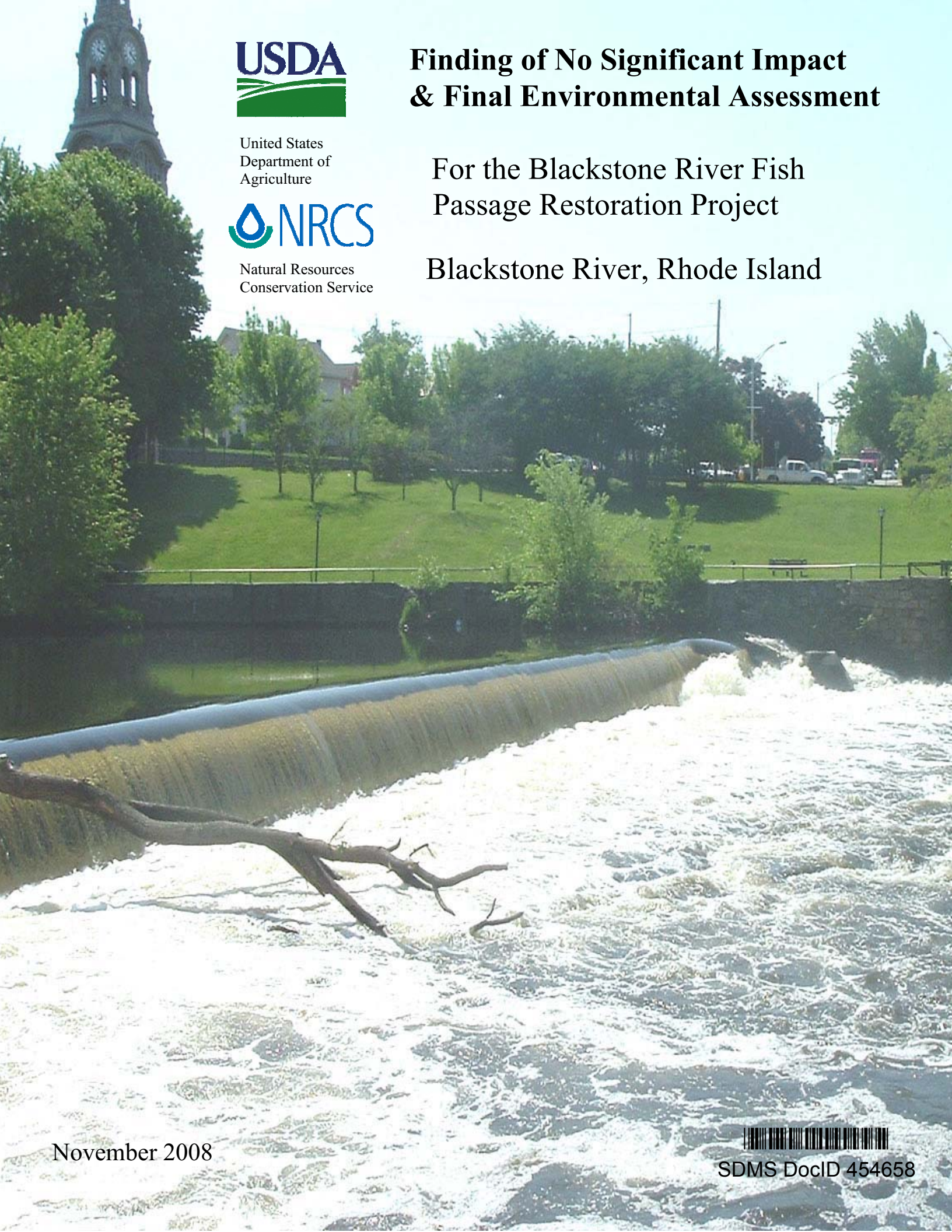
United States
Department of
Agriculture

Natural Resources
Conservation Service

Finding of No Significant Impact & Final Environmental Assessment

For the Blackstone River Fish Passage Restoration Project

Blackstone River, Rhode Island



November 2008

SDMS DocID 454658

Finding of No Significant Impact for the Environmental Assessment (EA) on The Blackstone River Fish Passage Restoration Project

I. AGENCY ROLE AND RESPONSIBILITY- United States Department of Agriculture (USDA) –Natural Resources Conservation Service (NRCS)

In accordance with the NRCS regulations (7 Code of Federal Regulations Part 650) implementing the National Environmental Policy Act (NEPA), NRCS has completed an environmental review of the following proposed action:

The construction of Denil-style fish ladders and eel passages at the Main Street, Slater Mill, and Valley Falls Dams. The removal of the Elizabeth Webbing Dam was also considered in the analysis as a part of the proposed action. Although NRCS does not have any formal federal decision-making authority in the form of a long term agreement to undertake activities to restore aquatic passage at the Elizabeth Webbing Dam, it has been included within the scope of the EA because of its integral relationship to the three funded fish passage projects. Further dam removal feasibility analyses will be required for the removal or breaching of Elizabeth Webbing Dam. As no federal action by NRCS is proposed for the Elizabeth Webbing Dam, this feasibility study is beyond the scope of this EA. NRCS anticipates that any adverse effects, as documented by future feasibility studies, will be evaluated and appropriate mitigation measures employed by future project proponents of this site.

II. ALTERNATIVES CONSIDERED IN THE EA

Two alternatives were analyzed in the EA and are characterized as follows:

Alternative 1 (Proposed Action) – Construction of fish ladders at Main Street, Slater, Mill, Valley Falls Dams, and removal of Elizabeth Webbing Dam (as per discussion in Section I)

Alternative 2 (No Action) – Diadromous fish passage projects will not be implemented

IV. NRCS DECISION

Based on the evaluation in the EA, I have chosen to select Alternative 1 as the Agency Preferred Alternative. I have taken into consideration all of the potential impacts of the proposed action, which have been evaluated in this EA, and balanced those impacts with considerations of the Agency's purpose and need for action.

VI. FINDING OF NO SIGNIFICANT IMPACT

To determine the significance of the action analyzed in this EA, NRCS is required by NEPA, 40 CFR 1508.27 and NRCS regulations to consider the context and intensity of the proposed action. Based on a review of NEPA criteria for significant effects and the analysis in the EA, I have determined that the action to be selected, Alternative 1 (Agency Preferred Alternative), would not have a significant effect upon the quality of the human environment, particularly when focusing on the significant adverse impacts which NEPA is intended to help decision makers avoid, minimize, or mitigate. Therefore, preparation of an Environmental Impact Statement (EIS) on the final action is not required under Section 102(2)(c) of NEPA, CEQ implementing regulations (40 CFR Part 1500-1508, 1508.13), or NRCS environmental review procedures (7 CFR Part 650). This Finding is based on the following factors (described in CEQ's implementing regulations at 1508.27 and NRCS regulations at 7 CFR 650.4(k)):

1) The EA evaluated both beneficial and adverse impacts of the proposed action. There are no significant adverse effects associated with Alternative 1 either directly, indirectly, or cumulatively from implementation of of the agency preferred alternative. The NRCS engineering design and project permitting processes will be used to identify appropriate actions necessary to minimize any potential adverse effects as required by NRCS regulations and policy (General Manual Title 190 Part 410) (see Section 4.3 of attached EA).

2) Alternative 1 does not significantly affect public health or safety as discussed in applicable sections of this EA.

3) There are no anticipated significant effects to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas from selection of Alternative 1. NRCS regulations and policy (NRCS General Manual Title 420 Part 401 and General Manual Title 190 Part 410), require that NRCS identify, assess, and avoid effects to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas. In accordance with these requirements it is not anticipated that implementing the proposed action would have adverse effects on these resources (see Section 4 of the attached EA).

4) The effects on the human environment are not considered controversial for Alternative 1. This is discussed in Section 4 of the attached EA.

5) Alternative 1 is not considered highly uncertain and does not involve unique or unknown risks. To the extent that effects related to implementation of the proposed action may result in significant effects to the quality of the human environment; NRCS, through the federal and state regulatory permitting process, will implement any additional measures as required by law.

6) Alternative 1 will not establish a precedent for future actions with significant effects, nor does it represent a decision in principle about future considerations. The proposed action will be carried out through implementation of three individual Wildlife Habitat Incentive Program long term agreements.

7) Alternative 1 will not result in individually or cumulatively significant adverse impacts to the human environment, particularly when focusing on the significant adverse impacts which NEPA is intended to help decision makers avoid, minimize, or mitigate. NRCS will document direct, indirect and cumulative actions during site-specific environmental evaluations and will identify and incorporate appropriate actions necessary to minimize potential adverse effects. Cumulative impacts resulting from Alternative 1 are anticipated to be beneficial overall (see section 4 in the attached EA).

8) The proposed action will not cause loss or destruction of significant scientific, cultural, or historical resources. NRCS follows the procedures developed in accordance with a Nationwide programmatic agreement between NRCS, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers, which called for NRCS to develop consultation agreements with State Historic Preservation Officers and Federally-recognized Tribes (or their designated Tribal Historic Preservation Officers). Furthermore, Rhode Island NRCS maintains a State Level Agreement between USDA NRCS Rhode Island State Office and the Rhode Island State Historic Preservation Officer (RI SHPO) (dated February 2008). As per this agreement, NRCS has consultated with RI SHPO to ensure compliance with Secion 106 requirements. Rhode Island NRCS also maintains a state level agreement with the Narragansett Indian Tribal Historic Preservation Office and is in direct consultation with the Tribe on this proposed action (see attached EA).

9) The proposed action will not adversely affect endangered or threatened species, marine mammals or critical habitat. NRCS has consulted with the United States Fish and Wildlife Service, and the National Marine Fisheries Service to insure these species are not jeopardized and that there are no adverse modifications to designated critical habitat (see section 4.8 of the attached EA). The proposed action will have overall positive benefits to National Marine Fisheries Service Species of Concern: American Shad, alewife, and blueback herring.

10) The proposed action does not violate Federal, State, local law, or requirements imposed for protection of the environment. The major laws identified include the Clean Water Act, Clean Air Act, Magnuson-Stevens Fishery Conservation and Management Act, the Endangered Species Act, National Historic Preservation Act, the Marine Mammal Protection Act, the Executive Order on Environmental Justice, and the Migratory Bird Treaty Act. Alternative 1 is consistent with the

requirements of these laws. In addition, NRCS will work applicable regulatory as necessary on a site-specific basis to avoid, mitigate or reduce any potential collateral adverse effects (see section 4 of the attached EA). .

Therefore, based on the information presented in the attached Blackstone River Fish Passage Restoration Project EA, I find in accordance with 40 CFR Part 1508.13 that the selection of the Agency Preferred Alternative (Alternative 1) is not a Major Federal action significantly affecting the quality of the human environment that would require preparation of an EIS.

Roylene Rides at the Door
Rhode Island State Conservationist,
Natural Resources Conservation Service
U.S. Department of Agriculture

10/24/08
Date

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LIST OF ACRONYMS

BMP	Best management practices
CEQ	Council on Environmental Quality
CRMC	Coastal Resources Management Council
CSO	Combined sewer outflow
EA	Environmental Assessment
EFH	Essential Fish Habitat
EPA	(U.S.) Environmental Protection Agency
FONSI	Finding of No Significant Impact
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NO_x	Nitrogen oxides
NRCS	Natural Resources Conservation Services
RIDEM	Rhode Island Department of Environmental Management
RIDFW	Rhode Island Department of Fish and Wildlife
RINHP	Rhode Island Natural Heritage Program
SHPO	State Historic Preservation Office
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
VOC	Volatile organic compounds
WHIP	Wildlife Habitat Incentive Program

1. INTRODUCTION

1.1 SCOPE OF THE DOCUMENT

Under the National Environmental Policy Act (NEPA), federal agencies that fund or propose actions are required to prepare a detailed statement on the environmental impacts that a federal action may have on the quality of the human environment. The Natural Resources Conservation Service (NRCS), an agency within the U.S. Department of Agriculture (USDA), has prepared this Environmental Assessment (EA) pursuant to implementing regulations for NEPA (40 CFR parts 1500-1508), USDA Departmental Policy for the NEPA (7 CFR part 1b), NRCS Regulations (7 CFR Part 650), and NRCS Policy (General Manual Title 190, Part 410). This EA evaluates the Proposed Action and No Action Alternative, as described in Section 2 of this document.

The Federal Agricultural Improvement and Reform Act of 1996 (Section 387) and the Farm Security and Rural Investment Act of 2002 authorized the NRCS to work with landowners to develop wildlife habitat on their property through the Wildlife Habitat Incentive Program (WHIP). WHIP is a voluntary program that provides technical and financial assistance to landowners and others for the creation of high-quality wildlife habitats that support wildlife populations of National, State, Tribal, and local significance. In 2007, NRCS entered into WHIP long term agreements with Pawtucket Hydropower LLC, Old Slater Mill Association, and Blackstone Hydro Associates, Inc. in order to install fish passage facilities on their respective Blackstone River dams.

The format of this EA follows the guidelines set forth in the National Environmental Compliance Handbook (NRCS, 2003). Section 2 of this document provides a thorough description of the Proposed Action and No Action Alternative. The affected environment of the proposed project area is described in Section 3. The affected environment description outlines existing environmental conditions, including land use, air quality, noise, geology and soils, water resources, sediments, vegetation, wildlife resources, aquatic resources, wetland resources, threatened and endangered species, cultural resources, environmental justice, and socioeconomic resources. Section 4 identifies potential environmental consequences of the proposed alternatives on the affected environment, including the cumulative effects of the proposed project. Section 5 describes and compares the conclusions of the proposed alternatives. Section 6 is a list of the preparers who aided in the completion of this EA. Section 7 outlines the federal, state, and local agencies and persons consulted in the preparation of the document.

1.2 BACKGROUND

NRCS is working with federal, state, and local agencies to restore diadromous fish species in the Blackstone River. These agencies include the U.S. Fish and Wildlife Service (USFWS), U.S. Environmental Protection Agency (EPA), U.S. Army Corps of Engineers (USACE), Rhode Island Department of Environmental Management

(RIDEM), and Coastal Resources Management Council (CRMC), as well as the Cities of Central Falls and Pawtucket, Rhode Island, and the Town of Cumberland, Rhode Island. The Blackstone River begins in Worcester, Massachusetts and flows approximately 48 miles southeast, meeting with the tidal Seekonk River before flowing into Narragansett Bay (Figure 1). A total of 39 municipalities, ranging from highly urbanized to undeveloped areas, in Massachusetts and Rhode Island are located at least partially within the Blackstone River Watershed. The Blackstone River is the largest tributary of Narragansett Bay, draining a watershed of approximately 475 mi^2. Major tributaries to the Blackstone include Kettle Brook, and the Quinsigamond, West, Mumford, Mill, and Peters Rivers.

Although primary source data, such as archaeological evidence, does not exist for diadromous fisheries in the Blackstone River Watershed, a variety of accounts do claim the seasonal use of the river by Atlantic salmon (*Salmo salar*), American shad (*Alosa sapidissima*), blueback herring (*Alosa aestivalis*) and alewives (*Alosa psuedoharengus*). Blueback herring and alewives are collectively referred to as river herring. Diadromous fish include both anadromous and catadromous species. Anadromous fish are those which spend most of their adult lives in salt water and migrate to freshwater streams, rivers, and lakes to reproduce. Catadromous fish are those which live in freshwater and travel to salt water to breed. A synthesis of these accounts can be found in Buckley and Nixon (2001).

Temporary settlements were located in well-known fishing areas along the river and used these resources as a major component of their diet. As dams and other obstructions were built during the Industrial Revolution, it would have become impossible for anadromous fish to travel upstream to spawn in the watershed above Pawtucket Falls, the location where the Main Street Dam currently exists. Eventually, the river became obstructed to the point that upstream passage was not available and that likely historic diadromous fish populations were eliminated as they could not return to their breeding grounds.

The proposed Blackstone River Fish Passage Restoration Project would restore diadromous fish populations to the Blackstone River through the installation of three fish ladders and the removal of one dam under the Proposed Action. This EA discusses the potential impacts of the proposed alternatives, in accordance with NEPA.

1.3 DESCRIPTION OF THE PROPOSED PROJECT

Four dams in Rhode Island have been identified for analysis by NRCS in an effort to restore diadromous fish to the Blackstone River (Figure 2). These are: the Main Street Dam located at the Main Street bridge adjacent to the Pawtucket Hydropower Project in Pawtucket, Rhode Island (Figure 3); Slater Mill Dam located adjacent to Slater Mill in Pawtucket, Rhode Island (Figure 3); Elizabeth Webbing Dam located at the Roosevelt Hydroelectric Project off of Roosevelt Avenue in Central Falls, Rhode Island (Figure 4); and the Valley Falls Dam located at the Broad Street (Route 114) bridge adjacent to the Blackstone Falls Hydroelectric Project on the border of Cumberland and Central Falls, Rhode Island (Figure 5). All four dams were constructed for mill power and do not have

flood control capability. Although NRCS does not have any formal financial assistance in the form of a long term agreement to construct fish passage facilities at the Elizabeth Webbing Dam, it has been included within the scope of this EA because of its integral relationship with the three funded fish passage projects.

The project proposes to install Denil-style fish ladders at the Main Street, Slater Mill, and Valley Falls Dams, and to remove the Elizabeth Webbing Dam. The fish ladders and dam removal would allow diadromous fish to access historical spawning habitat in the lower Blackstone River and catadromous fish to travel to salt water. The next dam on the river upstream of Valley Falls is the Pratt Dam, which is partially breached and is not an impediment to fish passage. The Ashton Dam, upstream of the Pratt Dam, is the next impediment to fish passage on the river. In total, the project would open close to 7 linear miles and over 200 acres of habitat upstream of the Main Street Dam and below the Ashton Dam that is currently inaccessible to diadromous fish. Approximately 80 percent of the potential habitat is located in the stretch of river adjacent to the Lonsdale Marsh immediately above the Valley Falls Dam.

1.3.1 Main Street Dam

The Main Street Dam was constructed in 1896 and is located at the Main Street Bridge in Pawtucket, Rhode Island. The dam is currently owned by Pawtucket Hydropower, LLC. The total length of the dam is approximately 170 ft. The power intake is located on the right abutment (looking downstream) under the bridge. The dam is an overflow spillway with a wood timber batter board facing on the upstream side and a timber top sill with the crest at elevation (El.) 17.1 ft National Geodetic Vertical Datum (NGVD) 1929. The dam is approximately 7 ft high, but sits on natural bedrock ledge which creates a total drop of about 16.5 ft from the top of spillway to the river bottom downstream of the dam. The Blackstone River downstream of the dam is tidal.

The turbines in the hydroelectric plant are Kaplan-type units. One turbine has a 1.5 m diameter runner and has a capacity of 620 kw at the design head of 16.5 ft. The second unit has a 2.0 m diameter runner with rated capacity of 830 kw.

The draft tubes for the units discharge into concrete tailrace chambers, one for each unit. These chambers are pressurized under all tide conditions and are each approximately 11 ft wide. These tailrace chambers extend 25 ft downstream from the draft tubes gates where the tailrace becomes single concrete conduit that is approximately 23 ft wide and extends 40 ft downstream to the tailrace exit at the river. The top of the tailrace conduit is at El. 3.74 ft, which allows the tailrace to be a free surface, open channel at over all tide levels except the top 1 ft of each high tide.

The turbines are operated as an instantaneous run-of-river project with a minimum discharge over the dam of 50 cfs or river inflow, whichever is less. The long term average annual generation is approximately 6,200,000 kwh. During the 2003-2007 period, the average annual generation was about 4,900,000 kwh.

1.3.2 Slater Mill Dam

The Slater Mill Dam is located approximately 300 ft upstream of the Main Street Dam. Slater Mill was built in 1793 and served as the first commercially viable cotton-spinning mill in the United States and is generally cited as the birthplace of the Industrial Revolution in America.

The dam is currently jointly owned by Blackstone Valley Electric Company and Slater Mill Association. The dam is a 171 ft long overflow granite block, gravity spillway. The dam crest is at El. 23.0 ft NGVD 1929 and has a height of approximately 7 ft. The abutments are cut stone and mortared walls with the mill located on the northwest side of the dam (right abutment looking downstream).

The hydroelectric turbines in the mill have not been in operation for many years. The entrance to a power canal was originally located upstream of the spillway, but has been filled in with a 3-ft diameter pipe currently connecting the canal to the river. The power canal extends under the mill building adjacent to the dam and originally extended downstream of the Main Street Dam. The canal originally supplied water to a number of turbines in mills located along the canal from the dam to below the Main Street Dam. All of the mills have been torn down except for the two building at the dam which are owned and maintained by the Slater Mill Historic Site. The power canal has been filled below the remaining buildings and a park has been created from the dam to Main Street.

Only three turbines remain at the Slater Mill Historic Site; one in the building at the present end of power canal and two in the building adjacent to the dam. None of these turbines have operated in recent years.

1.3.3 Elizabeth Webbing Dam

The Roosevelt Hydroelectric Project is located at the Elizabeth Webbing Dam, but has not operated since 2001. The new mill property owner does intend to operate the plant and is in the process of turning the hydroelectric project property over to RIDEM.

The Roosevelt Hydroelectric Project at the Elizabeth Webbing Dam consisted of: (1) a 220 ft long rockfill, gravity, earth dam; (2) a concrete intake structure with a mechanical trash rake; and (3) a 65 ft long concrete intake canal, a concrete powerhouse, and a 45 ft long concrete tailrace. The powerhouse has been locked, the turbine has not operated for the last 6 years, and the unit has been disconnected from the power grid. The dam crest is at El. 34.9 ft NGVD 1929 datum.

The impoundment has a surface area of 26 acres. The dam is approximately 14 ft high with the powerhouse located at the right abutment and an abandoned structure supporting two wooden gates on the left abutment of the dam. Normal tailwater is approximately 10 ft below the dam crest.

One adjustable blade, tube-type turbine is located in the powerhouse. The turbine hydraulic capacity is 270-1,060 cfs with a corresponding head range of approximately 15-10 ft, respectively. The turbine was operated as an instantaneous run-of-river project with a minimum discharge in the tailrace, the lower of 236 cfs or river inflow. The average annual generation was approximately 4,360,000 kwh.

1.3.4 Valley Falls Dam

Blackstone Hydro Associates owns and operates the Blackstone Falls Hydroelectric Project at Valley Falls Dam in Central Falls and Cumberland, Rhode Island. The project, which is FERC Project No. 3063, has operated since 1985 and was licensed in 1981. The Valley Falls Dam is located adjacent to the Broad Street Bridge on the border of Central Falls and Cumberland, Rhode Island.

The Blackstone Falls Hydroelectric Project consists of: (1) a 200 ft long curved granite masonry structure about 10 ft in height, (2) a wooden gate house containing five timber gates, each 7.83 ft wide by 9.25 ft high, (3) a 300 ft long open channel head race varying from 26-60 ft wide, (4) concrete intake structure with a trash rack and two hydraulic turbines, and (5) a 1,200 ft long by 25 ft wide tailrace.

The dam is located just downstream of the bridge on Broad Street that connects Central Falls and Cumberland. The dam, which was originally built in 1853, is an overflow spillway. The impoundment has a surface area of 60 acres.

The gate house is located at the river bank immediately upstream of the dam. The gate house is a masonry arch structure with five gate openings. The timber gates are constructed in two segments with each segment operated by a rack and pinion drive system. Both gate sections are about 4.75 ft high.

The intake canal extends about 300 ft downstream from the gate house. The invert of the canal is almost flat at El. 39.0 ft NGVD 1929 from the dam to the end of the canal. The powerhouse intake structure is located about 150 ft downstream of the gatehouse. Trash racks at a 1:1 slope are installed at the intake opening. The trash racks have a 3-in. clear opening and extend from the canal bottom at El. 39.0 ft NGVD 1929 up to the operative deck at El. 50.8 ft NGVD 1929.

The intake structure transitions from a 22 ft wide by 12 ft high opening at the trash racks into a 7-ft square conduit. Two hydraulic operated gates, one for each turbine and each about 7.5 ft^2, are used to isolate each unit from the forebay. Immediately downstream of the isolation gates, the intake structure transitions into a 7-ft diameter penstock. Each penstock is approximately 7 ft long from the transition to the turbines. The turbine housing, which is approximately 5 ft in diameter, transitions into the concrete draft tubes. The two draft tubes are 20 ft long with each exit an 8 ft high by 11 ft wide rectangle.

The turbines are propeller tube type units with no blade adjustment and no flow control except for the isolation gates. The turbine hydraulic capacity ranges from about 100 cfs

with one unit operating up to 700 cfs with both units operating. The net head range is approximately 10 ft. Each unit operates at 400 rpm and has a 4,160 volt generator. The combined rated capacity of the units is 818 kw. The turbines have 5-ft diameter runners. Only one of the turbines is operational when river flow available for power generation is 100-400 cfs, with two units operating when available flow is in the 500-700 cfs range.

The draft tubes for the tube units discharge directly into the tailrace about 20 ft downstream from the units. The tailrace is approximately 25 ft wide and the exit is located about 1,200 ft downstream of the turbine draft tubes.

The generators directly feed the local power company's substation. The turbines are operated as an instantaneous run-of-river project with a minimum discharge over the dam of 108 cfs or river inflow, whichever is less. The long term average annual generation is approximately 4,761,000 kwh.

1.4 PURPOSE AND NEED

There is a need to recover native diadromous fish populations that are in significant decline in southern New England, including Rhode Island, due to human-made migration barriers. The purpose of the Blackstone River Fish Passage Restoration Project is to restore anadromous fish species, such as alewives and blueback herring, American shad, and catadromous species, such as American eel, to the Blackstone River by providing fish passage at the four most downstream fish passage barriers and to maintain existing operations at the Main Street Dam, Slater Mill Dam, and Valley Falls Dam.

As mandated by the Federal Open River Initiative, NRCS has recognized the need to direct federal resources to address the decline of critical fish habitats, such as required by anadromous and catadromous fisheries that were once widespread throughout Rhode Island's watersheds. A precipitous decline of river herring populations since 2002 has prompted Rhode Island and many other states to ban the taking of river herring from their waters and has caused the National Marine Fisheries Service to declare river herring as a *Species of Concern* throughout their range. Of the 41 Narragansett Bay and Rhode Island watersheds that once supported vast diadromous fisheries, only 18 streams now support diadromous fish runs.

NRCS's involvement in the proposed Blackstone River Fish Passage Restoration Project supports the State of Rhode Island's restoration priorities. In particular, the proposed projects are in alignment with Governor Carcieri's fish passage restoration goals for the State of Rhode Island (RI Executive Order 03-16: to *restore fish passage on Blackstone, Pawtuxet, Ten Mile and Wood-Pawcatuck Rivers; open 35 river miles to anadromous fish by 2007; and open 100 river miles to anadromous fish by 2015*).

The proposed project is needed because dams impede fish passage and substantially reduce or eliminate access for diadromous fish to potential spawning areas within the Blackstone River and impede catadromous fish from spawning in salt water. Numerous

dams were installed on the river to harness water power during the Industrial Revolution, many of which still remain today.
In the spring of 1993 the Rhode Island Division of Fish and Wildlife (RIDFW) performed a study in which 3,000 blueback herring were released into the Blackstone River below the Albion Dam in areas that would be made accessible under this project (USACE, 1997). Sampling performed in August 2003 confirmed that the fish released in the spring had successfully reproduced and the offspring appeared abundant and healthy (USACE, 1997). The study indicated that there is adequate habitat to support viable herring populations in the lower Blackstone River. The goal of the project is to achieve diadromous fish populations that would eventually become self-sustainable and stocking would not be necessary to maintain the populations.

1.5 COORDINATION EFFORTS

The following stakeholder agencies and entities have been contacted in order to solicit input concerning the proposed project:

- City of Central Falls, Rhode Island
- City of Pawtucket, Rhode Island
- Coastal Resources Management Council
- Federal Emergency Management Agency
- Federal Energy Regulatory Commission
- Narragansett Indian Tribal Historic Preservation Office
- Mashpee Wampanoag Indian Tribal Historic Preservation Office
- Wampanoag Tribe of Gay Head Tribal Historic Preservation Office
- National Oceanic and Atmospheric Administration – National Marine Fisheries Service
- Rhode Island Department of Environmental Management
- Rhode Island Department of Fish and Wildlife
- Rhode Island Department of Transportation
- Rhode Island Historic Preservation & Heritage Commission
- Save the Bay
- Town of Cumberland, Rhode Island
- U.S. Army Corps of Engineers
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service.

Coordination letters and comments received (if any) are provided in Appendix A.

2. DESCRIPTION OF ALTERNATIVES

The following section describes the proposed alternatives for fish passage restoration at the Main Street, Slater Mill, Elizabeth Webbing, and Valley Falls Dams that have been evaluated for this EA. The proposed alternatives include the Proposed Action and No Action Alternative.

2.1 PROPOSED ACTION

In this alternative, Denil-style fish ladders and eel passages would be installed at the Main Street, Slater Mill, and Valley Falls Dams, and the Elizabeth Webbing Dam would be removed. The installation of fish ladders and eel passages at the Main Street and Valley Falls Dams are proposed to allow the existing hydroelectric facilities to operate with minimal impacts to power generation and meet USFWS design criteria. The installation of a fish ladder and eel passage at Slater Mill Dam is proposed to minimize impacts to tourism and educational activities at the adjacent Slater Mill. The hydroelectric facility at the Elizabeth Webbing Dam is no longer in operation; therefore, dam removal is proposed at this location. A detailed dam removal feasibility study will be required for the removal or breaching of Elizabeth Webbing Dam. As no financial assistance by NRCS is proposed for the Elizabeth Webbing Dam, this feasibility study is beyond the scope of this EA. NRCS anticipates that any adverse effects, as documented by future feasibility studies, will be evaluated and appropriate mitigation measures employed by future project proponents of this site.

2.1.1 Main Street Dam

In this alternative, a Denil-style fish ladder and eel passage would be constructed at the Main Street Dam to facilitate fish passage over the dam. The fish ladder and eel passage would be constructed on the left side of the dam (looking downstream) with the entrance underneath the Main Street Bridge and the exit just upstream of the top of the dam. This action would not require any major structural changes to the Main Street Dam or the adjacent Main Street Bridge. The fish ladder and eel passage is proposed on the left side of the river to minimize impacts to the existing hydropower facility. Downstream passage would be achieved by installing a surface bypass at the existing trash rack for the hydropower facility.

2.1.2 Slater Mill Dam

In this alternative, a Denil-style fish ladder and eel passage would be constructed at the Slater Mill Dam to facilitate fish passage over the dam. The fish ladder and eel passage would be constructed on the left side of the dam (looking downstream). The entrance would be situated downstream of the southern bank and the exit would be situated just upstream of the top of the dam. This action would not require any major structural changes to the Slater Mill Dam or the adjacent historic Slater Mill. The fish ladder and eel passage is proposed on the left side of the river to minimize impacts to the cultural

resources associated with the Slater Mill. Downstream passage would be achieved by creating a notch in the sill of the dam.

2.1.3 Elizabeth Webbing Dam

In this alternative, the Elizabeth Webbing Dam would be removed. The Roosevelt Hydroelectric Project at the Elizabeth Webbing Dam has not operated since 2001, and the new mill property owner does not intend to operate the plant and is in the process of turning the hydroelectric project property over to the RIDEM. The property owner and RIDEM would like to improve the aesthetics of the site by removing the hydroelectric project powerhouse. In addition, dam removal is the most effective method of diadromous fish passage restoration. To be consistent with the proposed plans, dam removal is favored at this location with the caveat that future feasibility studies will be required in order to more effectively evaluate this alternative.

A detailed dam removal feasibility study has not been completed to date and is beyond the scope of this EA. However, the Supplemental Programmatic EA of the NOAA Fisheries Implementation Plan for the Community-Based Restoration Program did determine that small dam removals, such as the Elizabeth Webbing Dam, resulted in a Finding of No Significant Impact (FONSI). NRCS anticipates that through the RIDEM regulatory process, significant analyses will be conducted to assess: mobilization of soils and sediment, affects on flood plain wetland hydrology, changes in downstream flooding, exposure of any potential soil/sediment contamination, and other environmental concerns. NRCS anticipates that any adverse effects, as documented by future feasibility studies, will be evaluated and appropriate mitigation measures employed by future project proponents.

2.1.4 Valley Falls Dam

In this alternative, a Denil-style fish ladder and eel passage would be constructed at the Valley Falls Dam to facilitate fish passage over the dam. The fish ladder and eel passage would be constructed on the left side of the dam (looking downstream). The entrance would be situated downstream and the exit would be situated just upstream of the top of the dam. This action would not require any major structural changes to the Valley Falls Dam or the adjacent Valley Falls Mill Complex. The fish ladder and eel passage is proposed on the left side of the river to minimize impacts to the existing hydropower facility. Downstream passage would be achieved by installing a surface bypass at the existing trash rack for the hydropower facility.

2.2 NO ACTION ALTERNATIVE

In this alternative, no modifications would be made to the Main Street, Slater Mill, Elizabeth Webbing, or Valley Falls Dams and diadromous fish passage would continue to be impeded. Therefore, under the No Action Alternative, a self-sustaining population of diadromous fish could not be established in the Blackstone River upstream of the Main

Street Dam. In addition, the ecological and commercial benefits associated with restoring these fish to the river would not be realized.

2.3 ALTERNATIVES REMOVED FROM FURTHER CONSIDERATION

The following section includes alternatives that were considered but were not found to be feasible and therefore, are not evaluated in this EA.

2.3.1 Elizabeth Webbing Fish Ladder

As an alternative to dam removal, the construction of a Denil-style fish ladder and eel passage was considered at the Elizabeth Webbing Dam. This alternative was screened out from the alternatives analysis since the State of Rhode Island, who currently has a pending Purchase and Sales Agreement on the site, has indicated their preference to remove this dam.

2.3.2 Dam Removal

As an alternative to the construction of fish ladders and eel passages, the removal of the Main Street, Slater Mill, and Valley Falls Dams was considered. This alternative was screened out from the alternatives analysis due to impacts to the existing hydropower facilities at the Main Street and Valley Falls Dam and impacts to cultural resources, tourism, and educational resources at the Slater Mill Museum. The removal of the Main Street and Valley Falls Dam would result in the loss of viable non-fossil fuel dependent power from the existing hydropower plants. The removal of the Slater Mill Dam would impact tourism revenue and educational activities at the adjacent Slater Mill Museum.

2.3.3 Trap and Truck

As an alternative to the Proposed Action, the implementation of a trap and truck program to manually transport fish upstream of the dams was considered. This alternative was screened out from the alternatives analysis as it would result in potentially serious impacts to fish and would be difficult to implement due to limited access. In addition, it would be difficult for NRCS to secure funding for future activities such as this at the dams.

2.3.4 Fish Bypass Channel

As an alternative to the Proposed Action, fish bypass channels were considered at each of the four dams. This alternative was eliminated from further consideration because bypass channels have a very flat channel bottom slope which would have a considerably larger footprint than a fish ladder and would result in potentially significant environmental impacts. In addition, the construction of a bypass channel at the Main Street dam would require alterations to both the dam and adjacent Main Street Bridge.

2.4 REGULATORY APPROVAL

The following is a list of the expected permits, regulatory approvals, and consultations that may be needed for the project. Specific permitting requirements would be identified for each dam prior to the start of construction:

- RIDEM Water Quality Certificate
- RIDEM Preliminary Determination Application (for fish ladders)
- RIDEM Application to Alter (for dam removals)
- Rhode Island Pollutant Discharge Elimination System
- CRMC Category B Assent (at Main Street Dam)
- Section 404 Permit
- Rhode Island State Historic Preservation Office (SHPO)
- Federal Energy Regulatory Commission
- Federal Emergency Management Agency (FEMA)
- Coastal Zone Consistency Determination
- Erosion and Sedimentation Control Plan
- Section 7 Consultation – Threatened and Endangered Species.

3. AFFECTED ENVIRONMENT

The following sections describe the environments that have the potential to be affected by the proposed project. These environments include ecological, cultural, social, aesthetic, and economic resources.

3.1 LAND USE

Approximately 84 percent of the Blackstone River is located within urban areas, including the major cities of Worcester, Massachusetts and Woonsocket, Rhode Island. The four dams that are the focus of this EA are located across three municipalities: the Cities of Pawtucket and Central Falls, and the Town of Cumberland. Land use in the vicinity of the Project Area (Figure 6) is comprised predominately of industrial and commercial facilities.

3.2 AIR QUALITY

The Clean Air Act requires the EPA to set National Ambient Air Quality Standards (NAAQS) for pollutants considered to be harmful to the environment and to public health. There are two types of air quality standards. Primary standards include limits to protect public health and secondary standards include limits to protect public welfare. The EPA has set NAAQS for six principal pollutants: carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter, and sulfur dioxide.

The State of Rhode Island is designated as a moderate nonattainment area for ozone. Nonattainment areas refer to environments where air pollution levels persistently exceed the NAAQS. In April 2004, the EPA designated all five counties in Rhode Island as moderate nonattainment areas for the 8-hour ozone standard.

3.3 NOISE

Sensitivity to ambient noise levels differs among land use types. For example, libraries, schools, churches, and hospitals are generally more sensitive to noise than commercial and industrial land uses. The majority of land uses along the river and within the project areas include commercial and industrial land uses, which generally have lower sensitivity to ambient noise levels.

3.4 GEOLOGY AND SOILS

According to the Bedrock Geologic Map of Rhode Island (Hermes et al., 1994), bedrock within the project area is classified as belonging to the Pennsylvanian Period Narragansett Bay Group, and more specifically, the Rhode Island Formation. The Rhode Island Formation consists of stratified gray to black, fine- to coarse-grained quartz arenite, litharenite, shale, and conglomerate, with minor beds of anthracite and meta-anthracite.

The soils in the vicinity of the project area are predominantly derived from glacial outwash parent material deposited by meltwaters following glacial recession. These areas typically consist of well sorted sands and gravels that may or may not be overlain by finer, wind deposited eolian material. In addition, some areas immediately adjacent to the river are overlain by more recent alluvium material associated with flood deposits.

3.5 WATER RESOURCES

The Blackstone River originates in a series of streams in the hills of Worcester, Massachusetts and flows southeast into Rhode Island. The river flows for approximately 48 miles before reaching the tidal Seekonk River, which in turn flows south and eventually reaches Narragansett Bay. The Blackstone River watershed consists of a total of 475 mi^2, with 140 mi^2 located in Rhode Island. The major tributaries to the Blackstone include Kettle Brook, and the Quinsigamond, West, Mumford, Mill, and Peters Rivers.

Urbanization along the Blackstone River has led to degraded water quality in many areas. RIDEM had designated certain areas along the river as "impaired" due to elevated levels of human pathogens; copper, lead, nutrients, and ammonia; reduced biodiversity; and low levels of dissolved oxygen (NBEP, 2002). The State of Rhode Island 2002 303(d) List (RIDEM, 2003) includes Valley Falls Pond, and the Blackstone River from the Massachusetts-Rhode Island border to Slater Mill Dam.

The majority of the project sites are within the 100-year floodplain (Figure 7). According to the Water Quality Regulations (RIDEM, 2006), the Blackstone River is designated as Class B1 waters from the Massachusetts-Rhode Island border to the combined sewer overflow (CSO) outfall at River and Samoset Streets in Central Falls, and Class B1(a) waters from the River and Samoset Street CSO to the Slater Mill Dam. According to the regulations, Class B1 waters are "designated for primary and secondary contact recreational activities and fish and wildlife habitat. They shall be suitable for compatible industrial processes and cooling, hydropower, aquacultural uses, navigation, and irrigation and other agricultural uses. These waters shall have good aesthetic value." Waters classified as B1(a) are likely impacted by approved CSO facilities and therefore, "primary contact recreational activities; shellfishing uses; and fish and wildlife habitat will likely be restricted."

3.6 SEDIMENTS

Due to the low-energy environment that generally occurs upstream of dams, finer sediments being carried in the river tend to settle and accumulate in headponds. Consequently, contaminants that are common in urban stormwater runoff that enters the river can bind to the finer sediments and accumulate in the low-energy environment upstream of dams. Preliminary sampling of the sediments in the project area reach of river did not indicate the presence of any contaminants substantially above RIDEM standards.

Sediments downstream of the dams are predominately sand and gravel, and are generally coarser than sediments found upstream of the dams. This is an expected result as the river bed immediately downstream of the dams is a relatively high-energy environment that does not allow for settling of finer sediments.

3.7 VEGETATION

The portion of the river corridor that lies within the project area is mainly urbanized. Vegetation communities within natural parts the watershed include deciduous and coniferous forest, scrub-shrub, agricultural fields, and emergent plant communities. In addition, the Blackstone River is associated with numerous emergent and submergent aquatic wetlands, as well as fringing emergent, scrub-shrub, and forested wetlands.

Upland vegetation communities within the Blackstone River watershed in Rhode Island typically consist of red maple (*Acer rubrum*) and oak (*Quercus sp.*) dominated deciduous forests, and white pine (*Pinus stobus*) and pitch pine (*Pinus rigida*) dominated coniferous forests. Typical understory vegetation in these areas consist of witch hazel (*Hamamelis virginiana*), sweet pepperbush (*Clethra alnifolia*), arrow wood (*Viburnum dentatum*), multiflora rosa (*Rosa multiflora*), and greenbrier (*Smilax rotundifolia*). Herbaceous vegetation may include hay scented fern (*Dennstaedtia punctilobula*), bracken fern (*Pteridium aquilinum*), poison ivy (*Toxicodendron radicans*), and various grasses and sedges.

Forested wetland communities along the Blackstone River are typically dominated by red maple; however, floodplain species may include gray birch (*Betula populifolia*), black willow (*Salix nigra*), and bebb willow (*Salix bebbiana*). Scrub-shrub species typically include sweet pepperbush, alder (*Alnus serrulata*), highbush blueberry (*Vaccinium corymbosum*), silky dogwood (*Cornus amomum*), arrow wood, and swamp azalea (*Rhododendron viscosum*). Herbaceous and emergent plant communities are generally dominated by cinnamon fern (*Osmunda cinnamomea*), sensitive fern (*Onoclea sensibilis*), skunk cabbage (*Symplocarpus foetidus*), cattail (*Typha sp.*), and various sedges and rushes.

3.8 WILDLIFE RESOURCES

Wildlife in the Blackstone River region has been subjected to human disturbances since European settlement, including the extermination and/or reduction in populations of large predators and vertebrates, such as the gray wolf (*Canis lupus*) and moose (*Alces alces*), by hunting and habitat loss (McNab and Avers, 1994). Some formerly displaced species have become re-established on abandoned agricultural lands, with the exception of large predators, whose niche has been partially filled by mid-size predators, such as the coyote (*Canis latrans*) (McNab and Avers, 1994). Common wildlife species in the project area include the white-tailed deer (*Odocoileus virginianus*), gray and red squirrels (*Sciurus carolinensis* and *Tamiasciurus hudsonicus,* respectively), white-footed mouse (*Peromyscus leucopus*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), and an assortment of resident and migratory birds.

A large percentage of the watershed's mammals, amphibians, reptiles, and birds depend on wetland or riparian habitat. Common amphibians are red-backed salamander (*Plethodon cinereus*), American toad (*Bufo americanus*), wood frog (*Lithobates sylvaticus*), green frog (*Lithobates clamitans),* pickerel frog (*Lithobates palustris),* gray treefrog (*Hyla versicolor*), and spring peeper (*Pseudacris crucifer*). Reptiles include snapping turtle (*Chelydra serpentina*), painted turtle (*Chrysemys picta*), and common garter snakes (*Thamnophis sirtalis*).

3.9 AQUATIC RESOURCES

A variety of accounts make claim the seasonal use of the river by diadromous fish species (Buckley and Nixon, 2001). These anadromous fish likely included species such as Atlantic salmon, river herring, and American shad. In 1993, RIDFW performed a suitability study to assess the habitat in the lower Blackstone River for anadromous fish restoration. During the spring of 2003, RIDFW released 3,000 blueback herring into the river below the Albion Dam, an area of potential spawning habitat upstream of the Valley Falls Dam. In August 2003, sampling indicated that the fish had reproduced successfully and the offspring of the released fish appeared abundant and healthy (USACE, 1997).
In addition, in May 2001, RIDFW performed gillnet sampling below the Main Street Dam to determine if native populations of anadromous fish were present at the mouth of the Blackstone during the spring run. The sampling indicated that American shad, blueback herring, alewife, white perch (*Morone americana*), and striped bass (*Morone saxatilis*) were present, and all but the striped bass included egg-bearing females (USACE, 1997).

According to data provided by NOAA, there is no Essential Fish Habitat (EFH) within the Blackstone River (NOAA, no date).

3.10 WETLAND RESOURCES

Wetland and open water resources in the project area include the Blackstone River and its associated fringing emergent and forested wetlands. According to the USACE, the Blackstone River is considered a navigable waterway of the United States under the Clean Water Act. Under RIDEM regulations, the Blackstone is considered a river as it is a perennial stream on U.S Geologic Survey topographical maps. Under CRMC regulations, the Blackstone River below the Main Street Dam (as it meets the Seekonk River) is considered Type 6 Industrial Waterfronts and Commercial Navigation Channels.

In many of the urbanized and developed areas near the project sites, the banks of the Blackstone River are defined by retaining walls, bulk heads, or other containment walls. These historic fills occurred on what was once the floodplain for the river. As a result, there are few remaining large fringing wetlands and floodplains associated with the river in these developed areas.

In portions of the Blackstone River in the vicinity of the dams, and in many portions to the north of the project site along the river, there still exist natural floodplains and fringing riparian wetlands, such as the Lonsdale Marsh in Lincoln, Rhode Island, that are not bordered by steep walls or fill areas. These wetlands typically consist of hydric soils, are dominated by hydrophytic vegetation, and are periodically flooded by the Blackstone River. Therefore, these areas meet state and federal wetland criteria.

3.11 THREATENED AND ENDANGERED SPECIES

The Rhode Island Natural Heritage Program (RINHP) maintains a database of the locations of state-listed endangered, threatened, or special concern species in the state. According to the RINHP database, there are two polygons in the project area where these species occur (Figure 8).

Based on correspondence with the USFWS, no federally-listed or proposed threatened or endangered species or critical habitat under the jurisdiction of the USFWS are known to occur in the project area (refer to Appendix A).

A precipitous decline of river herring populations since 2002 has prompted Rhode Island and many other states to ban the taking of river herring from their waters and has caused the National Marine Fisheries Service to declare river herring as a *Species of Concern* throughout their range.

3.12 CULTURAL RESOURCES

The Blackstone River Valley is known as the "Birthplace of the American Industrial Revolution." Industrial modification of the river began in the late 1600s, and by the 1830s there was one dam for every mile of river. By the end of the 19th century, much of the river and many of its tributaries were obstructed by dams or were channelized for transportation, urban development, and flood control (NBEP, 2002).

The Blackstone River runs from Worcester, Massachusetts to Pawtucket, Rhode Island, and powers a number of hydroelectric power plants, including the Pawtucket Hydropower Plant and Blackstone Falls Hydroelectric Project at Main Street Dam and Valley Falls Dam, respectively (Figures 9 and 10). In addition, the Slater Mill and Elizabeth Webbing Dams also utilized the river for commercial uses (Figures 11 and 12). The use of hydrological power began the nation's transformation from farming to industry. Numerous dams and other structures were constructed along the river to power milling and grist operations. These structures created obstacles for diadromous fish migration and declines in the populations of these species were noted soon after. Legislation as early as 1735 was passed to minimize impacts to diadromous fish passage; however, due to the growing priority for industry, the dams remained in place.

The Blackstone River remains a major feature within the project area today. Along its course the river provides significant recreational and cultural resources. Numerous fishing, kayaking, and hiking areas exist along the river. The Blackstone River Bikeway

is a recreational bike path that parallels the river throughout much of northern Rhode Island.

In addition, tourist attractions, historic districts, and scenic areas are abundant in Blackstone Valley. According to data provided by SHPO, properties on the National Register of Historic Places at the project sites include the Central Falls Historic District (between Roosevelt Avenue and Blackstone River), Valley Falls Mill Complex, Old Slater Mill Historic Site, Main Street Bridge, and Bridge Mill Power Plant (at the Main Street Bridge).

3.13 ENVIRONMENTAL JUSTICE

Executive Order 12898 *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* requires that "each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations" (CEQ, 1997a). According to data provided by RIDEM, a large Environmental Justice Zone borders the entire western side of the Blackstone River in the project area (Figure 13).

3.14 SOCIOECONOMIC RESOURCES

The City of Pawtucket, founded in 1671, is approximately 9.0 mi^2 in area, with an estimated population of 72,958 according to the 2000 census. The population density of Pawtucket equals 8,351 persons per square mile of land area. The city contains many diverse industries including textiles, primary metals, fabricated metals, printing paper, machinery, tools, chemicals, foundries, glass, and jewelry. Major points of interest in the city include the historic Slater Mill, Slater Memorial Park, and the Pawtucket Veterans Memorial Park.

The City of Central Falls, formerly a part of the Town of Lincoln, was incorporated in 1895. Central Falls is the smallest municipality in the state at 1.3 mi^2 in area and is also the most densely populated. Centrals Falls had an estimated population of 18,928 according to the 2000 census, equaling a population density of 15,642 persons per square mile of land area. The economy is sustained mostly by clothing, textiles, metals and machinery, chemicals, glass, and plastic industries.

The Town of Cumberland, incorporated in 1746, is approximately 28.2 mi^2 in area, with an estimated population of 31,840 according to the 2000 census. The population density of Cumberland is much lower than that of Pawtucket and Central Falls, at 1,188 persons per square mile of land area. Manufacturing and retail trade are the largest sources of income in Cumberland.

The Main Street Dam and Valley Falls Dam both house active hydroelectric power plants (Pawtucket Hydropower Project, LLC and Blackstone Falls Hydroelectric Project, respectively). These plants are a viable, non-fossil fuel dependent power generating source.

4. ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

Environmental consequences of the proposed alternatives are presented in the following sections. The Blackstone River Fish Passage Restoration Project would restore diadromous fish passage within the Blackstone River in the Cities of Pawtucket and Central Falls, Rhode Island, and the Town of Cumberland, Rhode Island. The following environments would not be impacted under the proposed alternatives and are not evaluated in the environmental consequences section: land use, geology and soils, and wildlife resources

4.1 AIR QUALITY

4.1.1 Proposed Action

Construction of the fish ladders and eel passages at the Main Street, Slater Mill, and Valley Falls Dams and removal of the Elizabeth Webbing Dam would occur over a three to four month period at each dam. Construction activity at the proposed project locations may require the use of excavators, dump trucks, pick-up trucks, forklifts, barges, and other construction equipment.

The construction of the fish ladders and eel passages, and the dam removal would involve construction vehicles transporting construction equipment to and from the site. The State of Rhode Island is designated as a moderate nonattainment area for 8-hour ozone, which means that the applicability of the Clean Air Act General Conformity Rule must be assessed. For areas of moderate ozone nonattainment, the thresholds levels in EPA's air quality regulations are 100 tons/year of nitrogen oxides (NO_x) and 50 tons/year of volatile organic compounds (VOCs), which are the pollutants most responsible for the formation of ground-level ozone.

Based on emission calculations for similar construction projects, NO_x emissions would be approximately 9 tons/year (VOC emissions are negligible compared to NO_x emissions and therefore, were not evaluated). This level of emissions would be well below the 100 tons/year threshold; therefore, the General Conformity Rule would not apply to the project and no further air quality analysis is required.

4.1.2 No Action Alternative

Under the No Action Alternative, no construction would occur and therefore, there would be no change in air quality due to construction activities.

4.2 NOISE

4.2.1 Proposed Action

No permanent noise impacts would occur as a result of the Proposed Action. Minor, temporary noise impacts from construction vehicles and equipment would occur, but

would be limited to the 3-4-month construction period at each dam. Under normal circumstances, these temporary impacts would occur between 6:00 a.m. and 8:00 p.m. on business days.

4.2.2 No Action Alternative

Under the No Action Alternative, no short-term or long-term noise impacts would occur.

4.3 WATER RESOURCES

4.3.1 Proposed Action

The installation of the fish ladders and eel passages at the Main Street, Slater Mill, and Valley Falls Dams are not expected to permanently impact water resources at the project sites. Minor, temporary impacts to turbidity would likely occur at the construction sites and for some distance downstream during construction. Best management practices (BMPs), such as cofferdams and silt fences, would be installed to minimize impacts. An erosion and sediment control plan would be prepared prior to the start of construction.

The removal of the Elizabeth Webbing Dam may result in lower dissolved oxygen levels in the river as aeration of water traveling over the dam would no longer occur; however, this could be offset somewhat by removal of oxygen-demanding sediments from the impoundment upstream of the dam. The removal of the dam could result in impacts resulting from sediment transport, discussed in Section 4.4. All activities within the Blackstone River would require coordination and approval through state and federal permitting agencies prior to the start of construction.

Installation of the fish ladders and eel passages at the Main Street, Slater Mill, and Valley Falls Dams, and the removal of the Elizabeth Webbing Dam are not expected to have any permanent impacts on the river topography in the vicinity of the project sites. Minor alterations of the streambanks and possibly minor excavation of the streambeds downstream of the dams would occur during fish ladder and eel passage installation. These alterations are not expected to significantly alter the overall bank and river configurations. The footprints of the fish ladders and eel passages would be limited to a relatively small area of the streambed and spillway.

The removal of the Elizabeth Webbing Dam would involve the removal of sediments as discussed in Section 4.4, but would not alter the overall character of the riverbed immediately upstream of the dam.

Construction within the 100-year floodplain is necessary to implement the project as the dams are located within the Blackstone River. The Proposed Action would have minimal impacts to the 100-year floodplain resources along the river. There would be no impact to flood storage. The removal of the Elizabeth Webbing Dam would result in a minimal decrease in upstream water elevations and no increase in downstream elevations. Since any change in upstream water surface elevations is a decrease, the change in water

surface elevations for this alternative would not negatively impact existing flood storage capacity in the stretch of the river.

4.3.2 No Action Alternative

Under the No Action Alternative, no impacts to water resources at the sites would occur.

4.4 SEDIMENTS

4.4.1 Proposed Action

The construction of the fish ladders and eel passages at the Main Street, Slater Mill, and Valley Falls Dams is not expected to result in permanent impacts resulting from sediment transportation. The installation of the fish ladders and eel passages would involve only temporary disturbance to the riverbed and BMPs, such as cofferdams, would be employed to minimize the transport of sediment downstream.

Minor impacts associated with the transportation of sediment potentially containing elevated levels of regulated constituents of concern could occur as a result of the removal of the Elizabeth Webbing Dam. Prior to the removal of the dam, characterization of the sediment upstream of the dam would occur. If necessary, impacted sediment upstream of the dam would be excavated and disposed of in a permitted disposal site to prevent transportation downstream. To minimize the transport of sediments during construction, excavation would likely occur "in the dry" using cofferdams. In addition, excavation would occur in phases, allowing the river to flow continuously while the dredging is performed behind the cofferdams. Following excavation, cobbles, or similar material, would be installed to provide a stabilizing veneer, to prevent sediment loss, if necessary.

4.4.2 No Action Alternative

Under the No Action Alternative, no construction would occur and therefore, there would be no sediment impacts resulting from construction activities.

4.5 VEGETATION

4.5.1 Proposed Action

The installation of fish ladders and eel passages at the Main Street, Slater Mill, and Valley Falls Dams, and the removal of the Elizabeth Webbing Dam are not expected to result in any permanent impacts on the existing vegetation in the vicinity of the project sites. During fish ladder construction, activities would occur in the concrete spillways of the dams, concrete headwalls, bedrock outcrops, and rocky streambed, where there is minimal aquatic and upland bank vegetation.

Although detailed analyses have not been conducted for Elizabeth Webbing Dam, it is anticipated that removal of the dam may result in restoring flood plain wetland vegetation

in areas that are now submerged. Invasive species management activities will likely be needed to ensure that newly exposed river bank soils are re-vegetated with native flora.

Temporary disturbances to adjacent upland vegetation may occur during construction to allow for access to the project sites. However, upon completion of the project these areas would be stabilized and reseeded or replanted with native vegetation.

4.5.2 No Action Alternative

Under the No Action Alternative, no impacts to vegetation at the sites would occur.

4.6 AQUATIC RESOURCES

4.6.1 Proposed Action

The Proposed Action is expected to have an overall positive effect on the aquatic resources of the Blackstone River. The installation of fish ladders and eel passages at the Main Street, Slater Mill, and Valley Falls Dams, and the removal of the Elizabeth Webbing Dam would allow diadromous fish to access approximately 200 acres of historic spawning habitat upstream of the dams. The reintroduction of both juvenile and adult diadromous fish would also benefit the existing fishery and surrounding ecosystem as they would provide an increased food source for larger predatory fish in the Blackstone River and Narragansett Bay.

The reintroduction of diadromous fish to this stretch of the Blackstone River along with enhanced downstream fish passage facilities at the two hydro-power facilities will have a positive effect on reducing potential turbine-related fish injuries and mortalities. Turbine-related fish injuries at hydropower facilities occur from pressure changes, cavitation, shear/turbulence, and mechanical injury within the turbine (Sale et al., 2000). These impacts will be minimized by a combination of installation of fish screens at the turbine intake, improving passage conditions within the turbine, or implementing spillway passage (Cada, 2001). Utilizing the measures described by Cada (2001) at the Main Street and Valley Falls Dams would almost completely eliminate turbine-related mortality, assuming proper operation of the downstream bypass and compliance with turbine flow limitations.

4.6.2 No Action Alternative

Under the No Action Alternative, impacts to aquatic resources at the sites would continue due to lack of fish passage facilities and lack of downstream facilities to minimize existing turbine injuries. In addition, resident fish populations in the vicinity of the dams would not benefit from the potential benefits mentioned above that would occur as a result of fish ladder & downstream fish passage facility construction or dam removal.

4.7 WETLAND RESOURCES

4.7.1 Proposed Action

The installation of fish ladders and eel passages at the Main Street, Slater Mill, and Valley Falls Dams, and the removal of the Elizabeth Webbing Dam are expected to result in only minor permanent impacts to the wetland resources in the vicinity of the project sites. The footprints of the fish ladders and eel passages at the Main Street, Slater Mill, and Valley Falls Dam would result in approximately 1,610; 715; and 830 ft^2 of impact within the river, respectively. In addition, the removal of the Elizabeth Webbing Dam would lower upstream water levels in the vicinity of the dam. This decrease in water levels would likely result in the conversion of wetland habitat from open water to emergent marsh along the existing banks of the river. This conversion is expected to occur on less than 0.5 acres of existing riverine habitat. Additionally, since the Elizabeth Webbing Dam is not controlling of flood water, its removal is not anticipated to have adverse affects on downstream flooding.

Minimal temporary disturbances to state-regulated 200-ft riverbank wetlands adjacent to the river may occur as a result of the construction activities associated with the installation of fish ladders and dam removal. Best management practices would be utilized to ensure that these temporary disturbances are minimized.

4.7.2 No Action Alternative

Under the No Action Alternative, no impacts to wetland resources at the sites would occur.

4.8 THREATENED AND ENDANGERED SPECIES

4.8.1 Proposed Action

Under the Proposed Action, there would be no temporary or permanent impacts to state-listed threatened or endangered species. The proposed project would positively affect populations of river herring, a *Species of Concern* for NMFS. There would be no construction activity within or immediately adjacent to RIDEM Natural Heritage Areas and the proposed project is not expected to impact species utilizing these areas.

Based on correspondence with the USFWS, no Federally-listed or proposed threatened or endangered species or critical habitat under the jurisdiction of the USFWS are known to occur in the project area.

4.8.2 No Action Alternative

Under the No Action Alternative, no impacts to threatened or endangered species at the sites would occur. However, river herring, NMFS *Species of Concern,* would continue to be negatively impacted by fish passage barriers in the Blackstone River.

4.9 CULTURAL RESOURCES

4.9.1 Proposed Action

The installation of fish ladders and eel passages at the Main Street, Slater Mill, and Valley Falls Dams would involve minor alterations to these historic structures; however, these alterations are not expected to have a negative effect on cultural resources of the project sites. The fish ladders and eel passages would be installed into the existing head and wing walls of the dams and would not compromise the stability or historic character of the dams.

Based on comments received from SHPO, the installation of fish ladders and eel passages at the dams would introduce a non-historic visual element to these historic structures; measures to mitigate these effects are currently being investigated by NRCS in consultation with SHPO and The National Park Service. Based upon discussions with SHPO, NRCS is evaluating a number of facing treatments for the proposed fishways. Visual renderings of these treatments by a landscape architect are currently being conducted to serve as a basis for these consultations.

The Elizabeth Webbing Dam is located within the Central Falls Historic District. Coordination with SHPO, Mashpee Wampanoag THPO, Gay Head Wampanoag THPO, Narragansett THPO, and the National Park Service to date has not indicated that the removal of the dam will be viewed as a negative impact to cultural resources.

Comments received from USFWS in regards to cultural resource effects of the project stated that the proposed alternative may have impacts to the dams themselves, but positive effects on cultural resources would result from the restoration of diadromous fisheries, which were known to have been important to pre-settlement Native Americans and post-settlement colonists.

4.9.2 No Action Alternative

Under the No Action Alternative, no impacts to the cultural resources at the dam sites would occur. However, continued impedence of diadromous fish to the river would impact cultural resources associated with the importance of fish runs to both pre-settlement American Indians and post-settlement colonists.

4.10 ENVIRONMENTAL JUSTICE

4.10.1 Proposed Action

The Proposed Action is not expected to negatively impact the Environmental Justice Zones in the vicinity of the project. Although there are Environmental Justice Zones located adjacent to the Blackstone River at the project sites, the Proposed Alternative would not disproportionately affect these populations. In addition, since the proposed project is targeting restoration of diadromous fish passage within the Blackstone River,

there is not an alternative location for the project. Although this EA identified noise as a temporary effect of construction activities, no resident facilities occur immediately adjacent to the construction areas.

4.10.2 No Action Alternative

Under the No Action Alternative, no impacts to Environmental Justice Zones adjacent to the project sites would occur.

4.11 SOCIOECONOMIC RESOURCES

4.11.1 Proposed Action

The Proposed Action is expected to result in only minor impacts to the existing hydroelectric power plants at the Main Street Dam and Valley Falls Dam. Based on a hydropower impact study performed for the project (EA, 2008), the impacts to hydroelectric power generation are expected to be less than a five percent reduction in the current power generation of the projects under normal operating conditions.

4.11.2 No Action Alternative

Under the No Action Alternative, no impacts to socioeconomic resources would occur.

4.12 HAZARDOUS MATERIALS AND WASTE

4.12.1 Proposed Action

Construction activities for the Proposed Action would generate hazardous materials typical of construction sites, such as fuels, oils, and lubricants for construction equipment. Contractors performing the construction would be advised to handle these materials carefully so they do not pose a threat to human health or the environment. NRCS anticipates that construction contract documents will include any necessary hazardous waste material handling and disposal specifications.

4.12.2 No Action Alternative

The No Action Alternative would not generate any hazardous materials or waste.

4.13 CUMULATIVE IMPACTS

The Council on Environmental Quality (CEQ) defines cumulative effects as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (CEQ, 1997b). A cumulative effects analysis must take into consideration both direct and indirect effects

of the proposed action, as well as the action's spatial and temporal effects when considered with other past, present, or future actions.

4.13.1 Past Actions

The Blackstone River Valley played a major role during the American Industrial Revolution. Industrial modification of the river began in the late 1600s and by the 1830s there was one dam for every mile of river. By the end of the 19th century, much of the river and many of its tributaries were impacted by dams or were channelized for transportation, urban development, and flood control (NBEP, 2002). In addition, industrial activities had a negative impact on the water quality of the Blackstone River. Following the Clean Water Act and other state and local pollution reduction initiatives, the water quality of the Blackstone River has improved dramatically over the last two decades.

Although primary source data, such as archaeological evidence, does not exist for diadromous fisheries in the Blackstone River Watershed, a variety of accounts do claim the seasonal use of the river by diadromous fish. As dams and other obstructions were built during the Industrial Revolution, it became more difficult for fish to travel in the watershed beyond Pawtucket Falls. Eventually, the river became obstructed to the point that a passage upstream was not available and the historic diadromous fish runs were eliminated.

4.13.2 Proposed Alternatives

The proposed project is not expected to have any significant adverse cumulative impacts on the Blackstone River. The proposed project would reverse previous impacts to diadromous fish passage in the Blackstone River and would have a beneficial effect on the fisheries, ecological, and economical aspects of the project area.

4.12.3 Reasonably Foreseeable Future Actions

Reasonably foreseeable construction activities at the Main Street, Slater Mill, Elizabeth Webbing, and Valley Falls Dams which could cumulatively affect the ecosystem are not anticipated in the near future. The project area is already densely developed and any future construction activities would likely involve the reuse of existing facilities. Beneficial future actions that could occur include fish passage restoration projects in the Blackstone River upstream of the dams that are part of the proposed project. These future projects have the potential to provide access to additional spawning habitats upstream of the Valley Falls Dam. According to the Blackstone River Fisheries Plan (NBEP, 2002), the ultimate goal is to restore diadromous fish populations in the Blackstone River into Massachusetts and into the Abbot Run tributary in Rhode Island.

5. COMPARISON OF ALTERNATIVES AND CONCLUSIONS

5.1 PROPOSED ACTION

The Proposed Action is expected to provide net ecological and economical benefits as a result of the restoration of a diadromous fish passage in the Blackstone River from the Main Street Dam in Pawtucket, Rhode Island to upstream of the Valley Falls Dam in Cumberland, Rhode Island. The Proposed Action includes the installation of three fish ladders and eel passages, and one dam removal. While fish ladders and eel passages are not as efficient as dam removal, fish ladders and eel passages are preferred at the Main Street, Slater Mill, and Valley Falls Dams to allow these structures to remain in place and to minimize impacts to existing hydropower facilities and tourism activities. This alternative also introduces the potential for additional diadromous fish restoration projects upstream in the Blackstone River in Rhode Island and Massachusetts. Specific benefits of the Proposed Actions include:

- Enhancement of base food source for commercially important fisheries
- Preservation of historically significant dams
- Decrease in turbine-related fish mortality over existing conditions
- Increased potential for upstream fish passage projects.

Potential negative impacts of the Proposed Action include:

- Impacts to hydropower generation at the Main Street and Valley Falls Dams
- Potential downstream sediment transportation at the Elizabeth Webbing Dam
- Minor fills placed in the river for the fish ladders.

5.2 NO ACTION ALTERNATIVE

The No Action Alternative assumes that no improvements would be made to the dams to improve diadromous fish passage. Fish passage would continue to be impeded by the dams. The No Action Alternative would not result in an efficient or self-sustaining diadromous fish spawning population in the Blackstone River.

5.3 COMPARISION OF ALTERNATIVES

Table 5.1 is provided as a comparison of the major environmental and socioeconomic benefits of the two alternatives.

TABLE 5.1 ALTERNATIVES SUMMARY AND COMPARISON

Affected Environment	Under Proposed Action	Under No Action Alternative
Air Quality	NI	NI
Noise	NI	NI
Water Resources	+	–
Sediments	NI	NI
Vegetation	NI	NI

Affected Environment	Under Proposed Action	Under No Action Alternative
Aquatic Resources	+	–
Wetland Resources	+	NI
Threatened and Endangered Species	+	–
Cultural Resources	–	+/–
Environmental Justice	NI	NI
Hazardous Materials and Waste	NI	NI

NOTES: NI: No impact.
+: Indicates item has a positive impact.
–: Indicates item has a negative impact.

5.4 CONCLUSION

The proposed Blackstone Valley Fish Passage Restoration Project would restore diadromous fish passage in the Blackstone River above the Valley Falls Dam. Limitations to fishway alternatives include the fact that fish ladders are generally 70 to 90 percent efficient at allowing the passage of shad and river herring when compared to dam removal. However, fish ladders and eel passages are the preferred alternative at the Main Street, Slater Mill, and Valley Falls Dams due to the configuration and/or historic nature of these dams and existing hydropower facilities. At the Elizabeth Webbing Dam, dam removal is preferred, though additional feasibility studies will be necessary to support this alternative, as the removal of the adjacent nonoperational hydroelectric power plant is proposed.

6. PREPARERS

Natural Resources Conservation Service

Andrew Lipsky – State Biologist
Meghan Walter – Hydraulic Engineer
Frank Vogel – Assistant State Conservation Engineer

EA Engineering, Science, and Technology, Inc.

Tom Cook, P.E. – Senior Engineer
Matthew Richardson – Scientist
Angelo Sullo – Engineer
Paul Theroux – Scientist
Sam Whitin – Project Manager

7. AGENCIES AND PERSONS CONSULTED

Table 7.1 lists the agencies and persons contacted about this project.

TABLE 7.1 AGENCIES AND PERSONS CONSULTED

City of Central Falls 580 Broad Street Central Falls, Rhode Island 02863 ATTN: Department of Planning	**City of Pawtucket** 137 Roosevelt Avenue Pawtucket, Rhode Island 02860 ATTN: Department of Planning
Coastal Resources Management Council Stedman Government Center, Suite 116 4808 Tower Hill Road Wakefield, RI 02879 ATTN: Tracy Silvia, Senior Environmental Scientist	**Federal Emergency Management Agency** 6th Floor 99 High Street Boston, MA 02110 ATTN: Arthur Cleaves, Regional Administrator
Federal Energy Regulatory Commission 888 First Street, NE Washington, DC 20426 ATTN: Kimberly Bose	**Narragansett Indian Tribal Historic Preservation Office** P.O. Box 700 Wyoming, Rhode Island 02898 ATTN: John Brown, Tribal Historic Preservation Officer
National Marine Fisheries Service One Blackburn Drive Gloucester, MA 01930 ATTN: Jack Terrill	**National Marine Fisheries Service** One Blackburn Drive Gloucester, MA 01930 ATTN: Peter Colosi
Rhode Island Department of Environmental Management 235 Promenade Street Providence, RI 02908 ATTN: W. Michael Sullivan, Director	**Rhode Island Department of Environmental Management** 235 Promenade Street Providence, RI 02908 ATTN: Ron Gagnon, Office of Customer and Technical Assistance
Rhode Island Department of Transportation Two Capitol Hill Providence, RI 02903 ATTN: Edward Szymanski	**Rhode Island Historic Preservation & Heritage Commission** 150 Benefit Street Providence, RI 02903 ATTN: Edward Sanderson, Director
Save the Bay, Inc. 434 Smith Street Providence, RI 02914 ATTN: Curt Spalding, Executive Director	**Town of Cumberland** 45 Broad Street Cumberland, RI 02864 ATTN: Department of Planning

U.S. Army Corps of Engineers New England District 696 Virginia Road Concord, MA 01742 ATTN: Regulatory Office	**U.S. Environmental Protection Agency** Region I, New England One Congress Street, Suite 1100 (CRI) Boston, MA 02114-2023 ATTN: Robert Varney, Regional Administrator
U.S. Environmental Protection Agency Region I, New England One Congress Street, Suite 1100 (CRI) Boston, MA 02114-2023 ATTN: Peter Holmes	**U.S. Fish and Wildlife Service** Rhode Island Field Office P.O. Box 307 Charlestown, RI 02813 ATTN: Greg Mannesto
U.S. Fish and Wildlife Service New England Field Office 70 Commercial Street, Suite 300 Concord, NH 03301-5087 ATTN: Phil Morrison	

8. REFERENCES

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Sale, M.J., G.F. Cada, B.N. Rinehart, G.L. Sommers, P.A. Brookshier, and J.V. Flynn. 2000. Status of the U.S. Department of Energy's Advanced Hydropower Turbine Systems Program. Proceedings of the 20th IAHR Symposium on Hydraulic Machinery and Systems, International Association of Hydraulic Research, Charlotte, North Carolina, Aug. 6-9, 2000.

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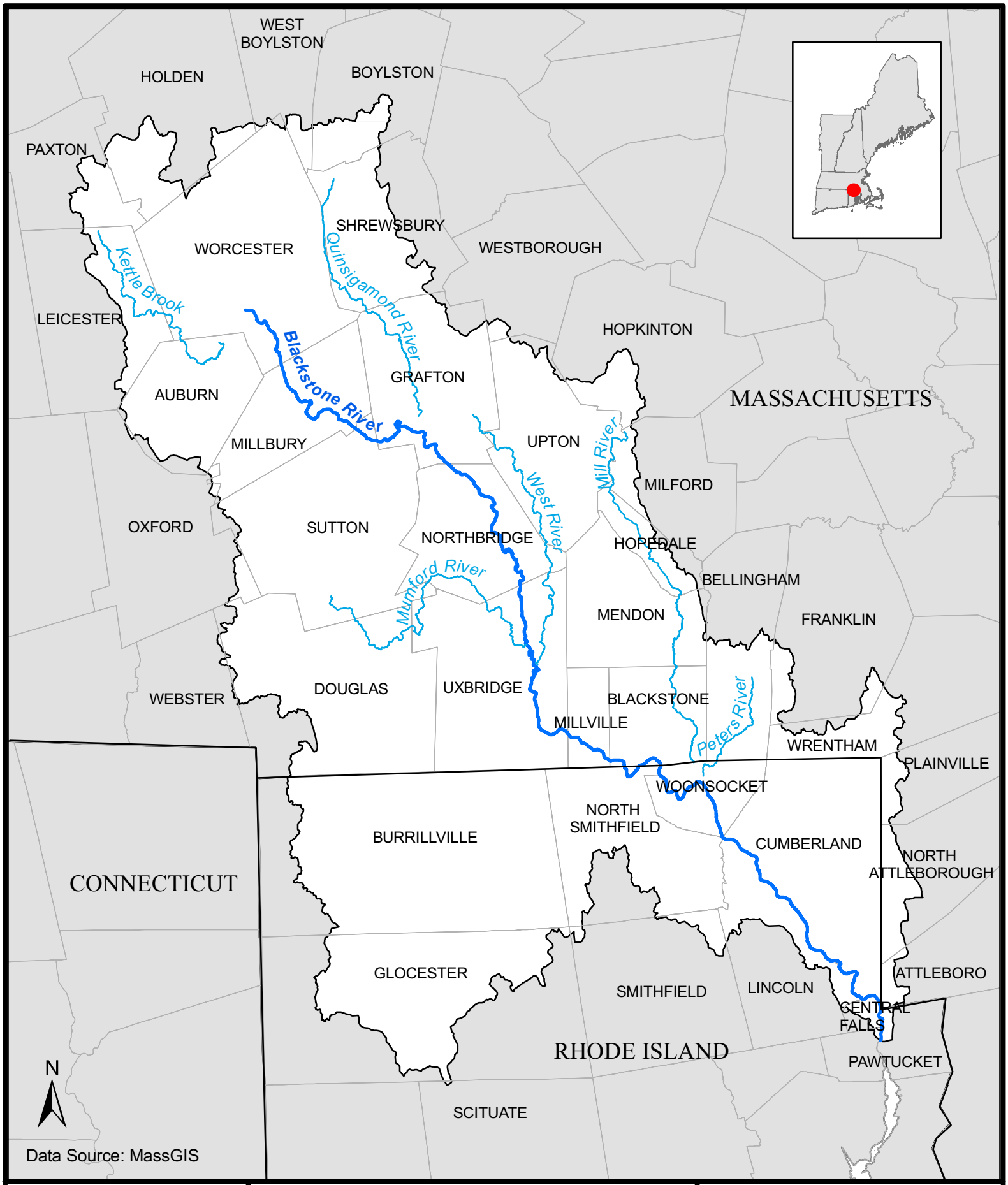
Figures

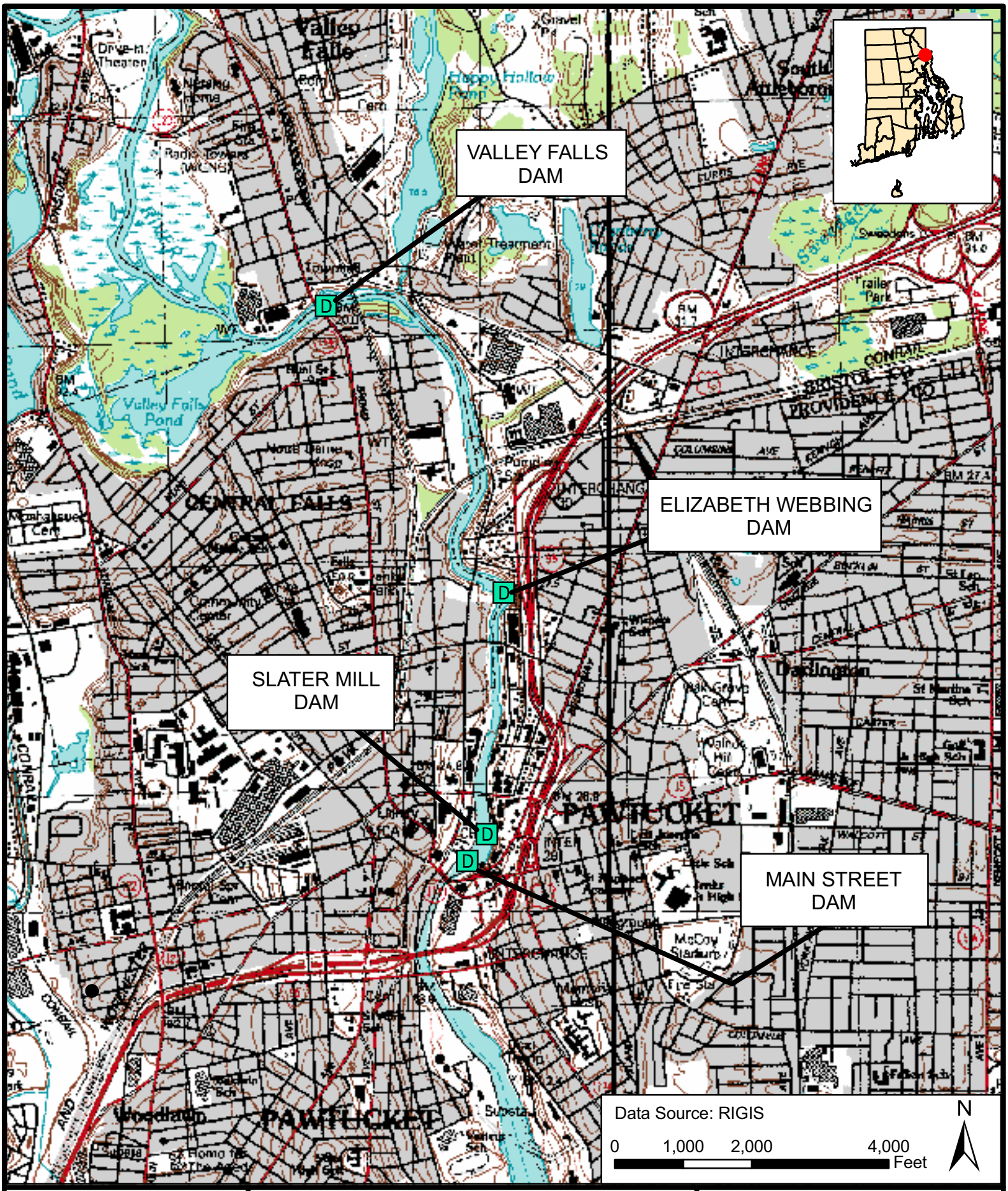


NRCS Natural Resources Conservation Service

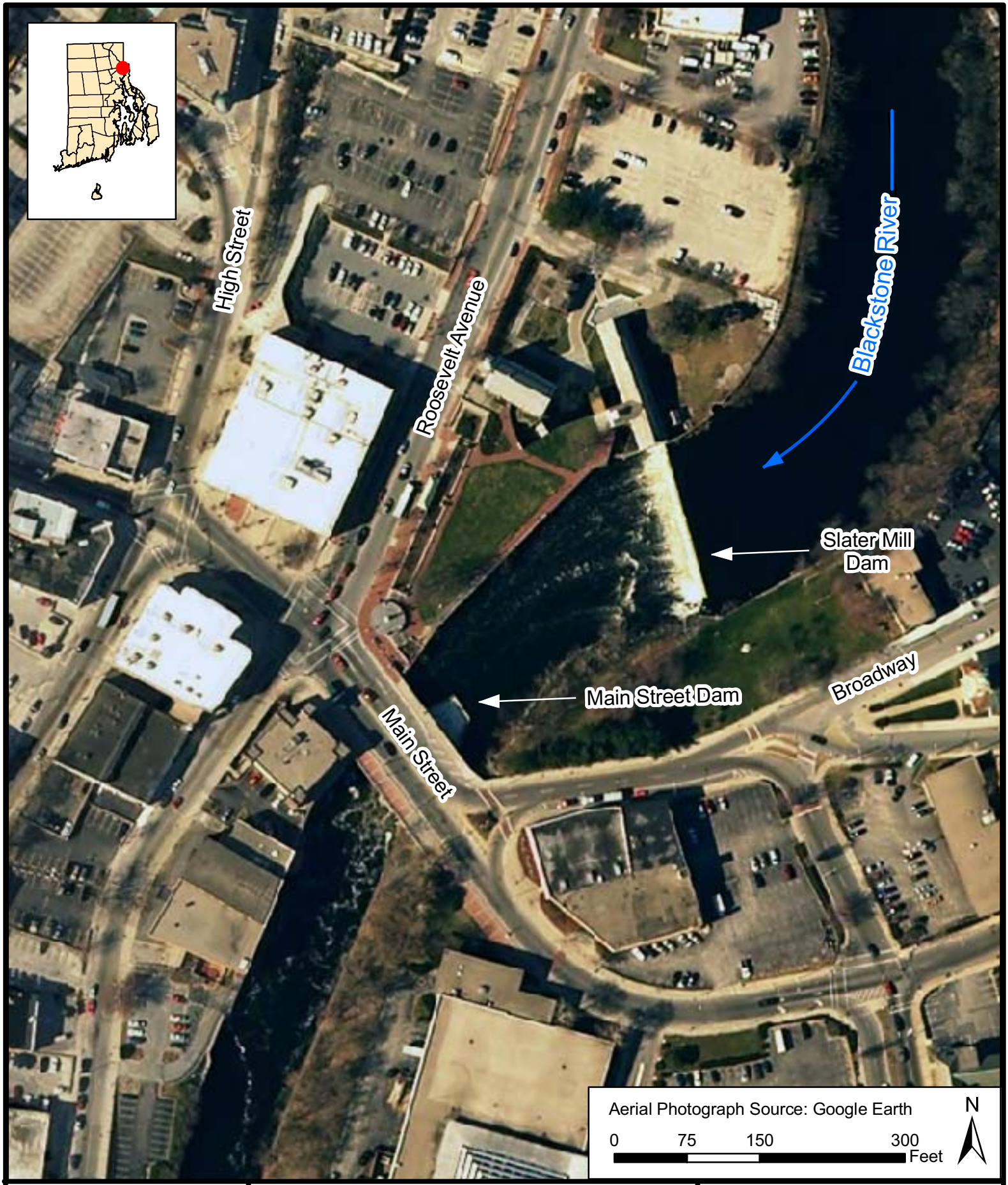
BLACKSTONE RIVER
FISH PASSAGE RESTORATION

FIGURE 1:
BLACKSTONE RIVER
WATERSHED AREA

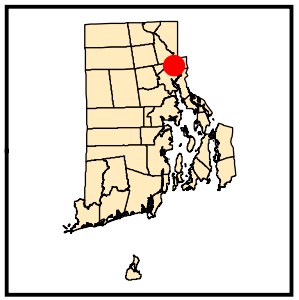
PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	EA PRJT NO:	FILE:
SW	MR	MR	SW	NONE	NOVEMBER 2008	62130.08	FIG1 BLACKSTONE.MXD



NRCS Natural Resources Conservation Service	BLACKSTONE RIVER FISH PASSAGE RESTORATION					FIGURE 2: PROJECT LOCUS	
PROJECT MGR: SW	DESIGNED BY: MR	CREATED BY: MR	CHECKED BY: SW	SCALE: AS SHOWN	DATE: NOVEMBER 2008	EA PRJT NO: 62130.08	FILE: FIG 2 PROJECT LOCUS.MXD



NRCS Natural Resources Conservation Service	BLACKSTONE RIVER FISH PASSAGE RESTORATION					FIGURE 3: MAIN STREET AND SLATER MILL DAMS	
PROJECT MGR: SW	DESIGNED BY: MR	CREATED BY: MR	CHECKED BY: SW	SCALE: AS SHOWN	DATE: NOVEMBER 2008	EA PRJT NO: 62130.08	FILE: FIG 3 MAIN STREET AND SLATER MILL.MXD



Blackstone River

Charles Street

Roosevelt Avenue

Elizabeth Webbing
Dam

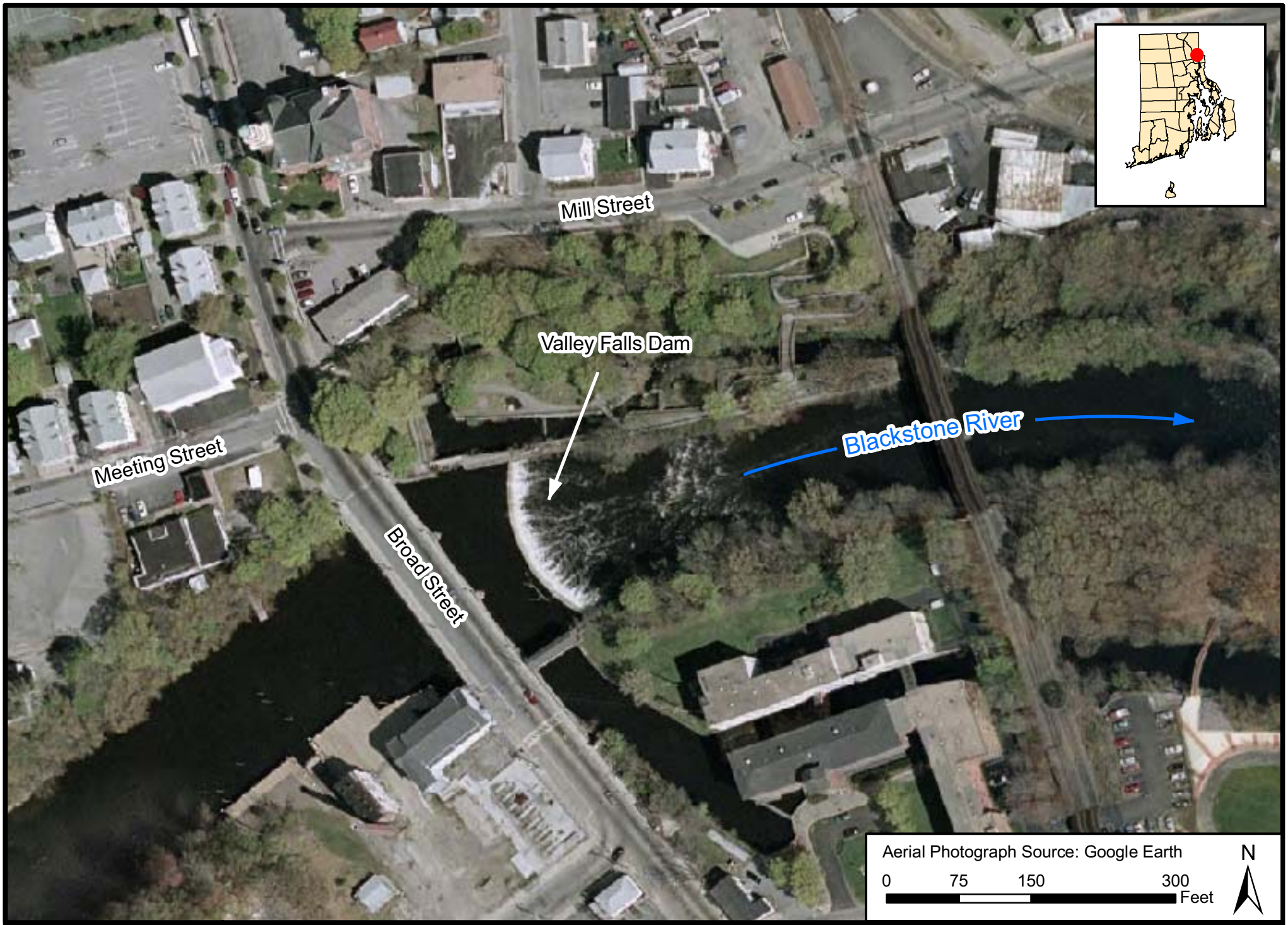
Interstate 95

Aerial Photograph Source: Google Earth

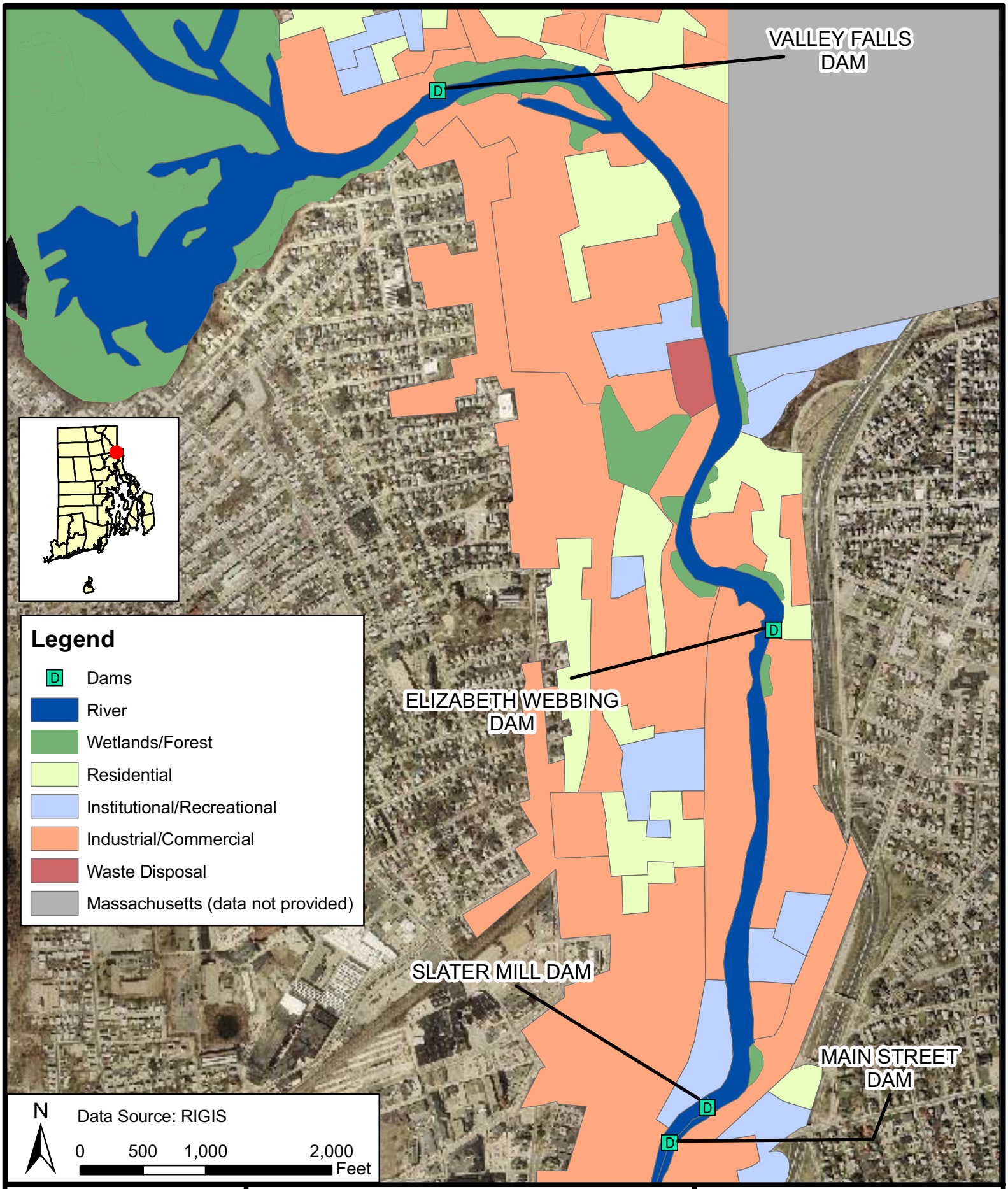
0 75 150 300 Feet

N

NRCS Natural Resources Conservation Service	FIGURE 4: ELIZABETH WEBBING DAM	PROJECT MGR: SW	DESIGNED BY: MR	CREATED BY: MR	CHECKED BY: SW	SCALE: AS SHOWN	DATE: NOVEMBER 2008	EA PRJT NO: 62130.08	FILE: FIG 4 EW.MXD



NRCS Natural Resources Conservation Service	FIGURE 5: VALLEY FALLS DAM	PROJECT MGR: SW	DESIGNED BY: MR	CREATED BY: MR	CHECKED BY: SW	SCALE: AS SHOWN	DATE: NOVEMBER 2008	EA PRJT NO: 62130.08	FILE: FIG 5 VF PHOTO.MXD



NRCS
Natural Resources Conservation Service

BLACKSTONE RIVER
FISH PASSAGE RESTORATION

FIGURE 6:
ADJACENT LAND USE

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	EA PRJT NO:	FILE:
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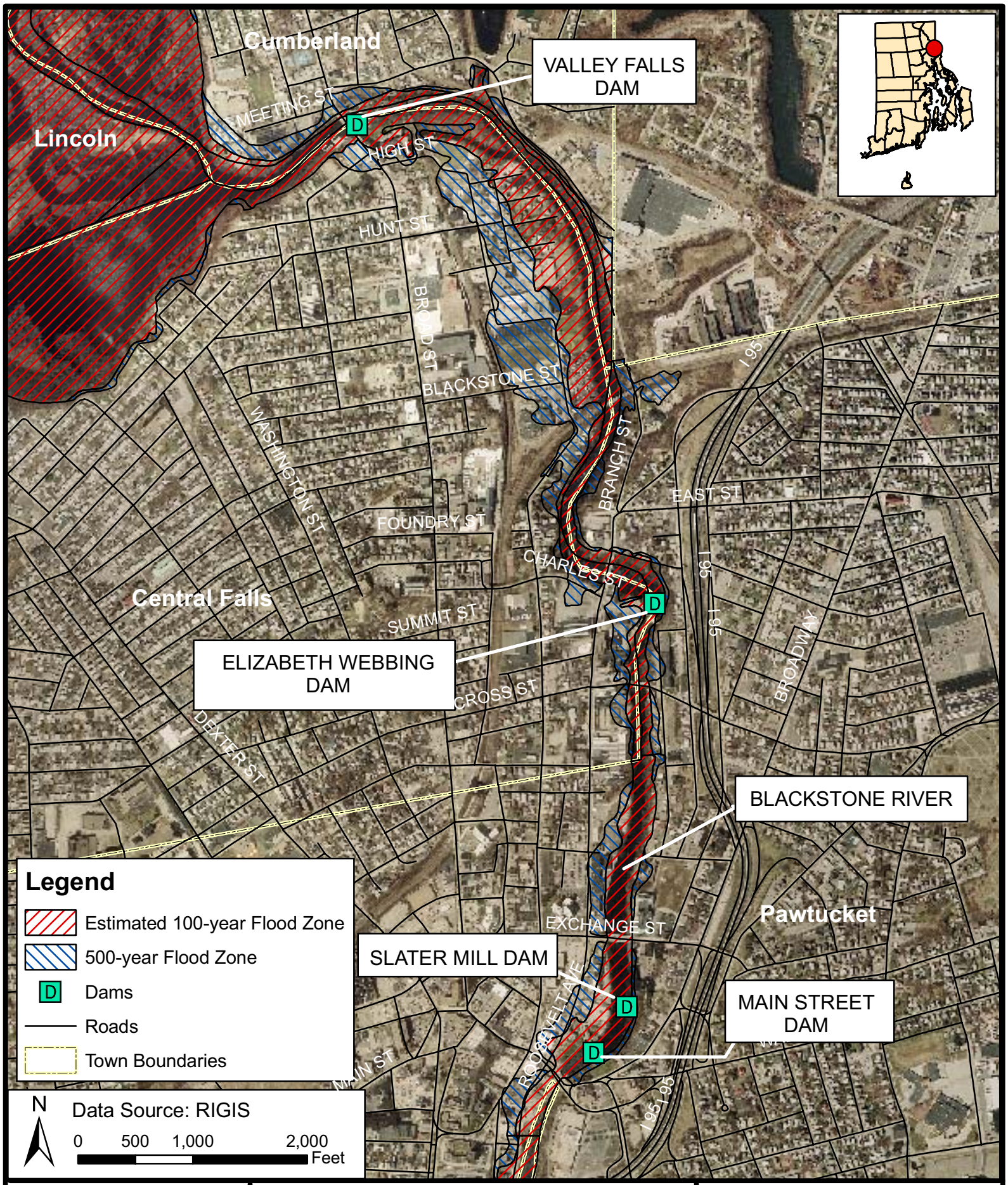

NRCS
Natural Resources Conservation Service

BLACKSTONE RIVER
FISH PASSAGE RESTORATION

FIGURE 7:
FEMA FLOOD ZONES

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	EA PRJT NO:	FILE:
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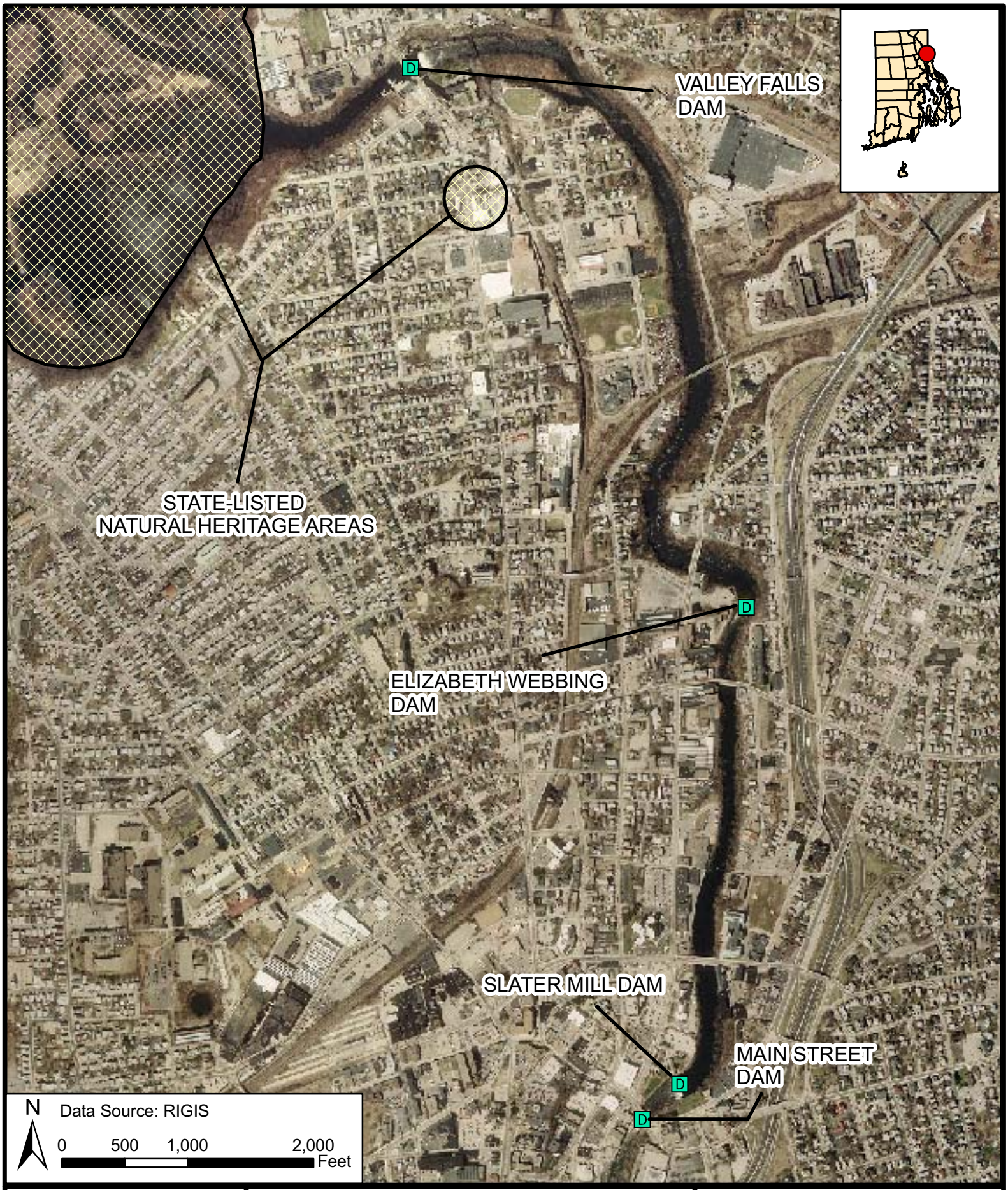


NRCS Natural Resources Conservation Service

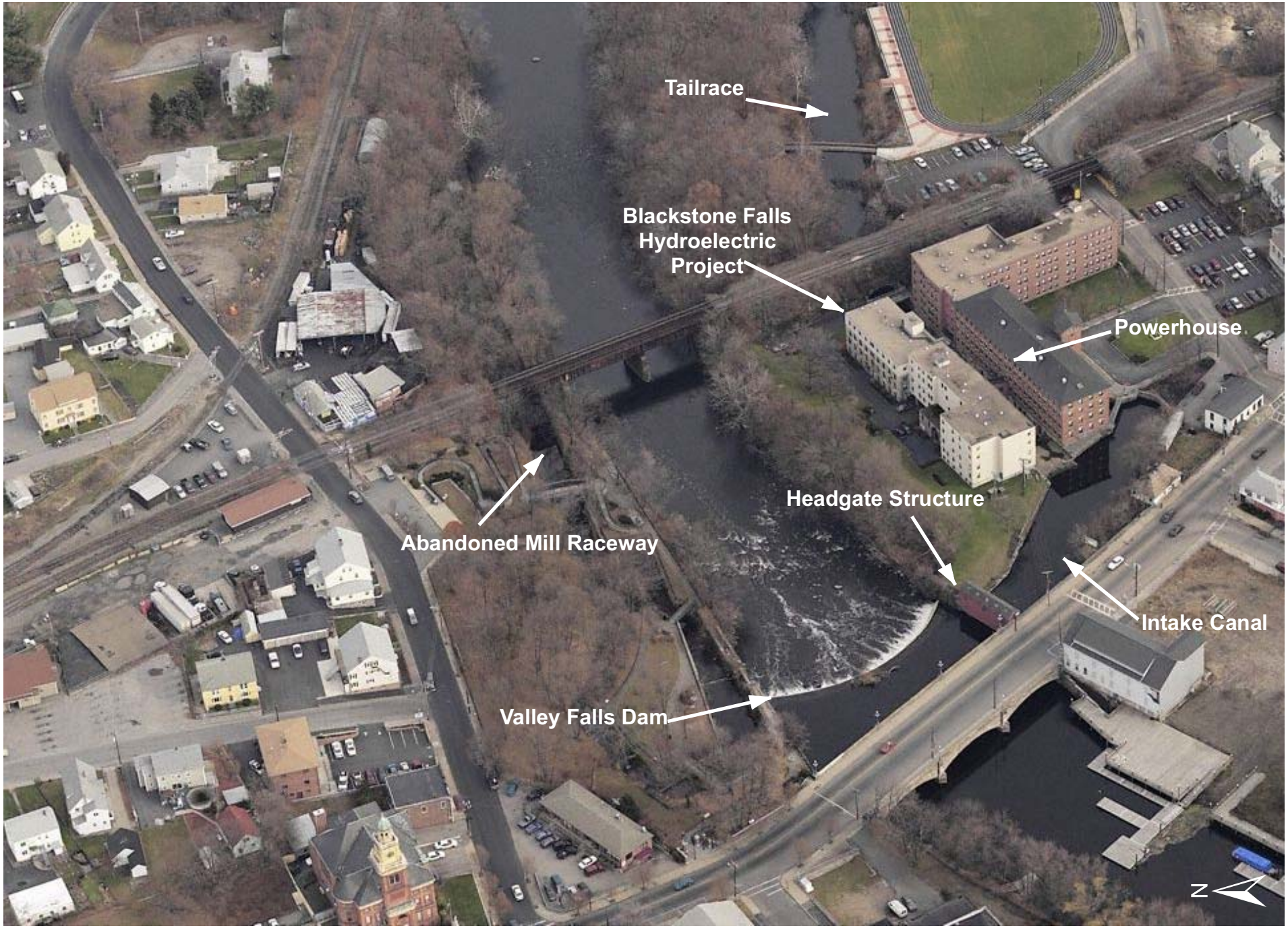
BLACKSTONE RIVER
FISH PASSAGE RESTORATION

FIGURE 8:
NATURAL HERITAGE AREAS

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	EA PRJT NO:	FILE:
SW	MR	MR	SW	AS SHOWN	NOVEMBER 2008	62130.08	FIG 8 NHP FIGURE.MXD

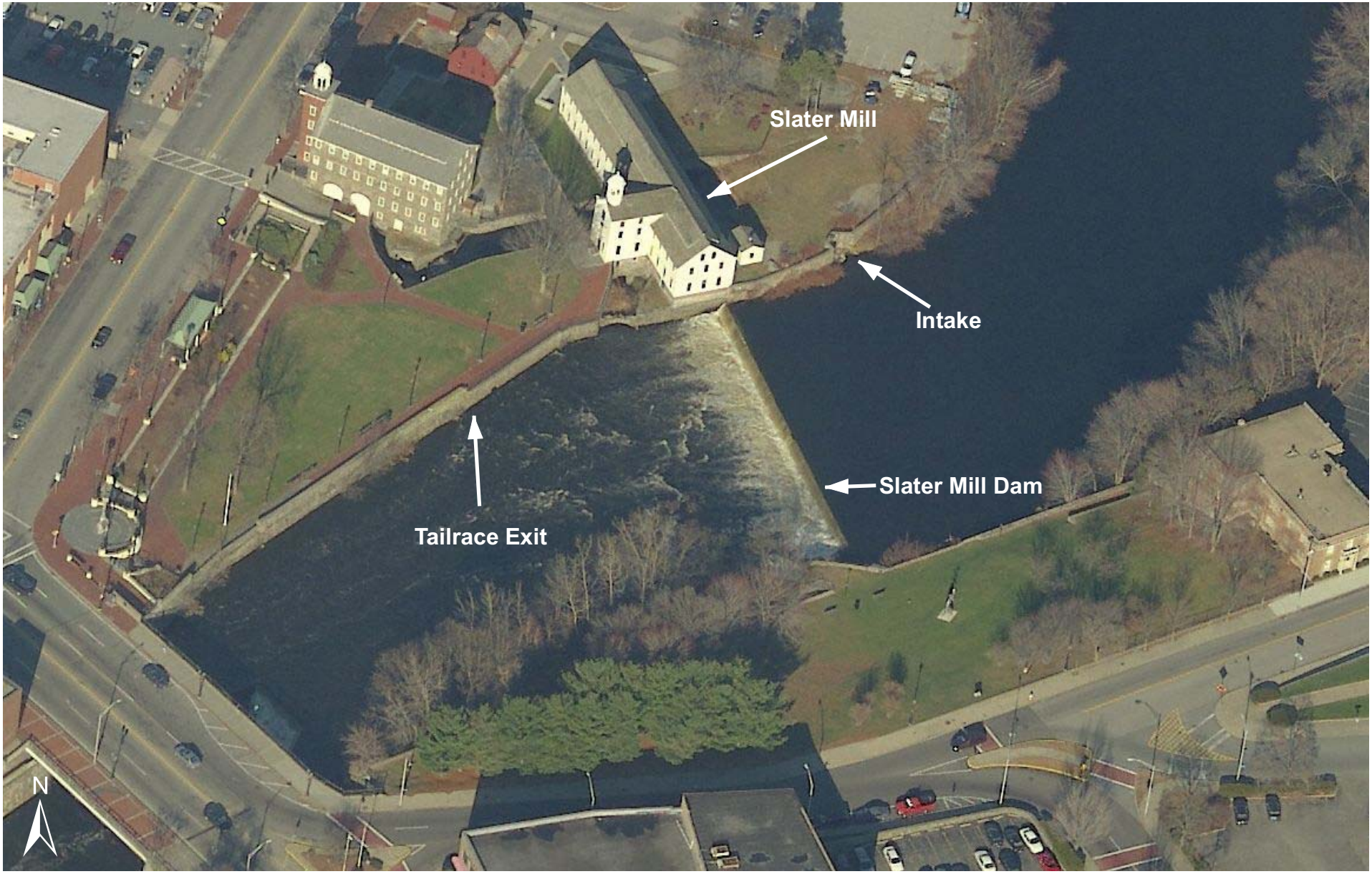
Aerial Photograph Source: Microsoft Visual Earth

NRCS Natural Resources Conservation Service	FIGURE 9: PAWTUCKET HYDROPOWER	PROJECT MGR: SW	DESIGNED BY: MR	CREATED BY: MR	CHECKED BY: SW	DATE: NOVEMBER 2008	EA PROJECT NO: 62130.08	FILE: FIG 9 PAWTUCKET HYDROPOWER.MXD



Aerial Photograph Source: Microsoft Visual Earth

NRCS Natural Resources Conservation Service	FIGURE 10: BLACKSTONE FALLS HYDROELECTRIC	PROJECT MGR: SW	DESIGNED BY: MR	CREATED BY: MR	CHECKED BY: SW	DATE: NOVEMBER 2008	EA PROJECT NO: 6213008	FILE: FIG 10 BLACKSTONE FALLS.MXD

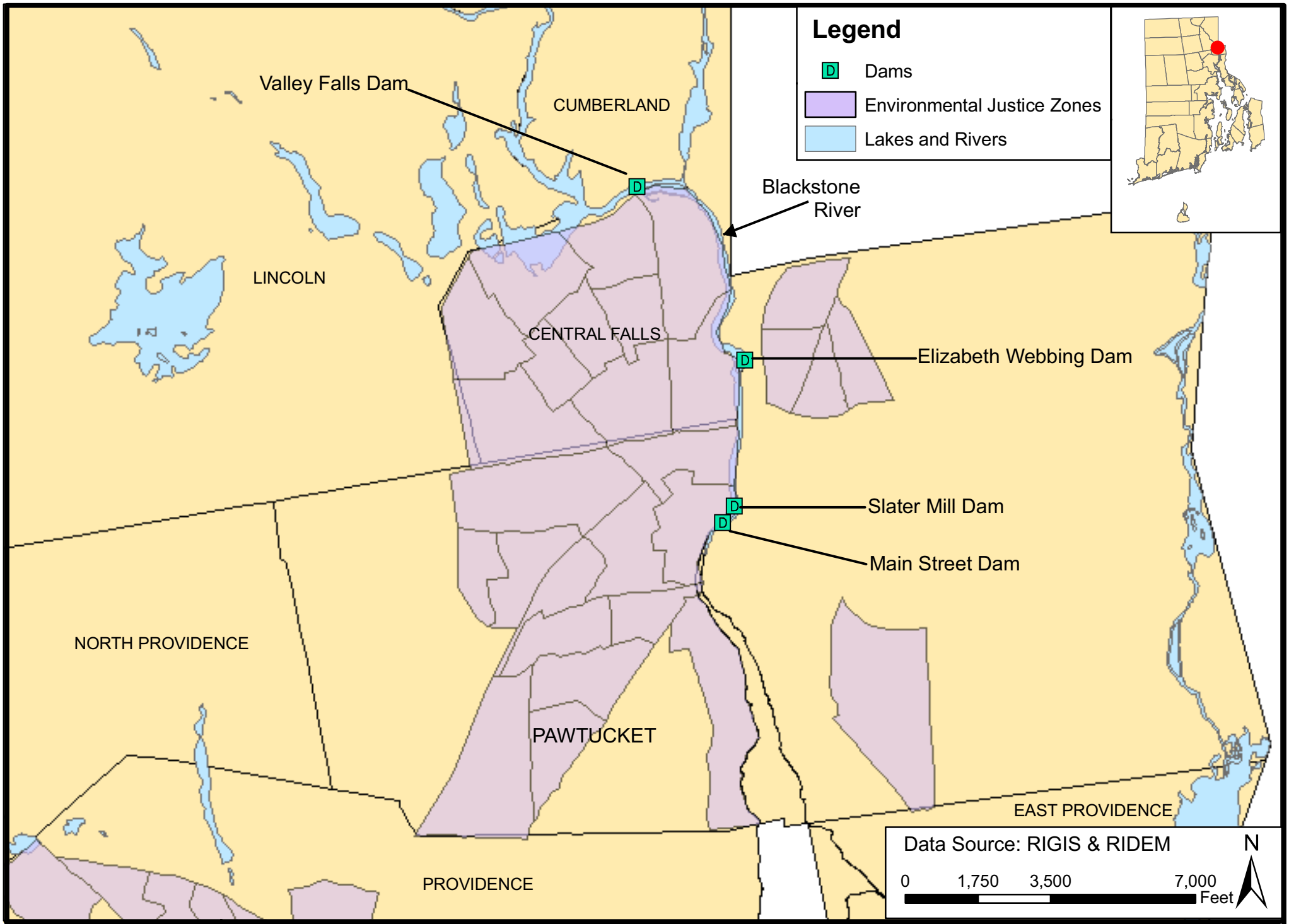


Aerial Photograph Source: Microsoft Visual Earth

NRCS Natural Resources Conservation Service	FIGURE 11: SLATER MILL	PROJECT MGR: SW	DESIGNED BY: MR	CREATED BY: MR	CHECKED BY: SW	DATE: NOVEMBER 2008	EA PROJECT NO: 6213008	FILE: FIG 11 SLATER MILL.MXD

Aerial Photograph Source: Microsoft Visual Earth

NRCS Natural Resources Conservation Service	FIGURE 12: ROOSEVELT HYDROELECTRIC	PROJECT MGR: SW	DESIGNED BY: MR	CREATED BY: MR	CHECKED BY: SW	DATE: NOVEMBER 2008	EA PROJECT NO: 6213008	FILE: FIG 12 ROOSEVELT HYDRO.MXD



NRCS Natural Resources Conservation Service	FIGURE 13: ENVIRONMENTAL JUSTICE ZONE MAP	PROJECT MGR: SW	DESIGNED BY: ST	CREATED BY: ST	CHECKED BY: SW	SCALE: AS SHOWN	DATE: NOVEMBER 2008	EA PRJT NO: 62130.08	FILE: FIG 13 ENV JUSTICE .MXD

Appendix A

Notification and Solicitation of Comments for Proposed Blackstone River Fish Passage Restoration Project and Corresponding Responses

EA Engineering, Science, and Technology, Inc.

Airport Professional Park
2350 Post Road
Warwick, Rhode Island 02886
Telephone: 401-736-3440
Fax: 401-736-3423
www.eaest.com

October 16, 2007

Department of Planning
City Hall, City of Central Falls
580 Broad Street
Central Falls, Rhode Island 02863

Re: Notification and Solicitation of Comments for Proposed Blackstone River Fish Passage Restoration Project

Dear Sir or Madam:

On behalf of the United State Department of Agriculture's Natural Resource Conservation Service (NRCS) and acting as their authorized agent, EA Engineering, Science and Technology, Inc. hereby solicits concerns and/or comments regarding the NRCS's proposed anadromous fish passage restoration activities at four dams along the Blackstone River in Pawtucket, Central Falls, and Cumberland, Rhode Island (refer to attached Project Locus and Aerial Photographs). The proposed project includes the installation of structure assisted fish passages at the Main Street (Pawtucket, RI), Slater Mill (Pawtucket, RI), and Valley Falls Dam (Central Falls/Cumberland, RI), and the removal of the Elizabeth Webbing Dam (Central Falls/Pawtucket, RI).

These restoration activities are necessary to restore anadromous fish passage to historic upstream spawning habitats. As this action is being partially and/or fully funded by a Federal agency and per the National Environmental Policy Act (NEPA) of 1969, an Environmental Assessment (EA) is being prepared to evaluate environmental and public-interest concerns associated with this proposal. This document is currently being prepared and your department will have an opportunity to review the draft EA.

Some facts concerning this proposal are as follows:

1 According to historical research, the Blackstone River supported an abundance of anadromous fish, including Atlantic salmon (*Salmo salar*), American shad (*Alosa sapidissima*), blueback herring (*Alosa aestivalis*), and alewives (*Alosa psuedoharengus*).

2 Numerous dams were constructed on the river to harness natural water power during the Industrial Revolution, many of which still remain today. These dams are impeding the passage of these anadromous fish to their upstream spawning habitats.

3 The proposed project would allow fish populations to return to spawning habitats upstream through either the installation of structure assisted fish passages, or the removal of certain dams.

4 In 1993 the Rhode Island Division of Fish and Wildlife performed a study in which 3,000 blueback herring were released into the Blackstone River. The study confirmed that there is adequate habitat to support herring restoration in the upstream portions of the lower Blackstone River.

5 Species would be reintroduced and be able to migrate to places along the river that are currently unreachable. The goal is that the fish populations will eventually become self sustainable and stocking will not be necessary to maintain the populations.

6 Per NEPA, all pertinent federal, state, and local agencies will be consulted during the EA process. Environmental, social, and economical impact analyses will be conducted to evaluate the impacts of the proposed project on surrounding environments.

This is an iterative process, and fish passage and/or dam removal designs are flexible as sensitive receptors are identified. Additional alternatives are being considered, including a No Action Alternative.

Information and data collected from this solicitation will be included in the EA for the project. Please forward concerns/comments to me no later than 30 days from the date of this letter so that they might be included in the DRAFT EA. If you should have any questions regarding this letter, please feel free call me at 401-736-3440, extension 207, or email me at swhitin@eaest.com. We look forward to your response.

Sincerely,

EA ENGINEERING, SCIENCE, AND
TECHNOLOGY, INC.

Samuel S. Whitin
Project Manager

SSW/mr
Enclosures

EA Engineering, Science, and Technology, Inc.

Airport Professional Park
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Warwick, Rhode Island 02886
Telephone: 401-736-3440
Fax: 401-736-3423
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October 16, 2007

Department of Planning
City Hall, City of Pawtucket
137 Roosevelt Avenue
Pawtucket, Rhode Island 02860

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Sincerely,

EA ENGINEERING, SCIENCE, AND
TECHNOLOGY, INC.

Samuel S. Whitin
Project Manager

SSW/mr
Enclosures

CITY OF PAWTUCKET
RHODE ISLAND

DEPARTMENT OF PLANNING AND REDEVELOPMENT

JAMES E. DOYLE
MAYOR

MICHAEL D. CASSIDY
DIRECTOR

October 30, 2007

Mr. Samuel S. Whitin
Project Manager
EA Engineering, Science, and Technology, Inc.
Airport Professional Park
2350 Post Road
Warwick, RI 02886

SUBJECT: Proposed Blackstone River Fish Passage Restoration Project

Dear Mr. Whitin:

On behalf of the City of Pawtucket, I am responding to your notification and solicitation of comments on this project. The Department of Planning and Redevelopment has represented the City over the past number of years in the discussion with regard to the opportunity and interest in restoring anadromous fish to the Blackstone River. Our only concerns regarding this project is that the effort be made as part of the design of the fish ladders to make sure there is minimal impact on the historic quality and character of the Main Street bridge and dam and the Slater Mill Historic Site and the dam associated with the mill.

The other comment I want to make regarding the Elizabeth Webbing dam is that the City of Pawtucket, Rhode Island Department of Environmental Manager, and Rhode Island Department of Transportation have been working on the proposed Blackstone River Bike Trail which would run along the river's edge adjacent to the Blackstone River at the Elizabeth Webbing dam, so the route for the bike trail should be taken into consideration as the plans for the fish ladder are further developed.

I would be more than happy to meet and discuss the City's concerns and interest in the project and provide you with additional information on the proposed Bike Trail route that will be helpful.

Sincerely,

Michael D. Cassidy
Director

MDC:mb

Cc: Jack Carney, Director of Public Works
Stephen Ricci, City Engineer

F:\DPR\Whitin.FishPassage.mdc.doc

EA Engineering, Science, and Technology, Inc.

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2350 Post Road
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Telephone: 401-736-3440
Fax: 401-736-3423
www.eaest.com

October 16, 2007

Mr. Grover Fugate
Executive Director
Coastal Resources Management Council
Stedman Government Center - Suite 116
4808 Tower Hill Road
Wakefield, RI 02879

Re: Notification and Solicitation of Comments for Proposed Blackstone River Fish Passage Restoration Project

Dear Mr. Fugate:

On behalf of the United State Department of Agriculture's Natural Resource Conservation Service (NRCS) and acting as their authorized agent, EA Engineering, Science and Technology, Inc. hereby solicits concerns and/or comments regarding the NRCS's proposed anadromous fish passage restoration activities at four dams along the Blackstone River in Pawtucket, Central Falls, and Cumberland, Rhode Island (refer to attached Project Locus and Aerial Photographs). The proposed project includes the installation of structure assisted fish passages at the Main Street (Pawtucket, RI), Slater Mill (Pawtucket, RI), and Valley Falls Dam (Central Falls/Cumberland, RI), and the removal of the Elizabeth Webbing Dam (Central Falls/Pawtucket, RI).

These restoration activities are necessary to restore anadromous fish passage to historic upstream spawning habitats. As this action is being partially and/or fully funded by a Federal agency and per the National Environmental Policy Act (NEPA) of 1969, an Environmental Assessment (EA) is being prepared to evaluate environmental and public-interest concerns associated with this proposal. This document is currently being prepared and your department will have an opportunity to review the draft EA.

Some facts concerning this proposal are as follows:

1 According to historical research, the Blackstone River supported an abundance of anadromous fish, including Atlantic salmon (*Salmo salar*), American shad (*Alosa sapidissima*), blueback herring (*Alosa aestivalis*), and alewives (*Alosa psuedoharengus*).

2 Numerous dams were constructed on the river to harness natural water power during the Industrial Revolution, many of which still remain today. These dams are impeding the passage of these anadromous fish to their upstream spawning habitats.

3 The proposed project would allow fish populations to return to spawning habitats upstream through either the installation of structure assisted fish passages, or the removal of certain dams.

4 In 1993 the Rhode Island Division of Fish and Wildlife performed a study in which 3,000 blueback herring were released into the Blackstone River. The study confirmed that there is adequate habitat to support herring restoration in the upstream portions of the lower Blackstone River.

5 Species would be reintroduced and be able to migrate to places along the river that are currently unreachable. The goal is that the fish populations will eventually become self sustainable and stocking will not be necessary to maintain the populations.

6 Per NEPA, all pertinent federal, state, and local agencies will be consulted during the EA process. Environmental, social, and economical impact analyses will be conducted to evaluate the impacts of the proposed project on surrounding environments.

This is an iterative process, and fish passage and/or dam removal designs are flexible as sensitive receptors are identified. Additional alternatives are being considered, including a No Action Alternative.

Information and data collected from this solicitation will be included in the EA for the project. Please forward concerns/comments to me no later than 30 days from the date of this letter so that they might be included in the DRAFT EA. If you should have any questions regarding this letter, please feel free call me at 401-736-3440, extension 207, or email me at swhitin@eaest.com. We look forward to your response.

Sincerely,

EA ENGINEERING, SCIENCE, AND
TECHNOLOGY, INC.

Samuel S. Whitin
Project Manager

SSW/mr
Enclosures

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October 16, 2007

Mr. Arthur Cleaves
Regional Administrator, Region I
Federal Emergency Management Agency
6th Floor
99 High Street
Boston, MA 02110

Re: Notification and Solicitation of Comments for Proposed Blackstone River Fish Passage Restoration Project

Dear Mr. Cleaves:

On behalf of the United State Department of Agriculture's Natural Resource Conservation Service (NRCS) and acting as their authorized agent, EA Engineering, Science and Technology, Inc. hereby solicits concerns and/or comments regarding the NRCS's proposed anadromous fish passage restoration activities at four dams along the Blackstone River in Pawtucket, Central Falls, and Cumberland, Rhode Island (refer to attached Project Locus and Aerial Photographs). The proposed project includes the installation of structure assisted fish passages at the Main Street (Pawtucket, RI), Slater Mill (Pawtucket, RI), and Valley Falls Dam (Central Falls/Cumberland, RI), and the removal of the Elizabeth Webbing Dam (Central Falls/Pawtucket, RI).

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Sincerely,

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TECHNOLOGY, INC.

Samuel S. Whitin
Project Manager

SSW/mr
Enclosures

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October 16, 2007

Ms. Kimberly Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Re: Notification and Solicitation of Comments for Proposed Blackstone River Fish Passage Restoration Project

Dear Ms. Bose:

On behalf of the United State Department of Agriculture's Natural Resource Conservation Service (NRCS) and acting as their authorized agent, EA Engineering, Science and Technology, Inc. hereby solicits concerns and/or comments regarding the NRCS's proposed anadromous fish passage restoration activities at four dams along the Blackstone River in Pawtucket, Central Falls, and Cumberland, Rhode Island (refer to attached Project Locus and Aerial Photographs). The proposed project includes the installation of structure assisted fish passages at the Main Street (Pawtucket, RI), Slater Mill (Pawtucket, RI), and Valley Falls Dam (Central Falls/Cumberland, RI), and the removal of the Elizabeth Webbing Dam (Central Falls/Pawtucket, RI).

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Sincerely,

EA ENGINEERING, SCIENCE, AND
TECHNOLOGY, INC.

Samuel S. Whitin
Project Manager

SSW/mr
Enclosures

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October 16, 2007

Mr. John Brown
Tribal Historic Preservation Officer
Narragansett Indian Tribal Historic Preservation Office
P.O. Box 700
Wyoming, Rhode Island 02898
(401) 539-1190

Re: Section 106 Consultation – Historical, Cultural & Archaeological Resources Inquiry for Proposed Blackstone River Fish Passage Restoration Project

Dear Mr. Brown:

On behalf of the United States Department of Agriculture's Natural Resource Conservation Service (NRCS) and acting as their authorized agent, EA Engineering, Science and Technology, Inc. hereby requests information regarding Narragansett Tribal protected historical, cultural and archaeological resources in the vicinity of the Main Street, Slater Mill, Elizabeth Webbing, and Valley Falls Dams located in Pawtucket, Central Falls, and Cumberland, Rhode Island for the proposed anadromous fish restoration activities at these dams (refer to attached Project Locus and Site Map). Each of the four dams is located along Blackstone River.

This information will be included in the Environmental Assessment being prepared per the National Environmental Policy Act (NEPA) of 1969. If you should have any questions, please feel free call me at 401-736-3440, extension 207, or email me at swhitin@eaest.com. We look forward to your response.

Sincerely,

EA ENGINEERING, SCIENCE, AND
TECHNOLOGY, INC.

Samuel S. Whitin
Project Manager

SSW/mr
Enclosures

cc: Doug Harris, Narragansett Indian Tribal Historic Preservation Office

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
60 Quaker Lane, Suite 46
Warwick, RI 02886
Phone (401) 828-1300, Fax (401) 828-0433

USDA

Helping People Help the Land...

Mr. Doug Harris
Deputy Tribal Historic Preservation Officer
Narragansett Indian Tribe
PO Box 700
Wyoming, RI 02898

Date: July 2, 2008

RE: Cultural resource consultation on proposed activities on the Blackstone River

Dear Mr. Harris:

As a follow up to our phone conversation yesterday June 26, 2008; I am providing for your review materials associated with NRCS funded conservation program contracts to restore migratory fisheries on the lower Blackstone River. We have conservation cost share agreements in place with landowners at three fish passage locations: 1 (Main Street dam), dam 2 (Old Slater Mill dam), and dam 4 (Valley Falls).

We look forward working with you and the Tribal Historic Preservation Office in these historic undertakings to restore River herring, American Shad, American eel and other species to the Blackstone River. Any questions, comments, or concerns that you have regarding this project can be directed to me at 401-822-8842, Reena Shaw, Cultural Resources Coordinator at (401) 822-8840 or Eric Scherer, State Resource Conservationist (401) 822-8814

Sincerely,

Andrew Lipsky
State Biologist

Attachments

The Natural Resources Conservation Service provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment.

An Equal Opportunity Provider and Employer

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
60 Quaker Lane, Suite 46
Warwick, RI 02886
Phone (401) 828-1300, Fax (401) 828-0433

USDA

Helping People Help the Land...

Mr. Charles Green
Program Assistant Director
Mashpee Wampanoag Tribe
766 Falmouth Road
Unit A3
PO Box 1048
Mashpee, MA 02649

Date: July 2, 2008

RE: Cultural resource consultation on proposed activities on the Blackstone River

Dear Mr. Green:

As a follow up to your meeting with Roylene Rides at the Door and other NRCS staff in regards to NRCS cultural resource consultation activities, I am providing for your review materials associated with NRCS funded conservation program contracts to restore migratory fisheries on the lower Blackstone River. We have conservation cost share agreements in place for three fish passage restoration locations: dam 1 (Main Street dam), dam 2 (Old Slater Mill dam), and dam 4 (Valley Falls).

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60 Quaker Lane, Suite 46
Warwick, RI 02886
Phone (401) 828-1300, Fax (401) 828-0433

USDA

Helping People Help the Land...

Ms. Bettina Washington
Tribal Historic Preservation Officer
Wampanoag Tribe of Gay Head
20 Black Brook Road
Aquinnah, MA 02535-1546

Date: July 2, 2008

RE: Cultural resource consultation on proposed activities on the Blackstone River

Dear Ms. Washington:

As a follow up to your meeting with Roylene Rides at the Door and other NRCS staff in regards to NRCS cultural resource consultation activities, I am providing for your review materials associated with NRCS funded conservation program contracts to restore migratory fisheries on the lower Blackstone River. We have conservation cost share agreements in place for three fish passage restoration locations: dam 1 (Main Street dam), dam 2 (Old Slater Mill dam), and dam 4 (Valley Falls).

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October 16, 2007

Mr. Jack Terrill
Asst. Regional Admin. For Habitat Conservation
National Marine Fisheries Service
One Blackburn Drive
Gloucester, MA 01930

Re: Notification and Solicitation of Comments for Proposed Blackstone River Fish Passage Restoration Project

Dear Mr. Terrill:

On behalf of the United State Department of Agriculture's Natural Resource Conservation Service (NRCS) and acting as their authorized agent, EA Engineering, Science and Technology, Inc. hereby solicits concerns and/or comments regarding the NRCS's proposed anadromous fish passage restoration activities at four dams along the Blackstone River in Pawtucket, Central Falls, and Cumberland, Rhode Island (refer to attached Project Locus and Aerial Photographs). The proposed project includes the installation of structure assisted fish passages at the Main Street (Pawtucket, RI), Slater Mill (Pawtucket, RI), and Valley Falls Dam (Central Falls/Cumberland, RI), and the removal of the Elizabeth Webbing Dam (Central Falls/Pawtucket, RI).

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Sincerely,

EA ENGINEERING, SCIENCE, AND
TECHNOLOGY, INC.

Samuel S. Whitin
Project Manager

SSW/mr
Enclosures

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October 16, 2007

Mr. Peter Colosi
National Marine Fisheries Service
One Blackburn Drive
Gloucester, MA 01930

Re: Notification and Solicitation of Comments for Proposed Blackstone River Fish Passage Restoration Project

Dear Mr. Colosi:

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EA ENGINEERING, SCIENCE, AND
TECHNOLOGY, INC.

Samuel S. Whitin
Project Manager

SSW/mr
Enclosures

Richardson, Matthew

From: Richardson, Matthew
Sent: Thursday, January 24, 2008 3:54 PM
To: Richardson, Matthew
Subject: FW: [Fwd: Blackstone River restoration proposal]

-----Original Message-----
From: Sean McDermott [mailto:Sean.McDermott@Noaa.Gov]
Sent: Monday, October 29, 2007 1:16 PM
To: Whitin, Sam
Cc: Boelke Christopher
Subject: [Fwd: Blackstone River restoration proposal]

Samuel,
NOAA Fisheries has reviewed the information request by EA Engineering regarding the Blackstone River fish passage restoration project.
Without specific details we are not able to provide specific recommendations. However, we are able to provide some general comments associated with dam removal and fish passage projects. As such, NOAA Fisheries recommends the environmental assessment evaluate the following:

1. Presence/absence of contaminants in the sediment within the impoundment and in the stream banks upstream of the dam removal site. Transport of contaminated sediments and potential exposure of contaminated materials after lowering of the headpond are a concern during and after dam removal activities.

2. Time of construction for each fishway and the dam removal if anadromous/resident species are present. All in water construction activities should occur when aquatic species are less vulnerable (e.g. during low flow season or outside a migration season).

3. The volume, type, and handling of sediment accumulated within the impoundment of the proposed dam removal.

4. The design of the dam removal and potential for any remnants of the dam to create a hydrologic barrier to fish passage.

5. Alternatives that consider removal of each dam in this project.

If you have any questions concerning these comments feel free to contact me.

--
Sean McDermott
Fisheries Biologist
National Marine Fisheries Service
1 Blackburn Drive
Gloucester, MA 01930
978-281-9113 Fax 978-281-9301

EA Engineering, Science, and Technology, Inc.

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Warwick, Rhode Island 02886
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October 16, 2007

Mr. W. Michael Sullivan, Ph.D.
Director
Rhode Island Department of Environmental Management
235 Promenade Street
Providence, RI 02908

Re: Notification and Solicitation of Comments for Proposed Blackstone River Fish Passage Restoration Project

Dear Mr. Sullivan:

On behalf of the United State Department of Agriculture's Natural Resource Conservation Service (NRCS) and acting as their authorized agent, EA Engineering, Science and Technology, Inc. hereby solicits concerns and/or comments regarding the NRCS's proposed anadromous fish passage restoration activities at four dams along the Blackstone River in Pawtucket, Central Falls, and Cumberland, Rhode Island (refer to attached Project Locus and Aerial Photographs). The proposed project includes the installation of structure assisted fish passages at the Main Street (Pawtucket, RI), Slater Mill (Pawtucket, RI), and Valley Falls Dam (Central Falls/Cumberland, RI), and the removal of the Elizabeth Webbing Dam (Central Falls/Pawtucket, RI).

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EA ENGINEERING, SCIENCE, AND
TECHNOLOGY, INC.

Samuel S. Whitin
Project Manager

SSW/mr
Enclosures

RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
235 Promenade Street, Providence, RI 02908-5767 TDD 401-222-4462

November 9, 2007

Samuel S. Whitin,
Project Manager of EA Engineering, Science and Technology Inc.
Airport Professional Park
2350 Post Road
Warwick, Rhode Island 02886

Dear Mr. Whitin:

The Department of Environmental Management supports several new initiatives for anadromous habitat restoration projects throughout Rhode Island in particular the Blackstone River Fish Passage Project which has been a priority for restoration since 2000.The Department looks forward to continue its participation on the steering committee and its partners to determine the best alternative for each restoration site.

Our preliminary numbers indicate that fish passage above the first four dams on the Blackstone River would provide access to over 200 acres of spawning and nursery habitat. This additional habitat could provide habitat for 140,000 river herring and thousands of American shad.

Response to EA's facts # 1

A Historical Assessment of Anadromous Fish in the Blackstone River was prepared by Betty Buckley and Scott Nixon, URI, in November, 2001. Much of the information was from old court records and newspaper articles. In the past, the Department's target species for which fish passage, was designed for river herring with the possibility for American shad as well as other salmonids.

Response to EA's fact # 4

During the spring of 1993 the Department stocked 3,000 adult blue back herring into the Blackstone River. On August 26, 1993 the Department sampled the young from that stock above the obstructions via boat electrofishing finding that the river provided sufficient spawning and nursery habitat and the water quality (DO, pH, temperature) to support river herring. Since then the Department has not conducted any further fish stocking studies or water quality testing.

Response to EA's fact # 5

30% post-consumer fiber

If the obstructions were removed or fish passage was put in place, anadromous fish would be able to reach and access an additional 200 acres of spawning and nursery habitat. There are also restoration opportunities within the Abbot Run River, which is located between Elizabeth Webbing and Valley Falls Dam. The Blackstone River would be a candidate to receive river herring broodstock and be placed on a prioritize list for stocking each spring. The Department's goal is to create a self-sustaining anadromous fish population following several years of stocking. At that point stocking will be discontinued and the restored system can be used as a broodstock source for stocking future restorations.

Response to EA's fact #6

As needed, the Department will provide input and technical assistance to the NEPA process to evaluate environmental, social, and economical impacts of the proposed projects on surrounding environments. In addition, the Department will provide input to other federal, state and local agencies during the permitting stages and reviewing process.

If fish passage is a preferred alternative then considerations can be designed to accommodate electronic fish counters installation, fish trap and possible public viewing windows or web cameras. A fish trap incorporated into one of the lower fishways would allow for transplanting broodstock and monitoring.

Typically with new fishways the Department will provide input to agencies reviewing permits, implement future harvest regulations, assist with the maintenance and operation of the fishway, and prepare a prioritize list of sites each year eligible for broodstock enhancement.

Although the proposed project does not provide access to large impoundments for alewives, it does provide pristine riverine habitat for alewives, blueback herring, and American shad. The Department supports the project and believes it will benefit anadromous fish populations in the future by providing access to valuable nursery and spawning habitat.

The Department is committed to these projects, and hopes that our comments are helpful. If you have any questions, please do not hesitate to contact my office.

Sincerely,

W. Michael Sullivan
Director

Cc: Larry Mouradjian
Michael Lapisky
Christine Dudley
Phillip Edwards

EA Engineering, Science, and Technology, Inc.

Airport Professional Park
2350 Post Road
Warwick, Rhode Island 02886
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Fax: 401-736-3423
www.eaest.com

16 October 2007

Mr. Ron Gagnon
Office of Customer and Technical Assistance
Rhode Island Department of Environmental Management
235 Promenade Street
Providence, RI 02908

Re: Notification and Solicitation of Comments for Proposed Blackstone River Fish Passage Restoration Project

Dear Mr. Gagnon:

On behalf of the United State Department of Agriculture's Natural Resource Conservation Service (NRCS) and acting as their authorized agent, EA Engineering, Science and Technology, Inc. hereby solicits concerns and/or comments regarding the NRCS's proposed anadromous fish passage restoration activities at four dams along the Blackstone River in Pawtucket, Central Falls, and Cumberland, Rhode Island (refer to attached Project Locus and Aerial Photographs). The proposed project includes the installation of structure assisted fish passages at the Main Street (Pawtucket, RI), Slater Mill (Pawtucket, RI), and Valley Falls Dam (Central Falls/Cumberland, RI), and the removal of the Elizabeth Webbing Dam (Central Falls/Pawtucket, RI).

These restoration activities are necessary to restore anadromous fish passage to historic upstream spawning habitats. As this action is being partially and/or fully funded by a Federal agency and per the National Environmental Policy Act (NEPA) of 1969, an Environmental Assessment (EA) is being prepared to evaluate environmental and public-interest concerns associated with this proposal. This document is currently being prepared and your department will have an opportunity to review the draft EA.

Some facts concerning this proposal are as follows:

1 According to historical research, the Blackstone River supported an abundance of anadromous fish, including Atlantic salmon (*Salmo salar*), American shad (*Alosa sapidissima*), blueback herring (*Alosa aestivalis*), and alewives (*Alosa psuedoharengus*).

2 Numerous dams were constructed on the river to harness natural water power during the Industrial Revolution, many of which still remain today. These dams are impeding the passage of these anadromous fish to their upstream spawning habitats.

3 The proposed project would allow fish populations to return to spawning habitats upstream through either the installation of structure assisted fish passages, or the removal of certain dams.

4 In 1993 the Rhode Island Division of Fish and Wildlife performed a study in which 3,000 blueback herring were released into the Blackstone River. The study confirmed that there is adequate habitat to support herring restoration in the upstream portions of the lower Blackstone River.

5 Species would be reintroduced and be able to migrate to places along the river that are currently unreachable. The goal is that the fish populations will eventually become self sustainable and stocking will not be necessary to maintain the populations.

6 Per NEPA, all pertinent federal, state, and local agencies will be consulted during the EA process. Environmental, social, and economical impact analyses will be conducted to evaluate the impacts of the proposed project on surrounding environments.

This is an iterative process, and fish passage and/or dam removal designs are flexible as sensitive receptors are identified. Additional alternatives are being considered, including a No Action Alternative.

Information and data collected from this solicitation will be included in the EA for the project. Please forward concerns/comments to me no later than 30 days from the date of this letter so that they might be included in the DRAFT EA. If you should have any questions regarding this letter, please feel free call me at 401-736-3440, extension 207, or email me at swhitin@eaest.com. We look forward to your response.

Sincerely,

EA ENGINEERING, SCIENCE, AND
TECHNOLOGY, INC.

Samuel S. Whitin
Project Manager

SSW/mr
Enclosures

EA Engineering, Science, and Technology, Inc.

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October 16, 2007

Mr. Greg Mannesto
U.S. Fish and Wildlife Service
Rhode Island Field Office
Route 1A, Shoreline Plaza, P.O. Box 307
Charlestown, RI 02908

Re: Notification and Solicitation of Comments for Proposed Blackstone River Fish Passage Restoration Project

Dear Mr. Mannesto:

On behalf of the United State Department of Agriculture's Natural Resource Conservation Service (NRCS) and acting as their authorized agent, EA Engineering, Science and Technology, Inc. hereby solicits concerns and/or comments regarding the NRCS's proposed anadromous fish passage restoration activities at four dams along the Blackstone River in Pawtucket, Central Falls, and Cumberland, Rhode Island (refer to attached Project Locus and Aerial Photographs). The proposed project includes the installation of structure assisted fish passages at the Main Street (Pawtucket, RI), Slater Mill (Pawtucket, RI), and Valley Falls Dam (Central Falls/Cumberland, RI), and the removal of the Elizabeth Webbing Dam (Central Falls/Pawtucket, RI).

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Sincerely,

EA ENGINEERING, SCIENCE, AND
TECHNOLOGY, INC.

Samuel S. Whitin
Project Manager

SSW/mr
Enclosures

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23 October 2007

Mr. Edward Szymanski
Environmental Office
Rhode Island Department of Transportation
Two Capitol Hill
Providence, RI 02903

Re: Notification and Solicitation of Comments for Proposed Blackstone River Fish Passage Restoration Project

Dear Mr. Szymanski:

On behalf of the United State Department of Agriculture's Natural Resource Conservation Service (NRCS) and acting as their authorized agent, EA Engineering, Science and Technology, Inc. hereby solicits concerns and/or comments regarding the NRCS's proposed anadromous fish passage restoration activities at four dams along the Blackstone River in Pawtucket, Central Falls, and Cumberland, Rhode Island (refer to attached Project Locus and Aerial Photographs). The proposed project includes the installation of structure assisted fish passages at the Main Street (Bridge #966, Pawtucket, RI), Slater Mill (Pawtucket, RI), and Valley Falls Dam (Central Falls/Cumberland, RI), and the removal of the Elizabeth Webbing Dam (Central Falls/Pawtucket, RI).

These restoration activities are necessary to restore anadromous fish passage to historic upstream spawning habitats. As this action is being partially and/or fully funded by a Federal agency and per the National Environmental Policy Act (NEPA) of 1969, an Environmental Assessment (EA) is being prepared to evaluate environmental and public-interest concerns associated with this proposal. This document is currently being prepared and your department will have an opportunity to review the draft EA.

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Information and data collected from this solicitation will be included in the EA for the project. Please forward concerns/comments to me no later than 30 days from the date of this letter so that they might be included in the DRAFT EA. If you should have any questions regarding this letter, please feel free call me at 401-736-3440, extension 207, or email me at swhitin@eaest.com. We look forward to your response.

Sincerely,

EA ENGINEERING, SCIENCE, AND
TECHNOLOGY, INC.

Samuel S. Whitin
Project Manager

SSW/mr
Enclosures

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October 16, 2007

Mr. Edward Sanderson
Director
Rhode Island Historic Preservation & Heritage Commission
150 Benefit Street
Providence, Rhode Island 02903

Re: Section 106 Consultation – Historical, Cultural & Archaeological Resources Inquiry for Proposed Blackstone River Fish Passage Restoration Project

Dear Mr. Sanderson:

On behalf of the United States Department of Agriculture's Natural Resource Conservation Service (NRCS) and acting as their authorized agent, EA Engineering, Science and Technology, Inc. hereby requests information regarding State protected historical, cultural and archaeological resources in the vicinity of the Main Street, Slater Mill, Elizabeth Webbing, and Valley Falls Dams located in Pawtucket, Central Falls, and Cumberland, Rhode Island for the proposed anadromous fish restoration activities at these dams (refer to attached Project Locus and Site Map). Each of the four dams is located along Blackstone River.

This information will be included in the Environmental Assessment being prepared per the National Environmental Policy Act (NEPA) of 1969. If you should have any questions, please feel free call me at 401-736-3440, extension 207, or email me at swhitin@eaest.com. We look forward to your response.

Sincerely,

EA ENGINEERING, SCIENCE, AND
TECHNOLOGY, INC.

Samuel S. Whitin
Project Manager

SSW/mr
Enclosures

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
HISTORICAL PRESERVATION & HERITAGE COMMISSION
Old State House • 150 Benefit Street • Providence, R.I. 02903-1209
TEL (401) 222-2678 FAX (401) 222-2968
TTY (401) 222-3700 Website www.preservation.ri.gov

5 November 2007

Mr. Samuel S. Whitin, Project Manager
EA Engineering, Science, and Technology, Inc.
Airport Professional Park
2350 Post Road
Warwick, Rhode Island 02886

Dear Mr. Whitin:

I am in receipt of your letter of October 16, 2007 requesting information related to a project for which you are acting on behalf of the United States Department of Agriculture's Natural Resource Conservation Service. Enclosed with this letter please find two CDs of information and printouts from our Candidate Files and National Register Eligible Properties databases. The CDs contain National Register of Historic Places nominations for the three towns about which you inquired, and state survey reports, which are available for download from our website, for those three towns.

Under Section 106 of the National Historic Preservation Act of 1966 (as amended), the responsibility for resource identification lies with the federal agency undertaking a project. We are glad to make our resource files available to the Department of Agriculture and their consultants to aid in the identification process.

If you have any further questions about the enclosed materials, don't hesitate to contact me.

Sincerely,

Jeffrey D. Emidy
Project Review Coordinator

071105.05

Date	Name	Address	Town	Status
	Roosevelt Avenue Bridge	Roosevelt Avenue (over Blackstone River)	Central Falls	DOE
	Broad Street Bridge	Broad Street (over Blackstone River)	Central Falls	DOE
09/15/1998	Central Braid Mill/American Supply Company	Broad St	Central Falls	
03/26/1992	Monast Building	Broad St	Central Falls	

Date	Name	Address	Town	Status
07/27/1993	Union Chapel & George Washington Memorial Park		Cumberland	
	Broad Stret Bridge	Broad St., over Blackstone River	Cumberland	DOE
	Church Street Railroad Bridge	Church Street, over P&W Railroad	Cumberland	DOE
01/03/2003	Newell Bridge	Diamond Hill Road	Cumberland	
	Howard Road Bridge	Howard Road, over Abbott Run	Cumberland	DOE
03/18/1997	Manville Mills Site	Manville Rd	Cumberland	
	Rawson Road Bridge (east)	Rawson Road, over Abbott Run	Cumberland	DOE
	Rawson Road Bridge (west)	Rawson Road, over Abbott Run	Cumberland	DOE

Date	Name	Address	Town	Status
04/26/1999	Manville Jenkes Company Complex		Pawtucket	
	Royal Weaving Company Mill Complex	300 Cottage Street	Pawtucket	DOE
04/26/1999	RI Cardboard	Exchange St	Pawtucket	NR listed: Exchange St HD 09/06/02
	Exchange Street Bridge	Exchange Street, over Blackstone River	Pawtucket	DOE
02/01/1994	Jenks House	165 Pine St	Pawtucket	Since Ineligible

Town	Address/Location	Property Name	Candidate Type	Construction Date
Central Falls	Broad Street	Broad Street Bridge	CDOE	
Central Falls	324 Broad Street	Grant House/Central Falls YWCA	not eligible	1880's
Central Falls	551 Broad Street	Broad Street Fire Station	potential	1889
Central Falls	702 Broad Street	DeNevers Building	potential	c. 1895
Central Falls	708 Broad Street	Cartier Building	potential	1893
Central Falls	27 Foundry Street	Fales and Jenks Mill	potential	1863
Central Falls	21 Hedley Avenue	Hedley Avenue School	not eligible	1875, 1884
Central Falls	High Street	Pierce Fight Site	potential	1676
Central Falls	1172 High Street	Spintex Company	demolished	
Central Falls	978 Lonsdale Avenue	Soldiers' Monument	potential	

Town	Address/Location	Property Name	Candidate Type	Construction Date
Cumberland	Old West Wrentham Road	Orchard House/Cyrus Cook House	potential	1810
Cumberland		Valley Falls Historic District	potential	
Cumberland	160 Angell Road	Greyrock	potential	1920
Cumberland	Broad Street	B.F. Norton School	not eligible	1889
Cumberland	Broad Street	Cumberland Town Hall	potential	1894
Cumberland	561 Broad Street	Kent-Smith House	potential	c. 1838
Cumberland	Church Street	Church Street Railroad Bridge	DOE	1882
Cumberland	2944 Diamond Hill Road	Whipple House	potential	1809
Cumberland	3628 Diamond Hill Road	Whipple House	potential	late 19th century
Cumberland	High Street & Pound Road	Union Chapel/George Washington Memorial Park	not eligible	
Cumberland		Old West Wrentham Road Historic District	potential	
Cumberland	2799 Mendon Road	Angell-Carpenter House	not eligible	c. 1800
Cumberland	Rawson Road	Rawson Road Bridges, Nos. 457&460	DOE	c. 1886
Cumberland	Albion Road	Albion Bridge	DOE	1885; reconstructed 1995/1996
Cumberland	Broad Street	Valley Falls Mill Archaeological Site	CDOE	
Cumberland	Newell Street	Newell Bridge No 204	CDOE	
Cumberland	Sneech Pond Road	Arnolds Mills Bridge	DOE	1886
Cumberland	Tower Hill Road	Beacon Pole Hill	not eligible	c. 1775
Cumberland	Tower Hill Road	Miller House	potential	c. 1797
Cumberland	George Washington Highway (RI 116)	Ashton Viaduct	DOE	1934-1945
Cumberland	Wrentham Road	Grant's Mill	potential	c. 1818
Cumberland	Howard Road	Howard Road Bridge	DOE	c. 1886
Cumberland	Curran Road	St. Basil Melkite Cemetery	not eligible	
Cumberland	Diamond Hill Road	Nine Men's Misery	unknown	

Town	Address/Location	Property Name	Candidate Type	Construction Date
Pawtucket		Church Hill Residential District	not eligible	
Pawtucket		Darlington Historic District	unknown	
Pawtucket		Quality Hill Historic District - Boundary Increase	potential	
Pawtucket	659 Armistice Boulevard	Seekonk Lace Mill	demolished	
Pawtucket	9 Beech Street	Vernon T. Barber House	potential	1900-1901
Pawtucket	800 Beverage Hill Avenue	Narragansett Park	not eligible	1934
Pawtucket	Broad Street	Pawtucket-Central Falls RR Station	DOE	1915
Pawtucket	Central Avenue	Greene & Daniels Mill	potential	1860 et seq.
Pawtucket	413 Central Avenue	Phillips Wire Company Buildings	potential	
Pawtucket	Columbus Avenue	McCoy Stadium	potential	1938- 1940
Pawtucket	56 Columbus Avenue	Nehemiah Bucklin House	not eligible	1938- 1940
Pawtucket	300 Cottage Street	Royal Weaving Company Mill	DOE	1900, 1905, 1909, 1914
Pawtucket	53 East Avenue	Pawtucket Boys' Club Building	potential	1902
Pawtucket	166 East Street	Colvin/Woodcock/Kulik House	potential	c.1852, remodeled c. 1880
Pawtucket	520 East Avenue	Edward Whittemore House	not eligible	c. 1830's
Pawtucket	Exchange Street	Exchange Street Bridge	DOE	
Pawtucket	3 Exchange Street	Beswick Building	not eligible	1891
Pawtucket	60 Exchange Street	Graham Block	potential	c. 1925
Pawtucket	207 Garden Street	house	not eligible	
Pawtucket	216 Main Street	Providence County Savings Bank	not eligible	1901
Pawtucket	420 Main Street	Fire Station #2	not eligible	1905- 1906
Pawtucket	Middle Street	Silver Top Diner	potential	
Pawtucket	Montgomery and Exchange Streets	United States Post Office	DOE	1932
Pawtucket	146-150 Mulberry Street	Hodge House	not eligible	1878
Pawtucket	67 Park Place	Jonathan Baker House	not eligible	1823
Pawtucket	165 Pine Street	Jenks House	not eligible	1873- 1874
Pawtucket	50 Prospect Street	Gilbert Carpenter House	not eligible	c. 1830
Pawtucket	617 Prospect Street		not eligible	
Pawtucket	Roosevelt Avenue	Pawtucket Fire Engine #1	not eligible	
Pawtucket	25 Roosevelt Avenue	Bridge Mill Power Plant Dam	CDOE	1893- 1894
Pawtucket	316 Roosevelt Avenue	Franklin P. Rand House	not eligible	c. 1835, moved?
Pawtucket	353 Roosevelt Avenue	Moses Morse House	potential	c. 1845
Pawtucket	(640) Roosevelt Avenue	Roosevelt Avenue Bridge	DOE	1910
Pawtucket	Taft Street	Pawtucket Gas Company Plant	unknown	
Pawtucket	10 Webster Street	Our Lady of Consolation School	potential	

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
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TTY (401) 222-3700 Website www.preservation.ri.gov

FILE COPY

RECEIVED
APR 23 2008
NRCS, WARWICK, RI

15 April 2008

Ms. Reena L. Shaw, Cultural Resources Coordinator
USDA Natural Resources Conservation Service
60 Quaker Lane, Suite 46
Warwick, Rhode Island 02886

Re: Fish Passage Project
Slater Mill Dam
Pawtucket, Rhode Island

Dear Ms. Shaw:

The Rhode Island Historical Preservation and Heritage Commission (RIHPHC) staff has reviewed the Draft Environmental Assessment and other information that you submitted for the above referenced project. We have previously provided comments on the Draft Environmental Assessment about the need to correct statements regarding the Slater and Wilkinson Mills. Slater Mill Dam is an element of the Old Slater Mill Historic Site, which is listed in the National Register of Historic Places and is a National Historic Landmark property.

The proposal lists three alternatives for providing fish passage through the Slater Mill Dam. Alternative 1 includes the construction of a Denil-style fish ladder at the site. Alternative 2 includes full removal of the Slater Mill Dam. Alternative 3 is the "no action" alternative.

Our conclusion regarding Alternative 1 is that the construction of a Denil-style fish ladder at the east end of the dam would introduce a non-historic visual element to the historic resource. Both the construction of the ladder and the creation of a notch in the sill of the dam for downstream passage will have direct physical effects on the historic resource. It is our conclusion that this alternative would produce an adverse effect to historic resources, as defined in the Procedures of the Advisory Council on Historic Preservation. We believe that measures to mitigate the adverse effect could be proposed.

Alternative 2, the removal of the Slater Mill Dam, will also have an adverse effect on the historic resource. A dam has existed in this location since at least 1793, when the Slater Mill was constructed. The dam is a vital resource in the interpretation of the site. It is our conclusion that this alternative would produce a severe adverse effect to historic resources, and that the loss of the historic dam could not be adequately mitigated.

Alternative 3, the "no Action" alternative, would produce no effect to historic properties.

Federal undertakings that affect National Historic Landmarks are subject to review by the National Park Service. We recommend that you contact Dave Clark, at the Boston Office of the National Park Service, at (617)223-5141, to notify the NPS of the project.

These comments are provided in accordance with Section 106 of the National Historic Preservation Act. If you have any questions, please contact Jeffrey Emidy, Project Review Coordinator, of this office.

Very truly yours,

FOR Edward F. Sanderson, Executive Director
Deputy State Historic Preservation Officer

c: Andrew Lipsky, State Biologist, NRCS, Warwick
Eric Scherer, State Resource Conservationist, NRCS, Warwick
Dave Clark, Environmental Protection Specialist, NPS, Boston

080415.03jde

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
60 Quaker Lane, Suite 46
Warwick, RI 02886
Phone 401.828.1300, fax 401.828.0433

USDA

Helping People Help the Land...

Jeffrey Emidy
Project Reviewer
Rhode Island Historical Preservation and Heritage Commission
150 Benefit Street
Providence, RI 02903-1209

June 26, 2008

Dear Mr. Emidy,

As you are aware, The USDA Natural Resources Conservation Service (NRCS) is providing financial and technical assistance to restore fish passage along the Blackstone River, Rhode Island. NRCS's involvement in the proposed Blackstone River fish passage projects supports the State of Rhode Island's restoration priorities. In particular, the proposed projects are in alignment with Governor Carcieri's fish passage restoration goals for the State of Rhode Island (RI Executive Order 03-16: to *restore fish passage on Blackstone, Pawtuxet, Ten Mile and Wood-Pawcatuck Rivers; open 35 river miles to anadromous fish by 2007; and open 100 river miles to anadromous fish by 2015).*

Thank you for taking the time on June 9, 2008 to meet with NRCS and our client Old Slater Mill to discuss the 30% level design plans for the proposed fish ladder at Slater Mill dam. NRCS is providing to you our summary of the concerns and design recommendations that we received from RIHPC at the June 9 meeting. The concerns expressed by RIHPHC at this meeting are in addition to those posed in your April 15, 2008 response letter to NRCS. We request that you review this information below to ensure that we have accurately characterized the viewpoints that RIHPHC communicated during the June 9, 2008 meeting.

We are also providing NRCS's responses to these concerns and the action steps that NRCS and our design engineers will take to address these concerns. In order for us to remain on schedule and proceed with the design of the Slater Mill fish ladder, we kindly request a response to this letter by July 11, 2008.

Any questions, comments, or concerns that you have while reviewing this project should be directed to Andrew Lipsky, NRCS Biologist and Project Manager at (401) 822-8842, Reena L. Shaw, NRCS Cultural Resources Coordinator at (401) 822-8840, or Eric Scherer, NRCS State Resource Conservationist at (401) 822-8814.

Sincerely,

Andrew Lipsky
State Biologist
USDA NRCS

The Natural Resources Conservation Service provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment.

An Equal Opportunity Provider and Employer

Attachments:

1. June 9, 2008 Meeting Synthesis between NRCS, NPS, RHPHC, and Old Slater Mill.
2. Blackstone River Fish Passage Restoration Project, Draft Environmental Assessment.
3. 60% Level Designs for Old Slater Mill Fish Ladder
4. 30 % Level Designs for Main Street Fish Ladder
5. Memorandum of Agreement between the State of Rhode Island and Pawtucket Hydropower LLC.
6. NRCS Conceptual Designs for Valley Falls Fish Ladder
7. Conceptual Designs for Elizabeth Webbing (Army Corps of Engineers)
8. USDA Wildlife Habitat Incentives Program Long Term Agreements for Pawtucket Hydropower LLC, Old Slater Mill Association, and Blackstone Hydropower LLC.

cc:
Simeon Bruner, Blackstone Hydro Associates LLC
Doug Harris, Senior Deputy, THPO
Janice Kissinger, Executive Director, Old Slater Mill Association
Jan Reitsma Executive Director, Blackstone River Valley National Heritage Corridor, NPS
Charles Rosenfield, Pawtucket Hydropower LLC
Ted Sanderson, Executive Director, RI HPHC
Eric Scherer, State Resource Conservationist, USDA NRCS
Director Michael Sullivan, RIDEM
Sam Whitin, EA Engineering Science and Technology, Inc.

EA Engineering, Science, and Technology, Inc.

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October 30, 2007

Mr. Curt Spalding
Executive Director
Save the Bay, Inc.
100 Save the Bay Drive
Providence, RI 02905

Re: Notification and Solicitation of Comments for Proposed Blackstone River Fish Passage Restoration Project

Dear Mr. Spalding:

On behalf of the United State Department of Agriculture's Natural Resource Conservation Service (NRCS) and acting as their authorized agent, EA Engineering, Science and Technology, Inc. hereby solicits concerns and/or comments regarding the NRCS's proposed anadromous fish passage restoration activities at four dams along the Blackstone River in Pawtucket, Central Falls, and Cumberland, Rhode Island (refer to attached Project Locus and Aerial Photographs). The proposed project includes the installation of structure assisted fish passages at the Main Street (Pawtucket, RI), Slater Mill (Pawtucket, RI), and Valley Falls Dam (Central Falls/Cumberland, RI), and the removal of the Elizabeth Webbing Dam (Central Falls/Pawtucket, RI).

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6 Per NEPA, all pertinent federal, state, and local agencies will be consulted during the EA process. Environmental, social, and economical impact analyses will be conducted to evaluate the impacts of the proposed project on surrounding environments.

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Information and data collected from this solicitation will be included in the EA for the project. Please forward concerns/comments to me no later than 30 days from the date of this letter so that they might be included in the DRAFT EA. If you should have any questions regarding this letter, please feel free call me at 401-736-3440, extension 207, or email me at swhitin@eaest.com. We look forward to your response.

Sincerely,

EA ENGINEERING, SCIENCE, AND
TECHNOLOGY, INC.

Samuel S. Whitin
Project Manager

SSW/mr
Enclosures

EA Engineering, Science, and Technology, Inc.

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2350 Post Road
Warwick, Rhode Island 02886
Telephone: 401-736-3440
Fax: 401-736-3423
www.eaest.com

October 16, 2007

Department of Planning
Town Hall, Town of Cumberland
45 Broad Street
Cumberland, Rhode Island 02864

Re: Notification and Solicitation of Comments for Proposed Blackstone River Fish Passage Restoration Project

Dear Sir or Madam:

On behalf of the United State Department of Agriculture's Natural Resource Conservation Service (NRCS) and acting as their authorized agent, EA Engineering, Science and Technology, Inc. hereby solicits concerns and/or comments regarding the NRCS's proposed anadromous fish passage restoration activities at four dams along the Blackstone River in Pawtucket, Central Falls, and Cumberland, Rhode Island (refer to attached Project Locus and Aerial Photographs). The proposed project includes the installation of structure assisted fish passages at the Main Street (Pawtucket, RI), Slater Mill (Pawtucket, RI), and Valley Falls Dam (Central Falls/Cumberland, RI), and the removal of the Elizabeth Webbing Dam (Central Falls/Pawtucket, RI).

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October 16, 2007

Regulatory Office
New England District
U.S. Army Corps of Engineers
696 Virginia Road
Concord, MA 01742

Re: Notification and Solicitation of Comments for Proposed Blackstone River Fish Passage Restoration Project

To Whom It May Concern:

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Samuel S. Whitin
Project Manager

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October 16, 2007

Mr. Peter Holmes
U.S. Environmental Protection Agency
One Congress Street, Suite 1100 (CRI)
Boston, MA 02114-2023

Re: Notification and Solicitation of Comments for Proposed Blackstone River Fish Passage Restoration Project

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Samuel S. Whitin
Project Manager

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October 16, 2007

Mr. Robert W. Varney
Regional Administrator
U.S. Environmental Protection Agency
Region I, New England
One Congress Street, Suite 1100
Boston, MA 02114-2023

Re: Notification and Solicitation of Comments for Proposed Blackstone River Fish Passage Restoration Project

Dear Mr. Varney:

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Samuel S. Whitin
Project Manager

SSW/mr
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October 16, 2007

Mr. Phil Morrison
United States Department of the Interior
U.S. Fish and Wildlife Service
New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5087

Re: Section 7 Consultation – Endangered and Threatened Species Inquiry for Proposed Blackstone River Fish Passage Restoration Project

Dear Mr. Morrison:

On behalf of the United States Department of Agriculture's Natural Resource Conservation Service (NRCS) and acting as their authorized agent, EA Engineering, Science and Technology, Inc. hereby requests information regarding federally protected floral and faunal species in the vicinity of the Main Street, Slater Mill, Elizabeth Webbing, and Valley Falls Dams located in Pawtucket, Central Falls, and Cumberland, Rhode Island for the proposed anadromous fish restoration activities at these dams (refer to attached Project Locus and Aerial Photographs). Each of the four dams is located along Blackstone River.

This information will be included in the Environmental Assessment being prepared per the National Environmental Policy Act (NEPA) of 1969. If you should have any questions, please feel free call me at 401-736-3440, extension 207, or email me at swhitin@eaest.com. We look forward to your response.

Sincerely,

EA ENGINEERING, SCIENCE, AND
TECHNOLOGY, INC.

Samuel S. Whitin
Project Manager

SSW/mr
Enclosures

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Field Office
70 Commercial Street, Suite 300
Concord, New Hampshire 03301-5087

November 20, 2007

Reference: Project
Blackstone River fish passage restoration project, Main St., Slater Mill, Elizabeth Webbing, Valley Falls Dams

Location
Pawtucket, Central Falls, Cumberland, RI

RECEIVED
NOV 1 1 2007
EA ENGINEERING, SCIENCE AND TECHNOLOGY, INC.
BY

Samuel Whitin
EA Engineering, Science, and Technology, Inc.
2350 Post Road
Warwick, RI 02886

Dear Mr. Whitin:

This responds to your recent correspondence requesting information on the presence of federally-listed and/or proposed endangered or threatened species in relation to the proposed activity(ies) referenced above.

Based on information currently available to us, no federally-listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service are known to occur in the project area(s). Preparation of a Biological Assessment or further consultation with us under Section 7 of the Endangered Species Act is not required.

This concludes our review of listed species and critical habitat in the project location(s) and environs referenced above. No further Endangered Species Act coordination of this type is necessary for a period of one year from the date of this letter, unless additional information on listed or proposed species becomes available.

In order to curtail the need to contact this office in the future for updated lists of federally-listed or proposed threatened or endangered species and critical habitats, please visit the Endangered Species Consultation page on the New England Field Office's website:

www.fws.gov/northeast/newenglandfieldoffice/EndangeredSpec-Consultation.htm

In addition, there is a link to procedures that may allow you to conclude if habitat for a listed species is present in the project area. If no habitat exists, then no federally-listed species are present in the project area and there is no need to contact us for further consultation. If the above conclusion cannot be reached, further consultation with this office is advised. Information describing the nature and location of the proposed activity that should be provided to us for further informal consultation can be found at the above-referenced site.

Thank you for your coordination. Please contact us at 603-223-2541 if we can be of further assistance.

Sincerely yours,

Anthony P. Tur
Endangered Species Specialist
New England Field Office

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Field Office
70 Commercial Street, Suite 300
Concord, New Hampshire 03301-5087
http://www.fws.gov/northeast/newenglandfieldoffice

Ref: Blackstone Fish Passage Draft EA Comments October 16, 2008

Andy Lipsky, State Biologist
Natural Resources Conservation Service
60 Quaker Lane, Suite 46
Warwick, RI 02886-0111

Dear Mr. Lipsky:

This responds to the USDA/NRCS Notice of Availability of Draft Environmental Assessment (dEA) for the Blackstone River Fish Passage Restoration Project, Rhode Island, dated September 17, 2008. The dEA evaluates the impacts on the affected environment associated with two alternatives (Proposed Action and No Action) for fish passage restoration activities at four dams on the lower Blackstone River. We have reviewed the dEA and provide the following comments for your consideration.

Page 8/32, 2.1
The description of the Proposed Action for each dam provides few details on the fish passage facilities. While we do not think it is necessary to go into explicit design detail, it would be beneficial for the EA to note that all fishways (upstream and downstream) will meet Fish and Wildlife Service design criteria and approval.

Page 19/32, 4.3.1, 2nd Paragraph
The dEA states that removal of the Elizabeth Webbing dam may result in a decrease in dissolved oxygen in the river downstream. We agree that, under existing conditions, water spilling over the dam provides re-aeration. However, if the extant hydro project associated with the dam starts producing power again, spill would occur much less often. Under that scenario, dam removal likely would have a net benefit to dissolved oxygen levels. We recommend that the EA account for this potential situation and include it in the comparison of the relative benefits of the Proposed Action to water resources.

Page 23/32, 4.9.2
The dEA states that no impacts to cultural resources would occur under the No Action alternative (i.e., not installing fishways at three dams and not removing a fourth dam). While maintaining the status quo would not impact the historical and cultural resources of the dams themselves, continuing to impede passage of diadromous fish to the river would impact the cultural resources

associated with the importance of historical fish runs to both pre-settlement Native Americans and post-settlement colonists. Historical evidence of the cultural significance of those fish runs is contained in the report "An Historical Assessment of Anadromous Fish in the Blackstone River" (Buckley and Nixon 2002), which is cited in the dEA. Therefore, we recommend modifying this section (and the associated table under Section 5.3) to sufficiently reflect the impact to both aspects of the cultural resources issue under the No Action alternative.

Page 26/32, Section 5.1

The section lists minor increases in turbine-related mortality due to the increase in fish populations in the river as a potential negative impact of the Proposed Action (i.e., installing fishways at three dams and removing a fourth dam). Given that none of the hydro projects discussed in the dEA presently have any downstream passage protection measures, and that the dEA indicates that the dams will be implementing protection measures under the Proposed Action, it seems reasonable to conclude that there could (and should) be a decrease in turbine-related mortality over existing conditions, even if there is an overall increase in fish populations in the river once upstream passage measures have been implemented.

Page 27/32, Section 5.4

The dEA states that fish ladders are 70-90% efficient at passing American shad. This passage rate seems high for shad, especially if they must negotiate multiple fishways. We recommend that the EA provide more background information or a citation to support this statement.

Thank you for providing this opportunity to comment. If you have any questions or require further information, please contact Melissa Grader of this office at 413-548-8002, extension 124.

Sincerely yours,

John Warner
Acting Supervisor
New England Field Office

cc: CNEFRO, Joe McKeon
NMFS, Lisa Cavallaro
Reading File
ES: MGrader:10-16-08:(603)223-2541