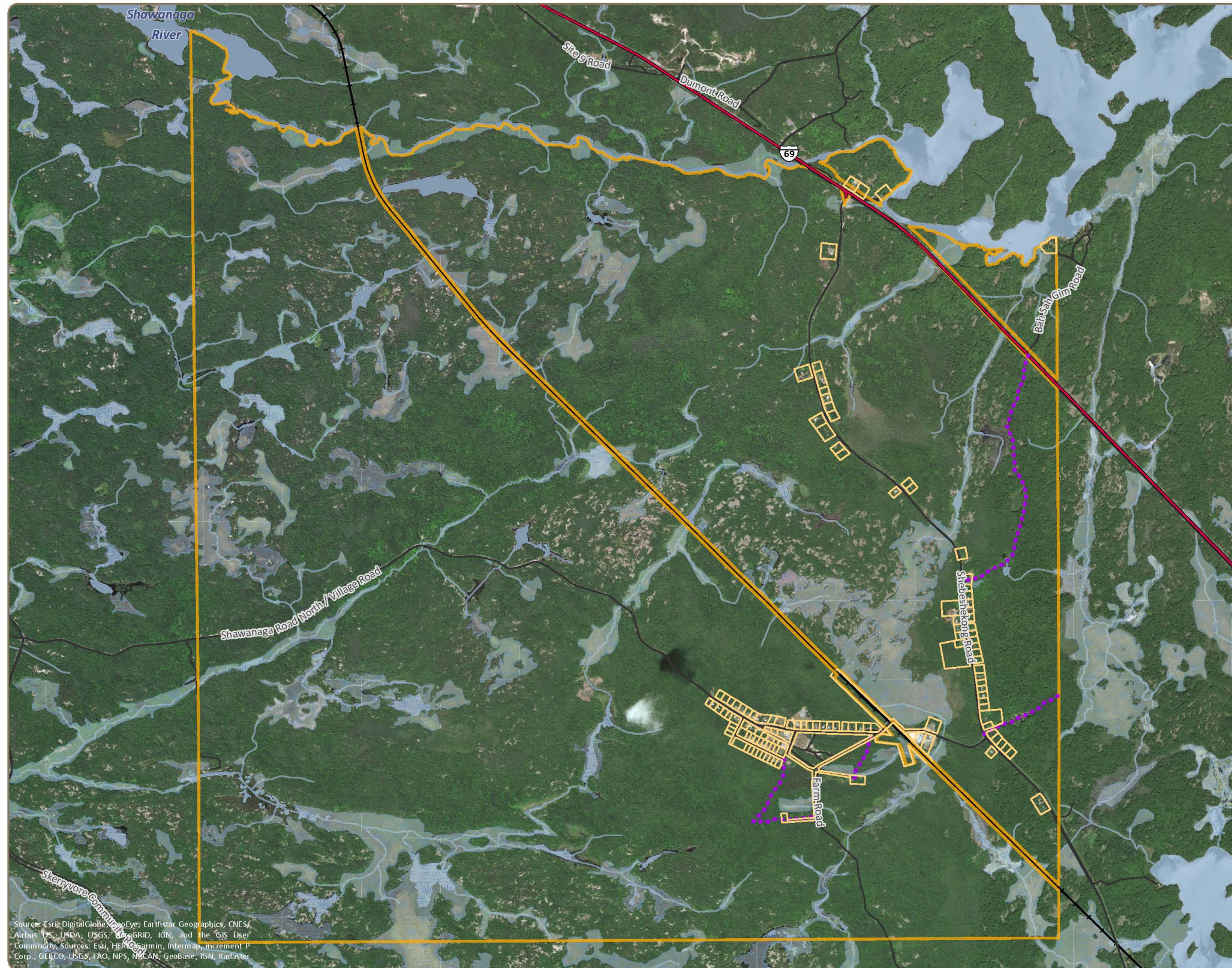
Our Environmental Management Plan (EMP) identifies environmental issues and concerns on our surveyed reserve lands and provides community-based strategies and guidance to manage each in a way that encompasses the rights, interests, and values of our community members. Our EMP aims to support economic growth and development on First Nation surveyed reserve lands, in a way that underscores the importance of environmental protection and sustainability. Our EMP is guided by the principles of the Anishinabe Nationhood, as outlined in the Constitution of Shawanaga First Nation. Indigenous knowledge, braided with science, have been used to develop the strategies and guidelines that form the basis of our EMP, which will ultimately serve to manage environmental issues, with seven generations in mind. The EMP is intended to support requirements of our Shawanaga Land Code (2017), under the Framework Agreement.

Shawanaga First Nation is located in Ontario at Latitude: 45.517 and Longitude: -80.284. The community is approximately 30 kilometres northwest of Parry Sound and approximately 150 kilometres southeast of Sudbury (Figure 1). The traditional territory of Shawanaga is bordered by the Seguin River to the south, the Magnetawan River to the north and extending to Georgian Bay (including the 30,000 islands) and east to the Ottawa valley. Shawanaga First Nation is comprised of three separate parcels of surveyed reserve land: Shawanaga (No. 17), Shawanaga Landing (No. 17B), and Naiscoutaing (No. 17A).





Figure 1: Shawanaga First Nation Location and Reserve Parcels

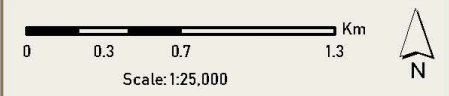


**SHAWANAGA FIRST NATION
LAND USE PLAN 2019
Map 2: Aerial Plan
Shawanaga Reserve No. 17**

- Shawanaga Surveyed Reserve Boundary
 - Surveyed Plots
 - Trails
 - Highway
- Map Features**
- Major Road
 - Local Road
 - Railway
 - Rivers
 - Lakes
 - Wetlands



This map depicts basic infrastructure and base features for Shawanaga First Nation for planning purposes. This map may not be reproduced without the express written consent of Shawanaga First Nation.



Data sources: Land Information Ontario, Shawanaga First Nation

Spatial Reference
Name: NAD 1983 UTM Zone 17N
Datum: North American 1983
Projection: Transverse Mercator

Date: July 30, 2019

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster

Figure 2: Shawanaga First Nation Aerial Plan – Shawanaga Reserve No. 17

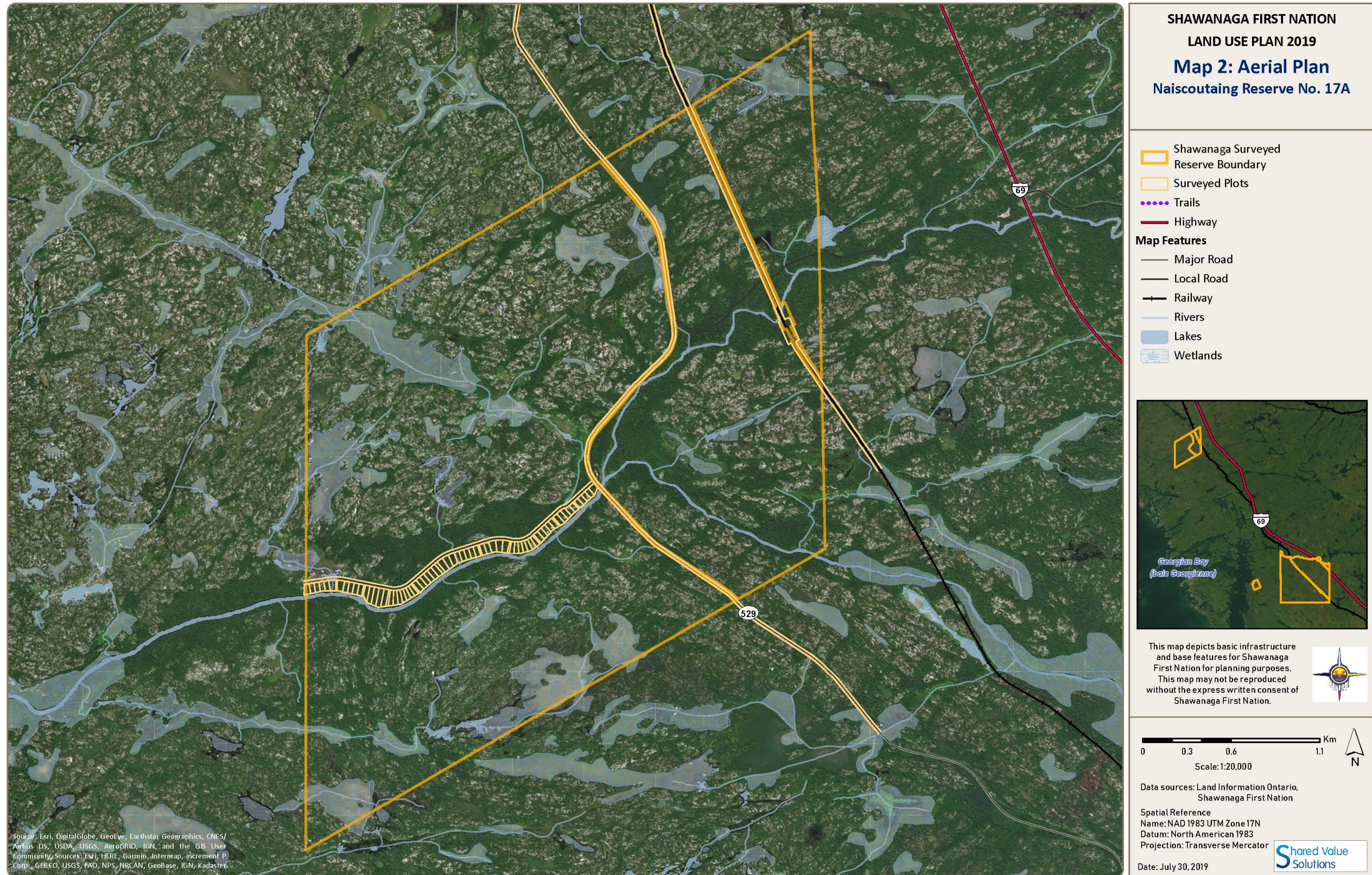


Figure 3: Shawanaga First Nation Location Aerial Plan – Naiscoutaing Reserve No. 17A



Figure 4: Shawanaga First Nation Aerial Plan – Shawanaga Reserve No. 17B (Shawanaga Landing)

1.1 Who We Are: Worldview, Cultural Teachings and History

1.1.1 Commitment to Our Role as Stewards of the Earth

Our community has a long history of believing in the Creator who put us here. We were given gifts of the lands, waters, and the air we breathe. It is up to us to keep these gifts as they were given. We take this very seriously and our children are taught this.

The lands give us the plants and animals which give us a variety of meats, grains, berries, and our greens. It also provides us with natural medicines which we are relearning. We protect these by taking only what we need, so that others may use them and to leave some for the future. With advances in technology and development, we are taking precautions to not destroy what we use from the land. This would mean to plan where, when, how, and who uses the lands. Some of us are now making gardens to grow our different vegetables. We are now protecting our trees because they provide us with heat for our homes, shade for those hot summers, and provide us with fresh air.

The waters are also very important to us. We are concerned about drinking water. Within our community, we have to truck in water to our pump house. With no water there is no building of new houses, no new housing—no opportunities for families to grow or stay, and off-reserve families cannot come home.

The lakes and rivers also provide us with different kinds of fish, which we harvest in summer as well as winter. Many members go to our Landing for camping and fishing on Georgian Bay in the summer time. Fish is one of our main sources of food. We are home to a world class walleye fishery. The water keeps our gardens growing, as well as our wildlife, our trees, and our children.

1.1.2 Cultural Teachings

Shawanaga First Nation belongs to the larger Anishinabe Nation, which stretches across much of Ontario, east across the Prairies and around the northern shores of all the Great Lakes. The teachings and principles included here underpin and inform our decision-making and way of life, as Anishinabe.

1.1.2.1 Seven Grandfather Teachings

- **Humility – Dbaadendiziwin:** To be humble about your accomplishments is to be strong
- **Bravery – Aakwa'ode'ewin:** Let nothing stand in the way of doing the right thing
- **Honesty – Gwekwaadziwin:** Better to fail with honesty than succeed by fraud
- **Wisdom – Nbwaakaawin:** With hard work and dedication will come knowledge
- **Truth – Debwewin:** It is always easiest to speak the truth
- **Respect – Mnaadendimowin:** Give it, earn it, and receive it
- **Love – Zaagidwin:** It is important to care for one another



Artwork by: Destiny Geroux Pawis, Community Member.



1.1.2.2 Principles of Anishinabe Nationhood

- Belief** We the original people know the Creator is one.
That, in the beginning, he created the four colours of man.
That he gave a place for each colour on four parts of earth.
That Anishinabe was placed here in North America.
We are the people indigenous to this land.
- Faith** By the Great Spirit are we so endowed.
The rights, responsibilities and aboriginal title given
By the Creator cannot be denied or given up by us
Or taken away by any other nation.
- Truth** As we have in the past, so do we now,
And must continue into the future, to exercise these rights
And fulfill the responsibilities and obligations for the land
Upon which we were placed, for our aboriginal rights,
And for this Anishinabe way of life.
- Gifts of Life** The Creator gave us the gift of this Anishinabe life.
He gave us our spiritual beliefs, our language, our traditions
And a place on Mother Earth which provided us with our needs.
We have maintained our way of life, our freedom,
Our language and our traditions
From the beginning...from time immemorial.
- Honour/Respect for Life** The Great Spirit instructed us to honour all of life
And to respect the creation.
He gave us laws that govern all our relationships
To live in harmony with creation and with mankind
We are spiritually and culturally obliged
To have in our interest the total well-being
Of this earth, this creation, and the people.



Knowledge	<p>The laws of the Creator, that have been given from the beginning That have been learned through the ages and passed down to us Define our rights, responsibilities and our way of living As Anishinabe living in community and within the creation. Ga-iji-mi-nigo-izit Anishinabe: Our aboriginal rights. The Creator has given us the right, and the means, To govern ourselves and to effect self-determination.</p>
Strength	<p>We are a sovereign people. The Anishinabe nation is a sovereign first nation. That sovereignty is directly endowed by the Great Spirit. Our sovereignty is guaranteed as long as we Adhere to the principles of Anishinabe life, Uphold our Aboriginal rights, And respect and care for the earth and the creation.</p>

1.1.3 History

Since time immemorial, our ancestors ranged from the Seguin River to the south, the Magnetawan River to the north, west to Georgian Bay (including the 30,000 islands) and east to the Ottawa valley. Anishinabe traded fish, furs and other goods with other Anishinabe peoples, as well as with the Wendat to the south and the Cree to the north. Trade routes brought copper from the west and shells from the east. Leaders met together to maintain peace and alliances. Contact with Europeans in the 1600s expanded our established trading systems to include furs and other goods.

By 1760, after the Seven Year's War, Britain had control over much of what they called British North America. But the indigenous nations sought affirmations and assurances of peace and fair trade, which led to the Royal Proclamation of 1763. The intent of the proclamation was to set out guidelines for European settlement of territories across Turtle Island (North America). It states that Aboriginal title exists and that all land would be considered Aboriginal land until ceded by treaty. Settlers could not claim land from indigenous occupants unless it was bought by the Crown and sold to the settlers. Indigenous nations insist that this Proclamation is still valid since no law has overturned it, yet First Nations continue to have to fight for and prove Aboriginal title and rights and insist on consultation and accommodation.

A significant meeting between the English Crown and the indigenous nations of the western Great Lakes in Niagara in 1764 created what came to be called The Covenant Chain. The symbolism of the chain (with the three links of respect, trust and friendship) is that the Crown would hold one end and the indigenous people would hold the other end. The English Crown, represented by Sir William Johnson, presented a massive wampum belt, which symbolized and solidified the agreement and relationship. The Anishinabe became the keepers of the wampum belt, read and renewed each year on Manitoulin Island.

In the 1840s around Lake Huron, the government sold 'mining locations' to individuals with ties to the government. They began burning forest and blasting rock. In 1848, a delegation of Chiefs went to Montreal to petition the Governor General and complain about this situation. A Royal Commission showed that the land did indeed belong to the indigenous inhabitants and a treaty would be required to sell any more land to settlers.

William Robinson was named Treaty Commissioner in 1850 and he travelled along Lake Huron to negotiate what would be called the Robinson Huron Treaty. This treaty was intended to be an economic arrangement, with the following promises made by the Crown:

- Reserve lands to be held by the Ojibway people, unsundered, to use 'for their own use and benefit'
- Cash payment at time of treaty
- Ojibway people would retain the right to hunt and fish on all Crown land, all unoccupied private land and in the water
- Perpetual annuity linked to the profits the Province made from the land

Shawanaga's Chief, Muckata Mishioguet signed the treaty, though not when other First Nations in the area signed. It was signed two weeks later, at Penetanguishene, with neighbouring First Nation, Wasauksing. There were many flaws in the Treaty, which is why Shawanaga First Nation continues to fight for respect, recognition and redress. These flaws include:

- The treaty commissioner's secretary mistakenly understood the Ojibway word *tibadagun* to mean miles, when the Chiefs defined it as leagues. Leagues are approximately three times as long as miles. There are major differences in what the Chiefs expected, what was described in the Treaty document and what was actually surveyed.



- Annuities did not increase after the 1880s and what was supposed to be meaningful support has become a symbolic pittance.
- Chiefs understood that fishing included fisheries; but fishing licenses were given to non-Ojibway commercial fishermen who overfished the lake and collapsed the fish stocks. Chief Solomon James of Shawanaga sent a letter to the provincial government in 1862 demanding an exclusive right of fishery from Shawanaga to Parry Sound, but his request was ignored.
- Provincial laws after 1890 restricted Ojibway hunting, despite treaty promises. Until the 1980's, federal and provincial laws superseded treaty rights.

In 1905, a rail line was built through the community and 100 acres of Shawanaga First Nation reserve lands was sold to CP Rail. A 100-year lease was signed between Shawanaga and CP Rail for the rail right-of-way but no new lease has been signed since 2005. In the early 1950s, Highway No. 69 was built through the northeastern edge of Shawanaga First Nation. The Province of Ontario is currently in the process of expanding and re-routing this highway.

1.2 EMP Vision, Goals, Objectives, and Scope

As stated in Shawanaga First Nation's Land Law 2017/18-003, enacted under section 7 and subsection 9.2 of the *Shawanaga First Nation Land Code*, we have a profound connection with the land that is rooted in respect for the spiritual value of the Earth and the gifts of the Creator. We have a deep desire to preserve our relationship with the Land, and to live in harmony with nature and humankind. It is our right and responsibility to be equal partners with the Crown in the control and management of the land, which forms the basis of our core values for lands management.

1.2.1 Vision

We wish for Shawanaga First Nation to grow economically and physically while upholding our responsibility to protect, exercise, and develop the cultural, spiritual and social nature of the Anishinabe Way of Life, which includes preserving the land's natural resources and the natural beings that inhabit the land for the next seven generations to come.

Our community's vision is as follows:

Shawanaga First Nation is a strong, independent, progressive First Nation – a community united through cultural identity, language, tradition, self-governance, self-determination, and respect for one another and for all people. Shawanaga is home, where togetherness means all members and neighbours help one another and work to build a self-sustaining and well-developed community.

As Shawanaga First Nation we have a profound relationship with the land that is rooted in respect for the spiritual value of the Earth and the gifts of the Creator. Our people are stewards of the land, water, animals and the Ojibway language; we have maintained our freedom, our languages, and our traditions from time immemorial. As a community we will enable and assist our elders to pass down teachings to the youth and support a strong future, sense of belonging, and purpose, now and for future generations.

1.2.2 Goals

It is our cultural and spiritual obligation to have, in our best interest, the total well-being of the earth, the creation, and the people. The goal of our EMP is to identify environmental issues of concern to Shawanaga First Nation and provide the necessary information for our community to respond to these issues while considering our cultural and spiritual obligations and providing the support necessary for economic growth and development on our First Nation surveyed reserve lands.

1.2.3 Objectives

Our EMP will:

- Identify and describe the key environmental issues that Shawanaga First Nation faces
- Outline the core environmental values and priorities within our community
- Identify how external factors, such as climate change and proximity to transportation routes, may affect our valued environmental components
- Provide a protocol for identifying potential and emerging environmental issues that could impact our lands and waters



- Provide a clear procedural mechanism to identify how valued environmental components can be protected by upholding our core environmental values and priorities for the next seven generations to come
- Provide a clear procedural mechanism by which potential and emerging environmental issues on Shawanaga First Nation's lands and waters can be mitigated and managed

1.2.4 Scope

Our EMP is intended to serve as an operational guide that will assist our administration, land managers, and Chief and Council in managing and evaluating activities and policies that may impact our lands and waters and the natural resources found within. It provides key information for each of our environmental issues and concerns, including best management practices and relevant provincial and federal legislation, which will assist us in developing relevant land laws that best serve and balance our community's interests. In addition, it provides ideas for community initiatives that will help instill our values in the youth of today, allowing for the stewardship of these environmental issues and concerns to be carried forward for the next seven generations to come.

Our EMP applies to all three parcels of our surveyed reserve land: Shawanaga (No. 17), Shawanaga Landing (No. 17B), and Naiscoutaing (No. 17A). Although the intent of this EMP is to focus on addressing environmental issues that occur within these reserve lands, some impacts originating outside of these parcel boundaries may be discussed, with recommendations provided on how to address such issues as they relate to on-reserve impacts.

Our EMP is a dynamic, living document that is intended to be amended, updated, and expanded as our community also grows and shifts with time. Although it is based on the current environmental conditions of Shawanaga First Nation and the community's current evaluation of environmental issues and concerns, it is designed to be updated to reflect changes to our community and any new environmental issues that may arise.

1.3 Development of the EMP

A community-driven approach was imperative for the development of our EMP to ensure that it aligns with the unique interests and needs of Shawanaga First Nation. To identify specific environmental issues that are of top concern for our community members, and to assist in

developing individualized strategies and initiatives that reflect our community's unique interests, the tasks outlined below were completed.

We worked with Shared Value Solutions (SVS) to conduct key knowledge holder interviews, within the community, between June 11-13, 2018. The following individuals were interviewed:

- Tobias McQuabbie, Lands Manager
- Adam Good, Band Manager
- Joel Pamjewon, Public Works
- Jonas Pawis, Water Plant Manager (included plant tour)
- Curtis Assance, Economic Development Officer
- Lisa Newman, Health Centre Executive Director
- Tammy Sweezey, Housing Director / Ontario Works Administrator
- Jodi Baker, Healing Centre Cultural Coordinator
- Morris Pawis, Elder

A phone interview was completed on June 21, 2018 with Deanna Jones Keeshig, Community Member.

Tobias McQuabbie provided team members with a tour of the Shawanaga First Nation reserve lands on June 12 and 13, 2018.

Working with SVS, a presentation to our Shawanaga First Nation Lands Committee was delivered on June 13, 2018 to introduce the project and share information.

The following reports and background documents were reviewed:

- Ministry of the Environment, Conservation and Parks (MECP) Water Well Record Database. Accessed June 2018.
- Shawanaga First Nation Land Code, 2017.



- Final Report, Assessment of Aquifers Test Well Investigation GWP 5163-10-00 Highway 7182 Reconstruction Hydrogeological Assessment Study, Shawanaga First Nation, Ontario. Morrison Hershfield, February 2, 2016.
- Phase I Environmental Site Assessment – Final Draft Land Code Requirement, Shawanaga First Nation, Ontario. S. Burnett & Associates Limited, February 17, 2015.
- Administration Office Renovations – Indoor Air/Ergonomics, Shawanaga First Nation. Environmental Public Health Services Sudbury Health Centre First Nations & Inuit Health - Health Canada, May 22, 2013.
- Ontario First Nations Technical Services Corporation Housing Inspection Report, May 9, 2013.
- Project Management Summary Report Emergency Diesel Fuel Spill Clean-Up Shawanaga First Nation, Ontario. S. Burnett & Associates Ltd., November 19, 2012.
- Environmental Remediation, Verification, Analysis and Restoration, Shawanaga First Nation Administration Building, 2 Village Road, RR#1 Nobel, Ontario. BAE Environmental, November 8, 2012.
- Traditional Use Study of the MTO Occupied Land for the Shawanaga First Nation, A Socioeconomic Assessment. ENVIRON International Corporation. July 23, 2012.
- Testmark Laboratories Ltd – Analytical Report – 10/30/12 – Treated Water.
- Amendment to Environmental Compliance Approval – 6838-4WKNU4, May 29, 2012.
- Administration Office Renovations – Indoor Air/Ergonomics, Shawanaga First Nation. Environmental Public Health Services, Sudbury Health Centre, First Nations & Inuit Health - Health Canada. October 12, 2011.
- Shawanaga First Nation Capital Planning Study – Final Draft Report. First Nations Engineering Services LTD., November, 2010.
- Amendment to Provisional Certificate of Approval Waste Disposal Site Number 6838-4WKNU4 Notice No. 1 Issue Date: September 17, 2008.



- Amended Provisional Certificate of Approval Waste Disposal Site Number 6838-4WKNU4, January 26, 2002.
- Shawanaga First Nation Phase III Environmental Investigation, Shawanaga Landing (Marina Site). The LATHEM Group Inc., April, 1998.
- Phase III Environmental Issues Inventory Shawanaga First Nation Final Report. The LATHEM Group Inc., March, 1997.
- Phase II Environmental Issues Inventory Shawanaga First Nation Final Report. The LATHEM Group Inc., March, 1995.
- Shawanaga First Nation Ojibway Territory – Constitution, 1993.

A meeting was held with our Shawanaga First Nation Lands Committee for a second time on August 2, 2018 and a short memo report was provided, outlining a preliminary list of identified environmental issues and concerns to be addressed in the plan. This list was refined further through community and Lands Committee input and engagement.

We distributed a survey to members throughout August and September of 2018. In total, 51 Shawanaga First Nation community members participated in the survey. The survey was distributed through various means in order to be inclusive of all members living both on and off the surveyed reserve. Specifically, surveys were distributed electronically, paper copies were made available in the band office and the Planning Coordinator scheduled home visits with members to help them fill out surveys.

During the Shawanaga First Nation Pow Wow that was held on August 18, 2018, we set up an information booth for community members. The purpose of the booth was to discuss the Shawanaga First Nation EMP and to further collect community input into the Plan.

We held two focus groups with our community members. One focus group was conducted with Shawanaga Youth on October 2, 2018 and one focus group was held with Shawanaga Elders on October 3, 2018. Participants were briefed on the EMP project, and its process, and then a series of questions were posed to the groups. The focus group questions were developed to obtain input from youth and elders on the environmental issues and concerns as identified by the community.

An introductory planning workshop was also conducted with one class at the elementary school on October 3, 2018, that focused on building an understanding of the planning process, and what it means for the community. These youth were then provided an opportunity to develop their own vision of Shawanaga First Nation through an exercise that consisted of drawing pictures of their specific vision.

A community wide Project kick-off meeting was held on October 3, 2018. Approximately 25 Shawanaga First Nation community members attended this meeting. The overall objective of this meeting was to formally introduce our Shawanaga First Nation EMP project and to gather initial input and feedback from our community members on their environmental concerns.

Two contests relating to the EMP were held throughout the planning process. The contests consist of a logo contest and a photo contest. In order to establish a branding for the Shawanaga Environmental Management Plan, we encouraged community members to design and submit a logo. Overall, members of the community submitted 15 logos and the Lands and Resources Department judged the entries and selected the top three winners. We have presented the winning logos throughout this Plan. A photo contest was also held in order to further engage our community members in the planning process. Members were asked to submit photos of the Shawanaga landscape, as well as photos of members being out and enjoying the land. These photos are featured in this Plan and provide value added visuals. Overall, 79 photos were submitted in the contest and the winners were selected by a random draw.



2.0 User Guide

Our EMP is intended for Shawanaga First Nation environmental managers, planners, regulators, monitors and decision-makers, as well as our community members. It is designed to provide support and guidance when carrying out any work related to the assessment, management and monitoring of the following environmental issues and concerns:

	Drinking Water Management		Waste Management
	Groundwater Management		Chemical and Fuel Storage
	Wastewater Management		Contaminated Sites Management
	Wetlands and Surface Water		Air Quality and Emissions
	Wildlife and Wildlife Habitat		Cultural Heritage and Archaeology
	Land Development		Medicinal Plants Conservation

Our EMP has been written and organized so that sections can be passed on to developers, consultants, educators and others working on projects on our land to clearly communicate our expectations, and outline procedures, for environmental management and protection. Each one of the twelve community-identified environmental issues and concerns is outlined in an Environmental Stewardship Guideline (ESG).

We have written our ESGs to be standalone resources that can be provided to users. The following table summarizes the purpose and intended users of each section of the ESG. All sections are relevant for Shawanaga staff.



Table 1 Purpose and Intended Users of the Environmental Stewardship Guidelines

ESG Sections	Purpose	Intended Users
Our Stewardship Vision	<ul style="list-style-type: none"> • Describes why this issue is important to our community • Describes our vision to address this issue 	<ul style="list-style-type: none"> • Community leaders and decision-makers • Environmental manager(s)
Community Objectives	<ul style="list-style-type: none"> • Identifies short- and long-term environmental management outcomes • Identifies specific actions to manage an environmental issue or concern 	<ul style="list-style-type: none"> • Community leaders and decision-makers • Environmental manager(s)
Stewardship Guidance and Strategies	<ul style="list-style-type: none"> • Outlines strategies to be undertaken to meet community objectives 	<ul style="list-style-type: none"> • Environmental manager(s) • Planners, regulators, monitors and decision-makers • Developers and consultants
Monitoring and Enforcement	<ul style="list-style-type: none"> • Outlines the responsibilities of our community to monitor and enforce our EMP • Identifies key roles in monitoring and enforcement 	<ul style="list-style-type: none"> • Community leaders and decision-makers • Environmental manager(s) • Community members • Developers and consultants
Community Initiatives	<ul style="list-style-type: none"> • Outlines ways in which our community can implement the EMP 	<ul style="list-style-type: none"> • Community leaders and decision-makers • Environmental manager(s) • Community members

ESG Sections	Purpose	Intended Users
	<ul style="list-style-type: none"> • Highlights the importance of awareness and stewardship • Encourages and fosters community stewardship 	<ul style="list-style-type: none"> • Educators
Regulations and Best Practices	<ul style="list-style-type: none"> • Identifies relevant federal and provincial legislation, regulations and best practices • Identifies requirements that must be met, at a minimum 	<ul style="list-style-type: none"> • Environmental manager(s) • Planners, regulators, monitors and decision-makers • Developers and consultants
Glossary	<ul style="list-style-type: none"> • Defines key terms used in the ESG • Improves understanding and interpretation of the ESG 	<ul style="list-style-type: none"> • All users of the EMP

3.0 EMP Administration

This section explains how we manage the administrative elements, crucial to the successful implementation and maintenance of our EMP. Because this is a living document that requires regular updates and additions, it is critical to manage the input we will receive from various sources, including documents, photos, spreadsheets, and databases.

This section outlines our approach to communication, data management, community access and changes to the EMP, regular review, and roles and responsibilities of everyone involved in implementing the Plan.

3.1 Communication Plan

Who is responsible: Lands and Resources Department with assistance from Shared Value Solutions staff.

Ongoing, regular communication is important in fostering community buy-in, engagement and compliance with the EMP. Through a communication plan consisting of newsletters, community meeting announcements, notices posted at the band office and through email communication, the Lands and Resources Department makes sure that community members, as well as non-community members, carrying out activities on our surveyed reserve lands are informed about our EMP. The Lands and Resources Department will communicate major updates and changes.

A key element of this communication plan is ensuring everyone living, using and operating on our lands complies with our EMP. The Lands and Resources Department informs land users and proponents of their obligations to comply with our EMP when they inquire about using our lands, by directing them to the online version of the plan, and conducts regular check-ins with these project proponents.

3.2 Data Management

Who is responsible: Lands and Resources Department

The Lands and Resources Department manages all EMP data. Key responsibilities include ensuring all documents and associated data are properly stored and making sure the most

recent version of documents are available to decision-makers, the community and proponents, when needed.

3.2.1 Storage Type and Structure

Data we need to manage comes in many forms and formats:

- Word Documents and PDF files
- Digital and Paper Maps
- Spreadsheets
- Specialized Databases
- Audio and Video Recordings
- Photos and Drawings
- Physical Resources and Artifacts
- First Nation Land Registry System (FNLRS)

Wherever possible, Shawanaga First Nation stores EMP data in a digital format. Non-digital data is digitized whenever possible (e.g., photos of physical resources and artifacts; photos, scans of drawings and paper maps). Hard copy and physical resources are stored in the Lands and Resources Department filing cabinet.

3.2.2 Electronic File Structure

We will create an electronic and back-up file structure as follows:

- Main folder: "Shawanaga First Nation Environmental Management Plan."
- Sub-folders: One for each EMP component, such as Administration, Main Body Text, ESGs and Reviews. The most recent version of each document(s) is stored within the relevant sub-folder.
- Each sub-folder also contains an "Archived" folder for older versions of documents kept for reference and back-up.



- The “Administration” sub-folder is for tracking project administration and coordination documents, budgets, and other important forms, and is accessible only to EMP administrators.

3.2.3 File Naming Convention and Password Protection

- All final EMP files are password protected.
- All electronic EMP files include a date and version number in the document file name (e.g., 20190430_V1.0_ShawanagaFirstNationEMP).
- All EMP hard copies include a date and version number on the title page of the document.
- We refer to the most recent date and highest version number of any file to make sure we are using the most up-to-date version of the file. The most recent file should be easily accessible in the electronic sub-folders.

3.2.4 Back-Up Storage

- We maintain at least two back-up copies of all EMP data.
- We save all EMP documents on both a cloud storage system (Google Drive) and an external hard drive that is stored at a different location than the computer containing our EMP data.
- We back-up files on a monthly basis, and as substantial changes are made to EMP data.
- During our annual review, we revisit our back-up strategy in light of changes and improvements in technology.

3.3 Community Access and Changes to the EMP

Who is responsible: Lands and Resources Department with assistance from our staff



Community members can access the EMP in three places:

- Online: <http://shawanagafirstnation.ca>;
- At the band council office; and
- In the Lands and Resources Department office.

Community members have access to hard copies of these documents during office hours. They may also request to take home digital or hard copies of specific documents or sections of the EMP.

By making the EMP accessible, community members are welcome to suggest changes on an on-going basis. If a community member or decision-maker wants to see a change, they can submit a request to the Lands and Resources Department. These submissions will be reviewed by the Lands Committee on an as-needed basis and, if necessary, will be discussed with Chief and Council for approval.

3.4 Regular Review

Who is responsible: Chief & Council, with assistance from the Lands Committee and the Lands and Resources Department

Because this EMP is a living document that is only useful if it remains relevant and current, **we shall review it every year**. The frequency of these reviews may change over time as the plan is implemented. However, because planning is an incremental process with many variables, this review process is essential to the ongoing usefulness of this EMP in supporting evolving community goals.

The results of our annual EMP review are compiled into an Annual EMP Review Report that is presented to, and discussed with, Chief and Council. This meeting with Chief and Council may be combined with the annual Land Use Plan review meeting.

3.4.1 Who Conducts the Review?

The Lands and Resources Department conducts the formal review with support from the Lands Committee members, band staff and Chief and Council.



3.4.2 What Does the Review Include?

To answer the questions in the outcomes section above, the Lands and Resources Department includes the following information into the Annual EMP Review Report:

- A summary of key examples where the EMP and ESG were implemented;
- A review of the key issues and concerns to ensure they are still relevant to the community;
- An assessment of ESG implementation;
- An assessment of our data management processes;
- An overview of community feedback;
- A review of changes to environmental legislation (if applicable); and
- Recommended improvements for the upcoming year.

3.4.3 Annual Environmental Management Plan Review Meeting

The Lands and Resources Department coordinates an Annual EMP Review Meeting and presents the draft Annual Environmental Management Plan Review Report to Chief and Council for input.

Chief and Council, Lands and Resources Department staff, and the Lands Committee review the draft report in advance of the meeting. During the meeting, the Lands and Resources Department presents an overview of the report findings, followed by a roundtable discussion on the goals and actions planned for the next year.

3.4.4 Implementation of Review Results

After the meeting, the Lands and Resources Department incorporates feedback and any actions from the meeting into the Annual EMP Review Report and finalizes it. If changes to the EMP are



required, the Lands and Resources Department will make the necessary changes. All changes will be reviewed and approved by Chief & Council.

3.5 Roles and Responsibilities

Below is a list of key groups and people involved in making sure the plan is well managed and administered, implemented and complied with.

3.5.1 Shawanaga First Nation Members

- Hold Chief and Council, the Lands and Resources Department, and the Lands Committee accountable for implementing the vision, guiding principles, strategies and guidelines laid out in this plan.
- Share individual and community vision and priorities to ensure the plan stays current and relevant.
- Participate in the community stewardship activities outlined in each of the ESGs of our EMP.
- Comply with the guiding principles, strategies, and guidelines described in the EMP.

3.5.2 Chief and Council

- Provide leadership in making sure the plan is maintained and implemented.
- Establish organizational structure for the overall decision-making and implementation of this plan.
- Engage with the community to make sure the EMP aligns with the community's issues and concerns.
- Provide the funding and resources needed to effectively implement and maintain the plan.
- Participate in the annual review process to help set goals and objectives for plan implementation.



- Review and make decisions on any changes to the EMP.

3.5.3 Band Manager

- Liaise between Chief and Council and staff.
- Oversee all staff, and policies and procedures associated with EMP implementation and management on behalf of Chief and Council.

3.5.4 Lands and Resources Department

- Carry out the day-to-day management and implementation of the EMP.
- Establish and implement EMP document management structure and protocols.
- Make sure that all EMP documents are accessible to the community and relevant external stakeholders.
- Work to ensure that all EMP documents are kept up to date and that out of date versions of these documents are properly archived.
- Work to ensure that the Band Manager is kept informed of all matters relating to EMP implementation and management on an on-going basis.
- Prepare an Annual EMP Review written report.
- Coordinate the Annual EMP Review meeting.
- Help source funding and resources needed to implement and maintain the plan.
- Create and carry out the communication plan to convey the purpose and content of the EMP to the community and proponents.

3.5.5 Chair of the Lands Committee

- Convene and facilitate Lands Committee meetings



- Develop and follow meeting agendas
- Assign tasks to Lands Committee members as needed
- Ensure that the Lands Committee functions well, including taking regular minutes and sharing relevant information to Committee members in advance of meetings.

3.5.6 Lands Committee Members

- Oversee the implementation and maintenance of this EMP.
- Review feedback and suggest changes, as appropriate.
- Participate in the annual EMP review.
- Review requests to change the EMP and make recommendations to Chief & Council.
- Keep up to date with relevant legislation to ensure that all legal requirements, including legislation, regulations, licensing, permitting and authorizations pertaining to the EMP are met and reviewed as needed.
- Oversee EMP Enforcement and Dispute Resolutions.
- Keep up to date with ongoing developments and changes to the EMP. Support the Chair with the above tasks as needed.
- Communicate information in the EMP to community members.



4.0 Environmental Issues and Concerns

As Anishinabe people, and members of Shawanaga First Nation, it is our cultural and spiritual obligation to have, in our interest, the total well-being of the earth, the creation, and the people. With this obligation in mind, we care for the lands and waters, and all life that inhabit them, for the benefit of all members, including those still unborn; our community's future for the next seven generations and beyond. This commitment underlies the selection and content of each of the following community-identified environmental issues that have been chosen for inclusion in our EMP. These were also identified through a review of historical documents, community engagement sessions and surveys, and meetings and interviews with appropriate band staff and community members.

The unique issues of concern for Shawanaga First Nation have been considered and addressed within each of the applicable ESGs. In addition, the impacts of climate change on each identified concern have also been included, where applicable.

4.1 Drinking Water Management

Our community is committed to providing a safe and reliable source of drinking water to all our members, regardless of whether they rely on our community treatment and distribution system or private wells. Our members have expressed concern about the sustainability of our drinking water system including the need for improved processes and infrastructure at our treatment plant to address the lack of capacity to meet increasing demand, among other issues. Power failures pose a number of concerns for our drinking water system, which we feel could be partially mitigated through the addition of a water storage tower. We want to continue to explore additional water sources, which may improve our system further and provide a long-term solution for water delivery in our community. Finally, we seek to increase oversight and monitoring of our water resources in order to ensure quality drinking water for our members.

4.2 Groundwater Management

The quality and quantity of our groundwater resources were flagged by community members as being an important consideration for the overall health of our ecosystem and people. Although groundwater is not often visible to our community members' eyes, we recognize that it is an important resource that must be managed through a source water protection plan and on-

going monitoring programs. As there are numerous groundwater wells in our community that provide us with drinking water, it is important for human health, to maintain accurate records of the state and condition of these wells, and conduct regular water quality testing.

4.3 Wastewater Management

We face unique challenges in effectively managing wastewater due to the absence of a wastewater treatment system, in combination with a high water table and large areas of exposed or shallow bedrock. Our members rely exclusively on septic systems (or other on-site systems) to treat and dispose of wastewater; however, these systems typically require a sufficient soil condition (depth and material) to reduce contaminated run-off and seepage of partially treated water into ground and surface water. We are particularly concerned about the impacts of pharmaceutical and personal care products (PPCP) on water receptors and aquatic wildlife. We believe the future success of our fish hatchery relies on protecting our water resources. Our members would like to see comprehensive monitoring of wastewater systems, including issues associated with seasonal use at Shawanaga Landing and the leased properties at Naiscoutaing.

While the implementation of best practices and guidelines may mitigate some of these risks, we feel that the addition of a wastewater treatment plant would ultimately ensure the most effective management of wastewater in our community.

4.4 Wetlands and Surface Water

Water is one of the basic necessities of life. We will strive to protect and, if needed, restore surface water quality and maintain adequate quantity within Shawanaga First Nation lands. Healthy surface waters also provide the habitat that supports healthy fish populations, which are of major importance to our community. Wetlands provide many functions in terms of the water balance and quality that are of benefit to people. Wetlands are also of great use to many wildlife species and can be critical habitat for specialized wetland species, including several species at risk. We will strive to inventory, assess, protect and, if needed, restore wetlands within our lands. We will identify sources of contamination and pollution and develop management techniques to remove or greatly reduce these sources and stressors. Clean surface water is also important for maintaining recreational uses like swimming and canoeing. We will look to implement integrated watershed management principles into the practices we use for monitoring and managing our surface water resource, and collaborate with various adjacent communities and external agencies to better manage the resource.



4.5 Wildlife and Wildlife Habitat

Healthy wildlife populations reflect a healthy environment. We rely on wildlife resources for subsistence and ceremonial purposes. Development pressures have the potential to negatively impact wildlife habitat and wildlife populations. We will work towards identifying, mapping, and protecting wildlife habitat within our lands. We will develop a management plan to maintain and enhance the quality of wildlife habitat, and the health of wildlife populations, including species at risk. We will look towards braiding traditional knowledge with science for continuous education and involvement of community members on wildlife issues and concerns. We will use available existing resources, references and protocols, and also develop our own protocols where appropriate.

4.6 Land Development

Maintaining and enhancing environmental protection of our lands while developing economically is key to our future. The community has worked hard to get to a place where we have regained control of our reserve lands through the Framework Agreement for First Nation Land Management. Land development is a key aspect of this, but it is important we do it in a good and sustainable way for future generations. A major consideration is how to ensure land development applications are reviewed, permitted, and monitored so that they are consistent with our requirements for environmental protection and management. We will encourage and require best environmental practices across the board—whether for a new housing development by the Band Administration, or a commercial use on leased land by a non-member. Another important objective is to develop and put into place our land laws, our Land Use Plan, and our systems of environmental assessment, so that we can clearly know and enforce the right kinds of practices to address environmental risks to our lands and members.

4.7 Solid Waste Management

The Anishinabe do not have a word for “garbage.” This speaks to our commitment to re-purposing materials for other uses and thereby, diverting these materials from the disposal stream. As a community, we are also committed to reducing the amount of solid waste we generate. We are concerned about the amount of illegal dumping occurring on our lands as well as the lack of an overall waste management strategy to plan for long-term solutions. A major concern is the inevitable closure of the Site 9 landfill that we currently rely on. We would like to

see a clear system in place to provide for proper disposal of domestic refuse, recyclables, compostable materials, hazardous waste, and large items such as derelict vehicles and appliances. We believe that a community transfer station would encourage proper disposal practices, as long as it is accessible and convenient. Our members support the development of relationships with other communities to secure a long-term disposal site (e.g., multi-community landfill). We recognize that community outreach and education is a key component of any waste management strategy, to outline member responsibilities and guidelines for waste reduction, proper disposal, and to foster environmental stewardship.

4.8 Chemical and Fuel Storage

We are committed to ensuring chemicals and other fuels are safely handled and stored on our lands. Improper handling of fuel and chemicals has the potential to cause serious and harmful effects to the health of our lands, water, and citizens. We are committed to not only ensuring accidents and malfunctions do not occur but also are committed to handling and storing our fuels in a manner that demonstrates our commitment to stewardship and harmony with nature and humankind. The major areas of concern for our community when it comes to safe handling and transport of fuels and chemicals are: above ground and underground storage tanks, including their decommissioning, the use of chemicals at the water treatment plan, potential impacts from offsite storage facilities, the use of propane tanks at homes in our community, and the gas station in the community.

4.9 Contaminated Sites Management

Community members have expressed concern over the occurrence of contamination and emergency spills, including incidents on the transportation corridors that cross our lands. In addition to implementing strategies to identify and reduce the risk of new contamination occurring on our lands, it is imperative that our community is prepared to respond to such incidents in a safe, timely, and effective manner.

The environmental site assessments that have been previously conducted on our reserve land parcels found several potentially contaminated sites. These areas need to be managed appropriately to ensure our natural environment is healthy and protected for seven generations to come.

4.10 Air Quality and Emissions

Clean, healthy air is essential to maintaining the health, abundance, and well-being of plants, wildlife, and humans. Our community is committed to ensuring there is clean and healthy air for both present and future generations. With increased human and natural factors that are threatening the air quality on our lands, we are committed to carrying out stewardship activities that protect and promote healthy air. The human and natural factors that we are particularly concerned with include increased traffic from the highway expansion, increased vehicle idling at the future service centre, forest fires, particulates from woodstoves, mold in community buildings, and the burning of wastes and plastics. We want our community members to breathe in clean, healthy air for seven generations to come.

4.11 Cultural Heritage and Archaeology

Our community is committed to protecting and preserving the cultural heritage and archaeological resources on our lands. There is archaeological evidence on our lands that dates back 10,000 years and our ancestors, as well as present-day community members, have continued to occupy this territory. As a result, the archaeological and cultural heritage record within this area is extensive. The materials left behind by our ancestors are sacred to the community and are non-renewable resources. While we are aware of numerous sites of cultural heritage significance, there are areas that have not been explored archaeologically within the territory as well. The protection of archaeological and cultural heritage materials is consequently of great significance. Specific sites of importance that we have identified as needing protection include, but are not limited to the following:

- Pow wow grounds
- Legacy lands
- Historical lands of significance
- Shawanaga Landing
- Sugar bush
- Turtle Rock



- Burial grounds and cemeteries
- Shawanaga Island (potential burial grounds)
- Historic trade routes, hieroglyphs (Naiscout Lake)
- Grave Island
- Garden Island
- Pickerel harvesting site
- Graveyard behind hatchery
- Spring near hatchery – 3 freshwater springs in total
- Hudson’s Bay Trading Post
- Bear Lake

4.12 Medicinal Plants Conservation

Medicinal plants play an integral role in maintaining our community’s health. The conservation of these plants is important for ensuring the continuation of our sacred traditions and in sustaining the well-being of our people for the next seven generations to come. With the increased number of development projects encroaching on our lands and resources, and the potential for transportation route upgrades and expansions, community members have expressed concern about the protection and conservation of our medicinal plants. We have an interest in establishing a Community Sacred Garden to preserve our local medicinal plants and to provide easier and continued access to these sacred resources.



5.0 Implementation Plan

This EMP identifies many environmental issues and concerns on our surveyed reserve lands and recommends community-based strategies to manage each issue in a way that encompasses the interests and values of our community and upholds our rights. This EMP is our starting point – our guiding document – and we have a lot of work to do in order to implement each strategy.

The purpose of this implementation plan is to provide a roadmap of next steps for our community to implement the EMP, customized to the unique needs of Shawanaga First Nation. We have identified priority actions (Table 2) that should be undertaken first, in sequence, to implement the EMP. Recommended actions (Table 3) will become the next priority actions once the current priorities have been completed.

This implementation plan sets out the potential Land Law(s), plans, policies, programs, protocols, and strategies, among others, to move this EMP towards fruition. This implementation plan will be most useful in guiding Shawanaga First Nation in prioritizing and delegating next steps. As part of our regular review of the EMP described in Section 3.4 – Regular Review, we shall also revisit and update our implementation plan to ensure it remains relevant and current but also to monitor, evaluate and celebrate our progress.

The information in the implementation plan for priority actions (Table 2) includes:

- Step – the order in which the priority actions should be done
- Action – a description of the priority action
- Type (approval, capacity building, communications, land law, plan, program, protocol, and study) – identifies the type of action required
- Key Result(s) – the outcomes of implementing the action
- Cost (low, moderate, high) – the relative estimated cost of the action
- Responsibility – identifies the Shawanaga First Nation member responsible for implementing the strategy
- External funding – identifies potential external funding sources that could be leveraged to implement the recommended action/strategy



To assist leadership with prioritizing recommended actions (Table 3), the following information is included for each action in addition to the information about costs, responsibility, external funding sources described above:

- Action - In the case of recommended actions, this is a description of the actions for each Environmental Stewardship Guideline (ESG).
- Effectiveness (low, moderate, high) – the likelihood the recommended action will result will achieve the intended result
- Benefit – describes why the community should complete this action and what benefits they will observe or experience when implemented
- Community Priority (low, moderate, high) – based on the vision, goals, objectives and community input
- Timeline (Year 1, Year 2, Year 3-5, Year 5-10, Year 10+) – the time in which the action/strategy should be implemented



Table 2 – Priority Actions

Step	Action	Type	Key Result(s)	Cost	Responsible Party	External Funding Sources
1	Approve the EMP through a BCR, land law or community approval process	Approval	Community approved and/or ratified EMP	Moderate	Lands Manager / Chief & Council	Lands and Economic Development Services Program
2	Develop and roll-out data management procedures for the EMP to ensure the EMP data and documents are stored and organized	Protocol	Internal data management protocol	Low	Lands Manager	N/A
3	Provide hard copies of the EMP in the Lands and Resources office	Communications	Physical copies of the EMP available to members and non-members in central and accessible locations	Low	Lands Manager	N/A
4	Provide online access to the EMP and communicate link to the community	Communications	Electronic copy of the EMP available to members and non-members in an easily accessible format.	Low	Lands Manager	N/A
5	Develop communication materials to clearly communicate the purpose of the EMP and to explain each of the ESGs	Communications	Physical and electronic brochures summarizing the purpose and strategies contained in each ESG	Low	Lands Manager	N/A
6	Develop an environmental protection regime, including any associated Land Law(s), in accordance with requirements and responsibilities of the Framework Agreement on First Nations Land Management	Land Law	Approved environmental protection regime and Land Law(s)	Moderate	Lands Manager / Chief & Council	Lands and Economic Development Services Program
7	Develop an Environmental Assessment regime, including any associated Land Law(s), in accordance with the requirements and responsibilities of the Framework Agreement on First Nations Land Management	Land Law	Approved environmental assessment regime and Land Law(s)	Moderate	Lands Manager / Chief & Council	Lands and Economic Development Services Program
8	Develop administrative process for citizens to propose changes to the EMP	Protocol	Written protocol outlining the process; Land Law(s) to implement the process; Communication materials; Infographics	Moderate	Lands Manager	Lands and Economic Development Services Program

Step	Action	Type	Key Result(s)	Cost	Responsible Party	External Funding Sources
9	Develop process to complete the regular review of the EMP, including <ul style="list-style-type: none"> - Who does the review? - What does the review include? - Community involvement? 	Protocol	One written process	Low	Lands Manager	Lands and Economic Development Services Program

Table 3 – Recommended Actions

Action	Type	Cost	Effectiveness	Benefit	External Funding	Responsibility	Priority	Timeline
Drinking Water Management								
Outline and define operator training requirements	Plan/Policy	Low	High	Provide clarity for training and job requirements	Ontario First Nations Technical Services Corporation	Water Plant Manager	High	Year 1
Outline the roles and responsibilities of the parties responsible for the provision of safe drinking water to community members	Plan/ Policy	Low	High	Clearly define the roles and responsibilities of those who will work to provide safe drinking water to our community	N/A	Water Plant Manager	High	Year 1
Ensure proper operations and maintenance of the water treatment facility	Assessment	Moderate	High	To inspect our water supply well throughout the year	Infrastructure Canada Clean Water and Wastewater Fund	Water Plant Manager	High	Year 1
Establish a records management protocol for drinking water treatment related documents and reports	Plan	Low	Moderate	Benefit: Records filed in duplicate at the treatment plant and band office	Infrastructure Canada Clean Water and Wastewater Fund	Water Plant Manager	High	Year 1
Develop a water truck maintenance schedule to ensure timely delivery of water resources	Program	Low	Moderate	Minimize risk of distribution interruptions and improve quality control	N/A	Water Plant Manager	High	Year 2
Develop and implement an emergency response plan that addresses water contamination emergencies	Plan	Low	High	To determine when drinking water advisories are necessary	Infrastructure Canada Clean Water and Wastewater Fund	Water Plant Manager	High	Year 2
Conduct a vulnerabilities assessment to determine the quality and quantity of source water in the community	Study	Low	High	Allows community to identify areas for further investigation and better understand potential impacts to our drinking water sources	Infrastructure Canada Clean Water and Wastewater Fund	Water Plant Manager	High	Year 2
Conduct a baseline assessment – every 5 years	Study	Moderate	High	Focus our drinking water monitoring program on those parameters listed in the “Guidelines for Canadian Drinking Water Quality” and/or “Ontario Drinking Water Standards”	N/A	Water Plant Manager	High	Year 2
Conduct a sanitary survey to assess the effectiveness of current drinking water resources	Study	Low	High	Allows for the assessment of the effectiveness of plant operations in providing safe drinking water to the community	Infrastructure Canada Clean Water and Wastewater Fund	Water Plant Manager	High	Year 2
Develop and implement a drinking water monitoring program that analyzes the	Program	Moderate	High	Allows us to be proactive in sampling our drinking water to identify threats.	Infrastructure Canada Clean Water and Wastewater Fund	Water Plant Manager	High	Year 2

Action	Type	Cost	Effectiveness	Benefit	External Funding	Responsibility	Priority	Timeline
quality of water leaving our treatment system								
Build internal capacity through career guidance and application process support for training programs	Program	Low	Moderate	Provide support and mentorship to community members to become water system operators	Ontario First Nations Technical Services Corporation	Water Plant Manager	Low	Years 3-5
Implement a tap water monitoring program to assess drinking water quality	Program	Low	Moderate	Ensures healthy and clean drinking water for all new houses	Partnership with the North Bay Parry Sound District Health Unit	Water Plant Manager	High	Years 3-5
Develop and implement a quality management system that includes both operational and compliance monitoring programs	Plan	Moderate	High	To assess the quality of drinking water distributed to the community	Infrastructure Canada Clean Water and Wastewater Fund	Water Plant Manager	High	Years 3-5
Develop and implement a Source Water Protection Plan	Plan	High	High	Prevent, mitigate and control potential sources of contamination to our water sources	Infrastructure Canada Clean Water and Wastewater Fund Ontario First Nations Technical Services Corporation Climate Change and Health Adaptation Program for First Nations South of 60 First Nation Adapt Program	Lands Manager	Moderate	Years 3 - 5
Implement a source water monitoring program to assess the quality of our deep bedrock well and groundwater	Program	Moderate	High	Assesses the quality of local groundwater, and includes chemical, biological and physical parameters	Infrastructure Canada Clean Water and Wastewater Fund Ontario First Nations Technical Services Corporation Climate Change and Health Adaptation Program for First Nations South of 60 First Nation Adapt Program	Lands Manager	Moderate	Years 5-10

Action	Type	Cost	Effectiveness	Benefit	External Funding	Responsibility	Priority	Timeline
Explore the feasibility of key system upgrades	Infrastructure	High	High	Work to continue improving processes and evaluating feasibility of potential system upgrades for our treatment and distribution	Infrastructure Canada Clean Water and Wastewater Fund	Water Plant Manager	High	Years 5-10
Outline the specifications required for any new water treatment facilities to be built to service SFN	Plan	Low	Moderate	Reduce potential risk associated with the safety and performance of materials that come into contact with drinking water	Infrastructure Canada Clean Water and Wastewater Fund	Water Plant Manager	High	Year 10+
Groundwater Management								
Conduct an inventory of all wells on Shawanaga First Nation lands and establish a database	Study	Low	Moderate	Allows us to assess possible pathways for groundwater contamination	Well Wise Testing Program	Lands Manager	High	Year 2
Conduct an inspection of all water wells on reserve	Study	Low	High	Assesses the integrity of the well to better supply drinking water	Well Wise Testing Program	L Lands Manager	High	Year 2
Complete a baseline assessment of ground water properties	Study	Moderate	High	Aids in assessing groundwater quality and quantity over time	N/A	Lands Manager	High	Year 2
Implement regular testing program for wells	Program	Low	High	Uses water samples to test for contamination	Recommend partnering with a local health unit (North Bay Parry Sound District Health Unit)	Lands Manager	High	Year 1
Decommission wells that are no longer in use	Program	Moderate/High	Moderate	Eliminates potential pathways for groundwater contamination	Recommend partnering with local health unit, municipalities and/or the province to develop well decommissioning program	Lands Manager	Moderate	Years 3-5
Develop ongoing groundwater monitoring program	Program	Moderate	Moderate	Develop baseline assessment to analyze changes due to development against	Potential to negotiate funding for this action with the Federal Government as part of FNLMA; or directly with proponents	Lands Manager	High	Year 3-5
Develop and implement a Source Water Protection Plan	Plan	High	High	Prevent, mitigate and control potential sources of contamination to our water sources	Infrastructure Canada Clean Water and Wastewater Fund Ontario First Nations Technical Services Corporation Climate Change and Health Adaptation	Lands Manager	Moderate	Years 3-5

Action	Type	Cost	Effectiveness	Benefit	External Funding	Responsibility	Priority	Timeline
					Program for First Nations South of 60 First Nation Adapt Program			
Wastewater Management								
Create a wastewater programs manager role	Capacity Building	Moderate	High	Effectively implement ESG strategies and create meaningful outcomes	Infrastructure Canada Clean Water and Wastewater Fund	Chief & Council	High	Year 1
Develop and implement wastewater management plans for Naiscoutaing and Shawanaga Landing, including through the following options: <ul style="list-style-type: none"> Constructing community bathroom facilities Requiring compliance with best management practices for outhouses, including the development of Environmental Protection land laws Gradually phasing out the use of outhouses 	Plan / Land Law	Moderate	High	Environmental protection for seasonal use of lands	Infrastructure Canada Clean Water and Wastewater Fund	Lands Manager	High	Year 1
Complete a septic system assessment and database	Study	Moderate	High	Better understand and manage septic on reserve	Infrastructure Canada Clean Water and Wastewater Fund	Lands Manager	High	Year 2
Develop a water quality monitoring program for wastewater impacts	Program	Moderate	High	Provide oversight into monitoring wastewater infrastructure	Infrastructure Canada Clean Water and Wastewater Fund	Lands Manager	High	Year 2
Develop and run a community septic system awareness program	Program/ Communications	Low	Low	Education of members to improve our septic systems and minimize impacts	Great Lakes Community Guardian Fund	Lands Manager	Moderate	Year 3
Explore alternative onsite wastewater systems	Study	Low	Moderate	Develop awareness of best practices and new technologies	Infrastructure Canada Clean Water and Wastewater Fund	Lands Manager	Moderate	Year 3-5
Develop and run a household water conservation initiative	Program/ Communications	Low	Low	Reduce consumption to enhance long-term sustainability	Great Lakes Community Guardian Fund TD Friends of the Environment EcoAction	Lands Manager	Moderate	Year 3-5

Action	Type	Cost	Effectiveness	Benefit	External Funding	Responsibility	Priority	Timeline
Conduct a wastewater treatment plant feasibility study	Study	Low	High	Make informed decisions for the future management of wastewater	Infrastructure Canada Clean Water and Wastewater Fund	Lands Manager	High	Year 5-10
Develop a pharmaceuticals and personal care products (PPCP) management strategy	Program	Low	Moderate	Proactive approach and community awareness about PPCPs	Recommend adding this as part of a SFN Staff person's job description	Lands Manager	Moderate	Year 5-10
Wetlands and Surface Water								
Approve and adopt aquatic protection timing restrictions by land law when working in proximity to fish habitat	Land Law	Low	High	Protect the most sensitive life-stages of fish species that could be negatively impacted by potential water quality or habitat disturbances	N/A	Lands Manager	High	Year 1
Establish a surface water quality monitoring program	Program	Moderate	High	To assess changes in water quality that may affect the health of surface water resources over the long-term	EcoAction	Chief & Council	High	Year 2
Improve surface water runoff quality	Land Law	Low	Moderate	Reduce phosphorous and nitrogen levels in runoff to minimize risk to human and ecological health	EcoAction Great Lakes Community Guardian Fund	Chief & Council	High	Year 2
Develop an inventory and map surface water bodies and wetlands	Study	Low	High	Develop and inventory of wetlands and surface water features to inform our decision-making process	EcoAction Toronto Zoo Turtle Island Conservation Program	Lands Manager	High	Year 2
Develop a communications network and to foster collaborative working relationships with regulatory agencies	Communications	Low	High	Develop partnerships and working relationships with government, research institutions, industry and neighbouring communities	N/A	Chief & Council	High	Year 2
Consider low impact stormwater management options for new developments	Land Law	Low	High	Protect the quality of surface water resources	N/A	Lands Manager	Moderate	Year 3-5
Develop and implement a fish habitat assessment and monitoring program	Study	Moderate	Moderate	Aids the monitoring of potential impacts from development	EcoAction Regional Fisheries Conservation Partnerships Program	Chief & Council	High	Year 3-5
Develop and implement a responsible recreational boating awareness program	Communications	Low	Moderate	Awareness program for waste management, fuel storage and refueling practices to avoid introduction and spread of invasive species, proper on-	Great Lakes Community Guardian Fund	Chief & Council	Moderate	Years 3-5

Action	Type	Cost	Effectiveness	Benefit	External Funding	Responsibility	Priority	Timeline
				shore disposal of grey water and black water				
Implement a spill response protocol	Plan	Low	High	Community involvement in detecting spills in timely manner	Great Lakes Community Guardian Fund	Lands Manager	High	Year 5-10
Develop and implement an integrated watershed management plan	Plan	Moderate	High	Protect important water resources	Great Lakes Community Guardian Fund EcoAction	Chief & Council	High	Year 5-10
Wildlife and Wildlife Habitat								
Conduct a baseline assessment of wildlife and wildlife habitat conditions	Study	Low	High	Helps us identify the specific types and areas of habitat in need of protection, as well as assess vulnerability	Ontario Trillium Foundation Climate Change and Health Adaptation Plan TD Friends of the Environment	Lands Manager	High	Year 1
Develop and implement a wildlife monitoring program	Program	Moderate	High	Allows us to maintain an understanding of the current state of wildlife and wildlife habitat, to identify concerning trends and help inform management, planning and implementation of recovery strategies and protection, when necessary	Ontario Trillium Foundation Climate Change and Health Adaptation Plan TD Friends of the Environment	Lands Manager	High	Year 2
Develop and implement a road ecology impact monitoring program	Program	Low	High	Will inform our wildlife protection strategy	Ontario Trillium Foundation	Lands Manager	High	Year 2
Provide training and internal capacity building opportunities for SFN community members	Capacity building	Moderate	High	Empowers our community to play a key role in stewardship	TD Friends of the Environment Catherine Donnelly Foundation	Lands Manager	High	Year 2
Develop a wildlife database	Study	Low	Moderate	Increase and share knowledge of wildlife on our lands	Ontario Trillium Foundation	Lands Manager	Moderate	Year 2
Establish best management practices, mitigation, and wildlife protocols	Land Law	Moderate	High	Helps protect important wildlife and wildlife habitat	Ontario Trillium Foundation	Lands Manager	High	Year 2
Develop a wildlife conservation strategy	Plan	Low	High	Helps protect the lands, waters, plants and animals that exist within our lands	Ontario Trillium Foundation	Lands Manager	High	Year 3-5

Action	Type	Cost	Effectiveness	Benefit	External Funding	Responsibility	Priority	Timeline
Develop recovery strategies and implement species-at-risk stewardship	Plan	Moderate	High	Help recover and stabilize species-at-risk populations currently in decline on our lands	Aboriginal Fund for Species at Risk	Lands Manager	High	Year 3-5
Conduct habitat and ecosystem recovery and restoration	Program	Moderate	High	Recover and enhance the ecological functioning of areas that have been degraded by human activities and/or natural processes	Aboriginal Fund for Species at Risk Land Stewardship and Habitat Restoration Program Tree Canada's Healing Trees program	Lands Manager	High	Year 3-5
Land Development								
Complete and implement an environmental assessment and permitting regime	Land Law	Low	High	Fair and transparent process for which Shawanaga can respond to development requests that require an Environmental Assessment	N/A	Lands & Resources Committee	High	Year 1
Complete and implement the land use plan and permitting regime	Land Law	Moderate	High	Fair and transparent process for which Shawanaga can respond to development requests	N/A	Lands & Resources Committee	High	Year 1
Establish a list of generic environmental permitting conditions	Protocol	Low	High	Provides consistency for Council and staff and provides assurances to proponents	Lands and Economic Development Services Program	Lands Manager	High	Year 2
Plan and expand administrative capacity and institutions to administer the environmental and land-use permitting regimes	Capacity Building	Moderate	High	Assures that plans and permitting regimes will be implemented fairly and efficiently	Share resources with other aligned First Nations to administer some aspects of environmental monitoring and assessment programs	Lands Manager	High	Year 2
Evaluate the efficiency and effectiveness of environmental and land-use permitting process	Program	Low	Moderate	Opportunity to review process, add efficiencies and ensure implementation is working through this living document	N/A	Lands Manager	High	Year 2
Develop clear proponent and lessor guidance manuals	Communications	Low	Moderate	Creates clear and transparent expectations for proponents	Lands and Economic Development Services Program	Lands Manager	High	Year 3-5
Waste Management								
Hire and train a waste management coordinator	Capacity Building	Moderate	High	Empower and build internal capacity to manage waste issues and implement the ESG	ISC's First Nations Waste Management Initiative	Lands Manager	Moderate	Year 2

Action	Type	Cost	Effectiveness	Benefit	External Funding	Responsibility	Priority	Timeline
					ECO Canada's Building Environmental Aboriginal Human Resources (BEAHR)			
Develop and implement a long-term waste management plan	Plan	Medium	High	Minimize the volume of waste taken to landfill	ISC's First Nations Waste Management Initiative	Lands Manager	Moderate	Year 2
Develop and implement a solid waste management program and implement relevant land law(s)	Program / Land Law	Moderate	High	Will help to curb instances of illegal dumping	ISC's First Nations Waste Management Initiative	Lands Manager	Moderate	Year 2
Deter illegal dumping and burning of waste	Land Law / Communications	Low	High	Multi-pronged strategy to restrict burning and educate community on waste	Recommend adding this as part of a SFN Staff person's job description	Lands Manager	High	Year 2
Develop a community-specific waste management regulatory regime	Land Law	Low	High	Establish fair and transparent rules for waste management	N/A	Lands Manager	Moderate	Year 3-5
Establish and develop regional partnerships with nearby municipalities	Protocol	Low	Moderate	Collaborative long-term waste management solution	ISC's First Nations Waste Management Initiative	Lands Manager	Moderate	Year 3-5
Conduct annual waste audits	Plan	Low	High	Identify areas for improvement and evaluating success of initiatives	ISC's First Nations Waste Management Initiative	Lands Manager	Moderate	Year 3-5
Conduct waste management compliance audits	Plan	Low	High	Awareness and evaluation of waste management practices in the community	ISC's First Nations Waste Management Initiative	Lands Manager	Moderate	Year 3-5
Foster environmental stewardship through community initiatives	Communications	Low	High	Empowers and provides sense of ownership of issue to community	Recommend adding this as part of a SFN Staff person's job description	Lands Manager	Moderate	Year 3-5
Conduct transfer station feasibility study	Plan	Moderate	High	Provides flexibility and planning when determining long-term disposal solutions	ISC's First Nations Waste Management Initiative	Lands Manager	Moderate	Year 10+
Chemical and Fuel Storage								
Develop partnerships with relevant government agencies (MECP, ECCC and TSSA) to promote capacity building and foster collaborative approaches to chemical and fuel handling and storage and spill management	Communications	Low	High	Fosters a constructive and collaborative approach to empower members, and could include a training program	N/A	Chief & Council	High	Year 2

Action	Type	Cost	Effectiveness	Benefit	External Funding	Responsibility	Priority	Timeline
Manage fuel storage of future developments	Study	Low	High	Allows community to identify potential impacts, assess proposed mitigation and determine potential effects	Recommend development proponents fund this review through their application process	Lands Manager	High	As needed
Create and maintain an inventory of fuel systems on SFN lands	Study	Low	High	Ensure community safety as all existing fuel tanks are to be registered with MECP and ECCC	ISC's Fuel Storage Tank System Priority Ranking Framework	Lands Manager	Moderate	Year 3-5
Ensure all fuel storage tanks on SFN lands are compliant with all federal and provincial regulations	Study	Low	High	Essential for safe and proper handling and storage of fuel on our lands	ISC's Fuel Storage Tank System Priority Ranking Framework	Lands Manager	High	Year 3-5
Develop and implement a community fuel spill response plan to ensure that responses to spills are conducted in accordance with appropriate guidelines	Plan	Low	High	To ensure our community is prepared to respond in the event of a spill emergency	ISC's Emergency Management Assistance Program	Chief & Council	High	Year 2
Hire and train a fuel storage community coordinator to work with TSSA and MECP to ensure that all chemical and fuel storage and handling is done in compliance with appropriate regulations	Capacity building	Low	High	Empowers an in-community champion	ISC's Fuel Storage Tank System Priority Ranking Framework	Chief & Council	High	Year 2
Develop and implement an emergency response plan to ensure that all chemical and fuel spill response, system/container handling, and fuel transport is conducted in accordance with appropriate guidelines	Plan	Low	High	To ensure our community is prepared to respond in the event of a spill emergency	ISC's Emergency Management Assistance Program	Chief & Council	High	Year 2
Develop and implement an inspection and maintenance program based on standards and guidelines established by TSSA	Program	Medium	High	Improves our community safety	ISC's Fuel Storage Tank System Priority Ranking Framework	Chief & Council	High	Year 5
Contaminated Sites Management								
Identify suspect contaminated sites	Study	Low	High	Builds on existing Phase 1 Environmental Site Assessment (2015) to identify new suspect sites	ISC's Contaminated Sites Management Program	Lands Manager	High	Year 2
Develop a community emergency spill preparedness and response plan	Plan	Low	High	Mitigates the risks of spills and contamination	ISC's Emergency Management Assistance Program	Chief & Council	High	Year 2

Action	Type	Cost	Effectiveness	Benefit	External Funding	Responsibility	Priority	Timeline
Conduct a new phase one environmental site assessment	Study	Moderate	High	Determine if additional intrusive investigations are required for an adequate assessment of environmental impacts or degradation	ISC's Contaminated Sites Management Program	Lands Manager	High	Year 2
Prepare soil management plan	Study	Moderate	High	Develop guidelines, best management practices and rules for the movement of fill to/from Shawanaga's lands.	ISC's Contaminated Sites Management Program	Lands Manager	High	Year 3-5
Build capacity for contaminated sites management at SFN	Capacity Building	Low	High	Empower members as managers and stewards of the land	ECO Canada's Building Environmental Aboriginal Human Resources (BEAHR)	Lands Manager	High	Year 3-5
Conduct phase two environmental site assessments	Study	Moderate to High	High	If recommended in the Phase 1 Environmental Site Assessment	ISC's Contaminated Sites Management Program	Lands Manager	Moderate	Year 3-5 (as needed)
Conduct a human health and ecological risk assessment (HHERA)	Study	Moderate to High	High	If recommended in the Phase 2 Environmental Site Assessment. Depicts the potential ways in which humans and wildlife could be impacted by the contaminated environment	ISC's Contaminated Sites Management Program	Lands Manager	Moderate	Year 5-10 (as needed)
Remediation and/or risk management of contaminated lands and waters	Program	High	High	Remediate the environment to meet applicable standards and guidelines	ISC's Contaminated Sites Management Program	Lands Manager	Moderate	Year 10+ (as needed)
Air Quality and Emissions								
Develop partnerships with MECP and ECCC for air quality monitoring and mitigation of issues	Communications	Low	High	Fosters a constructive and collaborative approach to address air quality concerns	Negotiate funding relationship with MECP and/or ECCC	Chief & Council	High	Year 2
Participate in regional air quality monitoring activities	Program	Low	High	Fosters collaboration with proponents and regulators	Negotiate funding with MECP, ECC and/ or proponent	Lands Manager	High	Year 2 (as needed)
Establish oversight process for potential impacts to air quality in future developments on SFN lands	Plan	Low	High	To manage and enforce air emissions from future developments on our lands	Ontario Trillium Foundation	Chief & Council	High	Year 2
Develop baseline air quality data set	Study	Moderate	High	Develop baseline air quality information to inform community decision-making processes	Proponent funding	Lands Manager	High	Year 2 (as needed)
Develop and implement emergency response plan for potential air quality issues	Plan	Moderate	High	Empowers community to take a proactive stance to human health	Recommend negotiating funding from MECP	Lands Manager	High	Year 2

Action	Type	Cost	Effectiveness	Benefit	External Funding	Responsibility	Priority	Timeline
Develop and implement indoor air quality sampling program	Program	Moderate	High	Builds knowledge and improves air quality for members	N/A	Lands Manager	High	Year 2
Develop and implement the Let's Care About Air – Outreach campaign and policies	Program/ Communications	Low	High	Combines community outreach with air quality policy development to empower members	Indigenous Services Canada's First Nations Waste Management Initiative Program	Lands Manager	High	Year 3-5
Develop and implement a campaign and policy to reduce vehicle emissions	Program/ Communications	Low	High	Combines community outreach with air quality policy development	Indigenous Services Canada's First Nations Waste Management Initiative Program	Lands Manager	High	Year 3-5
Develop and implement Reduce plastic and waste burning – Campaign and law	Program / Communications	Moderate	High	Reduces community impact on the environment	Indigenous Services Canada's First Nations Waste Management Initiative Program	Lands Manager, Education Department and Healing Center	High	Year 3-5
Monitor air quality impacts from future highway corridor expansion	Study	Low	High	Note: During development of highway expansion	Proponent funding for monitoring	Lands Manager	High	Year 5-10
Cultural Heritage and Archaeology								
Conduct an archaeological assessment of Shawanaga First Nation lands	Study	Moderate	High	Determines the archaeological potential of land prior to development occurring	Proponent funding; or recommend negotiating with the Provincial Government to secure funding or partner with an academic institution	Lands Manager	Moderate	As needed
Create and implement a Cultural Heritage Policy to inform proponents how to engage on archaeological matters	Land Law	Low	High	Sets out clear expectations, rules and best management practices to enhance our capability and ability to regulate and protect our cultural heritage and archaeological resources	N/A	Lands Manager	Moderate	Year 3-5
Develop a Shawanaga First Nation Archaeological Services Coordinator role	Capacity Development	Moderate	High	Empowers the community to regulate and protect cultural heritage resources on our lands	ECO Canada's Building Environmental Aboriginal Human Resources (BEAHR)	Lands Manager	Moderate	Year 3-5
Conduct an inventory of archaeological and cultural heritage resources on Shawanaga First Nation lands	Study	Moderate	High	Improves the knowledge of our community for our decision-making process	Canada History Fund	Lands and Resources Committee	High	Year 3-5

Action	Type	Cost	Effectiveness	Benefit	External Funding	Responsibility	Priority	Timeline
Develop an archaeological services unit and Cultural Heritage Guardians Program	Program	High	High	Develops internal capacity to protect, regulate and celebrate the cultural heritage resources on our lands	Federal First Nations Guardians Initiative	Lands and Resources Committee	Moderate	Year 5-10
Create SFN Heritage Center	Infrastructure	High	High	Physical space to celebrate and promote SFN heritage and culture within our community	Canadian Museums Association Canada Cultural Spaces Fund	Lands and Resources Committee	Moderate	Year 5-10
Medicinal Plants								
Complete medicinal plants inventory	Study	Low	Moderate	Allows us to document all medicinal plants that are used by our community, as well as where they are found within our traditional territory	Federal First Nations Guardians Initiative Climate Change and Health Adaptation Plan	Healing Centre Executive Director	Moderate	Year 2
Develop a medicinal plants community map	Communications	Low	High	Allows the community to identify areas and habitats that should be protected from development or where special considerations are necessary for the conservation of medicinal plants for the next seven generations	Federal First Nations Guardians Initiative Climate Change and Health Adaptation Plan	Healing Centre Executive Director	Moderate	Year 3-5
Develop a medicinal plants protection plan	Plan	Low	High	Incorporates Elder knowledge to identify sensitive and culturally significant habitat on our lands	Federal First Nations Guardians Initiative Climate Change and Health Adaptation Plan	Healing Centre Executive Director	Moderate	Year 3-5
Develop a community sacred garden	Infrastructure	Low	High	Protects traditional medicines	Federal First Nations Guardians Initiative	Healing Centre Executive Director	Moderate	Year 5-10

6.0 Enforcement and Dispute Resolution

"We are cultural and spiritually obliged to have in our interest the total well-being of the earth, the creation and the people. Not only is it our right to live the Anishinabe Way of Life but the responsibility to protect, exercise and develop the cultural and spiritual and social nature of the Anishinabe Way of Life.

To this end, it is the right and responsibility of the Shawanaga First Nation, as it is with all Anishinabe people, to be equal partners in the control and management of this land with its natural resources and the natural beings that inhabit the land."

– Shawanaga Constitution, 1993

As stated in our constitution, we have the authority and jurisdiction to make laws about environmental protection and natural resources because of our cultural and spiritual obligation to be stewards of the earth and all creation. Our authority and jurisdiction are upheld by the Framework Agreement on First Nations Land Management and our Individual Agreement with Canada with respect to our Land Code.

Merely having a law, however, does not guarantee compliance. Enforcement refers to all the ways in which those affected by the environmental protection laws are encouraged to comply with them. Enforcement includes everything from education and awareness of the laws through to compelling observance of the law by imposing sanctions or punishments for those who breach those laws.

Although it is outside of the scope of this EMP to prescribe new environmental laws or how to enforce them, the EMP and any environmental laws that we develop must work together. This section provides an overview on law making and enforcement, as well as some background information and considerations on these topics.

To implement this EMP, we shall develop an enforcement and dispute resolution regime. Our intent is that we will use this section as a reference when advancing conversations and decision-making around how we want to implement enforcement and dispute resolution processes within our community.



6.1 Foundations for Law-Making & Enforcement

6.1.1 Anishinabe Guiding Principles

There is no word for law in Anishinaabemowin, but there is a word called “chi’inaakonigewin,” which means “how we make a big decision”. Harmful actions can have spiritual, as well as material, consequences.

Another word that resembles the concept of law is “kinwezhiwein,” which translates into “guide,” as in “a guiding principle.” Anishinabe people believe that some laws come from the land, and should be learned by being on the land, observing the interactions between the animals, rocks, wind, water, birds, plants and trees. Anishinabe natural law ensures that these relationships, processes, roles and responsibilities are observed. This type of guiding principle is inspired by “Mnaamodzawin,” or “living a good life,” which is what traditional laws strive to achieve.

The concept of rights in Anishinabe culture extends to non-human entities. For example, water is understood in our worldview as a living being with rights and responsibilities. People often interfere with the rights of water by contaminating and polluting waters, thus committing an injustice to waters. Water justice will come when people renew the covenant between people and water.

Similarly, animals may be killed for food but have the right to be treated with respect and not mistreated. Future generations have the right to have their interests in the land and the teachings protected. The interdependence of human and animal communities is a core understanding: everything fits together, and everything counts on everything else.

6.1.2 Framework Agreement on First Nation Land Management

Under the Framework Agreement on First Nation Land Management (“the Framework Agreement”), Shawanaga First Nation has the power to make environmental laws relating to our land. A requirement of the Framework Agreement is that, at a minimum, the environmental protection standards and punishments created under our environmental protection laws must have the same effect as those prescribed in the laws of the province of Ontario. Certain federal



laws will remain in-force on our reserve lands under the Framework Agreement, including the Fisheries Act, Species at Risk Act, Migratory Birds Convention Act, Indian Oil and Gas Act, and the Atomic Energy Control Act. The Framework Agreement does not give First Nations authority to override the above-listed federal laws. We have reviewed and described relevant federal and provincial laws and regulations in each ESG section, to assist us in developing our own environmental laws.

Shawanaga First Nation has four options for the development of environmental laws:

- 1) Adopt provincial and/or (where applicable) federal laws as is;
- 2) Adopt applicable sections of provincial and/or (where applicable) federal laws as is;
- 3) Enhance provincial and/or (where applicable) federal laws to address areas where Shawanaga First Nation feels they are weak with respect to Shawanaga First Nation's rights and interests; or
- 4) Develop entirely new laws.

When developing our environmental laws, we must consider how we want to enforce them. The community's responsibility towards our environmental laws are directly tied to how we administer, promote and enforce them. This section summarizes our enforcement obligations under the Framework Agreement.

19.1 To enforce its land code and its First Nation laws, a First Nation will have the power to

(a) establish offences that are punishable on summary conviction;

(b) provide for fines, imprisonment, restitution, community service, and alternate means for achieving compliance; and

(c) establish comprehensive enforcement procedures consistent with federal law, including inspections, searches, seizures and compulsory sampling, testing and the production of information.

24.3 The First Nation environmental protection standards and punishments will have at least the same effect as those in the laws of the province in which the First Nation is situated.



6.1.3 Shawanaga First Nation Land Code

As stated in our Land Code, the Creator gave us laws that have always been and that govern all of our relationships to live in harmony with nature and humankind and those laws define our rights and responsibilities. Our Land Code describes our power to make environmental protection laws and to enforce our Land Laws. This section summarizes our law making and enforcement jurisdiction, as stated in our Land Code.

6.1.3.1 Law-Making Powers (Section 7)

7.1 Council may, in accordance with this Land Code, make Land Laws respecting: (a) the development, conservation, protection, management, use and possession of Shawanaga First Nation Land; [...]

7.2 For greater certainty, Council may make Land Laws including, but not limited to [...] (d) environmental assessment and protection; [...] (f) enforcement of Shawanaga First Nation Land Laws; and (g) provision of services for the resolution, outside of the courts, of disputes in relation to Shawanaga First Nation Land.

6.1.3.2 Enforcement of Land Laws (Section 10)

10.1 To enforce its Land Code and its Land Laws, Shawanaga First Nation shall have the power to:

(a) establish offences that are punishable on summary conviction;

(b) provide for fines, imprisonment, restitution, community services and alternate means for achieving compliance; and

(c) establish comprehensive enforcement procedures consistent with federal law, including inspections, searches, seizures and compulsory sampling, testing and the production of information.

Section 10.2 of the Land Code outlines the following options for prosecuting offences:

10.2 For the purpose of prosecuting offences, Shawanaga First Nation shall follow one or more of these options:



- (a) Retain its own prosecutor;*
- (b) Enter into an agreement with Canada and the government of the province to arrange for a provincial prosecutor;*
- (c) Enter into an agreement with Canada to arrange for a federal agent to prosecute these offenses; or*
- (d) Appoint its own justices of the peace.*

6.1.4 Ontario Laws

Because the First Nation environmental protection standards and punishments must at least have the same effect as those in effect in Ontario, the relevant enforcement and punishment provisions of the Environmental Protection Act regulations are also included and linked below for reference.

6.1.4.1 Ontario Environmental Protection Act, R.S.O., 1990, c. E.19¹, s. 182.1:

- (5) The amount of the penalty shall not exceed \$100,000 for each day or part of a day on which the contravention occurred or continued.*

6.2 Foundations for Dispute Resolution

6.2.1 Shawanaga First Nation Land Code

6.2.1.1 Dispute Resolution (Part 8)

Part 8 of our Land Code outlines a dispute resolution process to ensure that all persons entitled to possess, reside upon, use or otherwise occupy our land do so harmoniously. The purpose of our dispute resolution procedures in our Land Code is to enable the parties to a dispute to

¹ Ontario EP Law: Environmental Protection Act, R.S.O. 1990, c. E.19
<https://www.ontario.ca/laws/statute/90e19>

achieve a just, speedy, and inexpensive determination, taking into account the values which distinguish dispute resolution from litigation.

For matters of dispute regarding environmental protection issues, the Shawanaga Land Code lays out the following dispute resolution process:

41.1 The parties shall use best efforts to prevent disputes from arising and shall consider the use of dispute resolution processes at the earliest possible stage of any conflict. [...]

42.1 Shawanaga First Nation intends that a dispute in relation to Shawanaga First Nation Land [...] may progress through the following stages provided for in this Part:

(a) Negotiation;

(b) Facilitated discussions;

(c) Mediation; and

(d) Final arbitration by a Dispute Resolution Panel

In accordance with Section 42.5, dispute resolution is not available for disputes in relation to prosecution or conviction of an offence under a Land Law or under criminal law.

6.2.1.2 Offences (Section 48)

Section 48 of the Shawanaga Land Code speaks to offences:

Application of the Criminal Code

48.1 Unless some other procedure is provided for by a Shawanaga First Nation Land Law, the summary conviction procedures of Part XXVII of the Criminal Code, as amended from time to time, apply to offences under this Land Code or under a First Nation Land Law.

Fines and Imprisonment

48.2 Any person who commits an offence under this Land Code or a Shawanaga First Nation Land Law is liable to a fine not to exceed \$5000 and to a term of imprisonment not to exceed six months or to both fine and imprisonment, provided however, that offences related to Shawanaga First Nation environmental protection



laws may carry penalties consistent with similar environmental protection laws in force in Canada.

Penalties in Laws

48.3 A Shawanaga First Nation Land Law may provide for a penalty, which is different than the penalties referred to in subsections 48.1 and 48.2.

6.3 Strategies for Achieving Compliance with our EMP

Finding the best ways to encourage band members to follow our EMP guidance and strategies is crucial to its' success. This section identifies a variety of resources and strategies that we could implement to encourage compliance with the vision, goals, guidance and strategy of this EMP.

6.3.1 Early Intervention

According to Anishinabe Law, it is our responsibility as a society to recognize risk factors and engage in early intervention and support to prevent individuals from escalating harmful behaviours to our lands, waters and each other. Individuals from the community are sometimes needed to counsel or warn individuals who have begun to commit harmful actions.

Who should issue the warning?

- People in close relationships
- People with special sensitivity or awareness
- People with similar character or experience
- Elders²

² Askew, H., & Borrows, L. (2012). *Accessing Justice and Reconciliation: Anishinabek Legal Summary*. Retrieved from http://indigenousbar.ca/indigenoulaw/wp-content/uploads/2012/12/anishinabek_summary.pdf



As a community, it is our obligation to point out when someone is heading in the wrong direction to prevent harm. This allows us to be proactive before further enforcement and dispute resolution measures are required to correct the behaviour.

6.3.2 Education and Outreach

"If you teach them the principles they will govern themselves."

– Anishinabe Elder

In Anishinabe culture, individuals, to the greatest extent possible, are expected to make their own decisions, except when they adversely affect others. In traditional times, knowledge of stories and the guiding principles they portray played an important role in allowing people to conduct themselves in a harmonious way within the community, in the absence of coercive institutions.

Today, we must place an emphasis on teaching people the guiding principles, particularly when they are young. Fostering an awareness of our role as stewards of the land instills a willingness to take care of it. Explaining the natural consequences of harmful actions to the land and community instills a desire to act in a responsible and respectful way. If the laws are part of people's identity and way of life, the need to impose laws and enforcement will be limited or even eliminated.

Involving the community in the process of determining when a law is needed and what it should include is one of the best ways to ensure compliance. When people understand the importance of a law and have been part of its creation, they are often more invested in upholding that law, and encouraging those around them to do the same. Voluntary compliance reduces the need for enforcement measures and reduces the involvement of the courts.

6.3.2.1 Approaches and Tools for Community Involvement

Finding the best ways to encourage band members to support the implementation of EMP policies is crucial to its success. The following tools and approaches are among the options to consider:

- Include the community throughout the process of law creation. Engage citizens in the formation of laws, including enforcement elements.

- Clearly explain the principles behind the laws to promote understanding and compliance.
- Use visual tools to explain the laws wherever possible.
- Explore the use of signage as a deterrent of undesirable behaviour (smile, you're on camera, for example). Consider Community-Based Social Marketing to modify behaviour.
- Consider the creation of visually-oriented guide books or pamphlets that parents could use to help teach their children.
- Explore ways to include the guiding principles in pre-school and school curriculum.
- Consider creating awards or forms of recognition for people who demonstrate their commitment to protecting the land and environment—for adults and children.
- Consider holding contests that raise awareness of environmental protection.

6.3.3 Enforcement Officers and Policing

The role of enforcement officers is to enforce the requirements of a First Nation's environmental laws—from encouraging compliance to compelling it. The details of their responsibilities and powers must be outlined in the environmental laws themselves and be consistent between laws.

6.3.3.1 Enforcement Officer Responsibilities³:

- Carrying out inspections to verify compliance with environmental laws, decisions made under those laws, and any conditions specified in the decision statement, authorization or permit;
- Issuing orders directing corrective measures where there is an alleged contravention of an environmental law, its accompanying regulations and the conditions in a decision

³ Predie, J. (2018, December 5). *Enforcement Considerations for Developing Environmental Laws – Environmental Assessment, Protection and Solid Waste Management*. Lands Advisory Board Resource Centre Enforcement and Law Making Workshop – Eastern Region, Rama, ON.



statement, authorization or permit (e.g., verbal and written warnings, stop work orders, seizure of goods);

- Taking other measures to compel compliance, such as issuing orders, directions and prohibitions;
- Investigating suspected contraventions; and
- Undertaking measures to compel compliance through court action, such as injunctions and prosecution.

Typical activities of enforcement officers include **monitoring** (environmental changes over time, compliance monitoring, etc.), **inspections** to verify compliance (e.g., food safety, work site inspections) and **investigations** of alleged contraventions of a law to gather evidence⁴.

6.3.3.2 What Actions Can Enforcement Officers Take?⁵

- Issuing warnings, tickets, and orders
- Injunctions – issued through the courts
- Prosecutions – enforcement officers rely on lawyers to prosecute alleged offences in court

6.3.4 Anishinabe Justice Systems

“Anishinabe justice systems were designed to restore and maintain harmonious relationships within and external to the community through the practice Menobimadizen, living a good life”⁶. This is not based on punishment. Although punishment is always an option available, there is a

⁴ Predie, J. (2018, December 5). *Enforcement Considerations for Developing Environmental Laws – Environmental Assessment, Protection and Solid Waste Management*. Lands Advisory Board Resource Centre Enforcement and Law Making Workshop – Eastern Region, Rama, ON.

⁵ Predie (2018)

⁶ McGuire, P. D. (2008). *Restorative Dispute Resolution in Anishinaabe Communities – Restoring Conceptions of Relationships Based on Dodem*. Retrieved from http://fngovernance.org/ncfng_research/patricia_mcguire.pdf



focus on teaching proper behaviour. This focus on behaviour means that non-punitive sanctions are necessary to maintain order and restore peace within the societies.

Anishinabe justice systems, in general, focus on the offender not the offence. The purpose of the process is to try to determine why harm was done and how that harm can be repaired so that offenders are taught their behaviour is disruptive and unwelcome. This occurs in partnership with community norms and values. With a focus on behaviour, dispute resolution processes focus on ethical frameworks as the model for proper behaviour. There is no sense of evading responsibility for actions taken and this is why concepts such as guilt and innocence are alien to our culture.

6.3.5 Fines and Imprisonment

A person who commits an offence under the Land Code or a Shawanaga First Nation Land Law is liable to:

- A fine not to exceed \$5000;
- A term of imprisonment not to exceed six months;
- Both a fine and imprisonment, provided that offenses related to Shawanaga First Nation environmental protection laws may carry penalties consistent with similar environmental protection laws in force in Canada.

While many Shawanaga members agreed that fines would be a good way to encourage community members to follow the EMP's guidelines and strategies, some concerns were raised that fines may not be effective if people don't have the resources to pay them.

6.3.6 Regional Justice of the Peace

Under the Framework Agreement (Section 19.3), Shawanaga First Nation may appoint a justice of the peace for the purpose of enforcement. One option to consider is to appoint a justice of the peace who would hear cases or disputes in communities within the region, including neighbouring Land Code First Nations.

As indicated by Section 19.7 of the Framework Agreement, Shawanaga First Nation and Canada may enter into agreements for the training, supervision and administrative support for justices

of the peace. The shared cost between multiple Land Code First Nations may make this option more financially feasible to address enforcement and dispute resolution.

6.3.7 Traditional Court System

While a traditional court system is not expressly permitted for in the Framework Agreement, implementing this may be a long-term option for Shawanaga First Nation.⁷

When community members fail to recognize community standards and choose not to act in compliance with established environmental laws, a group of respected people, such as our Elders' tribunal, or an individual, may be given authority to complete a process that restores balance to the community. This judicial body, from Shawanaga First Nation, may be given the authority to monitor and enforce the EMP through the review of violations and passing judgement on appropriate punishments. This body, which could include Elders in good standing, would function in a senate or legislative fashion, sitting in judgement of violations in a traditional fashion. Please note that a traditional court system is not expressly provided for in the Framework Agreement, but might become a longer-term option.

6.3.8 Restorative Justice

The Gladue decision ([R. v. Gladue, 1998](#)) was precedent setting case based on Section 718.2 of the Criminal Code of Canada, which ruled that incarceration is to be used only as a last resort for all Canadian offenders, and in particular Indigenous offenders. Increasingly, restorative justice practices are becoming more common and are based on Indigenous cultures and practices.

"It is founded on the belief that criminal behaviour is primarily caused by the alienation of certain members from society at large. Although it is the responsibility of every individual to make positive choices for their life, regardless of personal circumstances. Restorative Justice principles are based on the understanding of compassion, that no one is an island, and that everyone is an equal member of society and has a contribution to make to the greater good. Therefore, when a person becomes alienated or disconnected from that society, it is the responsibility

⁷ Predie, J. (2018, December 5). *Enforcement Considerations for Developing Environmental Laws – Environmental Assessment, Protection and Solid Waste Management*. Lands Advisory Board Resource Centre Enforcement and Law Making Workshop – Eastern Region, Rama, ON.



of everyone in that society to bring the person back into a harmonious relationship with him/her "self", as well as with the rest of the community. This may mean that the society itself needs to take a long hard look at its own practices and systems which may be "contributing factors" to the person's alienation from it. The society may need to heal itself."

– Melanie Achtenberg⁸

Example: Nipissing First Nation Justice Circles

With regards to their Fisheries Law:

"NFN will address the individuals who violated our moratorium by summoning them to our justice circles. Justice circles are a community-based restorative justice process which aim to hold people accountable for their actions, while integrating them back into the community in a positive way. Our members strongly recommended that NFN hold justice circles.

The circles include a cross-section of community members, including other fishermen, elders and youth, and are based in healing and education, instead of charges. We provide positive incentives to comply with our fisheries law, but those who choose not to do so can be faced with penalties that could include the loss of benefits provided by the fisheries department for a period of time, community service and other appropriate penalties, which are imposed by the membership, not by the band. In the past, the recommendations made by our justice circles were followed, and our repeat offender rates were low."

- Former Chief Marianna Couchie

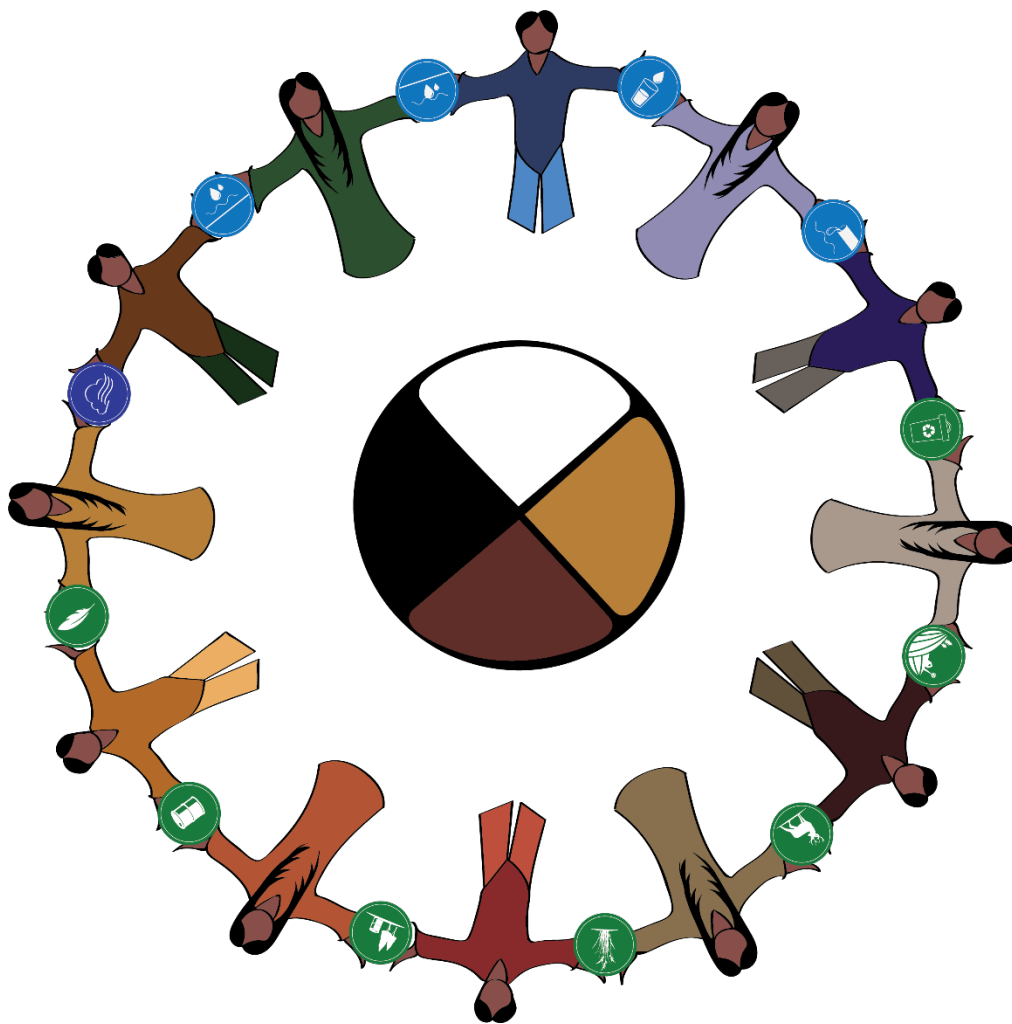
For more information on their use of justice circles, see the [Nipissing First Nation Fisheries Law](#).

⁸ Achtenberg, Melanie (2015). *Understanding Restorative Justice Practice within the Aboriginal Context*. Retrieved from: <https://www.csc-scc.gc.ca/research/forum/e121/e121j-eng.shtml>



7.0 Environmental Stewardship Guidelines (ESG)

ESGs have been developed for each of the environmental issues and concerns that were identified for Shawanaga First Nation. Each of the following ESGs have been designed to be stand-alone documents that will provide guidance in the assessment and management of our lands and waters.



"The Creator put us here to be the keepers of the land."

– Community Member





Drinking Water Management

Environmental Stewardship Guidance

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Our Stewardship Vision

Community Objectives

Stewardship Guidance and Strategies

Monitoring and Enforcement

Community Initiatives

Regulations and Best Practices

Glossary

"[We] used to have a few spring wells around the community you could just stop at and drink water with birchbark cups."

– Community Elder

Our Stewardship Vision

Water is a sacred gift from the Creator. As such, it is our responsibility to protect its quality and quantity—particularly so it is safe and available for us to drink.

Our community is committed to providing a safe and reliable source of drinking water to all of our members, regardless of whether they rely on our community treatment and distribution system or private wells. To fulfill this commitment, particularly as demand grows and our current systems reach capacity, we must carefully consider each aspect of the system from source to tap.

This ESG includes strategies to address source water protection, as well as strategies to effectively manage each component of our drinking water system. The strategies include implementing best practices, ensuring compliance with applicable regulations, and engaging community members through outreach and awareness programs to help fulfill our role as stewards of the water.

We also weave monitoring programs through all of these areas to evaluate the overall system and identify areas for improvement.





We are committed to implementing a multi-barrier approach to safe drinking water. A “multi-barrier” approach ensures that barriers are in place to mitigate threats to water quality including land uses and operational/infrastructure failures, among others.

Key aspects of this approach include:

- Selection of the best source (e.g., lake, river, aquifer)
- Prevention of source contamination
- Effective water treatment
- Maintenance of water quality throughout the distribution system

The multi-barrier approach is based on the concept that no single barrier can fully protect source water; however, in combination, multiple barriers can greatly improve the safety of drinking water and as a result, public health (Health Canada, 2013).

Our raw water is drawn from a groundwater source, in a partially confined aquifer. Raw water is pumped from a single well and trucked to the water treatment plant for treatment and distribution to homes. As this supply well, alone, is not able to meet the demands of our community, we are committed to exploring additional options to increase supply and ensure a long-term sustainable drinking water source.



Community Objectives

We will work to implement strategies to protect drinking water quality and quantity for seven generations to come.

Short-Term Objectives

- Construct a water tower or similar infrastructure to provide additional supply for emergency purposes (e.g., firefighting, water shortages).
- Establish minimum qualifications and training requirements for community water treatment operators.
- Include a routine cleaning/disinfection component as part of water truck maintenance schedule.



- Develop and implement Standard Operating Procedures at the water treatment plant, including the monitoring of water quality.
- Implement a Quality Management System at the water treatment plant.
- Develop a Drinking Water Emergency Response Plan, including strategies to address water quality during power outages.

Long Term Objectives

- Eliminate the use of water trucks by connecting source water to the treatment plant.
- Implement the use of water conserving technologies (water-saving toilets, low flow showerheads, sink aerators, etc.) to help minimize increases in water demand.
- Expand the water distribution system.
- Activation of re-chlorination system to allow for secondary disinfection based on real-time monitoring data for chlorine residuals.
- Conduct a Sustainability Assessment to evaluate the community water treatment plant's ability to handle future increased demand, including projecting future demand.
- Develop and implement a Source Water Protection Plan to prevent and mitigate potential impacts.
- Implement a tap water monitoring program for homes and community buildings to ensure consistent water quality and the early detection of contamination to limit exposure and prevent health impacts (e.g., lead in aging pipes).





Stewardship Guidance and Strategies

To meet our short and long-term objectives for safe drinking water quality in our community, we use the following **stewardship guidance and strategies** that are built on regulations, guidelines and best management practices.

Strategy 1: Vulnerabilities Assessment

This initiative involves the review of various historical reports that assessed the quality and quantity of source water in the community to identify any information gaps. Key reports for review will include the 2010 Capital Planning Study and the Hydrogeological Assessment conducted by Morrison Hershfield in 2016.

A gap analysis will allow the community to identify areas for further investigation. This analysis will ensure effective treatment and management of the source water and identify any potential sources that may have been overlooked in previous assessments. With this information, a comprehensive assessment of vulnerabilities may be conducted to characterize source water hazards and inform water treatment and monitoring program development to mitigate these risks.

Strategy 2: Baseline Assessment

The results of the baseline assessment will allow us to focus our drinking water monitoring program on those parameters listed in the "Guidelines for Canadian Drinking Water Quality" and/or "Ontario Drinking Water Standards" on our reserve lands. The baseline assessment is to be conducted every five years, unless conditions change and impacts to the drinking water source are predicted or are occurring. The baseline assessment will be conducted in consultation with the Health Canada Environmental Health Officer, and includes information collected from vulnerabilities assessment, sanitary survey and source water monitoring program (described below).

Strategy 3: Sanitary Survey

A sanitary survey will allow for the assessment of the effectiveness of plant operations in providing safe drinking water to our community members. It will include an



assessment of water quality from the bedrock aquifer, through treatment and to tap water in homes and community buildings, as well as a review of records related to the water treatment plant, including maintenance, repairs and operations. The following components of a sanitary survey, as outlined by Health Canada (2013), will be completed as part of this initiative.

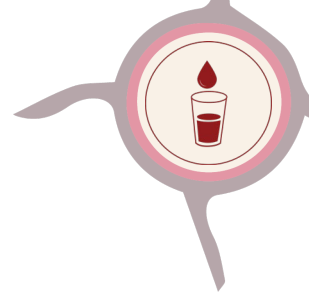
Table 1: Elements of a Sanitary Survey

Element		Description
1	System Plans	To characterize the capability of the overall system and identify areas requiring improvement and/or collective actions (intake, filters, pumps, etc.)
2	Monitoring, reporting, and data verification	Review paperwork and plans to verify and report compliance with applicable requirements
3	System management & operation	Review paperwork and plans to demonstrate that maintenance and operations can maintain compliance (e.g., cross connection control, emergency plan, operations and maintenance plan, personnel training)
4	Treatment System	Evaluate treatment processes (e.g., chemical addition, filtration), facilities, components, and techniques
5	Distribution System	Evaluate its adequacy, reliability and safety
6	Finished Water Storage	Evaluate its adequacy, reliability and safety

Strategy 4: Develop a Source Water Protection Plan

Source protection represents the first 'barrier' in our multi-barrier approach to water protection. A community-specific Source Water Protection Plan (SWPP) would ensure that potential sources of contamination, in the vicinity of water sources, are prevented, mitigated, or controlled as required. The initial program framework will be based on a set of goals and actions derived from current conditions, associated risks, and water quality targets.





The Ontario First Nations Technical Services Corporation (ONFTSC) offers training and support to First Nations communities looking to develop a SWPP.

Researchers in engineering at the University of Guelph partnered with Shared Value Solutions and the Chippewas of Nawash Unceded First Nation to develop a framework for First Nations source water protection that is informed by both technical and Indigenous Knowledge. This document may be a valuable resource in taking on this process.

Source: Marshall, R., Levison, J., McBean, E., & Shute, J. (2018). *Towards Effective First Nations' Source Water Protection: A Decision-making Framework*. School of Engineering, University of Guelph.

Refer to the **Groundwater Management ESG** for more information on this framework and the development of a SWPP. Additional guidance and templates can also be found in the Regulations and Best Practices section of this ESG.

Strategy 5: Source Water Monitoring Program

A source water monitoring program is intended to assess the quality of local groundwater, and includes chemical, biological and physical parameters. Should the source water monitoring program identify potential impacts and/or risks to drinking water, the proposed drinking water monitoring program may require updating.

While our source water is drawn from a deep bedrock well, contaminants in shallow groundwater may move into deeper layers through fractures in rock. This monitoring program will ensure that contamination is identified early, so that we can implement mitigation measures as needed.

Although Health Canada recommends monitoring of chemical contaminants for groundwater sources every two years, we will conduct more frequent monitoring, particularly in the spring and summer months to account the elevated risks during those seasons (e.g., run-off impacting shallow water table during spring freshet).



Strategy 6: Drinking Water Monitoring Program

This initiative is completed in consultation with the current Environmental Health Officer employed by the First Nations & Inuit Health Branch of Indigenous Services Canada.

Our drinking water monitoring program includes the sampling of drinking water leaving the treatment facility. The analysis for disinfection by-products will be conducted at least every three months. Analysis for microbiological parameters (including *E. coli* and total coliforms), and turbidity is also conducted according to the requirements outlined in O. Reg. 170/03 – Drinking Water Systems, as shown below in Table 2 (Health Canada, 2013). All drinking water samples are sent to SGS, a CALA

Although the continuous monitoring of chlorine residuals is not required for our size of system, we have an online analyzer to continuously read chlorine residual levels, which can be viewed at the meter by the operator, or by OCWA through the remote system. This online analyzer is located after water has been treated prior to entering the distribution system. We will install additional online analyzers for chlorine residuals as funding becomes available, to ensure optimal dosing and consequently, better quality drinking water for our members.

Sampling requirements including frequency and number of samples may change as our drinking water infrastructure is upgraded; at which time appropriate updates should be made to this section.

Information about water conservation in the home is included in Strategy 6 of the Wastewater ESG.





Table 2: Drinking Water Monitoring Requirements (Ontario Regulation 170/03 – Drinking Water Systems, Safe Drinking Water Act, 2002).

	Frequency	Matrix	Sampling Point	O. Reg. 170/03
Chlorine Residual (free)	Once daily	Treated	At a location following treatment, before distribution.	Schedule 6 – Operational checks, sampling and testing (general)
Turbidity	Once monthly or when abnormally high turbidity is observed	Raw	At a location prior to treatment (raw water)	Schedule 7 – Operational Checks
<i>E. coli</i>*	Once weekly	Treated	At a location after treatment, in the distribution system	Schedule 11 – Microbiological Sampling and Testing
	Once monthly	Raw	From supply well(s)	Schedule 11 – Microbiological Sampling and Testing
Total Coliforms*	Once weekly	Treated	At a location after treatment, in the distribution system	Schedule 11 – Microbiological Sampling and Testing
	Once monthly	Raw	From supply well(s)	Schedule 11 – Microbiological Sampling and Testing

*All microbiological samples (*E. coli* and total coliforms) must be accompanied by an additional sample to be tested for a free chlorine residual.

Although our raw water quality has been shown to be of good quality, we consider our groundwater source to potentially be Groundwater Under the Direct Influence of Surface Water (GUDI) to account for risks posed by a shallow water table and our community’s reliance on septic systems for the treatment of wastewater. As such, we default to the more conservative guidelines, where possible.

Chlorine residuals and microbiological sampling and analysis will be conducted simultaneously and will include the taking of treated water samples from the treatment plant and throughout the distribution system. Turbidity will be continuously monitored, as it may be associated with contamination and can also impact the effectiveness of disinfection.



Sampling locations are strategically chosen to capture any potential issues and include where water enters the system as well as throughout the treatment and distribution system.

Locations include:

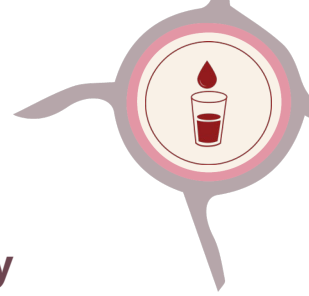
- Source (supply well)
- Water truck tank
- Reservoir
- Immediately after disinfection (before entry to distribution system)
- High risk points in the distribution system due to reduced flow rates (e.g., dead ends, areas at the periphery of the system)

To be effective, the frequency of monitoring events should increase with increasing risks to water quality. For example, if any modifications are made to water infrastructure or construction activities (e.g., blasting related to highway upgrades) that could impact the drinking water source, additional monitoring is to be implemented.

Water sample results will be compared to the lowest (i.e., most conservative) of the Canadian Drinking Water Quality Guidelines and the Ontario Drinking Water Standards. If exceedances are observed, additional monitoring is implemented, and the Environmental Health Officer, as well as Chief and Council are notified immediately. If total coliforms are detected, this signals a serious deficiency in our water treatment process and would be mitigated immediately to avoid potential health risks to community members. If deemed appropriate, the Emergency Response Plan is implemented when exceedances occur.

Private Wells

The drinking water monitoring program will also include routine sampling of private wells (for turbidity, *E. coli*, and total coliforms) for our members to ensure everyone has reliable access to healthy drinking water, whether they are connected to the community system or not. There is more information about well testing in Strategy 6 of the Groundwater Management ESG.



Strategy 7: Building Internal Capacity

We provide career guidance including resources and application process support for training programs relating to drinking water management.

We work closely with partners at the Ontario Water Wastewater Certification Office (OWWCO), the Walkerton Clean Water Centre (WCWC), the Ontario Clean Water Agency (OCWA) and the Ministry of the Environment, Conservation and Parks (MECP) to grow opportunities for First Nations applicants and remove barriers to certification.

We provide support and mentorship to community members interested in becoming water system operators to build capacity that will meet the needs of our drinking water system now and in the future, as our community grows.

See Strategy 12 for training and certification information.

Strategy 8: Explore the Feasibility of Key System Upgrades

We employ an evolutionary approach to drinking water management in our community to ensure we are continually improving processes and evaluating the feasibility of potential system upgrades for our treatment and distribution system.

Connection of Source to Treatment Plant

Ideally, as funding for infrastructure becomes available, we will perform the necessary modifications to connect our source water supply directly to the water treatment plant to eliminate the need for trucking water.

Construction of Water Tower

We hope to add a water tower to our drinking water system to ensure the provision of a safe and reliable drinking water supply to our members during power outages. This storage would also provide back-up supply in times when there are seasonal fluctuations in groundwater quantity or for emergency purposes (e.g., source contamination, firefighting).





Best practices will be followed during the design and construction of a water tower to ensure that it is appropriate for the demand and conditions (e.g., winter temperatures).

Addition of Filtration Process

**requires additional operator certification*

Based on recommendations provided in the 2010 Capital Planning Study, we will further explore the possibility of introducing a filtration system ahead of the primary disinfection process to improve the quality of our treated water. Filtration is a required component of systems that rely on GUDI. Although, our source is not designated as such, the shallow water table condition and widespread use of on-site wastewater systems increase the risk of contamination, making filtration a highly desirable upgrade.

Activation of Re-chlorination System (Secondary Disinfection)

**requires additional operator certification*

Although the continuous monitoring of chlorine residuals is not required by Health Canada for a system of our size, we understand the importance of this information in improving the efficacy of dosing (i.e., reduce instances of over and under-dosing) and improving the overall drinking water quality in our community.

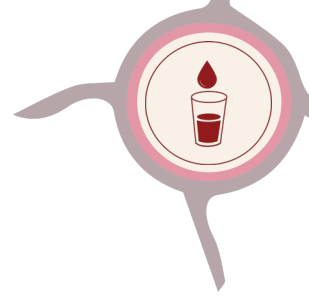
Our water treatment plant has an inactive re-chlorination system installed at the point where treated water leaves the treatment plant. The activation of this system would drastically improve the reliability of our drinking water quality.

Chlorine residuals are closely monitored to ensure microbiological organisms are adequately inactivated.

There are two main benefits to monitoring chlorine residuals:

- 1) It can limit the growth of biofilm within the distribution system and its associated taste and odour problems.





- 2) A rapid drop in chlorine residual may provide an immediate indication of treatment process malfunction or a break in the integrity of the distribution system.

(Health Canada, 2016)

We will explore funding opportunities to support the activation and operation of our re-chlorination system to work in conjunction with continuous monitoring of chlorine residuals in our drinking water system.

Strategy 9: Water Truck Maintenance

We will develop a water truck maintenance schedule with a section dedicated to cleaning and disinfection of water trucks used in our community to prevent inadvertent contamination of source water on the way to our water treatment facility. Additionally, we will develop Standard Operating Procedures (SOPs) for the operation and usage of the water truck, including an overview of hoses and connections, filling the truck, filling water tanks at home using the water truck, and cleaning and disinfecting the truck after use. These SOPs will be used by Shawanaga First Nation to help ensure proper procedures are implemented, as well as a training tool for new staff.

A major concern for transporting source water by truck is the introduction of additional sediment that builds up in tanks over time (increased turbidity). Although sediment can have a number of adverse effects on the distribution system and plumbing fixtures in homes, associated health risks are far more concerning. While sediment itself is relatively harmless, pollutants and pathogens including *Giardia* and *Cryptosporidium*, can attach to sediment particles, reducing the effectiveness of chlorine disinfection and putting consumers at risk of illness.

Our water treatment process does not currently include filtration, which makes reducing turbidity at the source and during transit a top priority.

Tank Design





The design of the water truck tank is a key component for mitigating these risks. Best practices for maintenance and design typically apply to water trucks used to deliver treated water; however, given our limited water treatment capabilities, these guidelines are considered beneficial.

According to the Canadian Standards Association (CSA) (B126 Series-13 Water Cisterns Standard, 2013), tanks should be made of:

- Stainless steel
- Concrete
- Fibre-reinforced plastic
- Polyethylene, or
- Other material provided it complies with this standard

All components of tank/equipment should be:

- Safe and durable
- Non-corrodible, resistant to chipping
- Watertight, smooth, non-absorbent
- Free of areas where water can stagnate
- Designed to minimize surge under normal transport conditions

Further details pertaining to the design criteria for tanks is provided in the CSA Standard.

Tank Maintenance

The regularity with which cleaning/disinfection procedures should be carried out depends on the frequency of use for the truck. Tanks should be flushed out with potable water on a bi-weekly basis to remove any sediment build-up. As our water truck does not transport treated water, cleaning/disinfection will not be required as frequently as described in the CSA Standard (B126 Series-13).

We should have water truck tanks cleaned and disinfected according to the following procedures either quarterly or bi-annually, depending on the frequency of use.





There are some circumstances that trigger the immediate need for cleaning/disinfection, including:

- Before use after construction, repair, modification, periods of non-use
- When water tanks/equipment have not been used for ≥ 4 weeks

Cleaning/Disinfection

- Clean with high pressure water or scrub to remove any dirt or debris using potable water or scrub with 200 ppm chlorine solution.
- Disinfect with 50 ppm chlorine with minimum contact time of 30 minutes.
- Check with manufacturer on aluminum tanks, plastic/organic coated tanks affected by heat/alkalinity
- Dispose of chlorinated water in accordance with local environmental regulations.

Shock chlorination cleaning procedures may be required in extenuating circumstances, including but not limited to:

- Before commissioning a new tank
- When water source changes
- Whenever contamination occurs or is suspected

Shock Chlorination

- Wash with pressure washer/stiff brush to remove debris
- Pump out sludge
- Refill tank with potable water
- Disinfect with 50 ppm chlorine with minimum 6-hour contact time (ensure sealants/materials are compatible with chlorine dosage)
- Flush and refill tank with potable water

Note: Some steps have been excluded from the above procedures to simplify processes. If water trucks are to be used for transporting potable (treated) water, all sections of the Standard should be strictly adhered to.





For Health and Safety reasons, any person entering the tank at any time must have up-to-date Confined Spaces Training.

In the event of system failures, occasionally we hire an outside contractor to truck water to our distribution system (i.e. water trucks repairs required). When using a contractor to transport potable or raw water, we will obtain copies of their Standard Operating Procedures for maintenance and disinfection of tanks, to have on file at the Band Office.

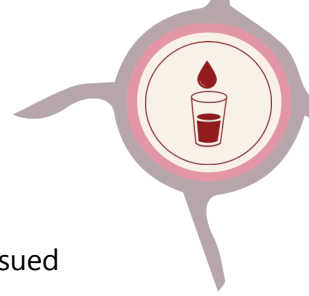
Strategy 10: Emergency Response Plans

We currently management our drinking water system jointly with the Ontario Clean Water Agency (OCWA). Our drinking water operator manages the on-the-ground operation of our system including monitoring checks, minor repairs, and sampling. OCWA monitors the overall system through automated components and provides daily reports to our operator. The system is armed with an alarm system (Northern Alarm Protection), which identifies issues in the system including low chlorine, low water reservoir level, low pressure and power outage. OCWA notifies our operator of any issues within 12 hours. OCWA's Outpost 5 uses Wonderware to log and trend data, which is reviewed within every 72 hours. All data is archived.

In the future, should we re-take full management of our water treatment system, we will work to ensure that we have protocols in place to respond to emergencies, including designating a back-up individual (with appropriate qualifications) to cover when the operator is away. Installing a supervisory control and data acquisition (SCADA) system will be a major priority going forward, to allow our operators to manage the system remotely, and to ensure high quality data collection and effective monitoring, including better emergency response capabilities.

Our emergency response protocol will address extreme and/or unpredicted weather events, natural disasters, impacts of human activities, system malfunctions, and power outages. For example, when our water truck requires repairs, we contract Adam Bros Construction Ltd to truck potable water from Parry Sound to be placed in our clearwell.





If water contamination is suspected, either a boil water advisory or a drinking water avoidance advisory will be issued (Table 3).

Table 3: Drinking Water Advisories (Health Canada, 2013)

Information About Drinking Water Advisories	
Drinking Water Advisories	<ul style="list-style-type: none">• Drinking water advisories are public announcements to advise the public of an identified or expected risk to their water supply.• Boil water advisories are related to possible or confirmed microbiological contamination of drinking water (including possible failures in the treatment or distribution system).• Drinking water avoidance advisories are related to the chemical or radiological quality of the water, when the contaminant of concern may not be removed or inactivated by boiling.• Decisions concerning drinking water advisories are generally made at the provincial/territorial or local level, using a risk management/risk assessment approach based upon site-specific knowledge and conditions. Boil water advisories are used much more commonly than drinking water avoidance advisories.
Boil Water Advisories	<ul style="list-style-type: none">• Boil water advisories are generally issued as a result of a possible or confirmed microbiological contamination. They can be issued either as a precaution against or in response to a waterborne disease outbreak.• A number of factors may prompt further investigation or form the basis for issuing a boil water advisory. These include operational conditions such as local maintenance or emergency repairs in the distribution system; equipment malfunction during treatment or distribution; inadequate disinfection or disinfectant residuals; or situations where operation of the system would compromise public health. They also include water quality conditions such as significant deterioration in the microbiological quality or turbidity of the source water; sudden unexpected changes in water quality; unacceptable





	<p>microbiological quality of treated water; unacceptable turbidity or particle counts of treated water; or where epidemiological evidence indicates that the drinking water is or may be responsible for an outbreak of illness (Health Canada, 2009a).</p>
Drinking Water Avoidance Advisories	<ul style="list-style-type: none">• Drinking water avoidance advisories are typically issued in emergency situations (e.g., chemical spill) to advise the public that they should avoid using their tap water, either completely or for specified uses.• Drinking water avoidance advisories would typically be issued following a catastrophic event such as a natural disaster or as a result of accidental or deliberate action, where the drinking water or its source may or has become heavily contaminated (usually by chemicals) and its use could pose a significant public health risk. These advisories are not intended to address short-term minor exceedances over existing MACs. Drinking water avoidance advisories rarely, if ever, require a cessation of supply, as the water will most likely be suitable for domestic purposes, such as flushing toilets and washing clothes, and necessary for essential services such as firefighting. <p>Two Types of Drinking Water Avoidance Advisories</p> <ol style="list-style-type: none">1) Where the contaminant is only of concern through ingestion, a "do not consume" advisory tells the public to avoid using the water for drinking; preparing food, beverages, or ice cubes; washing fruits and vegetables; dishwashing; and personal hygiene (such as brushing teeth);2) Where dermal or inhalation exposure to the contaminant could affect the skin, eyes, and/or nose, a "do not use" advisory tells the public to avoid the water for any domestic purpose, including all uses identified for a "do not consume" advisory and activities such as showering and bathing.

Strategy 11: Proper Operations and Maintenance

Our drinking water supply well will be inspected throughout the year to ensure the pump is operating properly and that





no damage to any of the major well components has occurred. Within the treatment facility, proper maintenance of all equipment, according to Manufacturer's Instructions, is completed. Of particular concern is corrosion, which could result in detrimental effects to the drinking water supply. As such, we will follow Health Canada's 2009 Guidance on Controlling Corrosion in Drinking Water Distribution Systems.

Water treatment plant chemicals and supplies are stored and used according to the Material Safety Data Sheets (MSDS) and manufacturer's specifications. The plant operator is WHMIS certified (Workplace Hazardous Materials Information System).

We will meet the minimum treatment requirements for groundwater sources consistent with the Protocol for Centralized Drinking Water Systems in First Nations Communities (2010).

The minimum treatment requirements for groundwater sources are:

Primary disinfection for the inactivation of microbes and secondary disinfection with maintenance of a chlorine residual of 0.2 mg/L free chlorine (or 1.0 mg/L combined chlorine for disinfection processes that employ chloramination) throughout the distribution system [and at all times provide at least 2-log (99 percent) removal or inactivation of *Giardia lamblia* cysts, *Cryptosporidium parvum* cysts, and viruses before water enters the distribution system].

(Aboriginal Affairs and Northern Development, 2010)

These requirements are also consistent with those outlined in the *Ontario Safe Drinking Water Act, 2002* for groundwater systems under the direct influence of surface water (GUDI), providing a higher standard of treatment relative to typical groundwater sources to account for risks posed by a shallow water table condition.

We recognize the short comings of our water system in meeting these minimum requirements; specifically, the need to activate and maintain secondary disinfection in order to optimize chlorine dosing in our system and provide better





oversight when issues arise. As such, we are committed to exploring opportunities to initiate these system upgrades.

Strategy 12: Defining Operator Training – Requirements

All staff responsible for providing safe drinking water to our community must be properly trained for their role and/or position.

The Ontario Water Wastewater Certification Office (OWWCO) assists the Ministry of the Environment, Conservation and Parks (MECP) by providing administration and evaluation services for Operator and Water Analyst certifications.

Information pertaining to training and education requirements can be found in more detail at: www.owwco.ca

Our drinking water operators must meet the requirements outlined in Ontario's Safe Drinking Water Act, 2002, to ensure that they are fully capable and prepared for the responsibilities that come with managing our community's water supply.

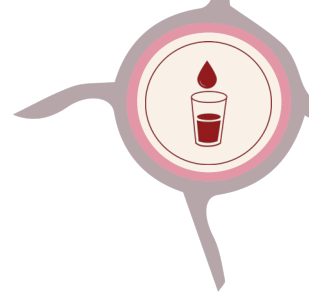
The general certification process is shown in Figure 1.

Entry Level Course for Drinking Water Operators (ELC)

The Ontario First Nations Technical Services Corporation (OFNTSC), Keewaytinook Okimakanak/Northern Chiefs Council (KO) and the Walkerton Clean Water Centre (WCWC) have partnered to develop and deliver drinking water training that meets the specific needs of First Nations communities and their operators.

This course is offered in various locations around Ontario, including Sudbury, with reimbursement provided for travel, meals and accommodations. The course is open to existing operators in First Nations communities as well as any other community members who have an interest in becoming a drinking water operator.





Course dates, registration forms and other information is available on the WCWC website at: <https://wcwc.ca/first-nations-zone/>

Operator-in-Training (OIT)

Those individuals who complete the ELC will be required to obtain an Operator-in-training (OIT) Certificates for the areas of water treatment and water distribution and supply.

Certification as an OIT involves the following main steps:

- 1) Pass OIT examination
- 2) Apply for certificate(s)

For full process details, go to: <https://owwco.ca/getting-your-certificate-or-licence-for-the-first-time/#1440173026174-7949f31c-20bb>

Class 1 Operator

According to the Safe Drinking Water Act, 2002, we are required to have a drinking water operator with a minimum Class 1 license. The ELC and OIT certificate are a prerequisite for obtain a Class 1 license.

Requirements to upgrade to a Class 1 Operator certificate include:

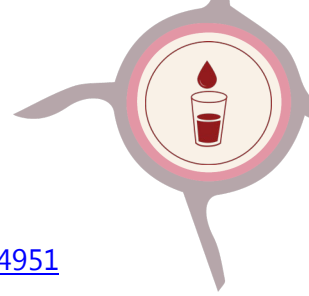
- 1) Completion of the ELC.
- 2) 1-year operational experience*

*The regulation states that OITs must obtain the 1-year experience requirements working in a treatment plant under the supervision of a fully operational operator (Classes 1-4).

However, the OWWCO has confirmed that First Nation applicants lacking the supervision component (either due to being the sole plant operator or the absence of certified supervisors) will still be considered for certificate upgrades, provided the 1-year experience requirement is met.

Applicants should include supporting information as an attachment to the application form. Further information about





certificate/license upgrades can be found at:
<https://owwco.ca/upgrades/#1440097772576-7aec4c04-4951>

Figure 1: Certification Process for Our Drinking Water Operators



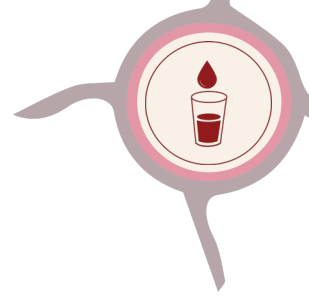
Strategy 13: Tap Water Assessment

Routine monitoring of tap water quality provides vital information pertaining to the endpoint of our distribution system—the water quality at the point where our members consume it.

This program includes the assessment of lead concentrations in drinking water, due to leaching from indoor pipes and plumbing. The analytical results are compared to the more conservative (i.e., higher standard) of the Canadian Drinking Water Quality Guidelines and the Ontario Drinking Water Standards. Should exceedances be observed, an Emergency Response Plan will be implemented and the Environmental Health Officer, as well as Chief and Council, will be notified immediately.

The program is to be designed and carried out in collaboration with the Environmental Health Officer.

New buildings, within the community, are required to meet the National Plumbing Code of Canada.



Strategy 14: Records Management

Our records management protocol will include:

- Manufacturer's operating procedures and manuals
- All monitoring/analytical data collected as part of the drinking water assessment and monitoring programs
- All communications with internal and external parties related to drinking water risks
- All recorded chlorine residual data results
- All physiochemical monitoring results including pH, temperature, peak flow, disinfectant contact time and concentration, etc.
- Any modifications made to the treatment facility
- Records of service problems/performance
- Incident reports
- Maintenance reports
- Assessment reports
- Material Safety and Data Sheets
- Auditor's reports
- Corrective actions
- Training Records including resulting certificates and/or accreditations

Records will be filed in duplicate at the treatment plant and band administration office.

Strategy 15: Quality Management System (QMS)

Our QMS will include both operational and compliance monitoring. Our operational monitoring program will be conducted during demanding conditions (e.g., weather events, increased demand on supply etc.) and is intended to assess the effectiveness of treatment processes. Compliance





monitoring assesses the quality of drinking water distributed to the community.

We will develop and implement an operational plan. The intent of the plan is to assess the treatment facility's ability to provide safe drinking water to community members, as well as identify areas requiring upgrades/improvements and outline any implementation strategies to manage/mitigate identified issues or shortcomings. The operational plan includes a detailed monitoring plan, reporting requirements and record-keeping strategies and is intended to compile information, plans and strategies from initiatives 1 through 11, as previously described. The plan will be developed in consultation with the system designer, plant staff, as well as the Environmental Health Officer and will be updated continuously (as applicable) to address new technologies, operating procedures and risks.

We use a laboratory accredited by the Canadian Association for Laboratory Accreditation (CALA) for all drinking water analyses (currently SGS).

Our audit committee is responsible for reviewing all records and evaluating proper operations and compliance. This is considered to be a collaborative process between the auditor (appointed by Council), Environmental Health Officer, and the plant operator. Recommendations for improvements are made during the audit, with appropriate timelines for accommodation outlined, and follow-up conducted to ensure recommendations have been addressed.

The following table outlines the audit process, as suggested by Health Canada (2013), that we have adopted.

Table 4: Steps of the Audit Process (Health Canada, 2013)

Steps of The Audit Process		
1	Planning	The objective of the pre-audit planning is to define the scope of the audit and identify specific activities to be conducted as part of the audit. The pre-audit file review should generate a list of items to be verified, and a list of questions or lines of inquiry. Activities may include a combination of interviews with managers or





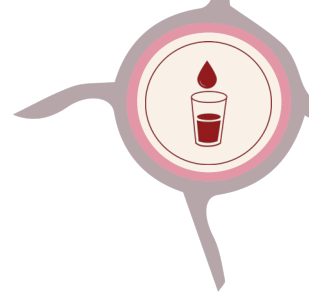
		operational personnel and a review of documents such as engineering studies, monitoring records, policies or procedures.
2	Conducting the audit or verification	This process should be collaborative, transparent and non-adversarial, explain the scope and goals, provide an opportunity to raise questions and concerns, and allow reasonable flexibility in terms of timelines. It should follow the established scope and lines of inquiry to verify that observed operational activities and procedures are consistent with written policies and procedures, and identify inconsistencies as a deficiency. These should be brought to the attention of the appropriate personnel, together with a discussion of suggested corrective measures, prior to writing the final report.
3	Final reporting	The final report should include the timelines of the process, the scope, verification goals and lines of inquiry, the names and titles of participants, the findings of the process, as well as recommended corrective measures and timelines to address identified deficiencies.

Strategy 16: Treatment System Specifications

Any new water treatment facilities to be built to service our community must be certified by an accredited certification body as meeting the appropriate NSF International (NSF)/American National Standards Institute (ANSI) health-based performance standards (www.nsf.org). This will reduce potential risk associated with the safety and performance of materials that come into contact with drinking water (e.g., treatment devices, treatment additives, and system components). An up-to-date list of accredited certification organizations can be obtained from the Standards Council of Canada (SCC: www.scc.ca).

Strategy 17: Roles and Responsibilities

Chief and Council, as well as the plant operator, are responsible for the provision of safe drinking water to community members. They will work together, with the Environmental Health Officer, to ensure to the best of their



knowledge, that the facility is maintained and operated according to the guidelines presented herein.

Monitoring and Enforcement

From Chief and Council, to band office and audit committee staff, to the on-the-ground drinking water operators – everyone has a responsibility to protect community health.

The first point of responsibility in the case of an emergency is the water operator. This individual is the eyes and ears on the ground, is responsible for monitoring the overall functioning of the water system and is required to immediately report adverse test results. Chief and Council as well as relevant staff are responsible for evaluating operational and compliance monitoring, as well as ensuring that the ESG for drinking water is implemented.

Community Initiatives

Community engagement plays an integral role in the management of drinking water systems. Community education and awareness campaigns allow us to curb behaviours that put our source water at risk, while creating opportunities for youth and adult members alike to connect with Elders to learn more about the cultural significance of water for our people and how we can all be stewards of this precious resource.

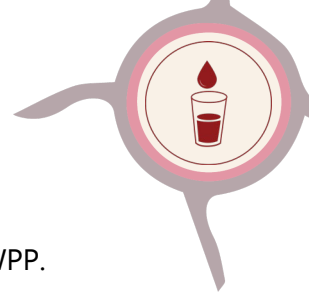
Traditional Knowledge Sessions on Water

Community Elders host talk and sharing circles with children, youth and adult members alike that explore the community's current and historical relationship with water. These circles will include stories and lessons that touch on the spiritual and cultural significance of water and our role as stewards of this sacred resource. These sessions will be videotaped to ensure the knowledge is saved for future generations.

Youth Focus Group for Source Water Protection Plan

Creation of a youth focus group to brainstorm risks/hazards to water quality from a youth perspective, including hopes for the future of their community. The group could start with an in-class course in drinking water systems including a tour of the community's treatment plant and supply well, allowing youth to perform a field assessment to evaluate current conditions.





Student leaders present findings/concerns and possible solutions to Chief and Council for integration into the SWPP.

Water Careers Day

Invite a series of water industry representatives to speak to youth, as well as interested community members, about employment opportunities in water and wastewater. Invitees may include individuals from the Ontario Clean Water Agency (OCWA), the Walkerton Clean Water Centre (WCWC), the Public Health Authority, and various non-profit organizations, among others.

Water Week – An Awareness Campaign and Celebration

A week-long community campaign to recognize and celebrate the importance of water in the community. Water week will include community workshops, educational talks, information booths, ceremonies, games and activities for youth, a community feast, art, music and more. Our school will be involved through classroom activities leading up to water week, involving students in various water related activities, such as: writing poetry and essays about water, making art pieces about water, and doing water-related research. Since high school students and other elementary students attend school outside of the community, it would be of interest to involve those schools during the week.

Resources

Children's Water Education Council (CWEC). The Children's Water Education Council (CWEC) is a charitable organization comprised of water and educational professionals committed to promoting community-based environmental education. CWEC facilitates unique water-based programs designed for children that are hands-on and interactive. They provide in-class presentations on water careers and help communities to start their own Groundwater Festivals, offering hands-on activities, discussions, demonstrations, displays and exhibits that will challenge students to consider the importance of groundwater to them as individuals and to society at large.

http://www.cwec.ca/Festivals_HowToStart





Safe Drinking Water Foundation Educational School Kits for Water Testing. The Safe Drinking Water Foundation provides various kits for teachers to use in their classrooms. Some kits provide students with the knowledge and tools to conduct their own drinking water tests, and to compare the results of their tests with Canadian drinking water standards. Other kits help students learn about water pollution, aquatic biology, drinking water treatment, water-borne illnesses, and more. Educational kits can be ordered for a fee through the website, or the Foundation can be contacted about the possibility of receiving sponsored kits.

<https://www.safewater.org/school-programs-overview/>

Ontario Drinking Water Stewardship Program Outreach and Education Toolkit. The goal of the Ontario Drinking Water Stewardship Program is to enable landowners and community members to help protect drinking water sources. This website provides links to a number of resources that can be used to raise awareness and inspire stewardship related to water quantity and quality issues, private wells, septic systems, runoff, and more.

<http://conservationontario.ca/uncategorised/140-source-protection-program-outreach-toolkitOntario>

EcoSchools' Water Awareness and Action Campaign Kit. This toolkit provides guidance on how to run a water awareness campaign within a school. It includes ideas for campaign design, communications, and school-wide activities, as well as lesson plans for the classroom.

<https://www.ontarioecoschools.org/>

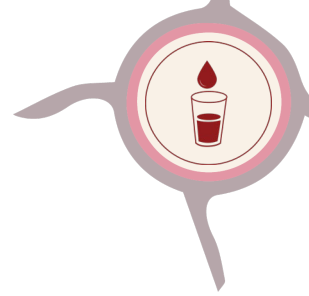
Regulations and Best Practices

Applicable Regulations and Guidelines

A sound understanding of federal and provincial legislation described in this section is key to ensuring we meet or exceed the relevant environmental standards.

Drinking Water Protection





Ontario First Nations Technical Services Corporation
(OFNTSC) (Source Water Protection Programs)

The OFNTSC was established in 1995, mandated by the Ontario First Nations Chiefs-in-Assembly to provide advisory level technical services to Ontario's Tribal Councils, Large First Nations, and Unaffiliated First Nations in a wide array of areas including training and operations and maintenance for water and wastewater systems.

The OFNTSC has previously held workshops for developing a Source Water Protection Plan for First Nations communities. The future offering of this and other courses are dependant on funding.

<http://ofntsc.org/>

First Nations On-Reserve Source Water Protection Plan Guide and Template, Aboriginal Affairs and Northern Development, 2014. The guide is designed to provide step-by-step guidance to First Nations as they develop their source water protection plans.

<https://www.aadnc-aandc.gc.ca/eng/1398369474357/1398369572276>

Clean Water Act, 2006. The purpose of this Act is to protect existing and future sources of drinking water in Ontario.

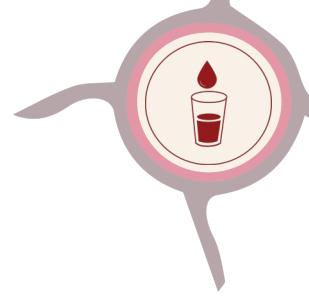
<https://www.ontario.ca/laws/statute/06c22>

Ontario Water Resources Act, 1990. The purpose of this Act is to provide for the conservation, protection and management of Ontario's waters and for their efficient and sustainable use, in order to promote Ontario's long-term environmental, social and economic well-being.

<https://www.ontario.ca/laws/statute/90o40>

Canada Water Act, 1985. The purpose of the Act is to provide for the management of the water resources of Canada, including research, and the planning and implementation of programs related to the conservation, development and utilization of water resources.





<https://laws-lois.justice.gc.ca/eng/acts/c-11/page-1.html>

Drinking Water Quality

Ontario Safe Drinking Water Act, 2002. The purposes of this Act are to recognize that the people of Ontario are entitled to expect their drinking water to be safe, and to provide for the protection of human health and the prevention of drinking water health hazards through the control and regulation of drinking water systems and drinking water testing. The Act also describes reporting requirements, operational standard of care requirements, approvals process, permitting, licensing, as well as compliance and enforcement.

Ontario laboratories licensed to conduct analyses on drinking water samples: This list provides the contact information for Ontario laboratories able to perform analyses on submitted samples of drinking water.

<https://www.ontario.ca/laws/statute/02s32>

Ontario Drinking Water Quality Standards, Ministry of Environment and Climate Change (January 2017 – e-laws currency date). The primary purpose of the Ontario Drinking Water Standards, Objectives and Guidelines is the provision of safe drinking water to those living in Ontario. The standards address disease-causing organisms, toxic chemicals and radioactive substances, as well as aesthetic parameters.

www.ontario.ca/laws/regulation/030169

Guidelines for Canadian Drinking Water Quality Summary Table, Prepared by the Federal-Provincial-Territorial Committee on Drinking Water of the Federal-Provincial-Territorial Committee on Health and the Environment February 2017. Using scientifically sound and up-to-date data and information, the drinking water guidelines are intended to provide protection to those consuming drinking water, and account for health effects, aesthetic effects, and operational considerations.

https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/ewh-semt/alt_formats/pdf/pubs/water-eau/sum_guide-res_recom/sum_guide-res_recom-eng.pdf





Guidance for Providing Safe Drinking Water in Areas of Federal Jurisdiction Version 2, Health Canada, 2013. The purpose of this document is to give clear, consistent guidance on how to implement the Guidelines for Canadian Drinking Water Quality.

<https://www.canada.ca/en/health-canada/services/publications/healthy-living/guidance-providing-safe-drinking-water-areas-federal-jurisdiction-version-2/page-6-guidance-providing-safe-drinking-water-areas-federal-jurisdiction-version-2.html>

From Source to Tap: Guidance on the Multi-Barrier Approach to Safe Drinking Water, 2004. Canadian Council of Ministers of the Environment. This reference document provides guidance to drinking water system owners and operators on how to apply the concept of the multi-barrier approach to safe drinking water in Canada.

https://www.ccme.ca/files/Resources/water/source_tap/mba_guidance_doc_e.pdf

Environmental Health Officer (EHO), Environmental Public Health Services, First Nations & Inuit Health Branch, Sudbury Health Centre. EHOs test drinking water quality for chemical, physical and radiological contaminants, maintaining quality assurance and quality control. EHOs can review and interpret drinking water quality tests and subsequently communicate the results to First Nations communities. Health Canada can review plans for new and upgraded water treatment systems from a public health perspective.

<http://www.fnha.ca/>

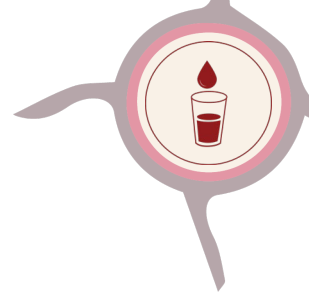
Our current Environmental Health Officer is:

Ray Alatalo, B.A.A. (Enviro. Health), C.P.H.I. (C)
Environmental Health Officer, Government of Canada
Environmental Public Health Services
First Nations & Inuit Health Branch

Sudbury Health Centre
282 - 40 Elm Street, Sudbury, ON., P3C 1S8

Telephone: (705) 671-0760





Cell: (705) 698-4682
Facsimile: (705) 671-4112

Community Drinking Water Supply

Safe Drinking Water and Fluoride Monitoring Protocol. Minister of Health and Long-Term Care, 2018. The purpose of this protocol is to provide direction to boards of health on the components of the Safe Water Program for the prevention and reduction of water-borne illness related to drinking water.

http://www.health.gov.on.ca/en/pro/programs/publichealth/ph_standards/docs/protocols_guidelines/Safe_Water_Fluoride_Protocol_2018_en.pdf

Maintenance Management Plan for Drinking Water and Wastewater Systems in First Nations Communities Guide and Template Aboriginal Affairs and Northern Development Canada, 2014. The purpose of this document is to provide guidance on the development of Maintenance Management Plans and to propose a series of templates that First Nations can readily use to create their own community-based plans.

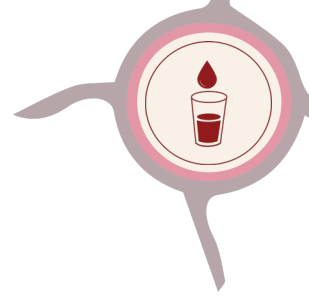
<https://www.aadnc-aandc.gc.ca/eng/1398350727577/1398350921495>

Safe Drinking Water for First Nations Act, 2013. The Act lays out the areas that federal regulations could address, including: the quality of drinking water; the training and certification of water and wastewater system operators; the treatment of water and wastewater; the monitoring, testing, sampling and reporting; and, the protection of sources of drinking water located on reserve.

<https://www.aadnc-aandc.gc.ca/eng/1330528512623/1330528554327>

Protocol for Centralised Drinking Water Systems in First Nations Communities Standards for Design, Construction, Operation, Maintenance, and Monitoring of Centralised Drinking Water Systems, Indian and Northern Affairs Canada, 2010. The protocol contains standards for the design, construction, operation, maintenance, and monitoring of





centralised drinking water systems in First Nations communities.

<https://www.aadnc-aandc.gc.ca/eng/1100100034998/1100100035000>

Small Drinking Water Systems (SDWS) Risk Assessment Guideline, 2018. Safe Water Program, Drinking Water Protocol, Environmental Health Branch Public Health Division Ministry of Health and Long-Term Care. The purpose of this document is to provide guidance to boards of health and, in particular, to public health inspectors in developing and issuing directives to owners of small drinking water supply systems.

http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/protocols_guidelines/Small_Drinking_Water_Systems_Risk_Assessment_Guideline_2018_en.pdf

Ministry of Environment and Climate Change, Drinking Water Management Division, The Indigenous Drinking Water Projects Office. The office provides in-kind technical and engineering support for on-reserve drinking water and wastewater systems.

<https://www.ontario.ca/page/working-first-nations-improve-drinking-water>

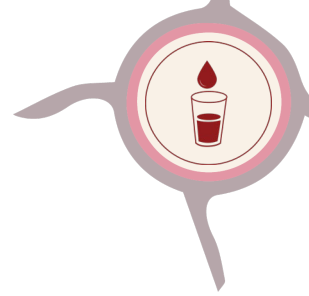
National Plumbing Code of Canada. The code sets out technical provisions for the design and installation of new plumbing systems, and applies to the extension, alteration, renewal and repair of existing plumbing systems.

https://www.nrc-cnrc.gc.ca/eng/publications/codes_centre/2015_national_plumbing_code.html

Well Records and Well Installation

Ministry of the Environmental and Climate Change, Water Supply Wells – Requirements and Best Management Practices, Revised April 2015. The guide serves to provide quick access to a simplified, clear and concise discussion of Regulation 903 of the Revised Regulations of Ontario, 1990 (Wells), and to





provide best management practices and recommended techniques in well construction.

<https://www.ontario.ca/document/water-supply-wells-requirements-and-best-practices#section-3>

MECP Water Well Database: This searchable database provides the location of groundwater wells in Ontario, as well as details regarding their construction/installation and decommissioning.

<https://www.ontario.ca/environment-and-energy/map-well-records>

Directory of Licenced Well Contractors in Ontario: A list of well contractors, licensed in Ontario to install groundwater wells, is provided as well as the contact information for each.

<https://www.ontario.ca/page/find-licenced-well-contractors>

Emergency Response

Guidance for Issuing and Rescinding Boil Water Advisories in Canadian Drinking Water Supplies, Health Canada, 2015. This document summarizes the factors to be considered before a boil water advisory is either issued or rescinded. It provides guidance for both those impacted by a boil water advisory, as well as guidance for responsible authorities.

<https://www.canada.ca/en/health-canada/services/publications/healthy-living/guidance-issuing-rescinding-boil-water-advisories-canadian-drinking-water-supplies.html>

Emergency Response Plan for Drinking Water Systems in First Nations Communities - Guide and Template, Aboriginal Affairs and Northern Development Canada, 2014. The purpose of this Guide is to assist First Nations administrators and water treatment plant operators in developing their own Emergency Response Plan, which in turn will help them protect their water system users under emergency conditions.

<https://www.aadnc-aandc.gc.ca/eng/1398341765198/1398341852027>





Guidance for Issuing and Rescinding Drinking Water Avoidance Advisories in Emergency Situations, 2009. Health Canada. This document summarizes factors that authorities should consider when issuing or rescinding a drinking water avoidance advisory in emergency situations.

<https://www.canada.ca/en/health-canada/services/publications/healthy-living/guidance-issuing-rescinding-drinking-water-avoidance-advisories-emergency-situations.html>

Health Canada Drinking Water Advisory Templates

www.hc-sc.gc.ca/fniah-spnia/alt_formats/pdf/pubs/promotion/envIRON/watk-toaql/do-not-drink-eng.pdf

Individual Wells

Individual Wells for First Nations - A Guide for Environmental Health Officers (EHOs) and Community-Based Drinking Water Monitors (CBWMs). Health Canada, 2010. This guide provides detailed procedures for the inspection and maintenance of wells. It also provides information about bacteriological sampling and testing services.

<http://publications.gc.ca/site/eng/383817/publication.html>

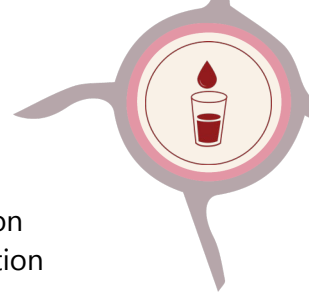
Individual Wells for First Nations - Testing your Well Water. Health Canada, 2010. This brochure was developed by Health Canada, to assist First Nations communities in testing water from individual wells.

<http://publications.gc.ca/site/eng/383824/publication.html>

Individual Wells for First Nations - Inspecting your Well Water. Health Canada, 2010. The brochure, developed by Health Canada, provides step-by-step instructions on how to visually inspect individual wells.

<https://www.canada.ca/en/indigenous-services-canada/services/first-nations-inuit-health/reports-publications/health-promotion/toolkit-individual-wells-first-nations-health-canada-2010.html>





Public Health Grey Bruce. This link provides information on the testing of drinking water samples, and the interpretation of the analytical results.

www.publichealthgreybruce.on.ca/Your-Environment/Safe-Water/Private-Drinking-Water/Testing-Drinking-Water

Trucking Water (Tanks and Cisterns)

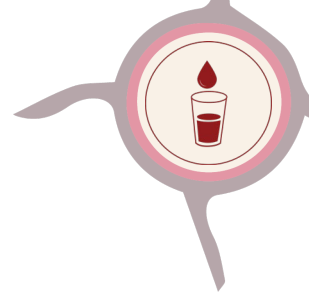
Canadian Standards Association (CSA) (B126 Series-13 Water Cisterns Standard, 2013. This series of standards is available for purchase on the CSA website, provided below. The standard outlines various requirements for the use of cisterns for water systems. It is important to note that this series was developed for application to cisterns or tanks containing potable water. As our water truck tank only transports raw water, it is not necessary to strictly adhere to these requirements; however, the series can provide general approaches for maintenance and disinfection, as well as approved materials for tank/cistern components to prevent contamination.

Standards contained in the series include:

- a) CSA B126.0, General requirements and methods of testing for water cisterns;
- b) CSA B126.1, Installation of water cisterns;
- c) CSA B126.2, Commissioning and field inspection of water cisterns;
- d) CSA B126.3, Operation and maintenance of water cisterns;
- e) CSA B126.4, Decommissioning of water cisterns; and
- f) CSA B126.5, Mobile water cisterns.

Measures to Mitigate Risk of Contaminated Hauled Water: A Focused Practice Question – Region of Peel Public Health, 2015. This paper provides a short overview of standards and best practices for design, cleaning/disinfection and overall maintenance of tanks used to haul water. Again, the focus is on potable water transport; however, many of these procedures can be adapted for raw water.





<https://www.peelregion.ca/health/library/pdf/measures-mitigate-contaminated-hauled-water-FPQ.pdf>

Cleaning and Disinfecting a Water Holding Tank (Yukon)

This handout, developed by the Yukon government, outlines procedures and health and safety precautions for cleaning and disinfecting a water holding tank. These procedures are generally designed for home owners and as such, stricter procedural guidelines should be followed for our communal water system.

http://www.community.gov.yk.ca/pdf/cleaning_disinfecting_water_holding_tank.pdf

Bulk Water Hauling Guidelines – Manitoba Health Protection Unit, 2013. Includes general procedures and guidelines for the design, maintenance and cleaning of bulk water tanks and hauling vehicles.

<https://www.gov.mb.ca/health/publichealth/environmentalhealth/protection/docs/bulkwater.pdf>

Water Towers and Other Water Storage

Chapter 5: Selecting and Sizing Water-Storage Tanks – American Water Works Association (AWWA), 2013. This chapter, developed by the AWWA, breaks down the key considerations for water storage (e.g., water tower) design in communities including peak demand, fire flow, tank costs, energy costs, environmental impacts, and water quality issues.

<https://www.awwa.org/Portals/0/files/publications/documents/samples/M42-RE-SampleChapter1.pdf>

Choosing the Right Water Storage for Your Community is an Important Decision – HRGreen. This article provides an overview of the key factors for a community to consider before selecting a water storage design.

<https://www.hrgreen.com/articles/choosing-right-water-storage-community-important-decision/>

Training Resources

Ontario Water Wastewater Certification Office (OWWCO)





The OWWCO manages the certification processes for water and wastewater operators in Ontario. The OWWCO website provides FAQs and detailed timelines and requirements for certification, including available courses and registration information.

<https://owwco.ca/>

*Ontario First Nations Technical Services Corporation (OFNTSC)
(Source Water Protection Programs)*

The OFNTSC was established in 1995, mandated by the Ontario First Nations Chiefs-in-Assembly to provide advisory level technical services to Ontario's Tribal Councils, Large First Nations, and Unaffiliated First Nations in a wide array of areas including training and operations, and maintenance for water and wastewater systems.

The OFNTSC has previously held workshops for developing a Source Water Protection Plan for First Nations communities. The future offering of this and other courses are dependant on funding.

<http://ofntsc.org/>

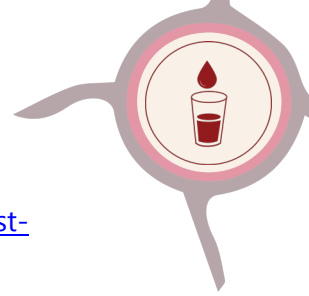
The Walkerton Clean Water Centre (WCWC) has partnered with the Ontario First Nations Technical Services Corporation (OFNTSC) and the Keewatinook Okimakanak Council (KO) to develop and provide drinking water training that meets the specific needs of First Nations communities and their operators.

The partnership is focused on the following training initiatives:

- Entry Level Course for Drinking Water Operators
- Operator training plans
- Continuing education training for operators
- Training for First Nation management
- Training for First Nation leadership

For information on this partnership and training opportunities for First Nations applicants, go to:





<https://owwco.ca/training-opportunities-operators-of-first-nations-systems/>

Walkerton Clean Water Centre (WCWC)

The WCWC is an agency of the Ontario government, established to provide drinking water operator education and training to ensure safe drinking water in Ontario.

<https://wcwc.ca/>

Ontario Clean Water Agency (OCWA)

The OCWA provides support for water and wastewater operations, maintenance and management for First Nations, municipalities, and commercial/industrial clients.

<http://www.ocwa.com/>

Glossary

Coliforms

A large group of bacteria species that occur in the environment, mainly soils, surface water and human or animal fecal waste. Most coliforms are harmless to humans, but they are often used as “indicator organisms” as their presence in a water sample indicates that a recent contamination pathway exists between a source of bacteria and a water supply.

Chlorine Residual

The amount of chlorine (in various forms) present in drinking water after a prescribed contact time for disinfection. Maintenance of a chlorine residual is important to demonstrate that raw water has been adequately treated to kill or inactivate bacteria, viruses, etc. and to prevent re-growth of these microorganisms in the distribution system.

Disinfection By-Products (DBP)

Compounds that form following the reaction of a chlorinated disinfectant with natural organic matter in water. DBPs are considered harmful to human health, highlighting the importance of minimizing their creation to drinking water treatment systems.





Primary Disinfection

Primary disinfection involves the use of a disinfectant (usually a form of chlorine) to treat raw water for human consumption.

Secondary Disinfection

Secondary disinfection, also referred to as disinfectant residual maintenance, involves the addition of extra disinfectant to maintain a certain concentration throughout a distribution system to prevent recontamination. This concentration is referred to as the disinfectant residual.

Source Water

Surface water (streams, rivers or lakes) or ground water (aquifers) that serves as a source of drinking water.

Standard Operating Procedures (SOP)

A procedure specific to an operation that describes the activities necessary to complete tasks in accordance with industry regulations, laws, and individual business standards.

Turbidity

The cloudiness of a fluid caused by suspended solids. The measure of turbidity is an important test used to determine water quality.



Groundwater Management

Environmental Stewardship Guidance

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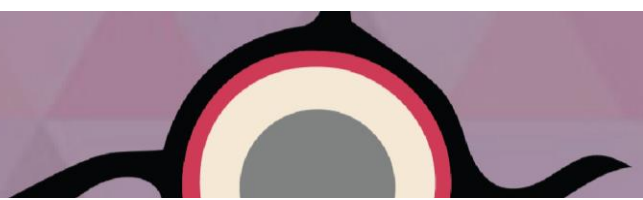
"The water—keep the water clean. For the next future, the kids coming behind. It's their future, not ours. It's got to be good for them."

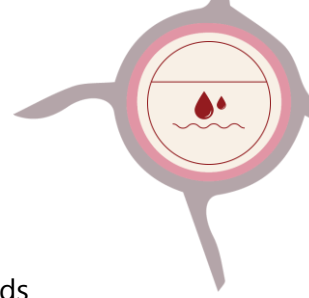
– Community Member

Our Stewardship Vision

We have a sacred connection to the water and are committed to protecting it in all of its forms. Although groundwater is not often visible, its quality and quantity are important for the overall health of our natural ecosystems and people. We will strive to protect our groundwater resources by identifying and mitigating potential risks, managing use, and establishing a community source water protection plan.

The intent of this ESG is to outline the strategies to help ensure sustainable management of our groundwater resources. This includes strategies for keeping accurate records of the number and integrity of water wells on our reserve lands, establishing comprehensive groundwater monitoring programs, and designing and implementing a source water protection plan.





Community Objectives

We will work to implement strategies that will protect groundwater resources in and around SHAFN reserve lands for seven generations to come.

Short-Term Objectives

- Inventory and inspect all wells on our lands.
- Establish a baseline groundwater monitoring program.

Long Term Objectives

- Develop a source water protection plan.
- Develop a groundwater monitoring program to be implemented should dewatering and construction activities be occurring nearby, or if contamination is suspected on our lands.

Stewardship Guidance and Strategies

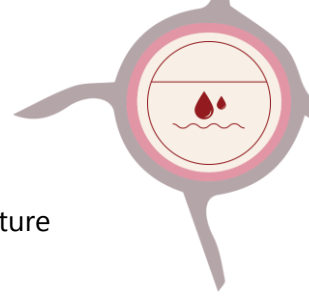
To meet our short and long-term objectives for groundwater management in our community, we use the following **stewardship guidance and strategies** that are built on regulations, guidelines and best management practices.

Strategy 1: Water Well Inventory

A well inventory provides the Lands and Resources Department with a detailed understanding of the current wells that are on our reserve lands. This inventory allows for an assessment of possible pathways for groundwater contamination and the aquifer's capability of supplying the community with usable groundwater and ensures that our water resources are being protected for seven generations to come. The well inventory database houses well records from the Ministry of Environment, Conservation and Parks (MECP) for wells identified in Figures 1 - 3, as well any wells identified by community members that are not included in the MECP database. The locations of these wells are confirmed with GPS and accurate coordinates are documented.

All wells that do not have existing well records should be inspected by a qualified well contractor, and a well record completed for inclusion in the database. To complete the inventory, community members are surveyed regarding





known wells on their properties and public spaces to capture wells that may not be present in the MECP database. Additional information for each well is also collected, including, (when available):

- Date of installation
- Location data (GPS or address)
- Installation method (i.e. direct push, rotary, air percussion)
- Stick up (if applicable)
- Static water level
- Well construction details including cap type (flush mount, lockable monument), well depth, casing diameter, screen material and length including depth of screened interval, casing seal type (cement, bentonite, cement/bentonite slurry, drill cuttings), pack type (gravel, natural, sand)
- Depth to water (at time of installation)
- Capacity (if applicable)

Where information relating to location data and measurements for stick up, static water levels, well depth, cap type and/or casing diameter, measurements are obtained manually in the field and subsequently added to the database.





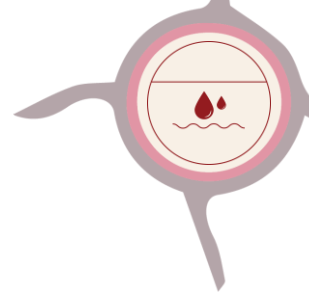
Table 1: Summary of information relating to MECP well records for wells located on Shawanaga lands (as of April 2019).

WELL ID	LOCATION	COMPLETED	UTM COORDINATES			WELL USE*	DEPTH (m)
			ZONE	EASTING	NORTHING		
4802560	SHAWANAGA	1976-10-11	17T	556216	5043774	DO	25.90
4803016	SHAWANAGA	1979-10-05	17T	556116	5043774	DO	18.30
7165276	SHAWANAGA	2010-07-22	17T	556000	5043448	PS	152.40
4801571	SHAWANAGA	1973-06-28	17T	555995	5042354	DO	7.60
4802596	SHAWANAGA	1977-09-08	17T	555816	5042824	DO	19.80
4803310	SHAWANAGA	1981-09-01	17T	556516	5042124	DO	25.90
4802558	SHAWANAGA	1976-10-08	17T	557116	5040124	DO	93.00
4802040	SHAWANAGA	1975-09-04	17T	556566	5042124	DO	48.80
4802039	SHAWANAGA	1975-09-04	17T	556516	5042074	DO	30.50
4801669	SHAWANAGA	1973-06-30	17T	557371	5039861	DO	23.80
7234064	SHAWANAGA	2014-12-04	17T	556419	5044058	DO	80.20
4801574	SHAWANAGA	1973-07-01	17T	556334	5044106	DO	41.10
4803309	LANDING	1981-08-28	17T	548217	5041026	CO	21.30
7111605	SHAWANAGA	2008-09-08	17T	556784	5040333	TH	21.34
4802159	NAISCOUTAING	1976-05-07	17T	539819	5058770	DO	30.50
4803595	SHAWANAGA	1982-08-12	17T	557120	5040125	DO	97.50
4801571	SHAWANAGA	1973-06-28	17T	555979	5042130	DO	7.62

DO = domestic
 PS = public supply
 CO = commercial
 TH = test hole

Figures 1 to 3 illustrate the locations of MECP well records that correspond with the above data table, situated on each of the three reserve areas at SFN.





Strategy 2: Water Well Inspections

An inspection of each water well on our lands (as identified in Strategy 1) allows a trained well inspector to assess the integrity of the well and determine whether it needs decommissioning. The inspection also allows for the determination of whether or not a complete and accurate water well record exists for every water well on reserve lands.

This process applies to all wells except for traditional dug wells. If deemed to not be in active use, dug wells are promptly decommissioned to eliminate a potential pathway for contaminants and to address the risks these wells pose to the safety of community members.

Trained well inspectors are licensed under the Ontario Water Resources Act, and can be identified by searching the following database: <https://www.ontario.ca/page/find-licenced-well-contractors>

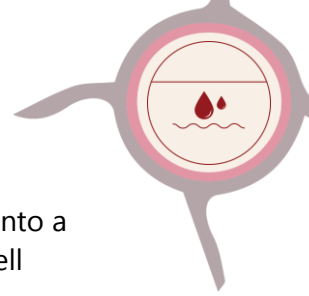
Strategy 3: Assessment of Baseline Groundwater Properties

A baseline assessment of groundwater properties allows us to maintain a database of the groundwater quality and quantity on reserve lands. This database allows for future comparison of water chemistry and levels as our reserve lands potentially experience changes from contamination, construction and development activities, and climate change. The assessment of baseline groundwater properties also allows for determining the treatability of groundwater for current and future use for community members. A Professional Geoscientist should be retained to conduct the baseline assessments, as well as to train and mentor Lands and Resources staff members for capacity building.

Strategy 4: Decommission Wells No Longer in Use

Abandoned wells that are not sealed properly can act as a potential pathway for groundwater contamination. A trained and licensed well contractor will be retained to decommission





wells that are no longer in use and cannot be converted into a monitoring well on our reserve lands. A list of licensed well contractors can be found at:

<https://www.ontario.ca/page/find-licenced-well-contractors>

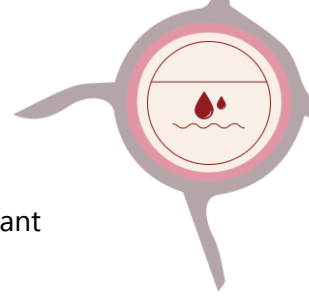
Wells no longer in use that were previously used as a drinking water source are inspected for integrity, and if in good repair, the licensed contractor performs a pumping test to determine the capacity of the well. Wells in disrepair will be decommissioned by the licensed contractor. High performing wells will undergo a cost-benefit analysis to determine if they should be kept for future drinking water supply, used for redundancy in drinking water supplies, used as monitoring wells, or decommissioned by the licensed technician. Wells with low capacity will be considered for conversion into monitoring wells.

Exploratory wells are decommissioned immediately. Monitoring wells that are in disrepair are decommissioned, while current monitoring wells that are deemed to be in good condition are maintained and serviced to remain in use as monitoring wells. Dug wells that are no longer in use will be decommissioned as those pose a risk to public safety and provide an additional pathway for contaminants to enter.

Strategy 5: Ongoing Groundwater Monitoring Program

An ongoing groundwater monitoring program analyzes groundwater quality and quantity on our reserve lands when there are anticipated changes or impacts from nearby construction, development, dewatering activities, or contamination and spills. Trained Lands and Resources staff, under the mentorship of a Professional Geoscientist, will monitor the groundwater quality and quantity (i.e. by collecting static water levels) in water wells on reserve when there is potential for impacts, as necessary. This data will be compiled and compared against the database of baseline conditions (Strategy 3) to determine if negative impacts are occurring. When monitoring for potential impacts, it is important to monitor both quality and quantity year-round to account for seasonal fluctuations. At minimum, monitoring should be conducted quarterly. However, higher monitoring





frequencies may be pursued depending on the contaminant and risk level.

Strategy 6: Well Testing Program

Regular (at least annual) well testing is required for all wells that are still in use or not being decommissioned, to ensure that the well is safe and that the local groundwater source is still in good health. Local public health units provide water testing kits for well owners to collect and submit samples for analysis. Water sample kits can be picked up and dropped off at:

Parry Sound Public Health Unit

70 Joseph Street Unit #302, Parry Sound ON, P2A 1Z7
Tel: 705-746-5801

Instructions for taking a water sample for testing are found here:

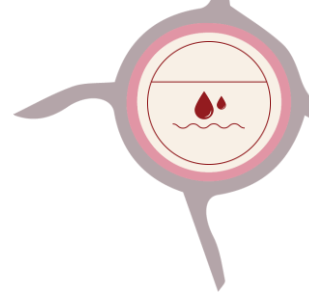
<https://www.publichealthontario.ca/en/ServicesAndTools/LaboratoryServices/Pages/Water-Testing-SubmitASample.aspx>

The Ontario Groundwater Association Well Wise Testing Program makes the following recommendations for routine testing:

Shallow wells that tap into sand and gravel water supplies are more vulnerable to contaminants that come from surface activities. The water quality and quantity can change over time and can be impacted by nearby land uses. Bacteria, nitrate and sodium are the most common impurities that come from human activities at the land surface that can impact well water. Other contaminants from surface activities that have been detected less frequently include pesticides and Volatile Organic Compounds (VOCs).

Properly constructed deeper drilled wells are usually more isolated from surface contaminants. However, shallow drilled bedrock wells, especially in areas with thin soils, can be at risk for contamination from the surface due to the very





rapid movement of water in cracks and fissures in the bedrock. Drilled wells should be monitored regularly to pick up any changes that could indicate a problem at the well. For deep bedrock wells, the water supply can have higher levels of dissolved minerals. Some natural impurities that have been observed in well water sampled in Ontario are hardness (CaCO_3) Iron, Manganese, Sulphur, Fluoride, Boron, Uranium, and Arsenic. Well water should be tested for metals and minerals to determine what is in the water naturally. Water testing can also help inform you if you are considering water treatment. It is best to know what concentrations of the different minerals you are dealing with prior to attempting to treat the problem.

Some impurities are picked up by water as it passes through household plumbing. The presence of these impurities may indicate corrosion of the pipes or another component of the distribution system. This is more of a concern if water is acidic. Some water treatment by-products may impact the corrosion of pipes. Keep an eye on the pH of your water and test for lead, cadmium and zinc.

http://www.ogwa.ca/Resources/Documents/water_testing_article.pdf

Rural Well Testing Kits that test for 40 of the most common water impurities can be obtained by contacting:

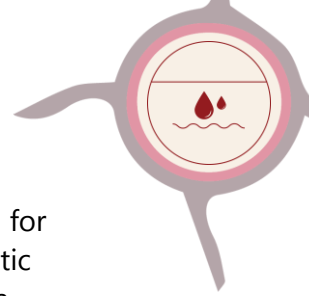
Well Wise Water Testing Program

Ontario Ground Water Association
48 Front Street East, Strathroy, ON N7G 1Y6
Phone: 519.245.7194 Fax: 519.245.7196 Email:
ogwa@ogwa.ca

Annual well testing will allow us to monitor iron and manganese concentrations and ensure that levels are not elevated above the recommended levels. The results will help inform what treatment options are required, if any.

For most wells, the “Metals, Minerals, and Salts” testing kit is sufficient, however wells that are close to gas stations,





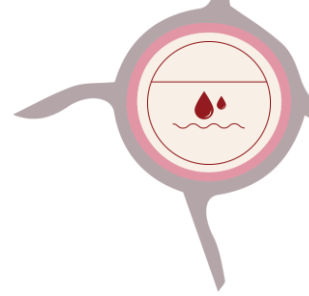
industrial sites, or fuel storage sites should also be tested for solvents and fuels. Drilled bedrock wells located near septic systems or septic lagoons should be tested quarterly (at a minimum) for E. coli and nitrate. Bedrock wells located near other potential contaminant sources, such as landfills or chemical or salt storage, should be tested accordingly.

Strategy 7: Source Water Protection Plan

Source water protection plans are designed and adopted by communities as a management strategy to minimize the impacts that human activity and natural events may have on water resources. Source water protection plans are typically developed on a watershed-basis and include assessments of the sources of water and actions to deal with the assessment results. Pollution Probe and the Ontario government recommend considering the following nine steps when developing a source water protection plan:

- 1) Involve stakeholders – from development to implementation
- 2) Define the source protection area
- 3) Identify potential threats
- 4) Define goals, objectives and targets
- 5) Map the area
- 6) Rank the threats and identify vulnerable areas
- 7) Create and implement a source protection plan (using information from above steps)
- 8) Establish regular monitoring and reporting practices
- 9) Obtain funding





You can learn more about these steps here:
<http://www.pollutionprobe.org/publications/the-source-water-protection-primer/>

Ontario's approach can be adapted to suit First Nation priorities. The stages outlined in the Medicine Wheel below (Figure 1) are based on traditional teachings and lessons learned from several First Nation communities and practitioners in Ontario.

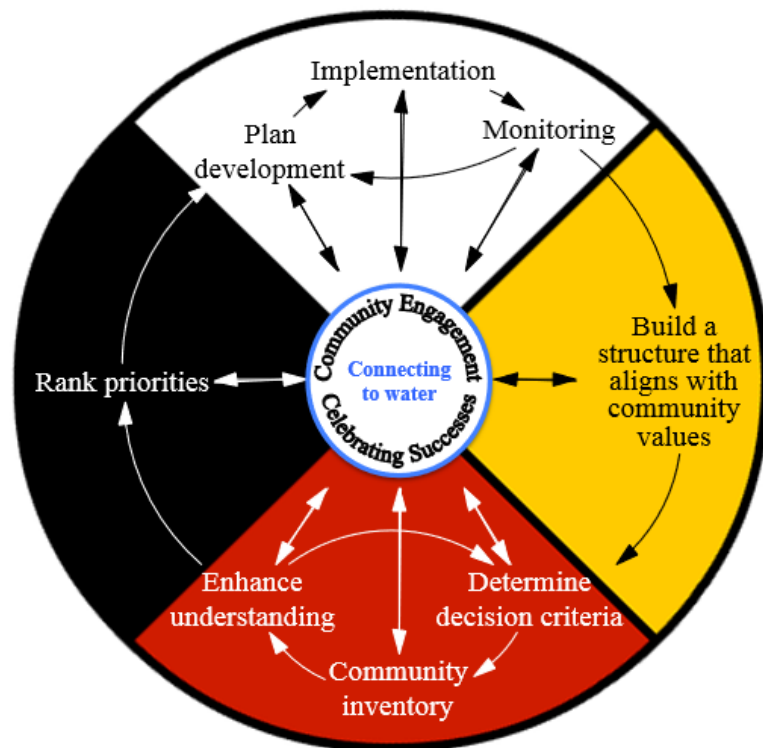


Figure 1: Stages of source water protection planning (Medicine Wheel teachings from Joanne Keeshig).

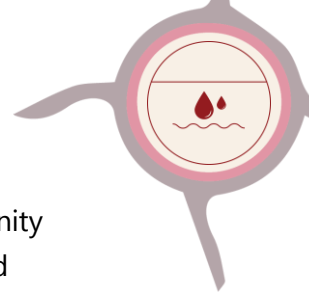
The following steps can be taken to get started on a source water protection plan:

Stage 1: Eastern Direction

The process begins in the Eastern direction with the development of a water protection program structure that aligns with community values. Steps include:

- 1) Identify Water Committee program leader(s).





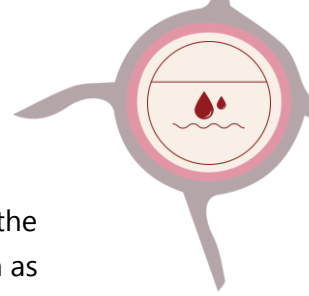
- 2) Build a Water Committee that consists of community members from all walks of life: Elders; youth; Band Council members; and other community members that have a passion for or work with water.
- 3) Identify the program's vision, goals, and a structure that works with the current assets of the community.
- 4) Identify roles and responsibilities. This can include the roles and responsibilities of each department, committee member, the political leadership, families, individuals, and the community at large.
- 5) Identify what the community is already doing that relates to water protection, mark it down as part of the implementation phase of the plan, and celebrate it through a community event.

Stage 2: Southern Direction

Conduct a community inventory, including documenting activities on and off reserve that may be impacting water quality and quantity. Communication with the community through education and outreach is critical to this stage, both to collect information and to inform community members about how their actions and the actions of others might affect water quality or quantity. Steps can include:

- 1) Identify the main concerns and threats to water from the perspectives of a variety of community members and departments.
- 2) Obtain files or reports that contain technical data on water quality and quantity and on the nature and locations of potential contaminant sources on reserve.
- 3) Identify where community members actually get their drinking water. Some people may be collecting water at springs, while others may be using wells that are not properly identified in consultant reports.





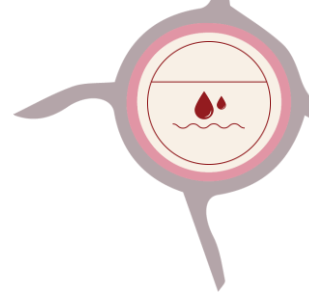
- 4) Obtain reports about the local watershed(s) and the traditional territory from off-reserve sources, such as Conservation Authorities.
- 5) Collect Indigenous Knowledge about water sources and how they have changed; vulnerable areas on the reserve; the locations of important medicinal plants; and other sites that should be protected through the water protection program.
- 6) Combine technical and traditional or local knowledge in written and/or mapping format.

Stage 3: Western Direction

Determine which contaminants pose the most risk to the community and set priorities about which risks will be addressed first. The following steps are included in this stage:

- 1) Conduct a risk assessment, set priorities based on the precautionary principle to “do no harm” and “plan seven generations ahead”, or use a combination of these approaches.
- 2) If the committee decides to conduct a risk assessment, the risks of each identified threat should be determined. It is important to engage someone with knowledge of hydrogeological processes in this step.
- 3) Prioritize which threats will be dealt with first using information about the risk of each threat, available funding, upcoming opportunities, and community preferences.
- 4) Identify which organizations should or could be contacted to deal with contaminant threats originating from off-reserve. Engage with Chief and Council and Tribal Councils to obtain approvals and request that they engage with certain off-reserve entities.



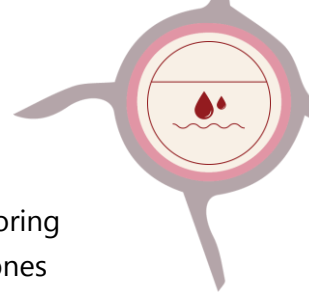


Stage 4: Northern Direction

The water protection plan is finalized in this stage and implementation and monitoring begins. The finalized water protection plan provides the community with a guide to make decisions that are respectful of the lands and waters on the reserve and in the traditional territory, and supports the community's physical, spiritual, and cultural relationships to water. The plan's implementation also creates opportunities for community members to engage in water stewardship. The following steps can be included in this stage:

- 1) Flesh out the priorities developed in the previous stage into a finalized implementation plan including milestones, dates, and outcomes.
- 2) Identify external funding opportunities and apply for grants.
- 3) Identify "shovel-ready" projects that can be ready to begin as soon as funding is available.
- 4) Engage experts to address data gaps through hydrological, hydrogeological, and/or ecological studies.
- 5) Divide tasks among participating departments and make internal funding decisions.
- 6) Determine long-term strategies for water protection by building partnerships with off-reserve organizations and obtaining Chief and Council/Tribal Council approvals.
- 7) Monitor the results of the implemented program, including water quality and quantity, and track the desired outcomes of the program, such as cleanup activities; upgraded infrastructure; eliminated sources of vulnerability (e.g., decommissioned abandoned wells); educational/school programs; and completed community outreach activities.





- 8) Revisit and evaluate the plan based on the monitoring results. Do goals need adjusting? Are new milestones or outcomes required?
- 9) Provincial watershed source water protection plans are reviewed by external experts, such as academics and consultants. It is a good idea for communities to have an expert review their finalized plans.

The Government of Canada has a guide and template available to assist First Nations Reserves in developing their individualized source water protection plan:

https://www.aadnc-aandc.gc.ca/DAM/DAM-INTER-HQ-ENR/STAGING/texte-text/source_1398366907537_eng.pdf

Monitoring and Enforcement

As citizens of Shawanaga First Nation, we are responsible for helping to protect our lands and waters – including groundwater. It is our responsibility to report anything we see that might affect our groundwater, such as changes on the land, spills or potentially harmful activities.

Well Inspections

(for more detail, see section above on well testing)

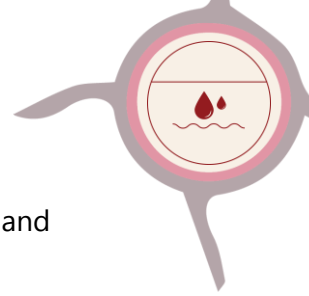
- Licensed well contractors inspect groundwater wells.
- Private well owners may hire contractors to test their own individual wells.
- Staff in the Lands and Resources Department manage testing for wells owned and operated by Shawanaga First Nation.
- If a test reveals a groundwater issue, immediately notify the Lands and Resources Department, and Chief and Council.

Community Initiatives

Groundwater Information Sessions

These sessions would give our community members knowledge about the groundwater within their traditional lands and how to take care of Mother Earth for future generations. The sessions would allow for distribution of knowledge to community members about lessening impacts affecting their groundwater. This also presents an opportunity





to gather TEK from elders in the community and regular land users and allows the members to share their knowledge about vulnerable places that need protecting within their traditional lands.

Groundwater Education Program

This program would be suited for each grade level so everyone in the program will have more a comprehensive understanding of what groundwater is, and its importance to the community. This program would involve Elders or knowledge holders coming into a classroom setting to discuss the importance of water, and interactive activities such as showing videos and pictures, or going out to the land to explore the areas of importance.

Community Engagement Sessions

A series of sessions for the community about water and the importance of it would be beneficial. This series could include a water walk with local knowledge holders and/or Elders, canoeing on water ways incorporating teachings on this journey, guided walks along a water course or to spring seeps in the bush.

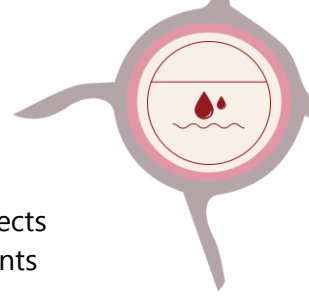
A Week to Celebrate Water

A week dedicated to show how important water is to the community through various celebrations of water and the gift it provides. These activities may include ceremonies, feasts, guided canoe trips, garbage day clean-up, mini boat races (built by youth), community booth information about how each department works with water and how they work to protect water, guest speakers (i.e. people actively involved in protecting water).

Community engagement, education, and the sharing of community knowledge are important to the success of water stewardship and protection measures. Community members, from youth to Elders, can contribute to the protection of water sources in many ways, such as by:

- Conducting Water Walks or Canoe Journeys along bodies of water on the reserve or in the traditional territory

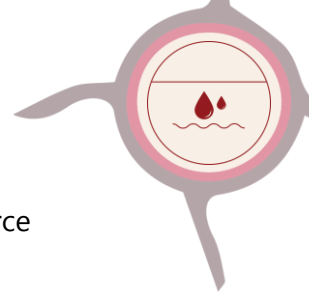




- Hosting water festivals to celebrate the many aspects of water in the community, which can include events like ceremony; feasts; guided walks along rivers, creeks, or to springs; mini boat races (built by youth); booths from each department that works with water such as Health, Education, Lands, and Public Works to showcase what they are doing to protect water in the community, and booths from other water groups (Water Walkers, school classes presenting water-related projects, university researchers, off-reserve water groups from the watershed)
- Elder and youth bush walks to springs and water bodies to learn about the old ways of gathering/using water in the territory
- Water quality testing at wells and springs (kits are available that can be used by youth to test a wide range of water quality parameters)
- Garbage clean up events along water ways or in important groundwater recharge areas
- Youth group activities, including trips to visit springs and wells; visual demonstrations to learn about how groundwater flows; trips to important groundwater recharge zones on-reserve or in the traditional territory; and making posters/pamphlets/videos about important water protection activities, such as keeping your wellhead area clean and capped properly
- Participating in water walks on reserve or in our traditional territory
- Hosting water workshops for our community members to share their knowledge about vulnerable places that need protecting on reserve (this can be accomplished by putting up maps and giving our community members stickies to identify important areas)

Many of these activities can provide opportunities for our community members to share their valuable knowledge, and to learn about water protection. Sometimes, the biggest risk to groundwater is from the storage of potential contaminants near wells, such as scrap metal, tanks, or even dogs tied to wells that defecate near the wellhead. Many of these events can be opportunities to engage our community members in



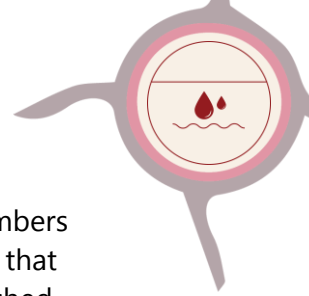


learning about what can be done at home to ensure source water is protected.

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Regulations and Best Practices

Federal Regulations

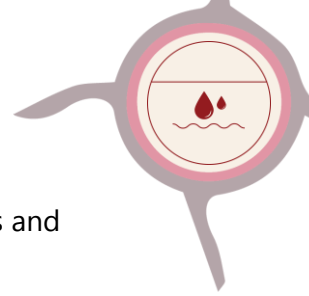
Canada Water Act, 2006 – The Act serves to provide for the management of the water resources of Canada, including research and the planning and implementation of programs relating to the conservation, development and utilization of water resources. Also has provisions for formal consultation and agreements with the provinces.

Canadian Environmental Protection Act, 1999. - This Act protects the environment, including land, air and water, through pollution prevention and protects human health in order to contribute to sustainable development. This Act assesses the risks associated with contaminants in the environment, regulates the releases of contaminants to the environment, and details required enforcement and compliance.

Ontario Ministry of Environment, Conservation, and Parks

In relation to the protection and conservation of ground water resources, the MECP has mandate for monitoring, compliance and enforcement for: drinking water, water takings, environmental assessments, water conservation and efficiency, water quality protection, drainage, contaminated





sites, climate change and also works with other ministries and agencies with many other water-related topics.

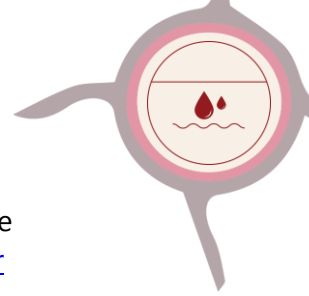
Ontario Water Resources Act, 1990. (MOECC). The purpose of this Act is to provide for the conservation, protection and management of Ontario's waters and for their efficient and sustainable use, in order to promote Ontario's long-term environmental, social and economic well-being. This Act regulates, amongst others: water takings through Permits to Take Water, water well records database. O.Reg 903 under the OWRA regulates groundwater wells for installation, operation and decommissioning.

Ontario Environmental Protection Act 1990: (MOECC). This Act is the primary pollution control legislation in Ontario. It prohibits contaminants that can cause adverse effects from being released into the environment, provides limits on releases to the environment, governs spill clean up, and can require the polluter to be responsible for cleaning up spills for which they are deemed to be at fault. This Act regulates Records of Site Condition (O. Reg. 153/04) which deals with site contamination, clean-up of groundwater and standards that must be met for groundwater quality.

Records of Site Condition ((O. Reg. 153/04), 2004). For groundwater that is already contaminated, this regulation sets requirements and standards that groundwater must meet before the land above it is developed. The clean-up of groundwater, referred to as groundwater remediation, is sometimes required to meet the quality standards set out in this regulation. Standards are provided for a variety of land uses including (residential/ parkland/institutional, industrial/commercial/community, and agricultural) for both potable and non-potable groundwater conditions.

Permits to Take Water Program (MOECC). The MOECC requires anyone taking over 50,000L/day from natural water bodies (surface or groundwater) to apply for a Permit to Take Water (PTTW). The program also requires reporting on an annual basis of the amount of water taken, from what source and how much was taken on a daily basis. Permits are required for water used for industrial, irrigation, water supply, dewatering, remediation and other purposes, but domestic





household use, for livestock watering and fire-fighting are exempt. <https://www.ontario.ca/page/permits-take-water>

Clean Water Act, 2006 (MOECC) The purpose of this Act is to protect existing and future sources of drinking water. It has requirements to do source protection planning and look at threats to supply and quality.

Guidelines and Best Management Practices

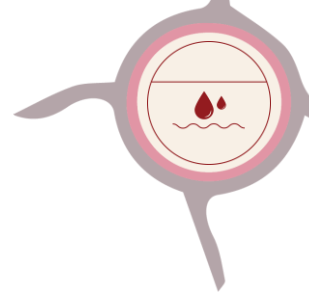
Federal Contaminated Sites Action Plan Advisory Bulletin (2016): How, When and Why do I decommission a groundwater monitoring well? (Environment Canada, 2016). https://www.canada.ca/content/dam/eccc/migration/fcs-scf/45E03CCF-169C-4E11-838A-44D3D7915900/FAB_How-20to-20decommission-20a-20monitoring-20well_EN_21-Apr-2016.pdf

Water Supply Wells: Requirements and Best Practices (MOECC, 2014): This manual provides a clear and concise discussion of Ontario Regulation 903 (The Wells Regulation) as amended under the Ontario Water Resources Act R.R.O. 1990. It also provides best management practices and recommended techniques for constructing a well and minimizing adverse impacts to our environment. <https://www.ontario.ca/page/water-supply-wells-requirements-and-best-practices>

A series of 7 technical bulletins summarize the requirements and best management practices on how to properly install a groundwater well. The technical bulletins include:

- [Wells Regulation – Siting a New Well \(technical bulletin\)](#)
- [Wells Regulation – Completing the New Well's Structure \(technical bulletin\)](#)
- [Wells Regulation – Flowing Wells \(technical bulletin\)](#)
- [Wells Regulation – Installing Equipment in a Well \(technical bulletin\)](#)





- [Wells Regulation – New Construction of the Hole, Casing, Well Screen and Annular Space \(technical bulletin\)](#)
- [Wells Regulation – Well Construction Licensing \(technical bulletin\)](#)
- [Wells Regulation – Well Disinfection \(technical bulletin\)](#)

Well Licensing (MOECC, 2017): to construct, inspect, repair or upgrade a well in Ontario, well contractors need a license and training, including a well contractor license or well technician license. <https://www.ontario.ca/page/well-contractor-licence>

There are 5 classes (types) of licenses for well technicians:

- Class 1: well drilling
- Class 2: well digging and boring
- Class 3: other well construction
- Class 4: pump installation
- Class 5: monitoring, sampling, testing and non-powered construction

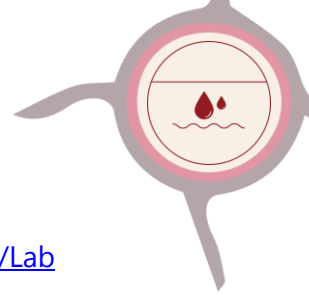
Wells Regulation – Well Abandonment: How to Plug and Seal a Well Technical Bulletin, MOECC (2011): This technical bulletin details the requirements for proper well decommissioning or abandonment so it doesn't become a pathway for contamination.

<https://dr6j45jk9xcmk.cloudfront.net/documents/2473/wellabandonmenttb-en.pdf>

Ontario Groundwater Association is a not-for-profit organization to facilitate the various sectors of the groundwater industry coming together for the delivery of safe and clean water supplies throughout the Province. The OGA website has some useful links and resources for wells and groundwater management including how to get well licenses, well testing and awareness programs for well owners and operators. <http://www.ogwa.ca/Resources-Links>

Testing a Private Well. The Public Health Unit provides sample kits for anyone owning a private well so they can test the quality of their well for bacterial contamination. To contact Public Health Ontario: PHOL Customer Service Centre, 1(877) 604-





4567 or (416) 235-6556.

<https://www.publichealthontario.ca/en/ServicesAndTools/LaboratoryServices/Pages/Water-testing.aspx>

Well Aware: A Guide for Well Owners (2011): a brochure on how to properly care for your well and test for contamination. http://www.ogwa.ca/Resources/Documents/WA_Booklet_2011_FINAL_July_2011.pdf

Water Well Records Database (2017): All wells should have a well record created when they are installed and notifications sent when they are decommissioned. If there isn't one (very old wells or wells not installed by a licensed contractor), one may need to be created. The MECP maintains a database of all the wells in the Province with these well records.

This site details how to obtain a well record. <https://www.ontario.ca/page/well-records>

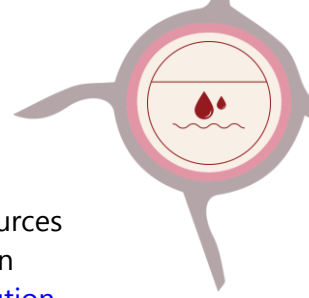
This website also is a portal to look at all well records in Ontario. <http://ontariogroundwater.com/>

Provincial Water Quality Objectives (PWQO), 1994 (MOECC). The PWQOs are numerical and narrative criteria which serve as science-based chemical and physical limits of acceptable change for surface waters (i.e. lakes and rivers) and, where it discharges to the surface, the ground water of the Province. The PWQO are set at a level of water quality which is protective of all forms of aquatic life and all aspects of the aquatic life cycles during indefinite exposure to the water. The PWQO's for protection of recreational water uses are based on public health and aesthetic considerations.

Guidance Document on Federal Interim Groundwater Quality Guidelines for Federal Contaminated Sites (2012). These guidelines were developed to assist federal custodians in assessing, remediating/risk managing federal contaminated sites. They are interim guidelines until a finalized set of guidelines can be developed. These guidelines are used for the assessment and remediation criteria for contaminated sites.

The Source Water Protection Primer (Pollution Probe and Ontario Ministry of Environment, 2006). This guide provides an introduction on what source water protection is, and how to





make it happen. The publication includes additional resources for developing and implementing source water protection plans. <https://www.actforcleanwater.ca/media/1043/pollution-probe-source-water-protection-primer-english.pdf>

Glossary

Aquifer

An underground geological formation of sand, soil, gravel and rock able to store and yield water.

Corrosion

The deterioration of a material, usually a metal, because of a reaction with its environment.

Decommission

The permanent closure of a groundwater well, ensuring that it is inoperative, dismantled and decontaminated for safety purposes. It is important to decommission abandoned groundwater wells, as they would otherwise provide a direct, unhindered route for pollutants to reach an aquifer.

Groundwater Recharge

A hydrologic process where water moves downward from surface water to groundwater. This is primary method through which water enters an aquifer.

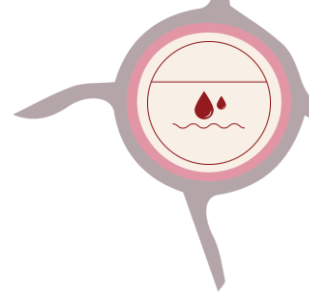
Groundwater Well

An excavation or structure created in the ground by digging, driving, boring, or drilling to access water in underground aquifers. Groundwater wells provide municipalities, industries, and homeowners with access to groundwater for their various water needs. Subsequently, they must be constructed and maintained to ensure that the groundwater supply is safe from pollution. The groundwater wells discussed in this document refer to deeper drilled wells, not shallow dug wells, unless specified.

Hydrogeology

The study of interactions between geology (e.g. rock, aggregate, mineral soil) and water, especially groundwater.





Impurities

Solids that have dissolved or are suspended in water, including but not limited to soluble iron salts, sodium chloride, sand and silt, sulfates, calcium bicarbonate and hydroxide. These particles can sometimes cause turbidity (cloudiness), hardness, and alkalinity in groundwater.

Monitoring Well

A non-pumping well, generally of small diameter, that is used to measure the elevation of a water table or to take samples for groundwater quality measurement.

Pesticide

Any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any pest, including herbicides, fungicides, defoliants and other substances.

pH

The measure of water's acidity or alkalinity. Water with a pH of 0 to less than 7 is acidic. A pH of 7 is neutral, neither acidic nor alkaline. Water with a pH greater than 7 to 14 is termed alkaline. In Canada, recommended pH for drinking water is between 6.5 and 8.5.

Source Water

Untreated water that originates from streams, lakes, or groundwater aquifers and eventually supplies private and public wells and drinking water systems.

Volatile Organic Compound

Organic compounds containing one or more carbon atoms that have high vapour pressures and therefore evaporate readily into the atmosphere.

Watershed

An area of land where surface runoff (including water, sediments, nutrients, and contaminants) drain into a common water body.





Wastewater Management

Environmental Stewardship Guidance

Contents

Our Stewardship Vision

Community Objectives

Stewardship Guidance and Strategies

Monitoring and Enforcement

Community Initiatives

Regulations and Best Practices

Glossary

"Water has an energy of its own. Praying to the water is one way in which we ask for that energy and use it as a prayer to give back to our families. It has a healing component to it and so the water is very, very important to us."

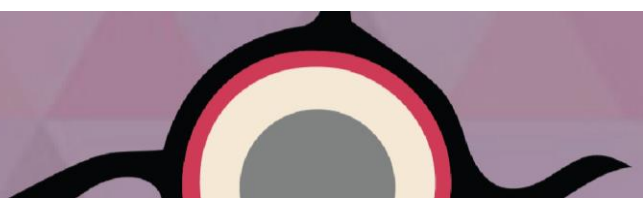
– Community Member

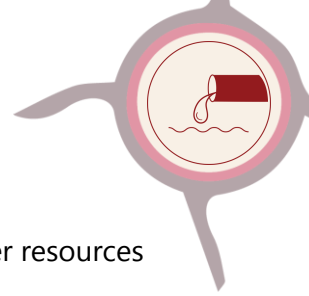
Our Stewardship Vision

Wastewater, when properly managed, has little to no effect on the quality of our water. However, our community faces unique challenges in effectively managing wastewater because of our reliance on septic systems in a high-water table and shallow bedrock region. This situation increases the risk for contamination of surface and groundwater via run-off and seepage if/when septic systems fail prematurely.

To address these challenges and maintain the quality of our water, we are committed to employing diverse strategies to manage wastewater in a sustainable way that preserves the value of our water for all uses—for drinking water, our fishery, and other social and economic uses. We take a multi-faceted approach to managing and mitigating wastewater impacts by setting goals and standards, employing Best Management Practices, and increasing awareness around household water conservation.

From the main community leased properties at Naiscoutaing to Shawanaga Landing, our wastewater needs and challenges vary considerably. This ESG presents strategies to address those differing needs.





Community Objectives

We will work to implement strategies to protect our water resources by properly managing our wastewater to mitigate risks.

Short-Term Objectives

- Complete an assessment on all septic system installed prior to 1991 and flag for immediate inspection.
- Develop a Wastewater Management Plan for Shawanaga Landing and Naiscoutaing.
- Foster environmental stewardship in our community through the implementation of awareness programs and engagement activities.
- Develop a set of Best Management Practices for septic systems that address the unique challenges faced by our community (e.g. high-water table).
- Explore alternative/non-conventional onsite wastewater treatment systems that meet the needs of our community and improve effluent quality.

Long Term Objectives

- Creating and implementing a Septic System Management Program that outlines a clear schedule for routine inspections and maintenance.
- Establish onsite wastewater treatment system maintenance reporting requirements for cottagers/leased properties at Naiscoutaing.
- Complete a comprehensive feasibility study for the construction and operation of a wastewater treatment plant and/or pre-fabricated "package plants" capable of serving clusters of homes and individual properties.
- Develop a plan to manage Pharmaceuticals and Personal Care Products (PPCP) emerging contaminants of concern associated with wastewater effluent.





Stewardship Guidance and Strategies

To meet our short and long-term objectives for effective wastewater management in our community, we use the following **stewardship guidance and strategies** that are built on regulations, guidelines and best management practices.

Strategy 1: Creation of a Wastewater Programs Manager Role

The creation of a wastewater programs manager role will ensure that programs and initiatives described in the ESG are effectively implemented, producing meaningful outcomes for the community. This role will oversee all wastewater programs (e.g. audits, assessments) and funding applications, including those relating to a future wastewater treatment plant. This individual could also explore the possibility of setting up a sewage emergency hotline, where members can leave messages when they experience sewage issues (i.e., backups in homes).

Strategy 2: Completion of a Septic System Assessment and Database

This initiative is intended to provide a comprehensive assessment of older septic systems in our community; in particular, those constructed prior to 1991, which were not previously inspected and approved by Health Canada. A database will be created to manage and monitor on-site wastewater treatment systems. Inspection data pertaining to more recent systems (installed since 1991) may be obtained from Health Canada. Information collected as part of the Septic System Assessment should include the following information, where possible:

- Location
- Owner contact information
- Location
- Design Capacity or estimated size of tank, bed
- Year of Installation
- Proximity to Surface Water
- Records of Maintenance





- Observations (i.e. noting any obvious system failures including sewage backups in home and inadequate drainage in area of septic bed)

Strategy 3: Explore Alternative Onsite Wastewater Systems

We will explore the application of alternative/non-conventional onsite wastewater systems including biofiltration. Where practical, we will encourage or require the installation of composting toilets or septic holding tanks to reduce or eliminate the release of wastewater effluent to the environment altogether. Technical documents and links to companies that specialize in alternative onsite treatment systems are provided in the 'Other Useful Resources' section of this document.

We will seek out existing demonstration sites for these technologies in Parry Sound and surrounding area to gather additional information relating to the viability of these systems in our region. We may opt to launch small-scale pilot projects in our community (i.e. at community buildings) to evaluate these options in practice, prior to making any significant investments.

Strategy 4: Development of Wastewater Management Plans for Shawanaga Landing and Naiscoutaing

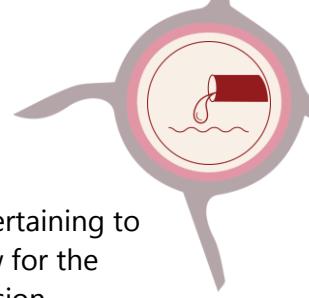
These plans are intended to address the disposal of wastewater produced during seasonal use at Shawanaga Landing and leased properties at Naiscoutaing.

Shawanaga Landing

The seasonal use of Shawanaga Landing poses several risks to aesthetics and water quality at the community beach, as well as to groundwater and surface water quality (i.e. Georgian Bay, rivers and streams). We will encourage responsible disposal of sewage by exploring various options, which may include:

- Constructing community bathroom facilities connected to septic holding tanks in locations throughout the Landing.
- Requiring compliance with best management practices for outhouses (i.e. setbacks from shoreline, pit dimensions). The





development of Environmental Protection laws pertaining to outhouse construction will be considered to allow for the enforcement of shoreline setbacks and pit dimension requirements.

- Gradually phasing out the use of outhouses, starting with the decommissioning of those closest to the shoreline and/or at capacity

Naiscoutaing

In order to mitigate impacts of septic systems on water resources, we may opt to require the use of holding tanks or alternative onsite wastewater systems (e.g. biofiltration, UV) that provide more effective treatment of contaminants including bacteria such as *E. coli*, phosphorus, nitrates, ammonium, and pharmaceutical and personal care products.

Strategy 5: Community Septic System Awareness Program

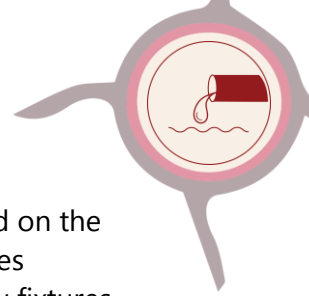
Public awareness is an important component of the effective management of septic systems. A community presentation and/or the distribution of educational materials to our members will introduce the Septic System Management Program. This may include the development of an inspection schedule, providing maintenance tips and identifying steps they can take to mitigate risks, especially those posed by high water table conditions.

The 'Think Before You Flush' (described in Community Initiatives section) public awareness campaign can play a key role in educating members about what should not be disposed of down the drain including personal hygiene products and pharmaceuticals.

Strategy 6: Household Water Conservation Initiative

Conserving water in homes reduces demand on septic systems, effectively minimizing impacts on the environment. The less water we use, the less wastewater we produce. Water conservation is also useful for reducing maintenance costs for septic systems and holding tanks, as tanks require pumping less frequently. Reducing household water use also reduces demands and costs for drinking water treatment systems. The initiative could include ways to conserve





water in the home that can be used for hand outs, posted on the website and on Facebook. The Housing and Social Services Department could make a commitment to install low flow fixtures, such as toilets and showers, in new houses and upgrade existing fixtures with low flow options as opportunities arise.

Strategy 7: Water Quality Monitoring Program for Wastewater Impacts

A water quality sampling program can ensure that the impacts of wastewater from septic systems are closely monitored in groundwater and surface water sources.

Special attention will be given to monitoring high risk areas following major heavy precipitation events and during key seasonal fluctuations, such as the spring freshet. This would ensure that water quality meets the Provincial Water Quality Objectives.

Strategy 8: Wastewater Treatment Plant Feasibility Study

Completion of a Wastewater Treatment Plant Feasibility Study will allow us to make an informed decision for the future management of wastewater in our community. This Study will provide details necessary to identify and apply for funding opportunities.

Strategy 9: Pharmaceuticals and Personal Care Products (PPCP) Management Strategy

Pharmaceuticals and Personal Care Products (PPCP) refer to, “a group of compounds found in common household products such as medications, cosmetics and cleaning agents” (Ontario Rural Wastewater Centre [ORWC], 2010). Although little is known about the full extent of risks associated with PPCPs in the environment, studies have indicated that these substances exert toxic effects on aquatic life, even at very small concentrations (ORWC, 2010).

Given the shallow groundwater condition in our community, our proximity to shorelines, and the widespread use of septic systems, we are committed to taking a proactive approach to managing risks posed by PPCPs in our wastewater.





We will create a PPCP Management Strategy, as part of our broader wastewater management plan, to reduce the release of these harmful substances to the environment and mitigate associated risks. Our multi-faceted approach will include a combination of community initiatives and best management practices for onsite wastewater systems.

Pharmaceutical Collection Events

We will host collection events (e.g. monthly) for community members to dispose of their unused pharmaceuticals (prescription and over-the-counter medications). This initiative will reduce the volume of pharmaceutical compounds released to the environment through improper disposal methods – placing items in household garbage or flushing them down the toilet. Providing a convenient and accessible method of disposal is key to the success of collection programs. Protecting public health is a top priority for our community; as such, we will ensure a secure disposal site to prevent unauthorized access as well as the use of detailed documentation (e.g. chain of custody) and final disposal at a licensed pharmacy.

Alternative Onsite Wastewater Systems

We will explore the application of alternative onsite wastewater systems including biofiltration and ultraviolet disinfection for the removal of PPCPs.



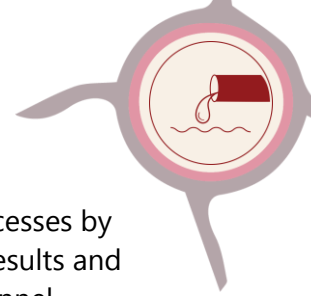
Monitoring and Enforcement

As citizens of Shawanaga First Nation, we are responsible for helping to protect our lands and waters. It is our responsibility to report anything we see that relates to wastewater that might affect our surface and ground water, such as changes on the land or potentially harmful spills.

Wastewater management on our lands falls under provincial regulations and must undergo regular inspections. We work closely with the Ontario Ministry of Environment, Conservation and Parks (MECP); the Ontario Clean Water Agency and Indigenous Services Canada (ISC) to monitor wastewater on our lands, as well as to enforce provincial and federal standards.

Our wastewater treatment operators would be responsible for maintaining and monitoring wastewater management on reserve and would be responsible for contacting the MECP or ISC in the event of wastewater accident, malfunction or emergency.





Community Initiatives

Our staff participate in monitoring and enforcement processes by liaising with government agencies to obtain inspection results and receive information and training from government personnel.

We recognize the importance of engaging all members of our community to foster stewardship of our lands and waters. We host community meetings and events and use awareness campaigns to help us all to better understand our responsibilities in managing wastewater and its associated impacts in our community.

Community Information Sessions

The community cares deeply about the health of our watershed and protecting it from wastewater impacts. These sessions will involve giving information about what wastewater is, where it comes from and some ways to reduce the wastewater within the household. During these sessions, the community will be informed of the Septic System Management Program, and opportunity to address concerns and/or problems of Shawanaga Landing and the leased properties.

Pharmaceutical Collection Events

We will arrange pharmaceutical collection events to occur on a regular schedule as to reduce the amount of chemicals entering into the wastewater. Also, during these times, the community can be given health information about certain pharmaceuticals, and information about ways to reduce the amount being introduced into wastewater systems.

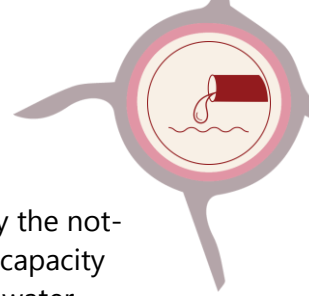
Youth Engagement Sessions

The community strives to empower their youth and play an active role in environmental stewardship. These sessions will gather youth of all ages to come learn about wastewater and involve interactive activities.

Our community cares deeply about the health of our watershed and protecting it from wastewater impacts. We strive to empower our youth to play an active role in environmental stewardship by creating volunteer and summer employment opportunities to support environmental stewardship programs and getting elementary school classes involved in the creation of communication materials (e.g. water conservation posters).

The following resources may be used to engage youth and adult community members alike as stewards of our water resources.





Water First Internship. This internship program, offered by the not-for-profit organization Water First, provides training and capacity development for young First Nation people interested in water treatment plant operation. Interns are trained in monitoring water quality from both the community water distribution system, and from traditional water sources on the land.

<http://waterfirst.ngo/programs/water-first/>

Youth for Water (Y4W). Youth for Water (Y4W) is a youth-driven water protection and conservation program created by Green Communities Canada.

The Youth for Water program focuses on bridging traditional Indigenous knowledge and culture with Western science and environmental issues to deliver a project that provides young Indigenous adults (ages 18-25) with an opportunity to learn about water issues and become involved in water protection and conservation.

This program is still in the early stages, but would provide excellent skills development, job-shadowing and mentorship opportunities for our young adults relating to wastewater management. It has previously worked with young adults from Hiawatha, Whitefish River, and Curve Lake First Nations.

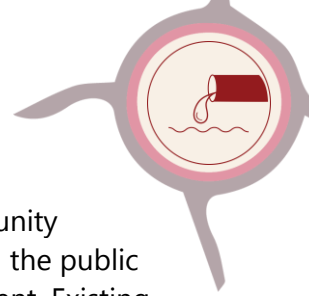
Youth adults interested in starting a water project in their own community are encouraged to reach out to Alix Taylor (ataylor@greencommunitiecanada.org) or Hattie Edwards (hedwards@greencommunitiescanada.org).

<http://greencommunitiescanada.org/youth-for-water/>

Think Before You Flush. Think Before You Flush is a public awareness campaign aimed at educating people about the problems certain products cause for wastewater treatment systems and aquatic ecosystems when flushed down the toilet or poured down the drain. The website provides information about products that should not be flushed down toilets or poured down drains. It also provides ideas for ways to raise awareness about the issue, including school-based projects. Links are provided for infographics and informational posters that can be printed and posted in bathrooms around the community. <http://thinkbeforeyouflush.org/>

Educating and Engaging the Public on Wastewater Treatment: Tools & Tips. Handbook on Wastewater Management for Local Representatives. Environmental Finance Centre, Syracuse University. This handbook





provides practical advice and guidance for raising community awareness about wastewater management and engaging the public in stewardship activities related to wastewater management. Existing organizations and programs that can be used as additional resources are provided. <http://efc.syr.edu/wp-content/uploads/2015/03/Chapter5-web.pdf>

Stockholm Junior Water Prize. This international competition provides youth with the opportunity to design and conduct water-related projects “of proven environmental, scientific, social or technological significance”. Teachers can use examples from past contestants to inspire youth to develop their own water projects, potentially with a focus on wastewater management and/or treatment. Competitions can also be facilitated at the classroom level if participation in the larger international competition is not desired. <http://www.siwi.org/prizes/stockholmjuniorwaterprize/>

Water Sourcebook CD-ROM K-12. This educational guide provides lesson plans for hands-on activities to teach children and youth about the importance of conserving and protecting water sources. There are activities focused specifically on wastewater treatment, as well as activities focused on drinking water, groundwater, surface water and wetlands. The DVD is available for free and can be ordered off the website. <https://www.ewef.org/Default.aspx?TabID=251&productId=8206>

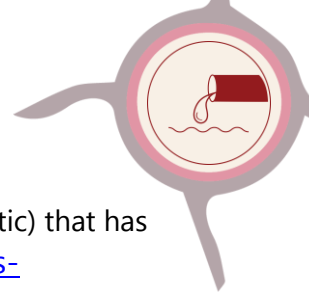
Regulations and Best Practices

In the absence of our own relevant land laws, we use the more stringent of federal and provincial regulations, guidelines and standards.

Federal Regulations, Guidelines and Resources

Canadian Environmental Protection Act (CEPA, 1999). This Act is intended to provide protection of both human and ecological health, associated with the risks posed by the release of harmful pollutants to the environment. The CEPA stipulates that the release of wastewater effluents cannot pose unacceptable risks to human and ecosystem health as well as fishery resources. It lists toxic substances of concern and the associated discharge limits. It also details discharge bans associated with certain chemical releases into the environment. The CEPA also outlines the requirements for obtaining and Environmental Compliance Approval (ECA), which is required for





any on-site wastewater treatment systems (including septic) that has a design capacity greater than 10,000 L/day. <https://laws-lois.justice.gc.ca/eng/acts/C-15.31/index.html>

First Nations Water and Wastewater Action Plan – Indigenous and Northern Affairs Canada. The First Nations Water and Wastewater Action Plan (FNWWAP) was introduced in 2008. FNWWAP provides funding for water and wastewater treatment facility construction and renovation, operation and maintenance of facilities, training of operators and related public health activities on-reserve. It should be noted that the FNWWAP includes funding options for small wastewater facilities, which includes septic systems.

Key components of FNWWAP include:

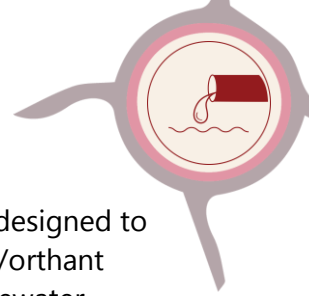
- Investments in infrastructure projects to address water and wastewater needs and to maintain existing systems;
- Investments in the on-going operations and maintenance of water and wastewater systems;
- Funding for the hands-on training of treatment plant operators, to increase the number of certified water treatment system operators;
- Water quality monitoring in accordance with the Guidelines for Canadian Drinking Water Quality (GCDWQ);
- Support for water and wastewater-related public health activities in First Nation communities on reserve; and
- Funding for third-party water and wastewater systems operation under the Safe Water Operations Program, when required. <http://www.aadnc-aandc.gc.ca/eng/1313426171775/1313426357946>

Federal Regulations Applicable to Future Wastewater Treatment Plant

The following regulations may be consulted for future application if/when our community has an operational wastewater treatment plant. These regulations are generally not applicable to septic systems.

Fisheries Act, 1985. The Wastewater Systems Effluent Regulation under the Fisheries Act came into force in June 29, 2012 and sets national effluent quality standards that are achievable through secondary wastewater treatment. The Regulations apply to owners





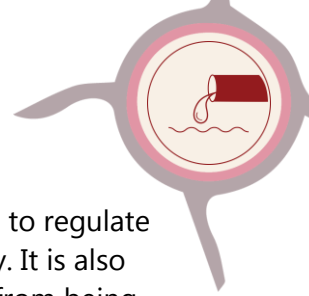
and operators of wastewater systems that collect, or are designed to collect, 100 cubic metres or more of influent per day and/or that discharge to surface water. This regulation requires wastewater system owners or operators to monitor, record information and submit reports on effluent quality and quantity. The Regulations specify the type of sample to be collected and minimum sampling frequencies, based on the type and size of wastewater system. Systems that deposit larger annual average daily volumes of effluent are required to monitor more frequently than those with smaller volumes. Owners or operators of wastewater systems may be required to install, maintain and calibrate monitoring equipment. <http://laws-lois.justice.gc.ca/eng/regulations/SOR-2012-139/index.html>

Strategy for the Management of Municipal Wastewater Effluent – Canadian Council of Ministers of the Environment (CCME). The Canadian Council of Ministers of the Environment (CCME) has developed a Canada-wide Strategy for the Management of Municipal Wastewater Effluent. The Strategy describes the collective agreement reached by the 14 ministers of the environment in Canada to ensure that wastewater facility owners will have regulatory clarity in managing municipal wastewater effluent under a harmonized framework that is protective of human health and the environment. The Strategy requires that all facilities achieve minimum National Performance Standards and develop and manage site-specific Effluent Discharge Objectives. The National Performance Standards address pollutants common to most wastewater discharges. The site-specific Effluent Discharge Objectives will address specific substances that are of concern to a discharge or environment. This strategy document provides regulatory clarity in managing municipal wastewater effluent under a harmonized framework, which is protective of human health and the environment. The strategy requires that all facilities achieve minimum National Performance Standards and develop and manage site-specific Effluent Discharge Objectives.

http://www.ccme.ca/files/Resources/municipal_wastewater_effluent/cd_a_wide_strategy_mwwe_final_e.pdf

Model Sewer Use Bylaw – CCME. This is a guidance document provides a model for a “Sewer Use Bylaw” for Shawanaga to develop its own bylaw. This Model Sewer Use Bylaw has not been developed to meet the specific needs of our community but is a foundation for the development of a bylaw. This Model Bylaw is a tool to assist communities in implementing source-controls for contaminants





discharged to community sewer systems. The bylaw aims to regulate what can be received by the wastewater treatment facility. It is also called source control and can prevent hazardous wastes from being discharged into the wastewater system (i.e. prohibiting dumping toxic waste into the sewer systems). Many of these by-laws aim to prevent clogging of municipal infrastructure from 'flushable wipes' and other non-biodegradable materials (paper towels, condoms, floss, hair) as well as oil/grease, hazardous wastes, medications and pharmaceuticals from going through the wastewater treatment system. More importantly, the bylaw can also apply to industrial and commercial users who may in future, if such users lease Shawanaga lands, discharge hazardous materials into the sewer which may have negative effects on the wastewater treatment plant and the river. www.ccme.ca/files/Resources/municipal_wastewater_effluent/pn_1421_model_sewer_use_bylaw_guidance_doc_e.pdf

Review of Municipal Effluent Chlorination / Dichlorination Principles, Technologies and Practices – Environment Canada. The report includes a comprehensive review of the current state-of-the-art methods for chlorine-based disinfection, residual chlorine control, dichlorination chemicals and procedures, and the related chlorination and dichlorination equipment used in the wastewater treatment. <https://www.ec.gc.ca/eu-ww/default.asp?lang=En&n=71E71A86-1>

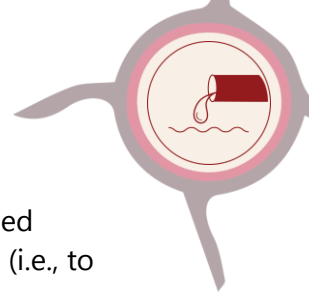
Guidance Manual for Sewage Treatment Plant Process Audits – Environment Canada. A reference document for agencies, municipalities, consultants, planners, organizations, and individuals responsible for the assessment, optimization, and upgrading of municipal sewage treatment plants. It focuses on technical methodologies that have been used to examine and assess full scale plants. Conventional and modified activated sludge facilities are covered in detail. <https://www.ec.gc.ca/eu-ww/default.asp?lang=En&n=2C8A77FE-1>

Provincial Regulations, Guidelines and Initiatives

Ontario Environmental Protection Act –Ministry of Environment and Climate Change (MOECC). The Act outlines the provincial requirements needed for approval to operate and discharge effluent into the environment. <https://www.ontario.ca/laws/statute/90e19>

Ontario Water Resources Act (OWRA, 1990). This act regulates the operation of wastewater treatment facilities in Ontario. This legislation classifies facilities (Class I-IV) based on several criteria (volume, infrastructure, capacity) and requires facilities to have an





Environmental Compliance Approval (ECA, previously called Certificate of Approval) for releases into the environment (i.e., to discharge effluent).

In terms of on-site sewage treatment systems, the OWRA only applies to large systems that exceed 10,000 L/day in capacity. Private residential-sized systems would be subject to the Ontario Building Code regulations. <https://www.ontario.ca/laws/statute/90o40>

Ontario Building Code – Ministry of Municipal Affairs and Housing (MAH). The Ontario Building Code regulates septic systems design and installation as well as other types of on-site sewage treatment systems. <http://www.mah.gov.on.ca/Page7393.aspx>

Sewage Self Assessment – Ministry of the Environment, Conservation and Parks (MECP). The MECP has a useful tool for assessing a facility's compliance with Ontario environmental legislation related to private, commercial, or industrial sewage. This assessment also directs individuals to the applicable legislation and standards depending on septic system size and other design characteristics. <https://www.ontario.ca/page/sewage-self-assessment>

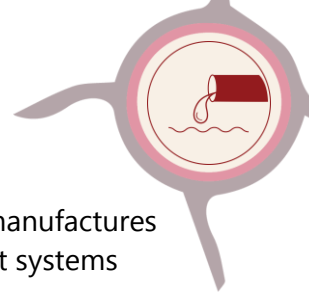
Design Guidelines for Sewage Works, MOECC (2008). This is a collection of the engineering design criteria for sewage works, based on generally accepted good engineering practices in Ontario. https://www.grandriver.ca/en/ourwatershed/resources/Documents/Water_Wastewater_Optimization_MOEDesign.pdf

Septic Smart! Program –Ontario Ministry of Agriculture and Rural Affairs (OMAFRA). OMAFRA has designed the Septic Smart! Program to assist Ontario residents in the maintenance and management of their septic tanks systems. The program features an information guide for septic tank owners as well as a series of video guides for septic owners to help better understand and maintain their septic system. http://www.omafra.gov.on.ca/english/environment/facts/sep_smart.htm

Other Useful Resources

Waterloo Biofilter – Onsite Wastewater Treatment. Waterloo Biofilter specializes in innovative onsite wastewater treatment systems, including options that accommodate shallow groundwater and bedrock conditions. <https://waterloo-biofilter.com/>





Premier Tech Aqua - Ecoflo Biofilter. Premier Tech Aqua manufactures passive (no energy required) onsite wastewater treatment systems that utilize natural organic materials for filtration (Ecoflo).

<https://www.ecoflobiofilter.com/waste-water-septic-tanks/green-technology>

Sun-Mar Composting Toilets. Sun-Mar manufactures a wide variety of composting toilets. <https://sun-mar.com/index.html>

Your Septic System - Canada Mortgage and Housing Corporation (CMHC). The Canada Mortgage and Housing Corporation (CMHC) has developed an educational document to inform homeowners about how septic systems work, best management practices including regular maintenance, and direction to additional resources as well as an FAQ section.

http://publications.gc.ca/collections/collection_2011/schl-cmhc/nh18-24/NH18-24-34-2008-eng.pdf

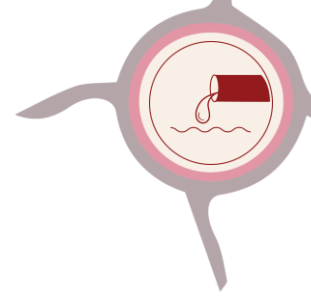
Water Quality: Septic Systems – North Dakota State University. These documents provide Best Management Practices for residential septic systems, including tips for septic systems in areas with high water table conditions. <https://www.ag.ndsu.edu/waterquality/septic-systems>

How to Care for Your Septic System – United States Environmental Protection Agency. This website describes best management practices for maintaining septic systems on your property. It is utilized by our members to help care for their residential septic systems. The website focuses on four key areas for maintaining septic systems:

- 1) Inspect and Pump Frequently
- 2) Use Water Efficiently
- 3) Properly Dispose of Waste
- 4) Maintain Your Drainfield

<https://www.epa.gov/septic/how-care-your-septic-system>





Glossary

Anaerobic Bacteria

Bacteria that thrive in environments devoid of oxygen. Anaerobic bacteria break down solids in septic tanks provided the first form of treatment in a septic system.

Bacteria

Microscopic living organisms usually consisting of a single cell. Bacteria can aid in pollution control by consuming or breaking down organic matter in sewage and or other water pollutants. Some bacteria may also cause human, animal and plant health problems. Bacteria are predominantly found in the intestines and feces of humans and animals. The presence of coliform bacteria in water indicates the contamination of water by raw or partially treated sewage.

Contaminant

Anything found in water (including microorganisms, minerals, chemicals, radionuclides, etc.) that may be harmful to human health.

Effluent

Refers to wastewater that has been treated.

Holding Tank

A holding tank is essentially a septic tank without a discharge outlet connecting to a leaching bed. Wastewater is stored in the tank until it is pumped out by a contractor.

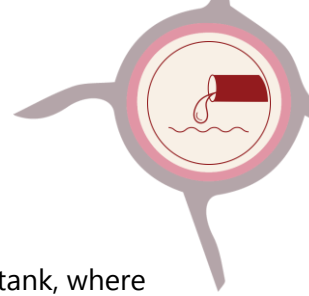
Pharmaceuticals

Refers to medicinal drugs, either over-the-counter or prescription. These substances are pertinent to wastewater treatment as they are released to wastewater through urination and improper disposal of expired or unused medications. Even in very low concentrations, pharmaceuticals can have harmful effects on aquatic life.

Pharmaceutical and Personal Care Products (PPCP)

Pharmaceuticals and Personal Care Products (PPCP) refer to, "a group of compounds found in common household products such as medications, cosmetics and cleaning agents" (Ontario Rural Wastewater Centre [ORWC], 2010).





Septic System

An on-site wastewater treatment system utilizes a septic tank, where solids are settled out and broken down by anaerobic bacteria, and a leaching bed, where partially clarified wastewater is distributed and treated by soil absorption and aerobic bacteria breaking down organics. Synonym: on-site waste treatment.

Septic Tank

A tank used to detain domestic wastes to allow the settling of solids prior to distribution to a leach field for soil absorption. Septic tanks are used when a sewer line is not available to carry them to a treatment plant. A settling tank in which settled sludge is in immediate contact with sewage flowing through the tank, and wherein solids are decomposed by anaerobic bacterial action. Tanks can be single or multi-chamber, depending on design.

Sewer

A pipe, conduit, drain, open channel or ditch for the collection and transmission of wastewater, storm water or uncontaminated water, or any combination thereof.

Surface Water

Any water that is obtained from sources, such as lakes, rivers, and reservoirs that are open to the atmosphere.

Wastewater

The composite of water and water-carried wastes from residential, commercial, industrial or institutional premises or any other source.

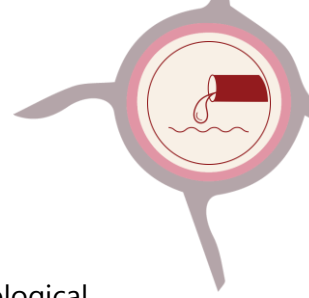
Wastewater Facility

Any works for the collection or treatment and release of wastewater or any part of such works. Includes engineered wetlands and those with natural elements considered as design components.

Wastewater Treatment Facility

Any structure or thing used for the physical, chemical, biological or radiological treatment of wastewater, and includes sludge treatment, wastewater sludge storage and disposal facilities.





Water Quality

The term used to describe the chemical, physical, and biological characteristics of water, usually in respect to its suitability for a particular purpose

Watershed

The land area from which water drains into a stream, river, or reservoir.





Wetlands and Surface Water

Environmental Stewardship Guidance

Contents

Our Stewardship Vision

Community Objectives

Stewardship Guidance and Strategies

Monitoring and Enforcement

Community Initiatives

Regulations and Best Practices

Glossary

"I love the feeling and the sounds of rushing water, and the fish. The Basin and the Shawanaga River is a special place for me."

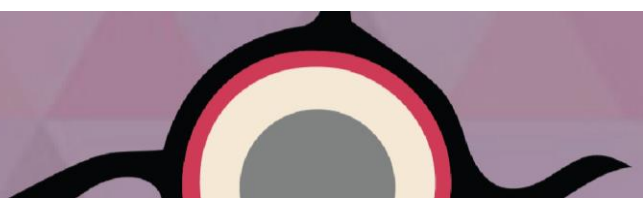
- Community Member

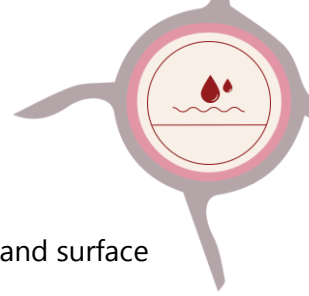
Our Stewardship Vision

We believe water is the lifeblood of our people and should be treated carefully and with respect to maintain its quality and ensure our survival. Healthy surface waters are the home of healthy fish populations, which are very important to our community. We also value and enjoy the water for activities such as swimming and canoeing. Wetlands play a key role in maintaining water balance and quality, and are home to many wildlife species, including several species at risk, as well as providing habitat for medicinal plants.

We are committed to protecting and, if needed, restoring surface water quality and quantity within our lands, including all wetlands.

This ESG includes strategies to inventory, assess, protect and, if needed, restore wetlands within our lands. We will identify sources of contamination and pollution and develop management techniques to remove or greatly reduce these sources and stressors.





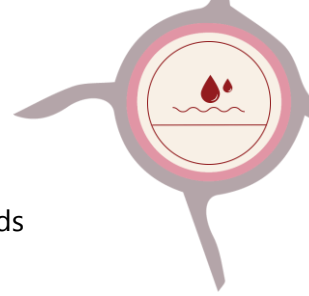
Community Objectives

We will work to implement strategies to protect wetland and surface water resources for seven generations to come.

Short-Term Objectives

- Plan for the protection of recreational uses of surface water. We will maintain and restore, where necessary, surface water quality to reduce water related health issues resulting from swimming and playing in the water.
- Complete fishery and aquatic habitat assessments and classifications based on habitat features and fish communities and develop monitoring plans for fish and other aquatic species, (e.g. invertebrate species that can be used as indicators of water quality and potential invasive species like rusty crayfish).
- Develop a plan to maintain the current productivity, and where possible, enhancement of our fishery resources and fish habitat quality, particularly our world class walleye fishery.
- Expand and improve our fish hatchery operations such that they provide a sustainable benefit to the River and our community.
- Reduce impacts from septic systems, inventory the state of septic systems and sewage treatment and upgrade these where possible to reduce water quality impacts (e.g. algal blooms).
- Assess the extent of impacts from development and recreational activities currently occurring via current land uses at Shawanaga Landing (e.g. water quality issues leading to algae blooms, use of fill near docks) and finding ways to manage and mitigate these.
- Examine the potential and risk for pollution impacts to the community and to the aquatic ecosystem via spills and other inputs from train derailments, highway accidents, gas stations, etc. and develop strategies and mitigation measures to minimize these risks. An emergency response plan is being completed for Shawanaga.
- Inventory, classify and map all wetlands within our lands, taking special note of those that provide habitat for Species at





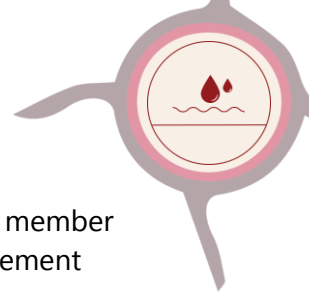
Risk (SAR), and protect and manage these wetlands sustainably into the future.

- Identify and map wetlands that are culturally significant and a source of medicinal plants and protect and manage these so that they continue to provide these plant species for our use. Our wetlands contain medicinal plants of importance to community members.
- Examine and assess the use and effectiveness of lampricides in our waterways. We will investigate whether these are having unintended negative consequences on non-target fish species and develop a management plan and engage with Department of Fisheries and Oceans to maximize benefits and reduce negative impacts.
- Develop a monitoring program to keep track of fluctuations in surface water levels resulting from various stressors (e.g. dams, changed precipitation patterns due to climate change).
- Develop and implement a surface water monitoring program to monitor some basic water quality for status, changes and trends that may impact community and aquatic ecosystem health.
- Aim to maintain existing high-quality surface water runoff and improve poor quality surface water runoff prior to entering natural watercourses and waterbodies within our lands.
- Develop and implement a plan to reduce phosphorus and sedimentation from entering surface water sources.
- Adopt responsible boating practices and develop a program to educate boaters on the use of these practices.

Long Term Objectives

- Keep a clean, sustainable source of water and a healthy aquatic ecosystem for future generations.
- Adopt the use of integrated watershed management plans with a holistic watershed view.
- Establish good relationships with other water resource managers and nearby communities to share water and aquatic habitat management information.





- Allowing for continued and increased community member involvement in fishery and aquatic habitat management activities.

Stewardship Guidance and Strategies

To meet our short and long-term objectives for maintaining the health and integrity of surface water systems in our community, we will use the following **stewardship guidance and strategies** that are built on regulations, guidelines and best management practices.

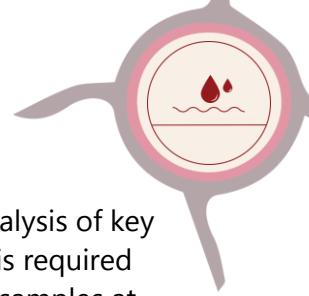
Strategy 1: Surface Water Quality Monitoring Program

Surface water quality monitoring data is collected for a variety of reasons, for a variety of water quality parameters and often does not have mandated requirements by any existing legislation, save for drinking water intakes. We have designed our surface water quality monitoring program based on the needs and uses by the community to determine the locations, frequency, water quality indicators to sample, and results analysis.

We will design our baseline water quality monitoring program to characterize baseline conditions of our major bodies of water, including the Shawanaga River, the Naiscout River and the Harris River, as well as their tributaries. The intent of the program is to assess baseline conditions in waters that are used for recreation, fishing and drinking water, so that we can monitor changes to surface water quality and detect trends. The design will follow guidelines and protocol manuals developed by the Canadian Council of Ministers of the Environment (CCME) (2015 and 2011). Parameters will include basic chemistry (dissolved oxygen, pH, turbidity, conductivity, suspended sediments), nutrients, metals, chlorides (salts), bacteria (total coliforms and/or E. coli), microcystin (blue-green algae toxin) and any other contaminants of concern. We will compare the results of the water quality data to both the provincial objectives and federal water quality guidelines using the most conservative measure. Some key considerations will include the following:

- Spot sampling basic water quality parameters at a minimum of 6 times a year, spread throughout the year (during non-ice periods), including high flow events and low flow periods to ensure statistical relevance (see Provincial Water Quality Objectives (PWQO) Program for guidance).





- We will send water samples to a laboratory for analysis of key parameters of interest, where laboratory analysis is required for a parameter. If capacity exists, we will analyze samples at the water or wastewater treatment plant laboratory. Refer to the Drinking Water ESG for guidance in using accredited laboratories for additional testing.
- We will seek additional guidance on design and implementation from water quality experts, including major parameters of interest to focus on monitoring, location, timing, frequency of sampling and sampling methods.

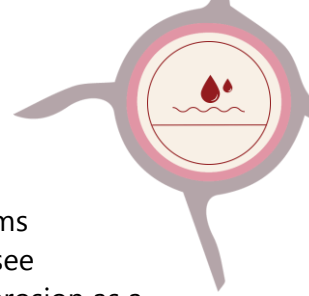
Our long-term water quality monitoring program will apply the results of the baseline assessment to focus the sampling and analysis of parameters of interest. This program is intended for the long-term, to assess changes in water quality that may affect the health of the surface water resources, residents and the aquatic environment. We will be able to compare the results to the baseline assessment and water quality thresholds to detect exceedances (of the provincial or federal guidelines) and to analyse for trends over time.

The program will support the monitoring of aquatic life such as a benthic macroinvertebrates and fish, whose communities and abundances are influenced by water quality, and includes parameters or thresholds to ensure aquatic integrity (i.e. dissolved oxygen targets). The program will consider the Great Lakes Water Quality Agreement. This includes considering the ways that this program could support the programs and measures laid out in the Great Lakes Water Quality Agreement, including programs for pollution abatement, aquatic invasive species detection and control, conservation, enforcement, and monitoring.

Strategy 2: Improving Surface Water Runoff Quality

Phosphorus is a nutrient required for the growth of plant matter; however, too much phosphorus in aquatic systems becomes a water quality concern, as it leads to over-enrichment (eutrophication) and algae blooms, or vegetation overgrowth that chokes waterways. Blue-green algae blooms are of concern, as they release toxins into the water that are a risk to human and ecological health. A local example of where this has recently become an issue is Sturgeon Bay in Georgian Bay, located south of our reserve lands. Best management practices (BMPs) can reduce phosphorus loading into





surface water systems from aquaculture and septic systems (potentially exploring non-conventional septic options) (see Wastewater Management ESG) and help to address soil erosion as a source of phosphorus.

For settlements like Shawanaga First Nation, stormwater runoff can be a contributor of phosphorus into surface water. Reducing sediment load in runoff is important for reducing phosphorus, as it binds to soil particles readily. Methods of slowing runoff and removing sediment such as grassed swales, bioretention ponds, and buffer strips, are important steps to take to reduce excess phosphorus from entering waterbodies. We will adopt BMPs for reducing phosphorus and nitrogen inputs into the river to limit the potential for algal blooms and eutrophication of waterbodies, by inspecting septic tanks for leaks.

Construction sites can be sources of phosphorus due to erosion of unvegetated soil running off the site, especially during high precipitation events. We will implement Erosion and Sediment Control BMPs for construction projects on our reserve lands to manage sediment transport into watercourses and wetlands. These BMPs could be included in an Environmental Assessment law.

With respect to point sources, wastewater treatment plants and septic systems will need to incorporate effective phosphorus removal (see the Wastewater Management ESG for more information).

To improve and protect runoff quality, we will require 30–120 m buffer strips of riparian (streamside) vegetation (depending on slope, size and sensitivity of the waterbody), and will restrict development directly adjacent to or within wetlands and waterbodies. This includes restricting soil and phosphorus from entering waterways by having restrictions on the clearing of riparian areas to reduce erosion and sedimentation and to provide a filter for runoff. We will also develop policies to require no-development buffer zones and to maintain vegetative cover.

Winter maintenance of roads includes the use of road salt to melt ice on roads. However, this is causing an emerging water quality and drinking water quality concern in Canada as chloride (salt) concentrations increase in natural waterways due to the overuse of this product. In addition, at times snow is piled near wetlands and could have an impact on wetland water quality when the snow melts.





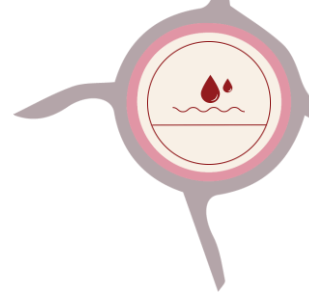
We will develop a road salt management plan and winter maintenance plan to reduce the use of road salt in sensitive areas, such as water crossings, and to identify areas where snow can be piled with minimal impact on nearby wetlands. Our facility operators will be trained in the *Smart About Salt* educational program, and education and outreach information will be provided to private landowners. We will work to adopt 'Smart About Salt' practices for all facilities, including roads, parking lots, private and public paved areas. We will encourage, and where possible, require others to adopt these same practices where their actions may affect our waterways.

Strategy 3: Inventory and Mapping of Surface Water Bodies and Wetlands

Our lands contain abundant wetlands and surface water features. We will work to develop a full inventory of these features on our reserve lands. Our inventory will include completing a desktop exercise to locate and map all surface water bodies and wetlands on our lands, then performing a field verification of the locations and boundaries, and classifying waterbodies and wetlands based on type, size, importance of aquatic habitat or species present. This could be done in collaboration with the Toronto Zoo Turtle Island Conservation Program or with other available wetland experts. Some of the tasks to be completed include the following:

- Inventory and map all wetlands and waterbodies on reserve;
- Classify wetlands present, generally based on the various wetland types presented in the Ontario Wetland Evaluation System, but also with an eye towards the habitat these wetlands provide to SAR (see guidance under Regulations and Best Practices below); and
- Develop a protection plan for wetlands that maintains the current amount of wetland cover on the landscape and provides buffers adjacent to wetlands where development is restricted. For example, we will provide a 120 m cautionary overlay for wetlands where a study is needed to determine potential for impacts and apply different buffer sizes based on the results of these studies. We will apply a minimum no-go buffer of 30 m to wetlands where no development is allowed, but we could modify this buffer zone based on the sensitivity of the wetland.





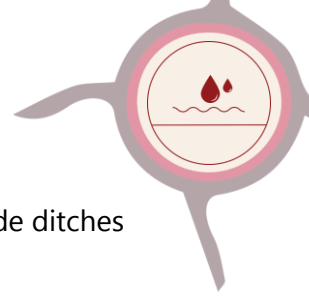
Strategy 4: Considering Low Impact Development Stormwater Management Options for New Developments

Stormwater management is the process of dealing with runoff from developed or built areas, which can vary in size and impact to local runoff. Stormwater management practice has gone through a shift in focus in recent years from a strictly conveyance approach (i.e. moving the water away from developed areas), to a more holistic and landscape-based approach using softer methods (i.e. green infrastructure as opposed to grey infrastructure) called low impact development (LID). Generally speaking, stormwater management practices prior to LID aimed to collect stormwater as quickly as possible and convey it off-site into a storm drain system that would eventually lead to a treatment plant or a surface water body. LID approaches try to mimic natural landscapes by slowing down the runoff, infiltrating it on-site and/or allowing it to filter sediment through vegetation or stormwater management ponds to provide some cleaning function prior to it reaching the natural waterbody. Many jurisdictions now use both traditionally engineered and LID approaches in dealing with stormwater management.

Our stormwater management plan will be appropriate to the scale of developments occurring within our lands and will also consider the impacts of climate change (and the potential resulting change in precipitation patterns and intensity) on our lands. The plan will protect the quality of surface water resources upon which we rely and minimize nutrients such as phosphorus as well as sediment and metals from entering the river.

Shawanaga First Nation will vegetate drainage ditches along roadsides to allow for filtration of runoff. For future developments, we will use innovative approaches inspired by natural processes (i.e. LIDs) to manage stormwater, where practical. We will develop or implement existing best management practices for working in and around water and for erosion and sediment control on construction sites. We will implement water quality protection initiatives such as buffer strips, grassed swales and others on any developments adjacent to waterbodies to help protect water quality and reduce impacts of runoff to our waterways. Other EMP initiatives will include the following:





- Scheduling maintenance to ensure that all roadside ditches are grassed.
- Using or requiring best management practices for reducing phosphorus inputs to water to reduce the potential for algal blooms via measures such as grassed ditches and riparian buffers along water courses.
- Placing restrictions on septic tank discharge and conducting periodic inspections and requiring mandatory pump-outs (for septic systems).

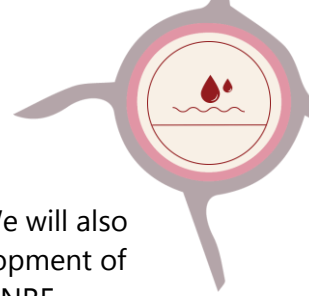
Strategy 5: Implementation of a Fish Habitat Assessment and Monitoring Program

We will assess fish habitat and fish species diversity using accepted assessment protocols, which can include the *Evaluation, Classification and Management of Headwaters Drainage Features Guidelines* document, the *Ontario Stream Assessment Protocol* and fish community sampling protocols. Our assessment will provide a baseline of aquatic ecology and habitat information, which will be used to monitor trends and potential impacts from development. Using broad-scale survey techniques, environmental monitors will assess the surface waterbodies for presence of fish species of most importance to community members. The monitors will assess fish for abundance, size and overall health. Walleye will be the main focus of the fish monitoring program as this species is of great importance to the community and is the focus of our hatchery program. We would also like to complete a study of Lake Sturgeon presence, history and habitat in our waters as this species is of great cultural importance to our community. Should surface water and/or sediment monitoring results indicate potential risks to human health, we would initiate a fish tissue sampling program. This will be done in collaboration with, or advice from, the Anishinabek of Ontario Fisheries Resource Centre (AOFRC) and/or other third-party consultants or advisors.

Strategy 6: Use of Aquatic Protection Timing Restrictions When Working in Proximity to Fish Habitat

We will generally refer to the provincial timing restriction windows for in-water works. The Ontario Ministry of Natural Resources and Forestry has set time-of-year restrictions for in-water work in Ontario,





such as construction or maintenance of infrastructure. We will also consult elders and other knowledge holders in the development of SFN-specific timing windows for such works, using the MNRF restrictions as a starting point and minimum standard.

These timing restrictions are in place to protect the most sensitive life-stages of fish species, such as egg development, juveniles and spawning adults that would be negatively impacted by potential water quality or habitat disturbances brought about by construction or other development activities. Certain activities are prohibited during the restricted activity periods. We will follow and implement these timing restrictions when considering or permitting construction or other in-water works on our lands. This will be addressed in our Environmental Protection law.

Strategy 7: Development of a Responsible Recreational Boating Awareness Program

The program will include recreational boating waste management, fuel storage and refueling practices, cleaning of boats to avoid introduction and spread of invasive aquatic species, proper on-shore disposal of greywater and black water (sewage) from boats with onboard toilets, and operation of boats in surface waters of our lands (including wake management to reduce shoreline erosion). This program will also include an awareness campaign, signage for wake speed limits and areas where re-fueling is restricted. We will carry out spot checks of docked boats to ensure that there are no fuel spills or waste leaks coming from the vessels. Additionally, we will develop and supply community members with best management practices for refueling and fuel storage, preventing the spread of aquatic invasive species through recreational boating, and disposal of greywater and black water from boats.

Strategy 8: Spills Response Protocol

We will report spills and other releases of contaminants to lands adjacent to and into surface water bodies immediately to the Lands Manager at the Lands and Resources Department, Chief and Council and the MOECP Spills Action Centre (416-325-3000, 1-800-268-6060 (toll-free), or 1-855-889-5775 (TTY)). Our spills awareness campaign will include training on the use of spill containment and cleanup equipment, signage for spills reporting, and education on proper disposal of fuel, contaminants and chemicals (see the Wastewater





and Chemical and Fuel Storage ESGs for more information). We will provide spill containment and cleanup equipment at designated locations throughout the community. All Public Works vehicles that carry extra fuel will be equipped with a spill kit.

Strategy 9: Develop an Integrated Watershed Management Plan

Integrated Watershed Management Planning (IWMP) is the process of managing human activities and natural resources on a watershed basis. This approach allows for the protection of important water resources, while addressing critical issues, such as the current and future impacts of development and climate change. Adopting the concept of IWMP is a recommendation of the Great Lakes Protection Act. Our IWMP, or an IWMP that we produce in collaboration with other watershed partners, will consider impacts of land use change and development on our water resources in the watershed through these steps:

- Developing an integrated watershed management (IWM) plan.
- Developing a Land Use Plan that includes certain prohibitions for developing in floodplains and other natural hazard areas and addresses watershed altering activities such as logging, mining, and roadway construction.
- Developing policies for waterfront planning and marinas for the protection of shorelines.

An IWMP is a great way to engage neighbouring jurisdictions and environmental groups who have an interest in protecting the Shawanaga River watershed as a whole in our wider traditional territory.

Strategy 10: Communications Network

We will develop a communications network to foster a collaborative working relationship to share water and sediment quality data between Shawanaga First Nation and other interested parties, such as:

- Regulatory agencies (including Ministry of Environment, Conservation and Parks, Department of Fisheries and Oceans,





Environment and Climate Change Canada, Ministry of Natural Resources and Forestry).

- Research institutions (including Anishinabek of Ontario Fisheries Resource Centre, Adopt-A-Pond Wetland Conservation Programme - Toronto Zoo).
- Representatives from Industry.
- Neighboring communities (including Magnetawan First Nation, Britt, Byng Inlet, and Parry Sound).

Partnerships with these organizations are intended to develop a network of monitoring locations within the watershed and to share information such as:

- Ideas for community-based educational outreach programs, for surface water protection.
- Establishing collaborative partnerships, off-reserve, to protect our surface water resources.

Monitoring and Enforcement

As citizens of Shawanaga First Nation, we are responsible for helping to protect our lands and waters, including wetlands. It is our responsibility to report anything we see that might affect the quality of our surface water and the integrity of wetland habitat, such as changes on the land, spills or potentially harmful activities. It is also our responsibility to harvest only what we need to feed our families, to do so in a right way and to teach our children to respect the gifts of the Creator in the Anishinaabe tradition.

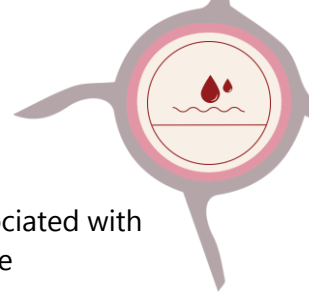
Monitoring and Enforcement

The Lands and Resources Department is responsible for ensuring that surface water quality monitoring and aquatic habitat assessment strategies are effectively implemented. Trained community environmental monitors are responsible for conducting the on-the-ground monitoring activities laid out in the strategies above, with assistance from staff biologists or external experts.

We will develop and implement Environmental Protection and Environmental Assessment laws on Shawanaga First Nation land. If the environmental monitors encounter activities that do not comply with our environmental laws or if they identify a surface water issue, they must immediately report to the Lands and Resources Department, who informs Chief and Council as appropriate.

If we choose to employ an environmental officer responsible for investigating and acting on any reports of suspected environmental





violations taking place on our lands, including those associated with natural resource development activities, this officer will be responsible for enforcing our environmental laws..

Responsible Boating

Our staff and volunteers are responsible for carrying out and monitoring the responsible recreational boating program. If they encounter a fuel or waste spill or any unsafe boating practices that threaten the water, they will immediately report it to the Lands and Resources Department, who will inform Chief and Council.

Community Initiatives

Creative Water Resource Workshops and Activities for Youth and Children

Students will be led in hands-on activities to explore the importance of water in the community, to identify the ways they use and rely on water, and to develop a personal philosophy and action plan for water protection. Workshops can include talks and water ceremonies led by local Elders, mapping of locations of water use, photography activities that document the ways water is used and why its valued, and more.

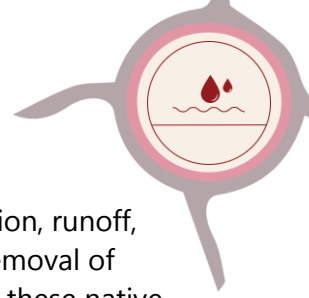
Shoreline Cleanups

The Great Canadian Shoreline cleanup is an event jointly sponsored by the World Wildlife Fund and Oceanwise. Shawanaga First Nation could participate in this event directly or complete a similar activity independently. Shoreline cleanups consist of community members gathering accumulated trash from the shores of waterbodies through a collective volunteer effort. The cleanups will be organized by the Lands and Resources Department or by the School. School groups will take part in the cleanups alongside other community members. Cleanup days will culminate in a celebratory meal for those who participated. Guidance for coordinating the cleanups is provided through the Great Canadian Shoreline Cleanup website. This initiative has involved hundreds of thousands of volunteers cleaning up more than a million kilograms of garbage from Canada's shorelines.

Shoreline Plantings and Invasive Species Weed Pulls

Community volunteers will be provided opportunities to take part in the planting of native vegetation along shoreline areas that have been exposed and/or degraded, as a result of human activities or invasive plant species infestations. Shoreline areas close to roads are prioritized for plantings. New native vegetation creates buffers





around lakes, ponds and streams, helping to reduce erosion, runoff, and the entry of contaminants into surface waters. The removal of invasive species from riparian and wetland habitats helps these native plant communities flourish and provides better habitat for native wildlife species.

Water Conservation Campaign

This campaign aims to raise community awareness about the importance of conserving water, and to provide useful tips and tools to use water efficiently. The campaign will include rebates on and installation of low flow showerheads, low flow toilets, rain barrels, and other water efficient fixtures and appliances. The campaign will also include using posters to raise awareness and making information available on our website. Children and youth will be involved through a water conservation poster competition, by designing posters that share and encourage various ways of conserving water.

Clean Boating Awareness Sessions

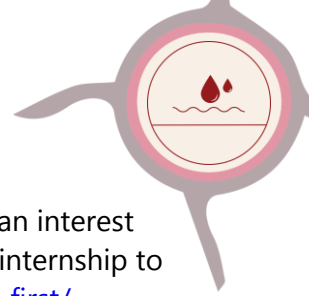
Each spring, at the onset of boating season, the Lands and Resources Department will facilitate a session on clean boating practices. Boat owners and those who use boats on a regular basis are invited to attend. School groups may also attend. Participants learn about how they can protect surface water through proper cleaning of boats, repair and maintenance, waste disposal methods, management of hazardous waste, and fuel spill prevention. Spill cleanup is also covered, along with information about sensitive areas and how to preserve coastal environments.

Resources

Great Canadian Shoreline Cleanup. This website provides information about this national conservation initiative that helps coordinate shoreline cleanups across the country. Community members can register to lead a cleanup or can sign up to join a cleanup that has already been scheduled. <http://shorelinecleanup.ca/>

Water First Education Programs. Water First is a not-for-profit organization that brings a variety of training and education opportunities to First Nation communities. Their education programs for school groups allow students to learn about water science while completing hands-on activities such as water sampling, tree plantings, and drone flights above watersheds. The organization offers youth the opportunity to complete a baseline water quality





study for their community and offers young people with an interest in water plant operation the opportunity to complete an internship to develop their skills. <http://waterfirst.ngo/programs/water-first/>

Hands-On Water Education Activities from Southwest Florida Water Management District. Though from the United States, this webpage provides links to many useful interactive activities for school children and youth to learn about watersheds, wetlands, the hydrologic cycle, household water use, and more.

<https://www.swfwmd.state.fl.us/education/activities/>

Regulations and Best Practices

Applicable Regulations and Guidelines

The following Acts and Regulations are intended to protect our surface water resources from adverse impacts due to both natural and anthropogenic sources.

Surface Water Management and Protection: Federal

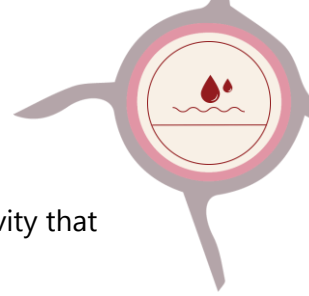
Canada Water Act, 1985 (Environment and Climate Change Canada).

This Act serves to provide for the management of the water resources of Canada, including research and the planning and implementation of programs relating to the conservation, development and utilization of water resources. In addition, the Act has provisions for formal consultation and agreements with the provinces. <https://laws-lois.justice.gc.ca/eng/acts/c-11/FullText.html>

Canadian Environmental Protection Act, 1999 (Environment and Climate Change Canada). This Act protects the environment, including land, air and water, through pollution prevention and protects human health in order to contribute to sustainable development. This Act assesses the risks associated with contaminants in the environment, regulates the releases of contaminants to the environment, and details required enforcement and compliance. <https://laws-lois.justice.gc.ca/eng/acts/c-15.31/>

Fisheries Act, 1985 (Department of Fisheries and Oceans). The Act contains key provisions on conservation and protection of fish habitat essential to sustaining freshwater and marine fish species. Under Section 35(1) of the Fisheries Act, it is prohibited that any activity cause "serious harm to fish that are part of a commercial, recreational or Aboriginal fishery, or to fish that support such a fishery" unless the work, undertaking or activity is prescribed or





authorized by the Minister under Section 35(2) a. An activity that causes serious harm is something that causes:

- death of fish;
- permanent alteration of fish habitat; or
- destruction of fish habitat.

This includes many types of activities from building structures in or near waterbodies, releasing effluent into waterbodies, to diverting water away from watercourses. Examples of activities on our lands that could potentially result in serious harm to fish include:

- road crossings
- wastewater treatment plants
- industrial developments (e.g. mines, pulp and paper mills, hydroelectric dams)
- golf courses or other commercial developments
- housing developments
- gas stations and other fuel storage facilities

Section 36 of the *Fisheries Act* prohibits the “throwing overboard of certain substances” in waters frequented by fish or in any water where fishing is carried on. Substances that are prohibited from being thrown overboard, deposited into waters, or left on shore include:

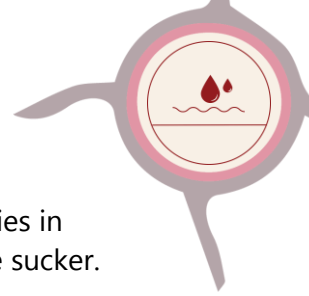
- ballast, coal ashes, and stones
- remains of fish or marine animals
- decayed or decaying fish may not be left in fishing apparatus
- deleterious substances (a substance that would degrade or alter water) of any kind

***Note that the Fisheries Act is currently in the process of being updated, and details towards its application may change in the future.**

<https://laws-lois.justice.gc.ca/eng/acts/f-14/>

Species at Risk Act, 2002 (Environment and Climate Change Canada). The Act lists native species that have been recognized as dwindling in population and being, in varying degrees, at risk of extinction in





Canada. Some notable aquatic species to which this applies in Ontario include the lake sturgeon and the black redhorse sucker.

Unless authorized by the responsible Minister, sections 32 and 33 of the Species at Risk Act prohibit:

- the killing, harming, harassment, possession, capturing or taking of a species listed as extirpated, endangered or threatened; and
- the damage or destruction of a residence including any part of the critical habitat for listed species.

<https://laws-lois.justice.gc.ca/eng/acts/s-15.3/>

Federal Policy on Wetland Conservation (1987). The policy details the agreement signed by the Government of Canada, as part of the Ramsar Convention, for the protection of wetlands and development of a federal policy. The Ramsar Convention is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.

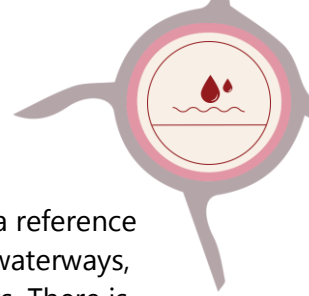
<http://nawcc.wetlandnetwork.ca/Federal%20Policy%20on%20Wetland%20Conservation.pdf>

Canada Shipping Act, 2001 (Transport Canada). The objectives of this Act are to protect the health and well-being of individuals, including the crews of vessels, who participate in marine transportation and commerce; promote safety in marine transportation and recreational boating; protect the marine environment from damage due to navigation and shipping activities; develop a regulatory scheme that encourages viable, effective and economical marine transportation and commerce; promote an efficient marine transportation system; develop a regulatory scheme that encourages the viable, effective and economical use of Canadian waters by recreational boaters; ensure that Canada can meet its international obligations under bilateral and multilateral agreements with respect to navigation and shipping; encourage the harmonization of marine practices; and establish an effective inspection and enforcement program.

<https://laws-lois.justice.gc.ca/eng/acts/c-10.15/>

Navigation Protection Act, 2012 (was Navigable Waters Protection Act, 1985) (Transport Canada). The primary purpose of the Navigation Protection Act is to balance the public right to navigate with the need





to construct works (e.g., bridges and dams). The Act has a reference list of 'navigable waters' which include Canada's busiest waterways, and what type of works are permitted on these waterways. There is also a decision-making process under the Act to address impacts to navigability in unlisted waterways.

***Note that Canadian Navigable Waters Act is proposed and under review, which would replace the current Navigation Protection Act.**

<https://laws-lois.justice.gc.ca/eng/acts/N-22/>

Surface Water Management and Protection: Provincial

There are two main provincial ministries that protect and conserve surface water natural resources, including the Ministry of Environment, Conservation and Parks (MOECP) and the Ministry of Natural Resources and Forestry (MNRF). Other government agencies also consider water resources in land use planning, (the Ministry of Municipal Affairs and Housing (MAH)), and agriculture (Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA)).

Ministry of the Environment Conservation and Parks (MOECP). In relation to the protection and conservation of surface water resources, the MOECP has a mandate for monitoring, compliance and enforcement of drinking water, wastewater, water takings, Great Lakes protection, environmental assessments, water conservation and efficiency, water quality protection, drainage, stormwater management, contaminated sites, climate change and works with other ministries and agencies with many water related topics.

<https://www.ontario.ca/page/ministry-environment-conservation-parks>

Ontario Water Resources Act, 1990. The purpose of this Act is to provide for the conservation, protection and management of Ontario's waters and for their efficient and sustainable use, in order to promote Ontario's long-term environmental, social and economic well-being. This Act regulates, amongst others: water takings through Permits to Take Water, sewage disposal for sewage works (i.e. wastewater treatment plants) and operation of facilities for water works (i.e. drinking water treatment plants).

<https://www.ontario.ca/laws/statute/90o40>

Ontario Environmental Protection Act, 1990. This Act is the primary pollution control legislation in Ontario. It prohibits contaminants





from being released into the environment that can cause adverse effects, provides limits on releases to the environment, governs spill clean-up, and often requires the polluter to be responsible mitigating and remediating spills. <https://www.ontario.ca/laws/statute/90e19>

Great Lakes Protection Act, 2015. The purpose of this Act is to protect the Great Lakes and basin from pollution, habitat loss and threats such as invasive species. <https://www.ontario.ca/laws/statute/15g24>

Clean Water Act, 2006. The purpose of this Act is to protect existing and future sources of drinking water and mandates the use of source water protection planning. <https://www.ontario.ca/laws/statute/06c22>

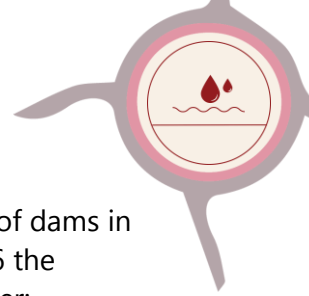
Pesticides Act, 1990. This Act requires a license and training to sell and use pesticides as well as who can apply, and what type of pesticides can be applied, in Ontario. <https://www.ontario.ca/laws/statute/90p11>

Ministry of Natural Resources and Forestry (MNRF). The MNRF has the mandate to manage all of Ontario's natural resources, such as fisheries, wildlife, mineral resources, forests, and water, including promoting economic opportunities in resource sales and outdoor recreation opportunities. MNRF administers acts and regulations related to managing and recovering species listed under Ontario's Endangered Species Act, mining, invasive species, aggregates, dams and reservoirs, amongst others. The MNRF is also responsible for determining the provincial significance of natural features including wetlands. <https://www.ontario.ca/page/ministry-natural-resources-and-forestry>

Conservation Authorities Act (1997). This Act allows for the creation of a Conservation Authority, whose jurisdictional boundaries are based on natural watersheds. The purpose of a conservation authority is to deliver a local resource management program at the watershed scale for both provincial and municipal interests. Conservation Authorities focus on natural resource management, resource stewardship and protecting people, property, and communities from water-related natural hazards (e.g. flooding, drought, erosion). They also play a role in wetland protection through development regulations. <https://www.ontario.ca/laws/statute/90c27>

Lakes and Rivers Improvement Act (LRIA), 1990. The Act outlines the management, protection, preservation and use of the waters of the lakes and rivers of Ontario and the land under them. The LRIA provides the MNRF with the legislative authority to regulate the





design, construction, operation, maintenance and safety of dams in Ontario. Under Section 14 or 16 of the Regulation 454/96 the following activities may require Approval from the Minister:

- Dams;
- Water Crossings – Bridges, Culverts and Causeways;
- River Channels – Includes river channelization, diversion or blockage;
- Dredging within a waterbody;
- Buried Pipelines and Cables – installing cables and pipelines where they will hold back, forward or divert water; or
- Municipal and other drains

<https://www.ontario.ca/laws/statute/90l03>

For additional information see the Lakes and River Improvement Act, Administrative Guide (MNR, 2011), which provides an overview of the LRIA, its application and how to get ministry approval to construct, alter, improve or repair water control infrastructure.

<https://dr6j45jk9xcmk.cloudfront.net/documents/2705/stdprod-088408.pdf>

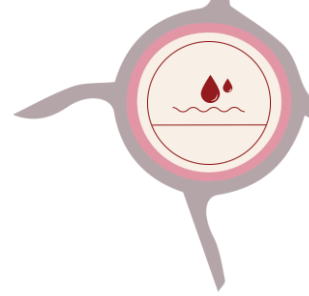
Invasive Species Act, 2015 (MNRF). This Act provides government with the authority to engage in control and eradication of invasive species. It also contains provisions for the containment and prevention of spread of invasive species. The most pertinent function of the *Invasive Species Act* is to prevent individuals from maintaining possession or transporting certain invasive species. Some examples of problematic aquatic invasive species in Ontario include Asian carp, rusty crayfish, sea lamprey and the zebra mussel.

<https://www.ontario.ca/laws/statute/s15022>

Other Ministries and Related Provincial Policies

Provincial Policy Statement (PPS) (MAH). The PPS is the statement of the government's policies on land use planning including protection of water resources, fish habitat and wetlands. It applies province-wide and provides clear policy direction on land use planning to promote strong communities, a strong economy, and a clean and healthy environment. Municipalities use this to support Official Plans and





land use planning decisions.

<http://www.mah.gov.on.ca/page10679.aspx>

Drainage Act, 1990 (OMAFRA). The Drainage Act is intended to help agricultural landowners remove excess water off their properties by channelizing flow to drains or ditches. Landowners can petition the municipality to construct drains in an area requiring drainage, then responsibility to maintain these drains is shared by the landowner and municipality. These drains often become fish habitat.

<https://www.ontario.ca/laws/statute/90d17>

Surface Water Quality Monitoring Programs

Guidance Manual for Optimizing Water Quality Monitoring Program Design (CCME, 2015). This document provides step-by-step methodology for designing a program to monitor for water quality.

http://www.ccme.ca/files/Resources/water/water_quality/Guidance%20Manual%20for%20Optimizing%20Water%20Quality%20Monitoring%20Program%20Design_1.0_e.pdf

Protocols Manual for Water Quality Sampling In Canada (CCME, 2011). This manual details proper sampling techniques to employ for a water quality monitoring program.

http://www.ccme.ca/files/Resources/water/water_quality/protocols_document_e_final_101.pdf

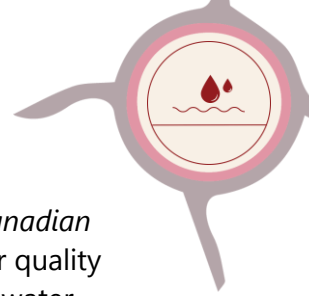
Analysis of Water Quality Data

Once water quality data has been collected, the results can be compared to the following guidelines and objectives. The provincial and federal governments publish values that are often used to as the benchmark to assess water quality based on protection of human and aquatic species health.

Provincial Water Quality Objectives (PWQO), 1994 (MOECC). The PWQOs are numerical and narrative criteria which serve as chemical and physical indicators representing a satisfactory level for surface waters (i.e. lakes and rivers) and, where it discharges to the surface, the ground water of the Province. The PWQO are set at a level of water quality which is protective of all forms of aquatic life and all aspects of the aquatic life cycles during indefinite exposure to the water. The Objectives for protection of recreational water uses are based on public health and aesthetic considerations.

<https://www.ontario.ca/page/water-management-policies-guidelines-provincial-water-quality-objectives#section-2>





Canadian Environmental Quality Guidelines (CEQG) by Canadian Council of Ministers of the Environment (CCME). The water quality guidelines (CEQG) are science-based thresholds of many water quality parameters, designed to protect the quality of aquatic and terrestrial ecosystems. The CCME produces information sheets related to a variety of water quality parameters (i.e. phosphorus, nitrogen, ammonia, turbidity, suspended sediments, etc.) and makes recommendations (guidelines) for limits of this parameter for the protection of aquatic life, recreational water quality sediment quality and others.

<http://ceqg-rcqe.ccme.ca/download/en/221>

<https://www.canada.ca/content/dam/canada/healthcanada/migration/healthy-canadians/publications/healthy-livingvie-saine/water-recreational-recreative-eau/alt/pdf/waterrecreational-recreative-eau-eng.pdf>

<http://ceqg-rcqe.ccme.ca/download/en/226>

http://www.ccme.ca/en/resources/canadian_environmental_quality_guidelines/index.html

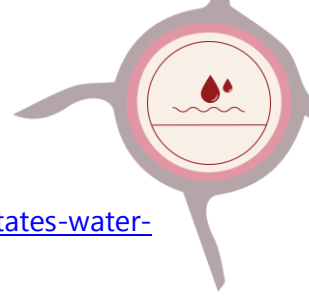
Water Quality Index (CCME, 1999). This index approach can be used to evaluate a group of water quality data into one value (from 0-100) to make it easier to communicate results to the Shawanaga First Nation band members and the general public.

[http://www.ccme.ca/files/Resources/calculators/WQI%20Technical%20Report%20\(en\).pdf](http://www.ccme.ca/files/Resources/calculators/WQI%20Technical%20Report%20(en).pdf)

<http://www.mae.gov.nl.ca/waterres/quality/background/cwqi.html>

Great Lakes Water Quality Agreement: A joint agreement with Canada and USA for the protection of the Great Lakes. The Agreement provides a framework for identifying binational priorities and implementing actions that improve water quality. The agreement includes commitments, objectives and actions to address environmental issues affecting the Lakes. This Agreement is a good resource for Shawanaga First Nation because it outlines the responsibilities and commitments the federal and provincial governments have made to address water issues in Lake Huron and its watershed. <https://www.canada.ca/en/environment-climate->





[change/services/great-lakes-protection/canada-united-states-water-quality-agreement.html](http://www.ec.gc.ca/change/services/great-lakes-protection/canada-united-states-water-quality-agreement.html)

Road Salt

Smart About Salt. Smart About Salt is an initiative of the not-for-profit organization, The Smart About Salt Council, which aims to protect freshwater resources by improving winter salting practices of individuals, communities, and industry. Their website provides information about proper winter salting techniques, including posters and postcards that can be used for community Smart About Salt initiatives. <http://www.smartaboutsalt.com/>

Syntheses of Best Practices - Road Salt Management (2013). This document provides a compilation of best management plans on salt management for winter road maintenance by the Transport Association of Canada. <https://www.tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/roadsalt-1.pdf>

Code of Practice: The Environmental Management of Road Salts. Environment Canada has several publications including a code of practice and best management practices for road salt. <http://www.ec.gc.ca/sels-salts/default.asp?lang=En&n=F37B47CE-1>

Sediment and Phosphorus

Best Management Practices: A Phosphorus Primer OMAFRA (2011). A detailed book on phosphorus that is useful for rural land owners and farmers. <http://www.omafra.gov.on.ca/english/environment/bmp/phos.htm>

Erosion and Sediment Control

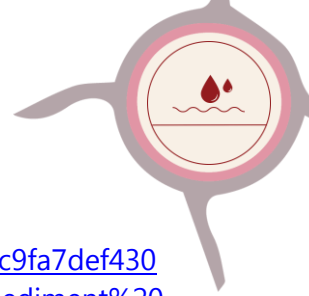
Buffer Strips Best Management Practices (OMAFRA, 2004). The use of natural vegetation along creek banks is a best management practice that helps to prevent agricultural and other types of runoff with their associated nutrients from entering streams. <http://www.omafra.gov.on.ca/english/environment/bmp/buffer.htm>

Other agricultural BMP's can be found here:

<http://www.omafra.gov.on.ca/english/environment/bmp/series.htm#5>

Environmental Guide for Erosion and Sediment Control During Construction of Highway Projects, Ministry of Transportation (2015). A guide with best management practices for sediment and erosion





control.

[http://www.raqsb.mto.gov.on.ca/techpubs/eps.nsf/0/7ff7c9fa7def430f85257f5b00510665/\\$FILE/MTO%20Erosion%20and%20Sediment%20Control%20Guide%202015%20Final%20ACC.pdf](http://www.raqsb.mto.gov.on.ca/techpubs/eps.nsf/0/7ff7c9fa7def430f85257f5b00510665/$FILE/MTO%20Erosion%20and%20Sediment%20Control%20Guide%202015%20Final%20ACC.pdf)

Surface Water Quantity Programs

Permits to Take Water Program (MOECP). The MOECP requires anyone taking over 50,000L/day from natural water bodies (surface or groundwater) to apply for a Permit to Take Water (PTTW). The program also requires reporting on an annual basis on the amount of water taken, from what source and how much is taken on a daily basis. Water taken for uses from industrial, irrigation, water supply, dewatering, remediation and others are required over the limit, but domestic household use, for livestock watering and fire-fighting are exempt. <https://www.ontario.ca/page/permits-take-water>

Environmental Flow Requirements in the Grand River Watershed. Environmental flows describe the quantity, timing, and quality of water flows required to sustain freshwater ecosystems and the human livelihoods and well-being that depend on these ecosystems. Environmental flow needs assessments can be used to determine how much water needs to remain in the stream year-round and how to balance human and ecological needs. This report example report details the process for determining environmental flow requirements in the Grand River watershed of southern Ontario.

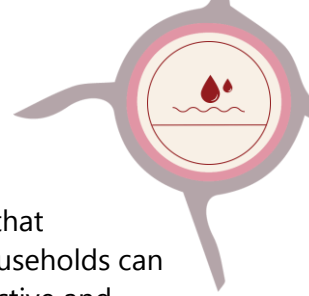
https://www.grandriver.ca/en/our-watershed/resources/Documents/WMP/Water_WMP_Report_EFlows.pdf

Water Conservation and Efficiency Strategies. The City of Guelph has a very comprehensive strategy and has done a literature review on best practices. <https://guelph.ca/plans-and-strategies/water-efficiency-strategy/>

Great Lakes-St. Lawrence Sustainable Water Resources Agreement. Ontario also uses the Great Lakes-St. Lawrence Sustainable Water Resources Agreement to help with water conservation and efficiency. <https://www.ontario.ca/document/great-lakes-st-lawrence-river-basin-sustainable-water-resources-agreement>

An Analysis of Canadian and Other Water Conservation Practices and Initiatives Issues, Opportunities And Suggested Directions. CCME, 2006.





A report that documents relevant strategies and actions that Canadian governments, communities, businesses and households can pursue to ensure that water is used in an efficient, productive and sustainable manner.

http://www.ccme.ca/files/Resources/water/water_conservation/kinkead_fnl_rpt_2005_04_2.1_web.pdf

Stormwater Management

Policy Review of Municipal Stormwater Management in the Light of Climate Change, (MOECC 2016). This document provides the key findings of the review conducted to determine if there is a need for a new policy, Act or regulation to deal with municipal stormwater management systems in Ontario municipalities in light of climate change. <https://www.ontario.ca/page/policy-review-municipal-stormwater-management-light-climate-change>

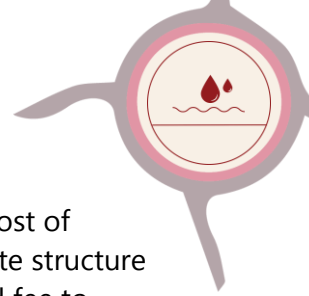
Stormwater Management Planning and Design Manual, Ontario Ministry of the Environment, 2003. This manual provides technical and procedural guidance for the planning, design, and review of stormwater management practices.

<https://www.ontario.ca/document/stormwater-management-planning-and-design-manual-0>

Low Impact Development Stormwater Management Planning and Design Guidelines, 2011. Low impact development is an alternate method of dealing with storm water on-site and often with 'soft' infrastructure (grassed swales, green roofs) as opposed to hard infrastructure (pipes and sewers) that take it to a centralized treatment system. The guide was developed to provide engineers, ecologists and planners with up-to-date information and direction on landscape-based stormwater management planning and low impact development stormwater management practices, and thereby help ensure the continued health of the streams, rivers, lakes, fisheries and terrestrial habitats. <https://cvc.ca/low-impact-development/low-impact-development-support/stormwater-management-lid-guidance-documents/low-impact-development-stormwater-management-planning-and-design-guide/>

Innovative Stormwater Management Practices (Toronto and Region Conservation Authority). This website is a database of new and emerging methods for stormwater management using low impact development techniques. <http://www.iswm.ca/>





Stormwater Fees. Some municipalities have realized the cost of dealing with urban stormwater far exceeds the current rate structure of water and wastewater billing and have included a third fee to promote on-site management of stormwater instead of conveying it through the municipal sewer network.

<https://media.assets.eco.on.ca/web/2016/11/Urban-Stormwater-Fees.pdf>

Stormwater Management and Watercourse Impacts: The Need for a Water Balance Approach (2006). Understanding the need to consider that the receiver of stormwater management facilities is the natural environment and how to plan to balance the needs of stormwater management and natural waterways.

https://sustainabletechnologies.ca/app/uploads/2013/01/ABL-Water-Bal-Report_NOV-28-06-FINAL.pdf

Aquatic Ecosystems

Information and best practices for assessing and protecting fish and fish habitat can be found in several places. Some resources include the following:

- Fish Habitat Referral Protocol for Ontario (DFO/MNR/CO, 2009)
- Environmental Guide for Fish and Fish Habitat (MTO, 2009)
- In-Water Work Timing Window Guidelines (MNR, 2009)
- Standards and Best Practices for In-Stream Works (BC, 2004)

Ontario Stream Assessment Protocol. This protocol document details several methods for assessing both the living and non-living components of Ontario's aquatic habitats.

<https://trca.ca/app/uploads/2018/02/osap-master-version-10-july1-accessibility-compliant.pdf>

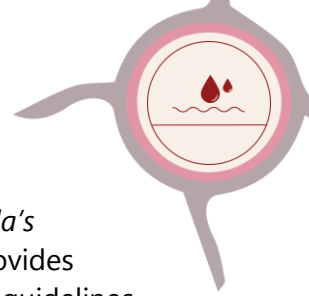
Evaluation, Classification and Management of Headwaters Drainage Features Guidelines. This document provides protocols for assessing smaller headwater aquatic habitat features in southern Ontario.

<https://cvc.ca/wp-content/uploads/2014/02/HDFA-final.pdf>

Ontario Invading Species Awareness Program. Information, guides and best practices related to the management of invasive species to prevent sale and spread of these species.

<http://www.invadingspecies.com/>





How Much Habitat Is Enough? 3rd Ed. Environment Canada's Canadian Wildlife Service, 2013. The technical bulletin provides numerous wetland, riparian, forest and grassland habitat guidelines, and the associated rationales for maintaining a certain size of habitat for the protection and sustainability of native species.

<https://www.ec.gc.ca/nature/default.asp?lang=En&n=E33B007C-1>

Lampricides and Facts about Stream Treatments, Factsheet 4a, Great Lakes Fishery Commission. This factsheet provides information regarding the use of lampricides within waterbodies, as well as an evaluation of any potential environmental and health effects.

http://www.glf.com/pubs/FACT_4a.pdf

Eating Ontario Fish 2017-2018. The Guide to Eating Ontario Fish provides easy-to-use information to help choose fish caught from Ontario lakes and rivers to minimize exposure to toxins. Consumption advice in the guide is based on guidelines provided by Health Canada. This guideline is updated annually.

<https://www.ontario.ca/page/eating-ontario-fish-2017-18>

Guide to Eating Ontario Fish: advisory database. This online database provides waterbody specific information with regards to recommended consumption for fish in Ontario.

<https://www.ontario.ca/data/guide-eating-ontario-fish-advisory-database>

Working Near Water: Considerations for Fish and Fish Habitat. Department of Fisheries and Oceans, 2002. A reference and manual for protecting fish habitat, mitigation and spills prevention and response. <http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html>

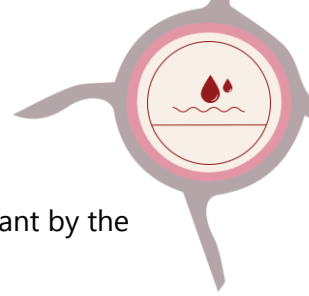
In-Water Work Timing Window Guidelines (MNR, 2013). These guidelines set out when construction or other in-water activities are restricted to protect sensitive fish species life stages.

<https://dr6j45jk9xcmk.cloudfront.net/documents/2579/stdprod-109170.pdf>

Wetlands

The MNRF is the provincial agency responsible for wetland conservation, including the classification of wetlands and designating provincially significant wetlands (PSWs). Wetlands also get protection through Official (Municipal) Plans, which can put policies related to





development in PSW's or other wetlands deemed important by the municipality.

Ontario Wetland Evaluation System (OWES) (MNRF 2014). The Ontario Wetland Evaluation System (OWES) provides a means of ranking the relative importance of different wetlands, based on a numerical ranking of wetland values or functions. These functions are grouped into 4 categories: Biological, Social, Hydrological, and Special Features.

<https://dr6j45jk9xcmk.cloudfront.net/documents/2685/stdprod-103924.pdf>

<https://www.ontario.ca/page/wetlands-evaluation>

Great Lakes Wetlands Conservation Action Plan (GLWCAP). This is a cooperative program that involves federal and provincial governments and non-government organizations in efforts to establish a comprehensive wetlands conservation program for Ontario wetlands within the Great Lakes basin. The Action Plan's goal is to create, reclaim, rehabilitate and protect wetland habitat in the Great Lakes basin. <http://glwcap.ca/>

Development, Interference with Wetlands and Alterations to Shorelines and Watercourses (2006). Under the *Conservation Authorities Act*, conservation authorities created policies and regulations in their jurisdictions for regulating development that would alter wetlands, shorelines and watercourses.

<https://www.ontario.ca/laws/regulation/040097>

MTO's Environmental Standards and Practices User Guide, 2014. This guide includes information on wetland protection and mitigation during the design and construction of roads and highways.

[http://www.ragsb.mto.gov.on.ca/techpubs/eps.nsf/0/53c492c283098598852572b300578e1f/\\$FILE/EPRs%20Apr%202014%20Final%20PDF%20Accessible%20Version%2028%2010%2014.pdf](http://www.ragsb.mto.gov.on.ca/techpubs/eps.nsf/0/53c492c283098598852572b300578e1f/$FILE/EPRs%20Apr%202014%20Final%20PDF%20Accessible%20Version%2028%2010%2014.pdf)

Integrated Watershed Management

Shawanaga First Nation lands lie downstream of large areas of the Shawanaga, Harris and Naiscouth River watersheds, where many activities occur that are presently outside of Shawanaga First Nation's control but which may impact our water resources. Integrated Watershed Management (IWM) is an approach to environmental management at the watershed level that Shawanaga First Nation may wish to pursue with upstream and adjacent municipalities,





landowners, and the province in order to ensure better use and protection of surface water resources under Shawanaga FN jurisdiction.

Summary of Integrated Watershed Management Approaches Across Canada (CCME, 2016). A document outlining how IWM has been done across Canada.

http://www.ccme.ca/files/Resources/water/water_conservation/Summary%20of%20Integrated%20Watershed%20Management%20Approaches%20Across%20Canada%20PN%201559.pdf

Integrated Watershed Management (ECCC). The federal government's suggestions for IWM including Primary Strategies for IMW in Canada including governance, instruments and tools, science and technology, monitoring and assessment and some lessons learned.

<http://www.ec.gc.ca/eau-water/default.asp?lang=en&n=13D23813-1&pedisable=true>

Marina and Waterfront Development and Boating

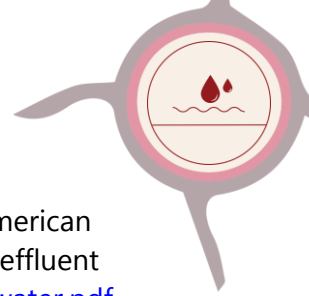
Safe Boating Guide – Transport Canada, 2014. This guide discusses best practices for fuel storage and handling around waterways.

<http://www.tc.gc.ca/media/documents/marinesafety/TP-511e.pdf>

National Management Measures Guidance to Control Nonpoint Source Pollution from Marinas and Recreational Boating, United States Environmental Protection Agency, 2001. This guidance document provides management measures that may be used to reduce non-point source pollution from marinas and recreational boating activities.

<https://nepis.epa.gov/Exe/ZyNET.exe/20004KEK.TXT?ZyActionD=ZyDocument&Client=EPA&Index=2000+Thru+2005&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5Czyfiles%5CIndex%20Data%5C00thru05%5CTxt%5C00000004%5C20004KEK.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL>





Graywater Discharges from Vessels (USEPA, 2011). This American regulation for discharges of greywater describes general effluent limitations. https://www3.epa.gov/npdes/pubs/vgp_graywater.pdf

Water Quality: Boating and Marine Activities: Solutions, Resources and Links. A website from the BC government discussing water quality with respect to boating.

http://www.env.gov.bc.ca/wat/wq/nps/NPS_Pollution/boating/Boating_Main.htm

References

British Columbia, 2004. Standards and Best Practices for Instream Works. Ministry of Water, Land and Air Protection. March, 2004.

MNR, 2011. Lakes and Rivers Improvement Act Administrative Guide. Ontario Ministry of Natural Resources, August 2011.

MNR, 2013. In-Water Work Timing Window Guidelines. Ontario Ministry of Natural Resources, May 2013.

Fish Habitat Referral Protocol for Ontario (DFO/MNR/CO, 2009). Aquatic Resources Management Advisory Committee, 2008.

MTO, 2009. Environmental Guide for Fish and Fish Habitat. Ministry of Transportation, June 2009.

Glossary

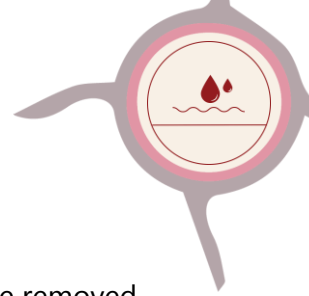
Algal Blooms

The excessive growth of one or more species of algae (e.g., cyanobacteria) which can reduce water clarity, change the colour of a waterbody, affect nutrient levels, deplete oxygen levels or produce toxins. Climate change can also accelerate the expansion of algal blooms.

Benthics (Benthic Organisms)

Bottom-dwelling aquatic invertebrates (e.g., worms, crabs, tunicates) that are used to monitor the ecological condition of lakes, streams, and wetlands.





Bioretention

The process in which contaminants and sedimentation are removed from stormwater and temporarily stored, treated and infiltrated physically, chemically or biologically in a basin or pond.

Effluent

The liquid waste or sewage discharged into a waterbody.

Eutrophication

A process in which deposits of excess nutrients cause an algal bloom or reduced oxygen through plant overgrowth in an aquatic Ecosystem.

Grey Infrastructure

Use of human engineered infrastructure like pipes and wastewater treatment plants to treat and convey stormwater and waste water. Generally designed to collect stormwater as quickly as possible and convey it off-site.

Greywater

The relatively clean wastewater from baths, sinks, washing machines, and other household appliances.

Green Infrastructure

Using natural features or engineered features whose designs are based on natural features (like LIDs) to treat stormwater.

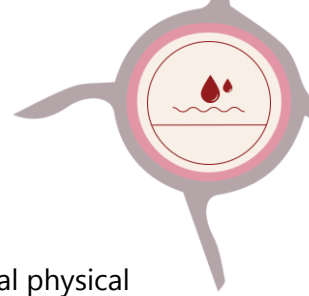
Low Impact Development (LID)

Stormwater management approaches that mimic natural landscapes by slowing down the runoff, infiltrating it on-site and/or allowing it to filter sediment through vegetation or specially designed stormwater management ponds to clean it prior to it reaching natural waterbodies.

Sedimentation

The process in which soil or particulate matter is carried from its point of origin by either natural forces or human activity and is deposited elsewhere on land or in water. This can lead to increased turbidity and sediment build up, and negatively influence aquatic nutrient cycling.





Soil Erosion

The detachment and movement of soil particles by natural physical forces, primarily by wind and water (e.g., rainfall, flowing water, currents and waves). Soil erosion can cause negative environmental effects including but not limited to the spread of pesticides to waterways, loss of soil nutrients, roadway and shoreline damage.

Stormwater

The rainwater, snowmelt, or other water that runs off our roofs, driveways, and roads and flows into rivers, waterways or storm sewers, rather than soaking into the ground.

Tributary

A freshwater stream that feeds into a larger stream or river.

Turbidity

The cloudiness of a fluid caused by suspended solids. The measure of turbidity is an important test used to determine water quality.

Watershed

An area of land that catches precipitation (e.g., rain, snow) and drains or seeps into a particular body of water (e.g., marsh, creek, stream, river, lake, groundwater). Watersheds can be open (e.g., water eventually drains into the ocean) or closed (e.g., water can only leave the system through evaporation or ground seepage) and come in diverse shapes, sizes, and locations.





Wildlife and Wildlife Habitat

Environmental Stewardship Guidance

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Community Objectives

**Stewardship Guidance
and Strategies**

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Enforcement**

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"Back in them days, there were all kinds of wolves. You'd stand in one spot and you'd hear 6, 7 packs answering each other all around you."

– Community Elder

Our Stewardship Vision

As stewards of the lands that have been gifted by the Creator, we have a responsibility to help maintain healthy wildlife populations and protect the habitats they need to thrive. From playing a central role in our social and spiritual lives to providing us with food, the land and its animals are central to our very identity. We believe that an abundance of wildlife, with intact and connected habitats, is an indicator of the health of the surrounding natural environment that also supports us and keeps us healthy. We also recognize that maintaining intact natural ecosystems helps guard against some of the threats of a changing climate.

Development has the potential to destroy wildlife habitat and disturb wildlife populations. We are committed to identifying, mapping, and protecting wildlife habitat within our lands. We will develop a management plan to maintain and enhance the quality of wildlife habitat and the health of wildlife populations, including Species at Risk.

We outline strategies to protect wildlife and wildlife habitat, such as educating our members, developing a database of existing wildlife habitat and wildlife population conditions, developing a wildlife and wildlife habitat monitoring plan, and developing guidance to address impacts of development to wildlife populations and habitat.



Community Objectives

We will work to develop and carry out strategies to protect wildlife habitat and wildlife populations for seven generations to come.

Short-Term Objectives

- Take an inventory of and mapping the current conditions and extent of wetlands and wildlife habitat within our lands. We will focus on valued species and Species at Risk (SAR), as well as areas with high potential for development and subsequent impacts to wildlife and wildlife habitat.
- Develop a digital database for all wildlife, SAR and habitat information, while maintaining control over sensitive species information and how and when this is shared.
- Develop a citizen science program so community members can contribute wildlife and SAR sighting information through the use of a web-based tool.
- Develop a monitoring program for culturally valued species and SAR.
- Develop a community awareness, education and stewardship program to encourage local community member awareness and involvement in wildlife and SAR conservation issues.
- Develop a program to combat the threat of poaching to SAR and other wildlife on our lands.
- Develop a Land Use Plan that prohibits development in critical wildlife habitat.
- Participate in the federal Aboriginal Fund for SAR program. Including activities directed at outreach, programs, planning development, surveying and monitoring, with a focus on the impacts of highways and roads impacting SAR.
- Develop and implement a series of Best Management Practices (BMPs) for development adjacent to wildlife habitat, including recommended buffer widths and other mitigation measures to be taken. The mitigation hierarchy (Avoid, Minimize, Restore, Offset in order of preference) is to be considered when development may cause impacts to wildlife habitat.





- Develop an Environmental Assessment law that includes compliance enforcement measures to ensure that BMPs are being followed as required to reduce impacts to wildlife and wildlife habitat resources from development.
- Evaluate options and identify preferred alternative(s) for the delivery of wildlife and wildlife habitat protection, forest management, stewardship, education, and enforcement –potentially through Shawanaga First Nation environmental officers, a Shawanaga First Nation Guardians program (e.g. Forest Rangers), or working with an outside partner such as Ontario’s Ministry of Natural Resources and Forestry (OMNRF) or the Canadian Wildlife Service (CWS).
- Inventory and map existing invasive species infestations or problem areas and developing an invasive species management plan.
- Develop an understanding of where there are roadkill hotspots for vulnerable wildlife species and populations, and any BMPs and mitigations that developers should follow to reduce this impact.
- Minimize the use of pesticides and present the community and/or developers with preferred alternatives to pesticide use, with the goal of having the lowest possible impact to wildlife resources and Shawanaga community members’ health.
- Develop a program for monitoring important pollinator populations (i.e. bees, wasps, and butterflies) and developing habitat improvement strategies, including mapping important food plant occurrences, planting dedicated pollinator gardens, and considering providing pollinator habitat in vegetation restoration plans associated with developments.
- Map and manage important wild rice harvesting areas.
- Develop a Forest Management Plan for our lands. Included in this would be management techniques to prevent the reduction of major forest fire risk (for example the use of fire cuts), and considerations for the potential impacts of climate change on the forest resource.
- Monitor moose and deer populations on our lands, keeping in mind ideal population balances for these



species, and consider the implementation of community-based hunting limits and guidelines. Encourage information sharing among hunters to avoid overharvesting.

- We acknowledge that the old community church provides important bat roosting habitat. The community will explore the potential of collecting and using bat guano for fertilizer within the community, while considering safety risks to community members and potential impacts to roosting bats, some of which may be SAR.
- Consider longer term potential bat habitat issues, taking into account the longevity of the church structure and consider options for improving or increasing available bat roosting habitat on our lands.
- Develop a nature trail system to encourage use, enjoyment and connection with natural habitats present on our lands. This could include the use of interpretive signage.

Long Term Objectives

- Develop a wildlife and wildlife habitat protection strategy.
- Implement SAR recovery efforts and habitat recovery and restoration activities when funding is available.
- Build and maintain internal capacity to carry out an extensive SAR monitoring and management program, building upon current programs. Currently bats and herptiles are being monitored but this should be expanded to include all SAR occurring on our lands. This will include mapping of SAR habitat, developing BMPs for working near SAR habitat and developing a long-term SAR monitoring program.
- Develop a formalized 'Environmental Training and Capacity Building Program' for environmental management of wildlife and their habitats, including training of our staff, and community engagement and educational outreach programs.
- Implement the preferred alternative(s) for delivery of wildlife and wildlife habitat protection, stewardship, education, and enforcement on our lands.



- Publish regular “State of the Land” reports every 5 years that detail results of SAR, wildlife and wildlife habitat monitoring, and identifies successes and areas to improve. These reports will include information on status and trends of wildlife populations, the state of significant wildlife habitat, trends in wildlife habitat loss or restoration, and existing stressors on wildlife populations and habitat, including cumulative impacts.
- Ensure MTO installs well designed highway overpasses and/or underpasses at hotspots for animal kills or crossings (e.g. deer moving to winter yarding areas, amphibians migrating to and from wetlands). We will develop a set of minimum standard mitigations that proponents will be required to follow on road projects.

Stewardship Guidance and Strategies

To meet our short and long-term objectives for healthy wildlife populations in intact habitats in our community, we will use the following **stewardship guidance and strategies** that are built on regulations, guidelines and best management practices.

Strategy 1: Baseline Assessment of Wildlife and Wildlife Habitat Conditions

The baseline conditions assessment will include a field inventory of wildlife and wildlife habitat within our lands, focusing on species and ecosystems that we have identified as “valued,” SAR (see Table 1 at end of this ESG), and areas with high development potential, and therefore high potential for impacts.

We will use a community engagement process to identify valued species and habitats based on the following criteria:

- Contribution to ecological function and resilience;
- Importance for wild foods harvesting activities; and
- Role in cultural and recreational practices.

We will also inventory invasive species in any locations where they have the potential to negatively impact our lands and wildlife (see Table 2 at end of this ESG for a list of invasive species of concern).

This process will help us identify the specific types and areas of habitat in need of protection, as well as the distributions and levels of vulnerability of different wildlife populations. The data collected





will inform land use planning, natural resource development risk management, and the development of wildlife and wildlife habitat management strategies. The baseline also provides a reference point for ongoing environmental monitoring, allowing for the identification of improvements and losses, in terms of wildlife populations and habitat integrity.

We will collect the information for this baseline assessment from:

- Existing documented traditional ecological knowledge (TEK);
- Interviews that gather previously undocumented TEK;
- Existing western science ecological datasets; and
- Habitat and wildlife surveys to fill knowledge gaps.

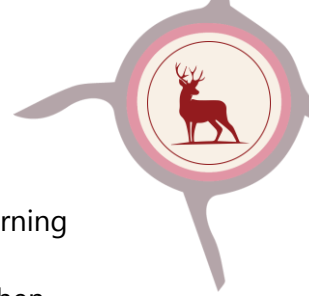
Our Lands and Resources Department is responsible for coordinating the baseline assessment with support from:

- Environmental monitors;
- Elders;
- Traditional knowledge holders; and
- Qualified wildlife biology and ecology consultants.

We will upload all files related to this baseline assessment (e.g. final assessment reports, maps, interview transcripts, survey results) to the Lands and Resources Department's Wildlife Database (see Strategy 4) and make them accessible to those involved in our Wildlife and Wildlife Habitat Monitoring Program (see Strategy 2). We will share data related to SAR and invasive species with the Provincial and Federal governments, but will otherwise keep this information confidential to prevent potential poaching issues.

Strategy 2: Wildlife and Wildlife Habitat Monitoring Program

Our monitoring program is focused on the same valued species, valued and at-risk ecosystems, and SAR that are the focus of our Baseline Assessment of Wildlife and Wildlife Habitat Conditions (see Strategy 1), as well as invasive species and high potential development areas. Ongoing monitoring of valued and at-risk species will enable us to maintain an understanding of the current



state of wildlife and wildlife habitat, to identify any concerning trends, and to help inform management, planning and implementation of recovery strategies and protections when necessary. By monitoring development projects, we will help to ensure that all involved parties follow applicable regulations, best management practices, and our wildlife protection protocols.

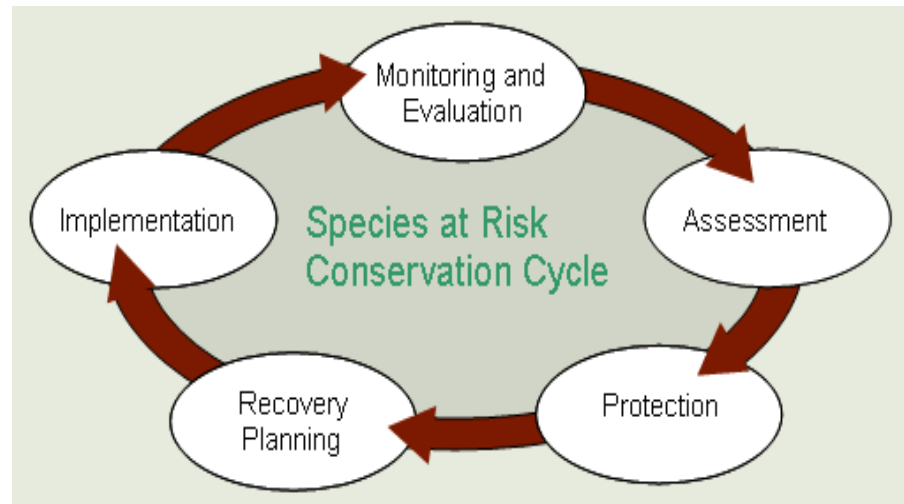


Figure 1: Illustration of the Components of a Species at Risk Monitoring Cycle. Environment and Climate Change Canada, 2011.

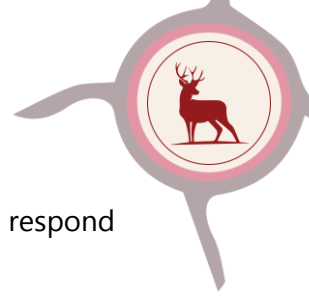
To monitor SAR, we will draw from our Baseline Assessment of Wildlife and Wildlife Habitat Conditions (see Strategy 1 above), as well as our existing SAR research program. We will conduct ongoing monitoring of identified SARs with support from traditional land users, and with support from Federal and Provincial governments, academic institutions, and not-for profit organizations.

Specific monitoring efforts will include:

- Wildlife population and distribution surveys;
- Health monitoring; and
- Identification and quantification of causes of wildlife mortality.

To monitor valued ecosystems, we will first identify corresponding indicator species and their disturbance thresholds. We will then monitor the health and abundance of the indicator species for each valued ecosystem to gain an understanding of the health and functioning of the ecosystem. By comparing indicator species abundance levels with defined thresholds, we can determine when





serious changes may begin to occur in an ecosystem and respond appropriately.

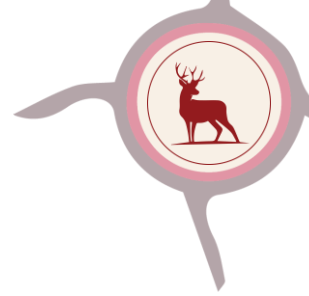
Our invasive species monitoring will include tracking invasive species sightings with assistance from community land users and ongoing measurements of abundance in locations where we suspect invasive species of having negative impacts on SAR or valued wildlife and wildlife habitat. We will determine thresholds at which invasive species will cause serious harm to ecological integrity. We will then compare our measurements of abundance with these thresholds to determine whether we need to take actions (such as removal).

We currently have a focus on invasive aquatic species, since we have already identified sea lampreys as an invasive species that is impacting our waters and fisheries. We will compare the results of our monitoring activities with our 'Baseline Assessment of Wildlife and Wildlife Habitat Conditions' to enable identification of and response to any serious changes in the environment. These results will also help to inform the development of our environmental management strategies and protocols.

We rely upon our community hunters, fishers and traditional land users, as well as our environmental monitoring team to gather this data. We will develop processes by which community members can submit the data they have collected to our Lands and Resources Department, who will then upload it to our Wildlife Database.

To summarize our monitoring efforts, we will develop and publish a 'State of Shawanaga First Nation Lands' report on a periodic basis (e.g., every 5 years). These reports will include:

- Information on our findings from the above efforts;
- Summaries of wildlife populations;
- Conditions of significant wildlife habitat;
- Trends in wildlife habitat loss or restoration; and
- Stressors on wildlife populations and habitats, including cumulative impacts.



Strategy 3: Road-Wildlife Impact Monitoring Program

We will implement a reporting system for our community members and others to report injured and dead animals on roads within or traversing our lands to the Lands and Resources Department. Staff will upload this data, including the locations of the occurrences, to our wildlife database so that we can monitor, review and respond to trends in road-related wildlife injuries and mortality.

The information we gather will help to inform our wildlife protection strategy and other environmental management strategies. Eventually, it may help to inform the need for roadkill prevention strategies and mitigation tools, such as appropriate route selection, seasonal or permanent road closures, installing appropriately designed eco-passages appropriate for wildlife in the area, grading, roadside drainage, and wildlife crossing signs.

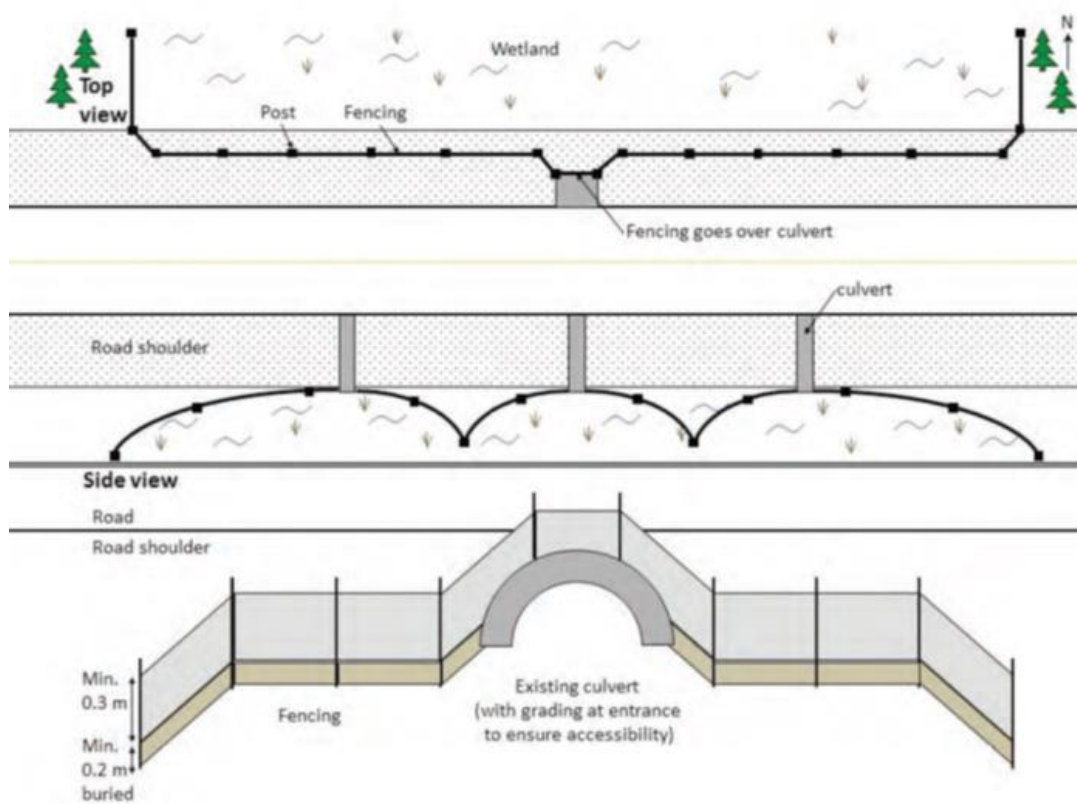
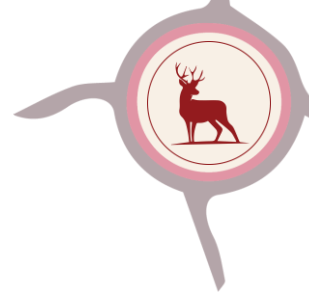


Figure 2: Diagram of a typical wildlife guiding underpass. OMNRF, 2016.



Strategy 4: Wildlife Database

Our wildlife database will include data from all of our wildlife-related research and monitoring, as well as records of all reported wildlife sightings and encounters. Within the database, we will be able to sort information by category (date of occurrence, SAR, invasive species, culturally important species, plant species, wildlife species, wildlife encounters, wildlife with diseases or abnormalities, habitat use, etc.). We will also be able to sort data by location, as we will aim to include GPS data in our records whenever possible. Our SAR Encounter Reporting Form is included at the end of this ESG.

Strategy 5: Wildlife Protection Compliance Protocol

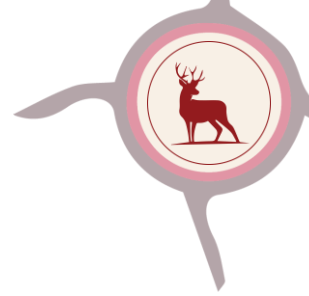
This initiative will help us protect important wildlife and wildlife habitat on our lands alongside experiencing the benefits of natural resource extraction (e.g. aggregates, forestry) and development activities (e.g. housing) by ensuring developers adhere to relevant standard regulations and BMPs (listed below), zoning laid out in our land use plan, and our own wildlife protection protocols.

We will create our wildlife protection protocol for developers with the support of qualified biologists, ecologists and traditional ecological knowledge holders. The protocol will provide direction and rules to developers that help ensure that the design, construction, operation, and decommissioning of development projects will result in the least possible impact on terrestrial, aquatic and riparian ecosystems. In cases where impacts are unavoidable, but we deem the development project important, our wildlife protection protocol provides guidance for minimizing and mitigating impacts, and carrying out off-setting and compensation measures.

Requirements for protecting aquatic and riparian habitats include minimizing stream crossings in linear developments, maintaining as much riparian vegetation as possible, and prohibiting development within specific riparian and wetland setback areas. Requirements for protecting terrestrial habitat includes:

- Minimizing new road development;





- Placing new development adjacent to existing developments;
- Removing vegetation using low disturbance methods; and
- Maintaining corridors and linkages for wildlife movement.

Requirements and direction for protecting animal species, including SAR, will include respecting established timing windows to ensure that activities are conducted during the time of year and/or day that will have the least impact on animal species in the area. Rules and mitigation strategies surrounding noise pollution are included. Rules are also laid out that are aimed at avoiding the introduction of invasive plant species through construction machinery and equipment.

We will require that monitoring of wildlife and wildlife habitats be conducted during all phases of project development, including:

Baseline monitoring before the project begins;

- Operational or maintenance monitoring during the project; and
- Follow-up monitoring after the project is complete.

Ongoing monitoring of the status of wildlife and wildlife habitat conditions related to development projects will help identify whether developers are complying with wildlife protection measures and any mitigation measures they have committed to and will identify when penalties or corrections are needed.

Monitoring programs can be scoped to the size and nature of a given development and the potential magnitude of impacts. When a project is deemed high risk for wildlife and wildlife habitat, a separate project-specific wildlife and wildlife habitat protection protocol must be developed.

Results of monitoring programs are to be filed with us, with the timeframe of submissions depending on the nature and timeframe of a specific monitoring program. We also mandate the hiring of local wildlife monitors and environmental monitors by all project proponents. We have trained our own wildlife and environmental monitors through our formalized Environmental Training and Capacity Building Program.





Strategy 6: Wildlife Conservation Strategy

Our Wildlife Conservation Strategy (WCS) will help protect the lands, waters, plants and animals that exist within our lands. It is based on the findings from the Baseline Assessment of Wildlife and Wildlife Habitat Conditions, monitoring programs, and other wildlife-related research. Our WCS is intended to provide guidance for aligning community planning and decision making with principles of sustainability that aim to protect wildlife.

Once developed, a key feature of our WCS is that it will provide a big picture overview of the connections between all the natural elements and creatures on our lands, which allows us to make decisions with the whole environment in mind. When evaluating development plans and proposals, instead of considering only site-specific impacts of a project, our WCS will help us consider and understand spin-off and cumulative effects throughout our lands. This helps us manage human activities in ways that support natural processes, and plan development in ways that maintain ecosystem linkages and connectivity.

Strategy 7: Species at Risk Stewardship and Recovery Actions

This initiative aims to help recover and stabilize SAR populations currently in decline on our lands. Our stewardship and recovery actions will include the development of community-specific recovery strategies and the implementation of SAR conservation activities.

As funding becomes available to do so, we develop additions to the Government of Canada's Recovery Strategies and Action Plans and the Government of Ontario's Recovery Strategies and Management Plans for SAR known to exist on our lands. We draw not only on the information in the SAR recovery strategies and action plans but incorporate our own TEK and awareness of our local context to create Shawanaga FN-specific recovery strategies and action plans for each species. These are living documents that we alter and add to according to changes in the SAR populations, changes in the threats to populations, and the availability of any other new information. We will also make a SAR Encounter Reporting Form available ([included at the end of this ESG](#)).





When we have access to funding, we carry out SAR conservation activities, including habitat protection and enhancement projects.

Strategy 8: Habitat and Ecosystem Recovery and Restoration

This initiative is intended to help us recover and enhance the ecological functioning of areas that have been degraded by human activities and/or natural processes (e.g. extreme weather events), when funding is available to do so. These areas may include decommissioned roads, old development sites, lands cleared for community infrastructure development, habitats taken over by invasive species, and more. Our focus is on reclaiming and improving habitats for culturally important and at-risk plant and animal species.

This program is to be led by the Lands and Resources Department, with support from external professionals and local individuals who have participated in training and capacity building programs related to rehabilitation and restoration.

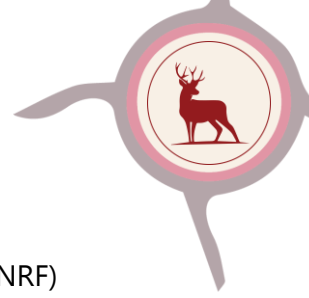
Strategy 9: Training and Internal Capacity Building

This initiative helps us empower our community members to play a key role in the design, coordination and implementation of wildlife and wildlife habitat monitoring and protection programs. Through training and capacity building programs, our community members will gain new skills and knowledge related to western science and combine those skills and knowledge with traditional ecological knowledge and an in-depth understanding of community context. With this combination of western and traditional knowledge and skill-sets, our people are ideally suited for environmental management and protection work.

We can help facilitate and encourage community members to pursue training and capacity building programs, including the following:

- SAR research and monitoring training
- Habitat restoration and rehabilitation training
- Invasive species research and monitoring training





- GIS and mapping skills development
- Ontario Wetland Evaluation System (through OMNRF)
- Ecological Land Classification training and certification (through OMNRF)
- Ontario stream assessment protocol training and certification (through OMNRF, DFO, MOECC)

Monitoring and Enforcement

As citizens of Shawanaga First Nation, we are responsible for helping to protect our lands and waters, including wildlife and wildlife habitat. It is our responsibility to report anything we see that might affect wildlife, such as changes on the land, spills or potentially harmful activities. It is also our responsibility to harvest only what we need to feed our families, to do so in a right way and to teach our children to respect the gifts of the Creator in the Anishinaabe tradition.

Monitoring

The Lands and Resources Department is responsible for ensuring that wildlife and habitat monitoring strategies are effectively implemented. Trained community environmental monitors are responsible for conducting the on-the-ground monitoring activities laid out in the strategies above.

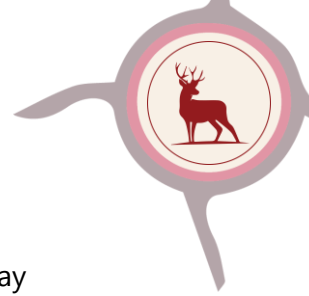
Enforcement

If the environmental monitors encounter activities that do not comply with our policies, they must immediately report to the Lands and Resources Department, who informs Chief and Council as appropriate.

If we choose to employ an environmental officer responsible for investigating and acting on any reports of suspected environmental violations taking place on our lands, including those associated with natural resource development activities, this officer will be responsible for enforcing our Environmental Protection law.

When necessary, this environmental officer will contact the Ontario Ministry of Natural Resources and Forestry about any illegal activities related to plants and wildlife that we cannot enforce independently. Examples of such issues include the following:

- The illegal sale of species at risk, wildlife or animal parts
- Fishing or hunting out-of-season



- Taking more fish or game than allowed
- Unlawful night hunting or shooting from a roadway
- Dumping waste on crown land
- Illegally removing sand, gravel or wood from public lands
- Having fires in restricted fire zones or without a permit
- Illegal activities in provincial parks and protected areas

The Ministry of Natural Resources and Forestry TIPS line is 1-877-847-7667.

Community Initiatives

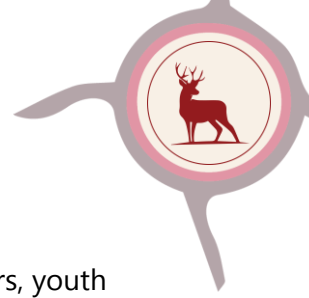
Species at Risk Information Sessions and Workshops

These workshops and sessions will focus on educating community members on SAR occurring on the traditional lands Shawanaga First Nation. These sessions will include training on identification, ecology and habitat needs, population trends, threats, and monitoring programs. Programs can be put on by trained people including OMNRF biologists or independent consultants and can also involve our community knowledge holders and/or Elders. Ideally various age groups would participate in learning about SAR and a variety of activities should be involved, including field trips. The sessions will supply the participants with proper identification cheat sheets, the role these SAR have within the ecosystem and the importance to protect them. A monitoring program to ensure the protection of SAR, and building an internal capacity to monitor SAR, and development of SAR encounter forms, or making it known at the band office.

Valued Ecosystems and Species Workshops

These sessions will require extensive community member involvement and input about their traditional lands. This would involve a mapping and a field component to identify areas of importance, and cataloguing of important species. Areas of importance for plant harvest, hunting, trapping, cultural and spiritual sites, etc. will be noted and mapped. Elders and Traditional Knowledge keepers will provide input about valuable resources (i.e. wild rice, medicinal plants, etc.). Guided nature trails which incorporates western science information and traditional knowledge on signs within that trail.





TEK Workshops and Sessions with Youth

The series of workshops and sessions would involve elders, youth and other knowledge holders (TEK experts). These sessions would include field visits with the group at various times of year and in classroom visits. As TEK is an extensive subject, these sessions would be ongoing into the foreseeable future but should be a formalized and on regularly scheduled program. Elders would come into classroom sessions or after-school sessions to place emphasis on the protection of their traditional lands that also encompass wildlife. Emphasis will be placed on the connectedness of nature and all plants and animals. These sessions allow the youth to become an environmental steward.

Invasive Species Awareness Workshops

These sessions would use information from a wide variety of sources including TEK, and other known experts as well as information from our inventory of wildlife habitat. Workshops will include aspects of invasive species identification, occurrence reporting, and management options. Workshops will aid in determining which invasive species are present and potential issues within our lands. The workshops will educate people on community-based information for invasive species that are within their traditional territories, and issues that are present, as well as the mechanisms of spreading of these species. This may allow for the development of a community-based monitoring initiative.

Road Ecology Workshop

These sessions could involve field trips during high activity and high-risk seasons along stretches of road that are known to be having impacts on local wildlife. Sessions would be used to illustrate some of the conditions that are leading to high levels of road kill, as well as what is working well at mitigated stretches of highway.

Regulations and Best Practices

There is considerable federal and provincial legislation aimed at preventing, mitigating, and compensating for impacts to wildlife and wildlife habitat. Although it is the federal legislation that applies to our community, we wish to meet and exceed the requirements of both federal and provincial legislation with regards to environmental management. Additionally, many other jurisdictions have developed best management practices for conducting development and construction work in proximity to





natural features. We have listed and summarized a selection of these below that can be used as references for developing and implementing mitigations on our lands.

Wildlife Conservation

Canada Wildlife Act, 2010. The focus of this Act is conservation, allowing for the creation of wildlife areas that are designated for habitat preservation along with wildlife conservation, interpretation, and research. These wildlife areas are specifically aimed at the protection of migratory birds and species at risk. The Act includes Wildlife Area Regulations, which prohibit all human activities that may negatively impact wildlife and their habitats. These Regulations allow for permits to be issued in order to permit certain human activities within wildlife areas and allow for some recreational activities to be undertaken without a permit.

Permitted activities include bird watching, photography, hiking, and canoeing. laws-lois.justice.gc.ca/eng/acts/W-9/

Migratory Birds Convention Act, 1994. The purpose of this Act is to protect migratory birds through the regulation of all human activities that could negatively impact their populations. The Act requires any activities that have the potential to impact migratory birds, with a few exceptions, to be issued a permit before being undertaken. The Act's Migratory Birds Regulations outline requirements for hunting of migratory birds and other activities with the potential to impact migratory birds. The Act's *Migratory Bird Sanctuary Regulations* allow for the creation of protected areas that encompass important habitats for migratory birds. laws-lois.justice.gc.ca/eng/acts/m-7.01/

Development and Pollution

Canadian Environmental Protection Act, 1999. This Act aims to protect ecosystems from the impacts of pollution. It covers environmental protection planning, such as pollution prevention planning and environmental emergency response planning. It also addresses the management of toxic substances, hazardous waste, nutrients, vehicle and engine emissions, and international air and water pollution. laws-lois.justice.gc.ca/eng/acts/c-15.31/

Canadian Environmental Assessment Act, 2012. **Note that the proposed federal Impact Assessment Act, 2019 will replace this act effective August 28, 2019.** This Act provides the basis for





the Environmental Assessment (EA) process, which is used to determine whether proposed projects are likely to result in significant adverse environmental effects in locations that fall under federal jurisdiction. The Act provides a variety of tools that are used to help integrate the EA process with other jurisdictions and their processes. These tools include coordination, joint reviews, delegation, substitution, and equivalency. laws-lois.justice.gc.ca/eng/acts/c-15.21/index.html

*Ontario Environmental Assessment Act, 1990**. This Act lays out a process for assessing the environmental impacts of proposed projects that fall under provincial jurisdiction. The Act applies to the projects of provincial ministries and agencies, municipalities, and public bodies such as conservation authorities. The types of projects that would likely fall under this Act include public roads and highways, waste management projects, resource management projects, flood protection projects, and water and wastewater related projects. The Act does not apply to the projects of private firms and companies. *Last amended in 2010.

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

Wildlife Exploitation

The Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act, 1996. The purpose of this Act is to protect plant and animal species from overexploitation caused by poaching and illegal trade. It also aims to protect ecosystems from the potential negative impacts of exotic invasive species. <http://laws-lois.justice.gc.ca/eng/acts/W-8.5/>

Species at Risk

Species at Risk Act, 2002. This Act is intended to protect endangered species and the habitats they depend on, ideally enabling the recovery of species at risk (SAR) to the extent that they are no longer at risk in Canada. At minimum, the Act aims to prevent SAR from becoming extinct or extirpated. The Act allows for the listing of new SAR through a recommendation and assessment process involving the Minister of the Environment, Governor in Council, the Committee on the Status of Endangered Wildlife in Canada, and Ministers responsible for particular species. The recovery of SAR is promoted by the Act through mandatory





development of recovery strategies and action plans for all species assessed as at risk. <http://laws-lois.justice.gc.ca/eng/acts/s-15.3/>

Ontario Endangered Species Act, 2007. This Act provides for the protection of species classified as endangered or threatened, as well as protection of those species' habitats. The Act also allows for the assessment and classification of new species through an independent body that bases its assessment on western science and Aboriginal Traditional Knowledge. This body classifies each species deemed at risk in 1 of 4 categories or levels of at-risk status. The creation of recovery strategies and plans is covered by the Act, as are tools aimed at reducing the impacts of human activities on endangered species, promoting protection, and enabling recovery. Note that the Ontario Endangered Species Act, 2007 is under a ten-year review and there may be changes to this act in the future. <https://www.ontario.ca/laws/statute/07e06>

Categorizing and Protecting Habitat under the Endangered Species Act. Ontario Ministry of Natural Resources, 2012. This policy enables the implementation of the Ontario Endangered Species Act's (ESA) objective to prohibit damage to or destruction of the habitat of species classified as endangered or threatened in Ontario. The policy outlines the principles and considerations used by the Ministry of Natural Resources (MNR) to determine whether an activity is likely to damage or destroy the habitat of endangered or threatened species. It also lays out how different habitats protected under the ESA are categorized by the MNR according to the predicted levels of tolerance and resilience of the endangered species that use the habitat. Habitat factor considerations that are described in the policy are related to uses of the habitat by endangered species, concentration of endangered species, availability of the habitat within the province, resilience of the habitat, and more. <https://www.ontario.ca/document/categorizing-and-protecting-habitat-under-endangered-species-act>

Environmental Law Enforcement

Environmental Enforcement Act. Environment and Climate Change Canada, 2012. This Act lays out the enforcement mechanisms, fine systems, and sentencing stipulations related to environmental laws. Information is provided regarding the categories of environmental offences and the fines associated with them. The Act also provides a toolkit to enforcement officers, which includes guidance for compliance orders and a public registry of corporations that have





committed offences under federal environmental legislation.

<https://www.ec.gc.ca/alef-ewe/default.asp?lang=En&n=2aafd90b-1=>

Invasive Species

Invasive Species Act. Ontario Ministry of Natural Resources, 2015.

This Act aims to prevent the introduction and spread of invasive species in Ontario. The focus is on preventing introduction, since prevention is the least costly and most effective approach in the long run. The Act allows for the classification of invasive species as either prohibited or restricted and enables the creation of regulations to be applied to those species. Prohibitions are laid out in the Act that apply to prohibited species. Activities that are regulated under the Act include moving of firewood, boating, and animal and plant purchase and trade. Since the Act came into effect only recently, new policies and regulations that accompany the Act will be coming out over time.

<https://www.ontario.ca/laws/statute/15i22>

Best Management Practices

Wildlife Habitat Protection

How Much Habitat Is Enough? 3rd Ed. Environment Canada's Canadian Wildlife Service, 2013. Toronto. This technical bulletin provides numerous wetland, riparian, forest and grassland habitat guidelines, and the associated rationales.

<https://www.ec.gc.ca/nature/default.asp?lang=En&n=E33B007C-1>

General Nesting Periods of Migratory Birds in Canada. Environment and Climate Change Canada, 2013. This resource provides information about migratory birds nesting periods, which helps inform regional timing windows of least risk for development and other human activities near nesting habit.

<https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods.html>

Ontario Restricted Activity Timing Windows for the Protection of Fish and Fish Habitat. Fisheries and Oceans Canada, 2013. This outlines timing windows for avoiding development and other undertakings at specific times, in order to protect spawning activities of specific fish species. <http://www.dfo-mpo.gc.ca/pnw-ppe/timing-periodes/on-eng.html>





Minimizing Development Impacts

Avoidance Guidelines. Environment and Climate Change Canada, 2016. These online guidelines outline some of the main compliance requirements of the Migratory Birds Convention Act and the Migratory Birds Regulations. Advice is provided for avoiding and mitigating impacts on migratory birds, their nests and their eggs. Guidance includes what to do if a migratory bird nest is encountered, what the risk factors for migratory birds are, what some of the main nesting periods are, how to determine the presence of nests, the ways in which breeding colonies may be disturbed, ways to minimize impacts during maintenance of human built structures, how to protect birds that depend on exposed soil banks, considerations for water-level regulation, and much more.

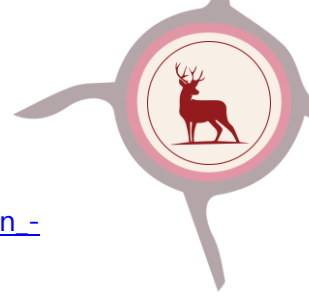
Although the guidelines state that buffer zones and setback distances for protecting migratory birds depends on the exact species of bird, the level of disturbance, and the landscape, an overview of general buffer and setback protocols is provided. Guidelines specific to avoiding disturbance of seabirds and waterbirds are also provided. Details are provided for how to reduce disturbance while on land, on water, and in the air. General nesting periods of migratory birds in Canada are also provided, along with a map of nesting zones in Canada and nesting calendars for specific regions.

<https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/guidelines.html>

Best Management Practices for Linear Development Proposed Within the Peace Region. British Columbia Ministry of the Environment. 2008. Though developed for use in British Columbia, this document provides useful guidance for the environmental management of linear development projects across the country. The document provides a series of strategies for protecting wildlife habitat, with strategies organized under the categories of project location and access planning, fish and wildlife considerations, and construction and reclamation practices. The construction and reclamation practices section lists steps and strategies for protecting wildlife habitat values during the vegetation removal process, through erosion control and environmental management, and through reclamation activities.

<https://www2.gov.bc.ca/assets/gov/environment/plants-animals-and-ecosystems/wildlife-wildlife-habitat/regional-wildlife/northeast-region/best-mgmt->





[practices/linear development bmps for the peace region - version 2 2008-09-17.pdf](#)

Environmental Best Management Practices for Urban and Rural Land Development – Aquatic and Riparian Ecosystems. British Columbia Ministry of Water, Land and Air Protection. This best management practices guide provides guidance for how to protect and enhance aquatic and riparian ecosystems during land development projects. Best practices are organized under the following categories: detailed site inventory, site planning and design, protection during development, protection after development, restoration and enhancement, human access to aquatic and riparian ecosystems, and ecosystem-specific best management practices. Guidance is provided for how to: protect riparian vegetation; protect water quality; maintain water levels; restore damaged aquatic and riparian ecosystems; protect wetlands, vernal pools, and lakeshores; and more.

www.env.gov.bc.ca/wld/documents/bmp/urban_ebmp/EBMP%20PDF%202.pdf

Protocol for Wildlife Protection during Construction. City of Ottawa, 2015. This document details best practices for protecting wildlife during construction projects. It provides valuable information about the timing of certain construction-related activities. It discusses the serious negative impacts that can be caused by site clearing and provides guidance for minimizing those impacts, including inspecting the site before clearing, “pre-stressing” the site to flush out wildlife, timing the clearing to avoid sensitive timing windows for various species, compensating for lost habitat, and more. This guide provides a table that lists specific habitat types, the species that may be found there, the sensitive times for those habitats, and recommendations for reducing impacts of construction within those habitat types. The guide also provides guidance for site management and maintenance, encounters with wildlife, wildlife-proofing buildings, and more.

https://documents.ottawa.ca/sites/default/files/documents/construction_en.pdf

Environmental Protection Requirements for Transportation Planning and Highway Design, Construction, Operation and Maintenance. Ministry of Transportation Ontario, 2014.

Environmental Reference for Highway Design. Ministry of Transportation Ontario, 2013. These publications provide





information about the province's environmental protection requirements (EPRs) for transportation and highway related design, construction and maintenance. EPRs are described for species at risk, fish and fish habitat, terrestrial ecosystems, water resources, noise, land use factors, contaminated property and waste management, built heritage and landscape features, archaeological resources, and air.

Environmental Protection Requirements for Transportation Planning and Highway Design, Construction, Operation and Maintenance.

[http://www.raqsb.mto.gov.on.ca/techpubs/eps.nsf/0/34d5d70230e3b565852572d70059ced8/\\$FILE/EPRs%20Apr%202014%20Final%20PDF%20Accessible%20Version%2028%2010%2014.pdf](http://www.raqsb.mto.gov.on.ca/techpubs/eps.nsf/0/34d5d70230e3b565852572d70059ced8/$FILE/EPRs%20Apr%202014%20Final%20PDF%20Accessible%20Version%2028%2010%2014.pdf)

Environmental Reference for Highway Design.

[http://www.raqsa.mto.gov.on.ca/techpubs/eps.nsf/0/e58d9ad002155fed85257f24005f3824/\\$FILE/Environmental%20Guide%20for%20Highway%20Design%20Final%202013_ACC.pdf](http://www.raqsa.mto.gov.on.ca/techpubs/eps.nsf/0/e58d9ad002155fed85257f24005f3824/$FILE/Environmental%20Guide%20for%20Highway%20Design%20Final%202013_ACC.pdf)

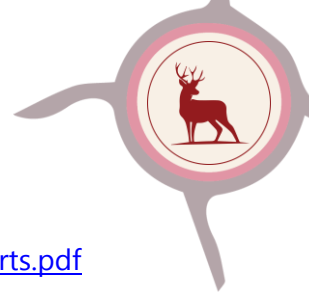
Aquatic and Riparian Habitat Protection

Best Practices on the Water. Canadian Wildlife Federation, 2015. This guide provides an overview of best practices for boating, along with some associated stewardship activities. The guidance is not extremely detailed, but it does provide some useful direction for minimizing impacts to aquatic species while on the water. http://cwf-cf.org/en/explore-our-work/connecting-with-nature/on-the-water/wild-about-sports/water-sports/14-CWF-EDUC-205_PracticesEng_Online-version.pdf

National Management Measures Guidance to Control Nonpoint Source Pollution from Marinas and Recreational Boating, United States Environmental Protection Agency, 2001. The guidance document provides management measures that may be used to reduce nonpoint source pollution from marinas and recreational boating activities. <https://www.epa.gov/nps/marinas-and-boating-national-management-measures>

Standards and Best Practices for Instream Works – Culverts. Fisheries and Oceans Canada & Government of British Columbia. This guidance document details best practices for culverts, including their location, design, installation process, timing of installation, maintenance,





removal, and more.

www.env.gov.bc.ca/wld/instreamworks/downloads/Culverts.pdf

Standards and Best Practices for Instream Works – Miscellaneous Works. Fisheries and Oceans Canada & Government of British Columbia. This guidance document details best practices for “flow or water level monitoring device construction; fish fence, screen or fish/game guard construction, maintenance and removal; fence installation repair or maintenance near a watercourse; and temporary ford construction and removal”. The best practices include direction related to minimizing impacts to the aquatic and terrestrial environment through careful location selection, timing of construction, project design, post works mitigation plans, and more.

www.env.gov.bc.ca/wld/instreamworks/downloads/MiscellaneousWorks.pdf

Model Ordinance for the Establishment of Riparian Setbacks. Chagrin River Watershed Partners, Inc, 2008. This model ordinance provides a template that can be adapted or drawn from to help develop riparian setback protocols.

<http://stormwater.co.trumbull.oh.us/pdfs/Model%20Ordinance%20Riparian%20Setbacks.pdf>

Standards and Best Practices for Instream Works – Bridges. Fisheries and Oceans Canada & Government of British Columbia. This guide provides information about best management practices for protecting aquatic and riparian habitat during the construction of bridges. It includes regional timing windows.

www.env.gov.bc.ca/wld/instreamworks/downloads/Bridges.pdf

Standards and Best Practices for Instream Works – Public Utility Works. Fisheries and Oceans Canada & Government of British Columbia. This guide provides information about best management practices for protecting aquatic and riparian habitat during work within waterways. Best practices are shared for stream crossings, stream channel maintenance, beaver and beaver dam management, habitat enhancement and restoration, and more.

<http://www.env.gov.bc.ca/wld/documents/bmp/iswstdsbpsmarch2004.pdf>

Standards and Best Practices for Instream Works – Channel Maintenance. Fisheries and Oceans Canada & Government of British Columbia.





This guide provides information regarding best practices related for dredging, vegetation cutting, stream channel restoration and maintenance, stream channel clean-up, and control of invasive non-native vegetation.

www.env.gov.bc.ca/wld/instreamworks/downloads/ChannelMaintenance.pdf

Standards and Best Practices for Instream Works – Beaver Dam Removal. Fisheries and Oceans Canada & Government of British Columbia. This guide provides information about best practices for the process of removing a beaver dam.

www.env.gov.bc.ca/wld/instreamworks/downloads/BeaverDamRemoval.pdf

Wildlife Habitat Identification and Monitoring

The Marsh Monitoring Program. Training Kit and Instructions for Surveying Marsh Birds, Amphibians and their Habitats. 2003 Edition. Published by Bird Studies Canada in cooperation with Environment Canada and the U.S. Environmental Protection Agency. March 2003.

This training kit, which provides detailed information and templates for surveying marsh birds and amphibians can be attained by registering to participate in the Marsh Monitoring Program.

volunteer@birdscanada.org

Significant Wildlife Habitat – Technical Guide. Ontario Ministry of Natural Resources. 2000. This technical guide, and its associated ecoregion specific criterion schedules, provides detailed information on how to identify and map out significant wildlife habitat, including wetland and woodland habitats. It describes how to identify: habitats with seasonal concentrations of animals, rare vegetation communities or specialized habitats for wildlife, habitats of species of conservation concern, and animal movement corridors.

It also details criteria and guidelines for evaluating and ranking significant wildlife habitat and determining how much habitat must be protected. The evaluation described is the process of determining whether a particular wildlife habitat should be considered significant and, therefore, be protected under the Planning Act. Additionally, the associated mitigation support tool provides guidance on mitigation measures that can be employed to reduce impacts to significant wildlife habitat. <https://www.ontario.ca/document/guide-significant-wildlife-habitat>





Significant Wildlife Habitat – Mitigation Support Tool
<https://www.ontario.ca/document/significant-wildlife-habitat-mitigation-support-tool>

Natural Heritage Reference Manual. This document's main purpose is to provide guidance for implementing the natural heritage policies of the Provincial Policy Statement. However, it contains useful information and methodology for any jurisdiction that is concerned with identifying a wide range of significant natural heritage features.
<https://www.ontario.ca/document/natural-heritage-reference-manual>

Invasive Species

Preventing the Spread of Invasive Plants: Best Management Practices for Land Managers, 3rd Edition. California Invasive Plant Council, 2012. This guide provides detailed information about best management practices for preventing the introduction and spread of invasive species. The best management practices are related to: tool, equipment and vehicle cleaning; clothing, boots and gear cleaning; travel; waste disposal; soil disturbance, vegetation management, fire and fuel management, and more. It contains guidance for site assessment, field mapping and monitoring, and also lists resources with additional information. <https://www.cal-ipc.org/docs/bmps/dd9jwo1ml8vttq9527zjhek99qr/BMPLandManager.pdf>

Preventing the Spread of Invasive Plants: Best Management Practices for Transportation and Utility Corridors. California Invasive Plant Council, 2012. This guide provides detailed information about best management practices for managing the spread of invasive species, specifically for the construction and maintenance of transportation and utility corridors.
www.pollinator.org/PDFs/TransportationUtilityCorridorsPreventionBMPs.pdf

Ontario Invasive Plant Council. This organization has several technical guidance documents for managing invasive plants. Information is provided related to the development of a management plan, the use of control methods, monitoring, and restoration possibilities.
<https://www.ontarioinvasiveplants.ca/resources/technical-documents/>

Creating an Invasive Plant Management Strategy – A Framework for Ontario Municipalities. Invasive Species Centre and Ontario Invasive Plant Council, 2015. This manual provides guidance on how to





develop an invasive plant management strategy. Information is provided related to invasive plant inventories, early detection, relevant governance and policies, prevention methods, community education and more. https://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/07/PlantManagementStrategy_2015_March17_2015_D3_PRINTFINAL.pdf

Clean Equipment Protocol for Industry - Inspecting and cleaning equipment for the purposes of invasive species prevention. Peterborough Stewardship Council and Ontario Invasive Plant Council, 2016. This protocol outlines the ways that vehicles and equipment must be inspected and cleaned to prevent the introduction or spread of invasive species. Inspection and cleaning diagrams and checklists are included. https://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/07/Clean-Equipment-Protocol_June2016_D3_WEB-1.pdf

Wildlife Observation Reporting

iNaturalist. This App can be used on mobile devices and is useful for reporting occurrences of any species of plant or wildlife observed. It can also be used to identify unknown species through an identification function and there are opportunities for peer review for species identification. Information reported contributes to biodiversity conservation science. <https://www.inaturalist.org/>

Ontario Nature Reptile and Amphibian Atlas. This online web reporting program allows for submission of sightings for any herptile species in Ontario (frog, toad, salamander, snake, turtle or lizard). It is also a useful tool for learning basic ecological facts about Ontario's herptiles and contains range maps for most species. <https://ontarionature.org/programs/citizen-science/reptile-amphibian-atlas/>



Glossary

Baseline Assessment

The establishment and evaluation of a point of reference in which to provide a comparison for future measurements, assessments, and predictions.

Cumulative Effects

Are changes to the environment that are caused by an action that has been impacted by other past, present and future human actions.





Forest Management

An approach to forestry that considers administrative, economic, legal, and social aspects, as well as scientific and technical aspects of a forest. It may also include silviculture, protection, and forest regulation.

Invasive Species

A plant, fungus or animal species that is not native to a specific location and which has the tendency to spread to a degree believed to cause damage to the environment, human economy or human health.

Noise Pollution

Harmful or disturbing levels of noise that can interfere with normal activities (e.g. inhibit birdsong and communication, avoidance of habitats where noise is excessive). Noise pollution is generally caused by industrial developments and machinery, roadways, aircrafts.

Pollution

The presence or introduction into the environment of a substance or thing that has harmful or poisonous effects.

Road Ecology

The study of the ecological effects of roads, including but not limited to impacts to habitats through fragmentation and direct road kill mortality.

Species at Risk (SAR)

A naturally occurring plant or animal in danger of extinction or of disappearing from the province or country. Terms such as special concern, threatened, endangered, extirpated and extinct can describe the range of conditions and potential outcomes for species at risk.

Traditional Ecological Knowledge (TEK)

People come to understand the ecology of their surrounding environment through years of firsthand experience and inherent cultural understandings of relationships between humans, animals, lands and waters. People also come to understand the ecology of their environment through teachings that have been passed down through relations or within a community.






Western Science

The approach to understanding scientific phenomena through a Eurocentric approach to scientific methodology and thought.


Table 1: Species at Risk in Parry Sound Region as identified by COSSARO

SPECIES – COMMON NAME (LATIN NAME)	STATUS	PHOTO	LINKS TO RECOVERY STRATEGIES AND ACTION PLANS
MAMMALS			
Little Brown Myotis (<i>Myotis lucifugus</i>)	Endangered		https://www.ontario.ca/page/little-brown-myotis
BIRDS			
Barn Swallow (<i>Hirundo rustica</i>)	Threatened		Ontario recovery strategy. https://www.ontario.ca/page/barn-swallow
Bobolink (<i>Dolichonyx oryzivorus</i>)	Threatened		Ontario recovery strategy. https://www.ontario.ca/page/bobolink
Eastern Meadowlark (<i>Sturnella magna</i>)	Threatened		Ontario recovery strategy. https://www.ontario.ca/page/eastern-meadowlark




<p>Eastern Whip-Poor-Will (<i>Caprimulgus vociferus</i>)</p>	<p>Threatened</p>		<p>Ontario recovery strategy. https://www.ontario.ca/page/eastern-whip-poorwill</p>
<p>Least Bittern (<i>Ixobrychus exilis</i>)</p>	<p>Threatened</p>		<p>Ontario recovery strategy. https://www.ontario.ca/page/least-bittern</p>
<p>Peregrine Falcon (<i>Falco peregrinus</i>)</p>	<p>Special Concern</p>		<p>Ontario recovery strategy. https://www.ontario.ca/page/peregrine-falcon</p>

FISH AND MUSSELS

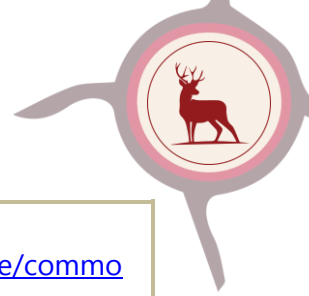
<p>Lake Sturgeon (<i>Acipenser fulvescens</i>)</p>	<p>Threatened</p>		<p>Ontario recovery strategy: https://www.ontario.ca/page/lake-sturgeonspecies-risk</p>
<p>Northern Brook Lamprey (<i>Ichthyomyzon fossor</i>)</p>	<p>Special Concern</p>		<p>Ontario recovery strategy. https://www.ontario.ca/page/northern-brooklamprey</p>

PLANTS

<p>Branched Bartonian (<i>Bartonia paniculata ssp. paniculata</i>)</p>	<p>Threatened</p>		<p>Ontario recovery strategy. https://www.ontario.ca/page/branded-bartonia</p>
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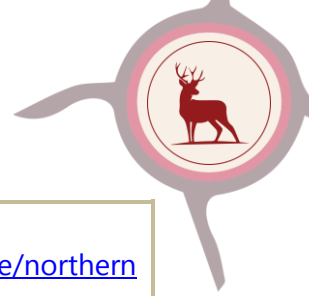
SNAKES AND LIZARDS





Common Five-lined Skink <i>(Plestiodon fasciatus)</i>	Special Concern		Ontario recovery strategy. https://www.ontario.ca/page/common-five-linedskink
Eastern Ribbonsnake <i>(Thamnophis sauritus sauritus)</i>	Special Concern		Ontario recovery strategy. https://www.ontario.ca/search/searchresults?query=Eastern%20Ribbonsnake%20recovery%20strategy
Massasauga Rattlesnake <i>(Sistrurus catenatus)</i>	Threatened		Ontario recovery strategy. https://www.ontario.ca/page/massasaugarattlesnake
Eastern Fox Snake <i>(Pantherophis gloydi)</i>	Threatened		https://www.ontario.ca/page/eastern-foxsnake
Eastern Hognose Snake <i>(Heterodon platirhinos)</i>	Threatened		https://www.ontario.ca/page/eastern-hog-nosed-snake
TURTLES			
Eastern Musk Turtle <i>(Sternotherus odoratus)</i>	Threatened		Ontario recovery strategy. https://www.ontario.ca/page/eastern-musk-turtlestinkpot





<p>Northern Map Turtle <i>(Graptemys geographica)</i></p>	<p>Special Concern</p>		<p>Ontario recovery strategy. https://www.ontario.ca/page/northern-map-turtle</p>
<p>Snapping Turtle <i>(Chelydra serpentina)</i></p>	<p>Special Concern</p>		<p>Ontario recovery strategy. https://www.ontario.ca/page/snapping-turtle</p>
<p>Blanding's Turtle <i>(Emydoidea blandingii)</i></p>	<p>Threatened</p>		<p>https://www.ontario.ca/page/blandings-turtle</p>



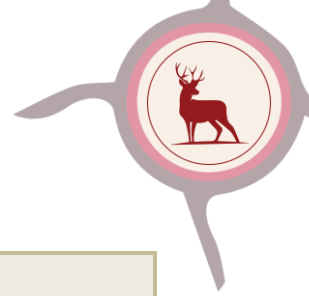











Table 2: Invasive Species Identified in Parry Sound District

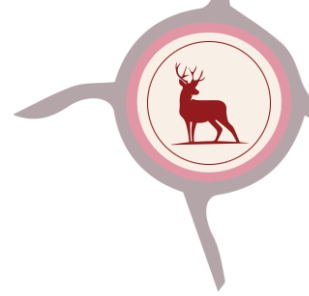
SPECIES – COMMON NAME (LATIN NAME)	PHOTO	LINKS TO CONTROL STRATEGIES AND MANAGEMENT PLANS
PLANTS		
Common Reed <i>(Phragmites australis)</i>		http://www.invadingspecies.com/invaders/plants-terrestrial/invasivephragmites/ Best Management Practices in Ontario Guide. www.ontarioinvasiveplants.ca/wpcontent/uploads/2016/07/Phragmites BMP FINAL.pdf
Common St. John's Wort <i>(Hypericum perforatum)</i>		dppw.tas.gov.au/Documents/stjohnwort_CR_C_bpmg.pdf <i>(Although this best practicemanagement guide is an Australian publication, it provides useful biology, dispersal and management information for the Shawanaga context. Some management techniques do not apply to the Canadian context, such as biological control using insects native to Australia)</i>
Eurasian Water Milfoil <i>(Myriophyllum spicatum)</i>		http://www.invadingspecies.com/invaders/plants-aquatic/eurasianwater-milfoil/
European buckthorn <i>(Rhamnus cathartica)</i>		Identification, Removal and Disposal. http://www.invadingspecies.com/invaders/plantsterrestrial/common-buckthorn/ Best Management Practices in Ontario Guide. www.ontarioinvasiveplants.ca/wpcontent/uploads/2016/06/OIPC BMP Buckthorn.pdf



<p>Giant hogweed (<i>Heracleum mantegazzianum</i>)</p>		<p>http://www.invadingspecies.com/invaders/plants-terrestrial/gianthogweed/ Best Management Practices in Ontario Guide. www.ontarioinvasiveplants.ca/wpcontent/uploads/2016/06/OIPC_BMP_Hogweed.pdf</p>
<p>Japanese Knotweed (<i>Reynoutria japonica</i>)</p>		<p>Identification. http://www.invadingspecies.com/invaders/plants-terrestrial/japanese-knotweed/ Best Management Practices in Ontario Guide. www.ontarioinvasiveplants.ca/wpcontent/uploads/2016/06/OIPC_BMP_JapaneseKnotweed.pdf</p>
<p>Reed Canary Grass (<i>Phalaris arundinacea</i>)</p>		<p>Best Management Practices in Ontario Guide. www.ontarioinvasiveplants.ca/wpcontent/uploads/2016/06/OIPC_BMP_ReedCanaryGrass.pdf</p>
<p>FISH AND AQUATIC INVERTEBRATES</p>		
<p>Freshwater Jellyfish (<i>Craspedacusta sowerbyi</i>)</p>		<p>No best management practices for Freshwater Jellyfish in Ontario published at this time.</p>
<p>Rainbow Smelt (<i>Osmerus mordax</i>)</p>		<p>http://www.invadingspecies.com/invaders/fish/rainbow-smelt/</p>
<p>Round Goby (<i>Neogobius melanostomus</i>)</p>		<p>http://www.invadingspecies.com/invaders/fish/round-goby/</p>



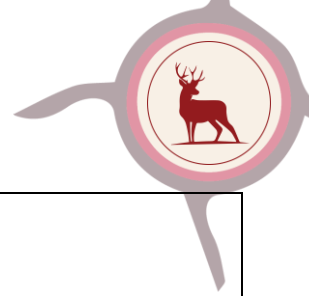
<p>Rusty Crayfish (<i>Orconectes rusticus</i>)</p>		<p>http://www.invadingspecies.com/invaders/invertebrates/rustycrayfish/</p>
<p>Spiny Waterflea (<i>Bythotrephes longimanus</i>)</p>		<p>http://www.invadingspecies.com/invaders/invertebrates/spiny-andfishhook-waterflea/</p>
<p>Zebra Mussel (<i>Dreissena polymorpha</i>)</p>		<p>http://www.invadingspecies.com/invaders/invertebrates/zebra-andquagga-mussels/</p>



Species at Risk Encounter Reporting Form

Species Encountered:			
<input type="checkbox"/> Blanding's Turtle <input type="checkbox"/> Snapping Turtle <input type="checkbox"/> Midland Painted Turtle <input type="checkbox"/> Northern Map Turtle <input type="checkbox"/> Eastern Musk Turtle (Stinkpot) <input type="checkbox"/> Wood Turtle	<input type="checkbox"/> Eastern Foxsnake <input type="checkbox"/> Eastern Hog-nosed Snake <input type="checkbox"/> Massasauga <input type="checkbox"/> Other (bittern, nighthawk, etc.) <hr/> <hr/>	Additional Comments: 	
Name of Observer:			
Contact Number(s) of Observer:			Date & Time of Encounter:
SPECIES INFORMATION			
Species Description: (e.g., number of individuals, approximate size, key identification features, nest, etc.)			
Status:		Additional Comments:	
<input type="checkbox"/> Alive <input type="checkbox"/> Injured <input type="checkbox"/> Dead			
Behaviour:		Additional Comments:	
<input type="checkbox"/> Basking <input type="checkbox"/> Feeding <input type="checkbox"/> Nesting <input type="checkbox"/> Traveling			
LOCATION			
UTM	17T (Zone)	E:	N:
			Accuracy:
Latitude:			Longitude:





Location and Surrounding Site Description: (check as many that apply)		Additional Comments:
<input type="checkbox"/> Roadway	<input type="checkbox"/> Rock Outcrop	
<input type="checkbox"/> Trail	<input type="checkbox"/> Field/meadow	<input type="checkbox"/> River
<input type="checkbox"/> Clearing	<input type="checkbox"/> Forest	<input type="checkbox"/> Stream
<input type="checkbox"/> Utility Corridor	<input type="checkbox"/> Wetland	<input type="checkbox"/> Lake
SITE CONDITIONS		
Weather:		Additional Comments:
<input type="checkbox"/> Sunny	<input type="checkbox"/> Rain	
<input type="checkbox"/> Sun/Cloud Mix	<input type="checkbox"/> Windy	
<input type="checkbox"/> Overcast	<input type="checkbox"/> Other (specify)	
Air Temperature: (°C / °F)		
ADDITIONAL INFORMATION		
Additional Documentation: (Indicate if attaching map, photos, etc.)		
Additional Notes:		

*Please forward photos or any additional information to sar@shawanagafirstnation.ca





Land Development

Environmental Stewardship Guidance

Contents

Our Stewardship Vision

Community Objectives

Stewardship Guidance and Strategies

Monitoring and Enforcement

Community Initiatives

Regulations and Best Practices

Glossary

"Economic development needs to be done in a traditional way by putting tobacco down and a prayer before proceeding. Elders can smudge the building when it's done construction. Think seven generations ahead."

– Community Member

Our Stewardship Vision

As stewards of the Earth, we have a responsibility to the Creator, as well as to our future generations, to protect and manage our lands and waters effectively. We also have a responsibility to foster prosperity for our members through economic development and growth.

Land development has the potential to impact many different components of the environment and to infringe on many of our environmental values. We strive to ensure that any development occurring on our lands meets high standards for environmental protection.

We are committed to allowing for careful development in a culturally appropriate way that protects what matters most to us and conserves our lands and waters for the future. We also aim to achieve high levels of community consultation, transparency and accountability related to all land development.

The intent of this ESG is to outline the strategies that we will put into place in order to ensure that our land is developed in a manner that ensures we are protecting what matters most to us. Whether it is our own members, or external proponents seeking to develop our lands, it is important that our expectations for how the lands and waters are treated is clear. We will do this by developing an Environmental Assessment and permitting regime, implementing our Land Use Plan and developing guidance manuals for how proponents can undertake land development.



Community Objectives

Making use of the report “Environmental Management and Land-Use Planning Implementation Framework and Considerations” (Shared Value Solutions, May 2019), we will pursue the objectives below.

Short-Term Objectives

- Make land use and development decisions in accordance with the vision, guiding principles and policies in our Land Use Plan to ensure that when development does occur on our lands it is done ‘right’.
- Protect what matters to Shawanaga First Nation by creating an Environmental Assessment regime for the application of site- and project-specific requirements for environmental management of land development. Environmental permitting regimes will be implemented through Environmental Assessment and Environmental Protection laws, which we will develop for our lands.
- Develop a fair and transparent decision-making process on our lands by creating a Land Use Plan regime. Land use permitting will be implemented through a Land Use Plan Land Law for the application of site- and project-specific requirements for compatible uses of land.

Long Term Objectives

- Be environmental stewards of the land through our everyday actions
- Develop and provide tools to proponents and lessors that clearly lay out our expectations for development on our lands.

Stewardship Guidance and Strategies

To meet our short and long-term objectives for land development in our community, we use the following **stewardship guidance and strategies** that are built on laws, regulations, guidelines and best management practices.

Strategy 1: Completing and implementing an Environmental Assessment and environmental permitting regime

This initiative is related to the development of our land and environmental laws under the Framework Agreement and our Individual Agreement with Canada. These laws, and associated





processes such as environmental assessments (EAs) and environmental permits, must at a minimum meet the same standards as related provincial laws and the requirements of federal laws which are still in force on our land (e.g., Fisheries Act, Migratory Birds Act, Species at Risk Act, Indian Oil and Gas Act, Atomic Energy Control Act). We have the opportunity to develop even higher standards than existing provincial and federal laws for environmental protection. We will discuss our community's standards through the following five step process to develop the environmental regime:

- 1) An initial scoping workshop with our Lands and Resources Department and Shawanaga First Nation legal counsel
- 2) Develop a draft EA and environmental permitting regime framework
- 3) Lands and Resources Department consults with Council and Shawanaga First Nation legal counsel on the framework
- 4) Develop the final EA and permitting regime, by our legal counsel and our Lands and Resources Department, based on the framework
- 5) Host community member meetings to gather support for the EA and permitting regime and associated laws and to ensure community members understand the compliance requirements of all Shawanaga laws.

There is a range of possibilities for our EA and environmental permitting regime based on the Framework Agreement and our Individual Agreement with Canada, and also a range of choices about the regime that will have implications for how it is administered and the capacity requirements the Lands and Resources Department will need to build. As an example of the range of choices, some of these possibilities for EA include:

- The *Status Quo* approach- Adopting the federal EA process (both 2012 and 1992 versions are options), and INAC's Environmental Review Process for smaller projects not triggering an EA. Note: These versions of the Act are specifically mentioned in the Framework Agreement and our Individual Agreement with Canada.





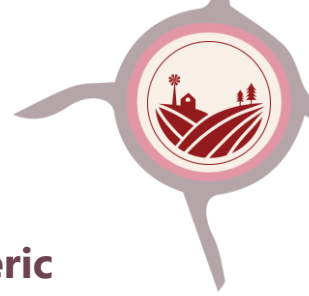
- Adopting the new federal Impact Assessment Act, which came into force on August 28, 2019. Note: this version of the Act came into force after the Framework Agreement and our Individual Agreement with Canada.
- Adopting the provincial EA process.
- Adopting a mix of the above options.
- Developing an enhanced version of either of the options above, with greater emphasis on matters such as the consideration of traditional knowledge, alternatives assessment, cumulative effects, socioeconomic impacts for our community, or other factors on which the current EA processes are weak. Criticisms of the federal and provincial processes include the process being slow, subject to political interference, expensive, and only applicable to big projects.
- Developing an EA regime, using input from other Land Code First Nations, which meets and/or exceeds federal and provincial requirements.

A third-party environmental consultant should be engaged to participate in this process, with strong qualifications and experience in environmental planning and assessment and the consideration of First Nations rights and interests within EAs and environmental permitting.

Strategy 2: Completing and implementing the land use plan and a land use permitting regime

This initiative involves completing our ongoing Shawanaga First Nation Land Use Plan project, and related land laws and policies that will help guide how compatible land development will occur in different areas of our Shawanaga First Nation land. While completion of this Plan and related laws is outside of the scope of the EMP, it is important to reference here because land-use considerations and environmental considerations should go hand-in-hand to guide our land development appropriately.





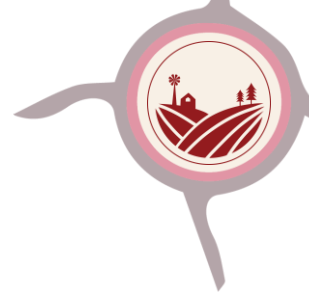
Strategy 3: Establishing a list of generic environmental permitting conditions for different development types

Generic environmental permitting conditions are meant to guide different kinds of land development, in relation to different kinds of development activities and our values protection. They are relatively generic but sufficiently detailed requirements for how to undertake activities in order to protect our environmental and cultural values. These standards are based on the other ESGs provided in the EMP- as applicable- and best practices guidance provided in those ESGs. These generic environmental permitting conditions help to speed up and streamline the process of developing environmental permit conditions, and provide certainty to land developers about the environmental requirements they can expect and plan for.

The following are examples of the types of development and servicing permitting conditions we may develop: We may create development and servicing permitting conditions for the following potential projects on our lands:

- Linear corridor development
- Wetland and water crossings and working near water
- Aggregate development
- Environmental and cultural monitoring during land development
- Forestry and land clearing
- Mitigating cultural heritage and traditional use impacts
- Parking lots and roadways
- Taking water in excess of 50,000 L/day
- Wastewater treatment requirements for developers
- Marina and waterfront development
- Institutional and commercial building developments
- Residential housing developments





Strategy 4: Planning and expanding administrative capacity and institutions at Shawanaga First Nation to administer the environmental and land-use permitting regimes

Implementing this ESGs, along with other land-use and environmental permitting processes, monitoring, enforcement and other administrative functions involves significant planning and funding efforts to build capacity for our current Lands and Resources Department and the band administration, overall. There are four suggested elements to this initiative:

- A continuous needs and gap analysis process involving a survey of staff, community members, Council, land development proponents; benchmarking relative to other operational communities under the Framework Agreement; an analysis of the benchmarking and survey results to identify any gaps where there are needs not yet fulfilled by the existing administration. Needs may include staffing, professional development, equipment and systems, buildings, vehicles, etc.
- A funding opportunities analysis (to be repeated every 2-3 years)- involving a survey of available INAC funding, other federal and provincial funding, own-source revenues, private and public foundation funding available, ranking these opportunities (high to low priority), aligning them with capacity needs as per the needs and gap analysis, and outlining the requirements and timing for funding applications for the high priority opportunities.
- A review of performance of our Lands and Resources Department on an annual basis to determine any additional capacity needs- this would be through a simple internal survey and workshop.
- Annual budgeting and fundraising to finance capacity development for our Lands and Resources Department including staffing, training, equipment and systems amongst others- this is an annual plan aligned with the band administration's annual budgeting process, and makes use of





the needs and gaps analysis, and funding opportunities analysis results for a given year.

We can investigate the opportunity to share the administrative burden by collaborating with adjacent land code communities to administer the environmental and land use permitting regimes.

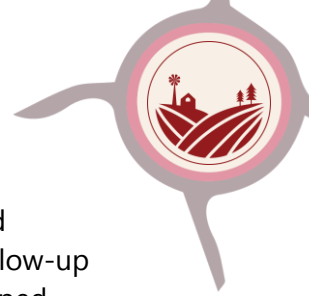
Shawanaga has worked with an Abatement Officer in the past to guide the development process in coordination with neighbouring First Nations communities and can do so again for future projects.

Strategy 5: Evaluating the efficiency and effectiveness of environmental and land use permitting processes with respect to land development to ensure the stewardship vision is being met

To ensure high-level goals are being met, it is important to do a program evaluation periodically. Program evaluations normally involve looking at all of the goals and objectives, inputs, activities, outputs, and outcomes of a program such as our environmental and land-use permitting program and evaluates whether there could be improvements made for the program to function or perform better. A program evaluation every 3-5 years, conducted by a third-party consultant who specializes in this field, is recommended. The program evaluation is intended to answer the following questions:

- Could the program be delivered more efficiently to reduce costs and/or times to complete and issue permits?
- Are our responsibilities towards our ancestral lands and future generations of Shawanaga First Nation people being effectively upheld in the permitting process?
- Are we effectively protecting our environment and enabling economic development?
- Is environmental quality on our land being maintained or improving?
- Are we effectively providing certainty and clarity to those developing Shawanaga First Nation lands about their environmental protection and management responsibilities?
- Is Shawanaga First Nation applying the permitting process in a consistent and coordinated way?





Evaluation results are to be shared with Council, the Band Administrator, and the community, and a plan for any follow-up actions based on the evaluation results should be developed collaboratively with these parties.

Strategy 6: Developing clear proponent and lessor guidance manuals for how to undertake appropriate land development on Shawanaga First Nation land

To meet our high-level goal of “providing certainty and clarity to those developing our lands about their environmental protection and management responsibilities”, we will develop and provide guidance manuals for those undertaking land development on Shawanaga First Nation land.

The manuals will describe our history and cultural heritage, our values about respecting the gifts of the Creator, our community economic and environmental protection plans, and our environmental and land-use regulatory regime and its requirements (including generic environmental permitting conditions as per Strategy 4). Manuals of this nature should be developed for the primary types of land development we expect, including:

- Commercial and light-industrial facilities
- Shawanaga First Nation institutional buildings/facilities
- Shawanaga First Nation residential housing
- Linear corridors (e.g., transmission lines, pipelines)
- Aggregate operations
- Forestry operations
- Marinas and waterfront development
- Cottages/seasonal residences
- Tourism and recreational facilities





Monitoring and Enforcement

The management of land development on our reserve lands is facilitated by our Lands and Resources Department and monitored by Chief and Council. As we are all stewards of our environment who value and depend on our lands and waters, we all contribute to and participate in activities related to effective management of land development.

Community Initiatives

Development is something that often remains in the hands of community leaders and decision makers with minimal community awareness and participation. It is important to us that our community members are aware of the potential impacts of land development, that they play a role in developing our approach to land development, and that they participate in activities related to environmental protection and land development whenever possible. This helps ensure that development proposals are rigorously assessed, that projects are well monitored, and that development does not take place unless it is well understood and supported by community members.

Land Development Impacts – Community Awareness Sessions

This series of community sessions will address a range of land development types and impacts. Information will be provided by community members with experience and stories related to the impacts of land development, professionals in the field of environmental protection in the face of land development, and others with important knowledge to share. Case studies from other communities will be shared, along with videos and photographs to help understand and visualize the impacts being discussed.

Environmental Assessment Community Consultation Workshops

These events will provide community members with the opportunity to learn about the environmental assessment and permitting processes, to learn about efforts to develop a community-specific environmental assessment and permitting process, and to provide input on the community environmental assessment and permitting framework and regime. As environmental assessments are undertaken in our community, the focus of these workshops will shift to informing and engaging the community in understanding and commenting on the proposed development.





Land Development Standards Community Consultation Workshops

These events will provide community members with the opportunity to learn about the importance of environmental standards for various types of development projects, and to provide their input regarding the approach, content, and enforcement of these standards.

Land Use Planning Community Events

A series of consultation and engagement sessions will take place to involve community members in the land use plan development and implementation.

Land Development Permitting Processes Community Evaluation Sessions

Community members will participate in these sessions to contribute their feedback on the efficiency and effectiveness of our environmental and land-use permitting processes. Our high-level goals related to land development are reviewed, programs and projects are evaluated, and opportunities for improvements are identified.

Resources

Community Planning Toolkit – Community Engagement. Community Places, 2014. This toolkit provides guidance for designing and implementing effective community engagement strategies. It includes descriptions of various engagement methods, strengths and weaknesses of different styles of engagement, and links to additional online resources. This information may be useful for the development of community consultation and engagement sessions related to land development standards, environmental assessment and permitting regimes, and more.

Regulations and Best Practices

Regulations for Land Development

Provincial

Environmental Assessment Act. The betterment of the people of the whole or any part of Ontario by providing for the protection, conservation and wise management of Ontario's environment.

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





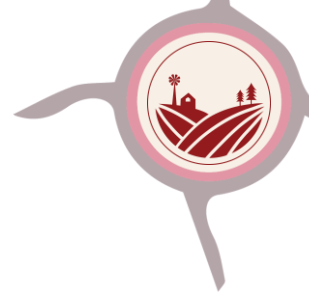
- General **R.R.O. 1990, Reg. 334**
<https://www.ontario.ca/laws/regulation/900334?search=environmental+assessment+act>
- Waste Management Projects **O. Reg. 101/07**
<https://www.ontario.ca/laws/regulation/070101?search=environmental+assessment+act>
- Electricity Projects **O. Reg. 116/01**
<https://www.ontario.ca/laws/regulation/010116?search=environmental+assessment+act>
- Deadlines **O. Reg. 616-98**
<https://www.ontario.ca/laws/regulation/980616?search=environmental+assessment+act>
- Designation and Exemption – Private Sector Developers **O. Reg. 345/93**
<https://www.ontario.ca/laws/regulation/930345?search=environmental+assessment+act>
- *Environmental Protection Act*. To provide for the protection and conservation of the natural environment.
<https://www.ontario.ca/laws/statute/90e19>
- Registrations under Part 11.2 of the Act – Activities requiring assessment of air emissions. **O. Reg. 1/17**
<https://www.ontario.ca/laws/regulation/170001?search=environmental+protection+act>
- Registrations under Par 11.2 of the Act – Water taking **O. Reg. 63/16**
<https://www.ontario.ca/laws/regulation/160063?search=environmental+protection+act>
- Applications for Environmental Compliance Approvals **O. Reg. 255/11**
<https://www.ontario.ca/laws/regulation/110255?search=environmental+protection+act>
- Spill Prevention and Contingency Plans **O. Reg. 224/07**
<https://www.ontario.ca/laws/regulation/070224?search=environmental+protection+act>
- Environmental Penalties **O. Reg. 22/07**
<https://www.ontario.ca/laws/regulation/070222?search=environmental+protection+act>





- Spills **R.R.O. 1990, Reg. 362**
<https://www.ontario.ca/laws/regulation/900360?search=environmental+protection+act>
- Marinas **R.R.O 1990, Reg. 351**
<https://www.ontario.ca/laws/regulation/900351?search=environmental+protection+act>
- *Ontario Heritage Act*. To protect heritage buildings and archaeological sites. Individual building designations Council approved permit required to undertake alterations to any of the identified heritage elements of the property or to demolish any buildings or structures on the property. Designation of heritage conservation districts.
<https://www.ontario.ca/laws/statute/90o18>
- Criteria for Determining Cultural Heritage Value or Interest of Provincial Significance **O. Reg. 10/06**
<https://www.ontario.ca/laws/regulation/060010?search=ontario+heritage+act>
- Criteria for Determining Cultural Heritage Value or Interest **O. Reg. 9/06**
<https://www.ontario.ca/laws/regulation/060009?search=ontario+heritage+act>
- Definitions **O. Reg. 170/04**
<https://www.ontario.ca/laws/regulation/040170?search=ontario+heritage+act>
- Historical Sites **R.R.O. 1990, Reg. 880**
<https://www.ontario.ca/laws/regulation/900880?search=ontario+heritage+act>
- Archaeological Sites **R.R.O. 1990, Reg. 875**
<https://www.ontario.ca/laws/regulation/900875?search=ontario+heritage+act>
- *Ontario Planning and Development Act*. This Act requires public participation in the preparation of a proposed development plan, and permits the Minister to propose modifications to a development Plan. In many respects, a development plan under the Ontario Planning and Development Act is similar to an official plan under the Planning Act. The primary differences are: 1) the Province is the authority for both undertaking and approving a development plan, and 2) the legislative requirements for the preparation and approval of a development plan are unique





to the Ontario Planning and Development Act.

<https://www.ontario.ca/laws/statute/94o23>

- *Ontario Water Resources Act*. Ontario Clean Water Agency Water, wells, sewage works, water works, the Act aims to protect both Ontario's drinking water and fresh water resources at large from pollution, whether from industrial sources, sewage systems, chemicals in use at farms, or any other source. <https://www.ontario.ca/laws/statute/90o40>
- Service of Documents **O. Reg. 226/07**
<https://www.ontario.ca/laws/regulation/070226?search=Ontario+water+resources+act>
- Environmental Penalties **O. Reg. 223/07**
<https://www.ontario.ca/laws/regulation/070223?search=Ontario+water+resources+act>
- Water Taking and Transfer **O. Reg. 387/04**
<https://www.ontario.ca/laws/regulation/040387?search=Ontario+water+resources+act>
- Approval Exemptions **O. Reg. 525/98**
<https://www.ontario.ca/laws/regulation/980525?search=Ontario+water+resources+act>
- Wells **R.R.O. 1990, Reg. 903**
<https://www.ontario.ca/laws/regulation/900903?search=Ontario+water+resources+act>

Federal

Canadian Environmental Assessment Act (1992 and 2012 versions). To guide the environmental assessment of all projects on federal lands or funded by Canada, and select types of major projects on non-federal lands, in order to prevent significant adverse environmental effects before development begins. <https://laws-lois.justice.gc.ca/eng/acts/c-15.21/> (2012 version of the Act); or <https://laws.justice.gc.ca/eng/acts/c-15.2/20100712/P1TT3xt3.html> (1992 version of the Act).

Impact Assessment Act, 2019. To guide the impact assessment (broader scope of assessment than environmental assessment including socioeconomic and cultural considerations, and a much broader and more influential role for First Nations, Métis and Inuit communities) of all projects on federal lands or funded by Canada, and select types of major projects on non-federal lands, in order to prevent significant adverse environmental effects and enhance





project benefits before development begins. The *Impact Assessment Act, 2019* will be uploaded to <https://lois.justice.gc.ca/> sometime after August 28, 2019.

Fisheries Act. To guide well-managed, stable and viable fisheries and to conserve and protect fish and their habitat <http://laws-lois.justice.gc.ca/eng/acts/F-14/>

- Applications for Authorization under Paragraph 35(2)(b) of the Fisheries Act Regulations (**SOR/2013-191**) <http://laws-lois.justice.gc.ca/eng/regulations/SOR-2013-191/index.html>

Migratory Birds Convention Act. Protects migratory birds – as populations and individual birds – and their nests in Canada and the United States from being threatened by proposed or existing projects. <http://laws-lois.justice.gc.ca/eng/acts/M-7.01/page-1.html>

- Migratory Bird Regulations (**C.R.C., c. 1035**) <http://laws-lois.justice.gc.ca/eng/regulations/C.R.C., c. 1035/index.html>

Species at Risk Act, 2002. This Act is intended to protect endangered species and the habitats they depend on, ideally enabling the recovery of species at risk (SAR) to the extent that they are no longer at risk in Canada. At minimum, the Act aims to prevent SAR from becoming extinct or extirpated. The Act allows for the listing of new SAR through a recommendation and assessment process involving the Minister of the Environment, Governor in Council, the Committee on the Status of Endangered Wildlife in Canada, and Ministers responsible for particular species. The recovery of SAR is promoted by the Act through mandatory development of recovery strategies and action plans for all species assessed as at risk. <http://laws-lois.justice.gc.ca/eng/acts/s-15.3/>

Land laws from other Land Code communities

The Land Advisory Board Resource Centre (LABRC) posts laws that have been passed by First Nations that can be for reference when we are developing our own laws:

<https://labrc.com/resource/first-nation-laws/>

Best Management Practices

B-6 Guidelines for Evaluating Construction Activities Impacting on Water Resources. This document complement its policies on the protection of water resources from sediment and associated





contaminants. <https://www.ontario.ca/page/b-6-guidelines-evaluating-construction-activities-impacting-water-resources>

Best Management Practices for Industrial Sources of Odour.

Information on best management practices for industrial sources of odour, including how to prepare a best management practice plan (BMPP), identifying typical sources of odour, and techniques used to reduce odour emissions. <https://www.ontario.ca/page/best-management-practices-industrial-sources-odour>

Best Management Practices: Buffer Strips. Well-managed buffer strips filter runoff before it enters streams, wetlands, ponds and lakes. This has many benefits for water quality, erosion prevention, soil water-holding capacity, fish and habitat quality, livestock health, and drain maintenance.

<http://www.omafra.gov.on.ca/english/environment/bmp/buffer.htm>

Best Management Practices: Fish and Wildlife Habitat Management.

Healthy fish and wildlife habitat on rural property has many benefits, and BMPs for improving habitat are compatible with cropland BMPs. Full of info for farmlands, woodlands, wetlands and other transitional areas, and aquatic areas. Prevention and control of nuisance wildlife are also covered.

<http://www.omafra.gov.on.ca/english/environment/bmp/wild.htm>

Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales. The Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales (the Stand and Site Guide) is one of a series of forest management guides used by forest managers when planning and implementing forest management operations.

<https://dr6j45jk9xcmk.cloudfront.net/documents/2786/guide-standsitescales-aoda.pdf>

Fisheries and Oceans Canada (DFO) Buffers to protect the environment: contains guidelines around the creation of conservation buffers or strips in and around fields and along roads, streams, rivers, lakes and wetlands.

http://www.lronline.com/Extension_Notes_English/pdf/bffrs.pdf

Fisheries and Oceans Canada (DFO) Land Development Guidelines for the Protection of Aquatic Habitat (1993): contains guidelines to protect fish populations and their habitat from the damaging effects of land development activities. These guidelines apply primarily to





salmon, trout and char, but are applicable to all fish species.
www.dfo-mpo.gc.ca/Library/165353.pdf

In-water work timing window guidelines: Guidelines to restrict in-water during certain periods to protect fish during spawning migrations and other critical life stages.

<https://www.ontario.ca/document/water-work-timing-window-guidelines>

Land Development Guidelines for the Protection of Aquatic Habitat. These guidelines are to protect fish populations and their habitat from the damaging effects of land development activities.
<http://www.dfo-mpo.gc.ca/Library/165353.pdf>

Preserving and Restoring Natural Shorelines: Extension Notes: This fact sheet provides information on the importance of shoreline vegetation and where you can get help to restore your shoreline and others in your community.
http://www.lrconline.com/Extension_Notes_English/pdf/shrlns.pdf

Regional Timing Windows of Least Risk:

Fish and Fish Habitat – Ontario Restricted Activity Timing Windows for the Protection of Fish and Fish Habitat. Time work to avoid the restricted activity timing windows in order to reduce the risk of harm to fish and fish habitat in Ontario. <http://www.dfo-mpo.gc.ca/pnw-ppe/timing-periodes/on-eng.html>

General Nesting Periods of Migratory Birds in Canada. Technical information on general nesting periods to support the planning of activities in order to reduce the risk of detrimental effects to migratory birds, their nests and eggs. <http://www.ec.gc.ca/paom-itmb/default.asp?lang=En&n=4f39a78f-1>

Runoff, Erosion Protection and Additional Best Management Practices 2011: BMPs created by Conservation Ontario to protect municipal drinking water sources from runoff contamination and soil erosion and to reduce the amount of sediment and nutrients that reach drinking water sources.

Waste disposal sites approvals: List of guides and resources such as landfill standards, and Best Management Practices and procedures for handling and disposal of wastes.





<https://www.ontario.ca/page/waste-disposal-sites-approvals-sample-applications-guides-and-resources>

Glossary

Alternatives Assessment

A problem-solving approach used in the environmental assessment process that aims to minimize environmental harm by comparing multiple solutions to a specific problem, goal, or objective.

Clearing

Refers to the removal and disposal of all trees, brush, stumps, fallen timber, hedges, and wooden curbs (among other things) that lie within the footprint of a right-of-way corridors or construction sites. This process is performed between the surveying and construction stages.

Cumulative Effects

Changes to the environment that are caused by a particular project, initiative, or activity in combination with past, present, and future projects, initiatives, or activities. Cumulative effects assessments are a part of the environmental assessment process completed to ensure that incremental effects resulting from combined influences of various activities are assessed.

Environmental Assessment

A process to predict environmental effects of proposed projects or initiatives before they are carried out. Environmental assessments identify potential adverse environmental effects, propose measures to mitigate them, predicts subsequent adverse environmental effects, and follow-up programs. Environmental assessments can be administered at the provincial or federal level.

Environmental Permit

An authorization that allows you to carry on various projects, initiatives, or activities which may cause adverse effects to the environment or human health.

Linear Corridor Development

Developments projects such as roads, railways, pipelines, transmission lines that are linear in nature.





Solid Waste Management

Environmental Stewardship Guidance

Contents

Our Stewardship Vision

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Stewardship Guidance and Strategies

Monitoring and Enforcement

Community Initiatives

Regulations and Best Practices

Glossary

"We left good memories. That's what you leave. That's all you leave there. No garbage."

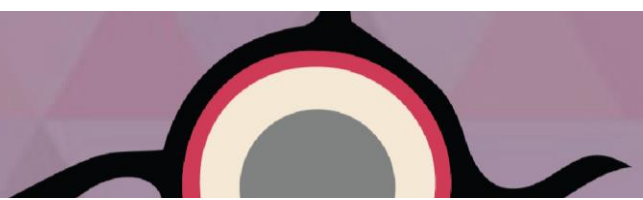
– **Community Member**

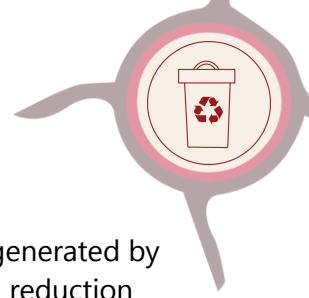
Our Stewardship Vision

The Anishinaabe do not have a word for "garbage;" re-purposing materials for other uses is part of our culture. As stewards of our lands and waters, Shawanaga First Nation stands for the sustainable management of the waste we generate. We are committed to reduction and diversion to minimize our impact on the environment, protecting our lands and waters for seven generations.

We are concerned about illegal dumping on reserve lands and are committed to developing an overall waste management strategy to plan for long-term solutions to all of our waste management needs.

Our vision is to reduce the amount of solid waste we generate, to repurpose materials for other uses, and to establish a clear system for disposing waste in an environmentally responsible way. From domestic refuse, recycling and composting to dealing with derelict vehicles and hazardous waste, we present strategies to manage all aspects of waste management, now and into the future. We recognize that community outreach and education is a key component of any waste management strategy so that everyone is clear on our responsibilities for proper disposal, and to foster environmental stewardship.





Community Objectives

We will work together to sustainably manage the waste generated by our community by implementing strategies that focus on reduction at the source, diversion, and stewardship initiatives.

Main Objectives

- Build internal capacity to sustainably manage our waste.
- Characterize the waste our community generates to improve the effectiveness of our waste management strategies.
- Explore options for waste reduction and diversion including the feasibility of recycling and composting programs.
- Eliminate illegal dumping and provide accessible options for proper disposal.
- Deliver community outreach programs that empower members to be stewards of the land by engaging in sustainable waste management practices.
- Foster local partnerships to collectively address waste management challenges.
- Establish long-term solutions to sustainably manage the waste we produce.

Stewardship Guidance and Strategies

To meet our short and long-term objectives for sustainable management of waste generated by our community, we use the following **stewardship guidance and strategies** that are built on regulations, guidelines and best management practices.

Strategy 1: Waste Management Plan

We will complete a Waste Management Plan to develop long-term (i.e., 20 year) solutions to address waste management challenges, including:

- Potential disposal sites
- Methods of collection, disposal
- Identifying realistic reduction methods and targets
- Feasibility of a recycling program
- Feasibility of a community composting program





Our Waste Management Plan will be based on the following hierarchy:

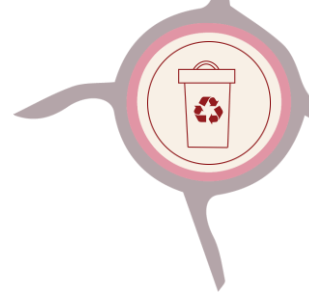


The waste management hierarchy focuses our efforts on waste reduction and ultimately, minimize the final volume taken to landfill. Reduction and re-use of items is most preferred both from economic and environmental perspectives. This figure highlights the importance of community stewardship initiatives and consequently, the role of our members in responsibly managing our waste and protecting our lands and waters.

Typical waste products generated within our community can include:

- Printed paper and packaging (plastics, paper, glass, aluminum, steel, and other material)
- Organic food and yard waste
- Tires
- Cement, metals, and glass from construction and demolition
- Pharmaceuticals, sharps, and bio-medical waste
- Single-use batteries
- Pressurized cylinders (propane, butane, spray cans etc.)
- Anti-freeze/ Coolant





- Empty Oil and Paint Containers
- Oil Filters
- Empty chemical storage drums and containers

The majority of the waste our community generates comes from residential, commercial and institutional sources; however, with future growth and associated construction activities, we expect to see an increase in waste from CRD (construction, renovation and demolition) sources, which will require innovative approaches to maintain our reduction targets.

Currently, we undertake regular waste collection for the community and dispose of it at the Site #19 landfill in the Township of the Archipelago. In anticipation of this site reaching capacity in the near future, we are continuously exploring alternative options for disposal and implementing best management practices to reduce waste.

Strategy 2: SFN Waste Management Program

We will create a Waste Management Program tailored to the needs of our community. The program will provide a framework for how we manage waste, which may include defining the community's vision and goals, roles and responsibilities, protocols and procedures as they relate to waste management, schedules (e.g. audits), and references to applicable land laws and other legislation.

Strategy 3: Development of a Community-Specific Waste Management Regulatory Regime

We are committed to adopting a community-specific waste management regulatory regime that is based on existing requirements laid out in applicable federal and provincial laws, regulations, best management practices, and policy guidance.

Strategy 4: Waste Management Coordinator

Funding should be secured to hire a Waste Management Coordinator for the community. This individual would be responsible for overseeing waste management projects including compliance audits,





supporting the development of future agreements, and championing community initiatives.

We rely on training and capacity building programs, such as the ECO Canada Building Environmental Aboriginal Human Resources (BEAHR) training for solid waste coordinators.

Strategy 5: Development of Regional Partnerships

We are committed to developing meaningful partnerships with nearby municipalities, First Nation communities, and regulatory authorities to collectively identify sustainable waste management solutions and explore opportunities for shared services related to waste management.

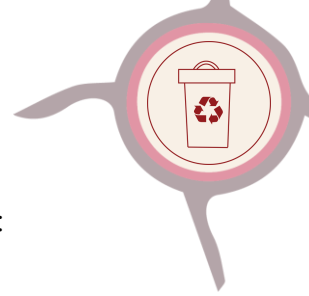
Strategy 6: Annual Waste Audits

SFN will conduct waste audits every five years in collaboration with the Township of The Archipelago, if possible, to characterize the relative quantities of waste types (e.g. organics, recyclables). This information can be used to optimize waste management strategies by identifying areas for improvement and evaluating the success of initiatives such as pilot projects and community outreach programs.

Waste audits and waste reduction plans both enable us to align our practices with high quality waste management standards set out by Ontario, and also inform us of our waste management stewardship challenges and opportunities. Indigenous Services Canada has in the past provided funding for solid waste management through the First Nations Waste Management Initiative (<https://www.sac-isc.gc.ca/eng/1491490781609/1533647730166>)

In conducting waste audits and developing waste reduction plans, we will follow the methodologies outlined in 'A Guide to Waste Audits and Waste Reduction Work Plans for the Industrial, Commercial, and Institutional Sectors as Required under O. Reg. 102/94' and 'A Guide to Waste Audits and Waste Reduction Work Plans for Construction and Demolition Projects as Required Under Ontario Regulation 102/94'.





The waste audits will consist of the following seven steps:

- 1) Review Facility Operations
- 2) Identify Waste Types
- 3) Plan the Waste Audit – including materials, sampling period, audit team, and records management
- 4) Conduct the Audit – the standard length of time for a waste audit is one full operational week at the facility
- 5) Estimate Recycled Content – As part of the audit keep a record of which products contain recycled content or are recyclable and indicate if the material is presently being recycled or disposed of at a landfill
- 6) Analyze the Waste Audit Data – Use data gathered to calculate an estimation of waste generated over the course of a year
- 7) Prepare Waste Audit Report – Using the data gathered and analyzed complete a waste audit report using the reporting template provided in pages 41-49 of A Guide to Waste Audits and Waste Reduction Work Plans for the Industrial, Commercial, and Institutional Sectors as Required under O. Reg. 102/94. <https://www.ontario.ca/document/guide-waste-audits-and-waste-reduction-work-plans-industrial-commercial-and-institutional-sectors>

Strategy 7: Transfer Station Feasibility Study

We will conduct a feasibility study for the construction of a community waste transfer station to provide a convenient storage location when the current disposal site reaches capacity. This will provide our community with flexibility when determining a new disposal solution and allow for effective sorting of recyclables and separation of hazardous wastes prior to transfer.





Strategy 8: Waste Management Compliance Audits

Our waste management compliance audits will be used to determine how we are performing in terms of complying and upholding the various laws and regulations that apply specifically to waste management. The audits will allow for the assessment of our community's waste reduction efforts, including the application of the previously mentioned waste management hierarchy.

Two regulations within the province's waste management regime that we will use as guidance and examples for our compliance audits are:

- Ontario Regulation 102/94 Waste Audits and Waste Reduction Work Plans
- Ontario Regulation 103/94 Industrial, Commercial, and Institutional Source Separation Programs

Both regulations include specific requirements that apply to the following entities, applicable to our lands:

- Retail establishments
- Restaurants
- Office spaces that exceed 10,000 square metres
- Multi-unit residential buildings
- Manufacturing facilities
- Construction and demolition projects

Strategy 9: Deterrence of Illegal Dumping and Burning of Waste

We are committed to eliminating illegal dumping and burning of waste on our lands. We will deter these activities by employing a range of strategies, which may include:

- Restricting access to known dumping sites (i.e. installation of gates that prevent entry of vehicles)
- Restricting the use of burn barrels
- Issuing penalties/fines to those engaged in illegal dumping and waste incineration activities





- Erecting signs in applicable areas that describe legal implications of dumping and burning waste and associated fines and penalties
- Employing landscaping designs for community spaces that impede access for dumping and burning or improves visibility of dumping hot spots

Strategy 10: Fostering Environmental Stewardship Through Community Initiatives

Public engagement is a key component of any successful waste management program. We recognize that waste reduction and diversion strategies require “buy-in” from community members to be effective. We use a combination of community events, awareness campaigns, and youth programs to foster stewardship of our lands and consequently, sustainable waste management.

Monitoring and Enforcement

As citizens of Shawanaga First Nation, we are responsible for helping to protect our lands and waters – including properly managing waste. It is our responsibility to report anything we see that might affect our environment, such as changes on the land, illegal dumping or spills. It is also our responsibility to manage all wastes we generate according to the standards we set.

Community Initiatives

Waste Audits

Waste audits will be conducted by students and community volunteers at the school, band office, and businesses willing to participate. These audits will help community members understand the types and amounts of waste that we are producing. Reports on the types of waste being thrown away will be provided to the band council and used to inform the development of waste reduction strategies. For example, an accurate analysis of recyclable content within our waste needs to be done to inform Council about the basis for recycling as a waste reduction strategy. Participation in a waste audit can help community members better understand how waste can be reduced, reused and recycled, while also fostering team building skills and a commitment to environmental stewardship.

Community Clean-Up Events

Twice a year, our members of all ages come together in teams to tackle littering hotspots in the community. This event includes the





collection of larger items as well, such as scrap metal, appliances and derelict vehicles, although these items are managed by qualified Public Works Staff for safety reasons.

The community clean-up is a great opportunity for us to “walk the talk” and foster stewardship of our lands and waters, particularly for our motivated youth who are looking to make a difference in their community. These events may be carried out in tandem with a *Great Canadian Shoreline Cleanup*, further described in the resources at the end of this section.

Waste Reduction Week

Our community will begin taking part in the international annual waste reduction week that takes place on the third week of October. During this week we will hold events to educate community members about ways to reduce waste and about proper waste disposal. Community members will learn about the ways waste impacts our environment, and about success stories of communities and families that have found ways to reduce their waste production. Posters, information booths, videos, waste reduction pledges and guest speakers will all be used to share this information. A poster competition will be held in the month leading up to this week, with contestants designing posters to encourage waste reduction.

Waste Reduction Eco-Art Challenge

This challenge will encourage students and interested community members to create pieces of art using waste materials. Examples of creative “eco-art” will be provided to participants. Through the creation of these art pieces, participants get to know more about the waste they and their families create, and ideally develop a heightened awareness of waste production into the future. Eco-art pieces will be displayed during Waste Reduction Week and a winner will be announced at the main community event associated with Waste Reduction Week.

Pharmaceutical Drop-off Program

The improper disposal of pharmaceutical products poses a significant risk to our water resources, as well as aquatic life even in very small amounts. Unused medications most often end up in the garbage or being flushed away in domestic wastewater. This program will provide a convenient, accessible, and secure location where





community members can drop off their unused medications to be properly disposed of at a nearby pharmacy.

*Note: Security at the drop-off location is vital to ensure medications do not end up in the wrong hands.

Food Waste Reduction Initiative

This initiative will include a poster campaign to educate community members about the impacts of food waste, as well as cooking classes that teach people how to make use of leftovers. Cooking classes will be led by community members.

Household Hazardous Waste Collection Events

Household hazardous wastes tend to pile up over time in homes. Holding annual or bi-annual collection events provides a convenient opportunity for community members to dispose of these items in a responsible way. Pick-up and transport to an appropriate disposal facility can be arranged by a licensed contractor.

Common household hazardous waste includes the following (this list is not exhaustive):

- Cleaning products (drain, floor, glass, oven, etc.)
- Cooking oil
- Compact Fluorescent Light (CFL), fluorescent bulbs and tubes
- Medicine (over-the-counter and prescription)
- Car batteries
- Fuel
- Motor oil
- Propane tanks
- Paint
- Bleach
- Aerosol cans
- Solvents





Resources

The Great Canadian Shoreline Cleanup. The Great Canadian Shoreline Cleanup is a national conservation program that provides Canadians the opportunity to take action in their communities wherever water meets land, one bit of trash at a time. It was created through a conservation partnership between the World Wildlife Fund (WWF) and Ocean Wise. Following each cleanup event, collected garbage is quantified and can be compared to other cleanup events, highlighting the difference volunteers are making and providing a sense of competition. While individuals can use tools available on the website to host a cleanup event themselves, communities, have the opportunity to take on a leadership role and become designated “Clean Shoreline Communities”.

This initiative will be integrated with Community Clean-Up events to address litter along SFN’s shoreline. <https://www.shorelinecleanup.ca/>

Waste Reduction Week in Canada. This website provides information about Waste Reduction Week, along with links to educational resources, videos, and other materials for waste reduction programming. <http://www.wrwcanda.com/>

Waste Reduction Week in Canada’s School Resource Kit. This Waste Reduction Week webpage provides a link to a School Resource Kit that outlines various activities and initiatives to carry out in schools during Waste Reduction Week. It includes guidance surrounding waste assessment, waste action plans, classroom activities, resources and more. <http://www.wrwcanda.com/en/school-resources>

Ontario EcoSchools’ Waste Audit Guide. This Ontario EcoSchools publication contains detailed information about how to conduct a school waste audit, including materials, safety precautions, and key steps. It also includes templates for waste audit recording forms, waste diversion calculations, and for a waste minimization action plan. https://www.ontarioecoschools.org/wp-content/uploads/2017/08/Waste_Audit_Instructions-EN-2017.pdf

Green Tourism’s How to Conduct Your Own Waste Audit. This webpage describes the benefits of waste audits and provides a link for downloading a guide on how to conduct a waste audit. To access the download a free account must be created. <http://www.greentourismcanada.ca/how-to-reduce-waste-at-work/>





Waste Minimization Learning Activities – By Grade (1-8). Ontario EcoSchools, 2004. This manual provides lesson plans for a variety of lessons and activities related to waste minimization for each grade from 1 to 8. The lessons explore the different causes of waste, impacts of waste, and ways to reduce waste. Outdoor learning is incorporated into many of the lesson plans.

<http://www.ontarioecoschools.org/document/waste-minimization-learning-activities-by-grade-1-8/>

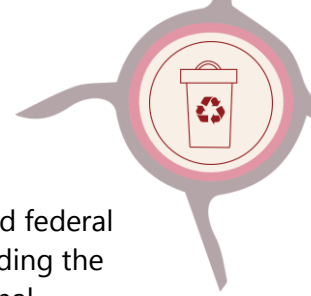
Ontario EcoSchools' Waste Minimization Ideas. This Ontario EcoSchools webpage provides links to a variety of ideas for school-based initiatives to reduce waste production. Ideas include a waste-free lunch initiative, reusable dishes, one-stop waste stations, and more. <https://www.ontarioecoschools.org/gallery-category/waste-minimization/>

Encouraging New Behaviours that Reduce Waste: BEST PRACTICES GUIDE FOR CREATING A SOCIAL MARKETING PLAN. National Zero Waste Council, 2015. This publication provides guidance on how to design and a social marketing campaign plan to reduce waste creation. This includes the description of 10 key steps in the planning process, including the creation of an implementation plan.

www.nzwc.ca/focus/campaigns/Documents/SocialMarketingPlan_BestPracticesGuide.pdf

Holiday Waste Reduction Campaign Review – Create Memories, Not Garbage. National Zero Waste Council, 2016. This National Zero Waste Council webpage provides an overview of a fun and humorous holiday waste reduction campaign developed by Metro Vancouver. The campaign's posters gave examples of non-wasteful gifts that people have planned for each other, including singing lessons, home baked cookies, and babysitting services. The overview outlines the factors of success in the campaign, helping provide ideas for our own waste reduction campaigns and initiatives. The videos and posters are free to be used by any community and can be accessed by contacting Metro Vancouver – webmaster2@metrovancover.org or ExternalRelations@metrovancover.org.





Regulations and Best Practices

In Ontario, waste is regulated through both provincial and federal statutes; provincial legislation provides regulations regarding the management of waste from the residential, ICI (Institutional, Commercial and Industrial), and CRD sectors and federal legislation mandates how waste is to be transported across federal and provincial borders, as well as which substances are permitted in the manufacturing of products.

Federal Regulations

Canadian Environmental Protection Act (1999). The purpose of the Act is to provide federal legislative guidance regarding “the prevention of pollution and the protection of the environment and human health in order to contribute to sustainable development.” The Act provides guidance on the production and transportation of waste and states that the prevention of pollution i.e. reducing the amount of waste produced, and regarding transportation, the act provides guidance on the movement of waste across inter-provincial and international boundaries.

Transportation of Dangerous Goods Act (1992). The purpose of the Act is to promote public safety in the transportation of dangerous goods. Certain types of waste can be classified as dangerous goods and, therefore, this Act can apply to its transportation and disposal. Substances that the act are applicable to are identified in Schedule 1 of the Act and/or fall under one of the 9 substance classes. The 9 substance classes are: explosives, gases, flammable liquids, flammable solids, oxidizing substances and organic peroxides, toxic and infectious substances, radioactive materials, corrosives, and miscellaneous products, substances or organisms.

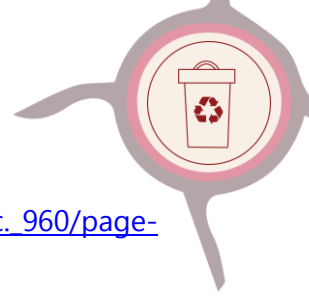
<https://www.tc.gc.ca/eng/tdg/clear-part2-339.htm#sec21>

<http://wwwapps.tc.gc.ca/saf-sec-sur/3/sched-ann/schedule1form.aspx>

Indian Reserve Waste Disposal Regulations C.R.C c 960 under the Indian Act. The purpose of this regulation is to provide guidance on waste management practices to be adopted on reserves that are under the Indian Act. The regulation is mandated under section 73 of the Act and currently is still mandated for communities, like SFN that are under the *First Nations Land Management Act*.

<https://www.aadnc-aandc.gc.ca/eng/1423604442004/1423604470475>





<http://laws-lois.justice.gc.ca/eng/regulations/C.R.C.%2C%20c.%20960/page-1.html>

Provincial Regulations

Environmental Protection Act (1990). The act provides overarching legislative guidance on the protection and conservation of the natural environment in the province of Ontario. Where “natural environment” is defined as the air, land and water, or any combination or part thereof, of the Province of Ontario. In terms of waste management this act and its accompanying regulations outline the requirements, definitions, and environmental protections related to waste generation, waste collection, waste operators, disposal sites, and waste management systems. In addition, the regulations provide requirements associated with specific waste types including pharmaceuticals, sharps, polychlorinated biphenyl (PCBs), waste generated by household, institutions, businesses, manufacturers, construction sites, and demolition sites. Applicable regulations under this act include but are not limited to:

- O. Reg 351/12 – Registration under Part II.2 of the Act: Waste Management Systems
- O. Reg 298/12 – Collection of Pharmaceuticals and Sharps – Responsibilities of Producers
- O. Reg. 232/98 – Landfilling Sites
- O. Reg 101/94 – Recycling and Composting of Municipal Waste
- O. Reg 102/94 – Waste Audits and Waste Reduction Work Plans
- O. Reg 103/94 - Industrial, Commercial, and Institutional Source Separation Programs
- O. Reg 104/94 – Packaging Audits and Packaging Reduction Work Plans
- R.R.O. 1990. Regulation 362 – Waste Management – PCB’s
- R.R.O. 1990. Regulation 347 – General Waste Management
- R.R.O. 1990. Regulation 342 – Designation of Waste

Waste Diversion Transition Act (2016). The purposes of this act are: “to promote the reduction, reuse and recycling of waste; to provide for the operation of waste diversion programs; and to promote the orderly winding up of waste diversion programs and industry funding





organizations in order to allow responsibility for waste to be governed under the Resource Recovery and Circular Economy Act, 2016 or otherwise.” This act is aiming to accelerate the province of Ontario’s zero-waste strategy. Applicable regulations under this act are:

- O. Reg 390/16 – Used Tires
- O. Reg 389/16 – Waste Electrical and Electronic Equipment
- O. Reg 388/16 – Stewardship Ontario
- O. Reg 387/16 – Municipal Hazardous or Special Waste
- O. Reg 386/16 – Blue Box Waste

Nutrient Management Act (2002). The purpose of this Act is to provide legislative guidance on the management of materials containing nutrients “in ways that will enhance protections of the natural environment.” Compost is classified as a nutrient under the act therefore any programs or processes applicable to compost waste ought to consider the requirements outlined in the *Act*. The applicable regulation under this act is:

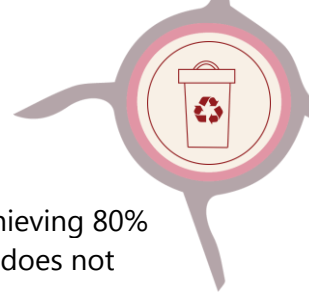
- O. Reg 267/03 – General

Environmental Assessment Act (1990). The purpose of this act is to provide guidance regarding the processes, procedures, and guidelines required in the carrying out of provincial environmental assessments in Ontario. The act sets the direction of protecting the environment as a top priority in carrying out environmental assessments in the province of Ontario. In the act included in the definition of the environment are: “the social, economic, and cultural conditions that influence the life of humans or a community” and “any building, structure, machine, or other device or thing made by humans.” Regarding waste management, the Act outlines requirements for environmental assessments and operations of municipal waste disposal facilities including landfills and incineration facilities. Applicable regulations under the Ontario Environmental Assessment Act include but are not limited to:

- O. Reg 101/07 – Waste Management Projects

Waste-Free Ontario Act (2016). The purpose of this act is to provide legislative guidance and direction to the Ontario zero-waste strategy as well as other recently passed waste management legislation in the province of Ontario namely the Waste Diversion Transition Act and the Resource Recovery and Circular Economy Act. These pieces of





legislation work together towards the goal of Ontario achieving 80% waste diversion out of landfills by the year 2050. This act does not have any accompanying regulations to note.

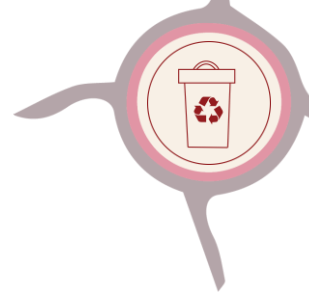
Planning Act (1990). The purpose of the Planning Act is to set out the land use planning system in the province of Ontario. The act specifically defines: how the land use planning system works, who makes decisions, how to resolve disputes and seek public input, and the roles of the province and municipalities in planning administration. The Act identifies waste management systems as an important infrastructure component to consider in planning and the Provincial Policy Statement has provisions regarding waste management systems.

Provincial Policy Statement under the Planning Act (2014). The Provincial Policy Statement is the policy document that accompanies the Planning Act and serves to provide directions to applicable authorities under the Planning Act. The statement is issued under section 3 of the Planning Act and it provides direction regarding the operation of infrastructure facilities including waste management sites. The Provincial Policy Statement defines waste management facilities as "sites and facilities to accommodate solid waste from one or more municipalities and includes recycling facilities, transfer stations, processing sites and disposal sites." The most recent Provincial Policy Statement was released in 2014 and has one statement related to waste management. The policy statement related to waste management is:

- 1.6.10.1 *Waste management systems* need to be provided that are of an appropriate size and type to accommodate present and future requirements, and facilitate, encourage and promote reduction, reuse and recycling objectives. Planning authorities should consider the implications of development and land use patterns on waste generation, management and diversion. *Waste management systems* shall be located and designed in accordance with provincial legislation and standards.

<http://www.mah.gov.on.ca/page10679.aspx#Waste+Management>





Best Management Practices

The following technical documents will be used, in conjunction with the applicable regulations and guidelines, to implement strategies to safely and appropriately manage SFN's waste.

Ontario Compost Quality Standards under Regulation 347 Waste Management. <https://www.ontario.ca/page/ontario-compost-quality-standards>

A Guide to Waste Audits and Waste Reduction Work Plans for the Industrial, Commercial, and Institutional Sectors as Required under O. Reg. 102/94. <https://www.ontario.ca/document/guide-waste-audits-and-waste-reduction-work-plans-industrial-commercial-and-institutional-sectors>

A Guide to Waste Audits and Waste Reduction Work Plans for Construction and Demolition Projects as Required Under Ontario Regulation 102/94. <https://dr6j45jk9xcmk.cloudfront.net/documents/1357/228-waste-reduction-work-en.pdf>

A Guide to Source Separation of Recyclable Materials for Industrial, Commercial and Institutional Sectors and Multi-Unit Residential Buildings as Required Under Ontario Regulation 103/94. <https://www.ontario.ca/page/guide-source-separation-recyclable-materials-industrial-commercial-and-institutional>

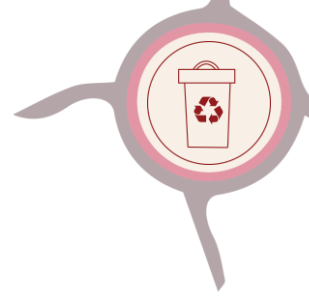
Environment and Climate Change Canada Technical Document on Municipal Solid Waste Organics Processing. https://www.ec.gc.ca/gdd-mw/3E8CF6C7-F214-4BA2-A1A3-163978EE9D6E/13-047-ID-458-PDF_accessible_ANG_R2-reduced%20size.pdf

Municipal Waste Integration Network: Municipal Solid Waste Options Guide. https://recycle.ab.ca/wp-content/uploads/2016/01/MSW_Options_Report.pdf

Federation of Canadian Municipalities Solid Waste as a Resource Guide for Sustainable Communities. https://www.fcm.ca/Documents/tools/GMF/Solid_waste_as_a_resource_en.pdf

Government of Nunavut Environmental Guideline for the Burning and Incineration of Solid Waste





https://www.gov.nu.ca/sites/default/files/guideline_-_burning_and_incineration_of_solid_waste_2012.pdf

Guide for Selecting Policies to Reduce and Divert Construction, Renovation and Demolition Waste. This proposed guidance document was produced for the CCME's Waste Management Task Group (WMTG) to address challenges associated with the disposal of CRD waste. The guide focuses on the effective selection of policy options for various levels of government (including municipal and territorial) to reduce or divert CRD waste materials, and includes implementation considerations, case study examples, and approaches to measure and model CRD waste.

As this guidance document is currently in a draft form and under review, it will not be used to inform waste management decision-making until a final version is released.

https://www.ccme.ca/files/current_priorities/waste/CCME%20Draft%20CRD%20Waste%20Guidance%20for%20review%20and%20comment%20EN.pdf



Glossary

Compost

Decaying organic matter that can be used as a plant fertilizer. Composting provides a means of contributing to waste reduction and reuse.

Household Hazardous Waste

Types of waste found in everyday homes that are corrosive, flammable, explosive, or toxic that must be used, stored, and disposed of properly. Examples include fluorescent lights, batteries, cleaners, paints and solvents, motor oils, chemicals and grease.

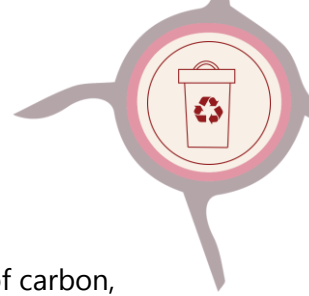
Municipal Solid Waste (Refuse)

All non-hazardous solid waste from a community that requires collection and transport to a disposal site.

Pharmaceuticals

Compounds manufactured for use as a medicinal drug. These compounds have been found to have significant adverse effects to aquatic wildlife, even at very small concentrations.





Polychlorinated Biphenyls (PCBS)

Any class of human-made organic chemicals consisting of carbon, hydrogen, and chlorine atoms, which range in consistency from an oil to a waxy solid. They are commonly used in electrical equipment, motor oils, adhesives, for thermal insulation, and in plastics.

Reuse

The act of using something again in an effort to reduce the demand for another, and to reduce solid waste outputs.

Source Reduction

Includes activities designed to reduce the volume, mass, and toxicity of waste products at various stages (e.g. design, manufacture, use, disposal) of their lifecycle.

Waste Audit

A methodical process used to determine the amount and types of waste that are generated by an organization or operation. They are often conducted by independent parties to determine the effectiveness of existing waste management strategies and identify areas for improvement.





Chemical and Fuel Storage

Environmental Stewardship Guidance

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Stewardship Guidance and Strategies

Monitoring and Enforcement

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Glossary

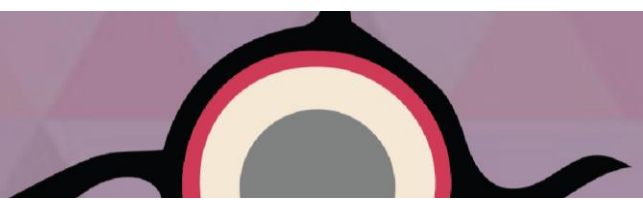
Our Stewardship Vision

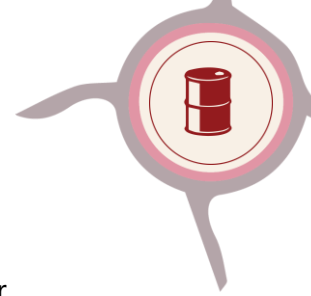
As stewards of our lands and waters, we are committed to handling and storing fuel and other chemicals on our lands in ways that protect human health and the environment. We are committed to preventing accidents and malfunctions to the full extent possible, and to handling and storing our fuels in a way that demonstrates our commitment to stewardship and harmony with nature.

This ESG presents strategies to address our community's concerns regarding chemical and fuel storage and handling, including above and underground storage tanks and how they are decommissioned, chemical use in water treatment, potential impact from off-site storage facilities and a new gas station, and the use of propane tanks in houses.

*"I won't be around for 50 years.
What's it going to be like on this
land?"*

– **Community Member**





Community Objectives

We will work to implement strategies that ensure safe and proper handling and storage of fuels and chemicals on our lands. This includes employing methods that promote both protection and stewardship.

Short-Term Objectives

- Establish more clear communication channels with the Technical Standards and Safety Authority (TSSA), the Ontario Ministry of Environment, Conservation, and Parks (MECP), and Environment and Climate Change Canada (ECCC) to foster more positive and collaborative relationships regarding fuel handling, storage, and management on our lands.
- Create an Environmental Protection law that includes solid waste management.
- Report any fuel spills or other issues to the Ontario Ministry of Environment, Conservation and Parks Spills Action Centre.
- Comply with applicable regulations and legislation for fuel storage and handling including:
 - Technical Standards and Safety Act,
 - Ontario Regulation 217/01 – Liquid Fuels (Ontario)
 - Ontario Regulation 213/01 - Fuel Oil
 - Ontario Regulation 212/01 - Gaseous Fuel
 - Ontario Regulation 211/01 - Propane and Storage Handling
 - Canadian Environmental Protection Act.
- Ensure that existing fuel storage locations are properly equipped for spill management including spill contingency plans.
- Ensure the proposed gas station will be equipped to respond to spills, accidents, and malfunctions including containing a spill contingency plan, spill response plan, and information regarding emergency response.





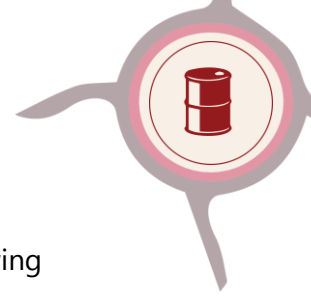
- Complete regular inspections on all existing fuel tanks (based on standards set out by the TSSA).

Conduct a public awareness campaign, including community outreach and education sessions to inform our members of how to respond to fuel spills and accidental releases. The awareness campaign will also include education and training on proper fuel handling and storage procedures.

Long Term Objectives

- Complete an inventory of all fuel storage locations on our lands and implement safety and control mechanisms, and spill contingency plans, for each location.
- Develop an internal fuel storage monitoring program to manage and mitigate potential risks to fuel storage. This could include developing an inspection protocol that is based on the standards and guidelines set out by the TSSA, MECP, and ECCC.
- Develop and implement community-specific management practices for fuel storage and handling based on existing best management practices pertaining to:
 - Regular inspections
 - Spills reporting
 - Create spill contingency plan for fuel spills
 - Install appropriate fuel containment structures around existing storage tanks
- Establishing collaborative partnerships with groups outside our community to ensure proper handling and storage of fuel. This could include partnerships with fuel companies, construction companies and other industry working in our territory in developing strategies to minimize risks associated with fuel storage, with a focus on spill prevention.





Stewardship Guidance and Strategies

To meet our short and long-term objectives for safe fuel handling and storage in our community, we use the following **stewardship guidance and strategies** that are built on regulations, guidelines and best management practices.

Strategy 1: Develop Partnerships with Relevant Government Agencies

We will explore the potential for establishing partnerships with the TSSA, MECP and ECCC to foster a constructive and collaborative approach to fuel handling and storage, as well as managing any potential fuel spills on Shawanaga lands. A strong relationship with government agencies allows us to draw upon existing resources and expertise of agencies in fuel handling and storage compliance and management. The TSSA along with MECP may also be able to provide valuable response assistance in the event of any fuel spill or emergency. This relationship should also include a training program to help build capacity of our citizens around fuel management, storage, and handling. The partnership could include training for inspections, monitoring and understanding government regulations.

Strategy 2: Manage Fuel Storage of Future Developments

To allow for safe and effective management of fuel storage associated with future development on our lands, and Environmental Protection law will be created that includes a protocol for managing fuel storage on our lands, All proposed development will follow the Environmental Protection law and be subject to a review and assessment by Shawanaga First Nation staff or an expert of our choice. This review should be funded by the proponent of the proposed development. This will allow us to identify potential impacts, assess proposed mitigation, and determine potential effects.





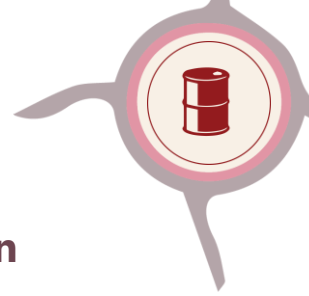
Strategy 3: Conduct an Inventory of All Fuel Storage Tank Locations and Systems

Developing an inventory of all existing fuel storage tanks will help us understand and better manage the risks associated with fuel handling and storage on our lands. According to current federal and provincial legislation, all regulated fuel tanks need to be registered with the ECCC and MECP. To assist with both compliance and ensuring safe handling and storage is occurring, we will create an inventory to identify and document all existing fuel tanks on our lands. Following the completion of this inventory, copies should be provided to TSSA, MECP, and ECCC. This inventory will be created and maintained by the Shawanaga First Nation Lands and Resources Department. Owners of fuel tank systems are to provide all applicable documentation to the Lands and Resources Department to demonstrate compliance to federal and provincial regulations.

Strategy 4: Ensure Regulatory Compliance of Fuel Storage Systems

Regulatory compliance is essential for safe and proper handling and storage of fuels on our lands. All new fuel storage tanks must be designed to be compliant with all federal and provincial regulations. All future installation of fuel storage tanks or upgrades to existing fuel storage tanks must include certifications from a professional engineer, registered in Ontario, with direct experience with fuel storage tank design, to confirm that the systems are designed and will be operated in compliance with all federal and provincial regulations. Any new tank installations or tank upgrades should be performed by a licensed technician who is certified by the TSSA. Owners of all fuel tank systems must provide supporting documentation to the Shawanaga First Nation Lands and Resources Department to show that they are compliant with Environment Canada Storage Tanks Regulations and Canadian Standards Association (CSA) Standard B139. The Lands and Resources Department will update the inventory to include all new and/or upgraded tank systems.





Strategy 5: Develop and Implement an Inspection and Maintenance Program

The Shawanaga First Nation Lands and Resources Department will develop and implement a Fuel Storage Inspection and Maintenance program based on standards and guidelines set out by the TSSA. This inspection and maintenance program will include regularly scheduled inspections of all fuel storage systems on our lands and coordinating follow up maintenance procedures when required. The inspection and maintenance program will also require owners of fuel tanks to submit documentation to the Shawanaga First Nation Lands and Resources Department that demonstrates federal and provincial regulatory compliance.

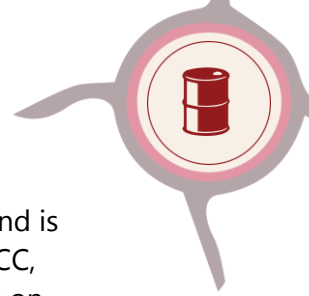
Strategy 6: Create and comply with the Fuel Spill Response Plan

To help ensure we are equipped to respond to spills that occur on our lands, we will develop a Shawanaga First Nation Fuel Response Plan. We will also require that businesses and proponents operating on our lands to create a project-specific Fuel Spill Response Plan based on best management practices and that, as a minimum, meets the requirements of our plan. Requirements of the Fuel Spill Response Plan will include ensuring that spill response kits are available at key locations where fuel is stored, transported, and handled. Requiring a Fuel Spill Response Plan will help to ensure that fuel and chemical spills, leaks, and accidental releases are addressed such that impacts to the lands, waters, and health of our citizens are minimized as much as possible and that remediation is carried out in a timely and consistent manner.

Strategy 7: Hire and Train a Fuel Storage Community Coordinator

The fuel storage community coordinator is responsible for working closely with partner organizations which may include the TSSA and the MECP to implement compliance measures that ensure fuel storage systems on our lands are in compliance with the federal and provincial acts and regulations. This person will need to have a working knowledge





of applicable federal and provincial regulatory standards and is responsible with liaising with counterparts at the TSSA, ECCC, and MECP on all fuel storage and handling related matters on our lands. This person is also responsible for carrying out public awareness and education activities with our citizens to ensure people know how to respond to fuel spills and accidental releases, including how to contact the MECP Spills Action Centre.

Strategy 8: Develop and Implement a Shawanaga First Nation Emergency Response Plan

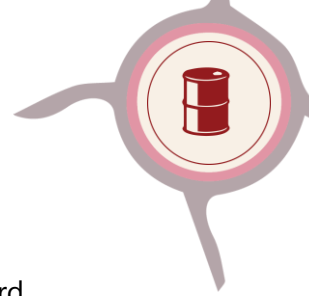
One of the key steps for being well equipped to respond to fuel and chemical spills is the development and when required, following of an emergency response procedure, which will be included in our Environmental Protection law. This procedure includes the following as a starting point:

In the event of any fuel or chemical spill or discharge, either the owner or any community member that notices the spill must immediately contact the both the Lands and Resources Department (705-366-2526 ext. 261) and the MECP Spills Action Centre Hotline: 1-866-663-8477.

The person who witnesses or identifies the incident should record the date and time of the spill and if it is known, the source of the spill and the substance that was spilled. The information documented should be provided to the Lands and Resources Department and the MECP Spills Action Centre (SAC).

Upon contacting the MECP SAC, an Environmental Officer will provide guidance and direction on next steps (i.e., clean-up, sampling, remediation) or engage other agencies as appropriate to ensure prompt action is taken to contain, control, and clean-up the spill, and restore environmental conditions. Depending on the severity of the spill, the SAC may opt to dispatch a field team, from MECP or another government agency, to take over management of the site.

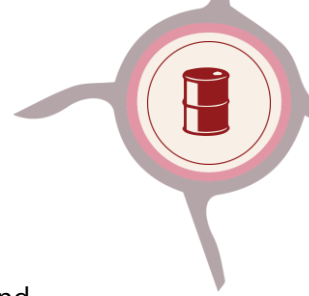




Overall our citizens should use the following as the standard spill response procedure:

- 1) Ensure the health and safety of the public, including checking the site for any injuries or risks of injuries
 - Ensure personal, public and environmental safety.
 - Consult applicable Safety Data Sheets (SDS) to identify hazards, personal protective equipment (PPE) required and accidental release measures.
 - Warn other people in the vicinity of the spill.
 - Make sure there are no ignition sources present including smoking.
- 2) Secure the spill area
 - Restrict access to the spill area
- 3) Contact the both the Lands and Resources Department (705-366-2526 ext. 261) and the MECP Spills Action Centre Hotline: 1-866-663-8477
- 4) Stop or contain the flow of the spill, if possible and if it is safe to do so
 - Isolate the spill by closing valves, turning off pumps, or fixing the containers position.
 - Stop the spill at its source.
 - Block off spill and prevent contaminants from entering drains and culverts.
 - Divert flow from water or other sensitive areas (i.e., wetlands) with materials such as gravel, sand bags, digging a trench, booms, etc.
 - Prevent spilled material from entering sewer or drainage structures (i.e., ditches, culverts, drains).
 - Use spill absorbent material to contain spill.
 - Contain the spill as close to the source as possible



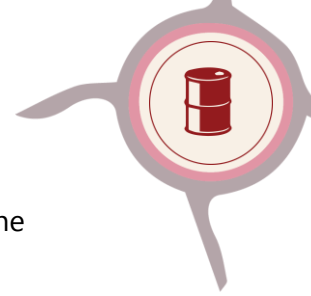


5) Initiate Clean up.

Following notification, the spill needs to be documented and must include the following information as outlined in CEPA:

- 1) The quantity of the substance that the company imports, sells, uses, manufactures or disposes of per year;
- 2) The use of the substance [starting material for synthesis of polyvinyl chloride (PVC) stabilizers, etc.];
- 3) The name and address of each facility where the substance is handled;
- 4) The name and address of the facility that disposed of the wastes as well as records that the wastes were disposed of in conformity with the Code of Practice outlined in the Canadian Environmental Protection Act (CEPA);
- 5) The preventive actions, pertaining to elements of the Code of Practice, implemented to minimize the potential for release of tetrabutyltin to the environment;
- 6) Records of any spill incident including the cause of the spill, remedial actions taken, and steps taken to prevent future incidents;
- 7) Waste manifests, movement document, or a permit, if applicable, showing the date, amount, waste class and receiver of any waste containing tetrabutyltin;
- 8) Any paper or electronic record and bill of lading showing the date, number of pieces and the designated receiver of any solid waste containing tetrabutyltin (absorbent materials, rags, contaminated clothing, etc.);
- 9) Any paper or electronic record and bill of lading relating to the shipment of waste packaging (i.e., non-bulk) to a





supplier showing the date, number of pieces and the designated receiver;

10) Any paper or electronic record and bill of lading relating to the shipment of waste packaging showing the type and number of pieces, the original product in the waste package and the designated receiver;

11) Work instructions and training records; and

12) Spill response plan for the incident.

Monitoring and Enforcement

As citizens of Shawanaga First Nation, we are responsible for helping to protect our lands and waters. It is our responsibility to report anything we see that might affect our groundwater, such as changes on the land, spills or potentially harmful activities associated with chemicals and fuel storage.

Standards and Training

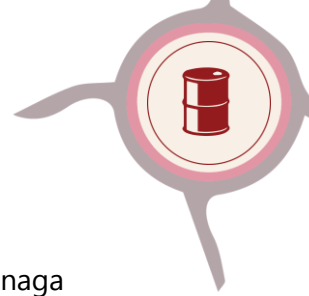
Shawanaga First Nation works in close partnership with the MECP and ECCC to monitor and enforce standards around fuel handling and storage on our lands. The TSSA standards are used as guidance for training Shawanaga First Nation staff on inspection methods and regulatory requirements for fuel and chemical handling and storage. Together, Shawanaga, MECP, and ECCC ensure that individuals and businesses that handle and store chemicals are compliant with the applicable regulations and conduct regular inspections to maintain their compliance.

Enforcement

We work closely with applicable government agencies to help enforce provincial and federal standards on our lands, and we will enforce our own Environmental Protection law. For fuel spills or incidents, we notify the Spills Action Centre to assist us in determining any non-compliance issues.

We participate in the monitoring and enforcement process by selecting a designated person from the Lands and Resources Department to liaise with government agencies to obtain inspection results and receive information/training.





Developer Responsibilities

Proponents of large-scale development projects on Shawanaga Lands (i.e., road or linear corridor construction, industrial facilities), are required to ensure proper fuel handling, storage and spills reporting and to file verification of this with the Band Administration for quick access and reference when needed. The proponent is required to liaise with Chief and Council and the Lands and Resources Department to develop contingency plans for fuel handling, storage and spills and file these plans with the Band Administration as well.

Emergency Contact

Shawanaga will establish a contact person within the community for fuel management who is responsible for providing resources and information on spill response measures, including how to contact the MECP Spills Action Centre. This contact person or their designate(s) will be readily available and will rely on local emergency responders when necessary.

It is the responsibility of the emergency contact to inform the community of the appropriate person to contact if they detect a fuel spill or incident, whether this be an SFN emergency responder or contacting the Spills Action Centre directly.

Community Initiatives

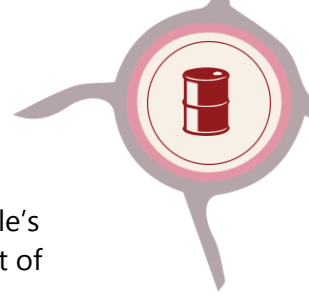
Let's Talk About Fuel: Community Education Sessions

These events are interactive community sessions where citizens are provided with information about how to avoid chemical and fuel spills and what to do if such an event were to occur. These sessions will also be used to share updates to the Shawanaga First Nation Emergency Response Plan and Fuel Spill Contingency Plan. Lastly, these sessions will provide demos on how to properly and safely dispose of fuel when required.

Let's Talk About Fuel: Info Sessions for Owners and Handlers of Fuel

These events provide more in-depth training and information geared towards individuals who own and handle fuel on a regular basis (i.e., it's part of their job). These sessions will provide extensive and hands-on training using role playing





scenarios and interactive discussions that deepening people's knowledge on what to do and how to respond in the event of an incident.

Let's Talk About Fuel: Public Awareness Poster Campaign

The final piece of the let's talk about fuel campaign is using posters to promote safe fuel storage and handling practices and further inform Shawanaga citizens of the fuel handling storages and practices being used on SFN lands. The poster designs would target a variety of demographics, including youth and children to ensure young people are aware of the risks and know to avoid areas with stored fuel.



Regulations and Best Practices

The following regulations and best practices will be used to ensure safe and proper handling and storage of fuel on Shawanaga lands.

Ontario Provincial Laws and Regulations

Technical Standards and Safety Act (Ontario). The purpose of the Technical Standards and Safety Act is to enhance public safety in Ontario by providing for the efficient and flexible administration of technical standards with respect to fuel, hazardous materials, controlled substances, vehicles and industrial equipment. The Technical Standards and Safety Act provides guidance on authorizations, safety and compliance, inspections, enforcement and the structure of responsibility and power (TSSA,2017).

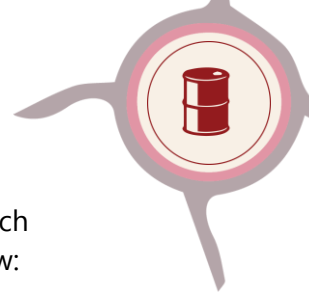
The Province of Ontario delegates responsibility to Technical Standards and Safety Authority to administer and enforce the *Technical Standards and Safety Act*. The Technical Standards and Safety Authority acts as a third-party inspector and regulator for fuel storage and handling in Ontario (TSSA, 2017).

<https://www.tssa.org/>

<https://www.ontario.ca/laws/statute/00t16>

The Technical Standards and Safety Act is comprised of the several regulations that form provincial legislation for a variety





of substances, activities or equipment. The regulations which are applicable to fuel storage and handling are listed below:

[Ontario Regulation 217/01 – Liquid Fuels \(Ontario\)](#)

[Ontario Regulation 213/01 - Fuel Oil](#)

[Ontario Regulation 212/01 - Gaseous Fuel](#)

[Ontario Regulation 211/01 - Propane and Storage Handling](#)

These regulations are part of the Technical Standard and Safety Act and provide specific guidance on the storage and handling of liquid fuels, fuel oil, gaseous fuel and propane and storage handling in Ontario. Each regulation outlines compliance requirements for individuals or businesses who wish to store fuel on their property including licensing and permit requirements, operating specifications, testing/inspection requirements and occurrence/accident reporting (Ontario, 2017).

Federal Laws and Regulations

Canadian Environmental Protection Act (Government of Canada). The Canadian Environmental Protection Act (CEPA 1999) is the foundation of Canada's environmental legislation aimed at preventing pollution and protecting the environment and human health. A key aspect of CEPA 1999 is the prevention and management of risks posed by toxic and other harmful substances.

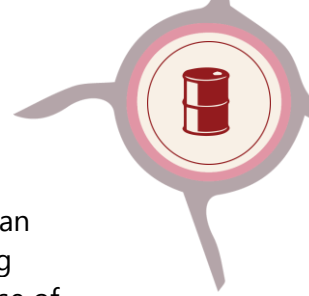
CEPA 1999 also manages the environmental and human health impacts of toxic substances such as fuel. (Environment Canada, 2004)

CEPA 1999 permits flexibility to each province in the authority to make regulations surrounding the handling distribution and storage of fuels and the fuel's effect on the operation of emissions control equipment. (Environment Canada, 2004).

<http://laws-lois.justice.gc.ca/eng/acts/c-15.31/>

Environment Canada Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations (Government of Canada). Environment and Climate Change Canada has created regulations under Part 9 - Government





Operations and Federal and Aboriginal Land of the Canadian Environmental Protection Act, 1999 (CEPA 1999), governing storage tank systems under federal jurisdiction. The purpose of the Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations is to reduce the risk of contaminating soil and groundwater due to spills and leaks of petroleum products and allied petroleum products from storage tank systems. The regulations establish technical standards for the design and installation of storage tank systems, and include requirements for operation, maintenance, removal, reporting and record-keeping (ECCC, 2017).

<http://laws-lois.justice.gc.ca/eng/regulations/SOR-2008-197/index.html>

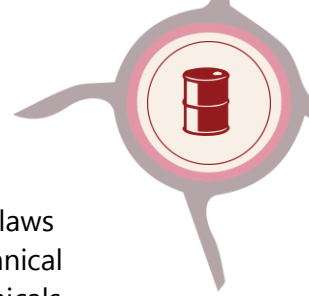
National Fire Code of Canada – National Research Council of Canada (2015). Section 4.1.5.6 “Emergency Planning” and Section 4.1.6.3 “Spills and Leaks” of the Code requires that emergency planning measures to be provided for areas where flammable liquids or combustible liquids are stored. The Code also requires that maintenance and operating procedures be established to minimize potential impacts of spills and leaks of flammable or combustible liquids. http://www.nrc-cnrc.gc.ca/eng/publications/codes_centre/2015_national_fire_code.html

Transportation of Dangerous Goods Act – Transport Canada (1992). Transport Canada developed safety standards and regulations, provides oversight and gives expert advice on the transport of dangerous goods including fuels. Transport Canada has requirements for people handling and transporting fuels as well as methods of fuel transportation. The Transportation of Dangerous Goods Act governs the transport of fuels on Canadian roads, waters, railways and air. <https://www.tc.gc.ca/eng/acts-regulations/acts-1992c34.htm>

Best Management Practices

The most essential best management practice to follow is to, at a minimum, maintain compliance with the applicable federal and provincial laws and regulations as mandated by the Ontario Ministry of the Environment, Conservation, and Parks and Environment and Climate Change Canada.





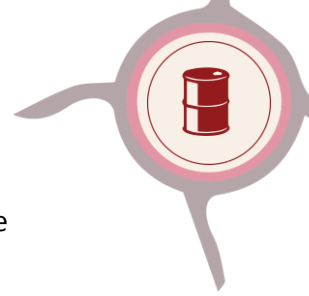
In addition to maintaining compliance with the applicable laws and regulations, it is recommended that the following technical guidance documents are followed to ensure fuel and chemicals are handled and stored safely and effectively on our lands.

Technical Standards and Safety Authority Fuel Safety Program. The Technical Standards and Safety Authority Fuels Safety Program regulates the transportation, storage, handling and use of fuels as to ensure conformance to the Technical Standards and Safety Act, and applicable regulations, codes and standards. These fuels include natural gas, propane, butane, hydrogen, digester gas, landfill gas, fuel oil, gasoline, and diesel. The Technical Standards and Safety Authority licenses fuel facilities, registers contractors and certifies tradespersons who install and service equipment. Additionally, TSSA reviews and approves facility plans for sites licensed by TSSA and performs custom equipment approvals and inspection services to ensure fuel is handled and used safely. Their website provides valuable information and contact information for the Fuels Safety Program (TSSA, 2017).
<https://www.tssa.org/>

A Field Guide to Fuel Handling, Transportation & Storage – British Columbia Ministry of Water, Land and Air Protection (2002). This field manual provides guidance on acceptable practices for managing fuel handling, transportation and storage. Although the guide is written for rural and remote areas of British Columbia, many of the principles apply to SFN. It summarizes requirements of applicable statutes of Canada, industry codes of practice and recommendations relating to environmental protection, health and safety, and fire protection.
http://www2.gov.bc.ca/assets/gov/environment/waste-management/industrial-waste/industrial-waste/oilandgas/fuel_handle_guide.pdf

Storage of Petroleum Products – Ontario Ministry of Agriculture and Rural Affairs This information sheet outlines options to address concerns related to storage tanks that hold less than 5,000 litres of gasoline, diesel, heating oil or kerosene. This guide is designed specifically for farmers but many of the guiding principles apply to fuel storage and handling on SFN. This guide describes:





- Distance from petroleum storage to nearest surface water
- Distance from petroleum storage to nearest well
- Type of tank and external protection against corrosion – aboveground tanks
- Types of fuel dispensers
- Security and signage
- Monitoring for leaks and spills
- Overfilling procedure and secondary containment
- Written emergency plan and cleanup equipment for spills

<http://www.ontariosoilcrop.org/wp-content/uploads/2015/08/EFPInfosheet5.pdf>

Procedure for the Handling of Fuel on Construction Sites - Civil Engineering Sector Labour-- Management Health and Safety Committee (2001). This procedure acts as a best practice example for fuel handling and storage on construction sites. The document outlines environmental protection procedures for the transport, storage and dispensing of fuel on construction sites, as well as a spill contingency plan. This procedure could be utilized for construction taking place on SFN lands.

<https://www.tssa.org/CorpLibrary/ArticleFile.asp?Instance=136&ID=7CC33056D15441F9B1442AF120619D05>

Glossary

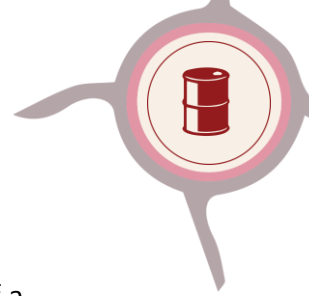
Butane

A low-boiling paraffin hydrocarbon generally stored and delivered in liquefied form and used as a fuel in gaseous form. It is obtained by processing natural gas as produced and also from a process in petroleum refining.

Combustible Liquid

A liquid that has the ability to burn at temperatures that are usually above normal working temperatures.





Corrosion

The deterioration of a material, usually a metal, because of a reaction with its environment.

Digester Gas (Anaerobic Digestion)

A biological process that produces a gas principally composed of methane and carbon dioxide, otherwise known as biogas. These gases are typically produced from organic wastes such as livestock manure or food processing waste.

Flammable Liquid

A liquid that will ignite (catch on fire) and burn easily at normal working temperatures.

Fuel

A material used to create heat or power through conversion in such processes as combustion or electrochemistry.

A. Gaseous Fuel

Fuel that is in gas form under ordinary conditions (e.g., natural gas)

B. Liquid Fuel

Fuel that is in liquid form under ordinary conditions (e.g., petroleum)

C. Solid Fuel

Fuel that is in solid form under ordinary conditions (e.g., wood, coal)

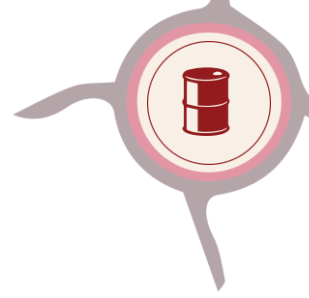
D. Fuel Oil

Any liquid fuel that is burned in a furnace or boiler for the generation of heat or used in an engine for the generation of power (e.g., diesel)

Gasoline

A refined petroleum product used as fuel for internal combustion engines.





Hydrogen

A colourless, odourless, highly flammable gas.

Landfill Gas

A natural by-product of the decomposition of organic materials in landfills, composed of roughly 50% methane and 50% carbon dioxide.

Natural Gas

A naturally occurring mixture of simple hydrocarbon components (primarily methane) used as fuel.

Petroleum

A liquid mixture of hydrocarbons that is present in certain rock strata and can be extracted to produce fuels including gasoline, kerosene and diesel oil.

Propane

A flammable hydrocarbon gas of the alkaline series, present in natural gas and used as bottled fuel.





Contaminated Sites Management

Environmental Stewardship Guidance

Contents

- Our Stewardship Vision**
- Community Objectives**
- Stewardship Guidance and Strategies**
- Monitoring and Enforcement**
- Community Initiatives**
- Regulations and Best Practices**
- Glossary**

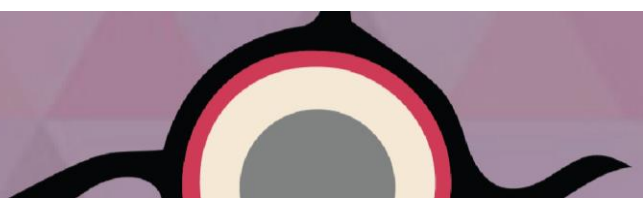
"Anishinaabe is supposed to have everything left clean. It's the Creator who left it to us to do that. Keep the water clean, the air clean, and Mother Earth"

– Community Member

Our Stewardship Vision

As stewards of the lands and waters, managing existing contaminated sites plays a crucial part in our role of keeping our natural environment healthy and protected now and into the future. The potential release of contaminants to our lands and waters, particularly through emergency spills, presents a threat to human and ecological health. We are committed to carrying out strategies to identify and reduce the risk of new contamination on our lands, and to make sure our community is prepared to respond to incidents in a way that is safe, timely, and effective.

The intent of this ESG is to describe our contaminated sites management strategy, which includes strategies for the identification, assessment and remediation of contaminated lands and waters. It also includes protocols for emergency spill response and mitigation, especially with respect to the potential for incidents connected to the transportation corridors that cross our lands.





Community Objectives

We will work to implement strategies that will address remediation of contaminated lands and waters, and to protect our natural environment for seven generations to come.

Short-Term Objectives

- Manage the risks associated with existing contaminated sites on our lands.
- Build capacity within the Lands and Resources Department to manage our potentially contaminated lands.
- Develop an Environmental Protection law that establishes environmental standards for levels of potentially contaminating substances on our land, a community emergency spill preparedness and response plan, spill protection, registering contaminated sites, and protocols to identify and reduce the risk of new contamination of our lands.

Long Term Objectives

- Developing and implementing a community-based contaminated sites management strategy.
- Building capacity within the Lands and Resources Department for the oversight of transportation of dangerous goods through our territories and corresponding emergency spill response and mitigation capabilities.



Stewardship Guidance and Strategies

To meet our short and long-term objectives for contaminated sites management in our community, we use the following **stewardship guidance and strategies** that are built on regulations, guidelines and best management practices.

Strategy 1: Identify Suspect Contaminated Sites

The Phase 1 Environmental Site Assessment (P1ESA) that was completed for Shawanaga First Nation reserve lands by S. Burnett & Associates Ltd. in 2015 allows for the identification of existing suspect sites. The following criteria and information, as outlined in the “Federal Approach to Contaminated Sites” (<https://www.canada.ca/en/environment-climate-change/services/federal-contaminated-sites/federal-approach.html>), are used to identify any new suspect sites that may require a P1ESA:

- Environmental record(s), if they exist;
- Internal environmental programs;
- Complaints raised by Shawanaga First Nation community members;
- Observed off-site impacts or issues that could impact SHAFN reserve lands;
- Similarities to other known contaminated sites;
- Visual or olfactory evidence of previous leaks, spills or discharges; and
- The nature of current or past activities at the site or adjacent properties.

Strategy 2: New Phase One Environmental Site Assessments (P1ESA)

The purpose of a P1ESA is to identify any areas of potential environmental concern (APECs) on any of our reserve lands, and any potentially contaminating activities that could have potential to impact our reserve lands. If deemed to be required, additional P1ESAs for any of Shawanaga First Nation’s three reserve lands will build on the P1ESA completed in 2015 by S. Burnett & Associates Ltd. It may be necessary to complete an updated P1ESA if, and



when, there are any changes to Shawanaga First Nation reserve land use designation (i.e., from commercial to residential or recreational) or land parcels are leased. P1ESAs are intended to help us determine whether more intrusive investigations are required for adequate assessment of environmental impacts or degradation.

P1ESAs for Shawanaga First Nation lands will be conducted under the supervision of a qualified person for environmental site assessments in Ontario (QP_{ESA} – as defined by the Environmental Protection Act) and in collaboration with our Lands and Resources Department. The P1ESA includes a review of historical records for our lands, interviews with community members and staff, and a visual inspection of lands within and around our boundaries to identify APECs and PCAs (Potentially Contaminating Activities). P1ESAs are conducted according to requirements outlined in Ontario Regulation 153/04.

Common environmental chemicals of potential concern that are often the focus of environmental site assessments include:

- Polycyclic Aromatic Hydrocarbons (PAHs)
- Volatile Organic Compounds (VOCs)
- Metals
- Petroleum Hydrocarbons (PHCs)
- Pesticides
- Polychlorinated biphenyls (PCBs)

Strategy 3: Phase Two Environmental Site Assessments (P2ESA)

In the event that a known impact occurs on our lands, or a P1ESA identifies areas of potential environmental concern that require further environmental investigation, a Phase 2 Environmental Site Assessment (P2ESA) is conducted. The P2ESA must be designed and conducted by a QP_{ESA}, as defined under Ontario Regulation 153/04 (see Strategy 2), using the results of the P1ESA. The P2ESA includes a sampling and analysis plan to characterize suspected or known contamination on our lands.

As part of the P2ESA, we will work with the QP_{ESA} to identify the appropriate environmental quality standards to be used in the



assessment based on land use, land properties and groundwater use. Our P2ESA considers both Federal guidelines (Canadian Council of Ministers of the Environment Environmental Quality Guidelines), as well as Provincial guidelines (Ministry of the Environment and Climate Change Site Condition Standards). The most conservative (i.e., lowest) guideline is used to identify chemicals of potential environmental concern (COPCs) within areas of potential environmental concern on our lands.

With respect to the provincial Site Condition Standards (SCS), the following schematic is used to identify which standards will apply to the P2ESA (Figure 1).

Following a P2ESA, we can use the results to determine the next steps, which could include:

- Do nothing, if the suspected contamination does not exceed the applicable environmental guidelines or standards.
- Conduct a human health and ecological risk assessment (HHERA) to quantify potential risks associated with the contamination (Strategy 4).
- Remediate the area to meet applicable guidelines and standards (Strategy 5).

Prior to any remediation or risk management activities taking place, a QP_{ESA} will be retained to develop a Remedial Action Plan (RAP) to identify various methods for remediation and assess the appropriateness of each approach based on site conditions, chemical characteristics of the target contaminant, and overall feasibility. During the development of the RAP, the QP_{ESA} will consider whether a risk assessment is necessary.

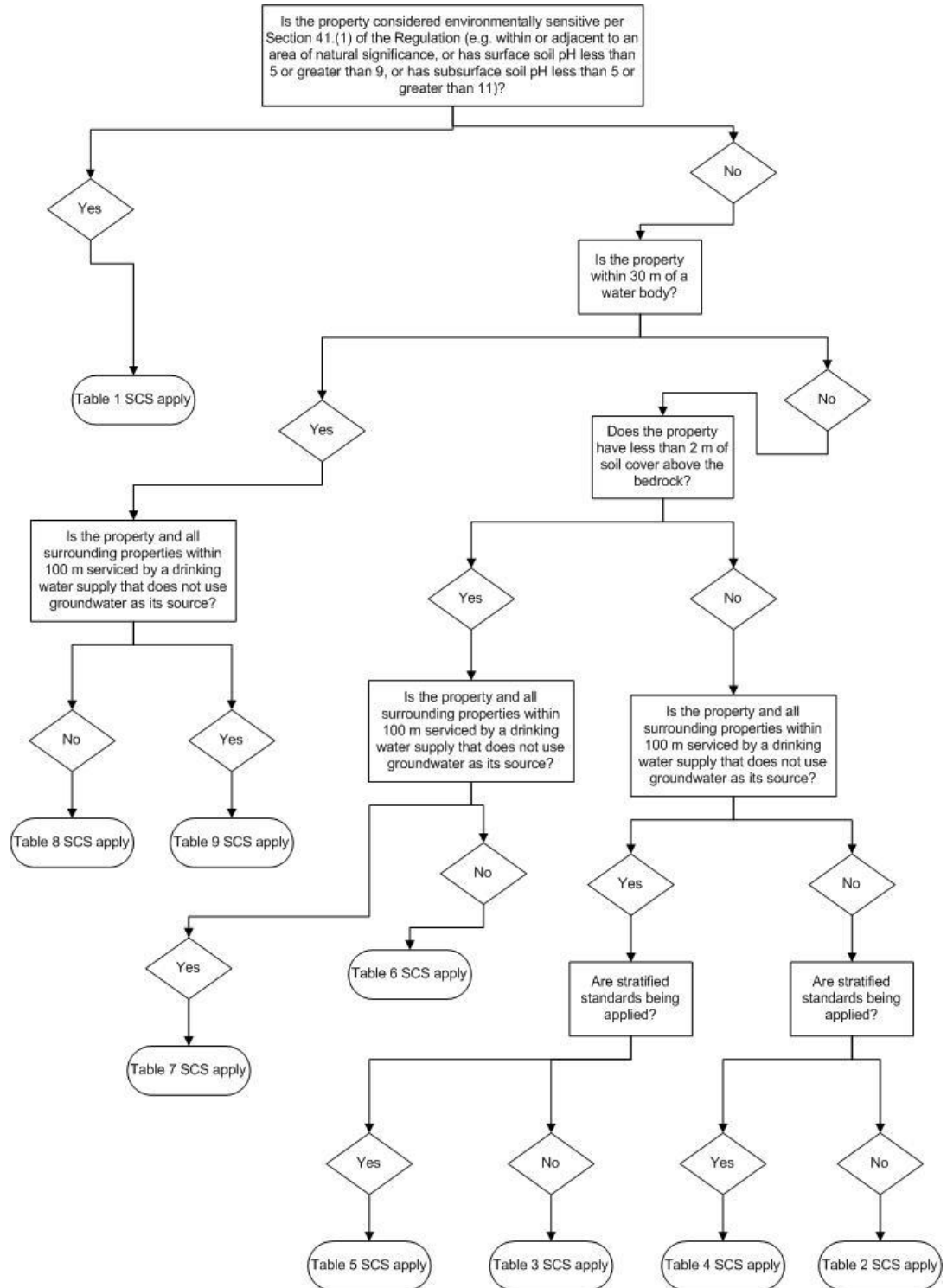
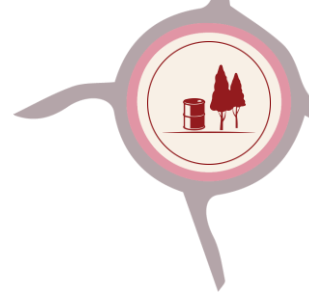


Figure 1: Association of Professional Geoscientists of Ontario, 2011. Guidance for Environmental Site Assessments under Ontario Regulation 153/04 (as amended).



Strategy 4: Human Health and Ecological Risk Assessment

Based on contamination identified in the P2ESA, a human health and ecological risk assessment (HHERA) will be conducted to quantify the risks, if any, associated with exposure to the contamination identified in the P2ESA. The HHERA is to be carried out in accordance with Ontario Regulation 153/04 and under the guidance of a Qualified Person for Risk Assessment in Ontario (QP_{RA}), as defined by the Environmental Protection Act.

HHERAs consider the toxicity of the contaminants identified as being of concern, the presence and type of human and ecological receptors present on our reserve lands, and the potential and extent of exposure for these receptors. The degree to which each of these three components overlap is a representation of the potential risk for adverse effects to occur. A conceptual site model (CSM) is then developed using this information, and depicts the potential ways in which humans and wildlife could be impacted by the contaminated environment. As shown in the sample CSM below (Figure 2), the model illustrates how unacceptable risks to human and wildlife health could occur.

The overall purpose of the HHERA is to quantify the magnitude of health risks associated with contamination on our lands. This information can then be used to develop a risk management plan for mitigating any unacceptable risks identified through the HHERA, and subsequently provide an acceptable degree of health protection to our community members and wildlife. Depending on the outcomes of the HHERA, if remediation and/or risk management of contaminated sites are required, Strategy 5 will be implemented.

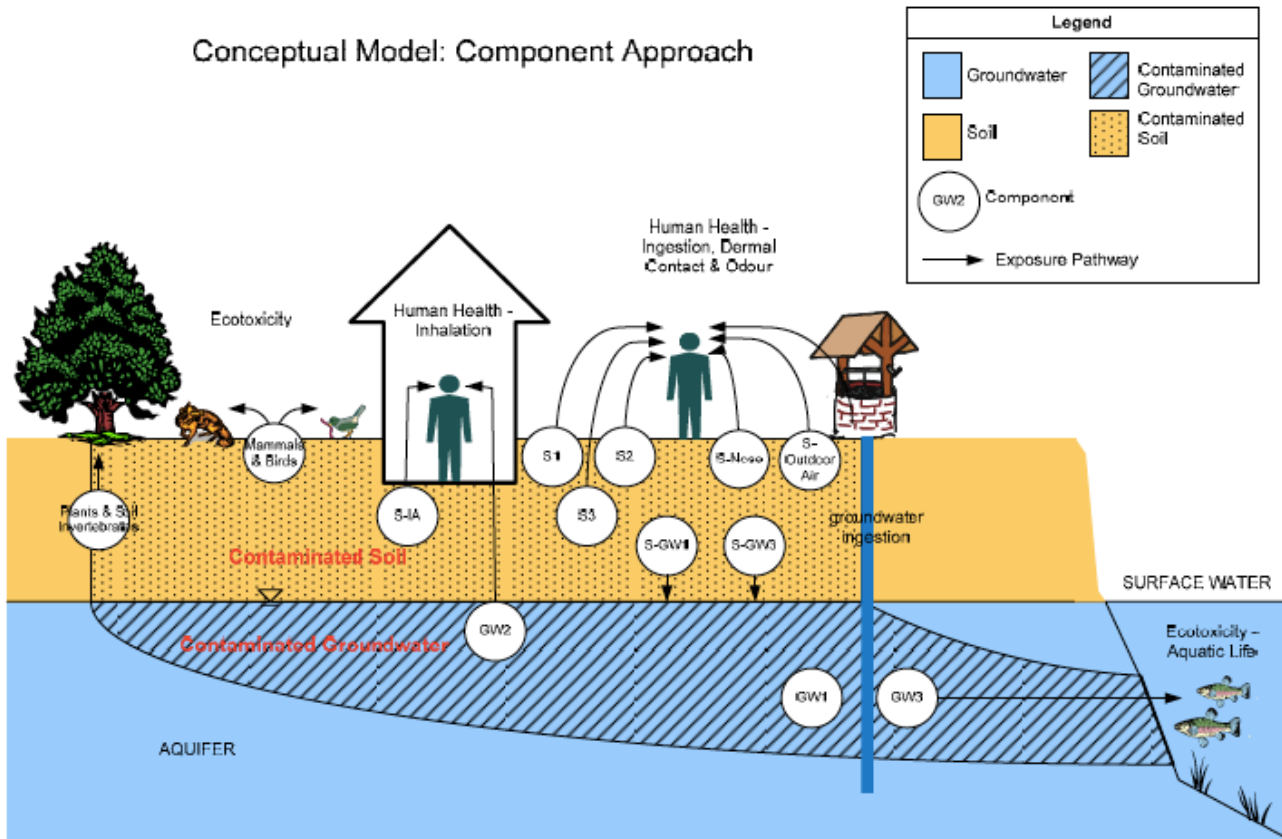
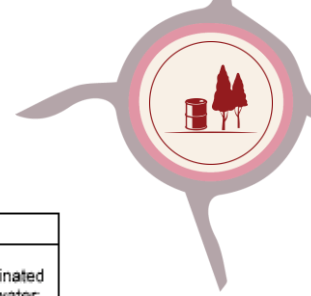


Figure 2: Conceptual Model: Component Approach (MOE 2011).

Strategy 5: Remediation and/or Risk Management of Contaminated Lands and Waters

Following confirmation of the nature and extent of contamination at a site, we will proceed to have the site remediated to meet applicable standards and guidelines as outlined in Strategy 3. If a HHERA has been completed, the site will be remediated to the site-specific standards.

At times, remediation is not possible due to various factors including physical site conditions, chemical characteristics of the contaminant, and overall feasibility of the methods required. In these cases, we may opt to manage the risk by controlling exposure to the contaminant to people and wildlife as well as unaffected soil and groundwater. This will often include the use of exposure barriers that prevent a contaminant from migrating



further and/or mitigates the release of the contaminant (i.e. vapour control).

A QP_{ESA} (and QP_{EA} if necessary) must be consulted prior to and throughout any project pertaining to the remediation and/or risk management of contaminated sites on our lands. This ensures that a licensed professional signs off on all plans and activities. There are typically significant liabilities associated with contaminated sites; retaining a licensed professional helps to reduce the overall liability for Shawanaga First Nation, while ensuring any contamination is effectively contained and managed to prevent further impact and risks to health. Remediation is preferential to risk management as it eliminates the risk and consequent exposure, as well as the need for ongoing management of the site. However, in circumstances where full remediation is not possible, risk management will be considered.

The Lands and Resources Department works closely with all contracted contaminated sites professionals throughout the life of a project.

Strategy 6: Build Capacity for Contaminated Sites Management

Our community members are deeply connected to our lands and waters, and therefore the management of contaminated areas on our reserve lands is of great importance. We recognize the need to retain qualified professionals (QP_{ESA} and QP_{RA}) to oversee the remediation and risk assessment efforts, however we also recognize that there is value in having community member involvement throughout the process. We will aim to involve community members, especially the Lands and Resources Department, in future contaminated sites management and remediation, as suggested by Health Canada (2010) and outlined in Figure 3 below.

We will work towards assisting staff in gaining the knowledge and experience necessary to effectively provide guidance and oversight on contaminated sites/remediation projects on our lands. To assist with capacity building efforts we will seek out job shadowing and mentoring opportunities, as well as training programs such as ECO Canada's Building Environmental Aboriginal Human Resource (BEAHR) training programs for both

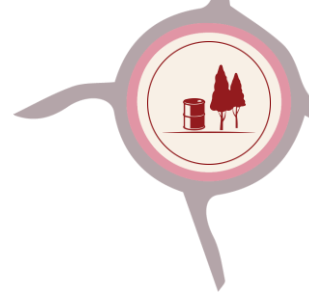


Environmental Site Assessment Assistants and Contaminated Sites
Remediation Coordinators.



Figure 3: A Guide to Involving Aboriginal Peoples in Contaminated Sites Management. Health Canada 2010.

Site Management Activity	Examples of Opportunities for Public Involvement
SITE IDENTIFICATION	
1. Identification of suspect sites	Aboriginal peoples' input on: Areas of concern Prioritization of sites in an inventory
SITE AND RISK ASSESSMENT	
2. Historical Review (literature review, site visit, interviews)	Aboriginal peoples can also assist with:
3. Initial Testing Program (sampling, analyses, conceptual exposure model, preliminary human health RA)	<ul style="list-style-type: none"> • Site characteristics; • Buried landfills; • Sampling; • Historical review; • Local records; • Oral histories; • Photos; • Maps; • Establishing a baseline on historical conditions; • Oral history;
4. Site Classification (Classes 1 to 3, N, I)	<ul style="list-style-type: none"> • Traditional knowledge; • Present conditions; and • Changing conditions (climate, permafrost). <p>For Ecological Risk Assessment Aboriginal peoples can assist with:</p> <p>Problem formulation;</p> <ul style="list-style-type: none"> • Selecting valued ecosystem components; • Chemicals of concern and pathways;
5. Detailed Testing Program (Contamination delineation, update of conceptual exposure model, finalization of remediation guidelines or risk assessment) Detailed Human Health Risk Assessment	<ul style="list-style-type: none"> • Identifying where and when to collect samples; • Collecting samples; and, • Animal health (observations, determinants). <p>For Human Health Risk Assessment Aboriginal peoples can assist with:</p> <ul style="list-style-type: none"> • Problem formulation; • Exposure assessment; • Historical and current risk scenarios; • Dietary consumption / seasonal variation;
6. Site reclassification	<ul style="list-style-type: none"> • Types and parts of animals used by community members; • Living/working conditions and land use; • Risk characterization; • Provide historical and current epidemiology of the community; and, • Help identify what is "safe" or "acceptable".



Site Management Activity	Examples of Opportunities for Public Involvement
SITE REMEDIATION / RISK MANAGEMENT	
7. Development of Remediation/ Risk Management Strategy	<p>Aboriginal peoples can also assist with:</p> <p>Development and implementation of remediation/risk management strategies throughout all aspects of the strategy.</p> <p>Aboriginal peoples can help identify:</p>
8. Implementation of Remediation/ Risk Management Strategy	<p>Components of concern;</p> <p>Land use objectives;</p> <p>Issues/criteria for evaluating options;</p> <p>Options for meeting objectives; and,</p>
9. Confirmatory Sampling and Final Reporting	<p>Preferred and acceptable options.</p> <p>Other opportunities to involve Aboriginal peoples in the risk management/ site remediation-process include roles related to:</p> <p>Heavy equipment operators;</p> <p>Cooks and support;</p>
10. Long-term Monitoring	<p>Project management;</p> <p>Administration;</p> <p>Health and safety; and,</p> <p>Communications and facilitation.</p> <p>Aboriginal peoples can:</p> <p>Act as informal monitors and communicators;</p> <p>Provide long-term knowledge of the site;</p> <p>Be involved in short-term and longterm monitoring processes; and,</p> <p>Act as informal or formal "watchdogs" for the project.</p>

Strategy 7: Community Emergency Spill Preparedness and Response Plan

An emergency spill preparedness and response plan provides our community with strategic direction for mitigating the risks of spills and contamination, preparing for potential disastrous events, and responding to spills and contamination events. The plan outlines possible hazards and how to both prevent and respond to those



hazards, and the steps that will be taken to respond and recover from emergency spill events.

A qualified person trained in emergency management, preparedness, and response should be involved in the drafting of the plan, in conjunction with the Lands and Resources Department. The emergency spill preparedness and response plan will be a living document that gets updated annually, and guides the training of selected community members for responding to incidents. The plan will also outline the role that the Lands and Resources Department will play in the oversight of transportation of dangerous goods through and adjacent to our reserve lands, and guide any necessary capacity building for monitoring, response, and mitigation capabilities of staff and community members.

Until a comprehensive emergency spill preparedness and response plan is developed, the following steps will be taken, if and when a substance is released that may cause harm to the environment or public health:

- 1) Where safe to do so, stop the source of the spill, taking care to wear any appropriate personal protective equipment.
- 2) Ensure public safety by cordoning off the affected area.
- 3) As per section 212 of the *Canadian Environmental Protection Act, 1999* and the corresponding *Environmental Emergency Regulations*, verbal notification of the spill must be made to the following 24-hour telephone line:

416-325-3000 or 1-800-268-6060

Follow all directions for spill response that the officials at this number provide.

- 4) When possible, use a spill kit to contain the release and prevent it from spreading. This often involves the application of an adsorbent over the affected area.



- 5) Make a reasonable effort to notify any community members or members of the public that may be adversely affected by the spill.
- 6) Contact a contractor that is licensed by the Ontario Ministry of Environment, Conservation, and Parks to transport and dispose of contaminated waste to clean up the area of the spill. The following company is located in Parry Sound and is qualified to clean up spills of oil, fuel oil, diesel fuel, PCBs, and other toxic waste:

Adams Bros. Construction Ltd.

info@adamsbros.ca

705-746-2962

After hours service: **705-774-1147**

When contracting a company to clean up a spill site, the Shawanaga Lands and Resources Department will retain documentation of where the final contaminated materials will be disposed of, and proof that the Toxicity Characteristic Leaching Procedure (TCLP) has been completed on any waste soils. Please refer to the Management of Impacted Soils Procedure at the end of this section.

- 7) As per section 212 of the *Canadian Environmental Protection Act, 1999* and the corresponding *Environmental Emergency Regulations*, a written report of the incident must be prepared and sent as soon as possible to:

Regional Director, Environmental Enforcement Directorate

Ontario Region

Environment and Climate Change Canada

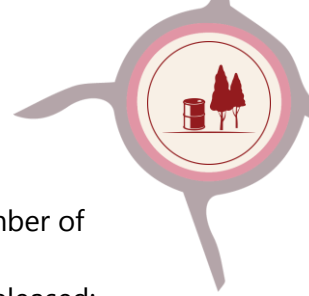
867 Lakeshore Road

Burlington, ON

L7S 1A1

ec.dale-ontdegarde-eed-ontoncall.ec@canada.ca

The written report must include the following information:

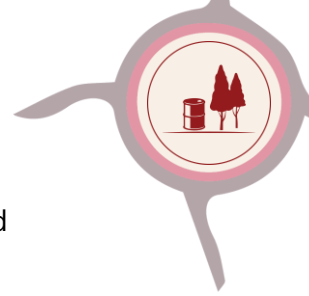


- the name, civic address and telephone number of the person who owns or has the charge, management or control of the substance released;
- the date, time and location of the release;
- the name and CAS registry number of the substance released;
- the quantity of the substance released or, if the quantity cannot be determined, an estimate of it;
- the identification of the container from which the substance was released and a description of its condition;
- the location of the release and a description of potential negative effects on the environment or on human life or health;
- a description of the circumstances and of the cause of the release, if known, and of the measures taken to mitigate any negative effects on the environment or on human life or health;
- the identification of all persons and agencies that were notified as a result of the release; and
- all measures taken or planned to be taken to prevent similar releases.

Management of Impacted Soils Procedure

The following steps should be followed to manage impacted (contaminated) soil as a result of a spill incident:

1. Excavate impacted material.
2. Store impacted material in appropriate containers (e.g. drums, dumpsters) that are fully enclosed to prevent leaks.
3. Hire an MECP licensed contractor or “Qualified Person” (under Ontario Regulation 153/04) to obtain a Toxicity Characteristic Leaching Procedure (TCLP) sample from the contained excavated material and confirmatory soil samples from the excavation, in accordance with Schedule



E, Table 3 of O. Reg. 153/04, to ensure all impacted material has been removed.

4. Ensure that samples are submitted to a licensed laboratory accredited by the Canadian Association for Laboratory Accreditation (CALA) and retain a copy of Certificate of Analysis.

Licensed laboratories in the area include:

- Maxxam Analytics (Sudbury)
 - ALS Geochemistry (Sudbury)
5. Ensure impacted material is transported to a MECP licensed disposal facility by a licensed waste hauler. Retain documentation for proof of transport and disposal of waste.
 6. Retain all applicable documentation for at least 7 years.

For large spills and/or those that occur in close proximity to water bodies or drinking water wells, Shawanaga will consider retaining a "Qualified Person" (under Ontario Regulation 153/04) to provide recommendations and oversee the remediation process.

Strategy 8: Soil Deposit, Transport and Removal Land Law

Shawanaga First Nation will enact a land law for soil deposit, transport and removal, to ensure that soil transported to and deposited on Shawanaga lands is free from contamination. This land law would address a wide array of soil management issues by ensuring the protection of sensitive areas (e.g. wetlands) and the health of our members and all living things that inhabit our lands and waters.

The province of Ontario has a patchwork of regulations and best practices for the management of "excess soil" that are overseen by various entities including the Ministry of the Environment, Conservation and Parks (MECP), Conservation Authorities, and municipalities. Applicable provincial legislation is contained in the Environmental Protection Act, Ontario Water Resources Act, Conservation Authorities Act, and the Aggregate Resource Act.



The development of Shawanaga's "Soil Deposit, Transport, and Removal" land law will be based on components of Ontario regulations that Shawanaga First Nation deems appropriate for application on our lands and any other best practices, standards or guidance documents at the discretion of Shawanaga First Nation.

The following documents may be used as a starting point for this process:

- Management of Excess Soil - A Guide for Best Management Practices (Province of Ontario)
<https://www.ontario.ca/page/management-excess-soil-guide-best-management-practices#targetText=Mixture%20and%20dilution%20of%20contaminated,is%20being%20submitted%20for%20filing>
- Excess Soil Management Policy Framework – 2016 (Province of Ontario)
http://www.downloads.ene.gov.on.ca/envision/env_reg/er/documents/2016/012-6065%20final.pdf

Monitoring and Enforcement

As citizens of Shawanaga First Nation, we are responsible for helping to protect our lands and waters from contamination. It is our responsibility to report anything we see that might affect our lands and waters, such as changes on the land, spills or potentially harmful activities.

Chief and Council, along with the Lands and Resources Department, are responsible for managing contaminated sites on our lands.

Community Initiatives

Community Reporting System

A formal reporting system will allow community members to anonymously report observations of any kind of environmental contamination on our lands, waters, or air. This reporting system will also provide the Lands and Resources Department with timely reports of incidents that require immediate action or attention.

Remediation Education in the Community



Community members participate in classroom and interactive activities that provide information about the sources of contamination, methods used to prevent contamination from occurring, and typical remediation activities that are required for contaminated areas. Educational sessions should also include audience-gearred sessions in the school for community youth.

Regulations and Best Practices

Assessment and Management of Contaminated Sites

Canadian Environmental Protection Act, 1999. This Act aims to protect ecosystems from the impacts of pollution. It covers environmental protection planning, such as pollution prevention planning and environmental emergency response planning. It also addresses the management of toxic substances, hazardous waste, nutrients, vehicle and engine emissions, and international air and water pollution. Part 9 of the Act applies to government operations and federal and Aboriginal land. <https://laws-lois.justice.gc.ca/eng/acts/c-15.31/page-1.html>

Release and Environmental Emergency Notification Regulations, SOR/2011-90. Under the *Canadian Environmental Protection Act, 1999*, this regulation outlines the requirements for reporting releases and provides the 24-hour phone numbers for each province in the case of a release or environmental emergency. <https://laws-lois.justice.gc.ca/eng/regulations/SOR-2011-90/page-1.html#docCont>

Ontario Regulation 347: General – Waste Management, 1990. This regulation provides guidance on waste management and disposal, including the legislated requirements for disposing hazardous waste in Ontario, such as contaminated soil materials. <https://www.ontario.ca/laws/regulation/900347>

Ontario Regulation 153/04: Records of Site Condition – Part XV.1 of the Environmental Protection Act, Ministry of the Environment, 2004. The purpose of this regulation is to provide legislative guidance on conducting Phase I Environmental Site Assessments, Phase II Environmental Site Assessments, and Risk Assessments in support of obtaining a Record of Site Condition (RSC). This regulation also provides guidance on site condition standards for different classifications of contaminated sites based on



characteristics such as soil depth, soil type, and potable vs. non-potable water. <https://www.ontario.ca/laws/regulation/040153>

A Guide to Involving Aboriginal Peoples in Contaminated Sites Management, Health Canada, 2010. The guide is intended to provide guidance to those managing contaminated sites projects on the involvement of the public in the projects, and in our case, the involvement of Shawanaga community members. <http://www.hc-sc.gc.ca/ewh-semt/pubs/contamsite/aboriginal-autochtones/index-eng.php>

Guide for Completing Phase One Environmental Site Assessments under Ontario Regulation 153/04. Ministry of the Environment, 2011. This manual provides guidance for the completion of phase one environmental site assessments (P1ESA) under O. Reg. 153/04, for the purpose of obtaining a record of site condition. <https://www.ontario.ca/document/guide-completing-phase-one-environmental-site-assessments-under-ontario-regulation-15304>

Guide for completing phase two environmental site assessments under Ontario Regulation 153/04. Ministry of the Environment, 2011. This manual provides guidance for the completion of phase two environmental site assessments (P2ESA) under O. Reg. 153/04, for the purpose of obtaining a record of site condition. <https://www.ontario.ca/page/guide-completing-phase-two-environmental-site-assessments-under-ontario-regulation-15304>

Guidance Manual for Environmental Site Characterization in Support of Environmental and Human Health Risk Assessment: Volume 1 - Guidance Manual, Volume 2 - Checklists, Volume 3 – Suggested Operating Procedures, and Volume 4 – Analytical Methods. Canadian Council of Ministers of the Environment, 2016. This guidance manual is intended to provide national guidance, training and advice with regard to environmental and human health risk assessments on federal sites. It describes the site characterization process and methods to obtain environmental data required for input to environmental and human health risk assessments at contaminated sites. http://www.ccme.ca/en/files/Resources/csm/Volume%201-Guidance%20Manual-Environmental%20Site%20Characterization_e%20PN%201551.pdf

Canadian Standards Association (CSA) Phase 1 Environmental Site Assessment, 2003. This guidance document provides details



regarding the conduct and completion of a phase one environmental site assessment to the standards specified by the CSA.

Association of Professional Geoscientists of Ontario Guidance of Environmental Site Assessments under Ontario Regulation 153/04 (as amended)- April 2011. The purpose of this document is to provide technical and operational guidance for conducting an environmental site assessment (ESA) to meet the requirements of Ontario Regulation 153/04, as amended.

https://www.apgo.net/files/APGO_Brownfields_Guidance_Document.pdf

Canadian Council of Ministers of the Environment Canada-wide Standard for Petroleum Hydrocarbons (PHC CWS) in Soil, CCME, 2008. The Canada-Wide Standard for Petroleum Hydrocarbons in Soil (PHC CWS) is a remediation standard that sets out the levels to which PHC impacted sites must be cleaned up to, if and when they are subject to remediation. The PHC CWS sets out generic target levels, as well as a process for generating site-specific numbers based on risk that are protective of human and ecological health.

https://www.ccme.ca/en/resources/contaminated_site_management/phc_cws_in_soil.html

Canadian Council of Ministers of the Environment, Canadian Environmental Quality Guidelines (CEQG) online database. The CEQGs provide science-based goals for the quality of aquatic and terrestrial ecosystems.

http://www.ccme.ca/en/resources/canadian_environmental_quality_guidelines/

The guidelines can be used if no provincial standards are available from the MOECC, or if the federal guidelines described herein are more conservative and/or applicable than provincial standards. Information included in the guidelines includes:

- chemical-specific guideline fact sheets that summarize the key scientific information and rationale for each substance
- detailed tables that summarize recommended guidelines for the different media and resource uses and the protocols used in developing the guidelines, along with their associated implementation guidance



- an interactive Summary Table that provides the ability to search CEQGs by chemical or chapter.
- factsheets for ease of verifying specific information and obtaining implementation guidance pertaining to each environmental quality guideline
- spreadsheet calculators for the Water Quality Index, Soil Quality Index and Sediment Quality Index
- scientific criteria documents.

The following CEQGs are available:

- Community Water Supplies
- Recreational Water Quality Guidelines and Aesthetics
- Canadian Water Quality Guidelines for the Protection of Aquatic Life
- Canadian Water Quality Guidelines for the Protection of Agricultural Water Uses
- Canadian Sediment Quality Guidelines for the Protection of Aquatic Life
- Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health
- Canadian Tissue Residue Guidelines for the Protection of Wildlife Consumers of Aquatic Biota

Human Health and Ecological Risk Assessment

Procedures for the Use of Risk Assessment under Part XV.1 of the Environmental Protection Act, Ontario Ministry of the Environment, October, 2005. This Procedure document provides the minimum requirements for conducting both the human health and ecological components of risk assessment for contaminated properties in Ontario. This Procedure document is intended for use by experienced risk assessors in conjunction with best professional judgment. <https://www.ontario.ca/document/procedures-use-risk-assessment-under-part-xv1-environmental-protection-act>

MGRA User Guide: A Guide to Using the "Approved Model" (November, 2016) When Submitting a Modified Generic Risk Assessment (MGRA), Standards Development Branch, Ministry of the Environment and Climate Change. The Modified Generic Risk Assessment (MGRA; also referred to as "Tier 2") provides a streamlined approach for developing property specific standards



(PSS) under Ontario Regulation 153/04 (Records of Site Condition (RSC) – Part XV.1 of the Act), made under the Environmental Protection Act (the Regulation). This streamlined process uses the “Approved Model,” which is based on the model (a system of interconnected Excel spreadsheets) that was used to develop the generic site condition standards (Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act - dated April 15, 2011). The Approved Model enables a Qualified Person (QP) entitled to prepare or supervise a risk assessment (QPRA, as described in section 6 of the Regulation) to develop Property Specific Standards quickly and easily.

<https://www.ontario.ca/page/guide-using-approved-model-when-submitting-modified-generic-risk-assessment>

[Federal Contaminated Sites Action Plan](#) (FCSAP), Health Canada, 2010. The FCSAP provides the following guidance documents on the conduct of risk assessments for contaminated federal sites in Canada:

Federal Contaminated Site Risk Assessment in Canada, [Part I: Guidance on Human Health Preliminary Quantitative Risk Assessment, Version 2.0](#)

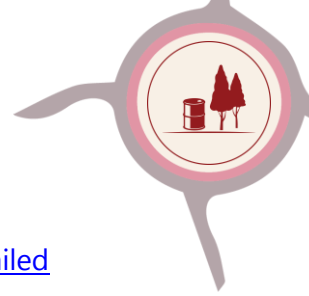
Federal Contaminated Site Risk Assessment in Canada, [Part II: Health Canada Toxicological Reference Values](#), Version 2.0

Federal Contaminated Site Risk Assessment in Canada, [Part III: Guidance on Peer Review of Human Health Risk Assessments for Federal Contaminated Sites in Canada](#), Version 2.0

Federal Contaminated Site Risk Assessment in Canada, [Part V: Guidance on Human Health Detailed Quantitative Risk Assessment for Chemicals \(DQRACHEM\)](#)

Federal Contaminated Site Risk Assessment in Canada, [Part VI: Guidance on Human Health Detailed Quantitative Radiological Risk Assessment \(DQRARAD\)](#)

Federal Contaminated Site Risk Assessment in Canada, [Part VII: Guidance for Soil Vapour Intrusion Assessment at Contaminated Sites](#)



Federal Contaminated Site Risk Assessment in Canada,
[Supplemental Guidance: Checklist for Peer Review of Detailed Human Health Risk Assessment \(HHRA\)](#)

Federal Contaminated Site Risk Assessment in Canada:
[Supplemental Guidance on Developing a Contract Statement of Work \(SOW\) for Human Health Preliminary Quantitative Risk Assessment \(PQRA\) and Detailed Quantitative Risk Assessment \(DQRA\)](#)

Federal Contaminated Site Risk Assessment in Canada:
[Supplemental Guidance on Human Health Risk Assessment for Country Foods \(HHRAFoods\)](#)

<http://www.federalcontaminatedsites.gc.ca/default.asp?lang=En&n=B15E990A-1>

Remediation

United States Environmental Protection Agency, 20016. In Situ Treatment Technologies for Contaminated Soil. This issue paper provides summary information on a wide variety of in situ technologies for the treatment of contaminated soil in both the vadose zone and saturated and unsaturated source zones. The in-situ technologies presented involve applying chemical, biological, or physical processes to the subsurface to degrade, remove, or immobilize contaminants without removing the bulk soil.

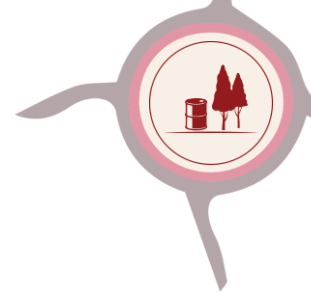
<https://clu-in.org/download/remed/542f06013.pdf>

Emergency and Spill Response

Ontario First Nations Technical Services Corporation (OFTSC) Emergency Planning Services. The OFTSC provides advisory services to First Nation communities for training and preparation for emergency situations, including industrial and transportation accidents. This branch of OFTSC works with First Nations in Ontario to develop emergency management plans, and/or review and analyze existing community emergency management plans.

<http://ofntsc.org/services/emergency-planning/>

Emergency Response Guidebook, Transport Canada, 2016. This guidebook provides safety precautions, information pertaining to transportation of dangerous goods, rail car identification, and guidelines for first responders during the initial phase of transportation incidents that involve hazardous materials.



<https://www.tc.gc.ca/media/documents/tdg-eng/EnglishERGPdf.pdf>

Glossary

Areas of Potential Environmental Concern (APECs)

The area on, in, or under a phase one property where one or more contaminants are potentially present, as determined through the phase one environmental site assessment, including through, (a) identification of past or present uses on, in or under the phase one property, and (b) identification of potentially contaminating activity.

Contamination

The presence of a polluting or poisonous substance in the natural environment, making it impure.

Land Registry Office (LRO)

A government office where you can register and search official private property records using Ontario's land registration system.

Petroleum Hydrocarbons (PHCs)

Includes any mixture of hydrocarbons that are found in crude oil.

Phase One Environmental Site Assessment (P1ESA)

A reporting process that addresses the contaminated property issues that may be of concern to the parties involved in activities on a particular land. Phase One ESAs include gathering information about past and present site uses, a site inspection, a review of site environmental files, and the preparation of a report that identifies potential sources of contamination. This phase determines whether there is a need for further site investigation.

Phase Two Environmental Site Assessment (P2ESA)

A reporting process that addresses the contaminated property issues that may be of concern to the parties involved in activities on a particular land. Phase Two ESAs focus on gathering specific information about a property including: surface soil, groundwater, surface water, sediment, and plant or aquatic species sampling, storage tanks contents, PCB sampling, geophysical surveys, noise levels and radiation, then using models to evaluate potential



contamination. This phase determines whether there is a need for a comprehensive remediation work plan.

Polychlorinated Biphenyls (PCBs)

Any class of human-made organic chemicals consisting of carbon, hydrogen, and chlorine atoms, which range in consistency from an oil to a waxy solid. They are commonly used in electrical equipment, motor oils, adhesives, for thermal insulation, and in plastics.

Polycyclic Aromatic Hydrocarbons (PAHs)

A group of chemicals containing only carbons and hydrogens atoms that are often released from burning coal, oil, gasoline, trash, tobacco, wood and other organic substances.

Potentially Contaminating Activities (PCAs)

Activities industries, or land uses that are occurring or have historically occurred on specific land, or adjacent to specific land that may have cause pollutants to enter the environment resulting in contamination

Remediation

The process of removing pollutants or contaminants from environmental entities including soil, groundwater, sediment or surface water.

Toxicity Characteristic Leaching Procedure (TCLP)

An analytical procedure to determine the potential for a soil sample to leach through a landfill. This test is required prior to disposal of contaminated soil at Ontario landfill sites.



Air Quality and Emissions

Environmental Stewardship Guidance

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"Pollution in the air—we don't want that. Everything has to be left clean, the way it is. We have to respect that."

- Community Member

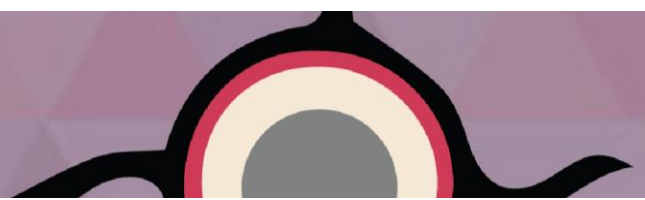
Our Stewardship Vision

Clean air is fundamental to protecting and promoting healthy people, lands and waters. Poor air quality has the potential to harm humans - particularly the most vulnerable young and older people - and natural ecosystems. We are committed to maintaining the clean, high air quality we now enjoy.

We are concerned about the ways human activities on our lands could affect air quality, such as increased traffic from the highway expansion, burning waste and plastics, and trucks idling at a future service centre. Poor air quality due to increased forest fire activity and the presence of mould in community buildings is also a concern for us.

This ESG presents strategies to address issues that could reduce air quality on Shawanaga Lands for present and future generations.

This ESG presents strategies for maintaining high air quality that benefits both present and future generations.





Community Objectives

We will work to implement strategies to protect the quality of our air for seven generations to come. Air is a life-giving source for the land, waters, and all living creatures and it is vital that we strive to protect it from damaging impacts for the generations to come.

Short-Term Objectives

- Establish more clear communication channels with the Ontario Ministry of Environment, Conservation, and Parks (MECP) and Environment and Climate Change Canada (ECCC) to foster more positive and collaborative relationships regarding air quality management on our lands.
- Report any air quality issues to the Ontario Ministry of Environment, Conservation, and Parks.
- Comply with applicable regulations and legislation for air pollution.
- Implement best management practices for air pollution management.
- Establish a no idling policy for vehicles on our lands.
- Create policies in our Environmental Protection law for household burning, including discouraging plastics burning.
- Establish collaborative partnerships to protect air quality. This could include partnerships with construction companies and other industry working in our Traditional Territory in developing strategies to minimize the release of air contaminants.
- Educate members and generate awareness on air quality issues and management strategies with a focus on idling and open-air burning. Hold outreach sessions with members to highlight the health and environmental impacts of idling and burning of plastics and methods for disposing of waste properly.

Long Term Objectives

- Take on a larger role in air quality regulation through collaboration and partnerships with MECP and ECCC.





- Measure and record baseline data related to air quality that builds and expands on the measurement work that has been conducted by government agencies.
- Utilize data and resources from existing regional air quality monitoring stations (MECP – Parry Sound Monitoring Station, MECP -Dorset Monitoring Station, MECP – North Bay Monitoring Stations and MECP – Sudbury Monitoring Station).
- Identify major air contaminant sources and develop accompanying monitoring and mitigation plans.
- Create and implement a process for managing air emissions from new development.
- Develop an environmental monitoring program, that includes air quality monitoring through a partnership between Shawanaga First Nation, MECP, and ECCC.
- Institute a law that regulates the burning of plastics and wastes on Shawanaga First Nation lands.

Stewardship Guidance and Strategies

To meet our short and long-term objectives for promoting air quality in our community, we use the following **stewardship guidance and strategies** that are built on regulations, guidelines and best management practices.

Strategy 1: Develop Partnerships with Relevant Government Agencies

We will establish partnerships with MECP and ECCC to foster a constructive and collaborative approach to air quality monitoring and management, including any unplanned air contaminant releases on Shawanaga lands. A strong relationship with government agencies allows us to draw upon existing resources and expertise of agencies in air quality monitoring and management. Due to the highly complex and expensive nature of air quality monitoring, we will work in collaboration with government agencies who specialize in local/regional air monitoring. Encouraging government agencies to locate an air monitoring station on our lands will allow us access to data from the air monitoring station, if an appropriate data sharing agreement is established. By participating in regional government monitoring efforts, we are more likely to affect change in the best interest of our air quality.





Strategy 2: Participate in Regional Air Quality Monitoring Activities

The Shawanaga First Nation Lands and Resources Department will undertake an annual review of MECP, ECCC, and proponent air quality monitoring reports. This annual review will include a regulatory compliance assessment and determining if mitigation plans are being followed adequately. Any issues that arise from our annual review will be addressed jointly with proponents and regulators.

Strategy 3: Establish Oversight Process for Future Developments on SFN Lands

To ensure air emissions from future developments on our lands are properly managed and mitigated, we will develop Best Management Practice standards for diesel equipment emissions, burning of waste, odour emissions and other air emissions that could be associated with future developments on our lands. These standards will be incorporated into environmental and/or land-use permits we issue for development on our lands. These permits will be developed by the Lands and Resources Department and approved by the Band Administration via Chief and Council. For more information, see the Land Development ESG.

Strategy 4: Let's Care About Air – An Outreach and Education Campaign on Air Quality

A key component to protecting and promoting healthy air quality is educating our members on the various air quality related issues at a general level before delving into specific air quality issues in depth. This outreach and education campaign will touch on issues including smog, climate change, vehicle emissions, air pollutants from development, and particulate matter. This campaign will also integrate and explore Indigenous Knowledge for promoting healthy air quality on our lands. The education and outreach program promotes strategies to reduce air pollution on the reserve and educates communities members about regional mitigation strategies. We will develop community air quality awareness through





educational and outreach programs, including but not limited to the following topics:

- anti-idling policy
- backyard burning
- proper waste disposal
- reducing household energy use
- burning hazardous materials
- greenhouse gas reduction targets

Strategy 5: Reducing Vehicle Emissions – Anti-Idling Awareness Campaign and Policy

Air emissions from idling vehicles, including idling trucks, is a growing air quality concern and is a significant contributor to air emissions in Ontario. There are a number of practices that would enable the reduction in vehicle emissions. Two promising practices that we will implement are a community awareness campaign focused on reducing vehicle idling and the implementation of an anti-idling policy. The Shawanaga First Nation Lands and Resources Department will work with the Education Department and Healing Centre to develop an education and awareness building campaign on the environmental and health impacts of vehicle idling. Following the education and awareness campaign, the Lands and Resources Department will work with community members on developing and implementing an anti-idling policy.

Strategy 6: Reducing Plastic and Waste Burning: Awareness Campaign and Law

Air emissions from the burning of wastes, including the burning of plastics is a growing air quality concern for us. Three promising practices that we will implement to reduce the burning of wastes and plastics are a community awareness campaign focused on the environmental and health impacts of burning plastics and wastes, establishing waste management infrastructure to promote proper disposal and diversion, and the implementation of a waste disposal law. The Shawanaga First Nation Lands and Resources Department will work with the Education Department and Healing Centre to develop an education and awareness building campaign on the environmental and health impacts of burning wastes and plastics.





Following the education and awareness campaign, the Lands and Resources Department will work with community members on developing and implementing an Environmental Protection law that includes policies for the prevention of waste and plastics burning.

Strategy 7: Develop Shawanaga First Nation's Baseline Air Quality Data Set

The Shawanaga First Nation Air Quality Champion will work alongside the Lands and Resources Department to utilize data from MECP and ECCC to determine the air quality baseline on our lands. The air quality champion will use the following resources as starting points:

<http://airqualityontario.com/aqhi/search.php>

<https://pollution-waste.canada.ca/national-release-inventory/archives/index.cfm?lang=en>

Strategy 8: Develop and Implement a Shawanaga First Nation Emergency Response Plan

One of the key steps for being well equipped to respond to air quality issues is the development and when required, following of an emergency response procedure. This procedure includes the following as a starting point:

In the event that a Shawanaga member notices any potential air quality issue, they must immediately contact both the Lands and Resources Department (705-366-2526 ext 261) and the MECP Spills Action Centre Hotline: 1-800-268-6060

Air quality issues can include visible smoke or smog in the air, chemical or other nuisance odours or large releases of contaminants or smoke from commercial or industrial operations, construction, vehicles, residential dwellings and other sources.

The person who identifies the air quality issue will record the date and time, and the source of the air pollution. This information is then provided to the Spills Action Centre.





Once notified, the Spills Action Centre will make the determination on next steps, including air sampling, evacuation, suspension of permits, etc. The closest regional MECP office with air sampling capabilities is located in Sudbury. More advanced MECP monitoring equipment, such as the Trace Atmospheric Gas Analyzer (TAGA), is available in Toronto. The TAGA is a mobile air science laboratory that can detect a wide range of air contaminants in real time.

Air Quality Incident Procedure

- 1) Identify potential air quality issues (i.e., chemical smell, visible smoke, fuel spill or smog, etc.).
- 2) Move away from the potential source and stay inside, if possible.
- 3) **Call the MECP Spills Action Centre at 1-800-268-6060.**
- 4) If the issue is **very** serious (large fuel spill, fire, etc.), call the OPP at 911.
- 5) Wait for direction from local government authorities.
- 6) If the issue is serious, notify community members to stay indoors.

Strategy 9: Develop and implement indoor air quality sampling program

To ensure indoor air quality concerns are addressed, including mold in community buildings, our air quality champion will work alongside the MECP, and qualified persons of our choosing to design and deliver an indoor air quality sampling program. The sampling program will include bi-annual sampling of community buildings and an option for community members to opt into household indoor air sampling on an annual basis. Based on the findings from the sampling, the indoor air quality sampling team will develop an action plan on how to address indoor air quality issues as they arise.





Strategy 10: Monitoring and Mitigating Air Quality Impacts from Future Highway Corridor Expansion

As the highway corridor expands on our lands, it will be important to monitor, manage, and mitigate the air quality impacts from expanded traffic in the area. This will require ongoing monitoring activities and factoring the highway expansion into key planning decisions. For example, any new residential areas and community institutions should be sited away from the highway corridor.

Monitoring and Enforcement

As citizens of Shawanaga First Nation, we are responsible for helping to protect our lands and waters, and air from pollution. It is our responsibility to report anything we see that might affect our air quality, such as changes on the land, forest fires, spills or other potentially harmful activities.

Shawanaga First Nation will designate a contact person for air quality issues. This person will be responsible for contacting the local provincial spill response authority at the MECP Spills Action Centre and will act as a "hotline" for local air quality issues and ensures that any potential issues are reported to MECP (and potentially sampled). The designated contact person will be available at all times and has access to local, on-call emergency responders, if necessary.

Community Initiatives

Idle-Free Zone Campaign

This campaign makes use of posters, information on the Shawanaga website and in community newsletters, and announcements during community meetings and events to raise awareness about the air quality and climate change impacts associated with idling.

Green Transportation Campaign

This campaign makes use of posters, information on our website and in community newsletters, and announcements during community meetings and events to raise awareness about the air quality and climate benefits that can be achieved through carpooling, cycling and walking instead of driving. The school, band office, Healing Centre, and local businesses will be provided with log sheets for students and staff to log whenever they cycle or walk to school/work. At the end of each month prizes will be awarded to those who carpooled, cycled and walked the most. This will include a youth-focused challenges such as



step competition and bike decorating contests to encourage walking and biking as a way for young people to move around.

Flick Off the Lights: Energy Conservation Campaign

Our community energy conservation campaign will include a number of activities and initiatives to raise awareness about the environmental benefits of conserving energy and to provide families with tools, tips and materials to help make their homes more energy efficient. Initiatives include increasing the air tightness of homes, providing rebates on purchases on CFL lightbulbs, installation of programmable thermostats and more. A poster campaign is also used to raise awareness about easy behaviour changes to help reduce energy use.

Resources

IdleBox Toolkit for Idling Reduction Projects. U.S. Department of Energy. This website provides links to templates that are useful for anti-idling outreach and education programs, including driver pledge forms, stickers, signs and more.

<https://cleancities.energy.gov/technical-assistance/idlebox/>

BC Climate Action Toolkit. Green Communities Committee and Fraser Basin Council. This online climate action toolkit provides a list of links to community anti-idling policies and by-laws.

<http://www.toolkit.bc.ca/tool/idle-reduction-by-law>

Anti-Idling Toolkit for Municipalities. Union of Nova Scotia Municipalities, 2011. This succinct toolkit provides useful information on creating a community engagement campaign for anti-idling and also on developing an anti-idling by-law. [http://clean.ns.ca%2Fwp-content%2Fuploads%2F2011%2F03%2FClean Idle-Free-Toolkit-for-Municipalities.compressed.pdf](http://clean.ns.ca%2Fwp-content%2Fuploads%2F2011%2F03%2FClean%20Idle-Free-Toolkit-for-Municipalities.compressed.pdf)

The Commuter Challenge. This website provides information and resources to support workplaces and communities in participating in “Commuter Challenge” – an annual week-long event that promotes walking, cycling and carpooling to work instead of driving.

<https://commuterchallenge.ca/>

The Commuter Challenge Workplace Coordinator Guide. This Guide provides information to help workplaces organize a commuter challenge for their employees. <https://commuterchallenge.ca/get-your-workplace-involved/>





Implementing an Energy Efficiency Awareness Program. Natural Resources Canada. This guide provides useful information for developing and implementing energy conservation programs in workplaces and communities.

https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/oeefiles/pdf/publications/commercial/Awareness_Program_e.pdf

Kwadacha Nation Energy Conservation Program: Community engagement and policy development report. Quality Program Services, 2014. This report provides insight into the workings of a First Nation community energy conservation program.

http://www.fraserbasin.bc.ca/Library/CCAQ_First_Nations_EnergySave/kwadacha_phase_3_report_march_2014_web.pdf

Model Municipal Code of Practice for Open Air Burning in Ontario. Clean Air Partnership and Ministry of the Environment, 2010. This model code provides information about what municipalities can do to minimize open air burning and reduce the impacts associated with it. The appendices include sample open air burning awareness pamphlets, as well as a case study on an awareness campaign to reduce open air burning.

http://www.simcoemuskohealth.org/docs/default-source/jfy-communities/code_for_open_air_burning

Regulations and Best Practices

Regulations for Protecting Air Quality

Environmental Protection Act – Ontario Regulation 419/05 Air Pollution — Local Air Quality (Province of Ontario). Ontario Regulation 419/05 (O.Reg 419) regulates contaminants released to air by various sources, including industrial and commercial facilities, to limit exposure to substances that can affect human health and the environment. O.Reg 419 specifies maximum concentration standards for a wide array of air pollutants based on different time (averaging) periods (1 hour, 8 hour, 24 hour). Any business or operation in Ontario who releases air contaminants of any kind must comply with this regulation by keeping air contaminant release below legal standards. Schedule 2 and 3 of O.Reg 419 lay out the air quality standards in Ontario for provincially regulated air contaminants.

<https://www.ontario.ca/laws/regulation/050419>

<https://www.ontario.ca/laws/statute/90e19>





Canada-wide Air Quality Management System (AQMS) – Canadian Council of Ministers of the Environment (CCME). The Canadian Council of Ministers of the Environment (CCME) implemented a Canada-wide Air Quality Management System (AQMS). AQMS is a comprehensive approach for reducing air pollution in Canada through a collaborative approach between the Federal government, Provincial government, industry and other stakeholders. The Provinces remain in control of implementing their own legislation around air quality but CCME helps to guide that legislation. Canadian Ambient Air Quality Standards (CAAQS) are the driver for air quality management across the country. Standards have been developed for sulphur dioxide and fine particulate matter (PM2.5) and ozone.
<http://www.ccme.ca/en/resources/air/aqms.html>

Canadian Environmental Protection Act (Government of Canada). The Canadian Environmental Protection Act (CEPA 1999) is the foundation of Canada's environmental legislation aimed at preventing pollution and protecting the environment and human health. The Act itself does not include specific air quality standards, but does specify control mechanisms to regulate the release of air contaminants by adhering to Provincial Standards and Federal guidelines (i.e., O.Reg 419, CCME AQMS). <http://laws-lois.justice.gc.ca/eng/acts/c-15.31/>

Regulations for Air Quality Data and Emergency Response

The following resources provide key information on air contaminant incident reporting and current and historical air quality data. Using these resources we can report air quality issues and obtain the necessary support from MECP. We can also check current air quality conditions and utilize historical data to form a baseline for air quality in the reserve.

Spills Action Centre (SAC). The MECP Spills Action Centre handles public reports of spills, air contaminant releases, adverse drinking water results and other environmental concerns. The Spills Action centre operates a 24-hour, province-wide, toll-free telephone reporting service. Environmental officers who receive the calls at the Spills Action Centre can provide advice and information related to environmental concerns. They can also activate a field response and emergency response when required.

MOECC Spills Action Centre: 1-800-268-6060
<https://www.ontario.ca/page/report-spill>





Air Quality Health Index (AQHI) – (Environment and Climate Change Canada & Ontario Ministry of Environment, Conservation and Parks). The Air Quality Health Index or "AQHI" is a scale designed by the Federal and Provincial governments to help you understand what the air quality around you means to your health. It is a health protection tool that is designed to help you make decisions to protect your health by limiting short-term exposure to air pollution and adjusting your activity levels during increased levels of air pollution. It also provides advice on how you can improve the quality of the air you breathe. This index pays particular attention to people who are sensitive to air pollution and provides them with advice on how to protect their health during air quality levels associated with low, moderate, high and very high health risks.

The Air Quality Health Index is a scale that lists a number from 1 to 10+ to indicate the level of health risk associated with air quality.

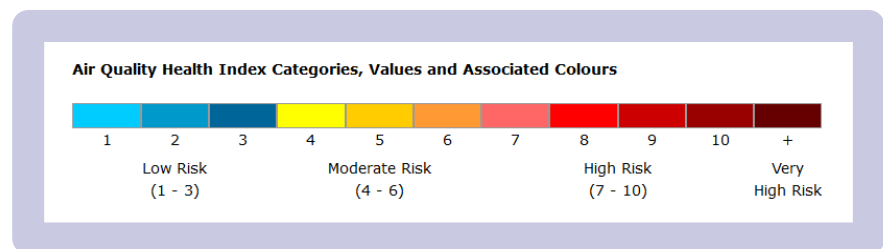


Figure 1: Air Quality Health Index Values

For Real-time AQHI Data from Parry Sound and Sudbury:

http://airqualityontario.com/aqhi/locations.php?text_only=1

For Historical AQHI Data:

<http://airqualityontario.com/aqhi/search.php>

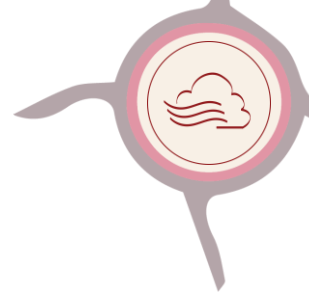
The closest continuous ambient air monitoring stations to Shawanaga are as follows:

- 1) Parry Sound MECP Air Monitoring Station

Location: 7 Bay St., Parry Sound, Ontario

Pollutants Measured: Ozone (O3), Particulate Matter (PM2.5), Nitrogen Dioxide (NO2)





2) Sudbury MECP Air Monitoring Station

Location: 155 Elm St. Sudbury, Ontario
Pollutants Measured: Sulphur Dioxide (SO₂), Ozone (O₃),
Particulate Matter (PM_{2.5}), Nitrogen Dioxide (NO₂)

3) Dorset MECP Air Monitoring Stations

Location: 1026 Bellwood Acres Rd. Dorset, Ontario
Pollutants: Ozone (O₃), Particulate Matter (PM_{2.5})

4) North Bay MECP Air Monitoring Station

Location: Chippewa St W., Department of National Defence
Pollutants: Ozone (O₃), Particulate Matter (PM_{2.5}), Nitrogen
Dioxide (NO₂)

National Air Pollution Surveillance Program (NAPS) (Environment and Climate Change Canada). The goal of the National Air Pollution Surveillance (NAPS) program is to provide accurate and long-term air quality data of a uniform standard across Canada. NAPS was established in 1969 to monitor and assess the quality of ambient (outdoor) air in the populated regions of Canada. NAPS is managed using a cooperative agreement among the provinces, territories and some municipal governments. NAPS collects data from 286 monitoring sites in 203 communities across Canada in every province and territory.

NAPS plays an important role in the monitoring and assessment of Canadian ambient air through research and providing information related to air quality data collection, trends, impacts and strategies. <http://www.ec.gc.ca/rnsps/naps/Default.asp?lang=En&n=5C0D33CF-1>

National Pollutant Release Inventory. The National Pollutant Release Inventory (NPRI) is Canada's legislated, publicly accessible inventory of pollutant releases (to air, water and land). The Government of Canada requires all polluters to report their pollution levels to the NPRI as a way to track facilities in Canada. The NPRI is a key resource for identifying pollution prevention priorities, supporting the assessment and risk management of chemicals, and air quality modelling, helping develop targeted regulations for reducing





releases of toxic substances and air pollutants, encouraging actions to reduce the release of pollutants into the environment, and improving public understanding.

In 2015, 7284 facilities reported to the NPRI on 343 listed substances (ECCC -NPRI, 2016).

<http://www.ec.gc.ca/inrpnpri/default.asp?lang=En&n=4A577BB9-1>

Best Management Practices

The most fundamental best practice in relation to air quality is that all activities on our lands maintain compliance with applicable MECP and Environment and Climate Change Canada regulations, permits, authorizations, conditions, and agreements with respect to air quality management/protection.

The following technical documents will be used in conjunction with the applicable regulations and guidelines to implement strategies that limit air pollution on SFN lands.

Air quality guideline for particulate matter, ozone, nitrogen dioxide and sulfur dioxide - World Health Organization (2005). The World Health Organization (WHO) air quality guidelines are designed to offer guidance in reducing the health impacts of air pollution based on a review of the accumulated scientific evidence and guideline values for the most common air pollutants. These guidelines are applicable across all WHO regions and inform policy-makers considering various options for air quality management in different parts of the world about the targets for air quality.

http://apps.who.int/iris/bitstream/10665/69477/1/WHO_SDE_PHE_OEH_06.02_eng.pdf

Best Practices for Reducing Near-Road Pollution Exposure at Schools - United States Environmental Protection Agency (2015). This best practice guide highlights strategies that communities can use to reduce traffic-related pollution exposure in areas located downwind from heavily traveled roadways or highways. This guide focuses on schools rather than entire communities, however, many of these best practices apply to Shawanaga, given their close proximity to a major highway. https://www.epa.gov/sites/production/files/2015-10/documents/ochp_2015_near_road_pollution_booklet_v16_508.pdf





Controlling Dust on Construction Sites - New South Wales Environmental Protection Authority (2003). This best practice guide highlights methods for controlling dust (particulate matter) on construction sites. The guide outlines the impacts of dust exposure as well as control methods for construction companies to follow that will help to reduce particulate matter emissions from construction activities on the reserve.

http://old.parracity.nsw.gov.au/_data/assets/pdf_file/0019/4294/NoDustBooklet.pdf

Environmental Code of Practice for Residential Wood Burning Appliances – CCME (2012). The Code of Practice for Residential Wood Burning Appliances was developed by CCME to help reduce air pollution associated with burning wood for residential heating. The goal of the Code is to provide readers with tools and information to reduce air pollution associated with wood burning.

http://www.ccme.ca/files/Resources/air/wood_burning/pn_1479_wood_burning_code_eng.pdf

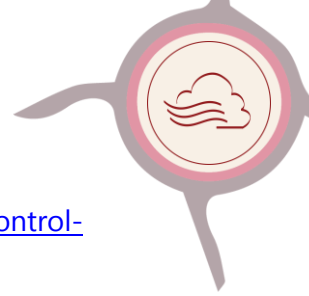
Environmental Code of Practice for Metal Mines – CCME – Section 4.4.6 Management of Air Quality Issues (2009). The code of practice outlines the major air quality concerns related to mining, though they can also be applied to other construction activities. The Code of Practice goes on to describe control methods to reduce air pollution as well as monitoring techniques for measuring air contaminant levels.

Ontario Ambient Air Quality Criteria – Ontario Ministry of Environment, Conservation, and Parks (2012). This document provides a list of all air contaminants regulated in Ontario including their maximum allowable concentrations, averaging times and the type of exposure risk (i.e., health, odour, particulate, etc.).

<http://www.airqualityontario.com/downloads/AmbientAirQualityCriteria.pdf>

Control Strategies to Achieve Air Pollution Reduction - United States Environmental Protection Agency (2016). This website provides links to various methods that can be used to control or limit air pollution associated with various activities. A control strategy related to air quality is a set of specific techniques and measures identified and implemented to achieve reductions in air pollution to attain an air quality standard or goal.





<https://www.epa.gov/air-quality-management-process/control-strategies-achieve-air-pollution-reduction>.

Guidance Document for Canadian Jurisdictions on Open-Air Burning – CCME (2016). This Guidance Document was developed by the CCME to assist governments, municipalities and Indigenous communities with their response to air quality problems associated with open-air burning. The Guidance Document may be considered as a voluntary or regulatory tool to address air quality issues related to smoke on the reserve. The tools and information in the Guidance Document have been designed to enhance local air management programs by providing best practices to help ensure open-air burning activities are conducted in a responsible manner, thereby minimizing potential adverse human health and environmental impacts. The document presents a number of best management practices that have been derived from municipal, provincial, state and federal regulations from across Canada and the US. The document also includes a “Model By-Law for Open-Air Burning” which could be utilized by SFN as a model to draft a similar regulation that would help to regulate the burning of waste on reserve lands.

http://www.ccme.ca/files/Resources/air/wood_burning/pn_1548_CCM E%20Guidance%20Document%20on%20Open%20Air%20Burning%20FINAL.pdf

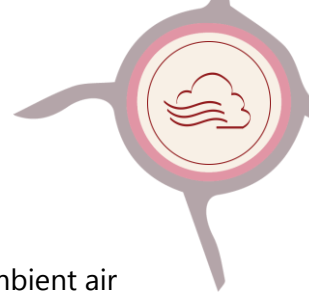
Government of Nunavut Environmental Guideline for the Burning and Incineration of Solid Waste. This guidance document was developed by the Government of Nunavut’s Department of Environment to provide communities with guidelines on how to safely and effectively incinerate waste. The guide is not intended to promote the burning of waste, rather it outlines safe means of doing so when no other waste management options are available. As a best management practice, the incineration of waste should be treated as a last resort when other methods are unavailable or have failed and should be regarded as a short-term solution not a long-term consistent practice. https://www.gov.nu.ca/sites/default/files/guideline_-_burning_and_incineration_of_solid_waste_2012.pdf

Glossary

Contaminants

Particles, liquids or gases in the air which have harmful chemical properties that affect our health. Examples of airborne contaminants include sulfur oxides, nitrogen oxides, carbon monoxide, volatile organic compounds (VOCs) and particulate matter.





Emissions

Contaminants that are released or discharged into the ambient air from any source (e.g., vehicle idling, industrial activities).

Fine Particulate Matter (PM_{2.5})

A mixture of solid particles and liquid droplets in the air which are 2.5 microns or less in diameter. These can penetrate the respiratory system further than other larger particles and subsequently present numerous health threats.

Greenhouse Gases (GHGs)

Atmospheric gasses such as carbon dioxide, methane, chlorofluorocarbons, nitrous oxide, ozone and water vapour that slow the passage of heat through the earth's atmosphere. While some greenhouse gases are naturally occurring, there are serious concerns today about how increased emissions of these gases are causing adverse changes to our climate systems.

Idling

The operation of the engine of a vehicle while the vehicle is not in motion. Idling is bad for both the environment, as it is an unnecessary source of carbon monoxide emissions, and your pocketbook, as it is a waste of gas and money.

Smog

A combination of smoke and other particulates such as ozone, hydrocarbons, nitrogen oxides which may result in a murky brown haze in the air that causes adverse health effects.



Cultural Heritage and Archaeology

Environmental Stewardship Guidance

Contents

- Our Stewardship Vision**
- Community Objectives**
- Stewardship Guidance and Strategies**
- Monitoring and Enforcement**
- Community Initiatives**
- Regulations and Best Practices**
- Glossary**

"There's a place out the bay called Turtle Rock. That's very special to the natives. It's shaped just like a turtle. Every time we go there there's a tobacco offering, we say a prayer. It's a sacred place."

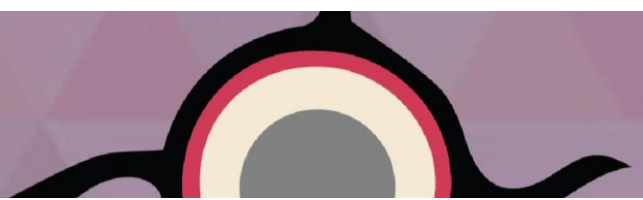
– **Community Elder**

Our Stewardship Vision

With the earliest archaeological evidence in our traditional territory dating back at least 10,000 years, the archaeological and cultural heritage record of our continued presence in this area is extensive. The materials left behind by our ancestors are sacred, non-renewable resources. While we are aware of numerous sites of cultural heritage significance, there are areas that have yet to be explored archaeologically. These areas, as well as other areas of cultural heritage importance, have the potential to be affected by any form of land disturbance, such as road building, excavation, and natural resource development. The protection of archaeological and cultural heritage areas and materials is consequently of great significance.

We are committed to conserving archaeological and cultural heritage resources as well as implementing strategies that will promote these goals, as laid out in this ESG.

Indigenous peoples have the right to maintain and strengthen their distinctive spiritual relationship with their traditionally owned or otherwise occupied and used lands, territories, waters and coastal seas and other resources and to uphold their responsibilities to future generations in this regard.





Community Objectives

We are committed to conserving archaeological and cultural heritage resources, as well as implementing strategies that will result in the promotion of these goals.

Short-Term Objectives

- Develop and implement community-specific legislation to protect archaeological and cultural heritage resources from land and resource development.
- Develop an inventory of all known archaeological and cultural heritage sites and resources within our traditional territory.
- Develop collaborative partnerships to protect our cultural heritage resources.
- Identify a community coordinator of archaeological services.
- Develop a relationship with an archaeologist holding a professional license who represents our rights and interests and has training capabilities.
- Implement a cultural heritage protection policy that includes guidelines for how archaeological activities will be carried out on our lands.

Long Term Objectives

- Become a leader of all archaeological and cultural heritage work within our traditional territory.
- Develop a comprehensive archaeology and cultural heritage unit with trained professionals and monitors.
- Develop a designated Cultural Heritage Centre to store all artifacts.
- Develop exhibits to display artifacts as well as cultural heritage training programs.
- Repatriate artifacts to our community.
- Develop culturally-sensitive educational materials related to archaeology and cultural heritage.



Stewardship Guidance and Strategies

To meet our short and long-term objectives for cultural heritage and archaeology in our community, we use the following stewardship guidance and strategies that are built on regulations, guidelines and best management practices.

Strategy 1: Conduct an Archaeological Assessment of Shawanaga First Nation Lands

An archaeological assessment is conducted to determine the archaeological potential of a parcel of land prior to development occurring on that land. The archaeological assessment will be completed as a component of the Environmental Assessment that must occur prior to development and will be included in our Environmental Assessment law. Our archaeological assessment will consist of 4 stages; the results of the Stage 1 assessment of our reserve lands will determine if Stage 2-4 (more detailed) assessments would be required for the protection of cultural heritage resources. The archaeological assessment of our lands will determine:

- The location of any archaeological resources on lands being developed;
- The degree of the cultural heritage value of any archaeological resources found;
- The most appropriate strategies for conserving and protecting areas of cultural significance prior to land development taking place;
- The most appropriate mitigation methods of development impacts where required or warranted.

The archaeological assessment of our lands will consist of the following steps:

Stage 1: Background Study and Property Inspection

In Stage 1 of the assessment, the archaeological potential of the land parcel being assessed is determined. This potential is determined by reviewing of geographic, land use, and historical data pertaining to the land parcel and surrounding area. Upon the completion of the background study, which is primarily a desk-top research exercise, an inspection of the land parcel is conducted by the archaeologist conducting the assessment. During an inspection, the current condition of the land is assessed. Following the completion of Stage



1, if areas of archaeological potential are identified, the assessment would advance to Stage 2.

Stage 2: Property Assessment

In Stage 2 of the archaeological assessment, a field survey of the land parcel is conducted to identify and locate any archaeological or cultural heritage resources on the land. The method for assessing the property is determined on its current state and use of that land parcel. More specifically the following methods are applied:

- Ploughed Field: Surveying the land by foot and examining the surface for artifacts.
- Forests, overgrown pastures or areas that cannot be ploughed: Parallel rows of small holes called test pits are dug all the way down to sterile subsoil at consistent intervals and the soil is sifted to search for artifacts.

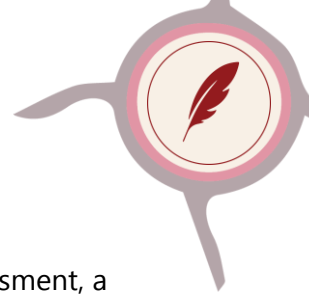
If resources of cultural heritage value are located during this stage, the assessment would move to Stage 3.

Stage 3: Site-Specific Assessment

In Stage 3 of the archaeological assessment, all sites of cultural heritage value identified in the assessment thus far undergo a site-specific assessment. In this stage, the size and cultural heritage value of the site is evaluated and when necessary recommendations for Stage 4 mitigation strategies are made. This Stage of the assessment includes additional desktop research and fieldwork. In terms of fieldwork, the standard practice at this stage is to expand from test pits to test units. Test units are 1 m by 1 m squares across the site where cultural heritage potential has been identified. Depending on the results of this stage, the assessment may move into Stage 4 of the assessment.

Stage 4: Mitigation of Development Impacts

In Stage 4 of the archaeological assessment, conservation and mitigation strategies are developed and implemented for the long-term protection of areas of cultural heritage value within our lands. These long-term protection plans are put in place to ensure valuable heritage resources are protected while still allowing for development and land use changes to occur, where appropriate.



Long-term Avoidance and Protection Strategy

Following Stages 1 through 4 of the archaeological assessment, a long-term avoidance and protection strategy is developed to ensure protection measures are put in place for areas of cultural significance within our lands. This protection strategy includes a number of zoning amendments and restrictions that prevent areas of cultural significance from being damaged by future development and land use changes. The Ontario Heritage Tool-Kit provides guidance on what measures this protection plan/ strategy could include. These designations and protection strategies can also be developed under and tailored for our Land Code.

http://www.mtc.gov.on.ca/en/heritage/heritage_toolkit.shtml

Excavation (if applicable)

If a site of cultural heritage value, identified during an archaeological assessment, cannot be protected in situ (in place), then excavation of the site is required. During excavation, the artifact(s) are documented through maps, drawings, measurement, and photographing. Subsequently for off-reserve artifacts it is held in trust by the province of Ontario and for on-reserve artifacts it would be held in a location advised by the Lands and Resources Department and decided upon by Chief and Council (unless stated otherwise in Shawanaga's Archaeology Guidelines).

Report to the Lands and Resources Department

Upon the completion of the archaeological assessment, a report is held at our Lands and Resources Department to document that the assessment has occurred and verify that all of the guidelines have been properly fulfilled in the conduct of the assessment.

Strategy 2: Create a Shawanaga First Nation Cultural Heritage Policy

A Shawanaga First Nation Cultural Heritage Policy would set out applicable guidelines and best management practices that would enhance our capability and ability to regulate and protect the cultural heritage and archaeological resources on our lands. This policy could inevitably be included in our Environmental Assessment law. The policy will include guidelines that will inform how proponents and municipalities engage with us on archaeological matters within our Traditional Territory, as well as inform our own internal decision making around development and land use changes. Our cultural



heritage policy will include enhanced standards and guidelines directed towards the conduct of archaeologists on our lands. This includes establishing a Chance Find Protocol in instances where an archaeological artifact is unearthed on our lands.

Strategy 3: Develop a Shawanaga First Nation Archaeological Services Coordinator Role

As part of building our internal capacity to regulate and protect cultural heritage resources on our lands, we will either hire an archaeological services coordinator or integrate archaeological services into an existing role based in our Lands and Resources Department. This person will be the direct point of contact for all archaeologists conducting work on our lands, including work being carried out by proponents and nearby municipalities. The coordinator will also be responsible for overseeing the implementation of our cultural heritage policy, leading the development of our cultural heritage inventory, developing our archaeological services unit, and involved in all matters pertaining to archaeology and cultural heritage on our lands.

Strategy 4: Conduct an Inventory of Archaeological and Cultural Heritage Resources on SFN Lands

Our archaeological services coordinator will work with the Lands and Resources Department to store an inventory of all sites of cultural heritage significance. This inventory includes all applicable assessment reports and accompanying data such as maps, aerial photographs, and site surveys. A duplicate back-up of the records inventory will be securely stored by the Lands Committee. This inventory is reviewed and updated on an annual basis and any new data is added to both sets of stored data.



Strategy 5: Develop an Archaeological Services Unit – Including SFN Cultural Heritage Guardians Program

An archaeological services unit and cultural heritage guardians program will ensure we have the capacity required to protect, regulate, and celebrate the cultural heritage resources on our lands. The development of the services unit and guardians program will include training of guardians to undertake field monitoring. The guardians will be coordinated and managed by the Archaeological Services Coordinator with support from the Lands and Resources Department. The archaeological unit will also establish partnership agreements that will enable the repatriation of artifacts back to Shawanaga First Nation to eventually be housed in the Shawanaga First Nation Heritage Centre.

Strategy 6: Create the Shawanaga First Nation Heritage Centre

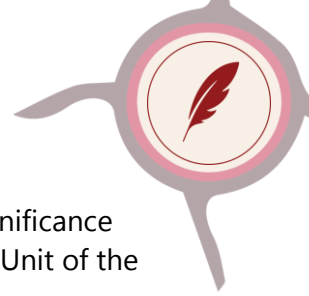
The Shawanaga First Nation Heritage Centre would be created as a space to house our repatriated artifacts. The space would be a place for community members to come to learn and celebrate our cultural heritage. The centre would run programs and tours open to community members and work with local schools to educate our youth about our cultural heritage and history of occupation on our lands. This centre would be led by our Archaeological Services Unit with the support of the Lands and Resources Department and collaboration with our Education Department.

Monitoring and Enforcement

As citizens of Shawanaga First Nation, we are responsible for helping to protect our lands and waters, which are closely connected to our irreplaceable cultural heritage resources. It is our responsibility to report anything we see that might affect cultural heritage areas or resources, such as changes on the land, spills or potentially harmful activities.

Monitoring Program

Once the program is established, cultural heritage guardians and our Archaeological Services coordinator, under the guidance of an archaeologist holding a professional license, will be responsible for carrying out the cultural heritage and archaeological resources monitoring programs. Should they identify an issue with cultural



heritage, archaeological resources or areas of cultural significance they will immediately inform the Archaeological Services Unit of the Lands and Resources Department.

Enforcement

Enforcement of the Environmental Assessment law will be the responsibility of the Lands and Resources Department until the establishment of the archaeological services unit.



Community Initiatives

Youth Engagement Sessions

A series of workshop sessions that would be tailored for different age groups/grades to explain and understand the areas of cultural significance. The workshops and activities are run by knowledge keepers, elders and professional designated persons (i.e., outside resources—OMNRF). These workshops will aim to provide students with interesting information about their own cultural heritage, and enhance their interest in archaeology, cultural teachings, and areas of cultural significance. Ideally this will inspire young people to ask our Elders more questions and to continue learning about how to maintain and protect our cultural heritage.

Archaeology Field Program

Youth in the community will participate in hands-on training in archaeological field digs within our traditional territory. Youth participants will learn about their own cultural heritage and develop lasting memories of being in culturally significant areas on our lands. The aim is to foster a sense of connection to these places and a desire to protect them.

Cultural Heritage Resource Stewardship Monitoring Program

Volunteers will take shifts traveling to and checking in on cultural heritage sites, reporting the state of the site to the Lands and Resources Department. Volunteers record any observed changes, or potential threats to the conservation of the site. Volunteers may be land users who are traveling near the site anyway and are willing to check in on the site. Some volunteers may travel to sites for the sole purpose of monitoring and reporting. All volunteers receive training on how to record and report on the state of cultural heritage sites.



Cultural Heritage Site Reporting Program

This reporting system will enable our community members to report observations of cultural heritage sites to our Lands and Resources Department, ideally accompanied by a GPS point. Through community participation, sites that were not previously identified or mapped can be pinpointed on our cultural heritage map. In cases where observers were not able to record a GPS point, someone may be sent out to the general location with a GPS to find the site and record its exact location.

Cultural Heritage Site Visits and Celebrations

These events will involve community members traveling together to areas of cultural significance, to pay respects to the site and celebrate its importance. Elders share their memories and stories associated with these sites, passing the knowledge down to younger generations. Community members learn about the history of the site, and celebrate its importance through ceremony, music and shared food. These events will help community members learn more about and develop deeper connections with our areas of cultural significance, ideally enhancing their desire and commitment to protect them.

Volunteer Program at the future Shawanaga Cultural Heritage Centre

High school students can gain volunteer hours by assisting with duties at our Heritage Centre. This includes working on displays, developing and running programs for children, and conducting research related to archaeology and our cultural heritage (including interviews with Elders). Through learning about our cultural heritage, these student volunteers will ideally begin gaining the knowledge needed to make informed decisions about managing and protecting areas of cultural significance in the future.

Regulations and Best Practices

The following Ontario provincial and federal laws and regulations apply to regulating cultural heritage and archaeological resources on our lands:

Federal Acts and Regulations

Canadian Environmental Assessment Act (2012). The purpose of this act is to protect components of the environment that are within the legislative authority of the Government of Canada from significant



effects caused by a designated project under the act. In addition, the act also aims to promote communication and cooperation with Indigenous peoples regarding environmental assessment. In terms of cultural heritage protection, section 5(1)c and 5(2)b seek to ensure environmental effects that impact areas of cultural significance are accounted and subsequently mitigated in the project planning process.

Prescribed Information for the Description of a Designated Project Regulations under the Canadian Environmental Assessment Act (2012). The purpose of this regulation is to prescribe what information is required for designated projects requiring an environmental assessment under CEAA 2012. In regards to areas of cultural heritage and archaeological significance the regulations require a description of changes to the environment – including information on the effects to Indigenous Peoples through any changes and effects to “health and socioeconomic conditions, **physical and cultural heritage**, the current use of lands and resources for traditional purposes or **on any structure, site or thing that is of historical, archaeological, paleontological or architectural significance**” as outlined in Article 19 of the regulation.

Parks Canada Agency Act (1998). The purpose of this act is to provide legislative guidance to the Parks Canada Agency, the agency responsible for providing oversight to National Parks, National Historic sites, and related heritage areas and areas of historic significance. In regard to cultural heritage and archaeology, the act deems it to be of the national interest to protect areas of cultural heritage within national parks, national historic sites, national marine conservation areas and related heritage areas. In addition, the act seeks “to commemorate places, people and events of national historic significance, including Canada’s rich and ongoing aboriginal traditions.” This includes the development of heritage protection programs in these areas.

Museums Act (1990). The purpose of this act is to provide legislative guidance and oversight on the establishment of museums in Canada – including the role of museums in protecting and promoting “the heritage of Canada and all its peoples throughout Canada and abroad and in contributing to the collective memory and sense of identity of all Canadians.” The act also states the importance of protecting artifacts of cultural significance to share with present and future generations.

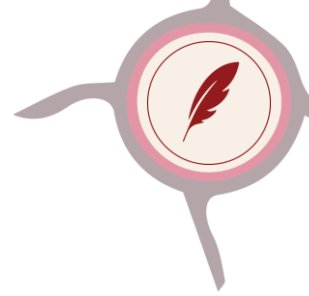


Cultural Property Import and Exports Act (2014). The purpose of this act is to enforce provisions regarding the import and export of cultural property – including cultural heritage artifacts within Canada. Within the act, cultural property is defined as “**movable or immovable property of great importance to the cultural heritage of every people**, such as monuments of architecture, art or history, whether religious or secular; archaeological sites; groups of buildings which, as a whole, are of historical or artistic interest; works of art; manuscripts, books, and other objects of artistic, historical or archaeological interest; as well as scientific collections and important collections of books or archives or of reproductions of the property defined above.” In addition, the act also includes provisions regarding the import and export of cultural heritage artifacts recovered on Canadian soil as a means of preserving the national heritage in Canada.

Provincial Acts and Regulations

Ontario Heritage Act (1990). The purpose of this act is to provide legislative direction to the Ministry of Tourism, Culture, and Sport regarding the policies, programs, and priorities for the conservation, protection, and preservation of the heritage of Ontario as the lead provincial regulator role over cultural heritage resources in the province of Ontario. In addition, the *Ontario Heritage Act* also governs the general practice of archaeology in the province of Ontario and with that prescribes a legal framework and accompanying guidelines for the licensing of archaeologists in the province. In 2005, the act was amended to assign additional powers to the province and municipalities that enable them to delay or stop the demolition of heritage sites and expand the province’s ability to identify and designate sites of provincial heritage significance. Applicable regulations under the Ontario Heritage Act include but are not limited to:

- O. Reg. 11/06 Marine Archaeological Sites
- O. Reg. 9/06 Criteria for Determining Cultural Heritage Value or Interest
- O. Reg 8/06 Licenses under Part VI of the Act – excluding Marine Archaeological Sites
- O. Reg. 170/04 Definitions
- R.R.O 1990, Reg. 880 Historic Sites



- R.R.O 1990, Reg. 877 Grants for Museums
- R.R.O 1990, Reg. 875 Archaeological Sites

Ontario Environmental Assessment Act (1990) – The purpose of this act is to provide guidance regarding the processes, procedures, and guidelines required in the carrying out of provincial environmental assessments in Ontario. The act sets the direction of protecting the environment as a top priority in carrying out environmental assessments in the province of Ontario. In the act included in the definition of the environment are: “the social, economic, and cultural conditions that influence the life of humans or a community” and “any building, structure, machine, or other device or thing made by humans.” The environmental assessment process in Ontario includes identifying environmental impact mitigation and management measures including cultural heritage resources. Applicable regulations under the Ontario Environmental Assessment Act include but are not limited to:

- O. Reg 231/08 Transit Projects and Metrolinx Undertakings
- O. Reg 101/07 Waste Management Projects
- O. Reg 116/01 Electricity Projects
- O. Reg 444/94 Exemption – Ministry of Transportation – MTO-63
- R.R.O. 1990, Reg. 334 General Regulations

Funeral, Burial, and Cremation Services Act (2002). The purpose of this act related to cultural heritage is to protect human burials – both marked and unmarked. Through the act marked burials are granted protection as heritage resources. Burials uncovered at archaeological sites are constituted as “unregistered cemeteries” that require further investigation to determine the extent of internments and either register the location as a cemetery or remove the remains for reinterment in a licensed cemetery. This purpose was previously met through a statute called the *Cemeteries Act*. The *Funeral, Burial, and Cremation Services Act* replaced the function of the *Cemeteries Act* in July of 2012. Applicable regulations under this act include but are not limited to:

- O. Reg 306/16 Code of Ethics
- O. Reg 30/11 General Regulations

Aggregate Resources Act (1990). The purpose of this act is to minimize negative environmental effects of aggregate operations while also



promoting proper management and reclamation of land where aggregate resources have been excavated. In regard to cultural heritage resources, this act has a process to address archaeological concerns at aggregate excavation sites – specifically it is included in the matters to be considered by the Minister in determining whether a license should be either issued or refused by the Minister and/ or Board. The regulation under this act is O. Reg 244/97 General

Planning Act (1990). The purpose of the *Planning Act* is to set out the land use planning system in the province of Ontario. The act specifically defines: how the land use planning system works, who makes decisions, how to resolve disputes and seek public input, and the roles of the province and municipalities in planning administration. In regard to cultural heritage and archaeology, the act also sets out to provide guidance on “the conservation of features of significant architectural, cultural, historical, archaeological or scientific interests.” In addition, section 3.3 of the *Act* prohibits any use of land including the erecting, locating, or using any buildings or structures at the “**site of a significant archaeological resource.**” The *Act* also stipulates that prior to any housing or land developments proceeding an archaeological assessment must be conducted to determine the archaeological potential and put in place appropriate mitigation measures to ensure cultural heritage resources are protected prior to a land development approval being granted.

Provincial Policy Statement under the Planning Act (2014) – The *Provincial Policy Statement* is the policy document that accompanies the *Planning Act* and serves to provide directions to applicable authorities under the *Planning Act*. The statement is issued under section 3 of the *Planning Act* and it provides direction regarding the protection of natural heritage, water, agricultural, mineral, and cultural heritage and archaeological resources. The *Provincial Policy Statement* defines cultural heritage and archaeological resources are “artifacts, archaeological sites, and marine archaeological sites.” The most recent *Provincial Policy Statement* was released in 2014 and has 5 statements related to cultural heritage and archaeological resources. The statement can be accessed at: <http://www.mah.gov.on.ca/Page10679.aspx>.

The policy statements related to cultural heritage and archaeological resources are:

- 2.6.1 Significant built heritage resources and significant cultural heritage landscapes shall be conserved.



- 2.6.2 Development and site alteration shall not be permitted on lands containing archaeological resources or areas of archaeological potential unless significant archaeological resources have been conserved.
- 2.6.3 Planning authorities shall not permit development and site alteration on adjacent lands to protected heritage property except where the proposed development and site alteration has been evaluated and it has been demonstrated that the heritage attributes of the protected heritage property will be conserved.
- 2.6.4 Planning authorities should consider and promote archaeological management plans and cultural plans in conserving cultural heritage and archaeological resources.
- 2.6.5 Planning authorities shall consider the interests of Aboriginal communities in conserving cultural heritage and archaeological resources.

Heritage Resources in the Land Use Planning Process Cultural Heritage and Archaeology Policies of the Ontario Provincial Policy Statement (2006). This toolkit serves as a guidance document to accompany the cultural heritage policies under the Provincial Policy Statement. The guide is organized into a series of information sheets that provide details and interpretation to key areas of interest in the Provincial Policy Statement pertaining to cultural heritage and archaeological resources. There are five information sheets in total in the guide on the following topics: built heritage resources, cultural heritage landscapes, archaeological resources and areas of archaeological potential, adjacent lands and protected heritage property, and heritage impact assessments and conservations plans.

http://www.mtc.gov.on.ca/en/publications/Heritage_Tool_Kit_Heritage_PPS_infoSheet.pdf

Best Management Practices

The following technical guidance documents will be used, in conjunction with the applicable regulations, to implement strategies to provide protection and preservation to cultural heritage resources and areas of cultural significance / importance, on SFN lands.

Engaging Aboriginal Communities in Archaeology: A Draft Technical Bulletin for Consultant Archaeologists in Ontario (2011). This technical bulletin provides guidance to consultant archaeologists on engaging Indigenous communities in conducting archaeology. It is a document

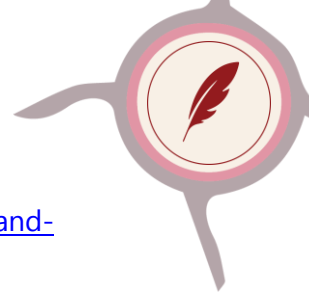


that provides supplemental information and direction connected to the *MTCS Standards and Guidelines for Consultant Archaeologists*. The bulletin provides a broad overview of standards and guidelines for engaging Indigenous communities in archaeology including who to engage and when to engage them in the process, the reporting and communication process with Indigenous communities and the Ministry, as well as other roles and responsibilities in the archaeological assessment process.

<http://www.mtc.gov.on.ca/en/publications/AbEngageBulletin.pdf>

Ministry of Tourism, Culture, and Sport (MTCS) Standards and Guidelines for Consultant Archaeologists (2011). The purpose of these Standards and Guidelines is to “set out basic technical, process, and reporting requirements for conducting archaeological fieldwork” as well as providing “guidance or advice on good practice beyond the requirements of the standards.” Specifically, the guidelines and standards identify how to carry out all 4 stages of a full archaeological assessment, appropriate ways to engage Indigenous peoples in archaeological fieldwork, the role of the Ministry of Tourism, Culture, and Sport, health and safety during archaeological fieldwork, the process for documenting and reporting archaeological artifacts, and the process for reporting the uncovering of human remains. http://www.mtc.gov.on.ca/en/publications/SG_2010.pdf

Conducting Archaeology within the Traditional Territory of the Saugeen Ojibway Nation: Process and Standard for Approval Authorities, Development Proponents, and Consultant Archaeologists (June 2011). As part of lands and resource stewardship Saugeen Ojibway Nation (SON) has developed their own archaeological guidelines that identify regulations for conducting archaeological fieldwork within SON Traditional Territory that go above and beyond the requirements set out by MTCS. Specifically, SON has three requirements for conducting archaeology within their territory that expand outside of the MTCS requirements. Those three requirements are: approval authorities, development proponents, and consultant archaeologists must engage with SON at all stages of a development project and archaeological assessment, SON must be involved in all decision-making activities related to the application of an archaeological condition, fieldwork strategies, and evaluation of assessment reports, and SON monitors must accompany consultant archaeologists in all field activities - i.e., Stages 2 through 4 of an archaeological assessment. <http://saugeenojibwaynation.ca/wp->



<content/uploads/2013/09/SON-Archaeology-Standards-and-Guidelines.pdf>

Glossary

The following glossary of terms was adapted from the Ministry of Tourism, Culture, and Sport Standards and Guidelines for Consultant Archaeologists (2011).

Archaeological Assessment

For a defined project area or property, a survey undertaken by a licensed archaeologist within those areas determined to have *archaeological potential* in order to identify *archaeological sites*, followed by evaluation of their *cultural heritage* value or interest, and determination of their characteristics. Based on this information, recommendations are made regarding the need for mitigation of impacts and the appropriate means for mitigating those impacts.

Archaeological Management Plan

A document that provides an inventory of *archaeological sites*, develops a municipality or region-specific mechanism for determining *archaeological potential*, and maps *archaeological potential* for the region. It will also state the region/ municipality's policies and processes for the management of *archaeological resources*. It may also include a summary of the region / municipality/ community's cultural history, means for promoting and educating the community about archaeological conservation, local strategies for storing and curating archaeological materials, and other issues related to conservation of *archaeological resources* within the community.

Archaeological Potential

The likelihood that a property contains archaeological resources.

Archaeological Resources

In the context of the MTCS Standards and Guidelines for Consultant Archaeologists, objects, materials, and physical features identified by licensed archaeologists during a Stage 2 archaeological assessments as possibly possessing *cultural heritage value or interest*. Analysis using the criteria set out in the Standards and Guidelines determines whether those objects, materials, and physical features meet the



definition of an archaeological site under the *Ontario Heritage Act* and whether Stage 3 archaeological assessment is required. In various planning and development contexts, the term may refer to any or all of *archaeological potential, artifacts, and archaeological sites*.

Archeological Site

Defined in Ontario regulation as “any property that contains an *artifact* or any other physical evidence of past human use or activity that is of cultural heritage value or interest.

Artifact

Defined in Ontario regulation as “any object, material or substance that is made, modified, used, deposited or affected by human action and is of *cultural heritage* value or interest.”

Avoidance

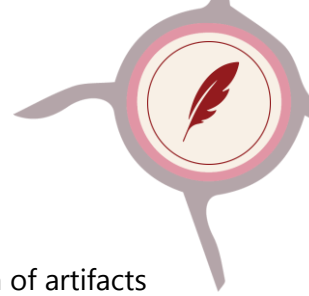
The process by which alterations to an *archaeological site* are prevented during the short-term time period during which development activities are undertaken.

Consultant Archaeologist

Defined in Ontario regulation as “an archaeologist who enters into an agreement with a client to carry out or supervise archaeological fieldwork on behalf of the client, produce reports for or on behalf of the client and provide technical advice to the client.” In Ontario, these people are also required to hold a valid professional archaeological license issued by the Ministry of Tourism, Culture, and Sport.

Cultural Heritage Value or Interest

For the purposes of the *Ontario Heritage Act* and its regulations, *archaeological resources* that possess cultural heritage value or interest are protected as *archaeological sites* under Section 48 of the act. Where analysis of documented *artifacts* and physical features at a given location meets the criteria stated in the Standards and Guidelines, that location is protected as an *archaeological site* and further archaeological assessment may be required.



Midden

An area of an *archaeological site* that has a concentration of artifacts and other remains that are usually interpreted as being the result of intentional discard focused at that location. Can include organic matter, stone tools, pottery, paint cans, building debris or anything discarded by the original inhabitants.

Professional Archaeologist

In Ontario, a person holding a professional license. Often someone carrying out archaeology as a *consultant* or academic. Significantly, the license allows the holder to completely excavate *archaeological sites*.

Project Area

The lands to be impacted by the project, e.g.: the area of a development application under the Planning Act, the area to be licensed under the Aggregate Resources Act; the area subject to physical alteration as a result of the activities associated with the project. This may comprise one or several properties, and these properties may or may not be adjoining. However, all the properties must be part of one project that is being undertaken by one proponent.

Property

A piece of land with a defined boundary and an owner. See *Project Area*.

Proponent

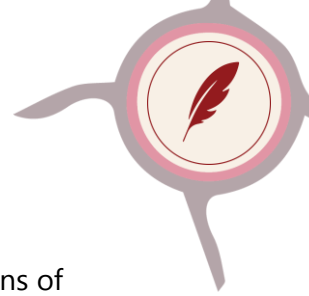
An entity, consisting of individuals, private corporations or government bodies, that is undertaking a development project.

Protection

Measures put in place to ensure that alterations to an *archaeological site* will be prevented over the long-term period following the completion of a development project.

Standard

A mandatory instruction or practice that the reader is required to carry out if they are doing the stated activity. Terms like “must” and “should” are used in standards.



Survey

The process followed in order to make initial identifications of *archaeological sites*. This may consist of pedestrian survey of ploughed fields, test pitting, the use of mechanical equipment in specific deeply buried or urbanized situations or remote sensing. Survey is a part of the overall *archaeological assessment* process.

Test Pit

A usually round hole about the diameter of a standard shovel blade dug to subsoil at regular intervals along a survey transect. The excavated soil is sifted through 6 mm mesh to look for artifacts.

Test Unit

A square hole 1 m by 1 m in its horizontal dimensions and of variable depth, excavated according to certain standards. Test units are excavated to obtain further information about an *archaeological site* subsequent to its discovery.



Medicinal Plants Conservation

Environmental Stewardship Guidance

Contents

- Our Stewardship Vision**
- Community Objectives**
- Stewardship Guidance and Strategies**
- Monitoring and Enforcement**
- Community Initiatives**
- Regulations and Best Practices**
- Glossary**

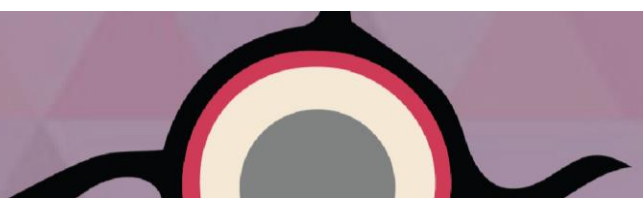
Our Stewardship Vision

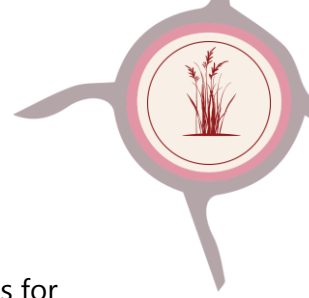
We have a profound connection to our lands and waters, rooted in respect for the gifts of the Creator and the spiritual value of the Earth. Of those gifts, sacred and medicinal plants are integral to our community's spiritual, social and physical health and well-being and must be protected for the use of future generations. We are committed to conserving the medicinal plants on our lands by identifying and managing potential risks to plant populations and habitat.

The intent of this ESG is to outline the strategies for ensuring long-term protection of our sacred and medicinal plants, including strategies for inventorying the plants used by community members and Elders, protecting sacred and medicinal plants from encroaching development and climate change, and establishing a Community Sacred Garden.

"Every time that we take something from the earth, ... we offer tobacco and sing songs for what we've used, what the Creator gave us."

– Community Member





Community Objectives

We will work to implement strategies that will protect medicinal plant resources in and around our reserve lands for seven generations to come.

Short-Term Objectives

- Create an inventory of medicinal plants, and plants of cultural significance, used by community members and Elders, with corresponding locations.

Long Term Objectives

- Develop a Medicinal Plant Protection Plan
- Establish a Community Sacred Garden

Stewardship Guidance and Strategies

To meet our short and long-term objectives for medicinal plants management in our community, we use the following **stewardship guidance and strategies** that are built on regulations, guidelines and best management practices.

Strategy 1: Medicinal Plants Inventory

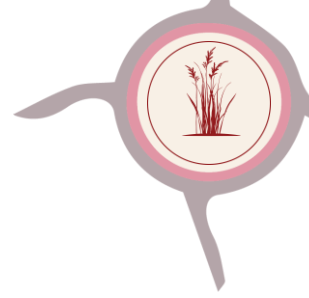
Sacred medicines (Figure 1) are used in our community on a daily basis, and are of great importance to the Healing Centre, Elders, youth, younger children, and wider community. In addition to these medicines, there are many other medicinal plants that are used and valued by the community. A medicinal plants inventory is used to document all medicinal plants that are used by Shawanaga community members, as well as those that are known to be found within our traditional territories. A documented list will help the community identify which plant species may require special protection when development is occurring on our lands (Strategy 3). Ideally, this list should be compiled by conducting traditional knowledge interviews across the entire community to ensure that the information is collected in a non-biased manner and consistent manner. In addition to a list of medicinal plants that are used and valued by the community, associated habitat information should also be collected and recorded.

The inventory list for Shawanaga medicinal plants should be developed with support of a botanist or taxonomist so that





each plant identified is referenced by its common English name(s), Anishnaabek name, and scientific name for ease of cross-referencing, as well as photos of each plant to assist with future identification. The medicinal plants inventory list can be updated on an on-going basis as new information is shared, and should be stored in an electronic database system that is saved to multiple locations to ensure the information will be preserved.



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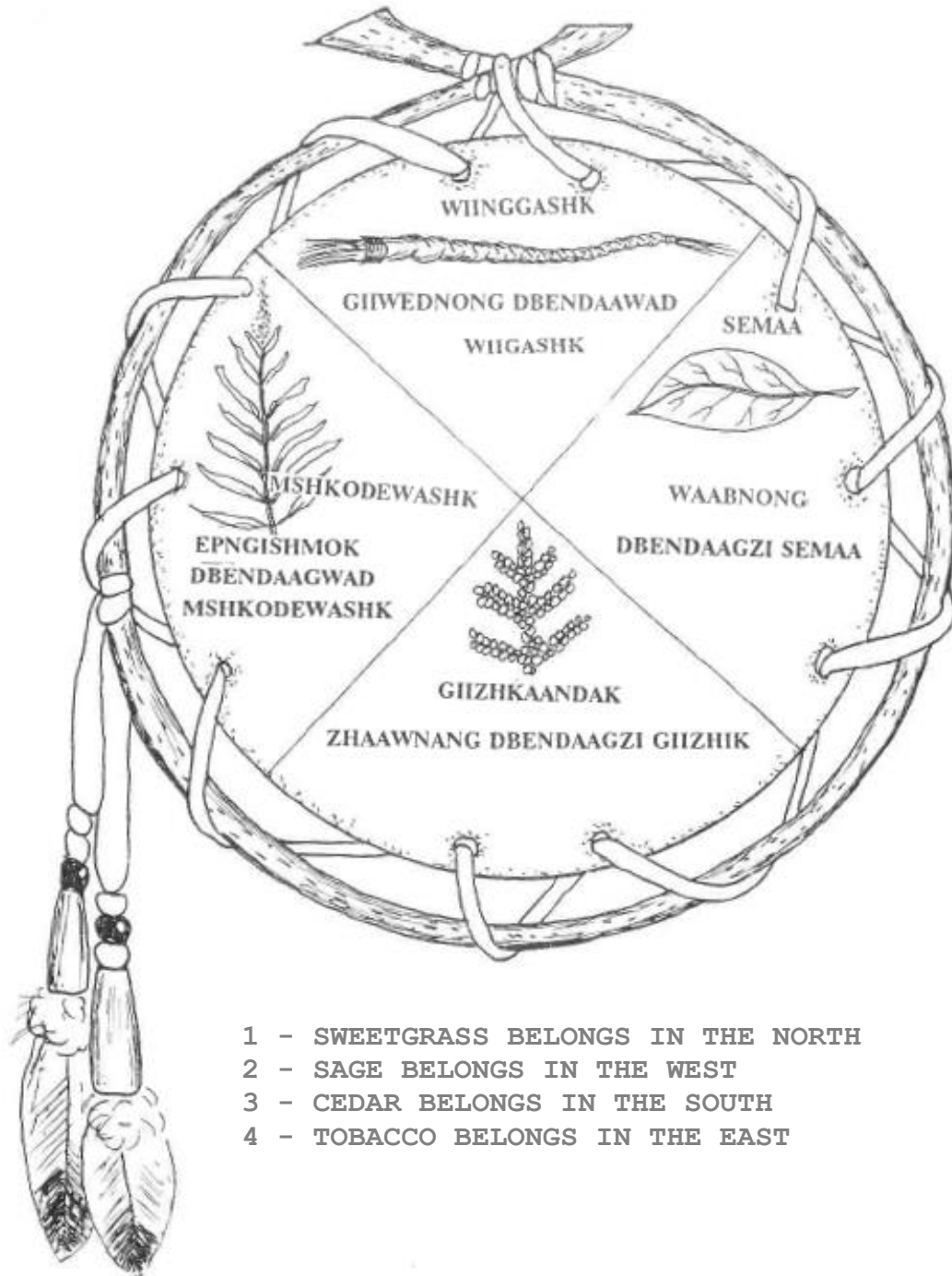
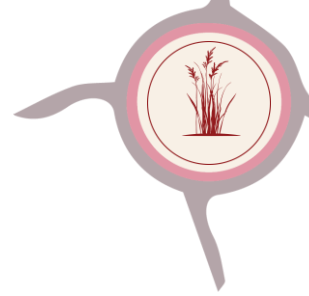


Figure 1: Sacred medicines used by Shawanaga First Nation (provided by Maryanne Geroux).



Strategy 2: Medicinal Plants Community Map

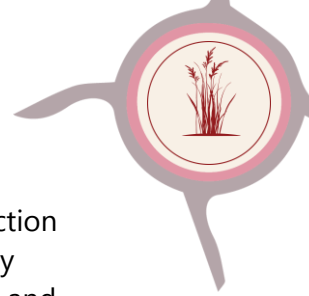
Through a combination of the information gathered in Strategy 1, ground truthing of our Lands, and GIS mapping strategies, a digital map will be developed to outline where each of the identified medicinal plants are found within our Traditional Territories. The production of a comprehensive map will be important in identifying areas and habitats that should be protected from development, or where special considerations are necessary for the conservation of medicinal plants for use by the next seven generations to come.

This map will only be for internal use by the Lands and Resources Department and will be held strictly confidential to ensure that this sacred knowledge remains protected and respected.

Strategy 3: Medicinal Plants Protection Plan

A medicinal plants protection plan uses community and Elder knowledge (Strategy 1 and Strategy 2) to identify sensitive and culturally significant habitat areas within Shawanaga Lands. Developed with the support of qualified biologists, ecologists, and traditional ecological knowledge holders, a medicinal plants protection plan outlines appropriate buffer areas and mitigation measures for plants of concern, as well as areas within our Lands that may warrant extra protective measures if or when development projects arise. The community medicinal plants protection plan should be consulted prior to and during consultation events with proponents, and also during land use planning activities.

This initiative will help ensure that developers adhere to relevant regulations and best management practices, and are cognizant of the plants that are valued by the community to allow for the least possible impact on medicinal plant resources. Where impacts are unavoidable because a development project is deemed necessary in the proposed location, a medicinal plants protection plan will provide guidance for minimizing and mitigating impacts. Protocols



associated with the protection plan will also provide direction for protecting relevant species-at-risk and plants that may become threatened by climate change or other activities, and to avoid the introduction of invasive species that might impact habitat and abundance of our medicinal plants.

In addition to consulting the appropriate protocols laid out in the protection plan, the medicinal plants protection plan strategy will also include a sweep for significant plant species in proposed project areas prior to any developments occurring. Should any medicinal plants be deemed present, and no other mitigation measures are feasible for the protection of medicinal plants, the plants will be protected by transplant into a community sacred garden (Strategy 4) for cultivation. Medicinal plants will also be transplanted into the community sacred garden if they are deemed to be threatened by the effects of climate change. A medicinal plants protection plan helps ensure that the areas in which our medicines grow are protected from development projects and the effects of climate change, and preserved for future generations.

Strategy 4: Community Sacred Garden

A community sacred garden will be established in the near vicinity of the Healing Centre to help ensure that traditional medicines are protected and readily available to support the health of our community for the next seven generations to come. The community sacred garden will be used to cultivate any rare or hard to find medicines, and any medicinal plants whose habitats may be threatened by encroaching development or climate change. During the plant sweeps that will occur under the Medicinal Plants Protection Plan (Strategy 3), any medicinal plants that are vulnerable or threatened by proposed projects will be transplanted into the sacred garden to ensure their preservation for future community use.

The medicines cultivated in the sacred garden will be available for use by the Healing Centre, community Elders, in community ceremonies and celebrations, and to teach Shawanaga youth about our traditional medicines.





Monitoring and Enforcement

As citizens of Shawanaga First Nation, we are responsible for helping to protect our lands and waters – including the medicinal plants that grow on our lands. It is our responsibility to report anything we see that might affect the health and abundance of medicinal plants, such as changes on the land, spills or potentially harmful activities, such as improper harvesting, overharvesting, or incompatible land uses such as ATV traffic. It is also our responsibility to pass on the teachings about medicinal plants, their uses and proper harvesting techniques to our youth so that they may respect and enjoy the land and its gifts in turn.

Community Initiatives

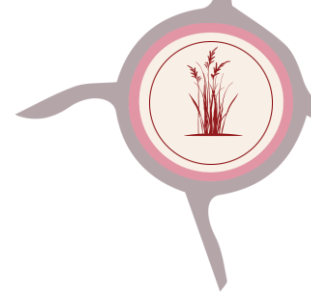
Community Information Sessions

These sessions would provide the community with knowledge about medicinal plants within their traditional lands, as well as about their purpose, teachings about the plants, how to properly identify them and locations of where to find these plants (i.e., where cranberries and/or blueberries grow). These sessions would also explain how to properly harvest the plant so it exists for future generations. The sessions would be a mix of 'in class' and listening to presentations or videos as well as learning on the land. These sessions would be held by knowledge holders and/or Elders, as well as other qualified professionals (i.e. OMNR biologists, other biologist). Plants of particular interest to us include: sweetgrass, cedar, cranberries, strawberries, ginseng, yellow birch, lady's slipper, chaga, moral mushrooms, leeks, rhubarb, wild rice, and milkweed.

Development of a Community Sacred Garden

Our community would come together to build a sacred garden full of plants of cultural and medicinal significance for their home community. Community members would be actively involved in the project and would continue ongoing support, this will also provide an opportunity to learn the importance of the plants through Elders and traditional knowledge holders. With the development of the sacred garden, it creates opportunity for volunteer and capacity building.





Regulations and Best Practices

Federal Regulations

Natural Health Products Regulations, 2003. These regulations control natural health products in Canada, which includes the use of any plants or plant materials for homeopathic or traditional medicine practices. This includes intending to use natural health products for the diagnosis, treatment, mitigation, or prevention of a disease or symptoms in humans. These regulations apply to activities such as the sale, manufacture, packaging, storage, and distribution of natural health products. <https://laws-lois.justice.gc.ca/eng/regulations/SOR-2003-196/page-1.html>

Food and Drugs Act, 1985. This act controls food and drugs in Canada, including any substances that are manufactured, sold, or represented for use in the diagnosis, treatment, mitigation, or prevention of a disease or symptoms in humans.

<https://laws-lois.justice.gc.ca/eng/acts/f-27/page-1.html>

Plant Protection Act, 1990. This act aims to prevent the spread, importation, and exportation of pests to protect plant life in Canada. The Act is primarily focused on agricultural and forestry sectors, however may also apply to any action that involves the movement, growth, culturing, production or movement of anything that could be a pest, be infested with a pest, or could constitute an obstacle to controlling a pest. <https://laws-lois.justice.gc.ca/eng/acts/p-14.8/page-1.html>

Species at Risk Act, 2002. This Act is intended to protect endangered species and the habitats they depend on, ideally enabling the recovery of species at risk (SAR) to the extent that they are no longer at risk. At minimum, the Act aims to prevent SAR from becoming extinct or extirpated. The Act allows for the listing of new SAR through a recommendation and assessment process involving the Minister of the Environment, Governor in Council, the Committee on the Status of Endangered Wildlife in Canada, and Ministers responsible for particular species. The recovery of SAR is promoted by the Act through mandatory development of





recovery strategies and action plans for all species assessed as at risk. <http://laws-lois.justice.gc.ca/eng/acts/s-15.3/>

Provincial Acts

Ontario Endangered Species Act, 2007 (MNRF). This Act provides for the protection of species classified as endangered or threatened, as well as protection of those species' habitats. The Act also allows for the assessment and classification of new species through an independent body that bases its assessment on western science and Aboriginal Traditional Knowledge. This body classifies each species deemed at risk in 1 of 4 categories or levels of at-risk status. The creation of recovery strategies and plans is covered by the Act, as are tools aimed at reducing the impacts of human activities on endangered species, promoting protection, and enabling recovery.

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

Invasive Species Act, 2015 (MNRF). This Act aims to prevent the introduction and spread of invasive species in Ontario. The main focus is on preventing introduction, since that is the least costly and most effective approach in the long run. The Act allows for the classification of invasive species as either prohibited or restricted, and enables the creation of regulations to be applied to those species. Prohibitions are laid out in the Act that apply to prohibited species. Activities that are regulated under the Act include moving of firewood, boating, and animal and plant purchase and trade.

<https://www.ontario.ca/laws/statute/15i22>

Glossary

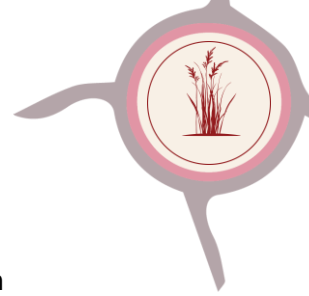
Buffer Area

An area that is next to a protected zone and has restrictions on the resource use that can occur, with the goal of helping enhance conservation of the protected area.

GIS

Geographic Information System (GIS) is a computer system used to capture, store, manipulate, and analyze geographical and spatial data.





Ground Truthing

The act of confirming and validating information through direct observations on the ground, rather than relying solely on the interpretation of remotely obtained data.

Invasive Species

A plant, fungus or animal species that is not native to a specific location and which has the tendency to spread to a degree believed to cause damage to the environment, human economy or human health.

Mitigation Measure

An action that is implemented with the intent of lessening the intensity of an adverse effect.

Species at Risk (SAR)

A naturally occurring plant or animal in danger of extinction or of disappearing from the province or country. Terms such as special concern, threatened, endangered, extirpated and extinct can describe the range of conditions and potential outcomes for species at risk.