

St. Marys AOC Habitat Restoration

Frequently Asked Questions (FAQ)

This document was developed to compile and address questions asked at multiple public and project team meetings on the Little Rapids project held in 2012 and 2013 during the engineering and design phase of the project. This document has been updated to reference the current project design and schedule.

1. Why is this project being considered?

A. The St. Marys River was designated a Great Lakes Area of Concern (AOC) in 1987 due to pollution and habitat alteration. The river is listed for 10 of 14 Beneficial Use Impairments (BUIs) evaluated under the AOC program, including Fish and Wildlife Populations and Habitat. Restoring the Little Rapids has been identified as a key project for addressing fish and wildlife impairments and an important step in delisting the river as an AOC by several groups, including the Binational Public Advisory Committee (BPAC); Michigan Department of Environmental Quality (MDEQ), Great Lakes Commission, St. Marys River Fisheries Task Group and the Chippewa Ottawa Resource Authority. Federal funding through the Great Lakes Restoration Initiative is currently available to support priority projects in Great Lakes AOCs. Local, State and Federal partners have secured funds to implement the project in 2016 and complete all management actions on the U.S. side, necessary to delist the site as an AOC.

Historically, there were four rapids areas in the St. Marys River: the Main Rapids, the Little Rapids, the East Neebish Rapids, and the West Neebish Rapids. The main rapids is the only location that still functions as a rapids, but receives less than 10% of the river's flow. The Little Rapids were located at the area known as the Little Rapids Cut, which includes the dredged shipping channel downstream of the Sugar Island ferry, as well as east of the Cut, between Island No. 1 and Sugar Island. At Little Rapids the development of the Sugar Island Causeway greatly reduced the flow of water needed to maintain the rapids in this eastern portion of the River. As a result, the rapids habitat that once provided important ecological productivity for the river was lost.

With proper design the eastern Little Rapids site can be restored to provide foraging, spawning and nursery habitat for a wide variety of sport fish and other aquatic organisms, while improving the condition of the causeway and improving access and recreation.

The St. Marys River is a globally unique river that forms a binational connecting channel between Lake Superior and Lake Huron, two of the largest freshwater systems in the world, with shared jurisdiction between the Canadian Province of Ontario and State of Michigan. The St. Marys River is defined from the head of the river at Whitefish Bay, downstream through the St. Joseph Channel to Humburg Point on the Ontario side, and to the straits of Detour Passage. The river has a sizable urban area including the cities of Sault Ste. Marie, Michigan, and Sault Ste. Marie, Ontario. The twin cities, known popularly as the "Soo", have a combined population of over 95,000 people, with the majority living in Ontario. Both communities have a strong tourism-based economy that is centered on sport fishing and other recreational activities tied to the St. Marys River. The river is a destination for anglers traveling from across the United States, Canada, and beyond.

2. Where does the funding for the project come from?

What happens if there are cost overruns?

A. The Engineering and Design phase of the project (feasibility, engineering, analysis, and environmental assessment) was funded by a Great Lakes Restoration Initiative (GLRI) grant from the National Oceanic and Atmospheric Administration (NOAA) to Eastern Upper Peninsula Planning and Development Little Rapids Commission (EUP). The Engineering and Design phase of this

project had a well-defined budget and the project was well within the GLRI grant award limit. Project implementation was funded by a GLRI grant from NOAA to the Great Lakes Commission (GLC). The GLC has partnered with The Chippewa County Road Commission, which will lead local implementation. NOAA works closely with the grantees to ensure that projects stay within budget. The project is expected to be completed within budget.

3. Who will own and maintain the structure?

A. The Chippewa County Road Commission owns and maintains the causeway. This will continue to be the case when the restoration project moves forward.

4. What is the condition of the two existing culverts?

A. A detailed structural analysis of the existing culverts was not performed as part of the project. Due to the location, water levels and water velocity at the culverts, they are both challenging and dangerous to evaluate. A visual inspection completed indicates that flow does pass through the culverts. Based on the approximated installation date of the existing culverts, the culverts are nearing or have reached their service life. Service life of a material estimates the length of time a product will properly function (before it begins to fail) and is based on multiple factors, in this case, including such factors as soil types and flow characteristics.

5. How many fish will spawn in the Little Rapids area if the project is constructed?

A. The proposed restoration project will create conditions that are optimal or nearly optimal for many species of fish and will result in a greater diversity of species spawning upstream and downstream of the causeway. The number of fish that will use the area for spawning will vary from year to year based on a number of conditions. Observations have been made of some species (e.g., pink salmon, Chinook salmon) spawning under the current conditions; restoring flow will increase the success of the spawning that currently takes place in addition to creating more spawning habitat. A baseline assessment for fish spawning, diversity, and abundance was conducted in 2013/2014, and further monitoring for fish will be done following project completion.

6. How will the project impact turbidity below the causeway?

Homes along Whitehead Road draw water from the Little Rapids.

A. Turbidity could potentially increase during construction of the project from use of mechanical equipment working on material within the flow of the river. During construction turbidity will be minimized through the use of turbidity curtains at the construction site that will isolate work activity. Turbidity curtains can also be installed around individual water intakes to provide further protection. After construction activities are complete the turbidity will be consistent with that of the shipping channel.

7. What impact will allowing more flow through the causeway have on water temperature?

A. Water temperature will be similar to that in the shipping channel.

8. Are there contaminated sediments under the causeway?

Where will they be disposed of at?

A. The only material anticipated to be removed is the fill material that the causeway is made of. Sediments from the Little Rapids area are not proposed for removal. The sediments in the Little Rapids area contain low amounts of nickel, lead, chromium, arsenic and other metals, as well as polycyclic aromatic hydrocarbons (PAHs). All measured metals and PAHs were below human health criteria established by the State of Michigan for soil, see table below (item 10; Note: ND=Non Detect). As such, materials are not anticipated to need a special method for disposal. It will be the responsibility of the contractor to dispose of the material.

9. The causeway was built in 1865 to push as much water as possible into the shipping channel. Check out the Bernie Arbic book City of Rapids on the Little Rapids for historical information on the causeway development. (A copy can be found at the Bayliss Public Library)

A. Many changes have occurred in the St. Marys River since the causeway was constructed to accommodate commercial shipping traffic. These changes have made the causeway obsolete and unnecessary from a flow management perspective.

10. Is this going to be a superfund site once the sediments are disturbed, are we trading one problem for another?

A. No. The existing data shows that the contaminant levels are below thresholds established by the state to be protective of human health. The table below compares 2001 Sample (PPM) MDEQ Part 201 Criteria (PPM) metals concentrations within Little Rapids sediment to human health criteria established by the State of Michigan.

Metal	2001 Sample (PPM)	2003 Samples (PPM)				MDEQ Part 201 Criteria (PPM)
	SM01-11	# of Samples	Range	Mean	Max	Soil Direct Contact
Arsenic	2.9	10	0.54-2.81	1.81	2.81	7.6
Barium	130	Not Tested				37,000
Cadmium	0.12	10	<.439-<1.172	<.726	<1.172	550
Chromium	39	10	8.4-54.5	35.32	54.5	790,000
Copper	22	10	4.8-36.9	19.22	36.9	20,000
Lead	7.2	10	3.4-25.1	19.16	25.1	400
Manganese	350	Not Tested				25,000
Mercury (Inorganic)	ND	10	3.66-101.18	41.6	101.18	160
Nickel	26	10	5.6-23.1	13.56	23.1	40,000
Selenium	0.2	Not Tested				2,600
Silver	0.74	Not Tested				2,500
Zinc	48	10	17-101.6	64.54	101.6	170,000
Naphthalene	ND	10	0.4-.0.5	0.45	0.5	16,000
Phenanthrene		10	0.3	0.3	0.3	1,600
Flouranthene		10	0.4-0.8	0.575	0.8	46,000
Pyrene		10	0.4-0.6	0.53	0.6	29,000
Chrysene		10	0.3-0.4	0.35	0.4	2,000
Benzo[b]flouranthene		10	0.4-0.5	0.45	0.5	20
Benzo[k]flouranthene		10	0.3-0.4	0.35	0.4	200

11. What is the construction time frame?

A. Construction time frame is estimated at 9 months.

12. What are the traffic impacts proposed to be during construction?

A. Two temporary lanes of traffic were included as part of the requirements in the Request for Proposal (RFP) to bidders. This was done to accommodate island residents in efforts to create relatively unimpeded travel around the construction and access to the ferry. The posted speed will be reduced on the temporary lanes for the safety of all workers and motorists. It should be noted that while the contractor will make every effort to keep the temporary lanes open, from time to time they may need to reduce these lanes and will direct traffic via the use of flaggers. The contractor has been asked to time these reductions, as best possible, to occur during off-peak times. The reduction of the temporary lanes would be relatively short spans of time, but will be required.

13. Does Sugar Island Township have a say in this?

A. The NOAA Restoration Center funds community-based restoration projects and community involvement is critical in all phases of the project. We will continue to have public meetings with the BPAC, Township Officials, and the County Road Commission.

14. If one of the proposed project alternatives is not deemed feasible can the money be used elsewhere in the community?

A. NOAA would consider other habitat restoration projects however; it is likely that if this project is not feasible NOAA would use the funds to support habitat restoration at other AOCs. These funds are designated for Great Lakes habitat restoration work and will not be diverted to fund other public works type projects.

15. Who has the results of the previous tests done on sediments in the Little Rapids Area? U.S. Army Corps of Engineers (USACE) or Lake Superior State University (LSSU)?

A. Sampling results are provided in documents titled Current Sediment Quality in the St. Marys River AOC (MI:USA) authored by LSSU and Oswego State University and Sediment Sampling, Lower St. Mary's River, Sault Sainte Marie, Michigan prepared for the USACE. The studies are available at: http://www.eup-planning.org/index.php?page=Little_Rapids_NOAA_Project

16. What is the probability of the acreage restored? What if it's less?

A. The objectives of the restoration project are to enhance 70 acres of aquatic habitat by restoring flow to former rapids habitat. This will provide critical habitat to a variety of aquatic species and ultimately help achieve the removal of the St. Marys River impairments related to fish and wildlife populations and habitat. The final acreage to be restored will depend upon the selected design, which will not be known until the contract has been awarded. The goal of the restoration project is to create conditions that are optimal or nearly optimal for many species of fish and will result in a greater diversity of species spawning upstream and downstream of the causeway. The number of fish that will use the area for spawning will vary from year to year based on a number of conditions. It was determined by hydraulic modeling that restoring flow through a minimum of 600 feet of the causeway would result in the minimum water velocity required to provide optimal spawning conditions for the greatest number of St. Marys River fish species. Monitoring fish presence, as well as other physical and environmental factors, before and after the project is completed will be an integral part of the project to measure success.

17. Is there a way for the bridge to be widened after it's constructed?

A. It is very common to widen bridges as traffic volumes increase or to widen substandard shoulder widths. Future widening can be made easier by detailing the bridge in certain ways.

18. What about widening the current road surface?

A. The causeway is under the jurisdiction of the Chippewa County Road Commission. It is our understanding that the Chippewa County Road Commission has no plans to widen the existing roadway. The proposed structure would provide two 11 foot lanes (matching existing conditions) and 4 foot wide shoulders to minimize costs while satisfying American Association of State Highway Transportation Officials (AASHTO) guidelines (the prevailing national design code).

19. What are the next steps to implement the project?

A. The initial phase (Engineering and Design, Environmental Assessment and Flow Modeling) was completed in August 2013. Implementation has been funded through a grant from NOAA to the Great Lakes Commission (GLC). The GLC has partnered with the Chippewa County Road Commission to lead implementation in 2015 and 2016. Other local entities involved in the project include Lake Superior State University and the Eastern Upper Peninsula Planning and Regional Development Commission.

20. What about using the National Guard temp bridge?

A. Floating structures and barges are typically designed to float and be supported by water. The use of a floating bridge may be inhibited by the shallow conditions that currently exist within the project limits. There are currently no plans to utilize any temporary bridge structures owned by the National Guard as they would need unencumbered access to the bridge to utilize it in an emergency causing complete closure of the causeway.

21. Look at different approach to pass water through the causeway (e.g. opening lengths and bridge/ culvert options)?

A. The engineering and analysis phase of the project analyzed a number of alternatives for the causeway that would lead to restoration of the rapids. From a hydraulic perspective this has included openings of the causeway from 400 feet to 1,000 feet. Bidders were allowed the opportunity to evaluate both bridge and culvert options. Upon an initial review of submitted proposal, it is anticipated the project will include construction of a bridge.

22. When will construction occur?

A. Construction projects generally occur during the warmer months because production is more efficient than it would be in colder months. Structural concrete construction can be performed in cold weather, if cold-weather techniques are utilized. Cold-weather techniques increase costs. However, road construction operations are typically prohibited in cold months for several reasons: 1) Asphalt plants close down during the winter and 2) Constructing pavement on frozen soil will result in pavement damage during the first thaw.

23. How do we decide on what alternative is selected?

A. Decisions on project designs were based upon feedback received at the public meetings in November 2012 and January 2013 from multiple entities including: County Road Commission, Township officials and residents, BPAC, Michigan Department of Environmental Quality (MDEQ), Michigan Department of Natural Resources (MDNR), NOAA, U.S. Fish and Wildlife Service (USFWS), and U.S. Environmental Protection Agency (EPA). Desired attributes were incorporated into the RFP requirements.

24. What will be the impact on river flows? Will flow and/ or water level change in the main shipping channel, through the Little Rapids area and north of the island?

A. The Little Rapids restoration project will have minor impacts to river flows and lake levels. The Little Rapids project will maintain 96% of the current flows in the main shipping and Lake George channels. The diverted flow volume is small (4%) compared to total flows in these two channels. Thus, changes to water depths and velocities in the shipping channel and Lake George Channel are relatively small and within the range of normal fluctuation.

25. How will flow changes impact shipping, water quality, bank erosion, ice formation (in the shipping channel and within the Little Rapids area), the ferry, and the causeway?

A. Because flow, depth and velocity changes in the main shipping and Lake George channels are predicted to be relatively minor, conditions related to water quality, bank erosion, and ice formation in this area will not change.

In the Little Rapids area velocities will increase (this is the goal of the project). This will reduce ice formation in some areas. Current trends in bank erosion and deposition along the Little Rapids shoreline are not expected to significantly change due to the project. In general, water velocities along the banks will be lower than in the center of the rapids where flows will be the highest, reducing the likelihood of increased rates of erosion. Additionally, the large cobble substrate found in the Little Rapids is expected to provide adequate erosion protection.

Velocities near the ferry dock are expected to remain the same with and without modifications to the causeway and thus no changes related to ice in this area are predicted.

26. How will this project affect the North End Wastewater Treatment Plant (WWTP) issues?

A. The water diverted through the rapids will lessen the flow slightly (a decrease of less than 4%) in the Lake George channel. However, the North End WWTP is located further downstream of the Little Rapids project site. The flow diverted from the Lake George channel will not “pull” water from near the WWTP back upstream to the Little Rapids. Thus, conditions in the Little Rapids area will not change from as they currently exist.

27. How much will operation and maintenance (O&M) be on the bridge and who will pay for it?

A. Maintenance of the road and bridge would be the responsibility of the Chippewa County Road Commission.

28. How large of a structure is expected?

A. We are considering structures with open spans from 400 feet to 700 feet long. The structure types being considered are spanning or bride/box culverts. Slight freedom has been given to the potential contractors to construct a design that best fits the budget.

29. The lower Little Rapids is very nice swimming during the summer and in the winter supports ice skating and snowshoeing because of solid ice. Will the project impact these activities?

A. The project will mainly increase flow and velocities in the main channel of the Little Rapids just downstream of the causeway. Flows in near-shore areas will change less. Thus, impacts to swimming near shore will be minimal and swimmers in the main channel will have to contend with increased velocities and flow. Increased velocities and flow will also reduce ice formation in this area.

30. Many residents get their drinking water from Little Rapids Bay. Will the project impact their water supply?

A. No. Changes to flow and velocity will not affect drinking water supply.

31. Water levels are low now, but were historically higher. Will the project assess impacts at other lake levels?

A. The project assessed impacts at four lake level, and St. Marys River flow, conditions. These included historically low (42,000 cfs) and high (127,000 cfs) conditions, a biologically important (82,000 cfs) flow, and an average of recent conditions (62,000 cfs) in the river.

32. Shipping/Freighter Impacts (hydraulic) on Fish Habitat

A. Inevitably, boat traffic (freighters and the ferry) will have some level of impact on the Little Rapids area and the goals of this restoration project. Due to the potential for water surges and fluctuating Great Lakes water levels, freighters and the ferry could have temporary or permanent impacts on fish spawning activities. However, these impacts could also be minor because the Little Rapids is afforded some protection by the multiple islands and shoals in the area.

Freighter passage and seasonal shipping restrictions were outlined included in the Code of Federal Regulations (CFR) in 1992 and followed by a Memorandum of Agreement (MOA) among relative parties in 1993 and updated in 1998. These rules and regulations were developed by directors with input from the Michigan Department of Natural Resources (MDNR), the Michigan Department of Environmental Quality (MDEQ), and federal agents from the U.S. Fish & Wildlife Service (USFWS), U.S. Army Corps of Engineers (USACE), and U.S. Coast Guard. These agencies have joint control of shipping activities and have performed research evaluating and understanding the associated impacts of shipping on fishes, coastal wetlands, and other ecosystem processes.

Any potential negative effects to spawning habitat by the shipping industry would need to be assessed, evaluated, and remedied by these state and federal agencies.

33. What is the definition of “Restoration” and “Rapids” respectively?

A. Total restoration to match historical conditions of the area is not feasible or practical. The shipping channel is an important economic driver for the nation and will not be removed. However, this does not mean that restoration of habitat is not possible. Increasing flows and velocities through the Little Rapids area will provide benefit to the fishery. Areas of high velocity, shallow depth with rocky substrate that are suitable for spawning are limited in the St. Marys River system thus any increase of area with the attributes is important to the management of the resource within the Great Lakes ecosystem.

34. Location of the causeway between 1997 and the current project?

A. The existing study evaluated several bridge opening lengths and locations under a wide variety of flows. These flows included historic low flow (even lower than we have recently experienced) and high flow conditions. The final opening length and placement selected was because it maximized areas with high velocities across a range of flows. Other placements provided greater or less spawning area at higher or lower flows, but when considering all flows and cost a single long open span was determined to be the most effective use of available funds. The study completed for this project is the only study to use a detailed hydraulic model of the system that was capable of predicting conditions in the lower Little Rapids under different flow conditions.

35. Will this project increase the population of Sea Lamprey?

A. According to the US Fish and Wildlife Service, the availability of sea lamprey habitat is not limiting numbers in the St. Marys River; thus, adding additional suitable habitat will not result in an increase of the sea lamprey population.

36. What are the impacts of heavier usage of the ferry?

A. It is anticipated that the construction material, equipment and crews will use the ferry during non-peak times. Limits can be placed on their use of the ferry in the bidding documents to minimize impact to island residents and visitors.

37. What will the disruption of the current habitat be?

A. The current habitat present in the Little Rapids is warm water, lake-like habitat which is relatively abundant in the St. Marys River due to the historic river modifications done for the shipping canal and locks. In comparison, swift-water rapids habitat is relatively rare due to these past construction activities which destroyed three of the four St. Marys River rapids. This correlates with the species that are present or spawn in each habitat. Species preferring warm, slack water are more common and abundant due to the plentiful habitat while species requiring rapids habitat to spawn are rarer. Several threatened and endangered species within the St. Marys River require rapids habitat to reproduce.

38. What is the cost of maintenance for the proposed structure?

A. The preferred alternate is low maintenance and meets the Chippewa County Road Commission’s desire to have a hot mixed asphalt driving surface to reduce future maintenance costs.

39. How will this project benefit the economy? Will it affect tourism?

A. The Little Rapids Restoration Project was identified decades ago by the BPAC to improve the environmental health and habitat of the St. Mary’s river area. With restored spawning grounds and a small restoration of a portion of the rapids, aquatic life should thrive. Fishing, hunting, and watercraft sports will increase, drawing more outdoor- loving people to the area. The St. Marys River will be taken off the AOC list, and be a larger attraction to tourists.

40. Why have this project at all?

A. The St. Marys River is an integral part of Sault Ste. Marie culture and individuality. The river, with the locks, shipping canal and abundant wildlife, is the focus of the community. The explosion of development impacted the river, altering the flow of water and reducing habitat quality for fish and wildlife. Planning for the Little Rapids Restoration Project was initiated in 1992 by the Soo Area Sportsmen’s Club with input from the region’s many stakeholders. The Binational Public Advisory Committee (BPAC) identified the Little Rapids restoration as a key project for addressing fish and wildlife impairments and an important step in delisting the river as an AOC. By restoring a small portion of the rapids and providing spawning grounds for numerous fish species, the environmental health will improve and the river will be removed from the AOC list. By extension, the Sault Ste Marie area will improve.

41. Why are you tearing up a “perfectly good road”?

A. Within the next five years this segment of roadway would need to be reconstructed and the existing culverts updated or maintained in some fashion, by the County Road Commission, using some combination of federal, state and local funds. Utilizing the funding from this project, the road commission is able to make repairs that benefit the community and environment, with 100% federal funding.

42. Who will I be able to contact if I have questions or concerns not addressed here? Where can I find more information?

Great Lakes Commission:

<http://bit.ly/LittleRapidsRestoration>

EUP Regional Planning and Development Commission:

<http://eup-planning.org/past-projects/little-rapids-noaa-project>

For More Information Contact:

Rob Laitinen, Superintendent/Manager,
Chippewa County Road Commission, 906-635-5295, surveyor@sault.com

Heather Braun, Project Manager for Habitat Restoration,
Great Lakes Commission, 734-971-9135, hbraun@glc.org

Jeff Hagan, Executive Director,
EUP Regional Planning & Development Commission, 906-635-1581,
Toll Free: 855-885-3690, jshagan@eup-planning.org

