Public Notice

U.S. Army Corps
Of Engineers
New England District
696 Virginia Road
Concord, MA 01742-2751

Date: August 29, 2005

Comment Period Closes: September 28, 2005

Evaluation Branch, Engineering/Planning Division

30-DAY PUBLIC NOTICE
WISWALL DAM
DURHAM, NEW HAMPSHIRE
AQUATIC ECOSYSTEM RESTORATION PROJECT

Interested parties are hereby notified that the U.S. Army Corps of Engineers, New England District plans an aquatic ecosystem restoration project to restore anadromous fish passage and river habitat in the vicinity of Wiswall Dam in Durham, New Hampshire. This work is being conducted under Section 206 of the Water Resources Development Act of 1996, P.L. 104-303, as amended. Section 206 provides programmatic authority for the U.S. Army Corps of Engineers (USACE) to carry out aquatic ecosystem restoration projects that improve environmental quality, are in the public interest, and are cost effective. The New Hampshire Department of Fish and Game is the non-Federal sponsor of this project. Attachment 1 is a project area location map and Attachment 2 includes a list of pertinent laws, regulations, and directives considered in project planning. The proposed plan is shown in Attachment 3.

Project Description:

Wiswall Dam is located on the Lamprey River in Durham, New Hampshire in the southeastern corner of the State, near the Atlantic coast. It is the second upstream dam on the Lamprey River, which flows approximately 48 miles from the Saddleback Mountains in Northwood to the southwest corner of Great Bay in Newmarket, New Hampshire. In November of 1996, the Lamprey River was designated as a Wild and Scenic River by the National Park Service under the National Wild and Scenic Rivers Act. This designation was due primarily to the river's valued wildlife resources and importance as a tributary to the Great Bay National Estuarine Reserve. Wiswall Dam is 11 feet high and 200 feet long, with a 160-foot-long concrete spillway. The existing concrete dam structure, which has been used to power various mill operations, was constructed in 1912; however, there has been a dam in this location since 1835 (or earlier). The remains of a stone block sluiceway and sluice gate are located on the left abutment bank. The dam is currently owned by the town of Durham, and the approximately 26-acre pool behind it serves as public water storage and supply for Durham and the University of New Hampshire (UNH) campus in Durham.

Historically, the Lamprey River is believed to have supported large populations of alewife and blueback herring (collectively referred to as river herring), sea lamprey, American shad, American eel, and Atlantic salmon. However, in past decades, dams built for industrial and residential development have obstructed fish migrations on the river. The Wiswall Dam is the second dam encountered by fish migrating from the ocean to spawning areas upstream on the Lamprey River. The first dam, the Macallen Dam, is located at tidewater in Newmarket, New Hampshire. Each year, about 20,000-60,000 river herring and other fish species swim through a Denil fish ladder at the Macallen Dam. These fish are prevented from accessing an additional forty-three miles of river habitat upstream from the Wiswall Dam due to the blockage posed by the dam's presence. Native anadromous fish species potentially affected by the dam include American shad, river herring, and Atlantic salmon.

The proposed Federal action involves the construction of a nature-like bypass channel to restore anadromous fish passage around the dam, allowing anadromous fish access to an additional 43 miles of river habitat upstream of Wiswall Dam. The bypass channel also is intended to reconnect riverine habitat upstream and downstream of the dam by providing continuous riverine habitat within the constructed channel.

The bypass channel will be approximately 1,100 feet long and 15 to 30 feet wide. Approximately 800 feet of channel will be excavated 5 to 10 feet into a terrace on the east side of the river and 300 feet will be constructed using a dike along the east bank of the river immediately downstream of the dam. The channel gradient will be approximately 1%, dropping a total of approximately 11 feet, the height of Wiswall Dam. Flows down the constructed channel are expected to average approximately 100 cubic feet per second (cfs), with extremes ranging from 2 cfs during drought conditions to 1,000 cfs during major flood events. The channel substrate will be sand and gravel with a variety of boulders and outcrops to mimic the geomorphology of the natural river.

Approximately 3,900 cubic yards of soil and rock will be excavated to construct the channel, and this material will be used to construct the dike and channel substrate. Channel banks and side slopes will be re-vegetated with a variety of native vegetation, including wetland and riparian species. An area of approximately 1 acre will be cleared of young pine plantation and mixed deciduous forest. Approximately 0.1 acre of shrub wetland will be deepened and replaced with perennial riverine habitat and additional shrub wetland along the channel banks and side slopes. Work is expected to occur in or after 2006, at a time that would have the least effect on existing fisheries and wildlife resources. It is anticipated that the project will be completed in one season. Monitoring of the project will occur over the next 5 years, and small-scale modifications may be needed to optimize the channel function at passing anadromous fish. No significant long term or short-term adverse impacts to the environment are anticipated.

Additional Information: Additional information may be obtained from the Engineering/Planning Division of the U.S. Army Corps of Engineers, Mr. Adam Burnett, the Project Manager, and Mr. Kenneth Levitt, of the Environmental Resources Section, at the return address shown. These individuals may also be reached by phone: for Mr. Burnett at (978) 318-8547 or email at adam.w.burnett@usace.army.mil, and for Mr. Levitt at 978-318-8114 or email at kenneth.m.levitt@usace.army.mil. Collect calls will be accepted weekdays between 9:00 a.m. and 3:00 p.m. Information on this project is also available online at www.nae.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:
New Hampshire Department of Fish and Game
New Hampshire Department of Environmental Services (NHDES)
New Hampshire State Historic Preservation Officer
New Hampshire Natural Heritage Inventory
New Hampshire Office of State Planning

Local:
Town of Durham, New Hampshire
Town of Lee, New Hampshire
Town of Newmarket, New Hampshire
Lamprey River Advisory Committee

Purpose and Need for Work: The Wiswall Dam currently blocks the upstream migration of anadromous fish in the Lamprey River in Durham, New Hampshire. Currently anadromous alewives and blueback herring (river herring), shad, and Atlantic salmon returning to the Lamprey River are able to pass beyond the Macallen Dam in Newmarket through a fish ladder, but are blocked from further upstream migration by the Wiswall Dam in Durham. The construction of a nature-like bypass channel will allow these up-migrating anadromous fish access to an additional 43 miles of riverine habitat for spawning and/or nursery. Without the project, these fish will not be able to access historical habitat.

Alternatives: Four alternatives were analyzed in detail, including the no-action alternative, removal of Wiswall Dam, construction of a Denil-type fish ladder, and construction of a nature-like bypass channel around the dam. The recommended alternative is construction of the nature-like bypass channel. The three alternatives considered along with the bypass channel are described further as follows:

No Action- The no action alternative would be the future-without-project condition, and the assumption that the existing Wiswall Dam will continue to block the upstream migration of anadromous fish. This blockage would preclude the restoration of self-sustaining runs of anadromous fish species, and the ecological benefits associated with the restoration of these fish to the Lamprey River upstream of Wiswall Dam would not be realized. Therefore, this alternative was rejected.

Dam Removal- Dam removal would provide full fish passage in the vicinity of the Wiswall Dam site. However, dam removal would cause the loss of the town of Durham's and UNH's supplemental water storage capability behind the dam. Dam removal would also cause the loss of the impoundment and the associated lacustrine habitat, as well as loss of approximately nine acres of wetlands supported by the impoundment along the riverbanks of

the Lamprey River. With the loss of the impoundment, the water levels would recede and no longer support some of the aquatic bed wetlands that border the river on the adjacent banks. Some of these wetlands are connected by small channels or inlets, and they provide nursery and spawning habitat for numerous lacustrine fish species. For these reasons, this alternative was rejected.

Denil Fish Ladder- A Denil Fish Ladder would be constructed on the east embankment of the Wiswall Dam. In this alternative, up-migrating fish would be allowed access to areas upstream of Wiswall Dam. During periods of upstream and/or downstream migration, the water would be allowed to flow through the fish ladder (by opening the stop log control structure) enabling fish to migrate through the fish ladder. Alternatively, for downstream migration, a notch could be placed in the spillway to direct fish over the spillway into a plunge pool below the dam, or the fish ladder could provide downstream access by putting a notch in the stop logs at the upstream end of the fish ladder. Limitations to this alternative include the fact that fish ladders are less efficient at passing shad and river herring (compared to having no dam in place) and can be even less effective in passing some other species. In addition, benthic connectivity would not be restored with a fish ladder compared to other alternatives such as dam removal or a nature like bypass channel. For these reasons this alternative was rejected.

Floodplain Management: In accordance with Executive Order 11988, the Corps of Engineers has determined that the proposed project will not contribute to negative impacts or damages caused by floods.

Historic and Archaeological Resources: The proposed restoration project is located in the vicinity of the Wiswall Falls Mill Site, which was approved for nomination to the National register of Historic Places in 1988. The proposed nature-like bypass channel would avoid most of the sites with the historic landscape. However, due to the subsurface modifications required to construct it, the action may constitute an adverse effect upon the historic Wiswall Falls Mill Site. Therefore, further coordination with the New Hampshire State Historic Preservation Officer will be conducted with the preparation of a Memorandum of Agreement (MOA) with specific mitigation measures and documentation of existing site conditions.

Endangered Species: The U.S. Fish and Wildlife Service has not identified any Federally or state listed threatened or endangered species in the proposed project area, with the exception of an occasional bald eagle (*Haliaeetus leucocephalus*). The State of New Hampshire Division of Fish and Game, Natural Heritage Inventory has indicated that two rare turtle species and one rare plant species have been observed in the Lamprey River Corridor within an approximate 5-mile radius of the Wiswall Dam impoundment. These include Blanding's Turtle (*Emydoidea blandingii*), wood turtle, (*Clemmys insculpta*), and knotty pondweed (*Potomageton nodusus*). The proposed project will be conducted in coordination with the New Hampshire Natural Heritage Inventory in order to avoid and/or minimize any impacts to the State-listed plant and reptile species noted above.

Federal Permit Requirements: A Water Quality Certificate will be acquired from the New Hampshire Department of Environmental Services pursuant to Section 401 of the Clean Water Act. A Section 404(b)(1) evaluation, pursuant to the Clean Water Act, is provided as an attachment to the draft Environmental Assessment.

Additional Requirements: The National Marine Fisheries Service will be providing comments on the project's essential fish habitat assessment pursuant to the Magnuson-Stevens Fisheries Conservation Act.

Environmental Impacts: A draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) have been prepared for this restoration project. These documents will be available for public review at the Durham Town Hall, 15 Newmarket Road, Durham, NH 03824, and the Region 3 Office of the New Hampshire Fish and Game Department at 225 Main Street Durham, NH 03824, or by contacting the U.S. Army Corps of Engineers, as noted above. The documents are also available online at the Corps of Engineer's New England District Web Site (www.nae.usace.army.mil). 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.

Comments: Any person who has an interest that may be affected by the proposed project may request a public hearing. The request must be submitted in writing to me within 30 days of the date of this notice and must clearly set forth the interest that may be affected and the manner in which the interest may be affected by this activity.

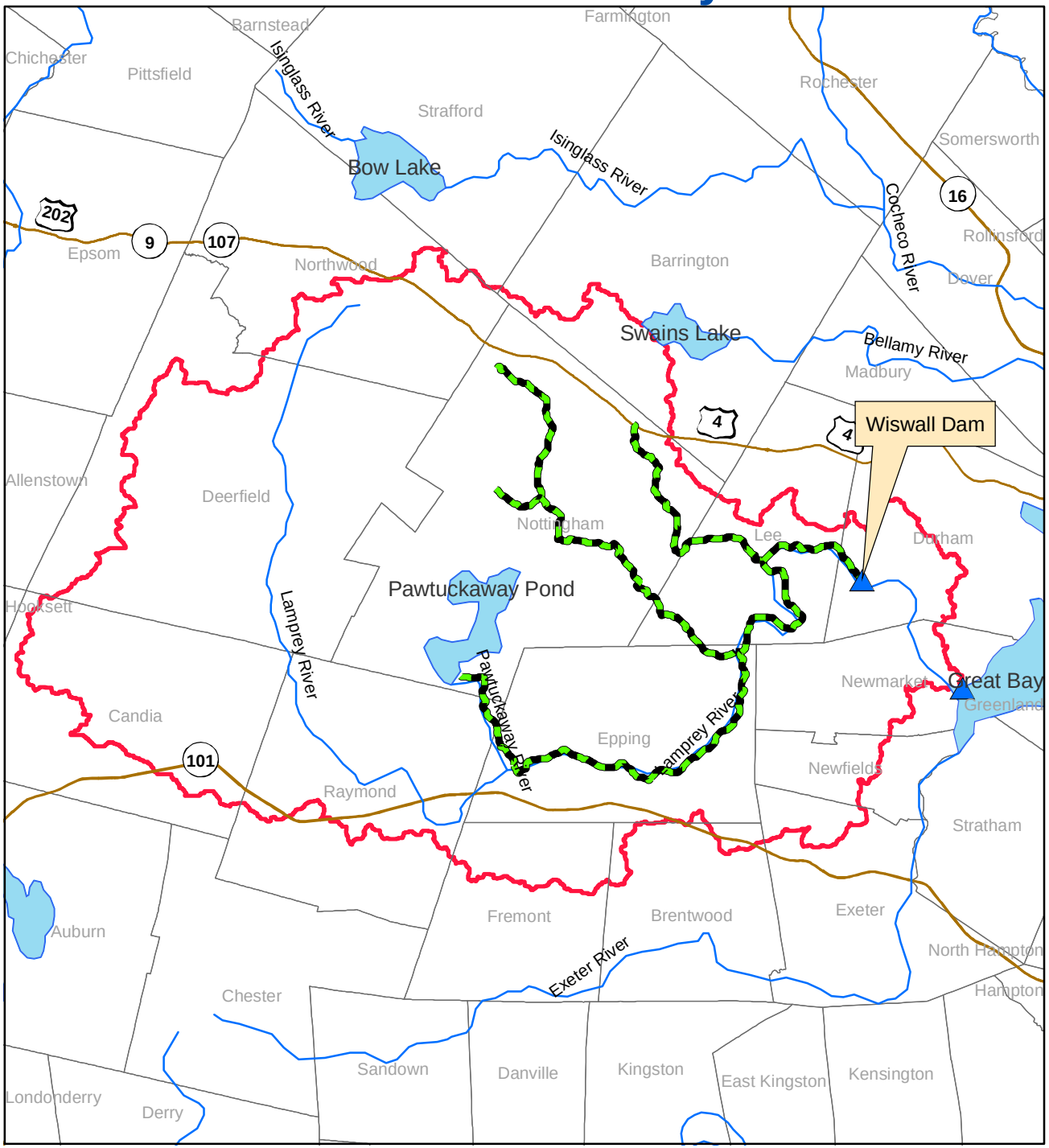
Please bring this notice to the attention of anyone you know to be interested in this project. Comments are invited from all interested parties and should be directed to me at: U.S. Army Corps of the Engineers, New England District, 696 Virginia Road, Concord, Massachusetts, 01742-2751, Attn: Engineering/Planning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

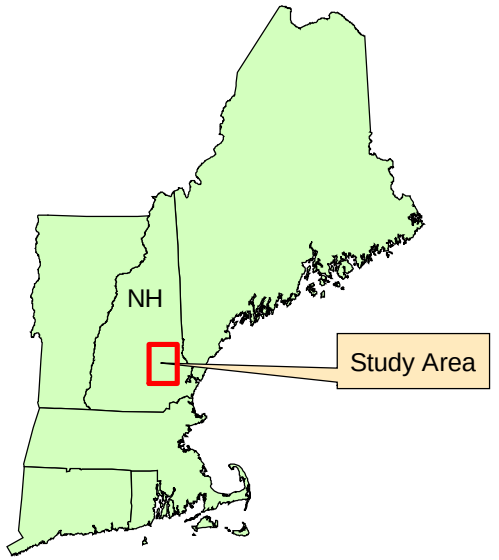
25 August 2005
Date

Curtis L. Thalken
Colonel, Corps of Engineers
District Engineer

Attachments

Wiswall Dam Ecosystem Restoration Project





Legend

- Town Boundaries
- Lamprey River Watershed Boundary
- Re-opened potential anadromous fish habitat with fish passage at Wiswall Dam or dam removed (approx. 43 river miles).

US Army Corps of Engineers®
New England District

0 1.25 2.5 5 7.5 10 Miles

Attachment 1: Project Location Map

Attachment 2 – Pertinent Laws, Regulations, and Directives

American Indian Religious Freedom Act of 1978, 42 U.S.C. 1996.

Archaeological Resources Protection Act of 1979, as amended, 16 U.S.C. 470 et seq.

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

Clean Water Act of 1977 (Federal Water Pollution Control Act Amendments of 1972), 33 U.S.C. 1251 et seq.

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

Federal Water Project Recreation Act, as amended, 16 U.S.C. 4601-12 et seq.

Fish and Wildlife Coordination Act, as amended, 16 U.S.C. 661 et seq.

Land and Water Conservation Fund Act of 1965, as amended, 16 U.S.C. 4601-1

Magnuson-Stevens Act, as amended, 16 U.S.C. 1801 et seq.

National Environmental Policy Act of 1969, as amended, 42 U.S.C. 4321 et seq.

National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470 et seq.

Preservation of Historic and Archaeological Data Act of 1974, as amended, 16 U.S.C. 469 et seq. This amends the Reservoir Salvage Act of 1960 (16 U.S.C. 469).

Watershed Protection and Flood Prevention Act, as amended, 16 U.S.C. 1001 et seq.

Wild and Scenic Rivers Act, as amended, 16 U.S.C 1271 et seq.

Executive Order 11988, Floodplain Management, May 24, 1977 amended by Executive Order 12148, July 20, 1979

Executive Order 11990, Protection of Wetlands, May 24, 1977

Executive Order 11593, Protection and Enhancement of the Cultural Environment, 13 May 1971 (36 FR 8921, May 15, 1971).

Executive Order 13007, Accommodations of Sacred Sites, May 24, 1996.

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

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

White House Memorandum, Government-to-Government Relations with Indian Tribes, April 29, 1994.

Attachment 3. Wiswall Dam Aquatic Ecosystem Restoration - Proposed Plan

E 1172100 E 1172400 E 1172700

N 220800

1
2.27 ACRES

2
.80 ACRES

3
1.28 ACRES

4
.16 ACRES

WATER SURFACE 56.72
WATER SURFACE 56.66
WATER SURFACE 55.35
65.8
OAK
PINE
MAPLE

LEGEND

- GRAVEL PATH – EARTH COVERED (1-1/2") SEEDED
- EXISTING WETLAND AREA TO REMAIN
- EXISTING WETLAND AREA TO BE REMOVED
- NEW WETLAND AREA
- NEW GRASS WITHIN POWER LINE R.O.W.
- NEW TREES
- NEW SMALL BUSHES, GRASSES, EXPOSED ROCK
- STONE PROTECTION – SOIL COVERED

REAL ESTATE

1. TOWN OWNED
2. PRIVATE – TO BE PURCHASED
3. PRIVATE – TO BE PURCHASED
4. PRIVATE – EASEMENT REQUIRED

LANDSCAPE PLAN
SCALE: 1"=30'

GRAPHIC SCALE:
30 0 30 60
1" = 30'

US Army Corps of Engineers
New England District

Symbol	Description	Date	Appr.

Date: | Rev.
Solicitation no. W912WJ-05-B-
Drawing code: WIS-1
File name: WWDL101.S08
Plot date: 1"=30'

Designed by: BEN PITEO
Drawn by:
Reviewed by:
Submitted by:

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WATER RESOURCES DEVELOPMENT PROJECT
CONSTRUCT FISH PASSAGE
WISWALL DAM
DURHAM, NH

LANDSCAPE PLAN

Reference number:
L-101
Sheet 8 of 8

.\NHWIS-1\WWDL101.S08 06/28/2005 09:05:30