St. Marys River Area of Concern
(Canadian section)

Status of the
Restrictions on Dredging Activities Beneficial Use Impairment

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Executive Summary

The purpose of this report is to assess the current status of the *Restrictions on Dredging Activities* beneficial use impairment (BUI) based on the locally approved 2015 delisting criteria. This assessment includes:

i. A summary of the Dredging and In-water Works Administrative Controls Document called for in the delisting criteria;
ii. An overview of remedial actions and monitoring initiatives recommended and completed in the Stage 2 Remedial Action Plan (RAP) report;
iii. Changes to dredging regulations and guidelines with implications to the *Restrictions on Dredging Activities* BUI;
iv. Status of *Restrictions on Dredging Activities* BUI on the US side of the St. Marys River, and
v. Recommendations and conclusions regarding BUI redesignation.

In the 1987 Protocol to the *Canada-U.S. Great Lakes Water Quality Agreement*, the two nations recognized 43 Areas of Concern (AOC) in the Great Lakes Basin; including the St. Marys River, which is identified as a bi-national AOC. As part of this agreement, Remedial Action Plans (RAPs) were to be developed to identify and restore environmental impairments in these areas.

When the St. Marys River was designated as an AOC, ten of fourteen BUIs were identified as impaired for the river, including *Restrictions on Dredging Activities*. The St. Marys River Stage 1 Remedial Action Plan report (1992), which provides a description of environmental conditions and problems, linked the BUI to restrictions placed on navigational dredging or disposal activities due to contaminant levels in sediment exceeding environmental standards. In 2002, the Stage 2 RAP report identified two actions needed to address the *Restrictions on Dredging Activities* BUI on the Canadian side of the AOC:

- Action NPS-1: Develop a multi-agency sediment management program for the river to address immediate dredging needs;
- Action NPS-5: Evaluate sediment quality and quantity in the Algoma Slip to determine need for further dredging.

In 2015, BUI delisting criteria were revised for the Canadian side of the AOC, including that for the *Restrictions on Dredging Activities* to account for local circumstances, link to relevant regulations or guidelines, and to be specific, measurable, achievable, relevant, and time-oriented (“SMART”). The *Restrictions on Dredging Activities* BUI delisting criteria states: “*This beneficial use will no longer be impaired when administrative controls and other regulatory procedures are in place within the Area of Concern that provide guidance and oversight for dredging proponents and permitting agencies in the planning and undertaking of dredging activities, including mitigating measures to reduce*

negative impacts. Such guidance will be made clear in a multi-agency Dredging Administrative Controls document that will be part of a broader sediment management plan for the Area of Concern."

In 2016, the *St. Marys River Dredging Administrative Controls Document* was established and disseminated to proponents and permitting agencies to provide guidance and oversight for the planning and undertaking of dredging activities. It directly delivers upon one aspect in the delisting criteria established for the BUI. The Dredging Administrative Controls document has been actively used by dredging proponents and agencies, and is providing the relevant parties with guidance to abide by the regulations and guidelines governing dredging activities in the St. Marys River. This document was updated in both 2021 and 2024 to include, and account for, other in- water activities that risk disturbing buried sediments and to address relevant feedback provided by the Binational Public Advisory Council (BPAC) and the Batchewana First Nation. The title of the document is now "*St. Marys River Area of Concern Dredging and In-water Works Administrative Controls Guidance Document*" (Appendix A).

To address environmental impairments caused by contaminated sediment from past industrial pollution, a *Contaminated Sediment Management Strategy* has been developed for the Canadian section of the St. Marys River AOC. It outlines site conditions and specific actions to manage contaminated sediment using the science-based evaluation in the *Canada-Ontario Decision-Making Framework for Assessment of Great Lakes Contaminated Sediment*.

This report outlines how the delisting criteria for this BUI has been met, and provides a recommendation to change the *Restrictions on Dredging Activities* BUI to a not impaired status.

1.0 Introduction

1.1 The St. Marys River Area of Concern

The St. Marys River is a 112km binational waterway that flows through several channels connecting Lake Superior to the North Channel of Lake Huron. The St. Marys River Area of Concern is one of the 43 Great Lakes Areas of Concern identified under the *Great Lakes Water Quality Agreement* (GLWQA) between Canada and the United States. The St. Marys River, as a connecting channel, is one of five AOCs jointly shared by Canada and the United States.

An Area of Concern (AOC) is a location with historically significant environmental impairment resulting from activities at the local level. Historical discharges of pollutants from local steel and pulp and paper industries, a tannery and manufactured gas plant, and municipal storm sewers and wastewater treatment plants impaired water quality and contaminated sediment along parts of the St. Marys River (OMOE and MDNR, 1992). Contaminants of concern included polycyclic aromatic hydrocarbons (PAHs), mercury and other heavy metals, and polychlorinated biphenyls (PCBs), which contributed to exceedances of water quality objectives, sediment quality guidelines, fish consumption guidelines and impacted biota (OMOE and MDNR, 1992; EC et al., 2002).

As directed by Annex 1 of the GLWQA, a Remedial Action Plan (RAP) for the St. Marys River was developed collaboratively by Canadian and U.S. partners to address environmental concerns affecting the Ontario and Michigan portions of the river. Implementation of the remedial actions continues.

The Canadian portion of the AOC extends from its head at Gros Cap in Whitefish Bay downstream to St. Joseph Island via Lake George to Quebec Bay in the St. Joseph Channel and downstream to Hay Point on the western shore of St. Joseph Island (Figure 1).

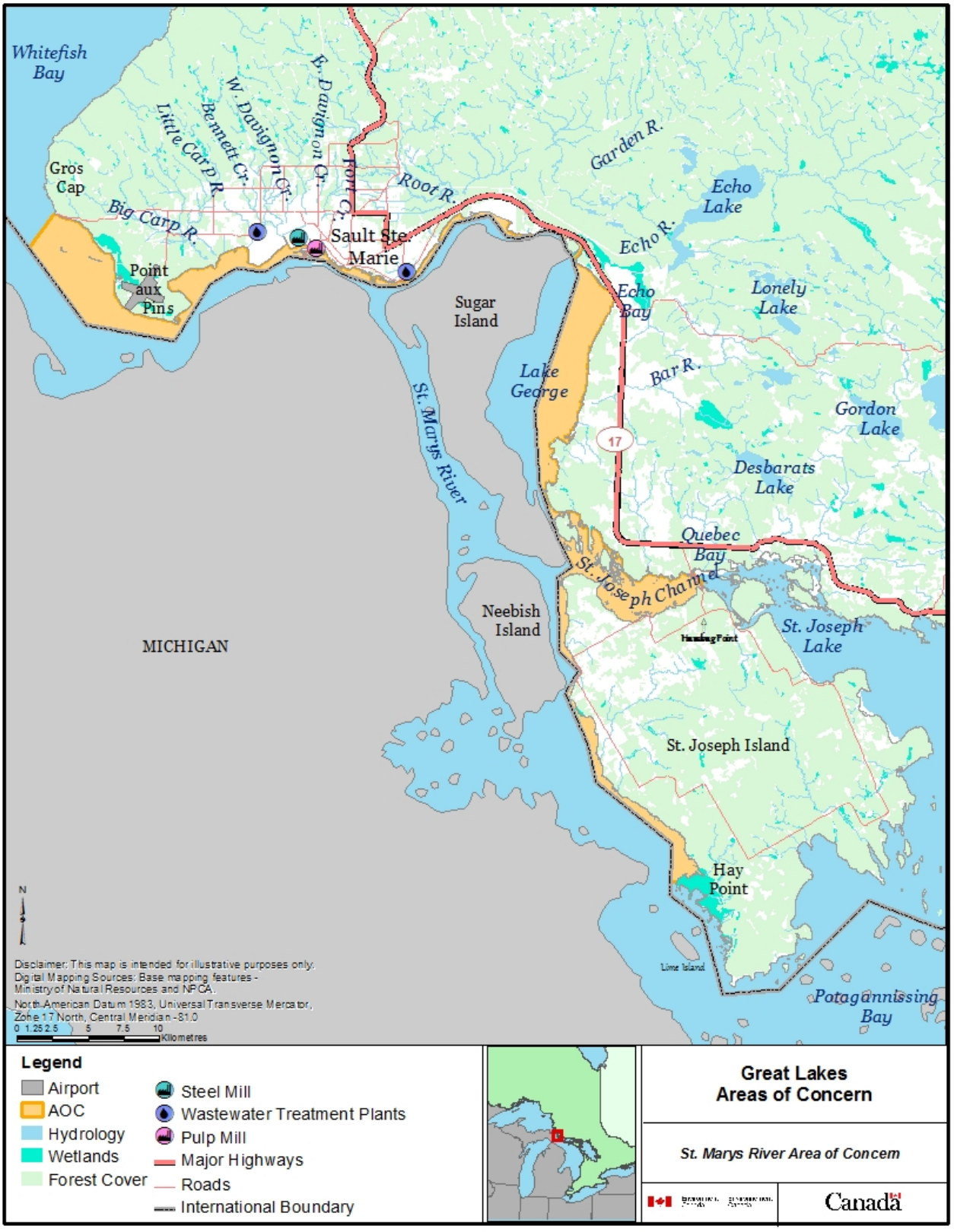

Figure 1: St. Marys River Area of Concern, Ontario, Canada

The St. Marys River has been an important shipping channel within the Great Lakes for decades. The Stage 1 RAP report (OMOE and MDNR, 1992) highlights the transformation of the St. Marys River over the last several decades as part of the Great Lakes – St. Lawrence Seaway. The channel is used to deliver coal, lignite, iron ore and limestone from the Great Lakes ports to the steel industry in Sault Ste. Marie, as well as grain through the river from Thunder Bay to the lower Great Lakes and overseas. Since as far back as the late 1700s, the St. Marys River has undergone extensive modifications through the construction of navigational locks and the Compensating Works and dredging of channels in order to facilitate shipping activity. Periodic dredging of sediments over the years was necessary in the St. Marys River, starting with the Lower Lake George and Neebish Channels being dredged in 1857, in order to accommodate for the increasing number and size of vessels navigating the river.

Historically, the St. Marys rapids supported a productive fishery, sustaining permanent and seasonal settlements along the river. Over the last decades, industrial development and European settlement led to significant modifications to the rapids in an attempt to improve navigation and hydropower production. With poor railroad connections and lack of roads in early to mid-1800s, St. Marys River was the only access to Lake Superior. It was in 1855 when a shipping canal and lock was constructed to by-pass the St. Marys River, making navigation possible between Lake Superior and Lake Huron for ships containing ore bound for the eastern United States. Subsequent hydrological changes to the river occurred through dredging of channels to accommodate for the increased traffic and size of ships as the years went on, as well as through the construction of gates at the head of the rapids in order to increase hydroelectric power in the early 1900s. Improved navigation and hydroelectric capacity led to the development of industries in Sault Ste. Marie, including on the Ontario side, steel making (Algoma Steel founded in 1905), and paper manufacturing (at former St. Marys Paper mill). Discharges from the major point sources as well as non-point sources caused severe water quality degradation and contaminated sediment within the St. Marys River.

1.2 Restrictions on Dredging Activities Beneficial Use Impairment

Fourteen Beneficial Use Impairments (BUIs), caused by a detrimental change in the chemical, physical or biological integrity of the Great Lakes system, are used to identify and evaluate AOCs and serve as a framework for directing remediation efforts. One of these BUIs, *Restrictions on Dredging Activities*, refers to restrictions placed on navigational dredging or disposal activities due to contaminant levels in sediment exceeding environmental standards (IJC, 1991). The *Restrictions on Dredging Activities* BUI is focused on the additional financial costs associated with the dredging and disposal of contaminated sediment and it applies to specific cases where commercial-

navigational dredging is routinely required but is considered “impaired” when contaminants are above concentrations that permit open water disposal (i.e., it cannot exceed limits under the Provincial Sediment Quality Guidelines).

The *Restrictions on Dredging Activities* BUI was listed as “impaired” in the Stage 1 RAP report because sediments from the following sites contained contaminants that exceeded MECP and/or U.S. Environmental Protection Agency guidelines for the disposal of contaminated sediment:

- Downstream of the Algoma Slag Site along the Ontario shore
- Both sides of the Lake George Channel
- Little Lake George
- Northern half of Lake George
- Michigan shore adjacent to the Cannelton Industies waste site
- The head of the St. Joseph and West Neebish Channels
- Lake Munuscong

The contaminants of concern within the sediment exceeding the guidelines included iron, zinc, cyanide, chromium, lead, arsenic, manganese, nickel, copper, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), loss on ignition (LOI), total phosphorous, oil and grease and Total Kjeldahl Nitrogen (TKN). The major source of these contaminants was local industry, specifically: Algoma Steel and the former St. Marys Paper mill in Ontario, and the former tannery and manufactured gas plant in Michigan. In addition, two municipal wastewater treatment plants in Ontario and one in Michigan were point-source contributors of pollution, and there were several non-point sources of pollution such as urban runoff from the twin cities of Sault Ste. Marie.

In the past, dredged material was often disposed of in open water under the Ontario Ministry of the Environment, Conservation and Parks (MECP) guidelines *for Open Water Disposal of Dredged Spoils*. Open water disposal was a preferred method of managing dredged sediment as the costs were low compared to other disposal options. The dredged material was disposed of within the St. Marys River in a manner that would not affect existing water uses such as navigation.

In the early 1990’s, during the time the Stage 1 RAP report was finalized, the MECP was developing biologically based Provincial Sediment Quality Guidelines (PSQGs) for contaminant concentrations in sediments. The open water disposal of dredged material guidelines were replaced by the *Fill Quality Guide and Good Management Practices for*

Shore Infilling in Ontario. The PSQGs provide numeric guidelines for consideration in the application of the *Fill Quality Guide*. Approved in 1993, the PSQGs put restrictions on the quality of dredged sediment (also referred to as dredgeate) that could be placed in open water (Persaud *et al*., 1993). This document was updated in 1996 (Jaagumagi & Persaud, 1996) and in 2008 (Fletcher *et al*., 2008). In addition to sediment chemistry, dredgeate grain size (texture) was also a limiting factor as open water disposal was only a viable option if the sediment at the disposal location had a texture similar to that of the dredgeate. Sediment that did not meet these guidelines required an alternative form of disposal most often in a Confined Disposal Facility (CDF) or landfill, which constituted a substantial additional cost to the project. The *Restrictions on Dredging Activities* BUI continued to be "impaired" in the Stage 2 RAP report (EC et al., 2002), as contaminants in sediment remained above the PSQGs.

Today, due to the inherent environmental impacts open water disposal places on local aquatic habitat (i.e., smothering habitat and aquatic biota), the practice is highly discouraged on the Canadian side of the St. Marys River, and generally, across the Great Lakes and Province of Ontario. Given the potential for ecological impacts associated with this practice, viewing this as a "beneficial use impairment" is contrary to the spirit and intent of the AOC program to restore environmental quality and ecosystem health.

As such, new options for the management of dredged sediment have been developed (changes to dredging and guidelines with implications to the BUI are detailed in Section 4.0 below). On-land disposal, which is consistent with the MECP's *Guideline for Identifying, Assessing, and Managing Contaminated Sediments in Ontario* (Fletcher et al., 2008), of dredge materials is a relatively efficient and low-cost approach and has been the effective, local practice for many years. There are no additional costs associated with dredging in the AOC compared to other locations on the Great Lakes, because open water disposal is no longer the low-cost, without restriction option that it was decades ago.

1.3 Restrictions on Dredging Activities Delisting Criteria

The Stage 2 RAP report (2002) detailed the delisting (restoration) criteria for all impaired BUIs. The criteria helped to guide the development of remedial actions, preventative measures, inform regulatory programs, and to direct monitoring efforts in the AOC. Delisting criteria are unique to each AOC and are derived locally through a collaborative effort between the RAP agencies and the public, represented through the Binational Public Advisory Council (BPAC) for St. Marys River. The BPAC was formed

in 1988. For “impaired” BUIs to be redesignated to “not impaired”, the delisting criteria developed specifically for the BUI must be met.

The initial suite of delisting criteria for the impaired BUI’s in the St. Marys River AOC were developed in 2002 for the Stage 2 RAP. The *Restrictions on Dredging Activities* BUI delisting criteria stated: *“This beneficial use will no longer be considered impaired when contaminants in dredged sediment do not exceed the standards, criteria, or guidelines that permit open water disposal. These levels are based on sediment concentrations associated with compounds identified within the AOC from local point or non-point sources, and is not based on contributions of new atmospheric deposition of compounds”.*

In 2010 it was determined that these original criteria required revisions to reflect current science and the approach to using indicators to measure ecosystem health. As outlined above, the permitting and practice of open water disposal is discouraged in Ontario, and having that as the basis for the delisting criteria was deemed inappropriate. Delisting criteria that are broad, subjective, or immeasurable make the assessment of ecosystem health difficult. In an effort to define meaningful targets, the delisting criteria were updated to follow the SMART test, meaning that they are Specific, Measurable, Achievable, Relevant, and Time-oriented. The updated delisting criteria were endorsed by BPAC on February 25, 2015. The current, updated delisting criteria for the *Restrictions on Dredging Activities* BUI states:

“This beneficial use will no longer be considered impaired when administrative controls and other regulatory procedures are in place within the Area of Concern that provide guidance and oversight for dredging proponents and permitting agencies in the planning and undertaking of dredging activities, including mitigating measures to reduce negative impacts. Such guidance will be made clear in a multi-agency Dredging Administrative Controls document that will be part of a broader sediment management plan for the Area of Concern”.

2.0 Dredging Administrative Controls

The *St. Marys River Area of Concern Dredging and In-water Works Administrative Controls Guidance* document (Appendix 1) is a tool that provides guidance to proponents considering dredging projects in Canadian waters of the St. Marys River, and encourages coordination and cooperation among the different authorities and government agencies that have a responsibility in the approval, permitting and planning process. The document was originally created in 2016 but was updated in 2021 to

include other in-water activities that risk disturbing buried sediments, and again in 2024 to address feedback received from BPAC and the Batchewana First Nation, and changes to the Conservation Authorities Act.

The objectives of the *Dredging and In-water Works Administrative Controls* are:

- to outline the administrative approach on in-water activities to minimize the disturbance, exposure or resuspension of contaminated sediment;
- to establish principles that will help guide decisions;
- to summarize the roles and responsibilities of the proponent and agencies involved;
- to provide guidance for proponents submitting in-water project applications needing permits; and
- to summarize agency mandates and to promote a common review process for regulatory activities that have the potential to disturb contaminated sediment.

For proponents considering dredging or other in-water projects, the document provides a list of permits and approvals that may need to be obtained, describes the process by which to obtain approval for in-water activities, factors to consider before submitting an application and avenues for obtaining additional information.

The *St. Marys River Dredging and In-water Works Administrative Controls Guidance* document satisfies the updated delisting criteria for the *Restriction on Dredging Activities* BUI. That is, it "…provides guidance and oversight for dredging proponents and permitting agencies in the planning and undertaking of dredging activities", or any other in-water activities, as called for in the delisting criteria. The *Dredging and In-water Works Administrative Controls Guidance* document is a standalone initiative that will continue to guide proponents. As the delisting criteria states, the dredging and in-water guidance it provides is reflected in the broader Sediment Management Strategy. With the *Dredging and In-water Works Administrative Controls Guidance* document in place since 2016, this report supports the recommendation brought forward to change the *Restrictions on Dredging Activities* BUI to not impaired status.

3.0 Stage 2 Recommended Remedial Actions

The Stage 2 RAP report outlines a strategy to remediate the impaired beneficial uses in the St. Marys River AOC. It contains descriptions of approximately sixty recommended actions to restore water quality and ecosystem health as per the beneficial uses. The Stage 2 RAP report lists two recommendations for the restoration of the *Restrictions on Dredging Activities* BUI on the Canadian side of the AOC. The two recommendations are:

i. **Action NPS-1:** Develop a multi-agency sediment management program for the river to address immediate dredging needs; and
ii. **Action NPS-5:** Evaluate sediment quality and quantity in the Algoma Slip to determine need for further dredging.

3.1 Develop a multi-agency sediment management program for the river to address immediate dredging needs (Action NPS-1)

As described in the Stage 2 RAP report, the most important of all non-point source remediation activities is the development and implementation of a Sediment Management Strategy for the St. Marys River AOC. In 2009, ECCC and MECP formed a multi-agency sediment management technical team. This team has worked with the contractors Ramboll Inc. and Integral Consulting Inc. to develop the Sediment Management Strategy for the Canadian side of the AOC. The process involved BPAC and Indigenous consultation. The Strategy outlines site conditions and specific actions to manage contaminated sediment using the science-based evaluation in the Canada-Ontario Decision-Making Framework for Assessment of Great Lakes Contaminated Sediment. Management actions completed include:

- Remedial dredging in Algoma Steel's boat slip to remove contaminants from the waterway. In total, nearly 30,000m^3 of sediment was removed over four dredging events in 1995, 2006, 2017, and 2019. While the first two dredging events focused on maintaining shipping access, the other two targeted the removal of contaminants. Remediating the boat slip is part of the Legacy Environmental Action Plan, a risk-based environmental management agreement between the steel mill and the Ontario Ministry of the Environment, Conservation and Parks. The need for future contaminant removal will be determined after it is confirmed there are no ongoing sources of contamination to the slip.
- Monitored natural recovery within the waterlot owned by Transport Canada to confirm improvements over time. The most recent round of monitoring was completed in 2023, with analysis underway to evaluate the extent of recovery. The need for future monitoring will be determined after the latest results are reviewed.
- Administrative controls and monitoring to prevent additional sediment disturbance and/or resuspension of contaminants throughout the AOC, such as when proponents consider in-water activities like dredging.

Action NPS-1 includes both short and long-term activities ranging from the assessment of immediate remedial options to the implementation of management actions. As such, there are ten sub-actions listed in the Stage 2 RAP report that supported the development of the sediment management strategy. These sub-actions are summarized in Appendix 2.

3.2 Evaluate sediment quality and quantity in the Algoma Slip to determine need for further dredging (Action NPS-5)

Algoma Steel is a steel manufacturing facility that was originally constructed in the early 1900s on the north shore of the St. Marys River in Sault Ste. Marie, Ontario. The facility is a fully integrated plant having all functions for primary steel production which includes coke, iron, basic oxygen furnace (BOF) steelmaking, casting, hot and cold rolled sheet and plate products (Algoma Steel Inc., 2019). Based upon several sediment surveys of Algoma's boat slip since 1995, it was determined that the sediment had elevated levels of polycyclic aromatic hydrocarbons (PAHs), petroleum hydrocarbons (PHCs), total metals and oil and grease.

The Stage 2 RAP report recommended that the sediment quality and quantity in the Algoma Slip be evaluated from an environmental perspective and remediated as required. This need was addressed in an Environmental Management Agreement (EMA) between Algoma Steel, ECCC and MECP initiated in 2000, which included among its objectives "the delisting of the beneficial use impairment associated with the Algoma boat slip as identified in the Stage 1 RAP report for the Remedial Action Plan for the St. Marys River". As a means to achieve this, Algoma Steel agreed to,
(a) assess sediment contamination and submit a clean-up plan to the MECP in the form of a semi- annual report, and
(b) complete the clean-up and submit a summary report to MECP in its first semi-annual report following completion of the work.

The EMA was a voluntary agreement that complimented the requirements of a regulatory process. A total of 11 semi-annual reports were submitted throughout the 5-year term of the EMA. The first semi-annual report of the EMA was submitted in February 2001, in which it was determined that since there was minimal deposition of new sediment since 1995, and that sediment quality had improved, further dredging was not warranted. It further recommended a repeat survey and assessment be done by end of the agreement in 2005. This recommended survey and assessment was completed in November 2005. The results of that assessment concluded that, due to the level of contamination, dredging in the north end of the slip was warranted.

The Algoma boat slip was dredged in 1995, 2006, 2017 and 2019 with 11,500m^3, 2,630m^3, 10,906m^3 and 4,638m^3 of sediment removed respectively. In order to provide detailed information about contaminant concentrations within the Slip sediments, surveys were conducted in 2005, 2014, 2018 and 2019.

Consistent in the reports from early surveys was the fact that the Slip sediment had high concentrations of PAHs. In the 2014 and 2018 surveys, average concentrations of six PAHs (i.e. fluorine, phenanthrene, anthracene, fluoranthene, pyrene, and chrysene) all exceeded the Severe Effect Level (SEL)[1], while the remaining PAHs all exceeded respective Probable Effect Level (PEL)[2] or Lowest Effect Level (LEL)[3]. Total metal concentrations and PHCs were similar in both 2014 and 2018 sampling years, which showed elevated concentrations. More specifically, there were instances of manganese concentrations exceeding sediment SELs. Also, in 79% of the 2018 samples at least one PHC concentration exceeded the soil quality guidelines[4]. The remaining samples did not exceed the soil quality guidelines.

In 2020, Algoma Steel hired a contractor to determine the need for further dredging. Based on the assessment, a sediment chemistry and toxicity sampling program was carried out in November 2020. The results of this study helped to assist with Algoma Steel's implementation of the Legacy Environmental Action Plan (LEAP) agreement with the Province of Ontario, which requires source track-down investigations. The need for future contaminant removal will be determined after it is confirmed there are no ongoing sources of contamination to the slip.

The LEAP is a risk-based environmental management agreement between Algoma Steel and the MECP. Objectives of the LEAP include identifying, assessing, managing, and mitigating off-site adverse environmental effects caused by legacy environmental contamination. The targeted investment of this agreement is $79.8 million over 21 years, which began in 2019.

4.0 Changes to Dredging and Guidelines with Implications to the *Restriction on Dredging Activities* BUI

The Provincial Sediment Quality Guidelines (2008), together with the *St. Marys Dredging and In-water Works Administrative Controls* Guidance document of 2024 regulate and provide guidance on dredging and in-water activities within the AOC. As

[1]Severe Effect Level (SEL) indicates a heavy level of contamination expected to be detrimental to the majority of sediment-dwelling organisms.
[2] Probable Effect Level (PEL) indicates the concentration above which instances of adverse biological effects are frequently observed.
[3] Lowest Effect Level (LEL) indicates a clean to marginally polluted level of contamination that can be tolerated by the majority of sediment-dwelling organisms.
[4] Ministry of the Environment (MOE). 2011. Soil, ground water and sediment standards for use under Part XV.1 of the Environmental Protection Act. PIBS#7382e01. http://www.mah.gov.on.ca/AssetFactory.aspx?did=8993

discussed under Section 1.2 above, historically, the *Restrictions on Dredging Activities* BUI was used as a means to evaluate and manage contaminated sediment within AOCs. In other words, contaminated sediment was the original driver of the *Restrictions on Dredging Activities* BUI; however, with the creation of the Canada Ontario Sediment Decision Making Framework under the 2002 *Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem* (COA), management of contaminated sediment is achieved separately through an effects-based assessment approach (EC and OMOE, 2008). MECP and ECCC developed a technical memorandum in 1998 for the Steering Committee overseeing the Canada-Ontario Agreement on the Great Lakes, which concluded routine upland disposal for small-scale dredging operations does not constitute a BUI.

The Sault Ste. Marie Region Conservation Authority is the local permitting agency for dredging operations on the Ontario side of the St. Marys River, and disposal options for dredged material are reviewed and permitted by the MECP. As outlined in the *St. Marys River Dredging and In-water Works Administrative Controls Guidance* document, the approval and management of dredging activities and disposal of material involves a number of provincial and federal legislation, and it is consistent across all the Great Lakes, including AOCs. For instance, Transport Canada is one of the agencies involved in the management of navigational dredging, which reviews and authorizes excavation or disposal of fill as per the federal *Navigation Protection Act*. Approvals may also be required from a number of other agencies, including the Ministry of Northern Development, Mines, Natural Resources who may issue work permits under the provincial *Lakes and Rivers Improvement Act*. In the case of the St. Marys River AOC, the *Dredging and In-water Works Administrative Controls* Guidance document is designed to provide clarity and be used as a guide in the planning and undertaking of any future dredging activities.

Furthermore, the *Restriction on Dredging Activities* BUI was defined before the current provincial guideline that establishes best practices for dredging activities and disposal. There is regulatory oversight for navigational dredging activities taking place in the St. Marys River, consistent with federal and/or provincial environmental protection legislation applicable to all the Great Lakes, including AOCs. Approvals may be required from a number of agencies and the approvals process is consistent throughout Ontario’s portion of the Great Lakes, and does not vary in Areas of Concern. All proponents of dredging and/or in-water projects within the AOC are required to follow the same provincial approvals process as in other non-AOC locations.

5.0 Status of *Restriction on Dredging Activities* BUI on Michigan side of the AOC

The *Restrictions on Dredging Activities* BUI was removed on the U.S. side of the St. Marys River AOC on November 14, 2017. Members of BPAC reviewed the findings relating to *Restrictions on Dredging Activities* provided by the Michigan Department of Environment, Great Lakes, and Energy (EGLE) and supported its recommendation to redesignate the BUI to not impaired on the U.S. side of the AOC. Michigan's delisting criteria states the BUI would no longer be considered impaired when:

"*During the most recent routine dredging in the U.S. Army Corps of Engineers designated navigational channel, use of a confined disposal facility or TSCA-level landfill for dredge spoils was not required due to chemical contamination*" (MDEQ, 2015).

In 2014 and 2015, the U.S. Army Corps of Engineers dredged areas downstream of Sault Ste. Marie, Michigan, within the navigation channel to ensure the safe passage of freighters and cargo. Thirty sites were sampled to assess contaminant levels and to determine appropriate disposal options for the dredgeate. Sample sites were located on the west side of Sugar Island through Nicolet Lake, on the west side of Neebish Island, and near Moon Island at the north end of Munuscong Lake. Results from the sediment assessment confirmed that the dredgeate was uncontaminated and therefore upland placement need not be regulated (Riley, 2017).

6.0 Recommendations and conclusions regarding redesignation

It is recommended that the *Restrictions on Dredging Activities* BUI in the St. Marys River AOC be redesignated to "not impaired" since this BUI's delisting criteria has been fulfilled. This recommendation is based on the following:

- The *St. Marys River Dredging and In-water Works Administrative Controls Guidance Document* (2024) has been created to provide guidance and oversight for dredging proponents and permitting agencies in the planning and undertaking of dredging and in-water activities. It directly delivers on the BUI delisting criteria and was community reviewed. Input was provided by the BPAC, local Indigenous communities, and Canada/US agencies (Appendix 3) and captured within the final document (Appendix 1).
- The *Administrative Controls Guidance Document* is a standalone initiative that will continue to guide dredging proponents, but as the delisting criteria states, the dredging and in-water guidance it provides is reflected in the broader Sediment Management Strategy.

- The Sediment Management Strategy for the St. Marys River AOC has been created. It provides the overall approach for managing contaminated sediment remaining on the Canadian side of the AOC.
- The two dredging-related actions recommended in the Stage 2 RAP (Actions NPS-1 and NPS-5) report are either completed or underway (See Section 3.2 and Appendix B).

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Appendix 1: Dredging and In-Water Work Administrative Controls Guidance Document

St. Marys River Area of Concern (Canadian Section)

Dredging and In-water Works Administrative Controls Guidance Document

July 2016
Updated May 2024

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This Protocol Guidance document does not substitute for local, provincial and federal laws and regulations that apply to dredging and in-water work. This is only a summary. Project proponents are advised to contact the relevant authorities, and to review and abide by the appropriate legislation.

This Protocol Guidance document follows the outline of the one developed for the Cornwall Sediment Strategy in 2003 (French, 2003).

1.0 Introduction

1.1 Why are we focused on dredging and other in-water activities in the St. Marys River?

The St. Marys River is a 112 km waterway bordering Canada and the United States. The river is the outflow of Lake Superior to Lake Huron, and is an important shipping channel within the Great Lakes – St. Lawrence Seaway. The St. Marys River is an Area of Concern (AOC) identified in the Canada-U.S. Great Lakes Water Quality Agreement. An AOC is a location that has experienced significant environmental degradation and impaired beneficial use. Canada and the United States have committed to developing and implementing a remedial action plan to address environmental degradation through a collaborative, scientific, and ecosystem-based approach.

One of the environmental issues in the St. Marys River AOC is contaminated sediment in the river resulting from past pollution. Contaminants of concern include petroleum hydrocarbons, polycyclic aromatic hydrocarbons, oils, grease, and trace metals. Although studies have shown that the contaminants are covered with layers of cleaner sediment, it is important that proponents of projects with in-water activities that could potentially disturb or expose deeper sediments to recognize the potential environmental impacts, follow best management practices, and obtain appropriate regulatory permits and approvals as needed. In-water activities which could pose a risk include but are not limited to: dredging, dock wall/wharf replacement, pile driving and trenching.

This document provides information to proponents considering in-water activities in Canadian waters of the St. Marys River, and encourages coordination and cooperation among the different authorities and government agencies that have a responsibility in the approval, permitting and planning process.

Levels of contaminants vary with location within the St. Marys River AOC. As a result, the restrictions on certain in-water activities, and the conditions under which they may be carried out, will also vary with location. In some cases, contaminant levels may result in the denial of an application if appropriate mitigation measures cannot be implemented.

1.2 What is the St. Marys River Guidance Document for Dredging and In- water Activities?

This document is a tool that provides guidance to proponents considering projects such as dredging, dock wall/wharf replacement or other in-water activities that risk disturbing buried sediments. It is also a tool for the agencies involved in the permitting process. Administrative controls for these activities fall into two broad categories:

a) Environmental assessment and planning;
b) Regulatory approvals and permitting.

The environmental assessment and planning processes are comprehensive exercises involving several agencies. These processes are used to forecast, assess and mitigate potential impacts of in-water activities, and to fulfill legislative and mandate requirements.

Permit approvals processes (for example, work and building permits) tend to involve a less comprehensive review and approval process, typically a single agency, and have limited scope and review. As summarized in the flow chart (Figure 1), the permitting review and approvals process involves several agencies at the local, provincial and federal levels.

Both types of administrative controls have the potential to play key roles in minimizing the disturbance of sediments within the St. Marys River AOC when in- water activities are being planned and implemented.

1.3 Objectives

The objectives of the St. Marys River Dredging and In-water Works Administrative Controls are to:

- outline the administrative approach on in-water activities to minimize the disturbance, exposure or resuspension of contaminated sediment;
- establish principles that will guide decisions;
- summarize the roles and responsibilities of the proponent and agencies involved;
- provide guidance for proponents submitting in-water project applications for required permits; and
- summarize agency mandates and to promote a common review process for regulatory activities that have the potential to disturb contaminated sediment.

Figure 1: Permits and Authorizations that may be needed for Dredging and/or In-water Projects

1.4 Enforcement

The policies outlined in the Dredging and In-Water Works Administrative Controls Guidance document are consistent across the entirety of the Canadian side of the Great Lakes. This means that all proponents considering undertaking dredging activities anywhere on the Great Lakes (including AOCs) are subject to the same regulations and guidelines which have been deemed sufficient by the appropriate regulatory and permitting agencies.

Oversight and legislation for all in-water activities within the Great Lakes, including dredging, are already in place. This includes the relevant laws and regulations in place which are overseen by their respective federal, provincial and/or municipal agency (See Table 1 for more information). Property owners who fail to obtain the correct permits could be in violation of several Acts, which can result in fines or a term of imprisonment, and they may be required to restore/rehabilitate the disturbed area and/or remove unapproved structures. These Acts include, but are not limited to:

- Conservation Authorities Act
- Environmental Protection Act
- Ontario Water Resources Act
- Fisheries Act, Species at Risk Act
- Canadian Navigable Waters Act
- Endangered Species Act
- Public Lands Act, Lakes and Rivers Improvement Act

2.0 Guidance

2.1 For proponents considering in-water activities

This guidance document provides information to proponents considering in- water activities on the Canadian side of the St. Marys River AOC [see Figure 2]. It outlines the considerations that government agencies will take into account while evaluating in-water activities that could disturb sediment; such as dredging, filling, covering, piling, or scouring. It provides information on the type of activities that require approval, outlines the review process for applications, identifies the authorities/agencies to contact, and articulates the principles of sound decision-making.

Applicants who submit a proposal should be aware that each of the applicable regulatory agencies must provide approval before they begin. There may be cases in which one agency may approve an application while another declines; in which case the activity would be unable to proceed (i.e. another agency may decline the proposal).

The approval and management of dredging activities and disposal of material involves a number of provincial and federal legislation, and it is consistent across all the Great Lakes. Regulatory agencies may also solicit input from others on an application. MECP may solicit input from ECCC based upon their joint work on the Great Lakes Areas of Concern and because of contaminated sediment management experience residing with ECCC.

Multiple steps are required for in-water works such as in sediment dredging operations. Project complexity is highly site-specific. Sediment characteristics, contaminant types and concentrations, and the physical and hydrodynamic environments all play a role in the complexity of a project. Implementation of controls minimize both the resuspension of sediment and the release of contaminants to the water column. To protect against resuspension during activities like dredging, the contaminated sediment area can be enclosed with silt curtains that extend to the bottom. These curtains have floatation devices at the surface and anchors at the bottom to ensure they hug the sediment floor. They are best deployed in low current environments. Other controls may include the use of silt curtains, cycle time of clamshell buckets, multiple dredge passes, or specialty equipment.

2.2 Geographic scope of the Protocol

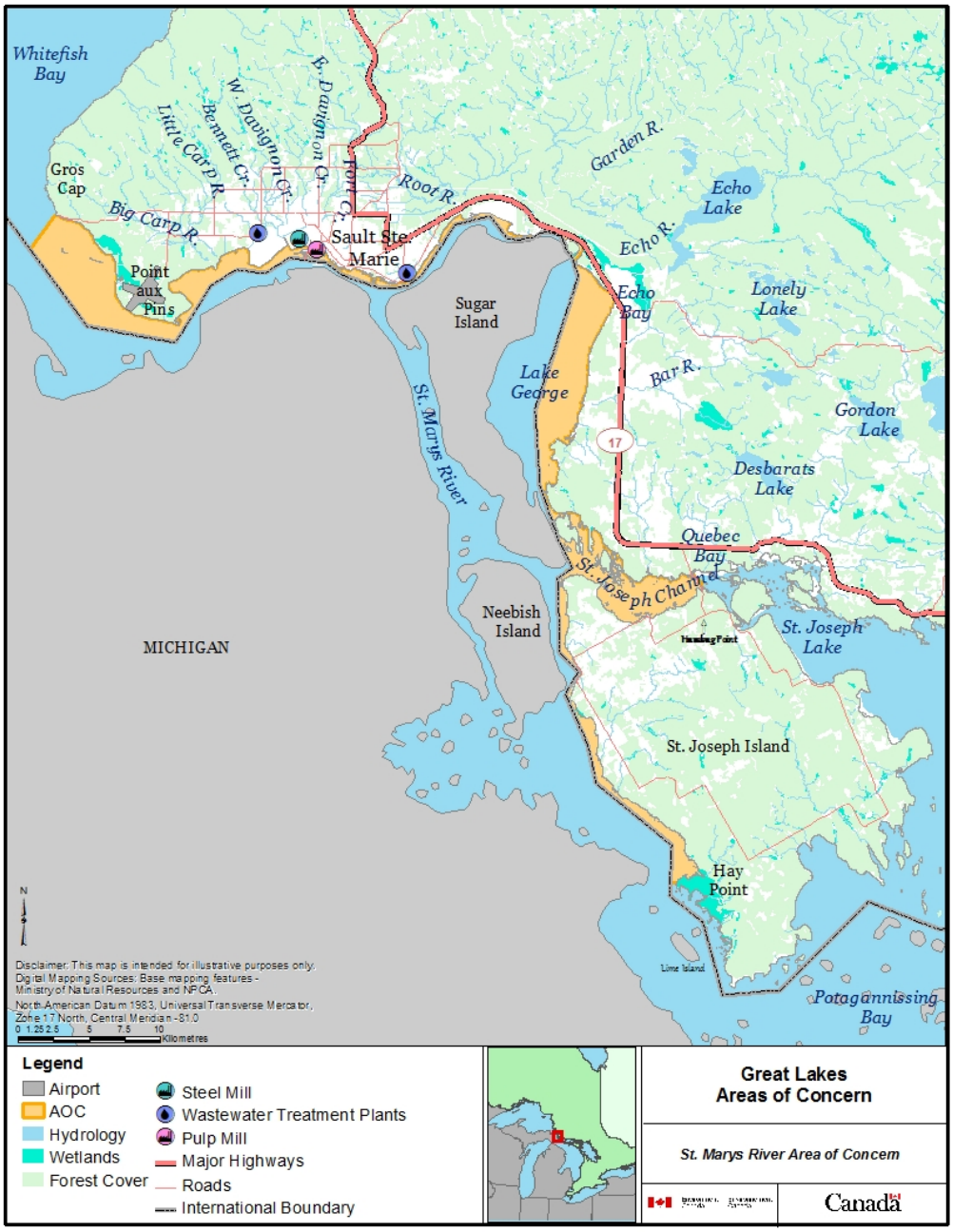


Figure 2: St. Marys River Area of Concern – Canadian Section

2.3 What are some examples of approvals that need to be obtained?

The approvals required will vary depending on the location and type of activity proposed. Table 1 provides examples, but the list is not exhaustive and additional activities may require a permit or approval. It is the responsibility of the proponent to contact the appropriate authorities. See Appendix B.

Table 1: Examples of in-water activities and potential permit or approval requirements

Activity	Submissions/Approvals	Agency	Legislation
Development within the Regulated Area may require a Permit from the Authority to confirm that the control of flooding, erosion, dynamic beaches, unstable soil and bedrock are not affected. The straightening, changing, diverting or interfering in any way with the existing channel of a river, creek, stream, watercourse or changing or interfering in any way with a wetland will also require a Permit.	Permit via the Prohibited Activities, Exemptions and Permits regulation under the Conservation Authorities Act	Sault Ste. Marie Region Conservation Authority	Ontario Regulation 41/24, Conservation Authorities Act
Removal and transport of dredged materials (contaminated or not) to the appropriate disposal site(s).	Waste Generator Registration Number, Environmental Compliance Approval	MECP	Regulation 347, General Waste Management, Environmental Protection Act
Collection, treatment, and discharge of contaminated water and sewage	Section 53 Environmental Compliance Approval	MECP	Ontario Water Resources Act
Taking of water greater than 50,000 litres/day.	Permit to Take Water	MECP	Ontario Water Resources Act
Visit the DFO Projects Near Waters website (https://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html), which provides an overview of the DFO review process, aquatic SAR mapping, Codes of Practice, and the	-Authorization under Fisheries Act s. 34.4(2)(b) and 35(2)(b), with or without SARA conditions; -SARA permit under Species At Risk Act s.73; or	Fisheries & Oceans Canada	Fisheries Act & Species at Risk Act

Measures to protect fish and fish habitat.	-Letter of Advice		
Dredging that does not meet the criteria and specific terms and conditions for construction under the Minor Works Order. An in- water work that is not considered a minor work will likely require that an application for approval be submitted.	Must submit an application for approval to the Minister and Notice of Works that details project and likely interferences with shipping and boating activities.	Transport Canada	Canadian Navigable Waters Act
Dredging project that may have an impact to species at risk and their habitat (see Appendix D).	Approval	MECP	Endangered Species Act
Building, constructing, dredging, filling, or removal of aquatic vegetation on shorelands or on Crown land under water.	Work Permit	MNR	Public Lands Act
Dams, channelization (including dredging, diverting or enclosing a channel), diversions, bridges and culverts	Work Permit and/or Approval	MNR	Lakes and Rivers Improvement Act

2.4 What is the process to obtain approval for dredging and other in-water activities?

Every proponent must follow these steps for any in-water activity in the St. Marys River:

Step 1
Contact the Sault Ste. Marie Region Conservation Authority (SSMRCA) – Regulatory responsibilities are assigned to the Sault Ste. Marie Conservation Authority under the Conservation Authorities Act. To determine if the proposed activity is within or will affect the St. Marys River watershed the proponent should contact the SSMRCA. Initial discussions with the SSMRCA will help to determine the feasibility of the proposed activity. **Note that if the project falls outside of the SSMRCA jurisdiction, then the MNR should be the first point of contact.**

Step 2
Complete and submit applications to appropriate agencies – the number of permits to be obtained will depend on the size, location and duration of the project and the requirements of each individual agency. Become familiar with the decision-making process (see Appendix A) and be prepared to modify the project if necessary. Sediment sampling needs to be completed and included in the application in order to determine the presence/absence of contamination and answer the questions in the decision-making process. Complete the permit application(s), include any additional requirements or conditions, and submit to the appropriate agencies (see contact information in section 3.0). These may include:

- Sault Ste. Marie Region Conservation Authority
- Ministry of Environment, Conservation and Parks
- Fisheries and Oceans Canada
- Ministry of Natural Resources
- Transport Canada
- Batchewana First Nation Natural Resources Department

Step 3
Application Review – each agency will review the application in accordance with their own regulatory requirements and may discuss it with other authorities/agencies. Each agency involved should provide the other agencies with copies of their comments/permits (project specific).

Step 4
Notification to Proponent of Decision – each agency will contact the proponent with a decision to approve or deny the proposed work.

The proponent cannot start the project without the appropriate permits and authorizations.

Step 5
Monitoring Compliance – proponents are responsible for ensuring that the project meets all terms and conditions of approval throughout the construction and post-construction phases. Any agency may visit the project site to ensure compliance.

2.5 What should a proponent consider before submitting an application?

- The proponent is responsible for submitting all necessary applications, that the required information for each application is provided (including documentation of sediment chemistry at surface and at depth if project involves the disturbance of sediment) and that all approvals are obtained before any work commences. There may be costs associated with submission of these applications.
- Failure to obtain the correct permits prior to the work could be a violation of one or more of the above noted Acts, which can result in fines or a term of imprisonment, and the proponent may be required to restore/rehabilitate the disturbed area and/or to remove unapproved structures.
- Be aware that permits usually include conditions, such as the time of year when the work can be done.
- A change in location may help avoid areas with contaminated sediment. Certain types of construction or dredging techniques, and the use of certain materials, may help alleviate problems in dealing with contaminated sediment. Contact a qualified professional to discuss ways of reducing your impacts on the St. Marys River.
- Projects that cannot be relocated or redesigned and may potentially disturb sediments must have a plan that indicates how contaminated sediment will be handled, removed and disposed of in a safe and environmentally protective manner.
- Preventing disturbance is critical when planning an in-water activity. The application should include how the proponent will ensure that there will be as little disturbance, exposure or re-suspension of sediments as possible.
- Be prepared. When an unforeseen spill or escape of contaminated materials occur, the impacts must be monitored and appropriate actions taken to mitigate further re-suspension of contaminated sediment. Application(s) may require you to outline what measures will be taken, including materials and equipment on site, to deal with these types of situations. Failure to show due diligence may result in fines or other penalties.
- The proponent of any activity is responsible for worker safety and all costs associated with the project. Examples of potential costs include (but are not limited to) application fees, engineering reports, and the removal, handling and disposing of contaminated sediment.

2.6 What guides an agency's decision?

Each agency will review their required application according to that agencies' mandate and legislative authority and may discuss the proposed activity with other parties.

All activities may also be assessed using the decision-making process outlined in Appendix A which looks at projects based on potential for Relocation, Redesign and Remediation. If the proponent disagrees with the decision or any of the conditions of approval, they should contact the appropriate agency(ies) to consider their options in accordance with the provisions of the applicable legislation as noted in the decision.

3.0 Contacts - Where can I obtain more information?

For more information on specific applications, please contact the appropriate agency:

Sault Ste. Marie Region Conservation Authority
1100 Fifth Line East, Sault Ste. Marie, Ontario P6A 6J8 (705) 946-8530
Email: nature@ssmrca.ca
Web: https://ssmrca.ca/permits/

Ministry of Natural Resources
64 Church Street, Sault Ste. Marie, Ontario P6A 3H3 (705) 949-1231
For inquiries relating to work permits:
1-855-613-4256
Email: mnr.rasc@ontario.ca
Local email: mnrf.ssm.district@ontario.ca

Ministry of the Environment and Conservation and Parks
Sault Ste. Marie Area Office, 70 Foster Drive, Suite 110 Sault Ste. Marie, Ontario P6A 6V4
(705) 942-6354
Email: environment.saultstemarie@ontario.ca

Fisheries and Oceans Canada
Fish and Fish Habitat Protection Program
867 Lakeshore Road Burlington, Ontario L7S 1A1
1-855-852-8320
Email: DFO.OPHabitat.MPO@dfo-mpo.gc.ca
Web: www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html

Transport Canada
Navigation Protection Program 100 S Front Street, 1st Floor Sarnia, Ontario N7T 2M4
(519) 383-1863
Email: NPPONT-PPNONT@tc.gc.ca
Web: www.tc.gc.ca/eng/programs-621.html

Batchewana First Nation Natural Resource Department
236 Frontenac Street, Rankin Reserve 15D P6A 6Z1 (705) 908-3784
Email: bnr@batchewana.ca Web: www.batchewana.ca

3.1 For agencies involved in the permitting process:

One of the objectives of this document is to support a coordinated approach by agencies with regulatory responsibility for dredging and other in-water activities in the St. Marys River.

Table 2: Agency Roles and Responsibilities

	SSMRCA	MECP*	DFO	MNR	TC**
Coordinate Process					
Participates in the implementation of a coordinated application review process by all parties	✓	✓	✓	✓	
Participates in meetings and discussions as required	✓	✓	✓	✓	✓
Notification/Circulation					
Refers proponents to appropriate agencies	✓	✓	✓	✓	
Provides guidance document to assist proponents throughout the process	✓	✓	✓	✓	
Notifies appropriate agencies when applications are received (project specific)	✓	✓	✓	✓	
Responds to requests for information in a timely manner	✓	✓	✓	✓	✓
Review Application					
Reviews application and provides input in accordance with jurisdiction	✓	✓	✓	✓	✓
Provides scientific information/technical data with respect to impact of activities on contaminated sediment		✓			
Reports to other agencies on findings of its review and recommendations before making a decision on approval.	✓	✓	✓	✓	
Provides notice of final decision to the parties and to the proponent.	✓	✓	✓	✓	✓
Monitoring – Activities					
Monitors compliance of activity with conditions of approval, if applicable	✓	✓	✓	✓	✓

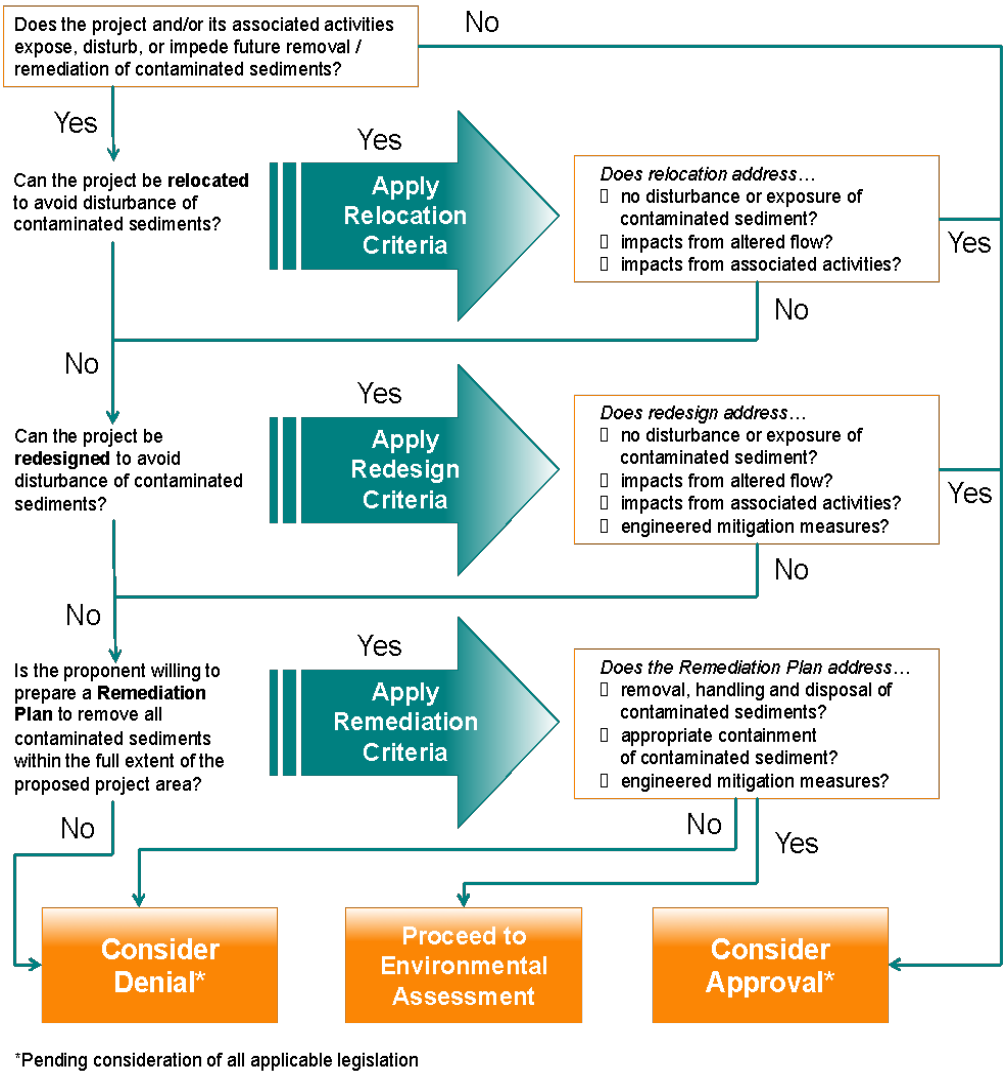
* MECP may solicit input from ECCC based upon their joint work on the Great Lakes Areas of Concern and ECCC's contaminated sediment management experience.

** Navigable Waters Protection

4.0 Further Information

Appendix A: Decision Making Process

The "Decision-Making Process" 1 outlined below summarizes the process for reviewing of all in-water project applications on the Canadian side of the St. Marys River Area of Concern involving the participating agencies.



*Pending consideration of all applicable legislation

[1] Adapted from the "Decision Making Process" flow chart in the Cornwall Sediment Strategy – Administrative Controls Protocol (2005) found at: https://www.rrca.on.ca/view.php?id=40

Appendix B: Applicable legislation as it relates to dredging and in-water activities

The provincial **Conservation Authorities Act** and Ontario Regulation 41/24 Prohibited Activities, Exemptions and Permits requires approval of any activities that may result in development such as the construction of buildings, site alterations (filling, excavating), shoreline alteration (dredging, shorewalls, decks, groynes), interference with a wetland or a watercourse (bridges, culverts).

The provincial **Public Lands Act** (Ministry of Natural Resources) provides that no person shall dredge or fill shorelands or work on Crown land without a work permit. “Shorelands” are defined as lands covered or seasonally inundated by the water of a lake, river, stream or pond and may include private, municipal or Crown lands. It is important to note that the MNR plays a permitting and approvals role when enforcing timing restrictions for in-water work. This is to prevent fisheries from suffering and means that NO in-water work can occur during spawning and incubation periods for fish. MNR may permit certain projects to be completed during a restricted timing window provided adequate control measures are in place to eliminate potential impact to fisheries. Consideration is given to factors such as specific location, nature of the work, mitigation measures, etc. For more information on MNR’s in-water work timing window guidelines visit: www.ontario.ca/document/water-work-timing- window-guidelines

The provincial **Lakes and Rivers Improvement Act** (MNR) requires a work permit and/or approval for dams, channelizations (including dredging, diverting, enclosing a channel), diversions, bridges and culverts. There is a two-phase approval process. The first phase involves location approval and is subject to an ecological review. Once the location is approved, the proponent must provide the MNR with plans and specification drawings that have been approved by an engineer. Copies of the work permit application form are available at Service Ontario Centres or at MNR district office.

The provincial **Environmental Protection Act** (Ministry of the Environment, Conservation and Parks) requires a generator registration number if the dredged sediment is classified as a waste. Additional requirements may apply, depending on the waste classification. For information on how to classify dredged material visit: www.ontario.ca/document/registration-guidance- manual-generators-liquid-industrial-and-hazardous-waste

The provincial **Ontario Water Resources Act** (MECP) provides approval for the collection, treatment and discharge of water and sewage (https://www.ontario.ca/document/guide-applying-environmental-compliance-approval-0). The Act also requires a Permit to Take Water for any water takings greater than 50,000 litres per day. For more information or to download application forms visit: https://www.ontario.ca/page/permits-take- water

The provincial **Endangered Species Act** (MECP) requires a permit to move species at risk individuals and/or encroach on their habitat. These permits are required for all activities proposed within existing or potential species at risk habitat. Under the Act, the MNR can grant different types of permits or other authorizations with conditions that are aimed at protecting and recovering species at risk. There are five types of permits issued under the Act including (1) health and safety, (2) protection and recovery, (3) social or economic benefit to Ontario, (4) Aboriginal, and (5) overall benefit. For more information on getting a permit/authorization visit: www.ontario.ca/environment-and-energy/how-get-endangered-species-act-permit-or-authorization

The federal **Canadian Navigable Waters Act** (Transport Canada) has a Minor Works Order that allows for in-water works to be implemented if they meet established criteria and specific terms and conditions for construction. Proponents are responsible for assessing their own proposed project to ensure it meets the criteria and that all legal requirements set out in the Minor Works Order are met. Works meeting the assessment criteria are classed as “designated works” under the Act, and may proceed as long as they comply with the legal requirements. Otherwise, proponents must provide a “Notice to the Minister (of Transport)” and “Notice of Works” that details the work and identifies likely interferences with shipping and boating activities, and a decision to approve or deny the project will be made. Applications are to be submitted through an external submission site (https://npp-submissions-demandes- ppn.tc.canada.ca/auth/loginconnexion?ret=%2F) which also includes a tool that can be used to assist in the determination of CNWA applicability (which can be found at the following link: https://npp-submissions-demandes-ppn.tc.canada.ca/projectreview-outildexamenduprojet). For more information visit: www.tc.gc.ca/eng/programs-621.html

The federal **Fisheries Act** includes a prohibition against the death of fish (section 34.4(1)) and the harmful alteration, disruption, and destruction (HADD) to fish and fish habitat (section 35(1)), unless authorized by the Minister of Fisheries and Oceans. To protect fish and fish habitat, efforts should be made to avoid, mitigate and/or offset harm. Projects in or near water must also comply with the pollution prevention provisions of the Fisheries Act, and with the federal Species at Risk Act should a project potentially affect a Schedule 1 aquatic species under SARA (DFO). Consult DFO’s website (www.dfo-mpo.gc.ca/pnw- ppe/index-eng.html), specifically the section “Projects Near Water”.

Appendix C: Federally Regulated Species at Risk that may be impacted within the St. Marys River AOC

- Deepwater sculpin (Great Lakes – Upper St. Lawrence populations) has been assessed as Special Concern by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). It is listed under the federal Species at Risk Act (SARA) and was afforded protection under SARA as of December 2007. They are found in lake habitats within the AOC.
- Upper Great Lakes Kiyi has been identified as a Special Concern by COSEWIC. It was listed and afforded protection under SARA as of 2007. Additional protection is afforded through the Fisheries Act. They are found in lake habitats within the AOC.
- Lake Sturgeon (Great Lakes - Upper St. Lawrence populations) is currently being considered for listing under SARA. Currently, protection is afforded through the federal Fisheries Act. If listed under the SARA, it will be afforded additional protection. They are found in lake habitats within the AOC.
- Northern Brook Lamprey (Great Lakes - Upper St. Lawrence populations) has been identified as Special Concern by COSEWIC. It is listed under SARA and was afforded protection under SARA as of March 2009. Additional protection is afforded through the Fisheries Act. They are found in riverine and lake habitats within the AOC.
- Redside Dace is listed as Endangered under SARA as of 2017. Additional protection is afforded through the Fisheries Act. They are found in the Two Tree River watershed.
- Silver Lamprey (Great Lakes – Upper St. Lawrence populations) is identified as Special Concern by COSEWIC. It was listed and afforded protection under SARA in 2019. Additional protection is afforded through the Fisheries Act. They are found in lake and riverine habitats within the AOC.

Appendix D: Provincially Regulated Species at Risk that may be impacted within the St. Marys River AOC

- Lake Sturgeon is listed as threatened in the Great Lakes-Upper St. Lawrence River population. They are found in the river within the AOC.
- Redside Dace is listed as endangered under the Endangered Species Act. They are found in the Two Tree River watershed.
- Northern Brook Lamprey (Great Lakes - Upper St. Lawrence populations) has been identified as Special Concern
- Silver Lamprey (Great Lakes – Upper St. Lawrence populations) has been identified as Special Concern.

Appendix E: Example of what to expect during the permitting process

Considering a project taking place in or near water? Here is an example of the process:

Step 1: Contact the Sault Ste. Marie Region Conservation Authority (SSMRCA)
Remember that regulatory responsibilities are assigned to the Sault Ste. Marie Conservation Authority (SSMRCA) under the Conservation Authorities Act. Some examples of activities that fall under the SSMRCAs regulation include, but are not limited to:

- Dredging
- Boat ramps, slipways and launch ramps
- Boathouses
- Docks
- Erosion-protection works (groynes, gabions, revetments, offshore breakwaters, shorewalls, retaining walls)
- Straightening, changing, diverting or interfering with an existing channel of a river, creek, stream, watercourse, shoreline or wetland

The first step to obtain approval for your project is to contact the SSMRCA. Pre-consultation with SSMRCA staff is strongly encouraged. They will help you determine if the proposed activity is within or will affect the St. Marys River watershed, and help to determine the feasibility of the proposed activity. ***Note that if the project falls outside of the SSMRCA jurisdiction, then the MNR should be the first point of contact.**

Step 2: Complete and submit all necessary permit applications to the appropriate agencies.

a) SSMRCA permit application process

The permit application is called the “Application for Permit pursuant to Ontario Regulation 41/24 – Prohibited Activities, Exemptions and Permits and the Conservation Authorities Act, Part VI”. You will be required to provide your contact information, location of the proposed work, confirmation that you are the legal owner or have landowner authorization, timeline for when the work will be carried out (ie. start and completion dates), and type of activity. The application must also be accompanied by a site plan with scale and dimensions such as:

- Area and lot line dimensions of the subject property.
- Location of the subject property in relation to surrounding streets, concession roads, buildings etc.

- Location, area, and dimensions of other existing structures on the property.
- Proposed location, area and dimensions of all new/proposed structures.
- Location and approximate area of any watercourses, wetlands, ponds, ravines, drainage routes (spring flooding), drains or swales either on or near the property.
- Existing and proposed grades and/or drainage.
- Location of slopes, fill area and setback distances.

Before submitting the application, you must agree that you will abide by all the standard terms and conditions of the permit should your application be approved. The following are the Standard Terms & Conditions you must consent to in order to obtain a permit through the SSMRCA:

1. I understand that in all cases, it is the property owner's responsibility to secure any other necessary approvals. All applications submitted to the Conservation Authority may be released to other federal, provincial and municipal agencies for authorization of works affecting their by-laws, statues or regulations.
2. I hereby grant authorized representatives of the Sault Ste. Marie Region Conservation Authority permission at any time to enter onto the lands which are described herein in order to make any surveys, examinations, investigations or inspections which are required for the purpose of ensuring that the work(s) authorized by this permit are being carried out according to the terms and conditions of this permit.
3. I hereby indemnify and save harmless the Sault Ste. Marie Region Conservation Authority and its officers, employees, or agents, from and against all damage, loss, costs, claims, demands, actions and proceedings, arising out of or resulting from my and/or my agents actions or omissions of the particulars, terms or conditions of this permit.
4. I understand that this permit does not release me and/or my agents from any legal liability or obligation and remains in force subject to all limitations, requirements and liabilities imposed by law.
5. I agree that should the work(s) be carried out contrary to the terms and conditions of this permit, that the Sault Ste. Marie Region Conservation Authority may enter onto the property and cause the terms to be satisfied, at my expense.
6. I understand that non-compliance with the approved permit and conditions is a provincial offence punishable by a fine of up to $50,000 or a term of imprisonment.
7. I agree to maintain all existing drainage patterns, and not to obstruct any and all drainage from other adjacent lands.

What happens to the application once it has been submitted?

Once the application is received and considered to be complete by the SSMRCA, it will be assigned a file number, reviewed by staff and a site visit will be carried out to access the application and specific site conditions. A detailed report and recommendation for approval or denial are provided to the General Manager who can then issue a permit.

If your project is taking place in or near water, you are responsible for contacting all other organizations, boards, and government agencies (Federal, Provincial and Municipal).

A permit from the Sault Ste. Marie Region Conservation Authority (SSMRCA) does not guarantee approval from other agencies. Remember that approvals or permits for projects taking place in or near water may be required from:

- Ministry of Natural Resources
- Fisheries and Oceans Canada
- Transport Canada – Navigation Protection Program
- Transport Canada - Airport & Port Programs
- Batchewana First Nation Natural Resources Department

Timing Guidelines for In Water Work

The Ontario Ministry of Natural Resources (MNR) is the lead agency for setting timing guidelines for work in and around water. These guidelines are determined on a case-by-case basis according to the species of fish in the water body, whether those fish spawn in the spring or fall, and whether the water body is located in the Northwest, Northeast or Southern Region of Ontario.

The St. Marys River AOC is considered part of the Northeast region. In order to determine which timing window(s) apply to your project, you will need to determine what fish species are present in the waterbody in which your project will occur. If uncertain, and for more information contact the Northeast Region Office in Sault Ste. Marie at 705-949-1231 or Tel: 1-800-667-1940. You can then use the following table to determine the dates during which in-water work is restricted. If more than one species is present, then the timing windows should be combined for all species present.

Table: Timing windows when in-water work is restricted for the Northeast Region of Ontario.

Season	Fish Species	Timing window
Spring	Walleye	April 1 to June 20
	Northern Pike	April 1 to June 15
	Lake Sturgeon	May 1 to July 15
	Muskellunge	May 15 to July 15
	Large/Smallmouth Bass	May 15 to July 15
	Rainbow Trout	April 1 to June 15
	Other/Unknown Spring spawning species	April 1 to June 15
Fall	Lake Trout	Sept. 1 to May 31
	Brook Trout	Sept. 1 to June 15
	Pacific Salmon	Sept. 1 to June 15
	Lake Whitefish	Sept. 15 to May 15
	Lake Herring	Oct. 1 to May 31
	Other/Unknown Fall Spawning Species	Sept 1. To June 15

Federal Fisheries Act

To determine whether your project requires review by the Department of Fisheries and Oceans Canada (DFO), or to seek support in complying with the Fisheries Act, you can visit www.dfo- mpo.gc.ca/pnw-ppe//index-eng.html or contact them by phone at 1-855-852-8320 or email DFO.OPHabitat.MPO@dfo- mpo.gc.ca.

The Fish and Fish Habitat Protection Program ensures compliance with relevant provisions under the Fisheries Act and the Species at Risk Act. The program reviews proposed works, undertakings and activities that may impact fish and fish habitat.

If your project is taking place in or near water, you're responsible for:

- understanding the risks to fish and fish habitat associated with your project
- taking measures to avoid and mitigate risks to fish and fish habitat
- requesting an authorization from the Minister and abiding by the conditions of your authorization when it is not possible to avoid and mitigate risks to fish and fish habitat
- ensuring compliance with all statutory instruments, including federal and provincial legislations
- anyone who causes a death of fish or Harmful Alteration, Disruption, or Destruction of fish habitat without prior authorization by the Minister has a Duty to Notify the proper authorities and a Duty to Take Corrective Measures, under the Fisheries Act.

Before you request a review of your project, it is important to ask the following questions.

Question 1: Can you avoid risks to fish and fish habitat?

There are measures to protect fish and fish habitat that will help you avoid risks to fish and fish habitat. These include preventing the death of fish, maintaining riparian vegetation, carrying out activities on land, maintaining fish passage, ensuring proper sediment control, and preventing the entry of deleterious substances in water. To see an in-depth explanation of these measures, please refer to: https://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures-eng.html. If there are aquatic species at risk in the area, proponents must also avoid harming, harassing, capturing or taking those species. If these measures can be implemented, then a project review by the program is not required.

Question 2: If risks to fish and fish habitat cannot be avoided, can they be mitigated?

It is inevitable that certain projects must take place in or near water and could have the potential to cause harmful impacts to fish and fish habitat. A series of codes of practice are available which provide guidance on how to avoid and mitigate risks to fish and fish habitat and comply with the Fisheries Act and Species at Risk Act. Currently there are codes of practice for the following activities:

- beaver dam breaching and removal
- clear span bridges
- culvert maintenance
- ice bridges and snow fills
- routine maintenance dredging for navigation
- temporary fords
- end-of-pipe fish protection screens for small water intakes in freshwater
- temporary cofferdams and diversion channels

In cases where risks to fish and fish habitat cannot be avoided, the project does not fall within waterbodies where our review isn't required or the scope of the project is not entirely covered under standards and code of practice, proponents are asked to submit a request for review to their Fish and Fish Habitat Protection Program regional office. If in doubt about whether a review may be required, please submit a request for review.

Once a request for review form is received, the program will review the proposed project to identify risks to fish and fish habitat. The Fish and Fish Habitat Protection Program will work with the proponent to ensure that risks are managed in the best way possible.

Requirements by MECP for Dredging Activities

The proponent should first define the project by obtaining an up-to-date bathymetry map of the area and, in combination with the areal extent of the project, determine the volume of material to be dredged.

The objective of project and data review is to draw together all the necessary requirements and available information in order to design a sampling survey. The main emphasis of a sampling survey is to define the nature of the material to be dredged.

A careful review of historical data should be made before a sampling program is designed. The data review should consider the following:

i. Does the information meet regulatory requirements?
   - Are there results for all parameters of concern for that specific area?
   - Are analytical methods and detection limits appropriate and adequate?
   - Have the data been generated with adequate quality assurance and quality control practices in place?

ii. Does the information adequately define the nature of the material to be dredged and disposed of?
   - Were an adequate number of samples taken?
   - Do the samples represent surficial sediment or provide a complete depth profile of the material to be dredged?
   - Were the samples collected and handled appropriately?

iii. Are there any long-term temporal trends in the data which indicate a change in the degree of contamination in the project area?

To facilitate the review of dredging/disposal applications, the proponent is requested to submit the following:

- A brief outline of the project proposed and the requirements of the project.
- Detailed map of the dredging project site; the map should clearly indicate bathymetry, relation of major landmarks to site, scale (1:500 or 1:1000), direction of north and sample collection sites.
- Description of the nature of the material to be disposed; this should include the results of bulk chemical analyses; identification of contaminants of concern; results of other tests conducted to further evaluate the materials such as bioassessment testing (toxicity, biomagnification, benthic community), geotechnical testing, testing of settleability or leachability etc. This description should also include a discussion of the latest results compared to provincial and federal sediment quality guidelines, to reference conditions, to earlier surveys, and an up-dated tabulation of results for the project site.
- Description of the surface area, depth, and volume of sediment to be dredged. Map showing the distribution of sediment concentrations and sampling locations.

- A discussion of the proposed disposal alternatives and an evaluation of the disposal mode proposed, including site evaluation, and if containment is proposed, facility design, facility management and facility de-commissioning.
- Generalized map of the disposal area indicating the proposed disposal facility in relation to the project site and the proposed transit routes to the disposal facility.
- If possible, an aerial colour photograph of the project site should be included.

In all cases, it is your responsibility to ensure you follow any additional requirements from other federal, provincial and municipal jurisdictions.

Appendix 2: Summary of Subactions for Action NPS-1

Summary of Subactions for Action NPS-1

Action NPS-1 includes both short and long-term activities ranging from the assessment of immediate remedial options to the implementation of management actions. As such, there are ten sub-actions listed in the Stage 2 RAP report that will support the development of the sediment management strategy, and these sub-actions are summarized below.

i. Sediment mapping of the St. Marys River AOC

The Stage 2 RAP report recommended that sediment mapping in the St. Marys River system be completed showing all significant zones of contaminated sediment. There have been numerous assessments and study reports completed over the past decade focusing on contaminated sediment in the St. Marys River. In order to outline all of the existing data collected within the AOC, ECCC procured services to produce illustrative maps of the study sites. These maps include a historical overview of over 100 sampling sites and results collected by ECCC and MECP since 2002. Maps include those for total sum of polycyclic aromatic hydrocarbons (PAHs) and for heavy metals (ie. exceeding the severe effect level (SEL) for arsenic, chromium, copper, iron, lead and nickel).

These maps are publicly available on the BPAC website:

- Polycyclic aromatic hydrocarbons (PAH): http://bpac.algomau.ca/wp-content/uploads/2015/10/SMR-sediment-maps-Total-PAH-April-2015.pdf
- Heavy metals: http://bpac.algomau.ca/wp-content/uploads/2015/10/SMR-sediment-maps-Metals-April-2015.pdf

Status: Complete

ii. Development of a decision-making framework

This sub-action called for the development of a consistent, scientifically defensible, and publicly acceptable decision-making framework that would identify options for remediation and provide a logical basis to guide community-based management decisions on sediment remediation within the AOC. In 2008, the Canada-Ontario Decision-Making Framework for Assessment of Great Lakes Contaminated Sediment was developed by the Sediment Task Team on Behalf of ECCC and MECP. It provides step-by-step science-based guidance for assessing risks posed by contaminated sediment. The framework is primarily concerned with risks to the environment but considers human health concerns associated with biomagnification of contaminants. It

identifies all possible sediment assessment outcomes based on four lines of evidence (sediment chemistry, toxicity to benthic invertebrates, benthic community structure, and the potential for biomagnification) and provides specific direction on next steps in making sediment management decisions. In addition, the framework provided a mechanism for identifying contaminated sediments of greatest concern (COA, 2007). The framework has been applied to the St. Marys River and will be used to guide future management decisions. It also forms the basis of the Degradation of Benthos BUI delisting criteria and assessment approach, which is explained in detail in the Sediment Management Strategy report (2023).

Status: Complete

i. Identify suitable management actions

This sub-action deals with identifying suitable management actions that can be incorporated into the final Sediment Management Strategy for the AOC. The Conceptual Site Model for the St. Marys River was updated in 2020 and concluded that "sufficient evidence exists to conclude that current conditions in the AOC do not pose a significant risk to human health and/or the environment" and therefore no further action will be required (ECCC, 2018). The Sediment Management Strategy report (2023) has been drafted incorporating these findings.

Status: Complete

ii. Prevent additional accumulation of contaminants

The Stage 2 RAP report recommended the implementation of a strategy to identify and control all major point and non-point sources of contaminant loadings to sediments within the St. Marys River AOC prior to remediation activities. This is important to prevent additional accumulation of contaminants, and also their re-accumulation following remediation.

The CSM (2021) outlines major historical sources and exposure pathways for contaminants in the sediment of the St. Marys River. These include Algoma Steel (formerly Essar Steel Algoma), St. Marys Paper (decommissioned), municipal wastewater treatment facilities, and the decommissioned Consumers Energy manufactured gas plant (Michigan) and Tannery Bay/Cannelton Industries Inc. (Michigan). Three of these sites are no longer in operation (ie. St. Marys Paper, Consumers Energy and Cannelton Industries Inc.), and are therefore no longer an

ongoing source of contaminants. As for the remaining listed sources, substantial progress has been made in implementing source control measures and through MECP regulation of major point sources.

For example, in regards to the municipal facilities, the City of Sault Ste. Marie has completed various stormwater management initiatives. In 2002, the City constructed the Bellevue Park Sanitary Sewer Overflow tank, which mitigates the impact of stormwater infiltration and impacts on the East End Wastewater Treatment Plant (EEWTP). The EEWWTP itself was updated in 2006 to include the first biological nutrient removal system in Ontario and ultraviolet disinfection. In 2009, the City updated its Sewer Use By-law to prohibit the discharge of stormwater and surface water to the sanitary sewer system. In 2015, a new Storm Water Management Master Plan and Guidelines was approved by City Council. This allows the City to implement a city-wide approach to stormwater management. Although projects are pending the City's budgeting process over the coming years, plans for stormwater management include improving snow disposal sites, education, implementing a point source monitoring plan, implementing oil grit separators, improving stormwater conveyance, and the retrofitting of existing stormwater management facilities for quality control.

Since 2019, Algoma Steel has been implementing the Legacy Environmental Action Plan (LEAP) agreement with the Province of Ontario. The LEAP is a risk-based environmental management agreement between Algoma Steel and the Ministry of Environment, Conservation and Parks. Objectives of the LEAP include identifying, assessing, managing, and mitigating off-site adverse environmental effects caused by legacy environmental contamination. The targeted investment of this agreement is $79.8 million over 21 years (i.e. $3.8 million spend yearly).

Status: Complete

iii. Monitoring program for major dischargers

The Stage 2 RAP report recommended a monitoring program to track water and sediment quality at major discharge points in relation to industry and municipal facilities. Existing monitoring programs are in place and a number of federal and provincial acts and regulations apply to industrial activities. For example, Algoma Steel continually monitors both air and water in accordance with MECP guidelines.

Status: Ongoing

iv. Monitoring and control during sediment remediation activities.

There is a need to monitor and control any resuspension of contaminants that may occur during sediment remediation activities, such as with Algoma Steel's remedial dredging in 2017-2019. This sub-action has been addressed with the creation of the *St. Marys River Dredging and In-water Works Administrative Controls Guidance* document, which summarize the local, provincial and federal permitting and approvals process for such work.

The objectives of the St. Marys River Dredging and In-water Works Administrative Controls are:

- to outline the administrative approach on in-water activities to minimize the disturbance, exposure or resuspension of contaminated sediment;
- to establish principles that will guide decisions;
- to summarize the roles and responsibilities of the proponent and agencies involved;
- to provide guidance for proponents submitting in-water project applications for required permits; and
- to summarize agency mandates and to promote a common review process for regulatory activities that have the potential to disturb contaminated sediment.

Status: Complete

v. Track atmospheric inputs

The Stage 2 RAP report recommended tracking atmospheric inputs of persistent toxic substances to the waters and basin of the St. Marys River. This sub-action is beyond the scope of the AOC and RAP program, which focuses on locally-generated impacts. Atmospheric inputs are already addressed under a number of other programs such as the Lake Huron and Lake Superior Lakewide Action Management Plans, and federal and provincial regulations with respect to domestic sources of atmospheric emissions (SMRRAP, 2018).

Status: Not Applicable

vi. Monitoring and remediation of the Sediment Management Strategy

Appropriate monitoring of remediation, both short and long-term, is a recommended component of the Sediment Management Strategy. The Sediment Management Strategy has been drafted and is currently undergoing pubic and Indigenous engagement activities. The strategy will be finalized in 2024, but appropriate actions are already underway to effectively manage contaminated sediment as needed (e.g., remedial dredging at Algoma Boat Slip, monitored natural recovery at Transport Canada's Federal Waterlot, etc.)

Status: Pending

vii. Incorporate benefits of advancing technology

The Sediment Management Strategy incorporates the benefits afforded by advancing technology. For example, remedial actions previously considered necessary but unrealistic, will be initiated once new technology makes them feasible, provided the necessity of these actions is still supported by current monitoring data and decision-making criteria.

Status: Complete

viii. Coordinate monitoring and remediation activities with Lake Huron LAMP

All of the above-mentioned monitoring and remediation activities should be fully coordinated with those of the Lake Huron Lakewide Action and Management Plan (LAMP). The Lake Huron LAMP is a five-year, ecosystem-based strategy for restoring and maintaining the water quality of Lake Huron and the St. Marys River. One of the Lake Huron Partnership actions of 2017-2021 was the development of a Sediment Management Strategy for the Canadian portion of the St. Marys River. For 2022-2026, the action is to continue implementing planned management actions on the Canadian side of the river with a focus on implementing the Sediment Management Strategy and associated *Dredging and In-water Works Administrative Controls Guidance* document. For further information visit: https://binational.net/

Status: Complete