

APPENDIX D

*CLEAN WATER ACT 404(b)(1) EVALUATION

LITTLE MANISTEE RIVER SEA LAMPREY BARRIER AND TRAPS MANISTEE COUNTY, MICHIGAN SECTION 506 GLFER

CLEAN WATER ACT SECTION 404(b)(1) EVALUATION Of the Effects of Placing Fill Material into the Waters of the United States

I. PROJECT DESCRIPTION

Refer to the Feasibility Report & Environmental Assessment (FR&EA) for detailed descriptions of the affected environment and evaluation of potential impacts of the proposed action and alternatives.
(Applicable FR&EA Section References are Provided below.)

a. Project Location, Description, and Authority: The U.S. Army Corps of Engineers, Detroit District (USACE), is proposing to excavate and remove the existing concrete spillway at the Michigan DNR egg collection facility and construct a permanent steel sheet pile (SSP) weir, armor the spillway banks, install a fish guidance weir to direct fish to the egg collection facility, install an overhead walkway for site access to a permanent trap and for operation and maintenance of the facility. Construction access will be provided across the bottomlands of the river through the placement of rock for a temporary ford downstream of the viewing platform from the staging area located adjacent the existing parking lot. The trap, steel sheet pile barrier weir, walkway and fish guidance weir is funded under the Great Lakes Fishery and Ecosystem Restoration (GLFER) program authorized by Section 506 of the Water Resources Development Act of 2000, as amended. The proposed action is to remove the existing concrete spillway that is part of the Michigan DNR egg collection facility, install a SSP weir to block upstream lamprey migration up to the 4% discharge event, construct a permanent sea lamprey trapping complex at the existing MDNR egg collection facility on the Little Manistee River near Stronach, Michigan, in Manistee County, Michigan. The recommended alternative is replacement of the concrete spillway with a SSP weir spillway, bank armoring, construction of a fish guidance weir, installation of an elevated walkway and construction of a permanent attractant water trap system in one gate of the MDNR egg collection facility. See **Chapter 3 and 4 - 3. PLAN FORMULATION AND 4. ENVIRONMENTAL EFFECTS OF RECOMMENDED PLAN.**

The lamprey trap will be approximately 4' wide x 4' deep and 5' high and constructed of galvanized steel mesh, plates and angles. Trap mesh will be of sufficient size to allow water flow through the trap; see **Figure 13** of the Integrated DPR/EA. A 25 square foot concrete slab (approximately 5'x 5') will be constructed beneath the trap to provide a level base for trap placement. A manual or electric davit hoist would be located on a support pile for use in lifting and lowering the trap. The trap will be capable of being set on a cart and wheeled to the shoreline. Final trap design will be completed in the design

phase during implementation, in coordination with the USFWS. Traps will be placed seasonally during the lamprey spawning run – installed once in March and removed in July depending on the weather.

b. Description of Placement Methods: Alternative 3, the selected alternative, involves the modification of the existing concrete spillway by removing the existing earthen and concrete spillway (1500 CYD of cut using 370 CYD of cut material for backfill to shape the banks); construct a low head adjustable (stop logs) spillway that would block lamprey migration up to the 25 year (4%) flood event; raising the existing walkway to an elevation that would accommodate the 100 year (1%) flood event; extend the walkway across the entire structure to allow for access for operations and maintenance. Scour stone (50 CYD total) will be placed on the upstream and downstream toe of the new spillway. Install a directional weir on pilings at the confluence of the spillway discharge and the main river to divert fish toward the MDNR egg collection facility. Place a total of 430 CYD of rock riprap or field stone to armor both banks of the spillway to protect the channel from scour; reconstruct the existing canoe/kayak portage path. Excavation of the concrete spillway and armoring the spillway riverbanks will result in the loss of about 5400 ft² of wetlands located along the river banks from excavation for placement of armor rock. Excavation of the spillway and approach will create about 1600 ft² of river bottomlands and placement of armor stone will create 1500 ft² of hard substrate for colonization by aquatic invertebrates. Completion of the proposed work will result in the net loss of 2400 ft² of aquatic habitat (0.05 acres). Materials placed in the river as part of the proposed project may include wood forms, concrete, and steel. The trap will be set on a concrete base slab (using approximately 0.7 CYD of concrete to construct a 5' x 5' by 10" thick pad). The steel piles and concrete would remain after construction. Wood forms, if used, would be removed upon completion of construction.

All construction generated debris would be appropriately disposed of in accordance with applicable laws and regulations, and would not be placed in wetlands or waters of the U.S. Recycling of materials would be encouraged. It is anticipated that the proposed permanent sea lamprey trap would be constructed using land-based construction equipment crossing the main river on a temporary rock ford.

c. Description of Habitat: There is very limited habitat located at and in the immediate vicinity of the concrete apron. The concrete spillway does not provide habitat but the vegetated riverbank does have a wetland fringe that is providing habitat for aquatic species. The wetland fringe may also be providing suitable habitat for the endangered Eastern massasauga rattlesnake. Discussions with the USFWS indicate that the project will not likely affect the massasauga rattlesnake. Construction of the weir and excavation for armor stone placement at the spillway riverbanks with the removal of the concrete spillway will result in the net loss of about 2300 ft² of aquatic habitat (0.05 acres). The new riverbanks of the spillway channel will be armored for erosion protection (1500 ft² hard substrate) and the existing wetland habitat will be lost. The proposed trap location is at the base of one existing weir which is providing no habitat. Construction of the concrete pad to set the trap on will not alter the existing habitat at the site.

II. FACTUAL DETERMINATION

a. Physical Substrate Determinations: The proposed SSP weir will remove the concrete apron and impact 5400 ft² of wetlands (1/8 acre) and result in the net loss of 2300 ft² of aquatic habitat. The armor stone on the riverbanks that is below the OHWM will provide (1500 ft²) suitable hard substrate for aquatic invertebrate colonization. The sea lamprey trap would be constructed at the base of one of the existing gates set on a concrete pad.

b. Water Circulation, Fluctuation, and Salinity Determinations: No significant effects. The proposed sea lamprey traps would be constructed just downstream of the gates of the existing weir. The trapping system will be supported by steel piles and traps will allow water to flow through. Removal of the concrete spillway and reconstruction with the SSP weir will not result in any stage increase or harmful interference. Water circulation, fluctuations and salinity conditions would remain similar to existing conditions.

c. Suspended Particulate/Turbidity Determinations: No significant effects. Work will occur in the dry or in slack water with appropriate soil erosion control measures in effect. The riverbanks of the spillway channel will be armored with rock to minimize any erosion during discharge events. Some particles may become suspended when the concrete spillway is excavated, the SSP weir is driven into the riverbed, support piles for the walkway, fish weir and proposed trap are set, however this turbidity would be minor and temporary. Turbidity effects would dissipate over time and distance from the work area and would not have significant short-term or long-term effects.

d. Contaminant Determinations: All materials used for construction of the SSP weir and proposed sea lamprey trap would come from an approved source. No contaminated materials are anticipated to be encountered during construction activities at the MDNR egg collection facility.

e. Aquatic Ecosystem and Organism Determinations: No significant effects. No significant amount of habitat is known to exist at the proposed construction site, therefore construction is not anticipated to disrupt existing habitat at the site or its use by fish and wildlife, which would avoid the area because of the noise and activity. The overall net decrease in aquatic habitat is 2400 ft² with the loss of riverbank emergent and shrub/scrub wetland fringe with the riverbank armoring with the project. Bottom-dwelling organisms will colonize the newly formed riverbed and the hard armor stone substrate.

f. Federally Listed Species The Little Manistee River watershed provides habitat for the threatened Eastern massasauga rattlesnake. The snake has been documented near the area of weir facility. The FWS initially indicated that construction window for the barrier would be November to February when the massasauga would be hibernating. However, after coordinating with FWS personnel they agreed that construction could be done during the summer months as long as silt fences were installed around the construction site and the site was inspected daily for the threatened snake species. The Lake Michigan shoreline provides habitat and nesting ground for the Piping Plover and feeding areas for the migrating Rufa red knot. However, based on habitat characteristics at the project site, no preferred habitat for the Piping Plover or the Rufa red knot is located in or near the work area.

Both the Indiana bat and the northern long eared bats are Federally listed species. At this time, we do not anticipate needing to remove any trees for construction. However, if once on site it is determined that some trees do need to be removed, the trees that are large enough to support summer colonies of the Indiana and northern long-eared bats would be inventoried to determine if they may provide suitable habitat. If applicable, all tree clearing would be conducted between October 15 and March 31 to avoid impacting any potential bat habitat. The Pitcher's thistle is a Federally listed plant species that grows in sand dunes. The site contains no suitable habitat for the Pitcher's thistle.

Therefore, the USACE has determined the project would have "no effect" on five of the Federally listed species and /or critical habitat. The USFWS has concurred in an email dated April 17, 2017 that the proposed project with the silt fence and daily inspections to insure any reptiles are excluded from the

work zone would result in the determination that the proposed project “would not likely adversely affect” the Eastern massasauga rattlesnake.

g. Proposed Disposal Site Determinations: No significant effects on municipal or private water supplies, recreational or commercial fisheries, water related recreation, aesthetics, parks, monuments, wilderness areas, research sites, or similar preserves are expected. Refer to EA for additional discussion.

h. Determination of Cumulative and Secondary Effects on the Aquatic Ecosystem: The proposed action is designed to block upstream sea lamprey migration at the 4% discharge event and increase sea lamprey trapping efficiency, capture and remove spawning-phase sea lamprey from the Little Manistee River system. Blockage of spawning phase sea lamprey and removal of larval sea lamprey downstream of the weir will provide benefit to the Great Lakes fishery and ecosystem. No significant cumulative or secondary effects are expected to occur from the proposed action.

III. FINDING OF COMPLIANCE

a. On the basis of the *Guidelines for Specification of Disposal Sites for Dredged or Fill Material* (40 CFR part 230), it has been determined that the proposed action is in compliance with Section 404(b)(1) of the 1977 Clean Water Act, as amended.

b. The project purpose is to construct a SSP weir to effectively block spawning phase sea lamprey up to the 4% discharge event, construct a permanent AWT sea lamprey trap within an existing bay to capture and remove adult, spawning-phase sea lamprey from the Little Manistee River at the MDNR egg collection facility. . Alternatives considered in this study include:

- **Alternative 1** – No Action (continued use of temporary traps and lampricide treatment)
- **Alternative 2** – Demolition of the Existing MDNR Weir Structure and Construction of a Permanent Lamprey Barrier and Trap at the Weir Location
- **Alternative 3** – Modify the existing spillway at the MDNR weir structure

c. The proposed project is consistent with applicable State of Michigan water quality standards. The action would not cause or contribute to significant degradation of the waters of the United States. A Section 401 (of the CWA) water quality certification (WQC), or waiver thereof, would be obtained from the State of Michigan prior to beginning construction. The non-Federal sponsor will apply for any applicable state permits.

d. The proposed action would not result in significant effects on human health or welfare, municipal and private water supplies, recreational fishing, aquatic life, wildlife dependent on the aquatic ecosystem, or the diversity, productivity and stability of the aquatic ecosystem at the project site and would not adversely affect the quality of the human environment. The proposed action has been coordinated with the U.S. Fish and Wildlife Service under Section 7 of the Endangered Species Act and Fish and Wildlife Coordination Act. With the exception of Eastern massasauga snake, the project would have no effect on Federally listed species. The project may affect, but is not likely to adversely affect the Eastern massasauga with special precautions during construction.

e. Appropriate steps would be taken to minimize adverse environmental effects on the aquatic ecosystem. Contract specifications would include specific environmental protection clauses to ensure protection of natural resources, proper installation and maintenance of appropriate and effective

erosion control measures during and after the project, and planned sequencing of the construction activities to minimize effects on the environment.

f. No significant adaptations of the Section 404(b)(1) Guidelines were made relative to this evaluation.