DEPARTMENT OF THE ARMY
DETROIT DISTRICT, CORPS OF ENGINEERS
BOX 1027
DETROIT, MICHIGAN 48231-1027

April 3, 2014

IN REPLY REFER TO:
Planning Office
Environmental Analysis Branch

PUBLIC NOTICE

1. The U.S. Army Corps of Engineers (USACE), Detroit District, proposes to place dredged material from the St. Marys River Federal navigation channel at Moon Island. Moon Island is located alongside the Federal navigation channel in Chippewa County, Michigan, about 22 miles south of Sault Ste. Marie, Michigan, near the southern end of Neebish Island. Only shoal material tested and found to be suitable for unrestricted placement would be placed at the island. The dredged material would be placed within a stone perimeter that will provide added erosion protection for the island.

2. Potential alternatives for handling dredged material from the Federal channel in the St. Marys River include: 1) No Action, 2) Upland Placement, and 3) Moon Island Placement. The proposed action is Alternative 3, Moon Island Placement. A stone perimeter would be constructed around the island and immediately adjacent shallow water area. To maximize fill capacity while avoiding scrub shrub wetlands on the island, approximately 6.1 acres of emergent vegetation (mainly common reed) would be filled, but 6.1 acres of the newly filled area that is currently open water will be left at a lower elevation to develop into replacement wetlands.

3. This Public Notice and the attached Environmental Assessment (EA)—*Dredged Material Placement, Moon Island, Chippewa County, Michigan*—are being issued for the purpose of providing information to various Government agencies and the general public and to solicit their comments and views relative to the proposed activity. The EA, which contains more detailed information about the proposed action and its potential impacts, is incorporated by reference into this Public Notice.

4. The EA includes a Section 404(b)(1) Evaluation, pursuant to the Clean Water Act, for placement of fill material into the waters of the United States. Any person who has an interest that may be affected by the proposed dredged material placement at Moon Island may request a public hearing. The request must be submitted in writing within the comment period of this notice (as described below) and must clearly set forth the interest that may be affected and the manner in which the interest may be affected by this activity.

5. Environmental review of the proposed action indicates that dredged material placement at Moon Island using suitable shoal material from the Federal navigation channel would not result in significant adverse environmental effects, nor would it be expected to result in any significant cumulative or long-term adverse environmental effects. Adverse effects would be minor, limited primarily to short-term noise and air emissions from equipment operation, minor turbidity generated from construction activities, temporary displacement of

fish, and limited destruction of bottom-dwelling organisms within the immediate work zone. Leopard frogs would likely be eliminated from the island though loss of natural shoreline, but ample frog habitat is found along much of the shoreline of Munuscong Bay. The project will allow for efficient maintenance of the Federal navigation channel, which is a critical link in the Great Lakes—St. Lawrence Seaway System. By expanding the island area, the project will increase habitat area for various species, including great blue heron, which have several rookery areas on the island. The perimeter stone berm would protect the island from further erosion.

6. The proposed project is expected to have minimal effect on the coastal zone of Michigan, and would be consistent to the maximum extent practicable with the State of Michigan Coastal Zone Management program. Water quality certification under Section 401 of the Clean Water Act has been requested from the State of Michigan. State certification or a waiver thereof would be obtained for this project.

7. Copies of this Public Notice and EA are being sent to the U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, the Michigan Department of Environmental Quality and other Federal, state, and local agencies, Native American tribes, and other interested groups and individuals. Any comments you may have concerning the proposed action should be made within thirty (30) days from the date of this notice. If no comments are received by the end of the thirty (30) day review period, it will be assumed that you have no comment. Please direct your comments to:

U.S. Army Engineer District, Detroit
ATTN: CELRE-PL-E (Charles A. Uhlarik)
477 Michigan Avenue
Detroit, Michigan 48226-2550

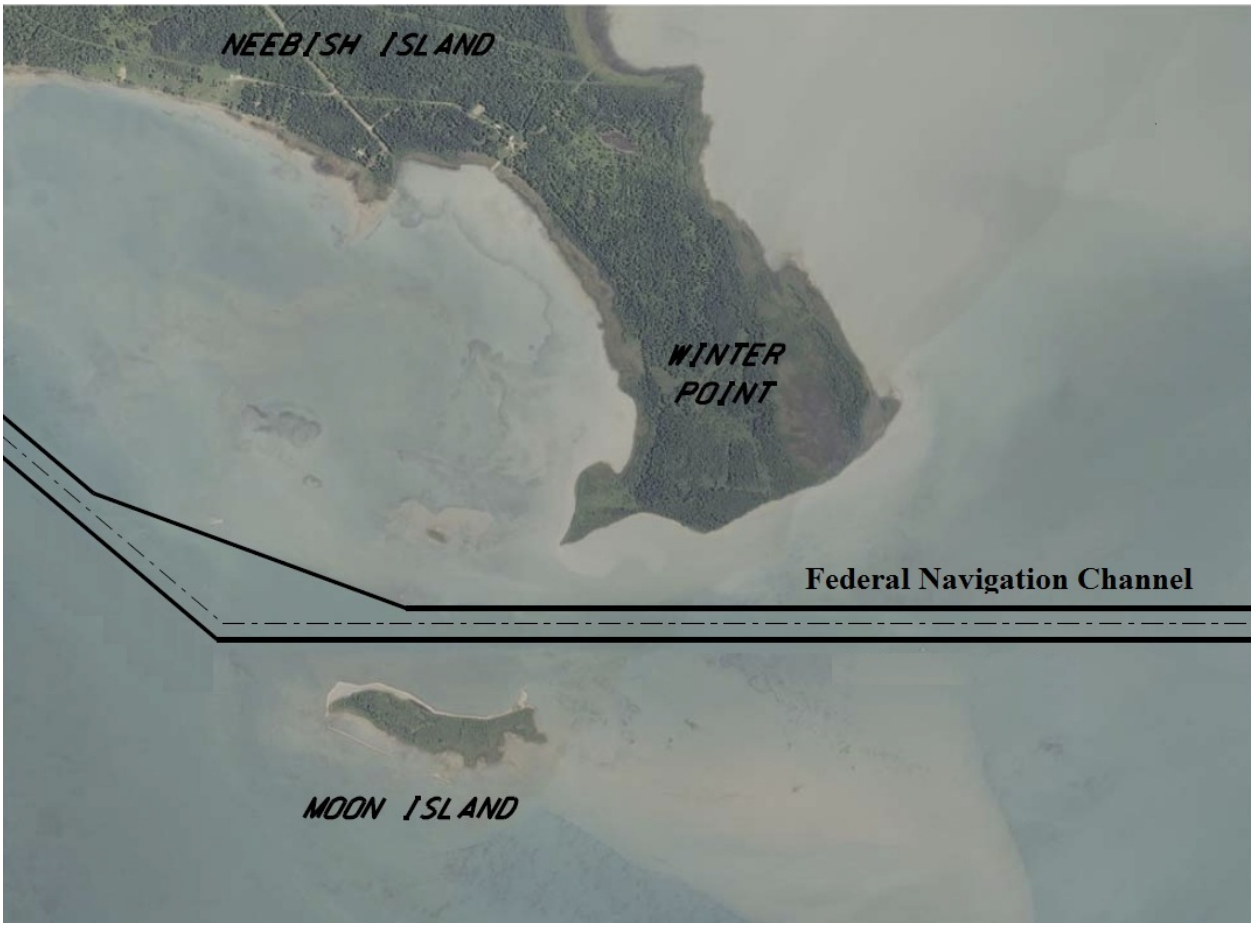
8. Following the comment period and a review of the comments received, the District Engineer (Detroit District, Corps of Engineers) will make a final decision regarding the necessity of preparing an Environmental Impact Statement (EIS) for the proposed dredged material placement at Moon Island, Chippewa County, Michigan. Based on the conclusions of the EA, it appears that preparation of an EIS will not be required; therefore, a preliminary Statement of Findings/Finding of No Significant Impact has been included in the EA.

Charles A. Uhlarik
for Jim E. Galloway
Chief, Planning Office

Enclosure

ENVIRONMENTAL ASSESSMENT
& SECTION 404(b)(1) EVALUATION

Dredged Material Placement
Moon Island
Chippewa County, Michigan



April 2014

U.S. Army Engineer District, Detroit
Corps of Engineers, CELRE-PL-E
477 Michigan Avenue
Detroit, Michigan 48226-2550
313-226-2476

ENVIRONMENTAL ASSESSMENT
& SECTION 404(b)(1) EVALUATION

Dredged Material Placement
Moon Island
Chippewa County, Michigan

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ENVIRONMENTAL ASSESSMENT

Dredged Material Placement
Moon Island
Chippewa County, Michigan

1.0 INTRODUCTION, AUTHORITY, PURPOSE AND NEED

1.1 The U.S. Army Corps of Engineers (USACE), Detroit District, proposes to place dredged material from the St. Marys River Federal navigation channel at Moon Island. Moon Island is located alongside the Federal navigation channel in Chippewa County, Michigan, about 22 miles south of Sault Ste. Marie, Michigan, near the southern end of Neebish Island (Figure 1). The dredged material would be placed within a stone perimeter that will provide added erosion protection for the island.

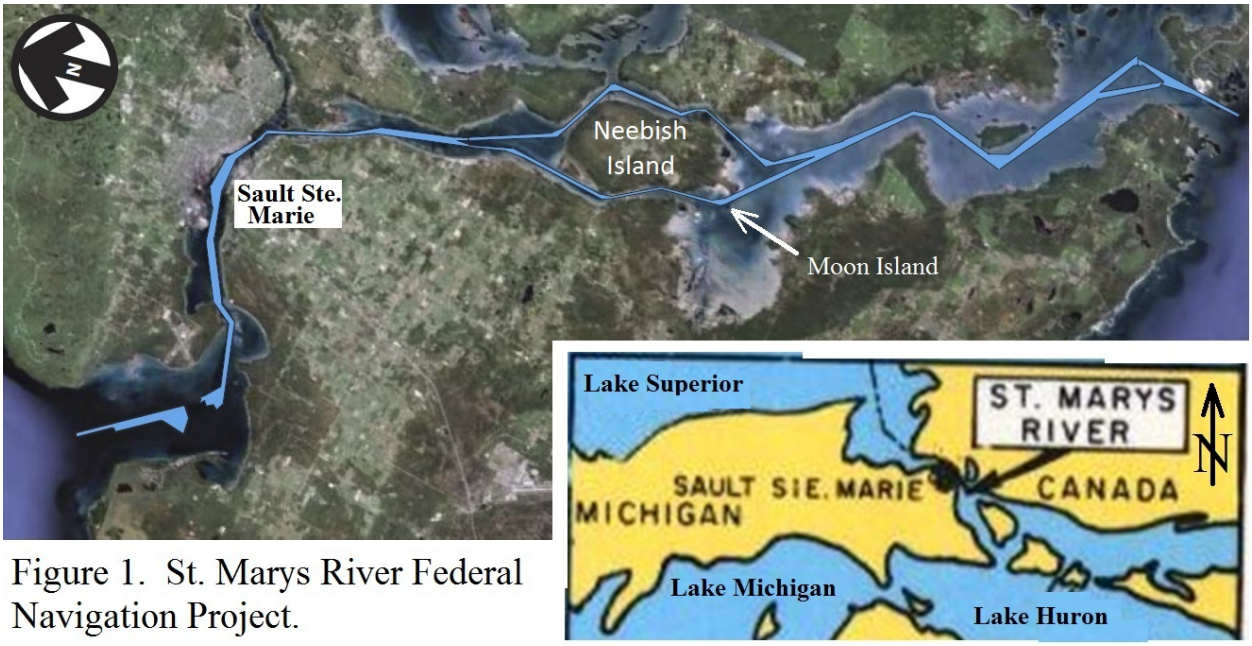

Figure 1. St. Marys River Federal Navigation Project.

1.2 The St. Marys River is 280 miles north-northwest of Detroit, Michigan, and 350 miles east of Duluth, Minnesota. The river flows approximately 70 miles southeast from Whitefish Bay, Lake Superior, to Potagannissing Bay, Lake Huron, following the international boundary between the Upper Peninsula of Michigan and the Canadian province of Ontario. It is the only water connection between Lake Superior and the other Great Lakes. The river has an average flow of 74,162 cubic feet per second and drops 22.3 feet in elevation between Lakes Superior and Huron, and (USACE 1975). Navigation through the 22.3-foot drop is handled by the Soo Locks at Sault Ste. Marie, Michigan, which is used by over 10,000 domestic and international

vessels each year to access important ports such as Duluth-Superior Harbor, Minnesota and Wisconsin, and Thunder Bay, Canada.

1.3 Federal activities on the St. Marys River are authorized by the River and Harbor Acts of July 11, 1870; August 5, 1886; July 13, 1892; June 13, 1902; March 2, 1905; March 3, 1907; March 3, 1909; July 25, 1912; March 4, 1915; September 22, 1922; January 21, 1927; July 3, 1930; June 26, 1934; August 30, 1935; March 7, 1942; June 15, 1943; March 2, 1945; July 24, 1946; March 23, 1956; July 9, 1956; and November 17, 1986. These acts provided for constructing and operating channels, locks, canals, anchorage areas, and a hydroelectric plant.

1.4 The St. Marys River currently has approximately 200,000 cubic yards of shoal build-up in Course 7 and Course 8[1] of the Federal navigation channel, which is in the vicinity of Moon Island. The nearest upland dredged material placement site is at the Rock Cut channel (Course 6), about four miles upstream from Moon Island, but this site has limited remaining capacity and a new site would be needed in order to provide capacity for the shoal material from Courses 7 and 8.[2]

1.5 The impacts of maintenance dredging are addressed in the 1975 Final Environmental Statement, *Maintenance Dredging of the Federal Navigation Channels in the St. Marys River and the Straits of Mackinac, Michigan.* The present Environmental Assessment (EA) addresses the potential impacts associated with dredged material placement at Moon Island.

1.6 Moon Island is on the south side of the Federal navigation channel opposite Winter Point of Neebish Island (see photograph on cover page and Figure 1). In the period 1903-1908 construction of the West Neebish Channel bisected the original crescent shaped island, leaving the larger portion lying southwest of the channel and retaining the name Moon Island. Three smaller islands once existed immediately downstream of Moon Island[3] but are now only observable as shoals (Figure 2).

1.7 Moon island has stone protection along two sides, the northwest or upstream end (at the bottom of Figure 2) and along the northeast side, which parallels the navigation channel (left side of Figure 2). This protection was constructed in 1990s for erosion control at the request of the Michigan Department of Natural Resources and is addressed in a 1996 Environmental Assessment.[4] The berm that is detached from the island (right side in Figure 2) was constructed later to help protect the back side of the island. The offshore location of this berm is due to shallow water depths at the time which prevented the work crew from approaching any nearer to the island shoreline. As such, the offshore berm is being incorporated as part of the present EA.

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[1] Course 7 extends approximately 3 miles between the Rock Cut and Moon Island. Course 8 extends approximately 9 miles from Moon Island downstream to Pt. Aux Frenes.

[2] Other courses of the St. Marys River Navigation Project also will need dredging, and investigations for dredged material placement sites are ongoing.

3 The USGS topographic map (Munuscong quadrangle).

[4] 1996 USACE, Detroit District. Finding of No Significant Impact, Environmental Assessment, and Clean Water Act Section 404(b)(1) Evaluation: *Armoring of Dredged Material Disposal Islands, St. Marys River, Chippewa County, Michigan.* This EA also addressed excavation of an access channel and temporary offloading platform, as needed for shoreline armor stone placement.

Figure 2. Moon Island aerial photograph from late 2012, viewed towards the southeast.

2.0 ALTERNATIVE FORMULATION AND THE PROPOSED ACTION

2.1 Potential alternatives[5] for handling dredged material from the Federal channel in the St. Marys River include: 1) No Action, 2) Upland Placement, and 3) Moon Island Placement. Alternative 1 (No Action) was dropped from further consideration because it would not allow for maintenance of the Federal navigation channel. Alternative 2 (Upland Placement) Costs of upland placement would exceed costs of present plan because of transportation costs (barge to off-loading site, truck to placement site), double handling of dredged material, and real estate/site preparation costs. Alternative 3 (Moon Island Placement) involves use of select areas of Moon Island and the shallow water area around the island, incorporating the existing offshore berm (Figure 3).

2.2 The proposed action is Alternative 3 (Moon Island Placement). This alternative is preferred over Alternative 2 because it provides for cost effective and environmentally sound dredged material placement, with the added benefit of increasing the island habitat area. Also, the island is adjacent to the dredging site and part of the stone berms already exist further reducing costs.

2.3 A wetland delineation was completed for Moon Island in August 2013 by USACE Regulatory field staff (Figure 4). The entire area under consideration for dredged material

[5] Open water placement in Munuscong Lake, was not included because of the material would be subject to substantial movement, potentially burying spawning habitat in the area.

placement totals 36 acres. This is comprised of approximately 19.4 acres open water, 6.8 acres emergent vegetation, 5.8 acres scrub shrub wetland, and 3.8 acres upland. The emergent vegetation is mostly comprised of common reed **(***Phragmites australis*) with a small area of broadleaf cattail (*Typha latifolia*) and the upland areas are used by great blue heron for nesting (Figure 5). Based on the wetland delineation and the great blue heron use of the island, the dredged material placement areas were confined to the open water and emergent vegetation, largely avoiding the scrub shrub wetlands. This is discussed in the next section, "Description of the Proposed Action."

Figure 3. Moon Island Area Considered for Dredged Material Placement underAlternative 3.

2.4 The dredged material placement plan is shown in Figure 6 and consists of a stone perimeter berm and an interior berm that will separate the site into two dredged material placement areas: Area A on the south side and Area B on the north side. The stone perimeter berm will contain the dredged material and prevent material from going into the St. Marys River. Existing berms will be tied in to the new perimeter berm, and may be upgraded depending on their condition and elevation. Also an access channel and a steel-sheet-piling-faced off-loading platform would be constructed at the access channel / island interface to allow barges to approach the island and off-load equipment and stone for construction.

2.5 Proposed dredged material placement elevations are 584.5' (IGLD 1985[(6)]) for Area A, and 580.5' (IGLD 1985) for Area B. The interior berm will prevent the material placed in Area A from infiltrating the scrub shrub wetlands, which are at approximately 581 feet in elevation. Area B is planned for a lower elevation to promote wetland development, and therefore the placed material would not infiltrate into the existing island habitat.

[6] Note all elevations given in the EA are in terms of International Great Lakes Datum (1985) which is based on a reference zero elevation at Rimouski, Quebec. As a point of reference, Low Water Datum (LWD) for the subject water body is 577.5 feet (IGLD 1985).

2.6 Pursuant to the National wetland policy of No Net Loss, the emergent vegetation that will be filled (approximately 6.1 acres) would be replaced by an equal area of wetland located in Area B (Figure 6). The replacement wetland may be scrub shrub, forested, or a combination of both, depending on site conditions and water levels. Some material manipulation to revise elevations and/or move material to the Area A will likely be needed to help ensure wetlands develop. Material manipulation, if needed, would occur after the material consolidates and dries, which would be one or two years after the dredged material is placed.

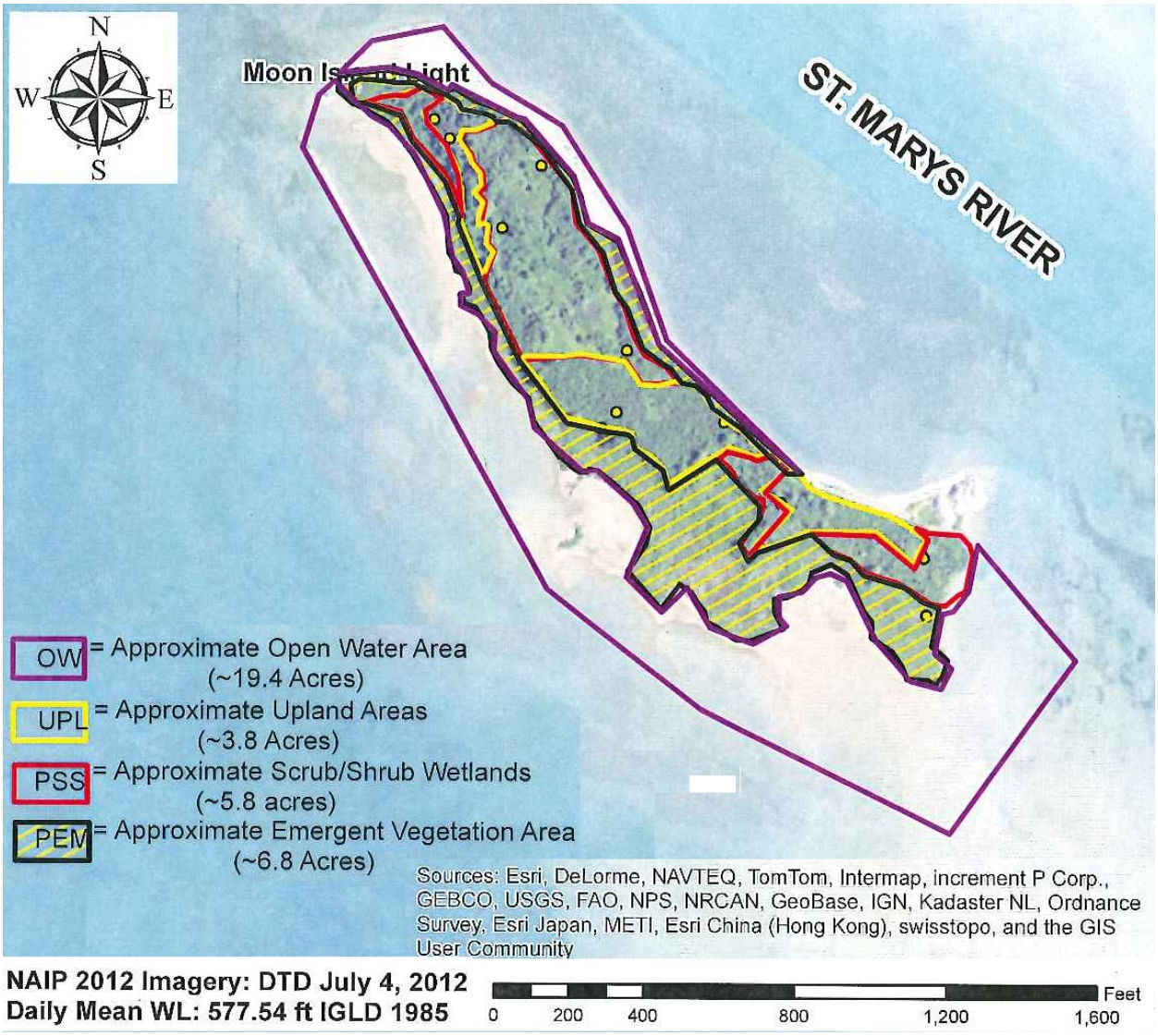

Figure 4. August 2013 Wetland Delineation of Moon Island (outer purple line is the upgraded stone erosion protection forming the island perimeter).

2.7 Current dredging needs in Course 7 and Course 8 of the St. Marys River consist of approximately 200,000 cubic yards of shoal material. Dredged material placement may be mechanical or hydraulic, but is likely to be hydraulic because of lower cost per cubic yard

placed. The site is expected to be filled within one to two years. With hydraulic dredged material placement a second year may be required because the need to allow for settling and drainage of the carriage water likely would prevent completing the filling in the first year. Carriage water would not be decanted over a weir but would be allowed to drain naturally through the stone berms.

2.8 Construction of the stone berms would be land based with equipment working on the island. Stone would be obtained from the stockpiles of material removed from the Rock Cut portion of the Federal navigation channel, which is approximately 4 miles upstream from Moon Island, and transported to the island by barge. The access channel to the island would be approximately 100 feet wide dredged to -10 feet of Low Water Datum (Figure 6).

2.9 Construction vehicles and island based material stockpiling will be confined mainly to the stone areas of the island that is at the off-loading site. Equipment will work off of the existing berms and the new berms as they are constructed.

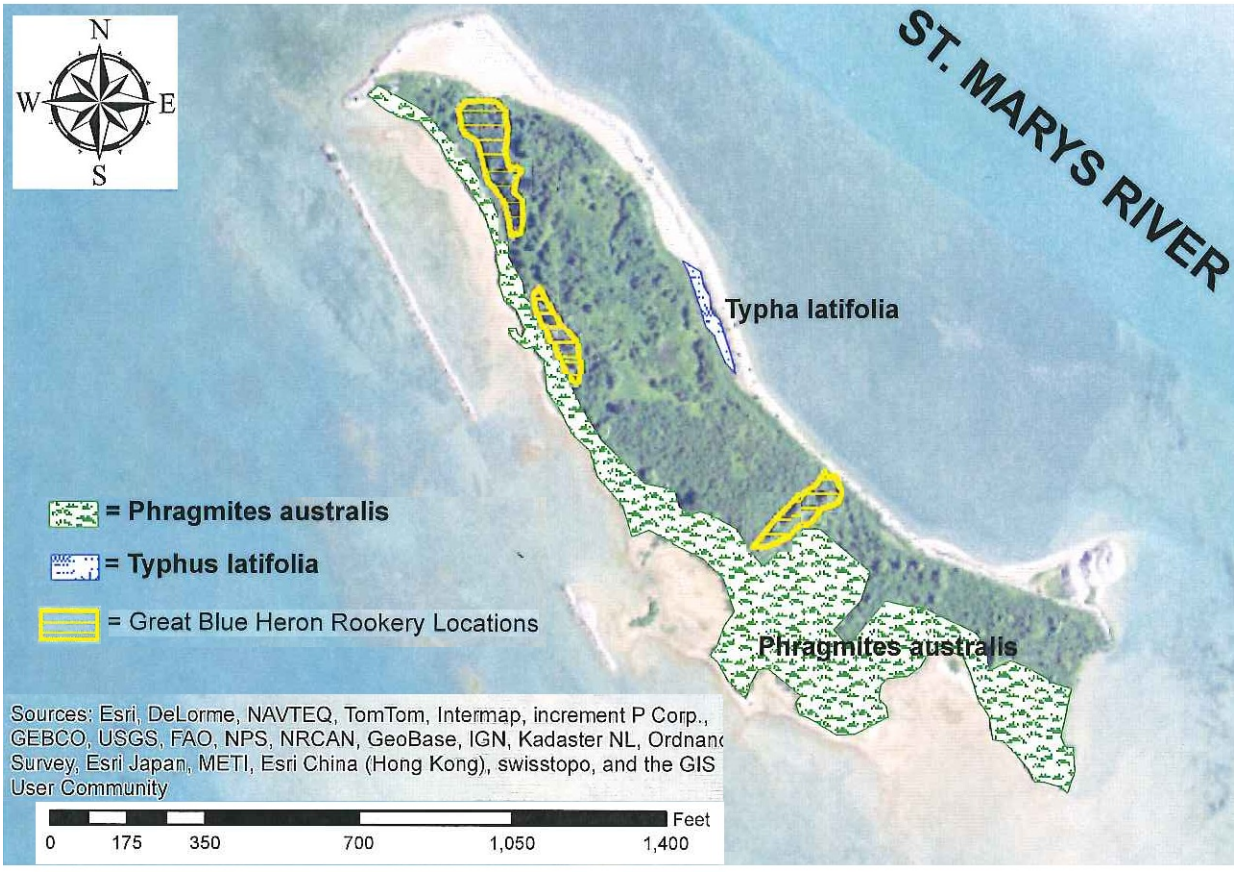

Figure 5. Emergent vegetation and Heron Rookeries observed during August 2013 site visit.

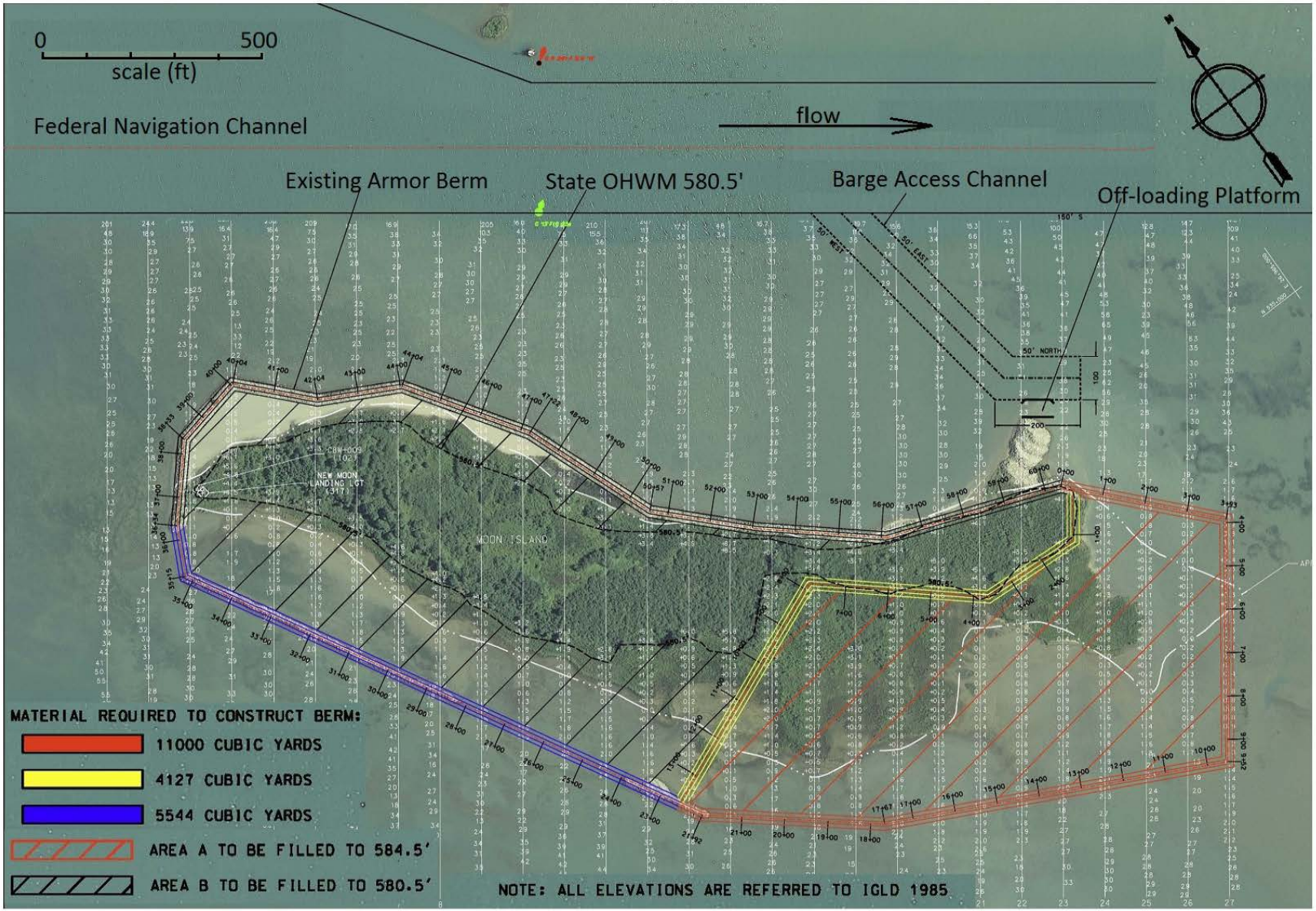

Figure 6. Dredge Material Placement Plan--Moon Island.

2.10 The stone berms would be constructed with a 10-foot top width to allow the equipment to construct from on top of the stone instead of from water-based construction plant (Figure 7). In some areas the berm may be temporarily widened within the project footprint to allow for trucks and equipment to pass or turn around.

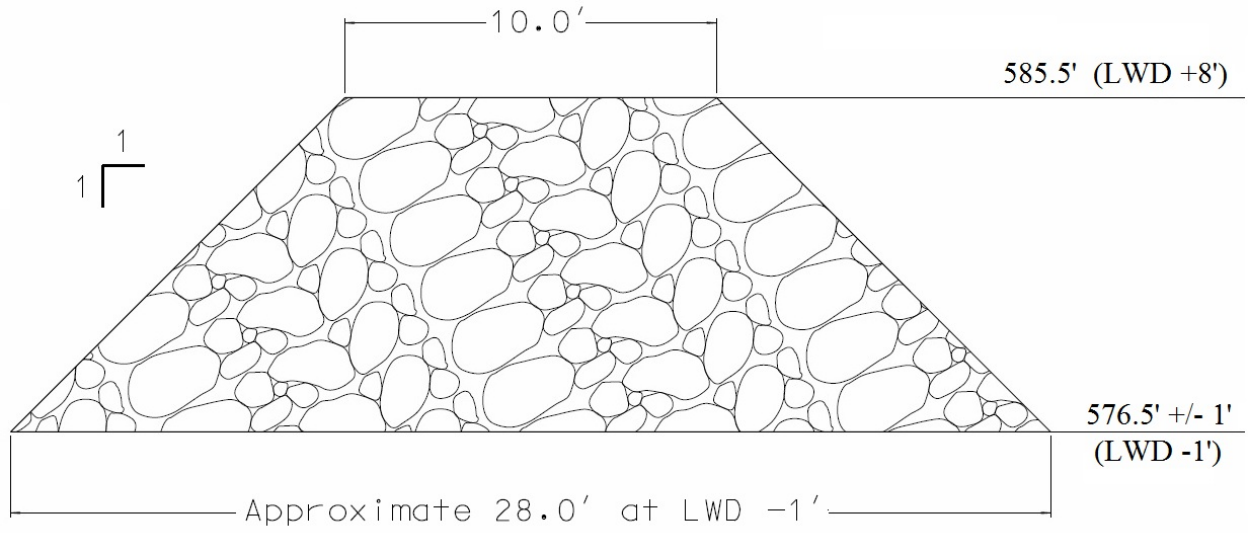

Figure 7. Typical cross section of proposed perimeter berm.

2.11 Some variation from the project as described may occur with respect to the sequence of work, methods of performing work, design of the project, or as a result of the implementation of cost-saving measures. These variations would be minor and would not constitute significant environmental impacts. Changes in the sequence of activities which may interfere with cultural or archeological sites/items, threatened or endangered species, critical habitat, or fish and wildlife species in general will be coordinated through respective agencies as appropriate. Further NEPA documentation would be prepared to address any project variations that may result in significant impacts.

2.12 Maintenance and repair requirements are expected to be minimal. However, future maintenance and repair of the stone berms would occur as needed. Impacts of maintenance and repair are expected to be minor and on a smaller scale than the present project proposal.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 This Environmental Assessment (EA) addresses the potential environmental effects of placing dredged material from the St. Marys River Federal navigation channel at Moon Island. The impacts of maintenance dredging are addressed in a previous National Environmental Policy Act document.[7] The following analysis therefore addresses construction of the offshore perimeter berms, placement of dredged material, and associated island access features.

[7] USACE. Final Environmental Statement "Maintenance Dredging of the Federal Navigation Channels in the St. Marys River and the Straits of Mackinac, Michigan." 1975.

3.2 Review of the proposed action indicates that the proposed dredged material placement and perimeter stone berm construction would not result in significant adverse environmental effects, nor would it be expected to result in significant cumulative or long-term adverse environmental effects. Adverse effects would be minor, limited primarily to short-term noise and air emissions from equipment operation, turbidity generated from the dredged material placement process, and limited destruction of fish and bottom-dwelling organisms within the immediate work zone. Leopard frogs would likely be eliminated from the island though loss of natural shoreline, but ample frog habitat is found along much of the shoreline of Munuscong Bay. The dredged material placement activity provides for removal of substantial shoaling from the Federal navigation channel, to ensure efficient and continued passage of vessels through the Federal navigation channel, which is a critical link in the Great Lakes—St. Lawrence Seaway System.

3.3 General Habitat Description[8]: Moon Island consists of roughly 7 acres emergent vegetation, 6 acres scrub shrub wetland, and 4 acres upland. There is an open water area between the erosion control berm and the island on the north end and partly down the east side. Two disconnected stone berms (700 feet and 200 feet in length) lie 100 to 200 feet offshore on the west. The island is heavily vegetated with a shrubs and herbaceous vegetation (Figure 8). Red osier dogwood is present in abundance on the island, along with a several species of willow, and red raspberry. Most of the islands few trees are green ash, though American elm and white willow are also present. The trees are located in three general upland areas and are used as great blue heron rookeries (Figure 5). The offshore stone berms on the west side of the island provide some sheltering to the island and emergent vegetation, though the emergent vegetation would be present regardless of the presence of the offshore berms, since much of it is in the lee of the island, protected from river flows.

3.4 Birds: The large number of fruiting plants such as red osier dogwood and red raspberry and the relative isolation from human impacts makes it likely that Moon Island serves as a high quality resting and feeding area for migrating songbirds. The upland areas of Moon Island support an active rookery for the Great Blue Heron (GBH) in the few ash trees that have survived on the island. Historically there were larger ash trees; however, it appears that during the last period of high water (1998) beaver cut all the larger ash down and what remains are those trees that have sprouted from the stumps or grew from seedlings that existed at that time. All three GBH nesting areas were active during the August 2013 site visits, with a total of approximately 15 active nests observed. A large dead tree served as a roosting place for at least two bald eagles but was too small for nesting.

3.5 Birds observed on the island in August 2013 (Attachment 2) include three species listed as "special concern" in the State of Michigan: bald eagle, osprey, and black tern. One species, common tern, that is State-listed as "threatened" was observed at Moon Island. Other birds observed include mallard, Canada goose, yellow warbler, red-winged blackbird, song sparrow, Wilson's snipe, and killdeer. All of these birds are protected under the Federal Migratory Bird

[8] Lists of animals and plants observed during the August 2013, three-day site visit, are included as Attachments 1 and 2 of this EA.

Treaty Act (Title 16 U.S.C. 703), which protects them from being impacted in a manner that results in direct death of a bird, or loss of eggs due to disturbances disrupting incubation. In general, nesting and fledging activities occur in the late-April through mid-August time frame. Once fledged, the young birds are able to avoid moving equipment. Prior to that, equipment must avoid disturbances to active nests that could result in a take.

Figure 8. June 2013 photograph on Moon Island.

3.6 Birds in the immediate vicinity of construction activities are expected to be temporarily displaced during construction operations. Birds farther from the active construction are likely to remain on the island. The stone perimeter berms and dredged material fill will benefit birds by providing greater area for nesting, especially where the dredged material is placed to higher elevations, which may result in more trees on the island. Construction and filling activities will be carried out in accordance with the Migratory Bird Treaty Act to avoid impacting nesting activities of birds.

3.7 Herptofauna: The only herptofauna (reptiles and amphibians) observed during the three-day site visit in August 2013 were northern leopard frogs. Frogs were observed along the natural shoreline on the west side of the island as well as along the shoreline of the ponded areas inside of the existing stone erosion protection berm on the east side of the island. These frogs likely are part of the food supply for the great blue herons and other birds in the area. Filling of the island to 580.5 feet elevation by hydraulic placement will largely eliminate open water areas in the

island. It is likely that after filling there will not be a leopard frog population on the island. However, there are ample wetlands along the shores of the St. Marys River in the Moon Island vicinity that would have northern leopard frog habitat. One such area in particular is the State of Michigan designated Environmental Area (EA 04-40A) on Winter Point of Neebish Island, which is directly across the Federal channel from Moon Island, less than a half mile from the island. The proposed activities at Moon Island would not be expected to have any impacts on the Winter Point Environmental Area, or any other shoreline habitat outside the project site.

3.8 Mammals: White-tailed deer were observed on the island and there is evidence of browsing of the Red Osier Dogwoods, Stinging Nettle, and various emergent plant species. Tracks of at least one doe and fawn were observed. Signs of beaver activity also were observed at the island. Small rodents and snakes may be present in burrows and runs in upland areas. The mammal population of the island should benefit from the proposed action as it will result in more upland area.

3.9 Benthos: Benthic (bottom-dwelling) organisms may be smothered by placement of stone and dredged material at Moon Island and by excavation of the access channel. While some incidental mortality may occur, the loss of bottom habitat is considered minor as there is an abundance of bottom habitat in the St. Marys River and Munuscong Lake. This loss is out weighted by the increase of the island habitat available for birds and mammals. The additional stone for perimeter berms would convert approximately 2 acres of bottomland to rock substrate. This may benefit fisheries and other aquatic organisms by providing new habitat with the added stone.

3.10 Fish: Munuscong Bay provides spawning habitat for a number of fish species, including small mouth bass, cisco, muskellunge, and lake herring. Habitat occurs in much of the bay, but the area proposed for stone berms and dredged material placement does not provide significant spawning habitat and is very shallow open water, lacking vegetation other than the common reed that occurs along the western and southern shoreline of Moon Island. Within Munuscong Bay, members of the sunfish family, such as small mouth bass, spawn in the late spring and early summer (roughly May/June); whitefish spawn in the fall and the eggs overwinter under the ice.

3.11 Dredging of the access channel and temporary storage of the material on the lake bottom adjacent to the access channel would generate turbidity from the excavation and piling and from wave wash on the temporary stockpiles. The location of these temporary stockpiles is on the northeast side of the island in an area of limited fetch and is protected from waves generated on the open waters of Munuscong Bay, although passing freighters generate waves in that area. Turbidity from the access channel work and temporary stockpiles would be localized in the eastern area of the bay and the immediate downstream area beyond the island. This is an area that is not prime habitat, but to the degree any fish eggs are present in this area, they could be impacted if the temporary stockpiles are present during May or June. However, most of the bay would be unaffected and overall impacts to the bay would not be significant.

3.12 Dredged material placement at the island will not affect fish spawning because it will be within the proposed stone berms. Stone placement would not generate enough turbidity to cause any significant effects, nor would driving steel sheet piling for the offloading platform. Actual

channel dredging by hydraulic dredge would not be an issue because the dredge suction head is down in the channel and the suction tends to draw the material in rather than simply stir it up and allow it to wash downstream. Any incidental turbidity that does occur would be largely confined within the channel as it moves downstream and is not likely to affect fish spawning activities, much like turbidity from passing ships.

3.13 Outside of the spawning period mentioned above and at the immediate construction site, fish which are mobile and adaptable enough that they would simply leave the area during construction. These displaced fish would find new forage and resting habitats. Many would return after the stone construction activity is finished and use the exterior of the newly constructed stone perimeter berm for habitat. Fish are unlikely to be trapped inside the perimeter berm as the construction activity and noise would drive them from the immediate area long before the perimeter berm is completed.

3.14 Federally Listed Species: Current listings under the Endangered Species Act for Chippewa County include Canada lynx, Kirtland's warbler, piping plover, piping plover designated critical habitat, American hart's tongue fern, Dwarf lake iris, Houghton's goldenrod, and Pitcher's thistle. Habitat for these species is not present at the island. The shoreline is a clay/mud/sand mix forming an abrupt transition from water to vegetation, with no real beach area. There are open water areas between existing berms and the island remnant, but no sand flats.

3.15 Two newly proposed species are included in the table that do not have protection under the act at this time, but will upon a final rule being published in the Federal Register. These are the northern long-eared bat (proposed endangered) and the rufa red knot bird (proposed threatened). There is no habitat for the bat (caves and forested areas) at the island, but the 7 acres of emergent vegetation provides coastal marsh habitat that the rufa red knot can use for resting and feeding during its migratory window of May 1 through September 30. The likelihood of any rufa red knot birds stopping at the island appears small, given the vast amount of suitable habitat in the area. If any of these birds are present they would simply use other nearby coastal marsh habitat; therefore, any effects from the project activities would not be adverse for the species.

3.16 The USACE determinations for each of the species listed for Chippewa county follow:

1. Canada lynx (T): No effect. Lack of suitable habitat, isolated, and limited size.
2. Northern long-eared bat (PE). No effect. Lack of suitable habitat.
3. Kirtland's warbler (E): No effect. Lack of suitable habitat.
4. Piping plover (E): No effect. Lack of suitable habitat.
5. Piping plover (CH): No effect. No critical habitat at or near Moon Island.
6. Rufa red knot (PT). May affect, not likely to adversely affect.
7. American hart's tongue fern (T): No effect: Lack of suitable habitat.
8. Dwarf lake iris (T): No effect. Lack of suitable habitat.
9. Houghton's goldenrod (T): No effect. Lack of suitable habitat.
10. Pitcher's thistle (T): No effect. Lack of suitable habitat.

Listing status: E = endangered; T = threatened; PE = proposed endangered; PT = proposed threatened; C = candidate; CH = critical habitat designated

3.17 Exotic/Invasive/Nuisance Species: Species of particular concern include the zebra mussel and sea lamprey.[9] The sea lamprey, a fish parasite, is present and spawns in the St. Marys River, but would not be associated with the island habitat. The placement of dredged material at Moon Island would not be expected to adversely affect zebra mussel distribution or populations in the St. Marys River. In general there have not been observable nuisance populations of zebra mussels on USACE breakwaters and stone structures in the upper great lakes. The colder waters in these northern regions inhibit zebra mussel populations. The much of the stone island perimeter has been in place since the 1990s and zebra mussels have not been identified at the site.

3.18 Exotic, invasive, and/or nuisance plant species present on the island include a large monotypical stand of common reed along the southwest side of the island (see Figure 4) and some specimens of reed canary grass were observed at 2 of the 10 sample plot locations on the island. Other exotic species may come in with the dredged material, but would likely already be present in the general area; hence, their presence in the channel sediments.

3.19 Wetlands: As shown in Figure 3 (above), the island include nearly 7 acres of emergent vegetation, primarily a monotypical stand of common reed **(***Phragmites australis*), and approximately 6 acres scrub shrub wetland interspersed with 4 acres of upland. USACE Regulatory field staff have evaluated the common reed present at Moon Island and believe it is the native variety, not the invasive[10]. The common reed provides good wintering habitat for white tail deer, but is often considered undesirable because of the large monotypic stands it produces.

3.20 After the material consolidates approximately 6.1 acres of Placement Area B would be left to develop as wetland in replacement for the 6.1 acres of emergent plants filled. The actual wetland type has not been determined at this time but could be developed into scrub shrub or forested wetland, depending available moisture and final elevation of the dredged material, which after the material has dewatered and consolidated, may be manipulated to promote development of wetland vegetation.

3.21 Sediment Quality: Shoaled material was sampled at 20 locations throughout the St. Marys River navigation channels in 2002. The physical character of the sediments is approximately a 50% mixture of sand and fine material. The analytical results show low concentrations of nutrients. Chlorinated organic and polychlorinated biphenyls (PCBs) were below minimum detection levels. Poly-aromatic hydrocarbons (PAHs) were detected in samples collected 18 miles upstream at Sault Ste. Marie, but not in the samples from the material proposed for placement at Moon Island. Barium, chromium, nickel, and zinc exceeded background concentrations in some of the 20 stations sampled, but were not at levels that warrant

[9] The USACE is currently studying sea lamprey control measures for the St. Marys River under a separate authorization.

[10] Based on field examination of the plants. It should be noted that invasive Phragmites is not common in the eastern upper peninsula of Michigan in large stands. It is has been reported on the southern end of Drummond Island, some small patches on US 2 west of St. Ignace near the Pointe aux Chenes marshes mixed in with native Phragmites and in selected small pocket locations along the St. Marys River and on the Canadian side.

confinement. These results show that the shoal material proposed for placement into Moon Island is suitable for unrestricted placement, with appropriate erosion control measures. New samples will be collected and evaluated prior to any material being placed at Moon Island.

3.22 Water Quality: The St Marys River, including and beyond the area of Moon Island, is listed as a Great Lakes Area of Concern for beneficial use impairments. According the U.S. Environmental Protection Agency (USEPA), "Impairment of water quality, sediment, and biota remain due to historical point source discharges."[11] The worst contamination originated from the Soo St. Marie area. Since the 1980s, the St. Marys River water quality has improved considerably through improvements implemented by the various governments and industry. The USEPA notes that "The benthic communities on the Michigan side appear to be healthy, while localized communities on the Ontario side still exhibit significant degradation."

3.23 Construction water quality effects are expected to be local in nature, of short duration, and would not adversely affect the environment. With the stone erosion berms in place, turbidity from dredged material placement will be restricted from the waterway. Some turbidity would result initially from construction activities but turbidity from dredged material placement would be restricted by the stone berms.

3.24 Motorized construction equipment (barges, cranes, dozers, etc.) are a potential source for petrochemical products to be introduced into the waterway. Work would be required to comply with U.S. Coast Guard and Michigan Department of Transportation regulations as applicable to marine work, navigation, and truck transport. Spill kits to contain and/or neutralize accidental discharges would be kept ready on-site during construction activities. Equipment delivered to the site would use established commercial and/or government-owned docking and launching facilities, as necessary, to gain access to the water.

3.25 Floodplains: Moon Island is within the 100-year floodplain. The proposed dredged material placement at Moon Island would not have an adverse effect on the floodplain and would comply with the Federal Executive Order on Flood Plain Management (E.O. 11988) because there is no practicable alternative to construction in the flood plain that meets the project purpose of protecting the island from further erosion.

3.26 Cultural Resources: The National Register of Historic Places and available shipwreck maps were reviewed. No National Register properties or known shipwrecks were listed for the Moon Island project area. The island was created from past dredged material deposition. Therefore, the Detroit District USACE has determined, pursuant to 36 CFR 800.4 of the National Historic Preservation Act, that no historic properties will be affected by the proposed dredged material placement at Moon Island. This determination was reviewed by the State Historic Preservation Office and they provided concurrence that "no historic properties are affected" on May 14, 2013.

3.27 Traffic: Crane barge traffic for project construction would have minimal impact on navigation in the St. Marys River. The stone loading site at the Rock Cut is outside the Federal channel, and the off-loading at Moon Island will also be outside the Federal channel. Real time

[11] http://epa.gov/greatlakes/aoc/stmarys/index.html

vessel location data will be monitored and movements of construction vessels will be timed to avoid interference with commercial navigation. Additionally, a Notice to Navigation Interests will be published informing them of the work, which will promote communication between the commercial vessels and the construction operation. Recreational vessels, because of their smaller size, would not be affected.

3.28 Noise, Recreation and Aesthetics: Moon Island is remote from most noise-sensitive sites (such as residential areas or hospitals), noise effects would be temporary and short-term, and motorized construction equipment would have noise reduction systems. The project site is remote from active recreational sites and so would not have significant adverse effects on recreation. Aesthetics would be degraded somewhat during construction but would otherwise not change significantly.

3.29 Air Quality: Effects on air quality would arise from emissions of motorized construction equipment. All equipment would be required to meet emission standards and emissions are expected to be minor. Thus, the proposed project would be exempted as *de minimis* (Latin for 'of minimal importance') and meet the Conformity Requirements under Section 176(c) of the Clean Air Act (as amended) and 40 C.F.R. 93.153.

3.30 Coastal Zone Management: The project is within the State of Michigan Coastal Zone Management Area. The project provides protection to the existing island which currently is exposed to erosive forces and preserves habitat for important species. As such, the project would be "consistent to the maximum extent practicable" (as defined in 16 U.S.C. 1456, Coastal Zone Management Act) with the Michigan Coastal Management Program.

3.31 Cumulative Impacts: The proposed dredged material placement project would not result in significant cumulative impacts. The loss of lake-bed area is minor and formerly there were more islands in this part of the river. The loss of bottom habitat is negligible compared to the large amount of costal bottom habitat in Munuscong Lake and other parts of the St. Marys River, and the dredged material fill would result in a larger area of habitat for birds and other animals. Impacts of likely elimination of leopard frogs from the island (through elimination of natural shoreline) are not significant because of the abundant natural shorelines that remain along much of Munuscong Bay that support leopard frogs. There are no cumulative environmental effects between dredged material placement at Moon Island and dredged material placement for other parts of the St Marys River as these placement sites would be distant from Moon Island.

3.32 Other Resources: The project would not have a significant adverse impact on community cohesion, desirable community growth, tax revenues, property values, public facilities, public services, regional growth, employment or the labor force, business and industrial activity, farmland, or man-made resources, nor would the project cause displacement of people.

4.0 EARLY COORDINATION

4.1 Information on the proposed action was provided to the U.S. Fish and Wildlife Service (USFWS), the U.S. Environmental Protection Agency, the Michigan Department of Environmental Quality (MDEQ), the Michigan State Historic Preservation Office, and various

Native American Tribes and groups. Comments received are summarized below. The USFWS did not provide early coordination comments.

State Historic Preservation Office

4.2 The State Historic Preservation Office (SHPO) reviewed the project information and stated that, "based on the information provided for our review, the State Historic Preservation Officer (SHPO) concurs with the determination of the [USACE] that **no historic properties are affected** within the area of potential effects of this undertaking" (correspondence of May 14, 2013). They also noted that if the scope of work changes in any way or if artifacts or bones are discovered, that their office be notified immediately.

Michigan Department of Environmental Quality

4.3 The MDEQ provided several sets of comments which are reproduced below with USACE responses.

Fisheries Division

Comment 1: "Not sure I agree with efforts to avoid the scrub shrub wetlands on the islands, but recognize the need for spoils placement and containment."

Response: We plan to place stone along the shoreline to limit the spread of hydraulic placement slurry to the open water/emergent area. In an effort to reduce the project's impact to wetlands we plan to avoid the scrub shrub wetlands on the island.

Comment 2: Law Enforcement Division had "concerns about the marking of the work area; apparently the buoys used weren't well marked or labeled. I would request that the project/work area boundaries be clearly marked with buoys labeled with agency/contractor name."

Response: Project boundaries will be clearly marked and labeled for USACE project work. A Notice to Navigation Interests will be published and real time ship location data will be used to avoid interference with commercial navigation.

Comment 3: "There is good SMB and muskie fishing around this island (which is built from dredging spoils), as well as cisco spawning fairly nearby."

Response: We have reviewed the project site for fish habitat and conclude that the project would not have a significant impact on existing fish habitat in the project vicinity. Important fish habitat consisting of submergent vegetation is apparent from satellite imagery in the vicinity of Moon Island (e.g. southwest of Moon Island and northwest of Winter Point), but the area that is proposed for fill is lacking in submergent vegetation. Our Regulatory field office noted in their report of site investigations conducted August 2013 that the proposed project footprint includes "approximately 19.4 acres of open water habitat that contained little to no submergent vegetation," which limits its use for muskie and

smallmouth bass. Additionally, the waters in this project footprint are very shallow, averaging less than 1 foot deep at water levels around 577.5' (IGLD 1985), which limits its usefulness as habitat for other fish species.

Comment 4: "This gets to the question of cost of placing upland vs. cost of disposal in the St. Marys somewhere."

Response: We have added upland placement to the alternatives discussion in this Environmental Assessment. Costs of upland placement would exceed costs of present plan because of transportation costs (barge to off-loading site, truck to placement site), double handling of dredged material, and real estate/site preparation costs. Since there are no significant impacts expected on fisheries, upland sites are not being pursued at this time. The proposed project alternative is the least costly, engineeringly feasible, and environmentally acceptable.

Comment 5: "If it is a given that spoils will be put in the St. Marys, then containment is likely a good thing. I'm not entirely sure if this proposal is primarily to remedy a long standing erosion issue, create a spot for subsequent spoils deposition, or both."

Response: The project proposal is for dredged material placement, but the project will also provide secondary benefits of erosion protection and increased area for wildlife habitat.

Water Resources Division

Comment 6: The "1996 EA and FONSI authorized placement of stone material along existing shoreline yet the two portions of armor stone berm on the west side are not along the shoreline but 100 feet or more offshore. The armor plan (no date) shows the continuation of these berms offshore to contain dredged material. The 1996 EA and FONSI [do] not authorize this location but provides for armoring along the existing shoreline. This location could not be the existing shoreline at that time since Great Lakes water levels were near record high elevations at the time of construction in 1997."

Response: Presence of two offshore stone berms on west side of the island has been added to the present Environmental Assessment (specifically in paragraphs1.7 and 3.3) along with all additional proposed stone berm construction and filling the island with dredged material.

Comment 7: "The cross section in the 1996 EA and FONSI shows the armor stone placed along the existing shoreline grading into the water. There are no open water/bottomlands between the armor stone and the existing shoreline as was constructed."

Response: Noted. See response to Comment 6.

Comment 8: The continuation of the armor stone berms offshore in accordance with the undated plan is not authorized by the 1996 EA and FONSI therefore the 2014 EA should be for the placement of the armor stone berm as proposed in the undated plan as well as the placement of the dredge spoil from the federal navigation project.

Response: The 2014 EA will include an environmental evaluation of the complete stone berm upgrade along with the dredged material filling.

Comment 9. The preliminary coordination letter states that the existing berms can be widened to 20 feet based upon the 1996 EA and FONSI so no need to include this in the 2014 EA. The 1996 EA and FONSI does not authorize widening of the existing berms as the offshore berms were authorized to be placed along the existing shoreline. The 2014 EA should request the widening of these offshore berms.

Response: See response to Comment 8. The plan has been revised to berm top width of 10 feet. Existing berms would be adjusted as necessary to accommodate equipment access for construction or as needed to ensure integrity of the perimeter for dredged material retention.

Comment 10: "The project proposes to temporarily stockpile dredge material on bottomlands until the armor stone around Moon Island is complete and the dredge material can be moved to a permanent location. We recommend that the dredge material should be disposed of in a permanent location upon the initial removal from the proposed access channel; however, if a permanent location is neither accessible nor feasible then a temporary location should be identified. Preference for a temporary location should be given to areas that will have permanent disturbance as a result of the completed project."

Response: Because of shallow depths between the navigation channel and the island, there is no feasible/practicable way to move the material dredged to create the access channel into the project footprint until dredging of the access channel is complete. We have considered the possibility of placing the material into the north end of the island where open water is located behind the existing berm as a protected location, but this area is not accessible because of the shallow depths around the island. Hauling the material back to the rock cut would increase costs and prolong the access channel dredging operation. There are no practicable alternatives but to temporarily stockpile the material adjacent to the access channel. The duration of time that the material is temporarily stockpiled will be minimized to the greatest extent possible.

Comment 11: "A containment method for stockpiled dredge material should be utilized and should include installation of a temporary sediment barrier that would allow the placement of dredge material in a manner that minimizes off-site siltation. The barrier should be maintained for the duration of the project until all dredge material has been relocated to a permanent location and any fine sediment has settled out of the water column within the barrier. The temporary stockpile location should also take into consideration the location of the Federal Navigation Channel and additional disturbance created as a result of channel traffic."

Response: The proximity of the Federal channel limits our ability to provide containment for the stockpiles. A turbidity curtain would not be sustainable in that location. However, movement of material would be limited by stockpiling only on the upstream side of the access channel so that the access channel can act as a barrier to catch any material that may move downstream. Material movement would also be limited by the stone island berm to the south and the Federal navigation channel to the north. The duration of time that the material is temporarily stockpiled will be minimized to the greatest extent possible. As soon as possible the stockpiled material will be moved into the project footprint where it will be protected in the lee of the island, while the stone berm is being constructed. The stockpiles would be moved to the island interior well before the fall spawning season (begins November 1) in Munuscong Bay to preclude adverse effects on spawning.

Comment 12: "The tentatively selected project proposes to fill a defined area of Moon Island below the State of Michigan ordinary high water-level of 580.5 IGLD 85. This option was clarified as being preferred over the other proposed alternatives because it would avoid the placement of fill material within areas identified as wetland. Data gathered by the ACOE in August 2013, identified two specific wetland communities: shrub scrub and emergent. The ground elevation of the shrub scrub wetland is indicated at being above 580.5 IGLD with some areas extending above 581.5 IGLD. Hydrograph data collected on constructed shrub scrub wetlands in Michigan[12] indicates that the maximum depth of water below ground surface of six and twelve inches is required for establishment of shrub scrub species, and once established the community can tolerate long-term periods of above ground inundation during the growing season."

Response: Noted.

Comment 13: According to information collected by NOAA[13], the 50-year long-term average lake level for Lake Huron is 579.3 IGLD 85. The 20-year average lake level is 578.12 IGLD 85, and the 10-year average lake level is 577.56 IGLD 85. With a proposed fill level of 580.5 IGLD 85, and given the current 10-year average level of Lake Huron, the surface elevation would be greater than 30 inches above the average lake level elevation and would likely result in the creation of upland, not wetland, communities. It is our recommendation to further evaluate the proposed fill elevation to account for the current and long-term average lake levels, and evaluate surface elevations that would be needed to establish wetland communities. This evaluation should take into account the soils associated with the fill material and any properties they may have to influence water table variability.

Response: Our revised plan is to fill the open water and emergent vegetation areas to a maximum elevation of 584.5 feet on the south side of the island, and to 580.5 feet on the north side. After the material consolidates we will evaluate wetland development potential and may manipulate the surface elevation accordingly to create micro-topography and ensure that wetlands develop to replace the filled emergent plant area. This could be developed into scrub shrub at an elevation of 6 – 12 inches above water table, or it could be developed to a forested wetland at 1 – 2 feet above water table and provided with cuttings

[12] Michigan Wetland Hydrographs: Constructed and Natural Sites, 2005-2012. Hansen, Linda. May 12, 2013.
[13] http://www.glerl.noaa.gov/data/now/wlevels/dbd/

from trembling aspen (*Populus tremuloides*). The dredged material soil that will be the wetland substrate is generally a mixture of 50 percent fines and 50 percent sand.

Comment 14: "The area identified as emergent wetland is located in areas with a ground elevation below 580.5 IGLD and dominated by *Phragmites australis*, Common reed. Current management efforts by various organizations[14,15] in Chippewa County, MI are targeting the management of *P. australis* in an effort to control large spread colonization in Great Lakes wetlands. It is our recommendation to include an invasive species management plan with the project proposal that addresses the colonization of *P.australis*."

Response: Our Regulatory personnel who conducted the wetland evaluation of Moon Island in August 2013 determined that the common reed present at Moon Island is likely the native variety, not the invasive, exotic variety. Therefore, we are not planning any control measures for this plant.

Comment 15: "It is also our recommendation to incorporate microtopography into the fill area to account for fluctuating lake levels and reduce the opportunity for future monotypic colonization of invasive species."

Response: Because of capacity requirements and the need to maintain a certain maximum soil elevation for a wetland, micro-topographic variations will be limited, unless the material consolidates enough to allow for more material to be stacked in the non-wetland area. However, after the material has settled micro-topography will be incorporated to the extent practicable.

Comment 16: Throughout the duration of this project, all efforts should be utilized to prevent unnecessary sedimentation into waterways. Turbidly curtains should be utilized to all extents feasible for the project.

Response: As noted in Response #12 above, the movement of material from the stockpiles will be controlled by the stockpile location and the duration of stockpiling is being minimized to limit exposure. Construction of the stone berms will generate limited turbidity of a negligible nature compared to storm-induced turbidity. Once the berms are complete, turbidity would be contained within the stone berms.

The Michigan Department of Environmental Quality (MDEQ) commented by electronic mail (May 21, 2013, and previous) requesting clarification on the location of the access channel in relation to an Environmental Area on the southern tip of Neebish Island across the channel from Moon Island. The Environmental Area is noted in the Environmental Assessment as being about 500 feet northeast of the navigation channel, whereas all project work would be on the southwest side of the channel. The MDEQ is evaluating State requirements and at a minimum would provide Clean Water Act Section 401 certification. They provided a note on the location of Moon Island:

[14] http://clmcd.org/weedmanagement_2.asp
[15] http://uprcd.org/phragmitesup.asp

"The coordination letter describes Moon Island as located in the St. Marys River. The court case Ainsworth v Munoskong Hunting and Fishing Club 153 Mich 185 (1908) sets the southern boundary of the St. Marys River as the south end of the Neebish Island Rapids. Therefore, Moon Island is located in Lake Huron on state-owned public trust bottomlands not in the St. Marys River."

United States Environmental Protection Agency

4.5 The United States Environmental Protection Agency (USEPA) provided extensive comments by correspondence of May 30, 2013. The USEPA comments are extensive, and therefore the letter is attached to this EA for reference (Attachment 3). In reiterating the proposed project, the USEPA noted that the access channel would be 150 feet long (Attachment 3, page 1, 4th paragraph). However, the 150 feet is the access channel width. Its length would be approximately 700 feet as shown in Figure 5 of this EA. The following summarizes the USEPA comments and provides USACE responses to those comments.

4.6 The USEPA requested that the EA identify and substantiate the purpose and need for the proposed project, and thoroughly address potential project effects on aquatic habitat and fish spawning areas. Information on these topics is included in the appropriate sections of this EA.

4.7 The USEPA recommends the EA include information on the specific locations for dredging that will be placed into the island, testing of the material for suitability for open water disposal, how the material will meet Michigan water quality standards, and material transport, and that the EA include a Clean Water Act Section 404 (b)(1) Alternatives Analysis. Testing from 2002 is summarized in the appropriate section of this EA. Further testing will be conducted prior to any dredging activity to confirm the suitability of the material for placement at Moon Island. As noted in the EA, material with detectable PAH levels, such as was found near Sault Ste. Marie in the 2002 sampling, would not be placed in Moon Island. The proposed placement of dredged material at Moon Island is not open water disposal, but will be confined within the proposed stone berm. The dredged material placement will meet State water quality standards since it will be separated from the water way by the stone berm. As the stone berm will be 10 feet wide at the crest and approximately 28 feet wide at the base, it is unlikely that dredged material would pass through the berm to any significant degree; over time the material will tend to fill in the voids between the stones, thereby preventing migration of material through the stone.

4.8 The USEPA requested that multiple cross sections be provided in east-west and north-south orientation for the “proposed restoration area” and that the cross sections be depicted with directional notation. For clarification, the proposed dredged material placement into Moon Island is not an ecosystem restoration project, but is authorized under the USACE operations and maintenance authority for the St. Marys River navigation project. The simplicity of the proposed stone berm does not warrant detailed design beyond the plan shown in Figure 6 and the typical cross section shown in Figure 7. As the cross section is typical, no direction is indicated.

4.9 The USEPA requested the EA include discussion of potential impacts or threats to Federally listed or state-listed endangered and threatened species and copies of associated correspondence.

This EA includes a discussion of Federally listed species for Chippewa County and a determination of effects. State-listed species noted by USACE Regulatory staff in their August 2013 field investigations included bald eagle, osprey, black tern, and common tern. Three of these are state-listed as "special concern"; the common tern is state-listed as "threatened."

4.10 A lengthy section of comments regarding monitoring and adaptive management plan was included in the USEPA comments (Attachment 3, pages 2 and 3). As noted, the proposal for Moon Island is dredged material placement, not an ecosystem restoration, so no monitoring or adaptive management is proposed. We will do post project manipulation of the replacement wetland area as necessary to ensure that a replacement wetland develops. There will also be periodic inspections to ensure the integrity of the stone berm and associated repairs will be made as necessary.

4.11 Additionally, USEPA recommended the EA include information on time frames for sediment characterization, and construction implementation. The stone construction is planned to be completed early in 2014. Sediment characterization is scheduled for early 2014 and dredged material placement would be initiated as early as mid-summer of 2014.

4.12 Use of best management practices (BMPs) was recommended for minimization of construction impacts to air quality, water resources, soil, and other regulated resources. The USEPA also noted that the Draft EA should discuss proposed construction measures (including staging areas, worksite access, in-water construction and fill placement), recommends that equipment work from barges in the waterway, and that dewatering devices be used (such as temporary portable dams or cofferdams) to isolate active work areas during construction. As noted in the EA, apart from a small amount of excavation for an access channel and construction of an off-loading platform, all construction will be land based. The minor turbidity effects do not warrant isolation by cofferdam or similar devices, and once the stone is placed the island interior will be isolated from the waterway for dredged material placement. Of course, standard BMPs include proper emissions control devices on construction equipment, proper fueling procedures to protect the environment from potential spills and a spill control kit and plan for unforeseen events.

4.13 The USEPA requests the EA include a list of all Federal, state, and local permits that will be required, copies of correspondence from agencies with oversight on this project, a list of all measures that would be undertaken in response to these agencies, and construction plans if available. USACE responses to agency coordination are provided above, including any measures to be undertaken in response to specific agency requests. Correspondence is only attached where the comments are voluminous; otherwise they are quoted in the discussion above. Any coordination with the Department of Natural Resources is typically done by the Michigan Department of Environmental Quality (MDEQ) and the comments passed along to USACE. MDEQ also handles Water Quality Certification and Coastal Consistency Determinations. Construction plans, as previously noted, are included in this EA (Figures 6 and 7).

4.14 One comment regarded wetland delineation and the USEPA recommends that USACE or MDEQ regulatory staff make a field visit and make a determination regarding the presence of wetlands adjacent to the bay in areas that may be used for staging or for water access. A wetland delineation was completed in August 2013 and is summarized in this EA.

4.15 The USEPA also requested information on the D_{50} of the stone proposed to be placed; the proposed length of life of 1:1 side slopes; stability of the 1:1 side slopes (noting the expectation that

slumping to at least a 1.5:1 slope is likely); the acreage of fill (footprint) on the lake bottom of the stone and dredged backfill; and the purpose, need, and point of the proposed "access channel" to be constructed. The d50 of the stone is not known, but will be coming from the same stockpile that was used for island armoring in the late 1990's, and that stone was a varying mix of 50–1800 lb stone ranging from 5–30 inches in diameter. At a slope of 1:1 some sloughing is expected, with the toe area approaching a 1.5: 1 slope. This sloughing has been considered during the design process, and it is not expected to impact the stability of the erosion protection berm. The stone is expected to last through a 50-year project life and with appropriate maintenance may last much longer.

4.16 The fill acreage on the lake bottom is approximately 18 acres. The purpose, need, and point of the proposed access channel is delivery of stone and equipment to the island. The current depth of water between the federal navigation channel and the island is not sufficient for the tugs and barges that require access to the off-loading area.

5.0 CLEAN WATER ACT SECTION 404(b)(1) EVALUATION

5.1 The project and alternatives are described in the previous sections of this Environmental Assessment. Below is the analysis of the Section 404(b)(1) guidelines specifying discharges of dredged or fill material into the waters of the United States (reference Code of Federal Regulations, 40 CFR 230).

5.2 Restrictions on Discharge (§230.10)

(a) Dredged material placement alternatives considered include 1) No Action, 2) Upland Placement, and 3) Moon Island Placement. The proposed action is Alternative 3, Moon Island Placement. The proposed action provides for efficient channel maintenance with secondary benefits of erosion protection and expansion of wildlife habitat area at the island.

(b) The proposed discharge would not violate applicable State water quality standards and would have no effect on species Federally listed as endangered or threatened. The proposed discharge would not involve an effluent discharge as the discharge site is within a perimeter of stone erosion control berm; therefore, the project would not violate the Toxic Effluent Standards of Section 307 of the Clean Water Act. Protection measures for marine sanctuaries (Marine Protection Restoration and Sanctuary Act of 1972) do not apply because no designated sanctuaries exist within the project vicinity.

c) The proposed discharge would not cause or contribute to significant degradation of the waters of the United States. Waters of the United States would be protected from erosion by the stone island perimeter. The proposed discharge would not have significant adverse effects on human health; aquatic life and other wildlife dependent on the aquatic environment; aquatic ecosystem diversity, productivity, and stability; and recreational, aesthetic, and economic values.

5.3 Factual Determinations (§230.11)

(a) Physical Substrate Determinations. The physical substrate at the project site includes sandy material mixed with some finer grained material. Approximately 11.9 acres of lake bottom would be converted to upland in the form of stone perimeter berms and dredged material from the Federal navigation channel, and approximately 6.1 acres would be converted to a wet/moist soil substrate that is expected to develop into scrub shrub or forested wetland. Stone for berms would be a varying mix ranging from 50 to 1800 pound stones of 5- to 30-inch diameter. The island fill shoal material would be approximately 50% sand/ 50% fines (such as silt and clay). Impacts on the aquatic environment will be minimized by use of land-based equipment for all construction, minimization of excavation, and controlled placement of stone materials to ensure minimal disturbance of the existing lake bed substrate.

(b) Water Circulation, Fluctuation, and Salinity Determinations. During the project operation, minor short-term changes in water clarity, dissolved gases, and nutrient levels may occur as a result of disturbance to the bottom sediments. The contractor would be required to comply with U.S. Coast Guard regulations applicable to marine work and navigation. Spill kits to contain and/or neutralize accidental minor discharges would be on-site. No eutrophication of the waters at the project site would be expected. No significant changes in salinity, water chemistry, color, odor, or taste would be expected to occur. No adverse changes in current patterns, flow, stratification, water velocities, or the hydrologic regime would be expected. No specific actions would be required to minimize impacts other than that the stone placement will be done in a controlled manner to minimize disturbances to the bottom sediments, and that construction will be land-based.

(c) Suspended Particulate/Turbidity Determinations. Minor increases in turbidity would be anticipated from the localized re-suspension of bottom materials during placement of stone, dredging of the access channel, and construction of the off-loading platform. Controlled stone placement will help minimize these effects and such sediment as is re-suspended would be expected to settle rapidly. During this period, light penetration would decrease and dissolved oxygen levels may fluctuate. No changes in any background levels of toxic metals, organic compounds, or pathogenic organisms would be anticipated. Increased turbidity may result in negative aesthetic impacts during the repair activities. Impacts to the biota from changes in the suspended solid levels over the short- and long-term would not be expected to be significant. These effects would be similar to the turbidity effects induced by storms, but limited to the immediate project vicinity. Turbidity from dredged material placement into the island would be contained by the stone island perimeter.

(d) Contaminant Determinations. Shoal material to be placed at Moon Island would be selected based on contaminants analysis of samples and only material suitable for unrestricted upland placement would be used at the island. This shoal material would be effectively isolated from the St. Marys River by the stone berm which would be 10 feet thick at the crest and approximately 28 feet thick at the base. The stone required for the

proposed project is naturally occurring inert material. Therefore, the use of proposed stone would not be expected to cause any water or sediment degradation.

(e) Aquatic Ecosystem and Organism Determinations. Stone placement activities would undoubtedly disturb nearby fish and force them to temporarily seek other habitat, which should be in plentiful supply in this area of the St Marys River. The proposed stone berm will provide additional and varied habitat for fish and other aquatic organisms once the berm construction is completed. Some benthic organisms in the immediate construction area would be destroyed, but populations would re-colonize the disturbed areas after construction is completed. No impacts would be expected to occur on special aquatic sites such as sanctuaries, refuges, mud flats, vegetated shallows, coral reefs, or riffle and pool complexes, as none exist in the project area. Approximately 6.1 acres of an emergent wetland, consisting mostly of common reed, would be filled, and approximately l6.1 acres of wetland would be developed on the newly placed dredged material. No special actions are required to minimize impacts to the aquatic ecosystem during this renovation project.

(f) Proposed Disposal Site Determination. Due to the coarse nature and rapid settling time of the stone fill material proposed to be placed in the area, the mixing zone is expected to be the immediate vicinity of the project. Controlled stone placement will help minimize any turbidity generated from disturbance of the river bed. Subsequent placement of dredged material would be periodic until the site is full, which is expected to be completed in 2 or 3 dredging seasons, though not necessarily in consecutive years.

(g) Determination of Cumulative Effects on the Aquatic Ecosystem. Maintenance would occur infrequently and cumulative effects would not be significant. Since subsequent maintenance activities would be "in-kind, in-place," impacts would be short-term and minor. The area of the river where Moon Island is located is lake like (Munuscong Lake) with primarily natural shoreline. There are few projects affecting shore habitat in this area and the proposed action in combination with other such projects (past, present, or future) in this area of the St. Marys River would not result in cumulative adverse effects.

(h) Determination of Secondary Effects on the Aquatic Ecosystem. Secondary effects are positive including a reduction of erosion from the island, which in turn may prevent degradation of downstream benthic habitat, and reduce erosion induced deposition in to the Federal navigation channel and in turn reduce the necessary dredging quantities.

5.4 Findings of Compliance (§230.12)

(a) Evaluation of the proposed action as described in this Environmental Assessment indicates that it is in compliance with Section 404 of the Clean Water Act requirements listed in the "Guidelines for Specification of Disposal Sites for Dredged or Fill Material" (40 CFR part 230). Appropriate steps taken to minimize the adverse effects on the aquatic ecosystem include the use of clean stone material, placed in a manner that minimizes disturbance of the bottom sediments, and placement of the shoal material within the stone berm to isolate it from the river.

(b) No specific adaptation of the Section 404(b)(1) Guidelines has been made to accommodate the proposed action. The proposed project would not result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreational and commercial fishing, plankton, fish, shellfish, wildlife, and special aquatic sites. Life stages of aquatic or other wildlife species would not be adversely affected in the project vicinity by the elimination of minor sub populations that exist within the island perimeter, such as frogs and any fish remaining within the enclosed stone perimeter. Significant adverse effects to the aquatic ecosystem in terms of diversity, productivity, stability, recreation, aesthetic, and economic values would not occur.

6.0 CONCLUSIONS AND DETERMINATIONS

6.1 This EA is written pursuant to the National Environmental Policy Act (NEPA) of 1969 and includes a 404(b)(1) Evaluation pursuant to section 404 of the Clean Water Act (CWA) of 1977. The project proposal has been evaluated and found to be in compliance with Section 404 of the Clean Water Act requirements listed in the "Guidelines for Specification of Disposal Sites for Dredged or Fill Material" (40 CFR part 230).

6.2 The proposed filling of Moon Island has been reviewed pursuant to the following Acts and Executive Orders: Fish and Wildlife Act of 1956; Fish and Wildlife Coordination Act of 1958; National Historic Preservation Act of 1966; National Environmental Policy Act of 1969; Clean Air Act of 1970; Executive Order 11593, Protection and Enhancement of the Cultural Environment, May 1971; Coastal Zone Management Act of 1972; Endangered Species Act of 1973; Clean Water Act of 1977; Executive Order 11988, Flood Plain Management, May 1977; and Executive Order 11990, Wetland Protection, May 1977. The proposed action has been found to be in compliance with these Acts and Executive Orders.

6.3 Moon Island is within the 100-year floodplain. The proposed island filling would not have an adverse effect on the floodplain and would comply with the Federal Executive Order on Flood Plain Management (E.O. 11988) because there is no practicable alternative to construction in the flood plain that meets the project purpose of protecting the island from further erosion.

6.4 The project is within the State of Michigan Coastal Zone Management Area. The project would be “consistent to the maximum extent practicable” (as defined in 16 U.S.C. 1456, Coastal Zone Management Act) with the Michigan Coastal Management Program because it would help curtail erosion of the island and would increase habitat that potentially can be used by important wildlife species.

6.5 This Environmental Assessment has been prepared in accordance with the National Environmental Policy Act (NEPA); the Council on Environmental Quality, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* (40 CFR Parts 1500-1508); and the Corps of Engineers, *Policy and Procedure for Implementing NEPA* (33 CFR Part 230).

6.6 This Environmental Assessment concludes that 1) there are no significant cumulative or long-term adverse environmental impacts associated with the proposed action; 2) the benefits

outweigh the minor, temporary impacts that may result; and 3) it does not constitute a major Federal action significantly affecting the quality of the human environment.

7.0 PUBLIC REVIEW

7.1 This Environmental Assessment (EA) and Section 404(b)(1) evaluation will be made available to the public for a 30-day review period. Following this period and a review of the comments received, a final determination will be made by the District Engineer regarding the necessity of preparing an Environmental Impact Statement (EIS) for the proposed dredged material placement at Moon Island in the St. Marys River, Chippewa County, Michigan.

7.2 Based on the conclusions of this EA and the findings of the Section 404(b)(1) Evaluation, it appears that preparation of an EIS will not be required. Therefore, a Preliminary Statement of Findings/Finding of No Significant Impact (SOF/FONSI) is included in Section 8.0 of this EA. If after considering any comments received during the public review, the District Engineer determines that an EIS is not necessary, the Preliminary SOF/FONSI would be finalized and the proposed action will be implemented.

8.0 PRELIMINARY STATEMENT OF FINDINGS AND FINDING OF NO SIGNIFICANT IMPACT

8.1 Proposed Action: The U.S. Army Corps of Engineers (USACE), Detroit District, proposes to place dredged material from the St. Marys River Federal navigation channel at Moon Island. Potential alternatives for handling dredged material from the Federal channel in the St. Marys River include: 1) No Action, 2) Upland Placement, and 3) Moon Island Placement. The proposed action is Alternative 3, Moon Island Placement. To maximize fill capacity while avoiding scrub shrub wetlands on the island, approximately 6.1 acres of emergent vegetation (mainly common reed) would be filled, but a 6.1-acre area of the dredged material would be allowed to develop into wetland as a replacement.

8.2 Coordination: The proposed placement of dredged material at Moon Island has been coordinated with the U.S. Fish and Wildlife Service, the U.S. Environmental Protection Agency, the Michigan Department of Environmental Quality, the Michigan State Historic Preservation Office, and various Native American Tribes and groups. Comments received are discussed in the Environmental Assessment (EA), which was provided to these agencies and to the public for a 30-day review and comment period.

8.3 Environmental Effects: The Detroit District, Corps of Engineers, has assessed the environmental effects of the proposed dredged material placement at Moon Island and has determined that the project would not result in significant adverse environmental effects, nor would it be expected to result in any significant cumulative or long-term adverse environmental effects. Adverse effects would be minor, limited primarily to short-term noise and air emissions from equipment operation, minor turbidity generated from the placement of stone berms and excavation for the island access channel, temporary displacement of fish, and limited destruction of some fish, frogs, and bottom-dwelling organisms within the island perimeter. The proposed

action provides for efficient channel maintenance with secondary benefits of erosion protection and expansion of wildlife habitat area at the island.

8.4 Determinations: The proposed dredged material placement into Moon Island has been reviewed pursuant to the following Acts and Executive Orders: Fish and Wildlife Act of 1956; Fish and Wildlife Coordination Act of 1958; National Historic Preservation Act of 1966; National Environmental Policy Act of 1969; Clean Air Act of 1970; Executive Order 11593, Protection and Enhancement of the Cultural Environment, May 1971; Coastal Zone Management Act of 1972; Endangered Species Act of 1973; Clean Water Act of 1977; Executive Order 11988, Flood Plain Management, May 1977; and Executive Order 11990, Wetland Protection, May 1977. The proposed assistance has been found to be in compliance with these Acts and Executive Orders.

8.5 Moon Island is within the 100-year floodplain; however, the proposed action would not have an adverse effect on the floodplain and would comply with the Federal Executive Order on Flood Plain Management (E.O. 11988) because there is no practicable alternative to construction in the flood plain that meets the project purpose of protecting the island from further erosion. The island filling would be "consistent to the maximum extent practicable" (as defined in 16 U.S.C. 1456, Coastal Zone Management Act) with the Michigan Coastal Management Program because it would help curtail erosion of the island and would increase habitat that potentially can be used by important wildlife species.

8.6 Pursuant to the Clean Water Act (CWA), a Section 404(b)(1) evaluation of the environmental effects of the fill material into the waters of the United States has been prepared. The Section 404(b)(1) Evaluation concludes that the proposed flood protection is in compliance with Section 404 of the Clean Water Act. Pursuant to Section 401 of the Clean Water Act, the State of Michigan has indicated that the project would comply with State water quality standards

8.7 Finding and Conclusion: The EA and Section 404(b)(1) evaluation, along with a review of comments received during public review, indicates that the proposed dredged material placement into Moon Island does not constitute a major Federal action significantly affecting the human environment; therefore, an Environmental Impact Statement will not be prepared.

_____
Date

Robert J. Ells
Lieutenant Colonel, U.S. Army
District Engineer

Moon Island Plant List

Acorus calamus – Single Vein Sweetflag – OBL – P8220029-38.JPG

Actaea rubra – Red Baneberry – FACU

Agalinis paupercula – Small-Flower False Foxglove - OBL

Ajuga reptans – Common Bugle (Alien) – UPL

Anaphalis margaritacea – Western Pearly Everlasting – UPL - P8080010.JPG

Arabis laevigata – Smooth Rockcress - UPL

Arctium minus – Lesser Burdock (Alien) - UPL

Asclepias syriaca – Common Milkweed - UPL

Betula papyrifera – Paper Birch – FACU

Carex rostrata – Swollen Beaked Sedge – OBL - P8050022.JPG

Carex stipata – Stalk-Grain Sedge – OBL - P8050023.JPG

Centaurea maculosa – Spotted knapweed (Alien) – UPL

Centaurium pulchellum –Branched Centaury – FAC - P8050020 & 21.JPG

Chrysanthemum leucanthemum – Ox-Eye Daisy (Alien) - UPL

Cirsium arvense – Canada thistle (Alien) - FACU

Cirsium palustre – Marsh Thistle (Alien) - FACW

Cirsium vulgare – Bull Thistle (Alien) - FACU

Clematis virginiana – Devil's-Darning-Needles – FAC

Cornus alba – Red Osier - FACW

Epilobium leptophylum – Bog Willowherb – OBL

Epilobium parviflorum – Smallflower Hairy Willowherb (Alien) - OBL - P8080051, 52, 53.JPG

Epipactus helleborine – Helleborine (Alien) – UPL - P8050026.JPG

Erigeron canadensis – Canadian Horseweed – FACU

Erysimum inconspicuum - Small Wormseed Mustard – UPL – P8220002 & 3.JPG

Eupatorium perfoliatum – Common Boneset – FACW - P808005.JPG

Euphrasia stricta – Drug Eyebright (Alien) – UPL - P8050018 & 19.JPG

Fallopia convolvulus – Black-Bindweed (Alien) – FACU

Fragaria virginiana – Virginia strawberry – FACU

Fraxinus pennsylvanica – Green ash - FACW

Galium palustre – Common Marsh Bedstraw – OBL

Geum aleppicum – Yellow Avens – FAC

Hackelia virginiana – Beggar's-Lice – FACU - P8050024 & 25.JPG

Impatiens capensis – Spotted Touch-Me-Not - FACW

Juncus balticus – Baltic rush - OBL

Juncus effusus – Lamp rush - OBL

Linaria vulgaris –Butter-and-Eggs (Alien) - UPL

Lobelia kalmii – Brook Lobelia – OBL – P8080056.JPG

Lotus corniculatus – Garden Bird's-Foot-Trefoil – FACU - P8080011, P8080059.JPG

Lycopus americanus – Cut-Leaf Water-Horehound - OBL

Lycopus uniflorus – Northern Bugle Weed - OBL

Lythrum salicaria – Purple Loosestrife (Alien) - OBL

Meliotus officinalis – Yellow Sweet-Clover (Alien) – FACU - P808008 & 9.JPG (White & Yellow Flowered Varieties)

Maianthemum canadense – False Lily-of-the-Valley – FACU

Myosotis scorpoides – True Forget-Me-Not (Alien) – OBL

Myrica gale – Sweetgale - OBL

Nepeta cataria – Catnip (Alien) - FACU

Oenothera biennis – King's Cureall - FACU

Pastinaca sativa – Wild Parsnip – UPL

Persicaria amphibia – Water Smartweed – OBL - P8080019, P8080022 & 23.JPG

Persicaria sagittata – Arrow-Leaf Tearthumb – OBL - P8080024, 25.& 26.JPG

Phalaris arundinacea – Reed Canary Grass - FACW

Phragmites australis – Common Reed – FACW – P8050014, P8060058 & 59, P8080046 & 47.JPG

Populus balsamifera – Balsam Poplar – FACW

Populus deltoides – Eastern Cottonwood – FAC - P8080028 & 29.jpg

Potentilla anserina – Silverweed - FACW

Ranunculus acris – Tall Buttercup (Alien) – FAC

Ranunculus repens – Creeping Buttercup (Alien) – FAC - P806009 & 10.JPG

Rubus idaeus – Common Red Raspberry – FAC

Salix alba – White Willow (Alien) – FACW

Salix discolor – Pussy Willow - FACW

Salix interior – Sandbar Willow – FACW – P8080064.JPG

Salix pyrifolia – Balsam Willow – FACW

Schoenoplectus pungens – Three-Square - OBL

Scutellaria galericulata – Hooded Skullcap - OBL

Solanum dulcamara – Climbing Nightshade (Alien) – FAC

Solidago gigantea – Late Goldenrod – FACW

Solidago ohioensis – Ohio Goldenrod – OBL - P8080049 & 50, P9220040 & 41.JPG

Solidago rugosa – Wrinkle-Leaf Goldenrod – FAC

Thalictrum dioicum – Early Meadow-Rue – FACU – P8080070.JPG

Thuja occidentalis – Eastern Arborvitae – FACW

Trifolium aureum – Hop Clover (Alien) – UPL – P8080060, 61 & 62.JPG

Trifolium repens – White Clover (Alien) - FACU

Typha angustifolia – Narrow-Leaf Cat-tail – OBL - P8050029.JPG

Typha latifolia – Broad-Leaf Cat-tail – OBL - P8050029.JPG

Ulmus americana – American Elm - FACW

Urtica dioica – Stinging Nettle – FAC – P8080013 & P8080018.JPG

Verbascum thapsus – Great Mullein (Alien) - UPL

Verbena hastata – Simpler's-Joy – FACW - P808003 & 4.JPG

Veronica anagallis-aquatica – Blue Water Speedwell – OBL - P808001 & 2.JPG

Moon Island Animal List

Amphibians

Rana pipiens – Leopard Frog (P8220042.JPG)

Birds

Haliaeetus leucophalus - Bald Eagle – Michigan Species of Special Concern – (Roosting Tree Photo P8050006.JPG)

Pandion haliaetus – Osprey – Michigan Species of Special Concern

Childonias niger - Black Tern – Michigan Species of Special Concern

Sterna hirundo - Common Tern – Michigan Threatened Species

Ardea herodias - Great Blue Heron – (Rookery Photos P8050038/39.jpg, P8060053 & 55, P8080035-37.JPG, P8080076.JPG)

Anas platyrhynchos - Mallard

Branta canadensis - Canada Goose

Setophaga petechia - Yellow Warbler

Agelaius phoeniceus - Red-Winged blackbird

Melospiza melodia - Song Sparrow

Gallinago delicata – Wilson's Snipe

Charadrius vociferous - Killdeer

Lepidoptera*

Nymphalis antiopa - Mourning Cloak Butterfly - (Sand Bar Willow – Observed Host – Photos P8080063-69.JPG)

Orgyia leucostigma - White-marked Tussock Moth – (140 plant species – Host – Photos P8080031-34.JPG)

Mammals

Odocoileus virginianus - White-Tailed Deer

Castor canadensis – Beaver

*Ant, Aphid, Beetle, Fly, Mayfly, Mosquito, and Spider species observed but not identified

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

MAY 30 2013

REPLY TO THE ATTENTION OF:
E-19J

Paul Allerding
U.S. Army Corps of Engineers – Detroit District
477 Michigan Avenue
Detroit, Michigan 48226

RE: Scoping Comments – Moon Island Erosion Repair, Lake Huron/St. Mary's River, Sault Sainte Marie, Chippewa County, Michigan

Dear Mr. Allerding:

The U.S. Environmental Protection Agency has received the U.S. Army Corps of Engineers (USACE) correspondence (hereafter: scoping document) dated April 18, 2013, requesting EPA's review of and comments on the proposed Moon Island restoration project in Lake Huron near Sault Sainte Marie, Michigan. According to your cover letter, USACE's proposal will involve the placement of armor stone around the perimeter of the island and placement of shoal material from the St. Mary's River to restore eroded portions of the island.

EPA has reviewed your correspondence and figures provided for the aforementioned project. This letter provides our comments on the scoping document pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality's NEPA Implementing Regulations (40 CFR 1500-1508), and Section 309 of the Clean Air Act.

As stated in your scoping document, Moon Island is a man-made island created largely in the 1950s and 1960s from past dredging. It is located approximately 22 miles south of Sault Sainte Marie, off Winter Point at the southeast end of Neebish Island along the south side of the Federal Navigation Channel in Lake Huron. Active erosion has caused the original island size (approximately 62 acres) to erode to its current size of approximately 18 acres.

The proposed action is to armor and backfill a remnant of the original island size to restore the island from its current size of 18 acres to a size of approximately 31 acres (half of its original size). Approximately 29,000 cubic yards of stone would be placed around the perimeter of the restored island. The cross-section of stone would be 20' wide at the top, allowing for construction equipment to work during stone placement, with 1:1 side slopes. A short access channel (150' in length) would be excavated between the island and the navigation channel.

Background Information and Purpose and Need

- EPA recommends that the forthcoming Draft EA identify and substantiate the purpose and need for the proposed project. After underlying problems have been identified and substantiated, the alternatives identified to solve the underlying problems should then be identified and explained. The no-action alternative and all action alternatives that would satisfy the substantiated purposed and need should be fully assessed in the Draft EA. The Draft EA should also identify alternatives considered but dismissed from further consideration, and should provide elimination criteria and clear explanations for their elimination.

Aquatic Habitat/Spawning Areas

- The scoping document does not present any information on the current baseline aquatic conditions in this area, and how the placement of fill material into open water to recreate man-made upland areas could or will affect aquatic habitat or fish spawning areas. EPA requests that these topics be discussed thoroughly in the Draft EA.

Use of Dredged Material as Fill

- The scoping document does not include background information on where dredging will occur (including maps of specific dredging areas), how dredged materials were or will be tested to ensure they are suitable for open water disposal and also meet Michigan water quality standards, or how dredged material will be transported to the project site. As the Draft EA is developed, EPA recommends that this information be developed and included in the document.
- EPA requests that the Draft EA include a Clean Water Act Section 404 (b)(1) Alternatives Analysis.

Diagrams/Illustrations/Figures

- Please ensure that the Draft EA includes multiple east-west and north-south cross-sections of the proposed restoration area. Please ensure the cross-sections properly notate the specific directions of the cross-sections (e.g. A1-A1').

Federal/State Endangered and Threatened Species

- Please ensure that the Draft EA discusses potential impacts or threats to Federally- or state-listed endangered and threatened species. Please include copies of any correspondence or emails sent to or received from the U.S. Fish and Wildlife Service and the Michigan Natural Features Inventory regarding coordination efforts.

Management/Monitoring

- EPA recommends that a Monitoring and Adaptive Management Plan be developed. The plan should include a description of proposed monitoring activities at the project location, include quantifiable and measureable success criteria for the ecosystem restoration work, and should

specify the length of the monitoring period(s). Additional information on the party(ies) who will maintain the site in perpetuity should also be included in the Draft EA.

- Open-water restoration efforts undertaken by other USACE districts in the Great Lakes basin have proposed utilization of the Lacustrine Qualitative Habitat Evaluation Index (LQHEI) method to score potential restoration sites. EPA supports the use of qualitative metrics to score both baseline and restoration conditions. In the Draft EA, please provide narrative information on the type of proposed metric(s) to be utilized for management/monitoring. EPA expects baseline measurements will be taken and utilized for comparison during monitoring.
- In the Draft EA, please provide information on funding available for mentoring up to Year 5 or Year 10 post-restoration that will allow for adaptive management, maintenance, and monitoring of the island restoration. EPA recommends that detailed information on maintenance and monitoring of the island restoration site be included in the Draft EA.
- EPA recommends that timeframes (however preliminary they may be) for sediment characterization, restoration plan development, and construction/implementation be included in the Draft EA.

Construction Impacts

- EPA recommends that the forthcoming Draft EA recommend specific measures and best management practices (BMPs) that will be undertaken to minimize construction impacts to air quality, water resources, soil, and other regulated resources. The Draft EA should discuss proposed construction measures, including a discussion of staging areas and their locations, access to the worksite(s), and a discussion of staging and access for in-water construction and fill placement. USEPA recommends that equipment work from barges in the waterway, and that dewatering measures such as temporary portable dams or cofferdams be installed to isolate active work areas during construction. Additional information on the use of barges, such as barge use to place stone, or barge use to bring construction equipment to the rock armor area, should be included in the Draft EA.

Permitting/Agency Coordination

- The Draft EA should include a list of all Federal, state, and local permits that will be required to undertake the proposed actions. This may include Michigan Department of Environmental Quality (MDEQ) Section 401 Water Quality Certification, floodplain alteration permits, and coastal zone consistency reviews.
- In the Draft EA, please provide correspondence from agencies with oversight on this project, including the U.S. Fish and Wildlife Service, the State Historic Preservation Office, the Michigan Department of Natural Resource and Department of Environmental Quality, and others. In the Draft EA, please include a list of all required as well as voluntary measures undertaken, underway, or planned to be taken by USACE with each agency regarding permitting requirements and any efforts to be taken with regard to early coordination.
- If construction plans are available, please include them with the Draft EA. EPA understands that construction plans may be draft or at less than 100% design.

Wetlands

- It is unclear if a wetland delineation has been completed or is planned to be completed. USEPA recommends that USACE or MDEQ regulatory staff make a field visit and determination regarding whether or not wetlands are present adjacent to the bay in areas that may be used for staging or for water access.

Additional Information

- EPA requests that the Draft EA include the following information:
  - The D_{50} of the stone proposed to be placed;
  - Additional information on the proposed length of life of 1:1 side slopes, and how 1:1 rock side slopes will be stable. EPA expects that some rock will slump, causing at least a 1.5:1 slope at the lake base;
  - A calculation of the acreage of fill (footprint) on the lake bottom, including both placement of dredged material and rock footprints; and
  - Additional narrative information on the purpose, need, and point of the proposed "access channel" to be constructed.

Thank you for the opportunity to review and comment upon this scoping document. We are available to discuss these comments with you in further detail if requested. We look forward to reviewing future NEPA documents prepared for this project. If you have any questions about this letter, please contact Ms. Liz Pelloso, PWS, of my staff at 312-886-7425 or via email at pelloso.elizabeth@epa.gov.

Sincerely,

Kenneth A. Westlake, Chief
NEPA Implementation Section
Office of Enforcement and Compliance Assurance

cc: Scott Hicks, USFWS
Chris Antieau, MDEQ Water Resources Division
Jay Parent, MDEQ Land/Water Interface Permitting
John Gustafson, MDEQ Land/Water Interface Permitting
Michigan Natural Features Inventory