Paperwork Reduction Act Information

Natural Resource Damage Assessment
Restoration Project Information Sheet

Responses to this collection are voluntary. Collection of restoration project information will be undertaken in order to provide information to Natural Resource Trustees to develop potential restoration alternatives for natural resource injuries and service losses requiring restoration during the restoration planning phase of the Natural Resource Damage Assessment (NRDA) process. Public reporting burden for this collection of information is estimated to average 20 minutes including the time for reviewing instructions, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspects of this collection of information, including suggestions for reducing this burden, to the NOAA Fisheries Office of Habitat Conservation, Restoration Center, Louisiana State University, Sea Grant Building, Room 124C Baton Rouge, LA 70803.

Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to penalty for failure to comply with, a collection of information subject to the requirements of the Paperwork Reduction Act, unless that collection of information displays a currently valid OMB Control Number.

The identity of respondents will not remain confidential. The information collected will be reviewed for compliance with the NOAA Section 515 Guidelines established in response to the Treasury and General Government Appropriations Act, and certified before dissemination.

Natural Resource Damage Assessment (NRDA)
Restoration Project Information Sheet

Guidelines for Completion

Please complete all of the information requested with the best information that you have available. Limited attachments are acceptable if they are necessary to adequately describe the project, however every effort should be made to have all pertinent information included on the Restoration Project Information Sheet. Below are specific guidelines for completion.

A. General Information

Organization:	The name of the organization or agency submitting the information. If you are applying as an individual indicate by filling this section with "N/A".
Contact Name:	The first and last name of a person who can be contacted for additional information.
Title:	The title (or position) of the above individual.
Address:	The mailing address of the above individual or organization.
Phone number/Email:	The phone number and email of the above individual.
Organization Website:	The web page of the above organization or agency.

B. Project Information

Type of Project:	A project is considered a "Change to an Existing Project" if the project has been previously submitted through the NRDA project information sheet.
Project ID Number	If the project is considered a change to an existing project, the Project ID is the unique number given upon submission through the NRDA project information sheet. Otherwise, leave this blank.
Project name:	The common name of the project, usually a combination of location and restoration activity (e.g., Cross Bayou Mangrove Restoration).
Location:	The location where the restoration activity will take place (e.g., East Timbalier Island).
State:	Two-letter abbreviation of the state (s) where the project will take place. If the project occurs across several states list all states separated by commas.
County/Parish:	County or Parish where the project will be completed. If the project occurs across multiple counties or parishes list only the primary county or parish name.
Watershed/Basin:	The watershed where the project will be completed. If the project occurs across multiple watersheds list only the primary watershed.
Latitude/Longitude:	Provide a latitude/longitude of the central location of the project activity. If the activity occurs over a large area you may also attach a map of the area of the activity.
Project Size:	The size of the area where project activities will occur; designated by linear miles, acres, or tonnage (e.g., area of plantings in a riparian buffer).
Affected Area:	The area affected or influenced by the project activity; designated by acres (e.g., area of water quality improvement as a result of riparian buffer plantings).

C. Project Description

A description of the project objectives, activities to be completed and expected outcomes; including information on the benefits of this project to the public and environment. If applicable, use this section to provide additional refinement to habitat and/or resource benefit (e.g., cypress wetland, barrier island). In addition, feel free to attach other information, maps, or diagrams concerning your project. Maximum 2,500 characters.

D. Project Activity(s)

The type of activity the project will complete to address the impacts to priority resources or habitats. Check all that apply.

Restoration:	Activities conducted to create, enhance, or restore an injured resource or habitat.
Protection:	Activities conducted to protect a resource or habitat by removing the threat to that resource or habitat (e.g., shoreline stabilization, buoys or markers, nest protection).
Debris Removal:	Removal of debris to restore and protect a resource or habitat.
Land Acquisition:	The acquisition and conservation of land in perpetuity to protect priority resources or habitats.
Maintenance/Management:	Activities conducted to maintain or manage the quality of a resource or habitat (e.g., prescribed burns).
Education:	Education of a targeted audience to restore or protect priority resources or habitats.

OMB Control #0648-0497 / Expires 12/31/2019

Natural Resource Damage Assessment (NRDA)
Restoration Project Information Sheet

Guidelines for Completion *(continued)*

E. Project Habitat(s)

The type of habitat that the project activities are located within or will benefit. Check all that apply.

Upland:	Regions located away from coastlines and the floodplains of rivers, streams, and other bodies of water.
Riverine:	Regions located within or adjacent to open freshwater areas that occur within a defined channel.
Marine/Estuarine Wetlands:	Regions that are inundated or saturated by saltwater on a consistent basis.
Freshwater Wetlands:	Regions that are inundated or saturated by freshwater (e.g., surface or groundwater) on a consistent basis to support saturation tolerant plant species.
Beach/Dune:	Regions along a sandy shoreline that include the area from the mean low tide through the dune system.
Subtidal (nearshore/offshore):	Coastal regions that are permanently inundated with salt water (e.g., ocean).

F. Resource Benefit(s)

Primary resources that would benefit from the project. Check all that apply.

Marine Mammals:	Whales (dolphin), Manatees, Otters, etc.
Birds:	All birds
Reptiles/amphibians:	Sea turtles, alligators, snakes, lizards, frogs, etc.
Fish:	Nearshore and offshore fish
Shellfish:	Oysters, shrimp, crabs, etc.
Terrestrial Wildlife:	All upland animals
Corals:	Shallow and deep water corals
Vegetation:	All plants (e.g., submergent, emergent, and terrestrial)
Water column:	Water quality and plankton
Sediment / Benthos:	Sediment permanently inundated with water, and organisms associated with the sediment (e.g., worms)
Shoreline:	Land area adjacent to water (e.g., beaches, marsh)
Human Use:	Improved recreation, infrastructure, community resilience, etc.
Status Species:	Will this project directly benefit State or Federally listed threatened and/or endangered species? If so, please list them. If not, please indicate N/A.

G. Project Status

Property/Resource Acquisition:	Acquisition of the property, resource, or landowner agreements (e.g., easements) in which the project activity will occur. Indicate the status by selecting NOT STARTED, IN PROGRESS, COMPLETED, or N/A.
Planning/Design:	Project planning and engineered design of the project activity. Indicate the status by selecting NOT STARTED, IN PROGRESS, COMPLETED, or N/A.
Permitting:	Acquisition of all local, state, and federal permits needed to implement the project activity (e.g., NEPA). Indicate the status by selecting NOT STARTED, IN PROGRESS, COMPLETED, or N/A.
Time to Implementation:	Number of months required to prepare for the start of project activity.
Time to Completion:	Following the start of the project, number of months required to complete the project activity.
Regional Planning:	Is this project included under a regional or statewide plan/initiative? (YES or NO) If yes, please list the plan/initiative in the space provided.

H. Project Cost

Estimated Cost:	The total cost of the project including any funds contributed by the applicant or other organizations (e.g., match funds).
Funding available:	Monies (from the applicant or partnering organizations/agencies) already committed for partial funding of the project activity. Indicate amount in the adjacent box.

H. Project Partners

Please provide the name, contact, and involvement (equipment, matching funds, design, etc.) of other organizations or agencies with the project activities.

OMB Control #0648-0497 / Expires 12/31/2019

Natural Resource Damage Assessment (NRDA)
Restoration Project Information Sheet

A General Information

Organization			
City of Woburn, Massachusetts			
Contact Name (First Last)	**Title**		
John E. Corey, Jr., P.E.	City Engineer		
Address	**City**	**State**	**ZIP**
10 Common Street	Woburn	MA	02478
Phone Number	**Email**		
(781) 897-5882 *ext.*	jcorey@cityofwoburn.com		
Organization Website			
https://www.woburnma.gov/			

B Project Information

Type of Project	If this is a Change to an Existing Project, enter the Project ID Number
New Project	

Project Name
Woburn Horn Pond Improved River Herring Passage

Location (e.g. John Smith National Wildlife Refuge)
Outlet of Horn Pond in Woburn, near Scalley Dam

State(s) (Use 2-letter abbreviations separated by commas)	County/Parish	Watershed/Basin
MA	Middlesex	Mystic River

Latitude (decimal degrees)	Longitude (decimal degrees)	Project Size (Choose one)				Affected Area	
42.4685 degrees N	71.1567 degrees W	*miles*	<5	*acres*	*tons*	102	*acres*

C Project Description

Please provide more information about the proposed project. (Limit 2,500 characters.)

To restore river herring (Blueback Herring and Alewife) in the Mystic River watershed, Woburn will design and construct improved fish passage at the Horn Pond outlet, including a 14-ft wide gravel road to facilitate maintenance of the passageway and dam, electrical and instrumentation conduits to the dam, a viewing station for camera recording and public observation, and downstream improvements. With these upgrades, up to 500,000 herring will reach Horn Pond each year. After years of decline, the Mystic hosts one of the state's largest fish runs, due to improved passage from new dams and fish ladders in Upper Mystic Lake in Medford (2012) and at Center Falls Dam in Winchester (2017). Passing the Center Falls Dams, the population is estimated to range from 89,000 (2017 by De Maximis, Inc) to nearly 500,000 (in 2015 by Mystic River Watershed Association [MyRWA], an increase of 100% over 3 years). The river herring migrate upstream to the 102-ac Horn Pond in Woburn via Horn Pond Brook, tributary to the Aberjona River, where an existing fishway provides difficult access; only 25,000 entered the pond last year. Following a 2018 site visit by Woburn, MA Division of Marine Fisheries (DMF), and US Fish and Wildlife Service (USFWS), conceptual designs of alternative for fish passage were developed (attached). Preliminary cost estimates range from $350K-$500K for a nature-like roughened channel (Alt 1), $200K-$400K for a nature-like pool/weir passage (Alt 2), and $400K-$800K for a Denil fish ladder (Alt 3) and include the road, viewing station and stream improvements. Woburn will analyze passage alternatives; evaluate site conditions; develop engineering design plans and construction manual; prepare permit applications; construct the facilities; oversee construction; and develop an operation and maintenance manual. The City will coordinate with DMF, USFWS, and NOAA to ensure that best practices are

OMB Control #0648-0497 / Expires 12/31/2019

Natural Resource Damage Assessment (NRDA)

Restoration Project Information Sheet *(continued)*

D Project Activity(s)

(Check all that apply)

☑ Restoration	☑ Debris Removal	☑ Maintenance/Management
☑ Protection	☐ Land Acquisition	☑ Education

E Project Habitat(s)

(Check all that apply)

☑ Upland	☐ Marine/Estuarine Wetlands	☐ Beach/Dune
☑ Riverine	☐ Freshwater Wetlands	☐ Subtidal (Nearshore/Offshore)

F Resource Benefit(s)

(Check all that apply)

☑ Marine Mammals	☐ Shellfish	☐ Water Column
☑ Birds	☐ Terrestrial Wildlife	☐ Sediment/Benthos
☑ Reptiles/Amphibians	☐ Corals	☑ Shoreline
☑ Fish	☐ Vegetation	☑ Human Use (Recreational, Cultural)

Will the project directly benefit State- or Federally-listed species? If so, please list them. If not, please indicate N/A.

The project will provide ecosystems benefits affecting the Northern Long-Eared Bat as well as Natural Heritage and Endangered Species territory located around Horn Pond's western edge.

G Project Status

Property/Resource Acquisition	Completed	*Time to Implementation* 0-3 months
Project Planning/Design	In Progress	*Time to Project Completion* 7-12 months
Project Permitting.	Not Started	

Is this project included under a regional or statewide plan? Yes

If so, please list:

Horn Pond is on DMF's restoration priority list as "High Priority" for Boston/North Shore. Also, while Horn Pond was not specifically mentioned, the Mystic River Watershed Assessment and Action Plan (2006) prioritized measures to increase the river herring p

H Project Costs

Estimated Cost	*Funding Available*
$200,000 to $800,000 depending on alternative selected	Currently seeking additional grants

I Project Partners

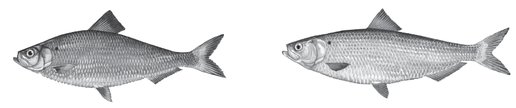
Partner 1 Organization Massachusetts Division of Marine Fisheries	
Partner 1 Contact **Brad Chase, Ben Gahagan**	*Partner 1 Involvement* **Fish passage design**
Partner 2 Organization U.S. Fish and Wildlife Service	
Partner 2 Contact Byran Sojkowski	*Partner 2 Involvement* Fish passage design
Partner 3 Organization Mystic River Watershed Association	
Partner 3 Contact Patrick Herron, Executive Director	*Partner 3 Involvement* River herring monitoring, fish passage site layout for viewing/cultural elements

Disclaimer:

The submission of project information **does not** guarantee project funding. Projects will be evaluated using criteria identified in OPA, NEPA, implementing regulations, and related laws. Selection and funding determinations will be made by the Trustee Council.

WOBURN • LOCATED 1640 : INCORPORATED 1642 : A CITY 1888 • DIRIGO ET VIRTUTE

LOCAL RIVER HERRING SPECIES



Alewife

Blueback Herring

Shaker Glen Extension
Wetland Restoration: **12 acres**

Horn Pond Fishway, Woburn, MA
Potential herring habitat: **102 acres**

Central Falls Fish Ladder, Winchester, MA (2017)
Expanded herring habitat: **28 acres**

Mystic Lakes Fish Ladder, Medford, MA (2012)
Expanded herring habitat: **180 acres**

Aberjona River
Horn Pond
Mystic Lakes
Malden River
Mystic River
Mill Creek
Chelsea Creek
Belle Isle Marsh
Boston Harbor
Charles River

MYSTIC RIVER WATERSHED HABITAT RESTORATION

Improved Fish Passage at Horn Pond in Woburn

0 2.5 5 mi

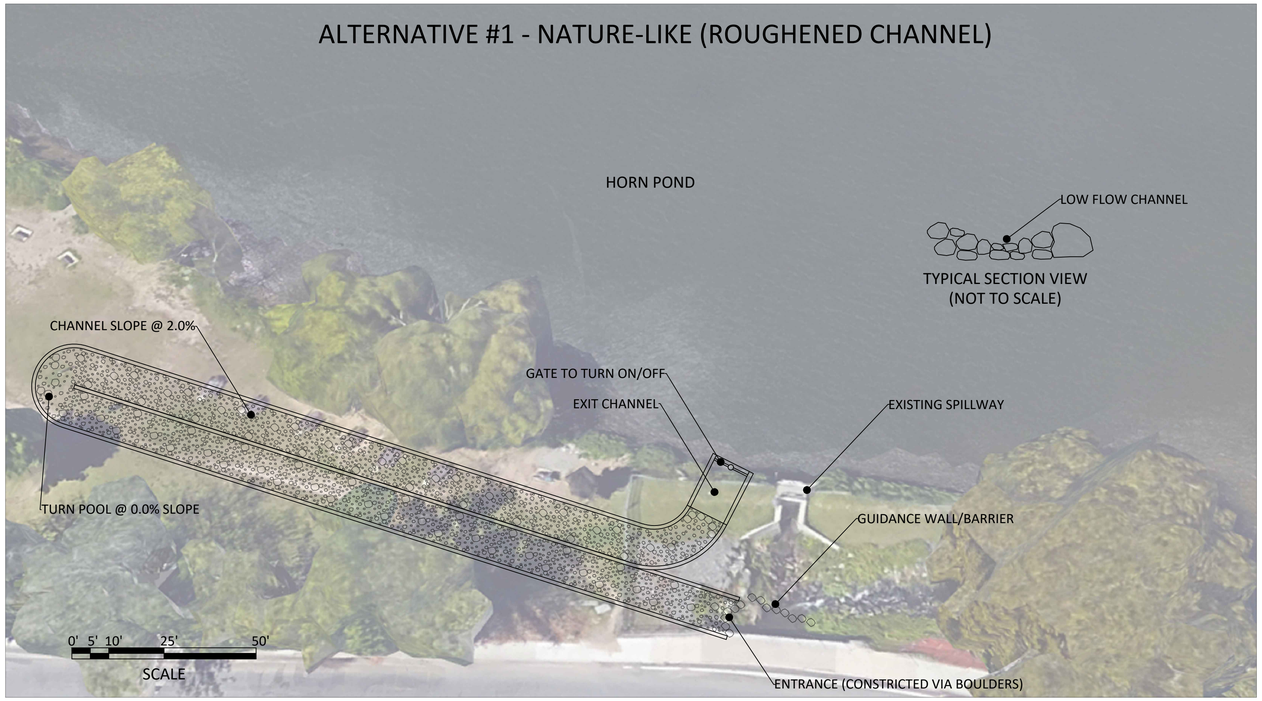
N

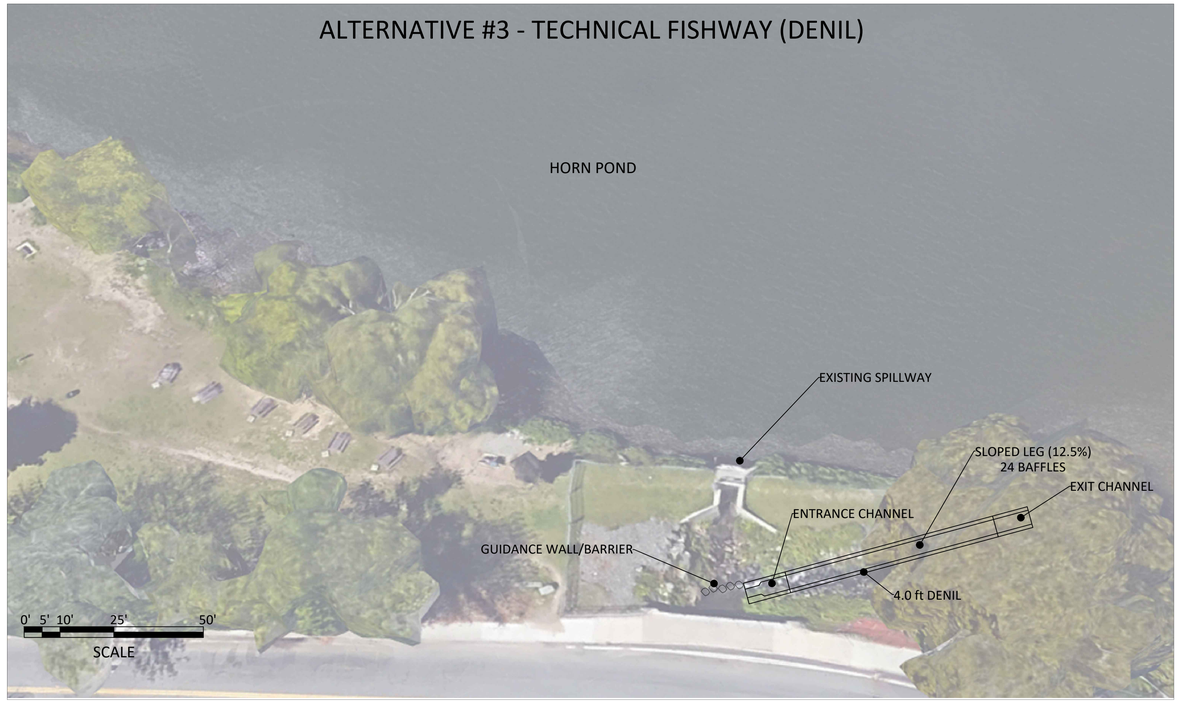
Graphic produced by project partner Mystic River Watershed Association
www.mysticriver.org

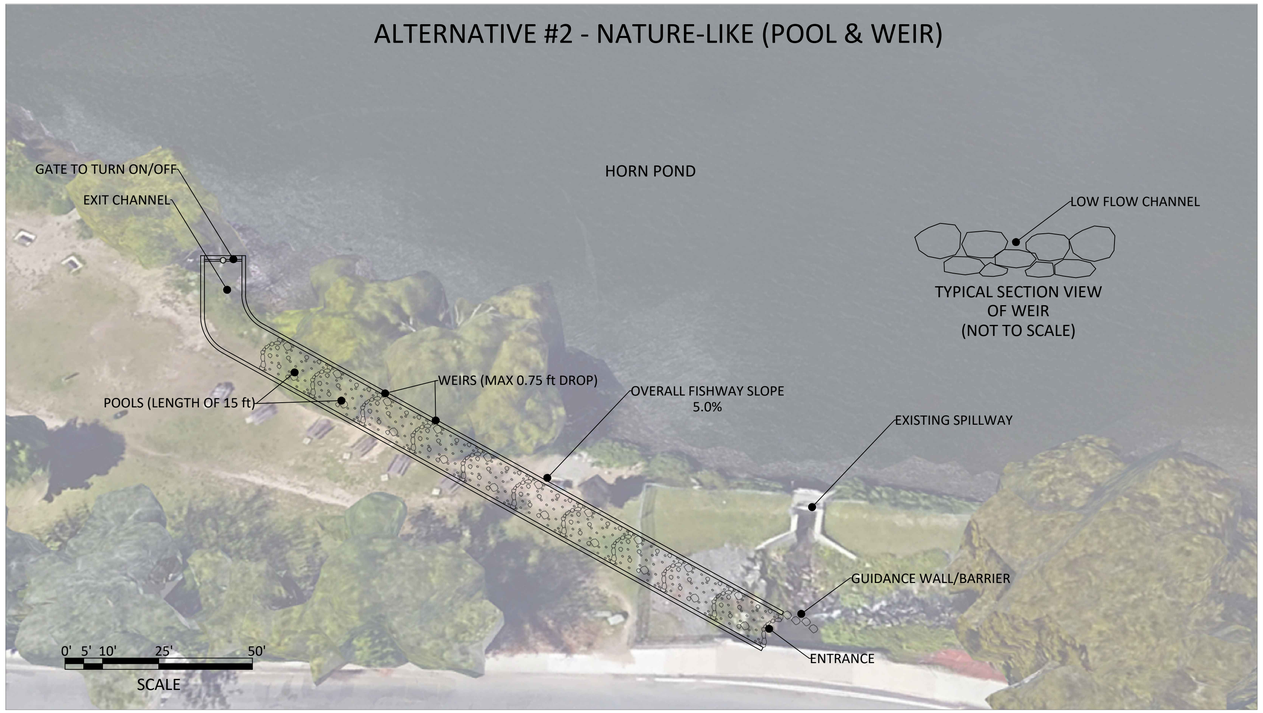
Scalley Dam at the Outlet of Horn Pond with Existing Fish Passage on the Right

Photo Credit: Darlene Wigton; http://www.woburnmaps.com/hornpond/dam.htm)

Scalley Dam at the Outlet of Horn Pond







NOTES:

1. THE INTENT OF THIS SHEET IS TO DISPLAY CONCEPTUAL FISHWAY DESIGNS THAT WOULD HAVE THE CAPABILITY OF PASSING THE TARGET SPECIES (RIVER HERRING) FROM HORN POND BROOK INTO HORN POND. THE PRESENTED LAYOUTS DEMONSTRATE THE ESTIMATED FOOTPRINT REQUIRED TO FIT THE SPECIFIC TECHNOLOGY TO THE SITE.
2. ALTERNATIVES #1 THROUGH #3 REPRESENT THREE DIFFERENT FISHWAY DESIGN OPTIONS. ALTERNATIVE #1 IS A NATURE-LIKE DESIGN WHICH IS COMPOSED OF A FIXED SLOPE, ROUGHENED CHANNEL. ALTERNATIVE #2 IS A NATURE-LIKE DESIGN THAT INCORPORATES POOLS AND WEIRS, AND ALTERNATIVE #3 IS A COMMON TECHNICAL FISHWAY (DENIL).
3. ALL THREE ALTERNATIVES WERE DEVELOPED ABSENT OF ANY HYDRAULICS AND HYDROLOGIC ANALYSES. THE TOTAL AMOUNT OF HEAD (DIFFERENCE IN WATER SURFACE ELEVATION BETWEEN THE TAILWATER AND HEADPOND) WAS ASSUMED TO BE 8.0 ft. A 10 ft CHANNEL WIDTH FOR THE NATURE-LIKE DESIGNS WAS ASSUMED TO HAVE THE CAPACITY TO PASS THE FULL RANGE OF FUTURE FISH PASSAGE DESIGN FLOWS.
4. THE SLOPES VARY BETWEEN ALTERNATIVES. ALTERNATIVE #1 HAS THE SHALLOWEST SLOPE AT 2%, ALTERNATIVE #2 HAS AN ASSOCIATED 5% SLOPE BASED ON A DROP PER WEIR OF 0.75 ft AND 15 ft LONG POOLS, AND ALTERNATIVE #3 HAS BEEN DRAWN AT A 12.5% SLOPE (MAXIMUM SLOPE FOR A DENIL FISHWAY). THE FISHWAY LENGTHS VARY DUE TO THE DIFFERING SLOPES. ALTERNATIVE #1 WOULD REQUIRE APPROXIMATELY 400 ft OF LINEAR LENGTH, ALTERNATIVE #2 IS ESTIMATED TO NEED 180 ft, AND ALTERNATIVE #3 WOULD REQUIRE THE LEAST AMOUNT OF LENGTH AT ROUGHLY 80 ft.
5. A GUIDANCE WALL/BARRIER HAS BEEN INTEGRATED IN ORDER TO ENSURE AS MANY UPSTREAM MIGRATING FISH AS POSSIBLE ENTER THE FISHWAY RATHER THAN GETTING ATTRACTED TO THE SPILLWAY FLOW. THIS FEATURE IS RECOMMENDED FOR ALL THREE ALTERNATIVES.
6. NOTE THAT THE WEIRS INCORPORATED IN ALTERNATIVE #2 DO NOT HAVE TO CONSIST OF NATURAL MATERIAL (e.g., STONE) BUT COULD BE CONSTRUCTED WITH CONCRETE.

No.	REVISIONS:	DATE:	BY:

UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
DIVISION OF FISHERIES
FISH PASSAGE BRANCH

CERTIFIED:
SUBMITTED:
REVIEWED:
RECOMMENDED:
W.O. APPROVAL: DATE:

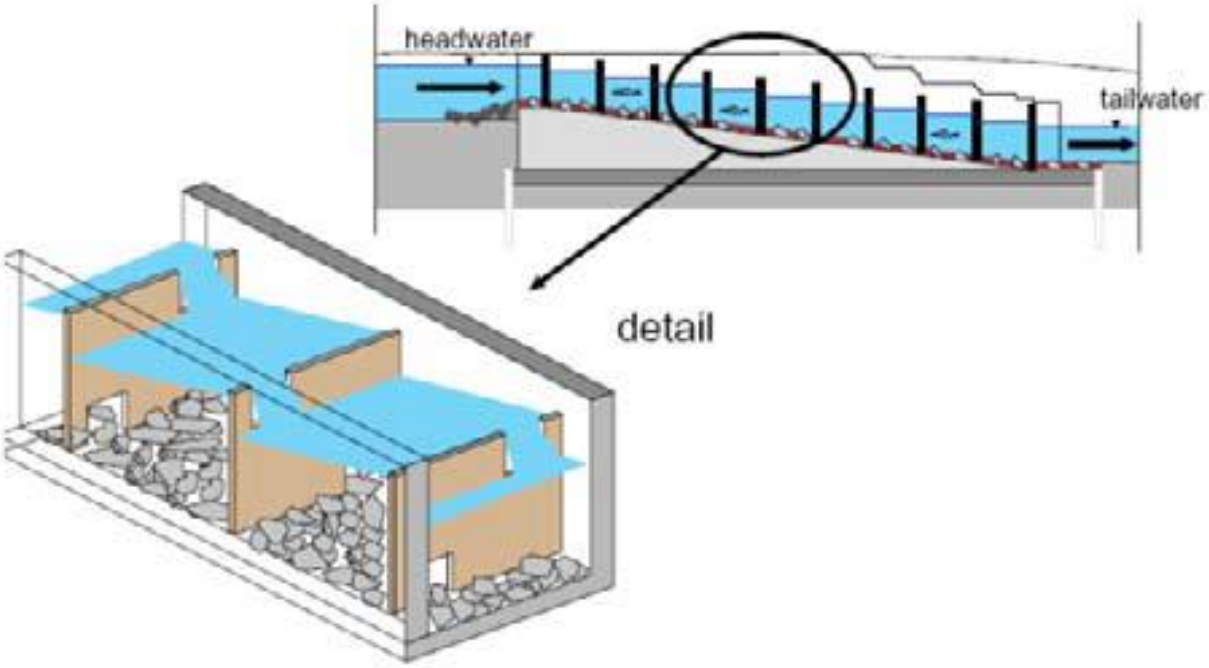
HORN POND FISHWAY ALTERNATIVES
CONCEPTUAL LAYOUTS
WOBURN, MA

BRYAN SOJKOWSKI, P.E., FISH PASSAGE ENG. USFWS

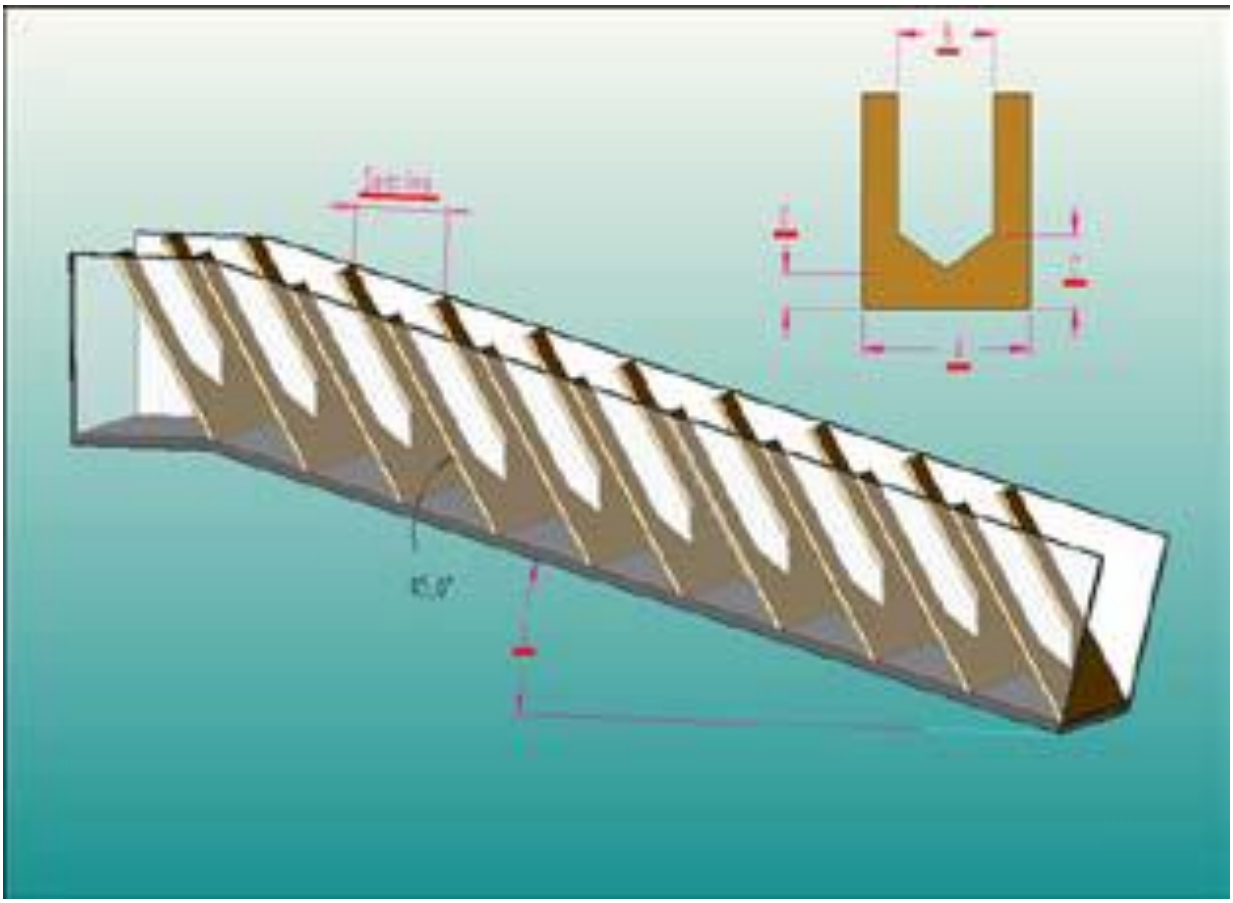
SURVEYED:	DESIGNED:	DRAWN:	CHECKED:
DATE: DEC- 2018		DRWG. NO:	

Nature-like fishway; bypass design

(NOAA undated, https://sero.nmfs.noaa.gov/habitat_conservation/documents/fish_passage_primer.pdf)



Pool and Weir Fishway (NOAA undated, https://sero.nmfs.noaa.gov/habitat_conservation/documents/fish_passage_primer.pdf)



Denil fishway with typical baffle design and nominal dimensions

(NOAA undated, https://sero.nmfs.noaa.gov/habitat_conservation/documents/fish_passage_primer.pdf)

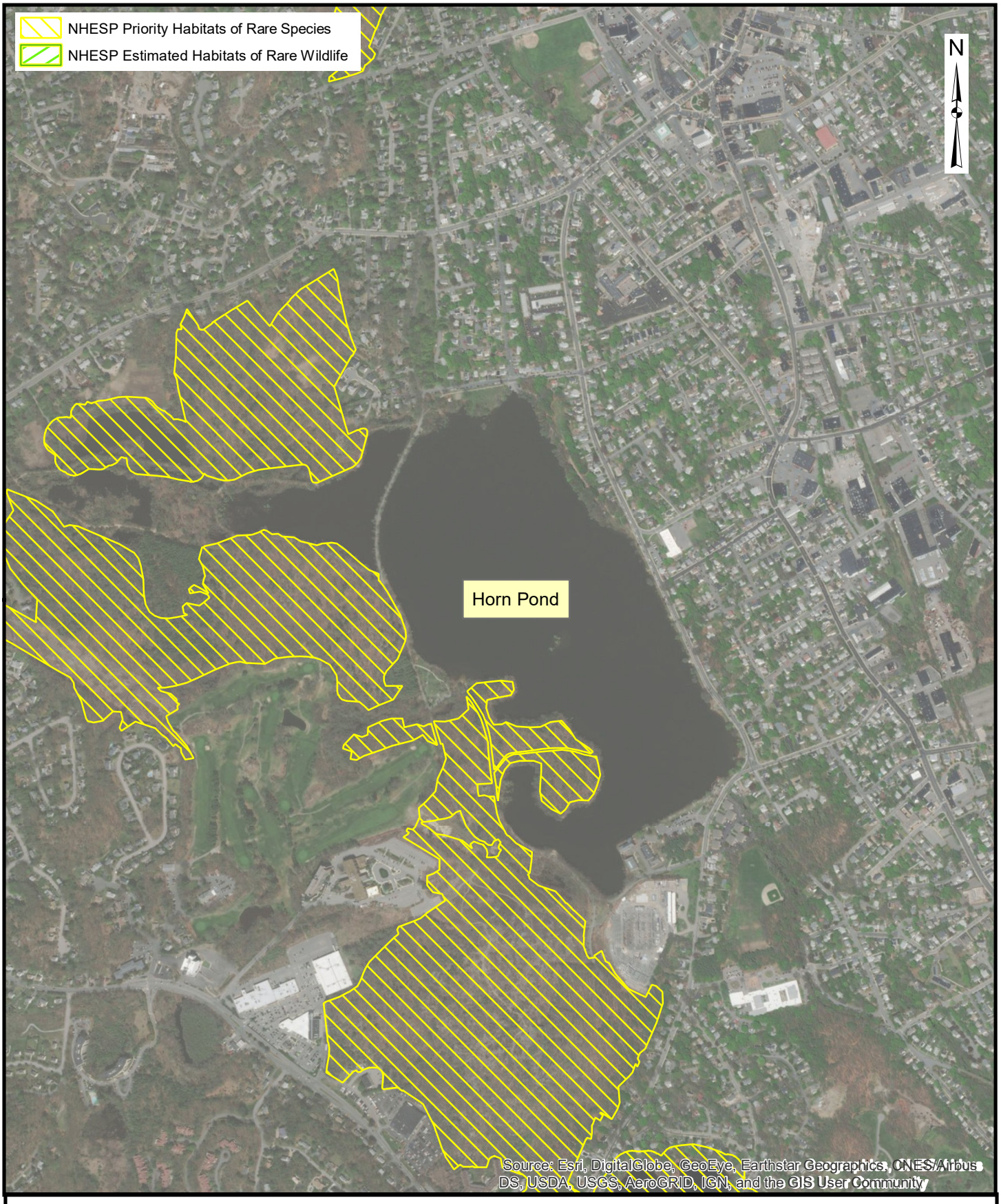


FIGURE 1
Horn Pond
Woburn, Massachusetts

ENVIRONMENTAL RECEPTORS

1,200 0 1,200

Scale In Feet

Weston & Sampson

<BOL>Path:</BOL> \\wse03.local\WSE\Depts\Water\ERMA\GIS - Constraints Mapping\Woburn\Russel Street & Horn Pond\Env Receptor-Horn Pond.mxd <BOL>User:</BOL> GasparA <BOL>Saved:</BOL> 11/29/2018 10:28:03 AM <BOL>Opened:</BOL> 12/18/2018 11:10:04 AM