Public Notice

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

Date: June 16, 2003

Comment Period Closes: July 16, 2003

Planning Branch, Engineering/Planning Division

Muddy River Flood Control and Ecosystem Restoration Study

Boston and Brookline, Massachusetts

Interested parties are hereby notified that the U.S. Army Corps of Engineers has prepared a decision document as directed by Section 522 of the Water Resources Development Act of 2000 to investigate flood control and ecosystem restoration opportunities in the Muddy River, Boston and Brookline Massachusetts. Comments are requested within 30 days of the date of this notice.

Purpose of the Study: The Muddy River is a small waterway located in the Boston metropolitan area (see Figure 1). Most of the 5.6 square mile watershed is located in the city of Boston (City) and town of Brookline, with a small portion being located in the city of Newton. The 3.5 mile long Muddy River flows through the heart of Frederick Law Olmsted's famed "Emerald Necklace", one of the most carefully crafted park systems in America and the oldest remaining linear urban park system in the United States. Although the park is an exceptional recreational resource and provides important wildlife habitat in a highly urbanized setting, its values are compromised by flooding, poor water quality, sedimentation and poor sediment quality, elevated contaminant levels in fish, proliferation of *Phragmites* and other invasive species, and deterioration of historic resources.

Flooding, degraded riverine habitats, poor water quality, and other related water resource problems have been noted in several prior studies of the river. The need for environmental restoration and correction of potential flooding problems was addressed in the Commonwealth of Massachusetts 1989 Emerald Necklace Parks Master Plan (updated in 2001). Flooding from the storm of October 1996 caused extensive damage to an underground Massachusetts Bay Transit Authority (MBTA) rail station and significant damages to institutions, residences and businesses along the river. Unprecedented flooding also occurred in several tributary areas, particularly along Stony Brook and Tannery Brook where numerous universities and institutions experienced serious damage. Significant flood losses also occurred from a storm in June 1998, with lesser damage occurring from a storm event in September 1996. As a result of these recent floods, Boston's Parks and Recreation Department, working with the Boston Water and Sewer Commission, the Commonwealth of Massachusetts, the town of Brookline, the Federal Emergency Management Agency (FEMA), and non-profit community groups such as the Emerald Necklace Conservancy and Fenway Alliance developed a comprehensive master plan to identify and address issues affecting the Muddy River. This comprehensive basin wide plan has undergone considerable refinement and the current proposal is described in a final Environmental Impact Report submitted by Boston and Brookline to the Massachusetts Executive Office of Environmental Affairs in February of 2003.

Concurrent with actions by the local communities, the Corps of Engineers was authorized to study the Muddy River by a series of legislative acts. The Water Resources Development Act of 1999 authorized the Corps to evaluate the city of Boston's 1999 Master Plan to determine whether these flood damage reduction and environmental restoration improvements were in the Federal interest. The Corps' Draft Evaluation Report, dated June 2000, determined that the City's Master Plan met some of the requirements of a Federally implementable project. However, continued Corps involvement would require preparation of a decision document that evaluated alternatives, identified the plan that maximized net National Economic Development benefits, and satisfied the requirements of the National Environmental Policy Act (NEPA). Continued participation by the Corps was directed by Section 522 of the Water Resources Development Act of 2000. This Act authorized the Corps to "carry out the project for flood damage reduction and environmental restoration, Muddy River, Brookline and Boston, substantially in accordance with the plans, and subject to the conditions, described in the Corps' draft evaluation report." Accordingly, the purpose of this study was to prepare a decision document that develops and evaluates alternative solutions to identified flood control and ecosystem restoration needs, selects and recommends a plan based on economic, environmental and public acceptability criteria, and demonstrates a Federal and non-Federal interest in proceeding to the project implementation phase.

Alternatives Analysis: A variety of alternatives to reduce flood damages and restore the Muddy River ecosystem were evaluated. The goal was to combine feasible, cost-effective and acceptable flood damage reduction and environmental restoration improvements to form a comprehensive solution to problems within the Muddy River watershed. This approach supported the non-Federal sponsors stated objective of providing holistic restoration of the Muddy River corridor. The evaluation focused first on flood control alternatives. Ecosystem restoration elements were added and evaluated, and comprehensive solutions to identified problems and needs developed. Alternative measures were developed and evaluated based on compliance with environmental and historic preservation concerns, engineering feasibility, economic justification, cost effectiveness, and public acceptability. Flood damage reduction plans evaluated included a plan designed to protect the MBTA only, and more comprehensive plans that provided flood protection at major damage areas along both the Muddy River and Stony Brook. The various levels of protection assessed for the comprehensive plans, included flood damage reduction for 20, 25 and 100-year floods. Historic compliance concerns and potential mitigation issues led to selection of the 20-year plan as the locally preferred flood control measure. Various ecosystem restoration measures were then added to this basic plan. The added measures included environmental dredging, flow recirculation, and aeration. A total of 12 combined ecosystem restoration plans were developed and evaluated based on ecosystem benefits, cost effectiveness, adverse impacts, permitability, and public acceptability.

Recommended Plan Description: The recommended plan consists of a combination of the 20-year flood control plan and extensive environmental dredging. The major features of the federally recommended plan are shown on Figure 2 and include:

- Improvements to protect against a flood with a return frequency of 20 years to include channel improvements, removal of undersized culverts installation of two new culverts, and daylighting two sections (about 700 linear feet) of the Muddy River;
- Dredging approximately 200,000 cubic yards of sediment from the Fens, Riverway, Leverett, Willow and Wards Ponds (the material will be dewatered on site and disposed of in licensed upland landfills);
- Eradication of *Phragmites* from wetland and riparian areas by dredging and cutting/herbicide treatment;
- Preservation and restoration of the historic park shoreline and vegetation in construction areas.

In addition, the city of Boston and town of Brookline will be responsible for long-term operation and maintenance of the project. This will include monitoring of water quality, removal of future accumulations of sediment to maintain flood control, water quality, and sediment quality benefits, and monitoring to guard against recolonization by *Phragmites*.

Environmental Benefits and Adverse Impacts: In addition to flood damage reduction, the recommended plan has a variety of environmental benefits. Dredging contaminated sediment, removing invasive species and rehabilitating and restoring wetland habitats will address the major issues that have degraded the Muddy River aquatic and riparian habitat. These actions will restore aquatic and riparian habitat areas, improve sediment quality, improve water quality (by increasing dissolved oxygen levels), shift fish community composition in favor of native species, eradicate *Phragmites* (creating more diverse wetland and riparian plant communities), and restore scenic and aesthetic qualities. In addition to the flood damage reduction and ecosystem restoration benefits, the removal of contaminated sediments and *Phragmites* would greatly enhance the recreational and aesthetic values of the Muddy River park system. Sediment removal would improve water quality and eliminate odors, while *Phragmites* removal would restore views along the waterway. The availability and accessibility of this improved recreational opportunity, particularly in the Back Bay Fens and Riverway sections, would directly benefit many colleges, hospitals, museums and other institutions located adjacent to the river. Improvements in benthic and fisheries habitat may allow development of a recreational fishery in the Fens and Riverway.

From a cultural resources perspective, restoration of this system of integrated parks would contribute to preserving a nationally significant historic resource. Designed by Frederick Law Olmsted during the last two decades of the nineteenth century, this resource has great historical significance as one of the most ambitious undertakings of that era involving landscape architecture, urban planning and engineering. Restoring this historic river and park system, which is listed on the National Register of Historic Places, will contribute to preserving the Olmsted legacy as one of the county's most famous landscape architect. The park system is also situated very close to the Frederick Law Olmsted National Historic Site in Brookline that is administered by the National Park Service (NPS). This proximity enables the National Park Service to sponsor park tours, bird walks and other activities within the park system. A historically appropriate restoration of the park's ecosystem would enhance NPS educational programs.

Adverse impacts to the project area are expected to be temporary. Construction will interfere with recreational use of the park and increase local traffic congestion. Odor problems may arise during dredging and dewatering of dredged material. Turbidity levels will increase in surface waters during dredging. Various measures will be implemented to minimize adverse effects. These will include implementation of a traffic control plan, odor control measures, and use of silt curtains to reduce dredging impacts on water quality.

A draft Environmental Assessment and Finding of No Significant Impact have been prepared for this project and are available for review (see below). A determination has been made that an Environmental Impact Statement is not required under the provisions of the National Environmental Policy Act.

Endangered Species: No impacts to federally threatened or endangered species are expected. The recommended plan would improve habitat for a state listed threatened fish, the three-spine stickleback.

Cultural Resources: Daylighting culverted sections of the Muddy River, eradication of *Phragmites*, dredging to restore historic (ca. 1920) shorelines, and appropriate landscaping of disturbed areas will have a positive effect on aesthetics and historic integrity of the Emerald Necklace park system. Adverse impacts will be mitigated by landscape plantings and other measures.

Federal Consistency with Coastal Zone Management: The proposed activities are outside the coastal zone and not under review under the State of Massachusetts' federally approved Coastal Zone Management Program.

Clean Water Act: No work will be performed until certification has been received from the Massachusetts Department of Environmental Protection, as required under Section 401 of the Clean Water Act of 1977. A Clean Water Act Section 404 (b)(1) Evaluation has been prepared for the recommended plan. Adverse impacts to vegetated wetlands caused by the flood control work will be fully mitigated.

Compliance: This recommended plan is in compliance with all applicable Federal environmental laws and regulations (see Attachment A).

Coordination: The proposed work is being coordinated with the following Federal, State, and Local agencies:

Federal	Commonwealth of Massachusetts
U. S. Fish and Wildlife Service U. S. Environmental Protection Agency U.S. National Marine Fisheries Service Federal Emergency Management Agency National Park Service	Executive Office of Environmental Affairs Department of Environmental Management Department of Environmental Protection MA Historical Commission MA Department of Fish, Wildlife, and Law Enforcement MA Division of Marine Fisheries MA Natural Heritage and Endangered Species Program Massachusetts Water Resources Authority Metropolitan District Commission
City of Boston	
Conservation Commission Parks and Recreation Department Water and Sewer Commission Boston Landmarks Commission	
Town of Brookline	
Conservation Commission Engineering/Transportation Department Parks Department	

Public Information Meetings: Two public information meeting have been scheduled to discuss the recommended plan. The first meeting will be held at the Brookline Town Hall Selectmen's Chambers at 7:00 p.m. on Thursday June 26. The second meeting will be held at the Boston Public Library Mezzanine Conference Room at 6:30 p.m. on Tuesday July 8. See attached flyer for more information. All interested parties are invited and encouraged to attend. Please bring this notice to the attention of anyone you know to be interested in the project.

Availability of the Draft Decision Document and Environmental Assessment: Copies of the reports are available at several locations (see Attachment B) and on the internet at www.nae.usace.army.mil (click on "Projects"). Copies of the reports on compact disc (CD) may be obtained from Mr. Richard Heidebrecht, Planning Branch by calling 978-318-8513 or by sending an email to MuddyRiverStudy@usace.army.mil.

Public Comments: Comments on the draft decision document and Environmental Assessment are invited from all concerned parties and should be directed to the District Engineer at 696 Virginia Road, Concord, MA 01742, ATTN: Engineering/Planning Division (Mr. Richard Heidebrecht, 978-318-8513), within 30 days of this notice. Comments may also be emailed to MuddyRiverStudy@usace.army.mil. 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 and the manner in which the interest may be affected.

16 JUN 03
Date

Thomas L. Koning
Colonel, Corps of Engineers
District Engineer

Attachment A

PERTINENT FEDERAL 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

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.

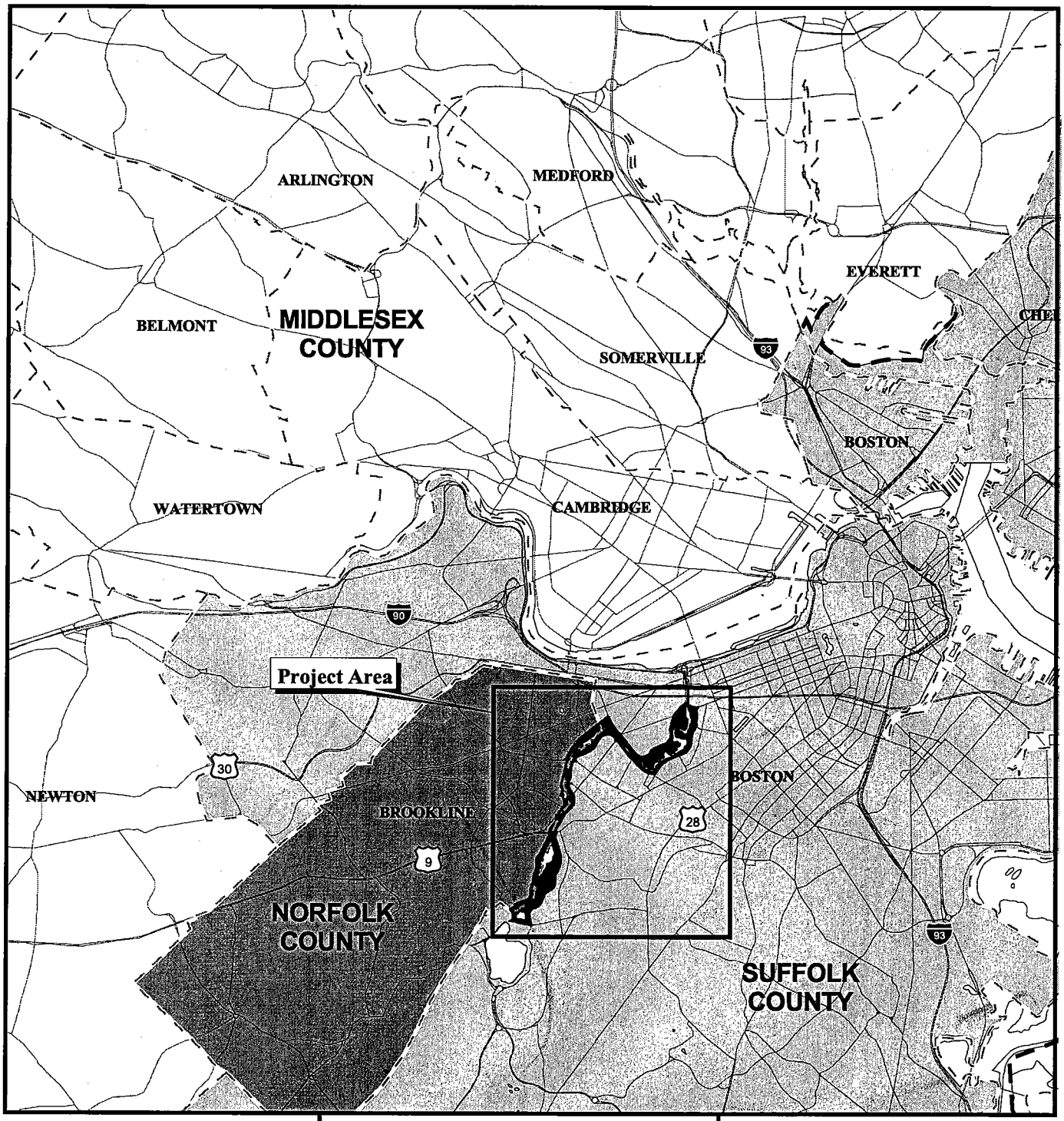
White House Memorandum, Government-to-Government Relations with Indian Tribes, April 29, 1994.

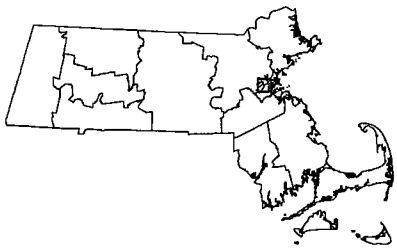
Attachment B

Copies of the draft Decision Document and Environmental Assessment are available for viewing at the following locations:

Boston Parks and Recreation Department 1010 Massachusetts Avenue, 3rd Floor Boston, MA 02118 *Contact: Margaret Dyson 617-635 4505*	**Boston Public Library - Copley Square Branch** 700 Boylston Street Boston, MA 02116 *Contact: Government Documents* *617-536-5400*
Brookline Department of Public Works Brookline Town Hall, 4th Floor 333 Washington Street Brookline, MA 02445 *Contact: Tom Brady 617-730-2088*	**Brookline Public Library** 361 Washington Street Brookline, MA 02445 *Contact: Reference Desk 617-730-2370*
Boston Environment Department Boston City Hall, Room 805 One City Hall Plaza Boston, MA 02215 *Contact: Ellen Lipsey 617-635-2510*	**Jamaica Plain Branch Library** 12 Sedwick Street Jamaica Plain, MA 02130 *Contact: Alice Roberts 617-524-2053*
Frederick Law Olmsted National Historic Site National Park Service 99 Warren Street Brookline, MA 02445 *Contact: Mark Swartz 617-566-1689*	**Massachusetts Historical Society** 1154 Boylston Street Boston, MA 02215 *Contact: Peter Drummey 617-646-0501* *or William Fowler 617-266-6532*
The Emerald Necklace Conservancy Two Brookline Place Brookline, MA 02445 *Contact: Simone Auster 617-232-5374*	**MASCO** 375 Longwood Avenue Boston, MA 02215 *Contact: Jan Henderson 617-632-2762*

Note: The documents are also available on the internet at www.nae.usace.army.mil





Project Area

N

3000 0 3000 6000 Feet

Data Source: MassGIS, Commonwealth of Massachusetts Executive Office of Environmental Affairs Data Layers

Figure 1. Vicinity Map
General Project Location

Muddy River
Boston and Brookline, Massachusetts
Draft Decision Document and Environmental Assessment

NEAPLOT-E:/projects/mr-100/aprs/fig_ap01-02.apr

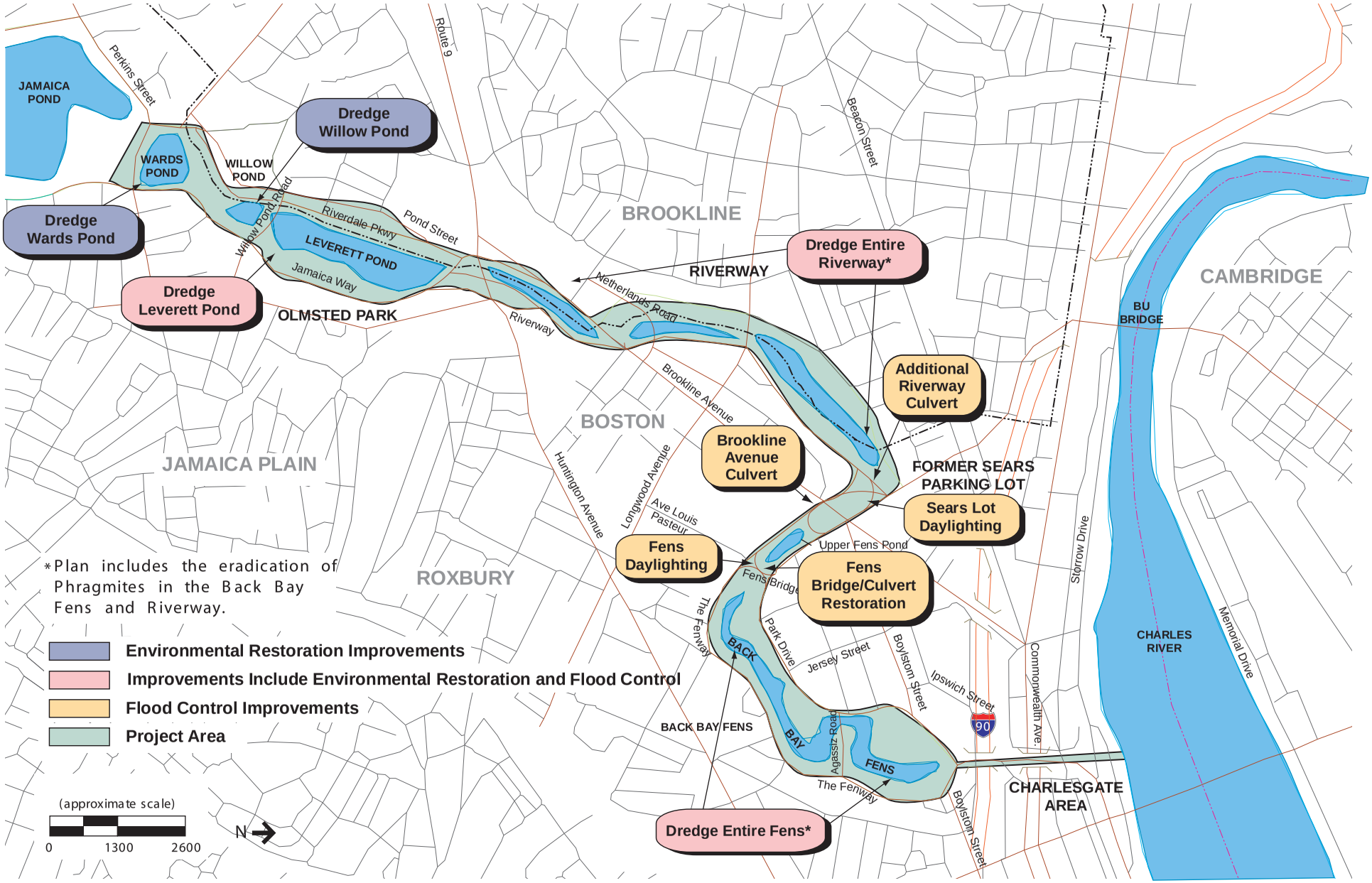


Figure 2: Recommended Plan

Public Information Meetings

Muddy River Flood Control and Ecosystem Restoration Study

Boston and Brookline, Massachusetts

Thursday, June 26, 2003 **7:00 pm** **Brookline Town Hall** **Selectmen's Chambers** **333 Washington Street**	**Tuesday, July 8, 2003** **6:30 pm** **Boston Public Library** **Mezzanine Conference Room** **700 Boylston Street** **Copley Square**

Both meetings will include the same presentation and an opportunity for the public to ask questions about the Muddy River Study.

Please call (617) 647-8513 or visit www.nae.usace.army.mil for more information.

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