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New England District

PUBLIC NOTICE

In Reply Refer to: Mr. Jordan Macy
Email: Jordan.G.Macy@usace.army.mil
Planning Division
Date: November 8, 2023
Comment Period Closes: December 7, 2023

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30 DAY PUBLIC NOTICE
PROJECT MODIFICATIONS FOR IMPROVEMENT TO THE ENVIRONMENT
Smelt Brook Local Protection Project,
Braintree and Weymouth, Massachusetts

Interested parties are hereby notified that the U.S. Army Corps of Engineers (USACE), New England District, is planning to perform work subject to the provisions of Section 404 of the Clean Water Act of 1977 (Public Law (P.L.) 95-217), Executive Order 11988 – Floodplain Management, and the National Environmental Policy Act (P.L. 91-190). The work involves modifications to the Smelt Brook Local Protection Project (LPP) in Braintree and Weymouth, Massachusetts to improve the passage of the rainbow smelt in Smelt Brook to suitable spawning habitat. The work is authorized by Section 1135 of the Water Resources Development Act of 1986 (PL99-662), as amended. Section 1135, entitled “Project Modifications for Improvements to the Environment,” states, in part, “The Secretary is authorized to review the operation of water resources projects constructed by the Secretary before the date of enactment of this Act to determine the need for modification in the structures and operations of such projects for the purpose of improving the quality of the environment in the public interest.” The non-Federal project partner for the study and project implementation is the Weymouth Braintree Regional Recreation Conservation District (WBRRCD). Attachment 1 lists pertinent laws, regulations, and directives.

Project Description: Smelt Brook LPP’s flood control structures (Attachment 2) obstruct migration of rainbow smelt and other diadromous species to historic spawning habitat. A perched culvert above a stilling basin (plunge pool) within the LPP was added to the project to decelerate the flow of water and protect the surrounding communities. This structure blocks access to a mile of suitable rainbow smelt spawning habitat (Attachment 3). The proposed project involves construction of a fish ladder on one side of the stilling basin of the plunge pool that meets the technical requirements for fish passage of the target species. The restoration of fish passage through the alteration of this structure is a modification of the Smelt Brook LPP. Projects conducted under Section 1135 of the Water Resources Development Act of 1986 must be compatible with the existing project purpose; therefore, the proposed alternatives must maintain the capacity of Smelt Brook LPP to protect the towns of Braintree and Weymouth from high stream flows and flooding

events. The plunge pool has successfully mitigated the risk for high flow within Smelt Brook but has impeded fish passage and access to suitable habitats upstream.

Purpose of Work: The purpose of the project is to restore upstream and downstream rainbow smelt passage to a mile of upstream historic spawning habitat in Smelt Brook that is currently obstructed by the plunge pool. This would restore self-sustaining populations and ecological function to Smelt Brook. Rainbow smelt are important fishery resources that play a significant ecological role in Quincy Bay. The ecological benefits associated with their presence include the strengthening of food webs by providing forage to fish, birds, mammals, and reptiles in freshwater and marine environments and the deposition of marine derived nutrients as fish spawn, die, and decay or are preyed upon in the freshwater system. Rainbow smelt and other diadromous fish populations have declined significantly in the Northeast U.S. since the 19th-century due in part to the construction of dams for use in flood control, energy production, logging, milling, and other purposes.

Alternatives: The following alternatives were considered as solutions to allow fish passage upstream past the plunge pool.

Alternative 1 consisted of constructing a fish ladder across the width and length of the entire stilling basin footprint within the plunge pool. This alternative failed to convey high flows that would prevent flooding or erosion and impacted the intent of the flood control measures within the LPP.

The recommended plan, or Alternative 2, is to construct a fish ladder on one side of the stilling basin. The plan for the fish ladder consists of between nine and eleven pools and weirs with the elevation of each pool being a few inches different from those adjacent to it. Flows would discharge from the outlet of the perched culvert into the stilling basin, which would extend the entire width of the stilling basin. Streamflow in excess of 1.5 cubic feet per second (cfs) would diverge with partial flow discharging from the first pool directly into the stilling basin, and partial flow directed to the pool and weir structure. The design would meet the required technical features needed for passage of rainbow smelt while maintaining the flood protection functions of the LPP. This alternative allows for the appropriate flow through the pools of the fish ladder while excess flow can exit the perched culvert directly into the open half of the stilling basin during high flow events.

Alternative 3 consists of a nature-like fish passage side channel with weirs that would extend along the side of the channel downstream of the stilling basin to avoid having the whole fish passage structure within the stilling basin. This would allow for longer pools and smaller depths over a greater distance but would require almost half of the area available area within the LPP easement area. This alternative would partially obstruct extreme flow events and create additional flood risk.

Alternative 4 consists of the design and construction of a nature-like fish passage side channel with switchback. This design considered fish passage along one side of the improved channel consisting of three adjacent channels in a series of gently sloping

pools oriented in an alternating downstream and upstream pattern. The flow would be gentle and the channels would include rocks, soil and plants to qualify as nature-like but there would be no opportunity for fish to rest.

Alternative 5 consists of the construction of a series of weirs across the entire stream section 600 feet downstream leading up to the plunge pool. The design considers spacing of 10 feet between the weirs for an equivalent length of pools. Weirs would be notched for flow at three elevations to ensure that at relatively low flows, the depths would be adequate to promote the migration of smelt upstream. Given issues with flood control of high flow events, and the diminished flow with the maximum slope that would allow for fish passage, the alternative has not been pursued as a feasible option.

Alternative 6 consisted of a keyhole slot at the base of the existing culvert that discharges flows into the plunge pool. The drop at the culvert would be reduced by excavating a sloped exit over 100 feet upstream and downstream of the culvert. There would be a lateral wall every 10 to 15 feet with a narrow notch for fish passage during lower flows. There would be three to six pools in the stilling basin to provide a smooth transition for fish from the culvert approach into the culvert sections. This would require replacing the existing culvert with one specifically designed to allow passage at this location. This alternative has not been pursued as a feasible option due to concerns regarding erosion risks from construction of the new culvert channel design.

Additional Information: Additional information may be obtained from the Planning Division of the New England District, U.S. Army Corps of Engineers: Mr. Jordan Macy, the project manager, and/or Ms. Hannah Doherty, the project biologist, at the address shown above. These individuals may also be reached by phone or email; Mr. Macy at 978-318-8584 or Jordan.G.Macy@usace.army.mil, and Ms. Doherty at 978-318-8685 or Hannah.L.Doherty@usace.army.mil.

Coordination: The proposed work is being coordinated with the following federal, state, and local agencies:

Federal
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service
National Marine Fisheries Service

State
Massachusetts Department of Environmental Protection
Massachusetts Division of Marine Fisheries
Massachusetts Office of Coastal Zone Management
Massachusetts State Historic Preservation Office

Tribal
Mashpee Wampanoag
Wampanoag Tribe of Gay Head (Aquinnah)

Narragansett

Local
Town of Weymouth
Town of Braintree
Weymouth Braintree Regional Recreation Conservation District

Environmental Impacts: A draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) has been prepared for this project. These documents are available for public review by contacting the U.S. Army Corps of Engineers, as noted above. The EA and FONSI will be finalized after consideration of public and agency comments. A preliminary determination has been made that an Environmental Impact Statement for the proposed project is not required under the provisions of the National Environmental Policy Act of 1969. This determination will be reviewed in light of facts submitted in response to this notice.

Other Information:

a. Local Sponsor: Weymouth Braintree Regional Recreation Conservation District

b. Floodplain Management: In accordance with Executive Order 11988, USACE has determined that the proposed work will not contribute to negative impacts or damages caused by floods.

c. Endangered Species: It is our preliminary determination that the project is not likely to adversely affect threatened or endangered species. USACE has been in coordination with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service to ensure that the proposed activity will not significantly affect any species or critical habitat designated as endangered or threatened pursuant to the Endangered Species Act of 1973 (87 Stat. 844).

d. Cultural Resources: USACE is in coordination with the Massachusetts State Historic Preservation Office, and the Mashpee Wampanoag, Wampanoag Tribe of Gay Head (Aquinnah), and Narragansett tribes in accordance with the National Historic Preservation Act of 1966, as amended.

e. Additional Requirements: A Water Quality Certificate will be acquired from the Massachusetts DEP pursuant to Section 401 of the Clean Water Act during the design phase of the project. A Section 404(b)(1) evaluation, pursuant to the Clean Water Act, is attached to the EA. Concurrence with our consistency determination will be obtained from the Massachusetts Office of Coastal Zone Management Program policies, in accordance with the Coastal Zone Management Act (CZMA) (16 U.S.C. §§ 1451).

Please bring this notice to the attention of anyone you know to be interested in this project. Comments are invited from all interested parties and should be directed to me at: U.S. Army Corps of the Engineers, New England District, 696 Virginia Road, Concord, Massachusetts, 01742-2751, Attn: Planning Division, within 30 days of this notice.

Nov 8, 2023

Date

Wendy C. Gendron
Chief, Planning Division

Attachments

Attachment 1

PERTINENT LAWS, REGULATIONS, AND DIRECTIVES

Clean Water Act, as amended (33 U.S.C. 1251 et seq.)

National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.)

Fish and Wildlife Coordination Act (16 U.S.C. 661-667e)

Fish and Wildlife Act of 1956 (16 U.S.C. 742a, et seq.)

Migratory Marine Game-Fish Act (16 U.S.C. 760c-760g)

Coastal Zone Management Act of 1972 (16 U.S.C. 1451)

National Historic Preservation Act of 1966 (54 U.S.C. 100101 et seq.)

Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.)

Clean Air Act, as amended (42 U.S.C. 7401 et. seq.)

Estuary Protection Act (16 U.S.C. 1221 et. seq.)

Federal Water Project Recreation Act, as amended (16 U.S.C. 460L-12 et seq.)

Land and Water Conservation Fund Act of 1965, as amended (54 U.S.C. 200301 et seq.)

Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (16 U.S.C. 1801 et seq.)

Executive Order 11988, Floodplain Management, 24 May 1977

Executive Order 11990, Protection of Wetlands, 24 May 1977

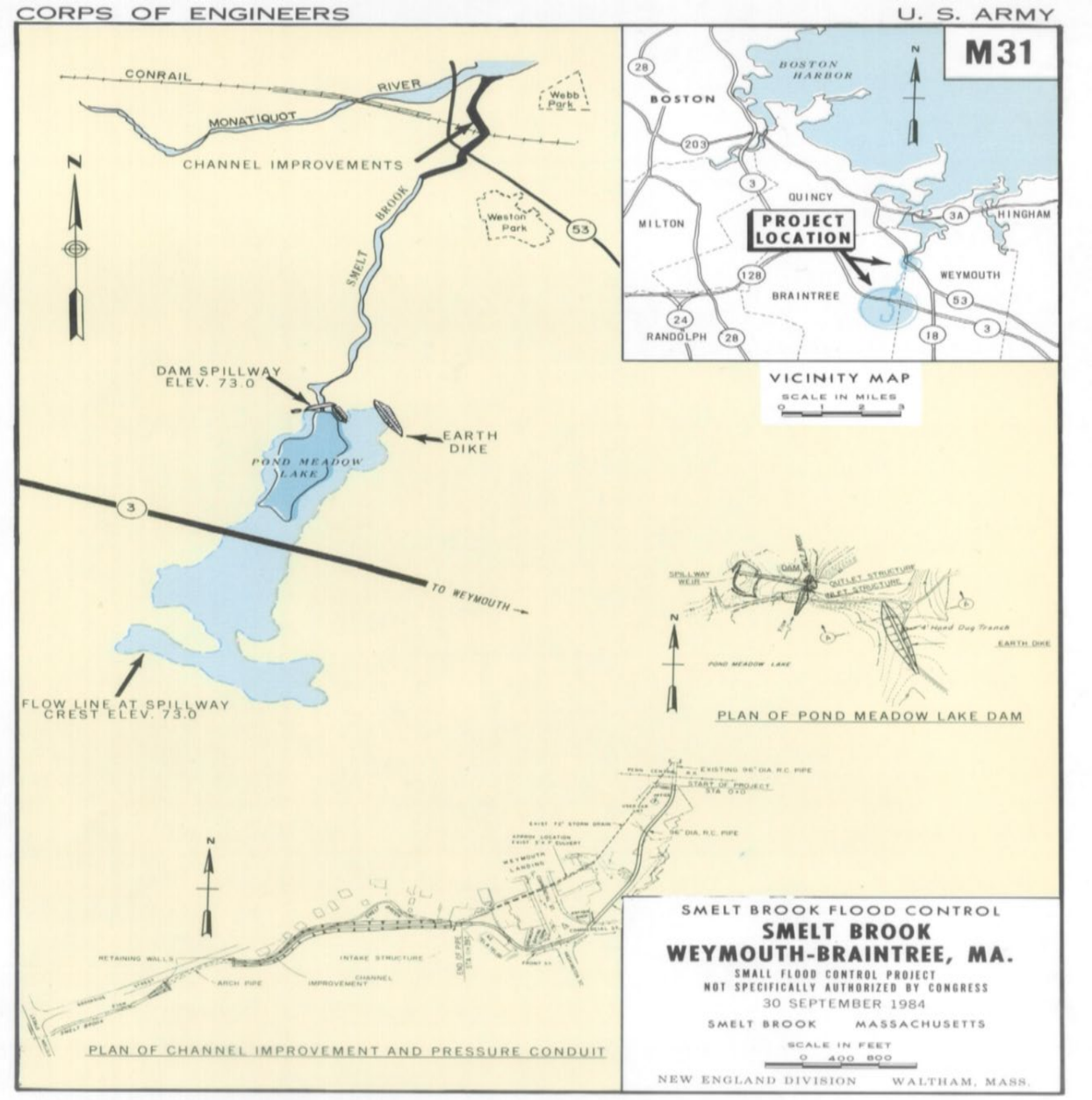
Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations, 11 February 1994

Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks, 21 April 1997

Executive Order 14008, Tackling the Climate Crisis at Home and Abroad

Attachment 2

Smelt Brook Local Protection Project Location



Attachment 3

Prominent Features Effecting Fish Passage in Smelt Brook LPP

Attachment 4

Proposed Project Modification Conceptual Rendering – Fish ladder on one side of the stilling basin.