ENVIRONMENTAL ASSESSMENT

Springborn Dam Removal Project

Enfield, Connecticut

Prepared by:

U.S. Fish and Wildlife Service
Southern New England-New York Bight Coastal Program
Rhode Island Field Office
50 Bend Road
Charlestown, RI 02813

Contact: Suzanne Paton
(401) 213-4415
suzanne_paton@fws.gov

In Partnership With:

Connecticut Department of Energy and Environmental Protection
Inland Water Resources Division
Inland Fisheries Division
Hartford, Connecticut

This Environmental Assessment becomes a Federal document when evaluated and signed by the responsible Federal Official.

7/12/16
Date

Acting for: Thomas R. Chapman
Supervisor
New England Field Office
U.S. Fish and Wildlife Service

ENVIRONMENTAL ASSESSMENT

Removal of Springborn Dam

Enfield, Connecticut

U.S. Fish and Wildlife Service
Southern New England-New York Bight Coastal Program
Charlestown, Rhode Island

July 2016

TABLE OF CONTENTS

1.0 INTRODUCTION....1
1.1 Background....1
1.2 Purpose and Need....1
2.0 PROJECT DESCRIPTION....4
3.0 ALTERNATIVES....5
3.1 No Action Alternative....5
3.2 Alternative 1....5
3.3 Alternative 2....6
3.4 Alternative 3, the Proposed Action....6
4.0 AFFECTED ENVIRONMENT....7
4.1 General....7
4.2 Water Quality....7
4.3 Flood Zones and Flooding....7
4.4 Sediment Chemistry and Management....8
4.5 Freshwater Wetlands and Vegetative Communities....9
4.6 Wildlife and Fish Resources....9
4.7 Threatened and Endangered Species....10
4.8 Historical and Archaeological Resources....11
4.9 Air Quality....11
4.10 Noise....12
5.0 ENVIRONMENTAL CONSEQUENCES....12
5.1 General....12
5.2 Water Quality....12
5.3 Hydrology and Flood Zones....13
5.4 Sediment Chemistry and Management....13
5.5 Freshwater Wetlands and Vegetative Communities....13
5.6 Wildlife and Fish Resources....14
5.7 Threatened and Endangered Species....15
5.8 Historical and Archaeological Resources....16
5.9 Air Quality....16
5.10 Noise....17
5.11 Cumulative Effects....17
6.0 AGENCY COORDINATION, PUBLIC INVOLVEMENT, & PERMITS....17
6.1 Consultation and Coordination....17
6.2 Public Involvement....18
6.3 Required Permits and Approvals....18
7.0 REFERENCES....19

LIST OF FIGURES

Figure 1 Location Map for Springborn Dam
Figure 2 Aerial view of Springborn Dam removal project site

APPENDICES

Appendix A Memorandum of Agreement between the United States Fish and Wildlife Service, Connecticut Department of Energy and Environmental Protection and the Connecticut State Historic Preservation Office
Appendix B Intra-Service Section 7 Northern Long Eared Bat 4(d) Rule Streamlined Consultation Form prepared by U.S. Fish and Wildlife Service

1.0 INTRODUCTION

1.1 Background

The Springborn Dam is the first dam on the Scantic River, a large tributary to the Connecticut River that enters the River between the mouth of the Farmington River and the Massachusetts state line. Located in Enfield, Connecticut (Figure 1), the Springborn Dam, is a 26-foot-high, run-of-river structure built in 1890 to provide power for an adjacent mill. The majority of the dam's timber cribbing, added in the 1920s, has washed away and the Dam currently serves no useful purpose. The mill complex, which no longer uses the Dam for power generation, experiences periodic flooding. This high hazard dam has the potential to fail and cause severe impacts downstream to life and property.

The Connecticut Department of Energy and Environmental Protection (CTDEEP) and the U.S. Fish and Wildlife Service (Service), with the support of local stakeholders, are proposing to restore the River to its natural, free-flowing condition, restore fish passage, mitigate future flood impacts, and eliminate a public safety risk through removal of the Springborn Dam. Funding for the project comes from the Hurricane Sandy Resiliency Competitive Grant Program administered by the National Fish and Wildlife Foundation (NFWF 2014) (Disaster Relief Appropriations Act of 2013). The CTDEEP, the owner of the Dam, is the project lead and administrator. The Service, as the lead Federal agency, is providing technical assistance by coordinating compliance with the National Environmental Policy Act, section 7 of the Endangered Species Act, and section 106 of the National Historic Preservation Act.

This Environmental Assessment (EA) has been prepared in accordance with the National Environmental Policy Act of 1969 (83 Stat. 852; 42 U.S.C. 4321 et seq.). The purpose of this EA is to analyze the potential environmental impacts of the proposed project and alternatives. The Service will use the findings in this draft EA to determine whether to prepare an Environmental Impact Statement or a Finding of No Significant Impact.

1.2 Purpose and Need

The purpose of the project is to reduce flooding risk for local communities, eliminate a public safety risk associated with an obsolete dam in poor condition, and re-establish passage of anadromous fishes (those that migrate from salt to fresh water to spawn) in the Scantic River to upstream spawning and nursery areas in this tributary to the Connecticut River. The following project goals and objectives have been identified:

- reduce the risk of flooding for local communities;
- eliminate a public safety risk;
- increase community resiliency in the face of future storms;
- eliminate a barrier to various migratory fish species and reconnect 2.6 miles of upstream fish habitat;
- promote restoration of runs of diadromous fish species and eastern brook trout;
- remove contaminated sediment from the River, eliminating exposure hazard to recreationists, downstream residents (in the event of dam failure), and wildlife;

- strengthen the long-term resiliency of the aquatic organisms; and
- restore natural riverine functions (e.g., sediment transport, floodplain development and function, maintenance of normal thermal regimes, re-establishment of natural riverine vegetative communities).

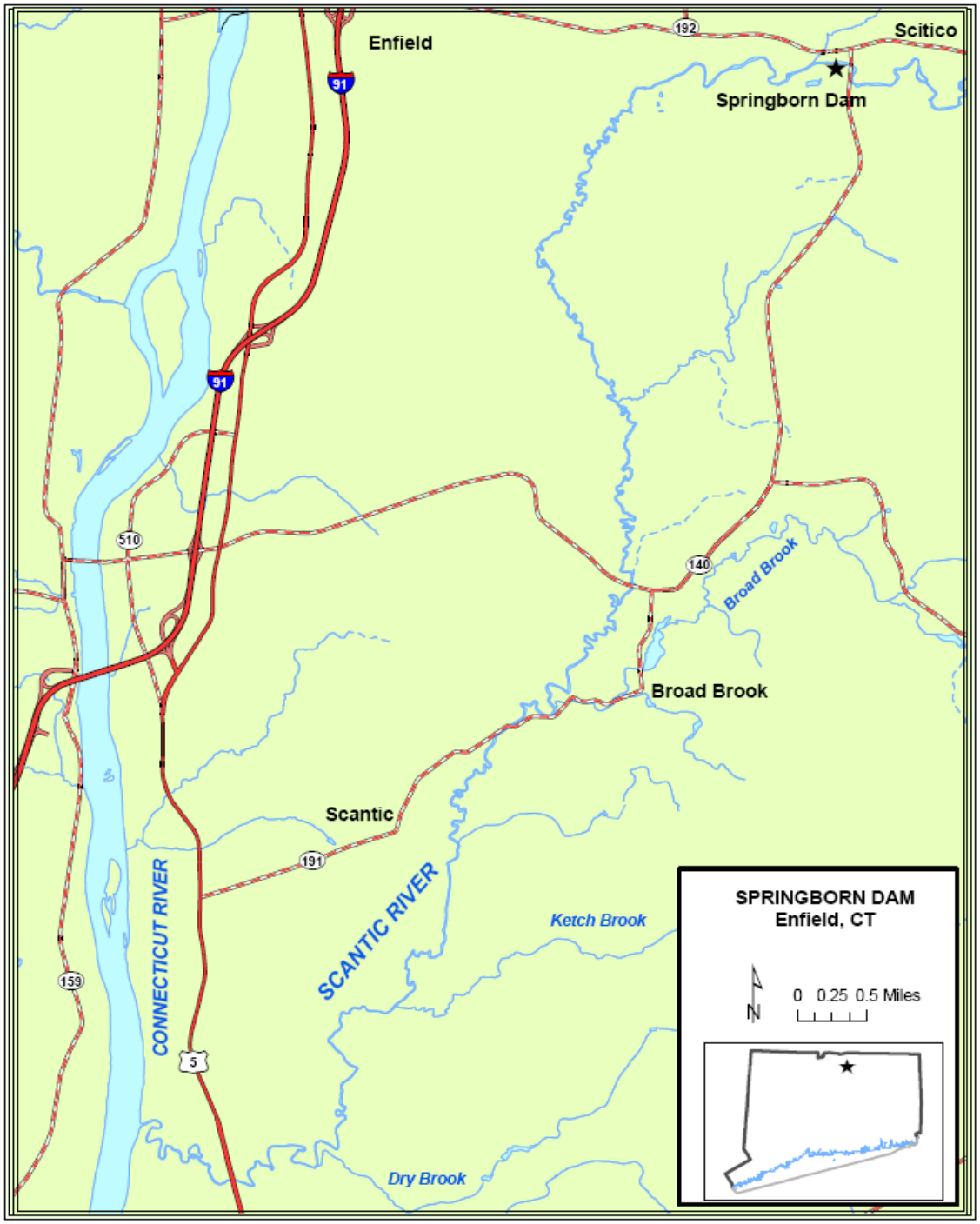


Figure 1. Location Map for Springborn Dam.

This high hazard dam is in such poor condition that catastrophic failure is a possibility; removal is needed to eliminate this potential catastrophe and associated risks of loss of life and damage to downstream property, including damage to downstream public drinking water wellfields. These risks are specifically related to storm events when the dam structure is under increased hydraulic stress. Dam removal will result in lower water levels around buildings and bridges and other infrastructure, thereby reducing the community's vulnerability to future flooding. During past flood events, the River has damaged the mill complex, making it uninhabitable. In addition to flooding damages, the economic costs associated with the Dam include long-term maintenance and continued liability for a deteriorating structure. These costs are borne by the dam owner, the CTDEEP.

Figure 2. Aerial view of Springborn Dam removal project site.

Following a dam removal prioritization prepared by the Northeast Aquatic Connectivity Tool (2011) based on importance to anadromous fish, the CTDEEP and The Nature Conservancy-Connecticut Chapter used additional criteria to refine the rankings of 1,709 dams in Connecticut. The Springborn Dam was ranked as the 4th highest priority in the entire State. The Dam is the first barrier to diadromous fish runs on the Scantic River. Migratory fish cannot surmount it to gain access to an additional 2.6 miles of upstream historical habitat. Species that will benefit

from this project include alewife (*Alosa pseudoharengus*) and blueback herring (*Alosa aestivalis*)(collectively called "river herring"), American shad (*Alosa sapidissima*), sea lamprey (*Petromyzon marinus*), brook trout, and American eel (*Anguilla rostrata*), as well as numerous resident fish, and other aquatic organisms.

2.0 PROJECT DESCRIPTION: THE PROPOSED ACTION

The Proposed Action entails full dam removal, as well as excavation of some of the impounded sediments. Approximately 12,400 cubic yards of sediment will be removed from approximately 40,500 square feet of the impoundment formed by the Springborn Dam. An additional area of approximately 21,500 square feet upstream of the dredge area and downstream of the Route 191 Bridge will be graded to reduce the likelihood of head cutting (erosion of the river bottom due to constrictions and changes in elevation).

The banks of the Scantic River in the vicinity of the project site are quite steep. It is anticipated that access for dredging of the impoundment will either be gained via a temporary construction access road installed upstream of the dam and railroad bridge, along the northern bank, leading from Water Street into the impoundment, or via a temporary modified riprap access road constructed in the riverbed downstream of the Dam. Both access points may be used and are shown on the design plans.

Two methods of sediment dredging behind the Dam may be used to complete the project:

1. mechanical dredging from upstream of the Dam, using porta dams and a temporary bypass channel to divert flow and dewater sediments in place; or
2. hydraulic dredging upstream of the Dam with dewatering downstream of the Dam, either through geotubes or stockpiling.

In the case of mechanical dredging from upstream of the Dam, sediment will be dewatered in-place as a result of constructing a temporary bypass channel and lowering the water surface elevation. In addition, the dredge material may also be stockpiled within the impoundment or in the upland area along Water Street and allowed to further dewater before being removed from the site for disposal at a State-approved landfill.

In the case of hydraulic dredging, dredge material will be pumped downstream to a property owned by the CTDEEP, just west of Terry Brook. Material will be stockpiled and allowed to dewater prior to being removed from the site for disposal.

The type of dredging will be determined by the construction contractor in consultation with the CTDEEP. The footprint and amount of dredging will be the same regardless of the dredging method.

The footings around the railroad bridge located within the impoundment were inspected by a diver in March 2015. An additional investigation in September 2015 using seismic refraction techniques confirmed that the structures are founded on bedrock and therefore no scour protection is needed.

3.0 ALTERNATIVES

An alternatives analysis was performed to determine the most feasible and prudent means of achieving the defined project goals. The alternatives for the proposed project that were considered included (1) a No Action Alternative; (2) the repair and rehabilitation of the Dam to comply with dam safety regulations; (3) partial dam removal; and (4) full dam removal.

In addition to alternatives to dam repair or removal, alternatives to sediment removal were also considered. This included an investigation into the feasibility of natural redistribution of the impounded sediments to the River downstream of the Dam as an alternative to dredging. However, based on chemical and toxicological testing, it was determined that sediments impounded by the Dam will need to be removed and properly handled and disposed prior to dam removal. The data, analyses, and conclusions on sediments are discussed in more depth in sections 4.4 and 5.4 of this document.

3.1 No Action Alternative

Under this alternative, no alterations to the Springborn Dam or the river sediments and embankments would take place. No actions would be performed to restore the River to a more natural state or to restore free-flowing hydrologic conditions along the River. The Springborn Dam would continue to block anadromous and catadromous (species that migrate from fresh to salt water to spawn, e.g., American eel) fishes and other freshwater fish that could otherwise benefit from restoring the natural river channel for fish passage.

Risk of downstream flooding to surrounding properties and the community at large would remain unchanged. The CTDEEP, as the Dam owner, would remain liable for ongoing maintenance as well as any impacts from a dam breach or catastrophic failure.

This alternative does not meet the basic project goals and objectives. It would not restore natural river conditions, restore passage of target species, improve riparian habitat, or reduce flooding and risk of dam failure.

3.2 Alternative 1: Repair the Dam

Under this alternative, the existing dam would be repaired and restored to a sound condition that meets current Connecticut Dam Safety Regulations. Full dam repair would entail reconstruction of that portion of the Dam that has been lost over time, back to its former (higher) elevation. Approximately 7 vertical feet of timber crib had been constructed previously on top of the existing masonry Dam. Much of the timber crib has been lost through deterioration, and the remainder of the crib is in poor condition. The consulting engineer does not believe it is feasible or desirable to replace the timber crib with the same or similar materials (Fuss & O'Neill, Inc. 2009). If the decision was made to repair the Dam, the engineers at Fuss & O'Neill would recommend that the remainder of the timber crib be removed, and a concrete vertical extension be constructed on top of the stone masonry to the elevation of the original timber crib. In addition to constructing the vertical extension, the low level outlet would be restored to a functional state (Fuss & O'Neill, Inc. 2009). Additionally, the upstream masonry face should be

exposed, cleaned, and repointed, and a reverse filter and impermeable layer capped with riprap should be installed.

Repairing the Dam would improve public safety by reducing the threat of dam failure. However, the risk of local flooding would remain the same. The CTDEEP would remain liable for ongoing maintenance for a dam that no longer provides any beneficial function. The Dam would continue to impede the movement of migratory and resident fishes and other aquatic organisms. Riparian habitat would not be restored, and sediment contamination would remain. The gorge-like nature of the site prohibits construction of a fishway and such a fishway would be extremely difficult to operate and maintain. In addition, a fishway would not effectively pass all the species targeted for passage. Therefore, the inclusion of a fishway in this alternative is not a feasible mitigation for retaining the Dam. This alternative fails to meet most of the project goals and therefore it was not considered further.

3.3 Alternative 2: Partial Dam Removal with Sediment Dredging in the Impoundment

Partial dam removal would entail removing the remaining timber crib, but leaving the stable stone masonry Dam structure in place. As with full repair of the Dam, the upstream masonry face should be exposed, cleaned, and repointed, and a reverse filter and impermeable layer capped with riprap should be installed. The Dam would still require ongoing inspection and maintenance and the repair or installation of an operable low level outlet. Less sediment removal and disposal would be required for partial dam removal than for full dam removal (Alternative 3). Since a good portion of the timber crib is already gone, construction costs would be less than full dam repair (Alternative 1). Under Alternative 2, somewhat less sediment would be dredged, approximately 21,000 cubic yards as opposed to approximately 30,000 cubic yards with full dam removal. The reason for this small difference is the steepness of the river bed behind the Dam, allowing a relatively low storage volume for retained sediment.

Under this alternative, public safety would be improved by repair of the Dam, but fish passage and riparian habitat would not be restored. The gorge-like nature of the site prohibits construction of a fishway and such a fishway would be extremely difficult to operate and maintain. In addition, a fishway would not effectively pass all the species targeted for passage. Therefore, the inclusion of a fishway in this alternative is not a feasible mitigation for retaining a portion of the Dam. The CTDEEP would remain liable for maintenance and repair in perpetuity. This alternative fails to meet most of the project goals and therefore it was not considered further.

3.4 Alternative 3, the Proposed Action: Full Dam Removal with Sediment Dredging in the Impoundment

This alternative, the Proposed Action, encompasses removal of the timber crib, the masonry dam structure, and the contaminated sediment as described above in section 2.0 of this document.

Complete removal of the Springborn Dam and restoration of the River and habitats similar to pre-development conditions is the most desirable alternative based on ecological considerations, recreational use, and public safety. Under this alternative, fish passage, riverine processes, and

riparian habitat will be restored. In addition, under this alternative, water quality will be improved, and this section of the River will be opened for recreational use. Local flooding will be reduced and the liability of dam ownership will be eliminated. Therefore, this alternative fulfills all of the goals from section 1.2 and represents the recommended Proposed Action. Descriptions of the existing resource conditions are provided below, followed by a discussion of potential impacts to each resource in section 5 of this EA. A technical report on the sediment redistribution and impact analysis (Fuss & O'Neill, Inc. 2014) and the environmental report within the CTDEEP Dam Safety Permit Application (Fuss & O'Neill, Inc. 2015) contain additional descriptions of resources.

4.0 AFFECTED ENVIRONMENT

4.1 General

This section of the EA describes the existing environmental resources (both living and non-living components of the physical environment), as well as cultural, social, and economic resources that have the potential to be affected by the Proposed Action. These existing conditions descriptions are based on the best data and studies available at this time, including technical documents produced specifically for this project. In the following section of this EA, section 5, the potential impacts to each resource from the No Action Alternative and the Proposed Action are described and discussed.

4.2 Water Quality

A map of water quality indicates that most of the Scantic River, including the vicinity of the project area, has Class B water quality (CTDEEP 2015). Designated uses of class B surface waters are habitat for fish and other aquatic life and wildlife; recreation; navigation; and industrial and agricultural water supply. Discharges to these waters are restricted to discharges from those allowed for class AA, A and SA waters (discharges from public or private drinking water treatment systems, dredging activity and dredge material dewatering operations, including the discharge of dredged or fill material and clean water discharges), as well as from cooling water discharges, discharges from municipal and industrial wastewater treatment systems and other discharges subject to the provisions of section 22a-430 of the Connecticut General Statutes.

Impoundments, such as the one created by the Dam, increase summer water temperatures significantly by creating larger, slower moving water surface areas exposed to sun and warm summer air. Warmer temperatures can lead to decreased dissolved oxygen content of the water both in the impoundment and for some distance downstream of a dam (Saila et al. 2005).

4.3 Flood Zones and Flooding

Flood zones are geographic areas defined by the Federal Emergency Management Agency (FEMA), reflecting the severity or type of flooding in an area. The government definition of a floodplain, or high flood risk zone, is an area which has at least a one in one hundred (one percent) chance of flooding in any given year. The project is within the 100-year flood zone (FEMA Flood Insurance Rate Map 09003C0232F).

This watershed has experienced severe flooding in the past and the effects are most pronounced at the dam site since the Dam was built in a narrow gorge without any floodplain. Currently during high flow events, water enters the adjacent mill buildings and flood waters rise a considerable distance upstream, which affects bridges and other properties. Periodic flooding continues to degrade the Dam, putting it at greater risk of failure.

4.4 Sediment Chemistry and Management

Sediment and surface water samples were analyzed for chemical concentrations and toxicity. The purpose of this assessment was threefold: (1) to evaluate the likelihood that adverse ecological effects may occur or are occurring as a result of sediments impounded by the Dam by comparing chemical concentrations to ecological screening criteria; (2) to assess toxicity of *in situ* sediments, suspended sediments and the water column; (3) to evaluate sediments against Connecticut Remediation Standard Regulations (RSR) criteria to guide the decision on disposal of dredge sediments.

Contaminants in sediments were identified at concentrations that exceeded both ecological and RSR criteria. The majority of sediment in the impoundment has varying levels of contamination, including elevated levels of some metals and polycyclic aromatic hydrocarbons (PAHs). In addition, chronic sediment toxicity results indicated an adverse effect to organisms' survival, growth, and biomass in an area from the Dam to approximately 240 feet upstream of the railroad bridge that crosses the impoundment. Acute water toxicity was not observed (Fuss & O'Neill, Inc. 2014).

PAHs, both natural and man-made, are known contaminants that commonly occur in fine sediments (fine sand, silt, and clay) in river systems (Buha and Williams 2011). PAHs occurring in the environment likely come from sealcoated pavements (Watts et al. 2010; Pavlowsky 2013) and the by-product of incomplete combustion from sources such as wood-burning stoves, furnaces, industrial emissions, energy production (i.e., coal burning), and motor vehicle engines (Buha and Williams 2011). PAHs enter freshwater bodies by atmospheric deposition or stormwater runoff and then bind preferentially to fine grain sizes, which settle out of suspension in backwater areas and accumulate in impoundments like the one upstream of Springborn Dam. PAHs are a concern because they are persistent in the environment for long periods of time. Common modes of human exposure include breathing polluted air, eating grilled meats, and smoking (Buha and Williams 2011). Less common sources include coming in contact with heavy oils, coal tar, roofing tar, or creosote.

Based on the results of the chemical and toxicological analyses, it was determined that a portion of the sediments within the impoundment requires removal and special handling for disposal. The volume of sediment removal was estimated to be 12,400 cubic yards. The remaining sediment within the impoundment will be allowed to naturally redistribute over time without adverse impacts to downstream aquatic organisms (Fuss & O'Neill, Inc. 2014).

4.5 Freshwater Wetlands and Vegetative Communities

Aquatic habitats of the project area consist of the Scantic River watercourse, including the impoundment, and the downstream natural reach. Flowing in a westerly direction, this reach of the Scantic River cuts through a well-defined valley formed in glaciofluvial sands and gravel. Sediments in the impoundment and in the downstream reach are predominately fine sand and gravel (KCI 2009; KCI 2012).

Two wetland areas are located approximately 1,000 feet upstream of the Springborn Dam and are located on the north and south side of the River. Both wetlands are located on level, backwater floodplains and are hydrologically fed by floodwaters and local groundwater. These areas are seasonally inundated, a hydrologic feature that drives the overall accretion of organic matter and the assemblage of plants within the two wetland areas. The southern wetland area is dominated by red maple (*Acer rubrum*), white ash (*Fraxinus americana*), slippery elm (*Ulmus rubra*), Eastern hemlock (*Tsuga canadensis*), northern arrowwood (*Viburnum recognitum*), speckled alder (*Alnus incana*), skunk cabbage (*Symplocarpus foetidus*), false nettle (*Boehmeria cylindrical*), spotted jewelweed (*Impatiens capensis)*, poison ivy (*Toxicodendron radicans*), grape (*Vitis* spp.), and jack-in-the-pulpit (*Arisaema triphyllum*). The wetland on the north side of the river is dominated by red maple (*Acer rubrum*), northern arrowwood (*Viburnum recognitum*), multiflora rose (*Rosa multiflora*), skunk cabbage (*Symplocarpus foetidus*), jack-in-the-pulpit (*Arisaema triphyllum*), spotted jewelweed (*Impatiens capensis)*, and common reed (*Phragmites australis*) (Fuss & O'Neill, Inc. 2009).

4.6 Wildlife and Fish Resources

4.6.1 Wildlife

Birds - According to information provided by the Scantic River Watershed Association (2015), the CTDEEP has designated the Scantic River Corridor as a resource protection area due to its use by a wide variety of wildlife. Bird species include bald eagles (*Haliaeetus leucocephalus)*, northern harrier (*Circus cyaneus)*, red-tailed hawk (*Buteo jamaicensis*), great blue heron (*Ardea herodias*), king fisher (*Megaceryle alcyon*), and a variety of ducks and geese.

Benthic Macroinvertebrates – The CTDEEP sampled benthic macroinvertebrates in 2008 and 2010 at a location downstream of the Springborn Dam (KCI 2012). A multi-metric index score with a range from 0 to 100 (with higher values indicating less-stressed sites) was used to score collected data. The average score for the location sampled downstream of Springborn Dam was 50.0 and 59.2, respectively.

Mammals - Topography surrounding the Springborn Dam and impoundment is steep. Land along the northern edge of the River is developed with a historic industrial facility and residences. Land south of the impoundment contains a housing development and undeveloped land. Downstream of the Dam, land to the south is a combination of forest and field. Although a site-specific wildlife survey has not been conducted, mammals potentially present in this area include chipmunks (*Tamias striatus)*, squirrels (*Sciurus carolinensis)*, raccoon (*Procyon lotor)*, otter (*Lutra Canadensis)*, white-tailed deer (*Odocoileus virginianus)*, and coyote (*Canis latrans)*.

Amphibians and Reptiles - Although no site-specific assessment of amphibians or reptiles has occurred, species may be found in the vicinity of the Scantic River and Springborn Dam. Stream salamanders such as the northern two-lined salamander (*Eurycea bislineata*) may be present downstream of the Dam. Frog species such as the green frog *(Rana clamitans melanota)* may be found at the edge of the River, but are not expected to inhabit the main channel. Painted turtles *(Chrysemys picta ssp.)*, snapping turtles *(Chelydra s. serpentina)*, wood turtles *(Clemmys insculpta)*, and northern water snakes *(Nerodia s. sipedon)* may also occur at the edges of the river.

4.6.2 Fish

Anadromous species known to inhabit the River include the American shad, alewife, and blueback herring. Other fish species known or presumed to inhabit the Scantic River in the vicinity of the Springborn Dam include American eel (*Anguilla rostrata*), brown bullhead (*Ictalurus nebulosus*), bluegill (*Lepomis macrochirus*), Eastern brook trout (*Salvelinus fontinalis*), brown trout (*Salmo trutta*), common shiner (*Luxilus cornutus*), fallfish (*Semotilus corporalis*), American pickerel (*Esox americanus*), longnose dace (*Rhinichthys cataractae*), largemouth bass (*Micropterus salmoides*), pumpkinseed (*Lepomis gibbosus*), tessellated darter (*Etheostoma olmstedi*), and white sucker (*Catostomus commersoni*) (Hagstrom et al. 1990). A memorandum from KCI Technologies (KCI 2012) indicated the presence of nine additional species: black crappie (*Pomoxis nigromaculatus*), blacknose dace (*Rhinichthys atratulus*), golden shiner (*Notemigonus crysoleucas*), redbreast sunfish (*Lepomis auritus*), rock bass (*Ambloplites rupestris*), sea lamprey (*Petromyzon marinus*), smallmouth bass (*Micropterus dolomieu*), spottail shiner (*Notropis hudsonius*), and yellow perch (*Perca flavescens*). In addition, the bridle shiner (*Notropis* b*ifrenatus*), which is listed as a State species of special concern, occurs in the project vicinity (CTDEEP 2015). These species have a wide array of habitat requirements; however, most are generalists and can adapt to the conditions that exist within the Scantic River in the vicinity of the project. The River below the Dam can be characterized as a shallow, low-gradient stream with a mostly bedrock-rocky substrate.

4.7 Threatened and Endangered Species

A May 19, 2015 query of the Service's online Information, Planning, and Conservation system produced a report indicating that the proposed project is located within the range of the federally threatened northern long-eared bat (*Myotis septentrionalis*) (NLEB). No critical habitat has been designated for the NLEB. The species has a wide range that encompasses much of the eastern half of the United States. In the summer, these bats roost, forage, and raise pups in mixed stands of trees of greater than 3 inches DBH that often have cracks, cavities, or loose bark. The total area of tree clearing associated with the project will total less than 0.1 acre, which allows for a 4(d) rule streamlined consultation process. The Connecticut Natural Diversity Database (CT NDD) was queried for the location of any known NLEB hibernacula and occupied roost trees. CT NDD confirmed there are no known occupied hibernacula or roost trees in the Town of Enfield. Therefore, the Service completed a Streamlined Consultation Form for the intra-service section 7 consultation.

At the State level, two rare species were identified as potentially occurring within areas that may be affected by project activities. A May 2015 letter from the CTDEEP regarding consultation of the CT NDD indicated that populations of wood turtle (*Glyptemys insculpta*) and bridle shiner (*Notropis bifrenatus*), both listed as state species of special concern, occur in the project vicinity. Wood turtles require riparian habitats bordered by floodplain, forests or meadows. They hibernate in the banks of rivers in submerged tree roots. Their summer habitat includes pastures, old fields, woodlands, powerline cuts, and railroad beds bordering or adjacent to streams and rivers.

4.8 Historical and Archaeological Resources

The Springborn Dam is a 26-foot-high, block masonry, run-of-river structure built in 1890 to provide power for an adjacent mill. The majority of the Dam's timber cribbing, added in the 1920s, has washed away and the Dam currently serves no useful purpose. The mill complex, which no longer uses the Dam for power generation, experiences periodic flooding.

In 2007, the Connecticut River Watershed Council reviewed historical information on the Springborn Dam and associated mill buildings and submitted materials to the Connecticut State Historic Preservation Office (SHPO) for review. These materials included a detailed description and timeline of the historic mill buildings and owners, a review of the history of the Springborn Dam, and site photographs. At that time, the SHPO concluded that the Springborn Dam is eligible for the National Register of Historic Places and that the proposed activity constituted an adverse effect. On March 18, 2015, a Staff Archaeologist and an Environmental Reviewer from the SHPO participated in a site visit to review the project area. In a letter dated April 6, 2015, the SHPO reaffirmed their previous findings and recommendations for a Memorandum of Agreement. (The SHPO letter, dated April 6, 2015, discusses removal of one of the historic mill buildings for project access. However, since then, the project has been designed to provide access without removing a building.)

In addition to consulting with the SHPO, coordination efforts also have included consultation with the federally recognized Mashantucket (Western) Pequot and Mohegan Tribes, the Advisory Council on Historic Preservation, and the Town of Enfield. After 60 days, no response was received from the Mashantucket (Western) Pequot Tribal Nation. The Mohegan Tribal Historic Preservation Office (THPO), after reviewing project information, issued an opinion that no properties of cultural, religious or historic significance to the Mohegan Tribe of Indians of Connecticut will be adversely affected by the project as it is proposed, but in the advent of an inadvertent discovery of cultural resources or human remains, the Mohegan THPO respectfully requests notification in a timely fashion.

4.9 Air Quality

Ambient air quality is protected by Federal and State regulations. The Environmental Protection Agency has developed National Ambient Air Quality Standards (NAAQS) for certain air pollutants, and air quality standards for each state cannot be less stringent than the NAAQS. The NAAQS set the concentration limits that determine the attainment status for each criteria pollutant.

The entire State of Connecticut, including the project area, is currently in non-attainment for 8-hour ozone. The project area, along with the rest of the State of Connecticut, is in attainment for all other criteria air pollutants: particulate matter (<10 micrometers in diameter-PM10 or < 2.5 micrometers in diameter-PM2.5); sulfur dioxide (SO2); ozone (O3); nitrogen dioxide (NO2); carbon monoxide (CO); and lead (Pb).

4.10 Noise

Currently, noise factors at the project location include local car and truck traffic, occasional airplanes from Bradley International Airport, local animal sounds, and residential activities on the south side of the River.

5.0 ENVIRONMENTAL CONSEQUENCES

5.1 General

The proposed removal of the Springborn Dam will not have any long-term adverse effects on the existing environment of the Scantic River. Dam removal will provide fish passage to sections of the River upstream from the existing Dam. The project is expected to have a positive effect on the river ecology, as well as provide flood mitigation and elimination of the threat of catastrophic dam failure. Benefits to river ecology include cooling of the river waters, restoration of healthy oxygen levels, removal of contaminated sediments, and improved connectivity for migratory and local fish and aquatic organisms.

5.2 Water Quality

Under the No Action Alternative, no short- or long-term changes to water quality in the Scantic River are expected. However, water quality may continue to be impaired, particularly during summer months, by low oxygen and warm temperatures due to the shallow water depths in the impoundment, and the continued presence of contaminated sediment.

Under the Proposed Action, the impacts to water quality from the removal of the Dam and excavation of sediment will be minimal and of short duration. Construction will take place during low flow conditions in the summer months. In order to protect the Scantic River during construction, erosion control measures will be installed. These measures may include, but are not limited to silt fencing and stone check dams, which will comply with *The Connecticut Guidelines for Soil Erosion and Sediment Control.* Disturbed areas will be seeded with appropriate seed mixes following construction. Erosion control measures above surface water elevation will remain in place until vegetation becomes established.

Sediment and dam removal are expected to improve habitat quality within the River. The target fish species for this project, as well as some local resident species, have very restrictive temperature requirements for survival, growth and reproduction. Impounded waters behind a dam are slow-moving, shallow, and often have higher water temperatures, lower oxygen levels and greater fluctuations in pH than more swiftly moving waters (Santucci et al. 2005). As a result, it is anticipated that the removal of the Dam will help to reduce thermal loading and

associated water quality problems. Additionally, sediment excavation will remove a source of contamination from the River. Therefore, long-term benefits to water quality are expected to be beneficial, and no long-term negative impacts are anticipated.

5.3 Flood Zones and Flooding

Under the No Action Alternative, there will be no change to water levels or predicted flooding regimes. Flood zones will remain unchanged. The Scantic River will continue to experience periodic flooding, particularly at and upstream of the Springborn Dam. Without significant upkeep and maintenance in the future, the Dam will continue to deteriorate and potentially catastrophically fail, possibly resulting in downstream flooding, ecological harm and damage to downstream properties, infrastructure, and aquatic organisms.

Under the Proposed Action, the Dam removal and sediment excavation will restore the River to a more natural, free-flowing riverine system. Short- and long-term impacts include the lowering of surface water elevation. Reductions of base and flood flow elevations were confirmed by engineers at Fuss & O'Neill, Inc. through modeling of flows before and after dam removal. Following dam removal, water surface elevations under average flow conditions are expected to decrease by approximately 11.6 feet at the existing dam location from existing dam crest elevations surveyed on July 7, 2016. Flood elevations for the 10-year and 50-year frequency flood events will decrease by approximately 12.8 feet and 12.6 feet, respectively. Lowering water elevations will reduce the community's vulnerability to future flooding upstream. The Dam is in such poor condition that catastrophic failure is a possibility and removal will eliminate this possibility and the risk of loss of life and damage to downstream property, including the damage to downstream public drinking water wellfields. Therefore, impacts of the Proposed Action are expected to be beneficial.

5.4 Sediment Chemistry and Management

Under the No Action Alternative, no mechanical movement of sediments will take place. The sediments with elevated contaminants will remain in the existing impoundment, although periodic high flows may erode and wash small volumes of sediment downstream. Risk of human contact with the sediments is low, given that there is no public access to the impoundment, although recreational boaters can paddle into the impoundment from upstream. The contaminated sediments would continue to have short-term and long-term detrimental effects on bottom-dwelling organisms in the impoundment.

The Proposed Action will have net long-term beneficial effects through removal and upland disposal of contaminated sediments.

5.5 Freshwater Wetlands and Vegetative Communities

Under the No Action Alternative, no changes in vegetation or wetlands are expected.

Under the Proposed Action, limited direct impacts to wetlands and uplands will occur. Periodic inundation of the two floodplain wetlands approximately 1000 feet upstream is expected to

decrease following removal of the Dam. Normal water surface elevation is expected to decrease as well. The change in normal water surface elevation and periodic inundation is expected to affect the long-term conditions of the wetland. Organic matter is expected to decompose more rapidly, causing wetland surface elevations to subside until a new equilibrium between hydrologic fluctuation and accretion is reached. Altered hydrology is expected to favor less water-tolerant species, and there will be an increased risk for invasive plants to colonize these areas. Dominant tree and shrub species would be expected to persist.

While removal of the Dam will result in these alterations to wetlands and hence wildlife habitat, the net benefits of the proposed habitat restoration project to the target species and river system as a whole far outweigh any such impacts. Although the dominant vegetation and associated classifications of some wetlands will change in response to changes in river surface water elevations, the actual loss of wetland habitat is minimal and primarily confined to the riverine environment, which is expected to revert to wetland habitat dominated by emergent plants, scrub-shrub habitat and flood-tolerant tree species. Overall, there will be long-term net benefits from improved habitat quality, restoration of fish passage, and expected gains in biodiversity.

5.6 Wildlife and Fish Resources

5.6.1 Wildlife

Under the No Action Alternative, wildlife diversity or populations are not expected to change.

Under the Proposed Action, project activities will not have long-term adverse impacts to wildlife in the project vicinity. Short-term impacts may arise from construction activity for the 2- or 3-month project period. Disturbances are expected to include increased noise, human presence, substrate disturbances/turbidity occurring from in-water work, and vegetative disturbances associated with the access points.

The noted activities could temporarily displace resident and transient wildlife that currently utilize the affected habitats or reduce the availability and attractiveness of habitats for some species, particularly wildlife that are sensitive to disturbances or have specific habitat requirements (e.g., fish). During construction, dredging and removal of the dam will cause temporary disruption to individuals and local subpopulations of birds, mammals, amphibians and reptiles in the construction area. Displaced species are expected to relocate and/or use adjacent habitats, given the continuity of the project area with similar habitat types. Dredging and removal of the Dam will cause disruption to individuals and local sub-populations of benthic macroinvertebrates within the construction area and immediately downstream. Individuals located in the dredged sediments going to an approved landfill will not survive. However, invertebrate populations as a whole are expected to recover following the end of construction. Short-term impacts to wildlife are expected to cease upon completion of the project and restoration and stabilization of disturbed areas. Wildlife usage is expected to return to pre-project levels. Long-term impacts are expected to be neutral or even beneficial following the removal of contaminated sediments and improved water quality.

5.6.2 Fish

Under the No Action Alternative, the existing Dam will continue to impede the natural movement of resident riverine fish, migratory fish, and other resident aquatic species.
The Proposed Action will have a positive long-term impact on fisheries in the Scantic River by allowing fish passage beyond Springborn Dam. Dredging and removal of the Dam will cause temporary disruption to individuals and local subpopulations of fish in the construction area. However, these impacts will not extend beyond the period of construction. Dredging and dam removal will take place within de-watered areas of the stream and CTDEEP staff will be on hand during the de-watering process to salvage all stranded fish, mussels and other aquatic species (e.g., turtles) and relocate them to suitable habitat outside of the project boundaries.

Many species that depend on flowing water, such as brook trout, river herring, and American shad, have suffered dramatic population declines, in part due to the loss of flowing water and riverine habitat caused by dams that fragment rivers and prevent access to upstream spawning habitat. The removal of this Dam will vastly improve connectivity to upstream and downstream river lengths, significantly expanding the area and quality of fisheries habitat. Therefore, the Proposed Action will have long-term positive effects upon the fisheries and fish habitat of the Scantic River.

5.7 Threatened and Endangered Species

Under the No Action Alternative, no changes to State and Federal threatened and endangered species, or to State species of special concern, are expected.

Under the Proposed Action, no long-term impacts to wood turtles, the bridle shiner, and the NLEB are expected. Impacts to wood turtle would be temporary and protection measures will be employed during construction. Impacts to potential NLEB roosting habitat are anticipated to be negligible. Moreover, it is highly unlikely that NLEB would be present in the project area because the total area of impact is very small (0.1 acre), involving the removal of only a few trees. Following an intra-service section 7 NLEB 4(d) rule streamlined consultation, Service biologists determined that the proposed activity is in compliance with the 4(d) Rule.. No specific construction-period recommendations have been made for the bridle shiner.

The CTDEEP natural diversity database staff provided the following recommendations to protect the wood turtle and other similar species during this project:

- where possible, avoid installing sediment and erosion control materials from late August through September and from March through mid-May;
- install silt fence in a staggered layout to allow wildlife to travel between wetland and upland habitats;
- do not use erosion control materials that use embedded netting, including biodegradable and degradable netting, since these can be fatal to wildlife;
- if riprap is used, consider covering with local streambank material; and
- soil stockpiles should be fenced off to discourage wood turtles from nesting in them.

5.8 Historical and Archaeological Resources

Under the No Action Alternative, the Springborn Dam will remain in place and no immediate impacts to the historical property would take place. No archaeological documentation of the Dam would be completed. The obsolete Dam will continue to be subject to deterioration and structural failure.

The SHPO had previously determined that the Proposed Action will cause an adverse effect to a property eligible for listing on the National Register of Historic Places. Adverse effects consist of the complete removal of the Springborn Dam from the Scantic River, which will permanently eliminate the historic property from the landscape.

A draft Memorandum of Agreement (MOA) (see Appendix C) between the Service, the CTDEEP, and the SHPO has been implemented by the parties. Mitigation measures will consist of documentation of Springborn Dam, publication of documentation results in a scholarly journal, and archaeological monitoring of the dam removal process.

5.9 Air Quality

Under the No Action Alternative, there will be no changes to the existing air quality.

The Proposed Action will have no long-term impacts on air quality. The emissions from construction vehicles and related equipment should have a short-term, insignificant impact to local air quality. The project does not include new construction or conversion of land use facilitating the development of public, commercial, or industrial facilities. No new sources of stationary source air pollutant emissions will occur as a result of the project. Traffic will not increase as a result of the project and therefore, there will be no increase in mobile source emissions of air pollutants.

Removal of the impounded sediments and Dam will involve temporary emissions from construction equipment. Potential construction air quality impacts can occur due to the use of diesel-powered construction vehicles. Diesel air emissions include carbon monoxide, hydrocarbons, nitrogen oxides, and particulate matter. Emissions from construction equipment are anticipated to be significantly less than the total emissions from other industrial and transportation sources in the region and therefore, are expected to be insignificant with respect to compliance with the National Ambient Air Quality Standards. Potential localized air quality impacts would be avoided or limited by proper operation and maintenance of construction equipment and adherence to State regulations limiting idling of engines.

Because the project does not include construction or conversion of land use that would facilitate the development of public, commercial, or industrial facilities, any project-related emissions will not interfere with the air quality goals for the State Implementation Plan. No negative impacts are anticipated.

5.10 Noise

The No Action Alternative has no impact on noise.

Under the Proposed Action, construction activity will occur during daytime hours and any adverse noise impacts due to construction activities will be temporary. In addition, construction noise is exempt from the State noise standards found at RCSA 22a-69-1 through 22a-69-7.4. Minimal short-term and no long-term negative impacts are anticipated.

5.11 Cumulative Effects

Cumulative impacts are those resulting from the incremental impact of the Proposed Action when added to other past, present, and reasonably foreseeable future actions. No adverse cumulative impacts are anticipated as a result of the Proposed Action. However, long-term beneficial, cumulative effects are expected. The proposed dam removal and channel excavation are intended to restore fish passage, improve riparian habitats, and prevent an uncontrolled dam failure and release of contaminated sediments downstream. The Dam is the first barrier on the Scantic River and its removal will open up 2.6 miles of stream habitat for migratory fish and other aquatic organisms. Future projects to remove the other upstream barriers will create a beneficial cumulative effect, as more habitat will be available to migratory fish, in addition to that opened by the Proposed Action.

Removal of the Dam and contaminated sediments will provide long-term improvements to water quality in the Scantic River. These actions will have beneficial cumulative impacts for resident and migratory fishes, benthic invertebrates, other wildlife, and human interaction with the environment.

6.0 AGENCY COORDINATION, PUBLIC INVOLVEMENT AND PERMITS

6.1 Consultation and Coordination

Representatives of the following Federal, State, and local agencies, Tribes, and project team members were consulted during project planning and the development of this EA:

- Town of Enfield, Connecticut;
- U.S. Fish and Wildlife Service, Region 5;
- U.S. Army Corps of Engineers;
- Connecticut Department of Energy and Environmental Protection, Inland Fisheries;
- Connecticut Department of Energy and Environmental Protection, Inland Waters;
- Connecticut State Historic Preservation Office;
- Mohegan Tribal Historic Preservation Officer;
- Mashantucket (Western) Pequot Tribal Historic Preservation Officer;
- Fuss and O'Neill, Inc.; and
- STR (owner of adjacent mill buildings and property over which contractors will pass.

6.2 Public Involvement

Resource agencies, abutters, and other stakeholders have been consulted over a number of years as this project has proceeded from the conceptual stage to full design and permitting phase. The project is undergoing local, State, and Federal permitting processes, as described in section 6.3 of this document. Each permit process requires extensive environmental and planning agency circulation, as well as ample public notice and involvement. A public meeting was held at the Town of Enfield Library on November 13, 2014. Therefore, there were existing and suitable opportunities for a wide variety of specialists, regulators, and residents to comment on and condition the project's potential short-term impacts.

Letters of support for the project were issued by the Connecticut River Watershed Council, the Connecticut Water Company, the Hazardville Water Company, the Enfield Conservation Commission, Trout Unlimited, the American Heritage River Commission, Connecticut State Senator John A. Kissel, Connecticut State Representative David Alexander, and the Scantic River Watershed Association.

6.3 Required Permits and Approvals

In addition to this EA, the following permits and/or consultations are required by State and Federal agencies:

- Section 401 Water Quality Certification (CTDEEP);
- Dam Safety review (CTDEEP);
- Section 404 of Clean Water Act, Connecticut Programmatic General Permit (USACE);
- Section 106 of the National Historic Preservation Act consultation and review (SHPO/THPO and the Advisory Council on Historic Preservation); and
- Section 7 of the Endangered Species Act (USFWS).

7.0 REFERENCES

Buha, A. and M. Williams. 2011. Polycyclic Aromatic Hydrocarbons. Website accessed on April 19, 2016. http://toxipedia.org/display/toxipedia/Polycyclic+Aromatic+Hydrocarbons

CTDEEP. 2015. http://cteco.uconn.edu/map_catalog/maps/town/wtrqualcl/WtrQualCl_Enfield.pdf Accessed March 29, 2016.

Fuss & O'Neill, Inc. 2009. Springborn Dam (CT00529) Feasibility Study Report, Enfield, Connecticut, May 2009.

Fuss & O'Neill, Inc. 2014. Sediment Redistribution and Impact Analysis at Springborn Dam, Enfield, Connecticut, June 2014.

Fuss & O'Neill, Inc. 2015. Connecticut DEEP Dam Safety Permit Application for Springborn Dam, Enfield, Connecticut; submitted on behalf of DEEP, October 2015.

Hagstrom, N.T., M. Humphreys and W.A. Hyatt. 1990. A Survey of Connecticut Streams and Rivers — Connecticut River Tributaries, Scantic River, Mattabesset River, Salmon River, Coginchaug River and Eightmile River Drainages. Federal Aid in Sport Fish Restoration F-66-R-2. Annual Performance Report. Department of Environmental Protection, State of Connecticut. F-66R-2. Hartford, CT. 152 pp.

KCI Technologies, Inc. 2009. Memorandum Re: Sediment Characterization and Mobility Assessment. March 23, 2009. To Chris Cullen, P.E. From Mike Trumbauer. Page 53.

KCI Technologies, Inc. 2012. Springborn Dam Removal Feasibility Study Memorandum, April 11, 2012.

Martin, E.H. and C.D. Apse. 2011. Northeast Aquatic Connectivity: An Assessment of Dams on Northeastern Rivers. The Nature Conservancy, Eastern Freshwater Program.

National Fish and Wildlife Foundation. 2014. Hurricane Sandy Coastal Resiliency Competitive Grants Program: Removal of Springborn Dam, Enfield, Connecticut; Grant awarded July 2014.

Pavlowsky, R. T. 2013. Coal-tar pavement sealant use and polycyclic aromatic hydrocarbon contamination in urban stream sediments. Physical Geography 34:392-415.

Saila, S. B., D. Poyer and D. Aube. 2005. Small dams and habitat quality in low order streams. Wood-Pawcatuck Watershed Association.

Scantic River Watershed Association. 2015. http://www.srwa.org/greenway.shtml. Accessed November 11, 2015.

Santucci Jr., V. J., S. R. Gephard and S. M. Pescitelli. 2005. Effects of multiple low-head dams on fish, macroinvertebrates, habitat, and water quality in the Fox River, Illinois. *North American Journal of Fisheries Management* 25:975-992.

Watts, A. W., T. P. Ballestero, R. M. Roseen and J. P. Houle. 2010. Polycyclic aromatic hydrocarbons in stormwater runoff from sealcoated pavements. Environ. Sci. Technol. 44: 8849–8854.

Appendix A: Memorandum of Agreement between the United States Fish and Wildlife Service, Connecticut Department of Energy and Environmental Protection, and the Connecticut State Historic Preservation Office regarding removal of the Springborn Dam on the Scantic River in Enfield, Hartford County, Connecticut

MEMORANDUM OF AGREEMENT
BETWEEN THE
UNITED STATES FISH AND WILDLIFE SERVICE,
CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION,
AND THE
CONNECTICUT STATE HISTORIC PRESERVATION OFFICE
REGARDING
REMOVAL OF THE SPRINGBORN DAM ON THE SCANTIC RIVER
IN ENFIELD, HARTFORD COUNTY, CONNECTICUT

WHEREAS, the United States Fish and Wildlife Service (USFWS), as lead Federal agency, intends to provide technical assistance for the *removal* of the Springborn Dam (Dam) and associated sediments on the Scantic River in Enfield, Hartford County, Connecticut (the "Project") and this is an undertaking subject to review under section 106 of the National Historic Preservation Act (NHPA, 54 USC § 306108); and

WHEREAS, the Connecticut Department of Energy and Environmental Protection (CTDEEP) is the owner of the Dam and has responsibilities for implementing stipulations under this Memorandum of Agreement (Agreement), and has been invited to be a signatory to this Agreement pursuant to 36 CFR § 800.6(c)(i); and

WHEREAS, the USFWS in consultation with CTDEEP has defined the Area of Potential Effect as the Dam and its immediate environs as depicted in Appendix A; and **WHEREAS**, the USFWS has consulted with the Connecticut State Historic Preservation Office (CTSHPO) regarding the effects on historic properties pursuant to 36 CFR § 800; and

WHEREAS, the USFWS, in consultation with CTSHPO, has determined that the undertaking will have an adverse effect on the Dam, which is eligible for listing on the National Register of Historic Places as a contributing element to the extant mill complex; and

WHEREAS, in accordance with the regulations implementing section 106 of the NHPA, the USFWS has invited the Advisory Council on Historic Preservation (ACHP) to participate in the consultation process, and the ACHP has determined that its participation in the consultation to resolve adverse effects is not necessary; and

WHEREAS, the USFWS has invited the Mashantucket (Western) Pequot Tribal Nation and Mohegan Tribe of Indians of Connecticut to participate in the section 106 consultation for the undertaking in letters sent via certified mail return receipt requested on January 20, 2016; and **WHEREAS**, no response was received within the subsequent 60 days from the Mashantucket (Western) Pequot Tribal Nation; and

WHEREAS, after reviewing the information provided, it is the opinion of the Mohegan Tribal Historic Preservation Office (THPO) that No Properties of cultural, religious or historic significance to the Mohegan Tribe of Indians of Connecticut will be adversely affected by the

Project as it is proposed, but in the advent of an inadvertent discovery of cultural resources or human remains, the Mohegan THPO respectfully requests notification in a timely fashion; and

NOW, THEREFORE, the USFWS, the CTDEEP, and the CTSHPO agree that the Project shall be implemented with the following stipulations in order to take into account the effects of the Project on historic properties:

I. STIPULATIONS

a. Prior to any demolition or construction activities, the CTDEEP shall retain an archaeologist consultant (Consultant) on behalf of the USFWS. The Consultant shall document the Dam to the professional standards of the CTSHPO. Documentation shall consist of narrative text, photographs and/or high quality digital images, an index of photographs, and a photographic site plan. Photographic documentation shall include views during high and low water conditions and pertinent context-related perspectives of the adjacent mill complex. Final documentation shall be provided in duplicate to the CTSHPO for permanent archiving and public accessibility.

b. The CTDEEP and their Consultant, on behalf of the USFWS, shall prepare and submit a brief history and description of the Dam, including project-related information, photographs and maps, to the *Society for Industrial Archaeology New England Chapters Newsletter*.

c. The CTDEEP and their Consultant, on behalf of the USFWS, shall monitor the demolition of the Dam and professionally document any dam-related features or other industrial-archaeological remains that may be exposed during project-related activities. The CTDEEP will consult with the Office of State Archaeology at the University of Connecticut (Storrs) regarding the curation of industrial artifacts that may be recovered through the archaeological monitoring. The Consultant will prepare a report on the results of the archaeological monitoring that will contain narrative text, a detailed site map, sketch plans and/or drawings as appropriate, high quality digital images with a photographic index and key, and a State of Connecticut archaeological site form. The report shall be provided in duplicate to the CTSHPO for permanent archiving and public accessibility.

d. If previously unidentified historic or archaeological resources are discovered during the demolition process, the CTDEEP, on behalf of the USFWS, will suspend all work and notify the CTSHPO. The USFWS and the CTSHPO will apply the National Register criteria to identified resources to determine eligibility and consultation pursuant to 36 CFR § 800.4.

II. DISPUTE RESOLUTION

a. Should any signatory to this Memorandum of Agreement (MOA) object within thirty (30) days to any actions proposed or carried out pursuant to this MOA, the USFWS shall consult with the CTSHPO to resolve the objection. If the USFWS determines that the objection cannot be resolved, then the USFWS shall forward all documentation relevant to the dispute to the ACHP. Within thirty (30) days after receipt of all pertinent documentation, the ACHP will either:

i. provide the USFWS with recommendations, which the USFWS shall take into account in reaching a final decision regarding the dispute; or

ii. notify the USFWS that it will comment pursuant to 36 CFR § 800.6(b), and then proceed to comment. Any recommendations or comment provided by the ACHP shall be understood to pertain only to the subject of the dispute; the USFWS responsibility to complete all actions under the MOA that are not subjects of the dispute will remain unchanged.

III. AMENDMENTS

This MOA may be amended when such an amendment is agreed to in writing by all signatories. The amendment will be effective on the date a copy is signed by all signatories and filed with the ACHP.

IV. DURATION

This MOA shall continue in full force and effect until three (3) years after the date of the last signature of a signatory party or the completion of the Project and the fulfillment of Stipulations, whichever comes first.

If any signatory to this MOA determines that its terms will not or cannot be carried out, that party shall immediately consult with the other parties in an attempt to develop an amendment per Stipulation 8 above. If, within 30 days (or another time period agreed to by all signatories), an amendment cannot be reached, any signatory may terminate the MOA upon written notification to the other signatories. In the event that the MOA is terminated, the USFWS will either execute a revised MOA with signatories pursuant to 36 CFR § 800.6(c) or request the comments of the ACHP under 36 CFR § 800.7(a).

EXECUTION of this Agreement by the USFWS, the CTDEEP, and the CTSHPO, its subsequent filing with the ACHP, and implementation of its terms evidences that the USFWS has afforded the ACHP the opportunity to comment on the Project and that the USFWS has taken into account the effects of the Project on historic properties.

SIGNATORIES

U.S. FISH AND WILDLIFE SERVICE

By: _____ Date: 24 MAY 2016
Thomas R. Chapman, Supervisor, Southern New England Coastal Program

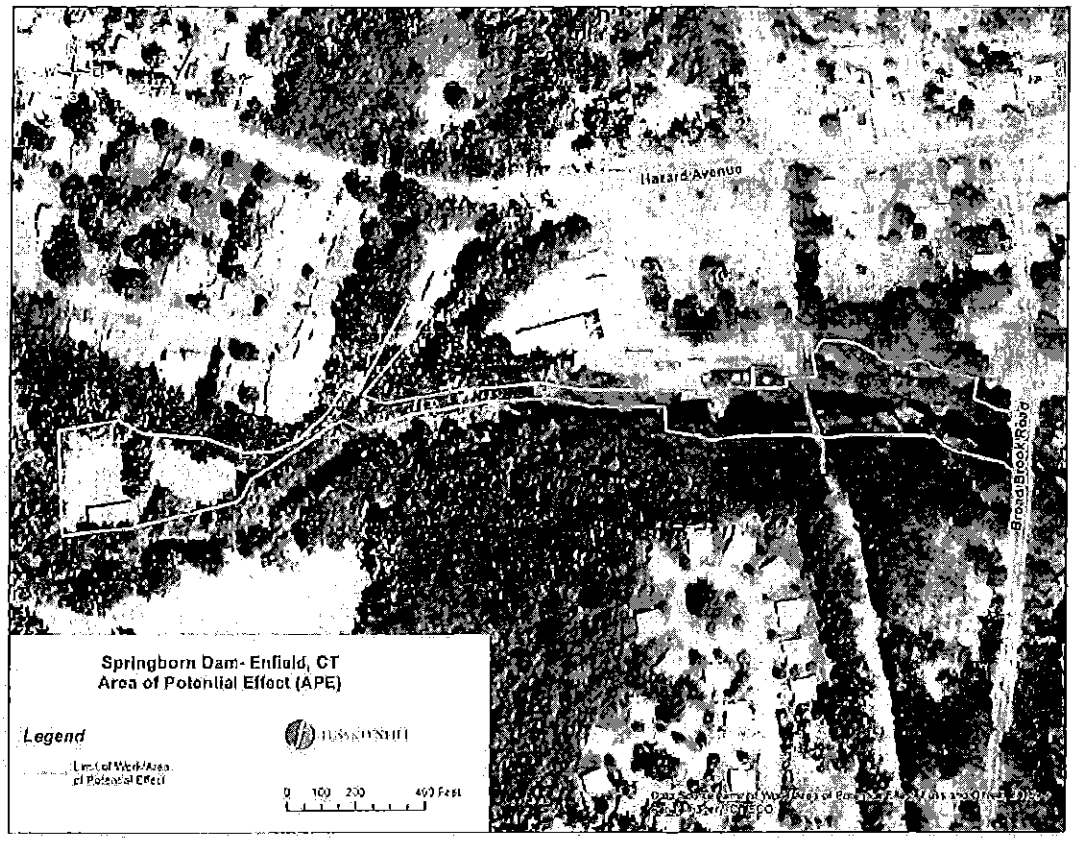
CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION

By: _____ Date: 6/2/16
Robert Klee, Commissioner

CONNECTICUT STATE HISTORIC PRESERVATION OFFICE:

By: _____ Date: 5/24/16
Kristina Newman-Scott, State Historic Preservation Officer

APPENDIX A
MAP OF AREA OF POTENTIAL EFFECT



Appendix B: Intra-Service Section 7 Northern Long Eared Bat 4(d) Rule Streamlined Consultation Form Prepared by U.S. Fish and Wildlife Service

SVO
OK
7/6/16

Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form

Federal agencies should use this form for the optional streamlined consultation framework for the northern long-eared bat (NLEB). This framework allows federal agencies to rely upon the U.S. Fish and Wildlife Service's (USFWS) January 5, 2016, intra-Service Programmatic Biological Opinion (BO) on the final 4(d) rule for the NLEB for section 7(a)(2) compliance by: (1) notifying the USFWS that an action agency will use the streamlined framework; (2) describing the project with sufficient detail to support the required determination; and (3) enabling the USFWS to track effects and determine if reinitiation of consultation is required per 50 CFR 402.16.

This form is not necessary if an agency determines that a proposed action will have no effect to the NLEB or if the USFWS has concurred in writing with an agency's determination that a proposed action may affect, but is not likely to adversely affect the NLEB (i.e., the standard informal consultation process). Actions that may cause prohibited incidental take require separate formal consultation. Providing this information does not address section 7(a)(2) compliance for any other listed species.

Information to Determine 4(d) Rule Compliance:	**YES**	**NO**
1. Does the project occur wholly outside of the WNS Zone[1]?	☐	☒
2. Have you contacted the appropriate agency[2] to determine if your project is near known hibernacula or maternity roost trees?	☒	☐
3. Could the project disturb hibernating NLEBs in a known hibernaculum?	☐	☒
4. Could the project alter the entrance or interior environment of a known hibernaculum?	☐	☒
5. Does the project remove any trees within 0.25 miles of a known hibernaculum at any time of year?	☐	☒
6. Would the project cut or destroy known occupied maternity roost trees, or any other trees within a 150-foot radius from the maternity roost tree from June 1 through July 31.	☐	☒

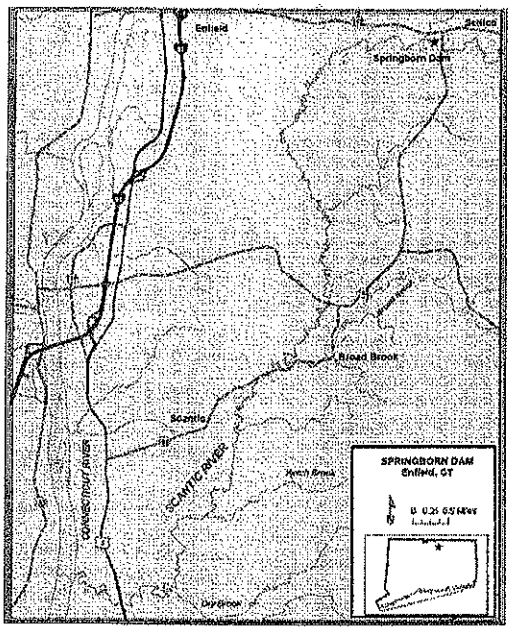
You are eligible to use this form if you have answered yes to question #1 **or** yes to question #2 **and** no to questions 3, 4, 5 and 6. The remainder of the form will be used by the USFWS to track our assumptions in the BO.

Agency and Applicant[3]: Suzanne Paton, USFWS, Suzanne_Paton@fws.gov 401-213-4415

Project Name: Springborn Dam removal

Project Location: Scantic River, 98 Water Street, Enfield, CT

[1] http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf
[2] See http://www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html
[3] If applicable - only needed for federal actions with applicants (e.g., for a permit, etc.) who are party to the consultation.



Basic Project Description:

The Springborn Dam is the first dam on the Scantic River, a large tributary to the Connecticut River that enters the River between the mouth of the Farmington River and the Massachusetts state line. Located in Enfield, Connecticut (Figure 1), the Springborn Dam, is a 26-foot high, run-of-the-river structure built in 1890 to provide power for an adjacent mill. The majority of the dam's timber cribbing, added in the 1920s, has washed away and the Dam currently serves no useful purpose. The mill complex, which no longer uses the Dam for power generation, experiences periodic flooding. This high hazard dam has the potential to fail and cause severe impacts downstream to life and property.

The Connecticut Department of Energy and Environmental Protection (CTDEEP) and the U.S. Fish and Wildlife Service (Service), with the support of local stakeholders, are proposing to restore the river to its natural, free-flowing condition, restore fish passage, mitigate future flood impacts, and eliminate a public safety risk through removal of the Springborn Dam. Funding for the project comes from the Hurricane Sandy Resiliency Competitive Grant Program administered by the National Fish & Wildlife Foundation (Disaster Relief Appropriations Act of 2013). The CTDEEP, the owner of the Dam, is the project lead and administrator. The Service, as the lead federal agency, is providing technical assistance by coordinating compliance with the National Environmental Policy Act, section 7 of the Endangered Species Act, and section 106 of the National Historic Preservation Act.

The project is expected to go to construction following the completion of all NEPA compliance and public comment period. The permitted construction window begins July 1, 2016 but we anticipate a more realistic start date of August 1, with construction continuing into the fall and winter months.

General Project Information	YES	NO
Does the project occur within 0.25 miles of a known hibernaculum?	☐	☒
Does the project occur within 150 feet of a known maternity roost tree?	☐	☒
Does the project include forest conversion[4]? (if yes, report acreage below)	☒	☐

[4] Any activity that temporarily or permanently removes suitable forested habitat, including, but not limited to, tree removal from development, energy production and transmission, mining, agriculture, etc. (see page 48 of the BO).

Estimated total acres of forest conversion	< 0.1 acre	
If known, estimated acres[5] of forest conversion from April 1 to October 31	< 0.1 acre	
If known, estimated acres of forest conversion from June 1 to July 31[6]	< 0.1 acre	
Does the project include timber harvest? (if yes, report acreage below)	☐	☒
Estimated total acres of timber harvest		
If known, estimated acres of timber harvest from April 1 to October 31		
If known, estimated acres of timber harvest from June 1 to July 31		
Does the project include prescribed fire? (if yes, report acreage below)	☐	☒
Estimated total acres of prescribed fire		
If known, estimated acres of prescribed fire from April 1 to October 31		
If known, estimated acres of prescribed fire from June 1 to July 31		
Does the project install new wind turbines? (if yes, report capacity in MW below)	☐	☒
Estimated wind capacity (MW)		

Agency Determination:

By signing this form, the action agency determines that this project may affect the NLEB, but that any resulting incidental take of the NLEB is not prohibited by the final 4(d) rule.

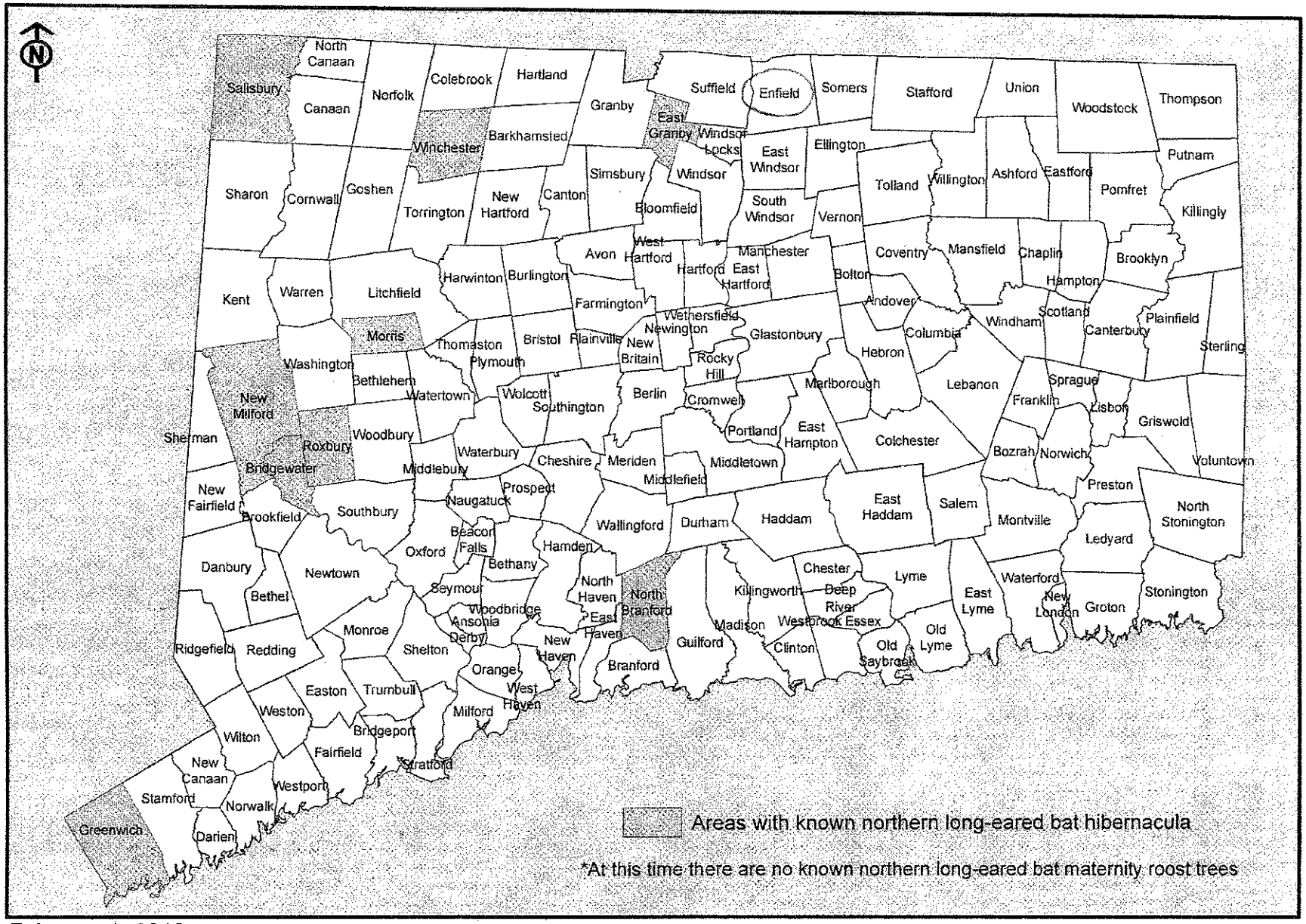
If the USFWS does not respond within 30 days from submittal of this form, the action agency may presume that its determination is informed by the best available information and that its project responsibilities under 7(a)(2) with respect to the NLEB are fulfilled through the USFWS January 5, 2016, Programmatic BO. The action agency will update this determination annually for multi-year activities.

The action agency understands that the USFWS presumes that all activities are implemented as described herein. The action agency will promptly report any departures from the described activities to the appropriate USFWS Field Office. The action agency will provide the appropriate USFWS Field Office with the results of any surveys conducted for the NLEB. Involved parties will promptly notify the appropriate USFWS Field Office upon finding a dead, injured, or sick NLEB.

Signature: Suzanne Patton Date Submitted: 6/16/16

[5] If the project removes less than 10 trees and the acreage is unknown, report the acreage as less than 0.1 acre.
[6] If the activity includes tree clearing in June and July, also include those acreage in April to October.

Northern long-eared bat areas of concern in Connecticut to assist with Federal Endangered Species Act Compliance



February 1, 2016

For information on federal requirements visit http://www.fws.gov/midwest/endangered/mammals/nleb/

Natural Diversity Data Base Areas

ENFIELD, CT

September 2015

State and Federal Listed Species & Significant Natural Communities

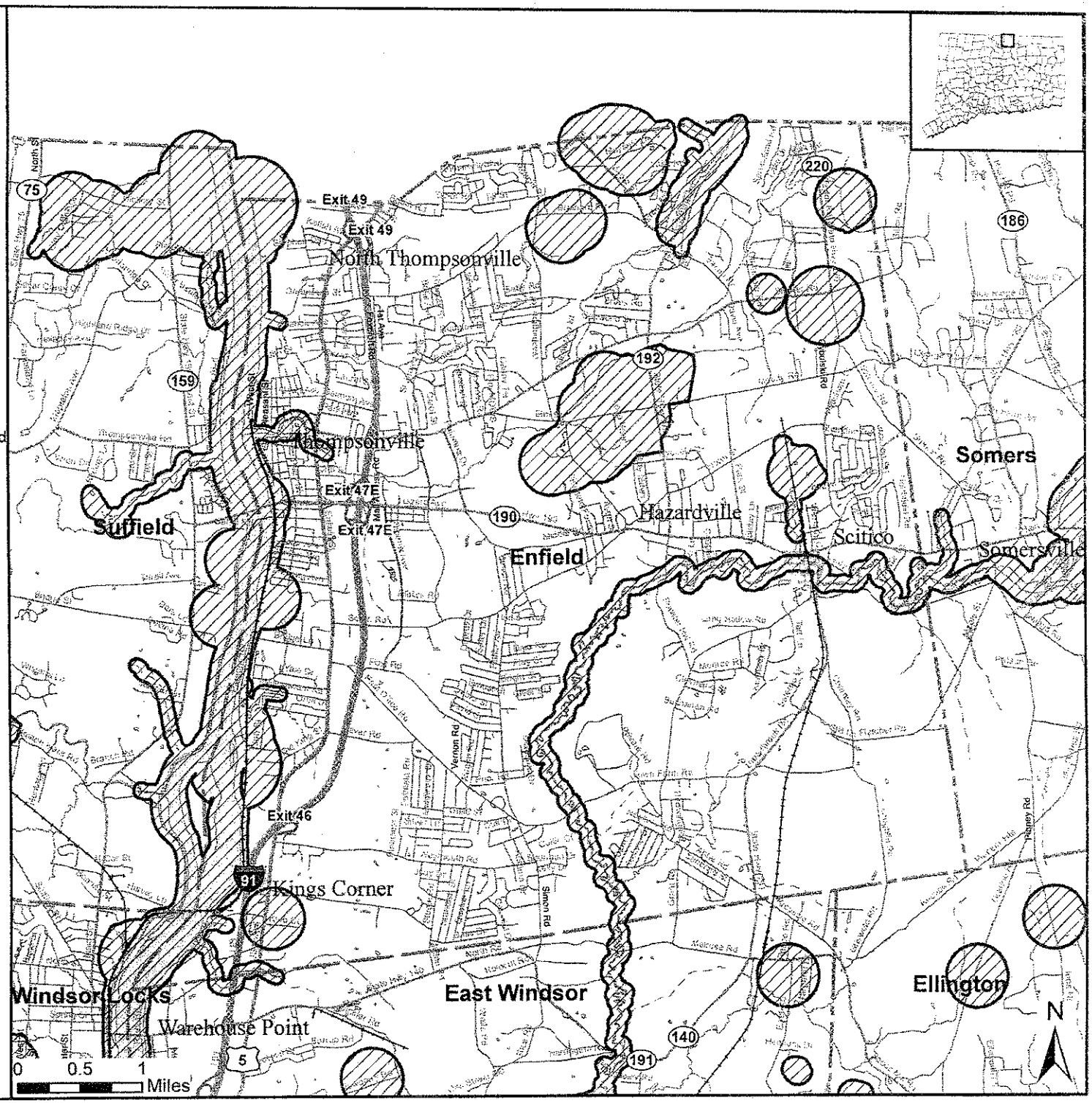
Town Boundary

NOTE: This map shows general locations of State and Federal Listed Species and Significant Natural Communities. Information on listed species is collected and compiled by the Natural Diversity Data Base (NDDB) from a number of data sources . Exact locations of species have been buffered to produce the general locations. Exact locations of species and communities occur somewhere in the shaded areas, not necessarily in the center. A new mapping format is being employed that more accurately models important riparian and aquatic areas and eliminates the need for the upstream/downstream searches required in previous versions.

This map is intended for use as a preliminary screening tool for conducting a Natural Diversity Data Base Review Request. To use the map, locate the project boundaries and any additional affected areas. If the project is within a shaded area there may be a potential conflict with a listed species. For more information, complete a Request for Natural Diversity Data Base State Listed Species Review form (DEP-APP-007), and submit it to the NDDB along with the required maps and information. More detailed instructions are provided with the request form on our website.

www.ct.gov/deep/nddbrequest

Use the CTECO Interactive Map Viewers at www.cteco.uconn.edu to more precisely search for and locate a site and to view aerial imagery with NDDB Areas.

QUESTIONS: Department of Energy and Environmental Protection (DEEP)
79 Elm St., Hartford CT 06106
Phone (860) 424-3011

Connecticut Department of Energy & Environmental Protection
Bureau of Natural Resources
Wildlife Division