

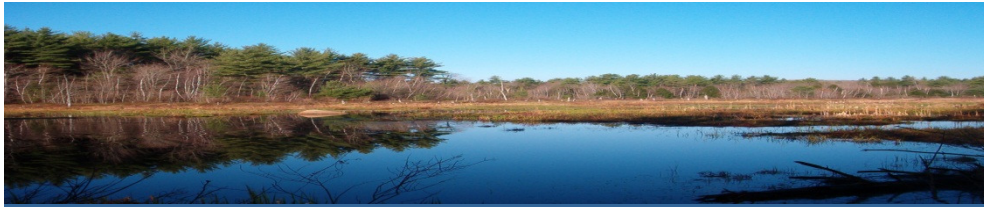
NHDES
Aquatic Resource Mitigation
Program

Aquatic Resource Mitigation Fund: Collaborating for Success

Funding for Wetland Restoration,
Stream Passage Improvement, and Land Conservation



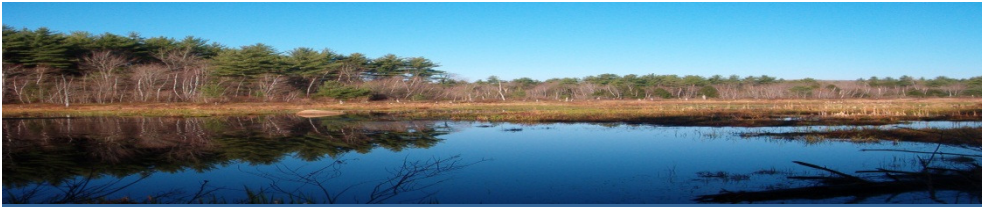
Lori Sommer, NHDES
Melinda Bubier, NHDES
Rick Van de Poll, Ecosystem
Management Consultants



NHDES Aquatic Resource Mitigation Program

NHDES Wetlands Bureau

- Wetland regulatory program that issues permits and requires mitigation for certain projects that meet a minimum threshold
- Wetland impacts > 10,000 square feet
- Perennial Stream impacts > 200 linear feet (bank + channel + bank)
- Intermittent Stream Impacts > 200 linear feet measured along the thread of the channel
- Temporary and secondary impacts (ACOE) to buffers of streams and vernal pools.



NHDES Aquatic Resource Mitigation Program

NHDES Wetlands Bureau

Four forms of Compensatory Mitigation

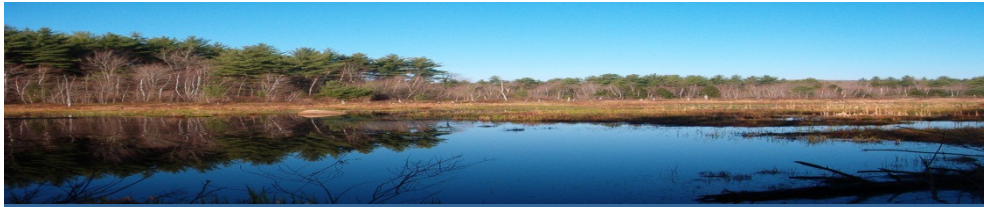
Permittee – Responsible:

- 1) Wetland & Stream Restoration
- 2) Upland Preservation Through Permanent Conservation
- 3) Wetland Creation

In-lieu Fee Payment to NHDES:

- 4) Payment Into the ARM Fund

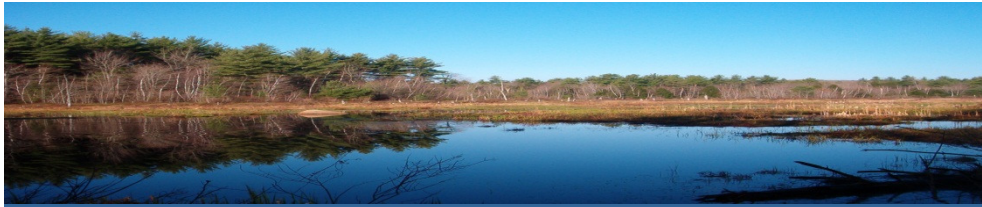




NHDES Aquatic Resource Mitigation Program

What Guides the DES In-Lieu Fee Program?

- NH Mitigation Rules: Chapter 800. Adopted in 2004, Revised in 2007 and 2/1/2016
- Federal Mitigation Rules: Department of Defense and Environmental Protection Agency. April 10, 2008. *Compensatory Mitigation for Losses of Aquatic Resources*. Final rule. Federal Register. Vol. 73, No. 70: pp. 19594-19705.
- In Lieu Fee Instrument:
<http://www.nae.usace.army.mil/Portals/74/docs/regulatory/Mitigation/NHinstrument051812.pdf>
 - District Engineer Oversight/Approval
 - Interagency Review Team and Site Selection Committee



NHDES Aquatic Resource Mitigation Program

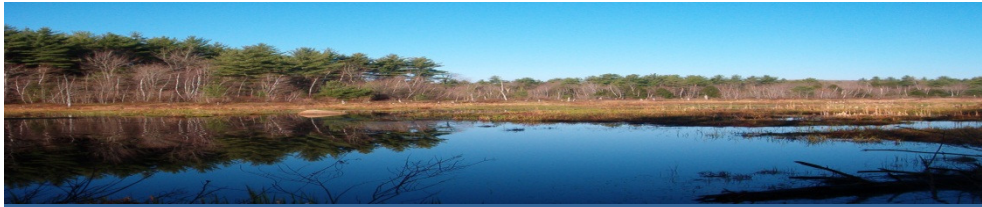
What is an in Lieu Fee?

Federal In Lieu Fee Guidance Characterization (2000)

“In lieu fee mitigation occurs in circumstances where a permittee provides funds to an in-lieu fee sponsor instead of completing project-specific mitigation or purchasing credits from a wetland mitigation bank.

Mitigation Rule Definition (2008)

“...a program involving the restoration, establishment, enhancement and/or preservation of aquatic resources through funds paid to a government or non-profit natural resources management entity to satisfy compensatory mitigation requirements.

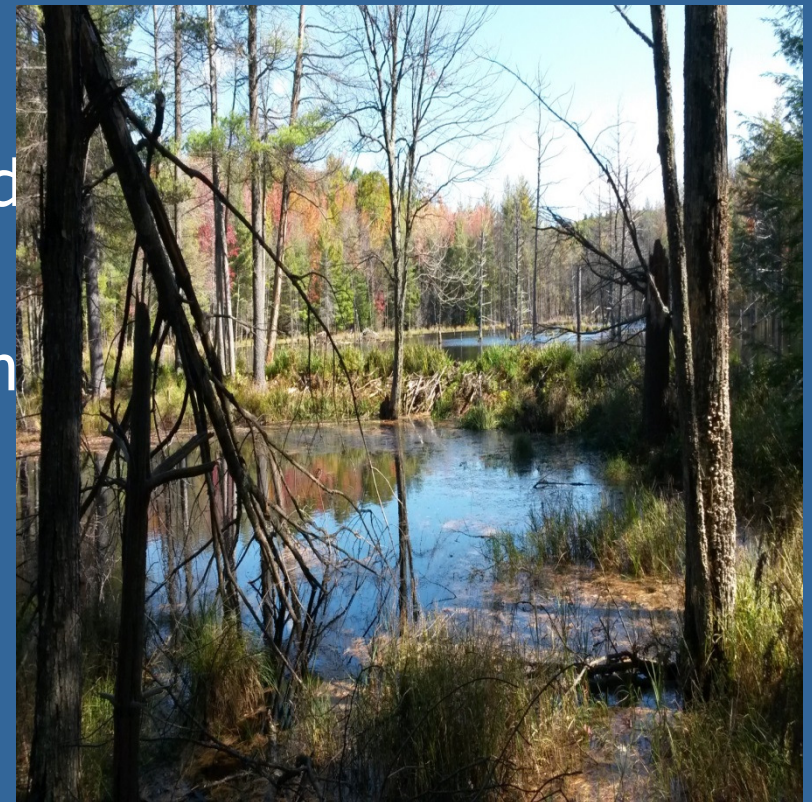


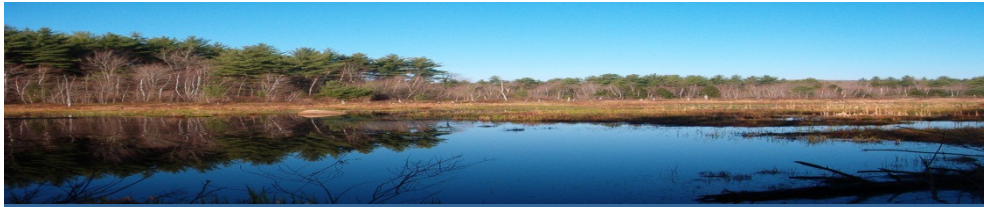
NHDES Aquatic Resource Mitigation Program

Aquatic Resource Mitigation Fund RSA 482-A:28 - 33

Process of pooling payments together to be spent in the “watershed” where impacts occurred

Funds go toward wetland and stream restoration, preservation of land, floodplain restoration, and other aquatic resource improvements.



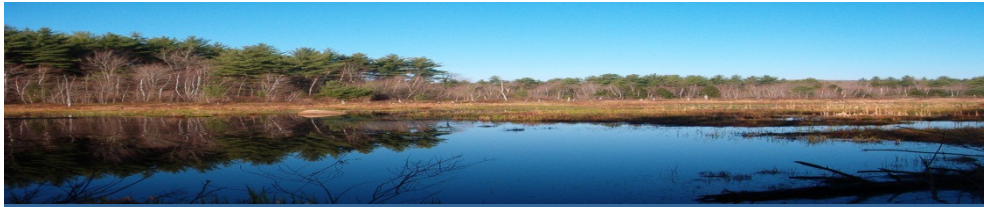


NHDES Aquatic Resource Mitigation Program

Funding to Target Important Aquatic Resource Projects

- Protect significant features relative to drinking water resources, floodplains, vernal pools
- Restore and/or protect systems of regional and statewide significance;
- Greatest potential to restore or protect aquatic resource functions & values;
- Restore important wildlife & fisheries habitats with a goal to improve aquatic fish passage;

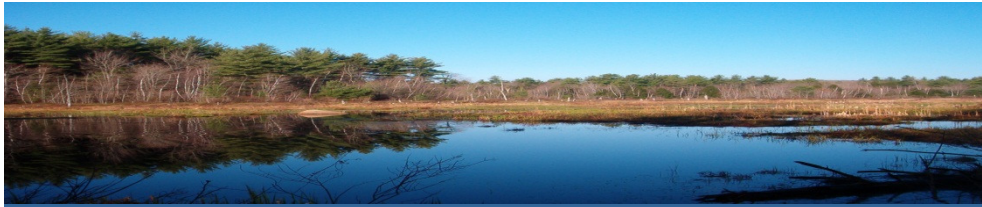




NHDES Aquatic Resource Mitigation Program

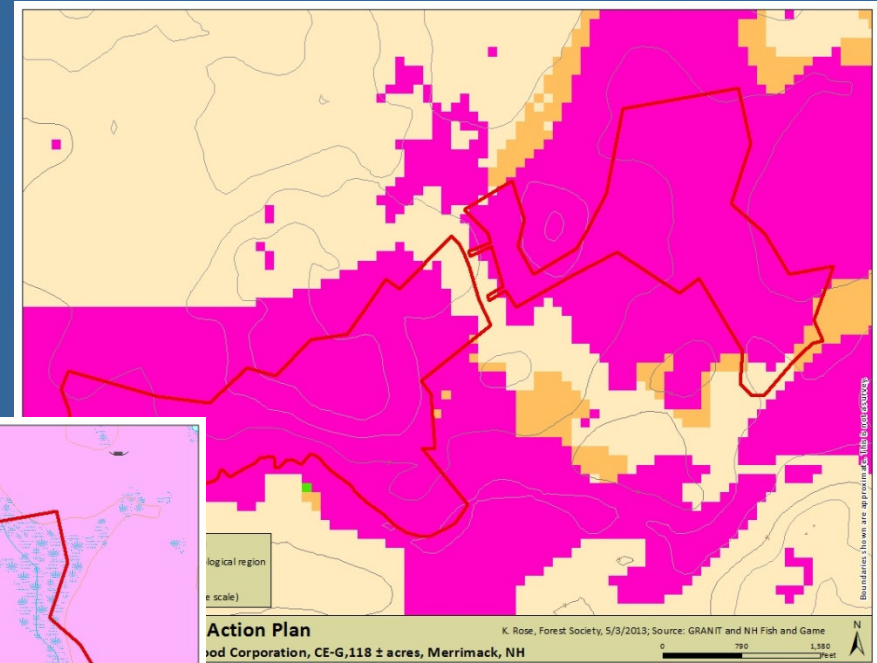
ARM Funds Can Be Used For:

- Acquisition of land and costs associated with conservation easements
- Legal fees as well as monitoring and stewardship fees
- Development of final engineering plans
- Construction costs including construction, planting, monitoring and follow-up remedial measures
- Other: dam removal and/or stream restoration projects, culvert replacement work to provide habitat improvement



NHDES Aquatic Resource Mitigation Program

Pennichuck Water Works Property Merrimack



Areas of valuable aquatic resources (NWI & WAP)

Forested, scrub shrub, emergent wetlands



Beaver ponds

Vernal pools



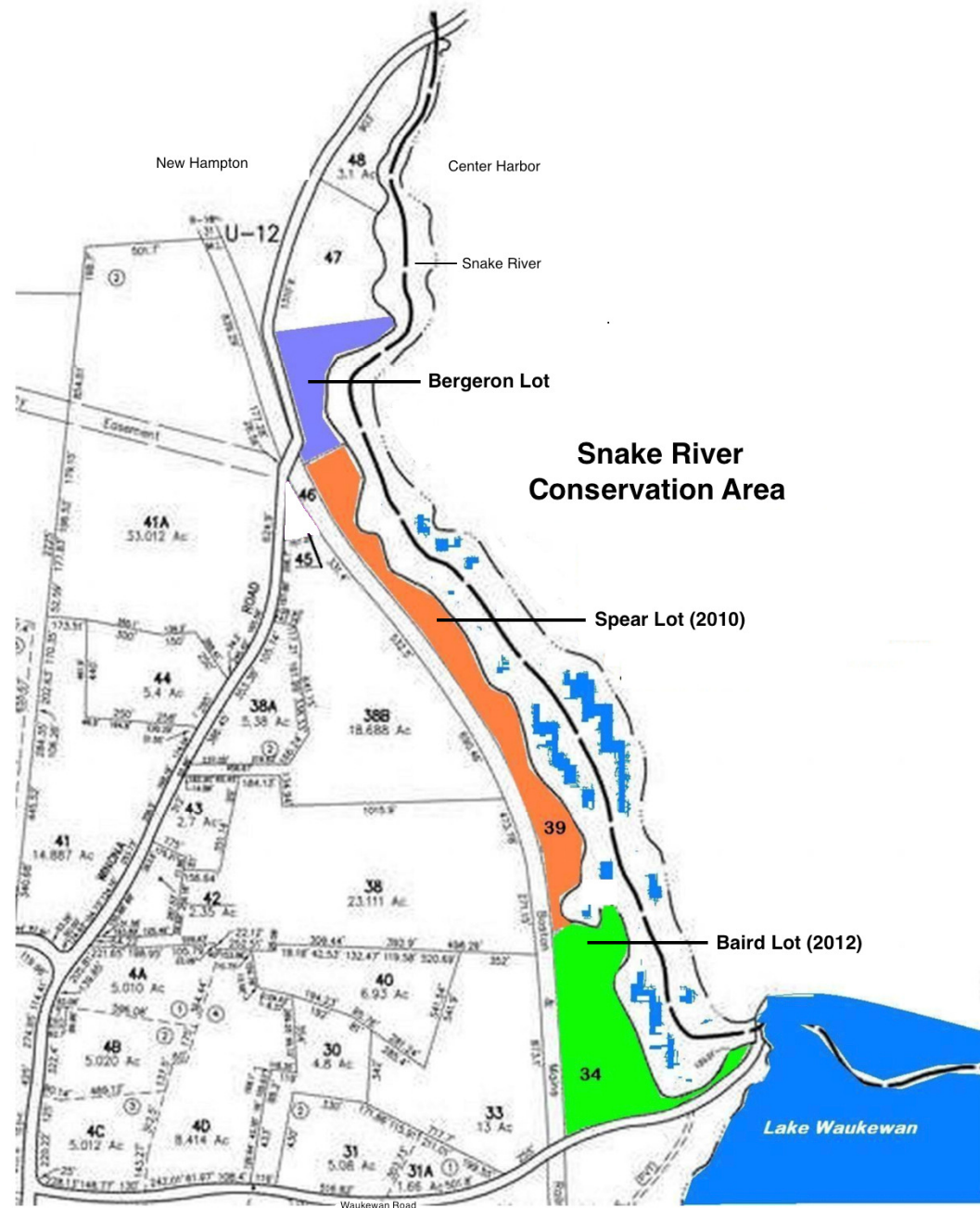
Headwater streams

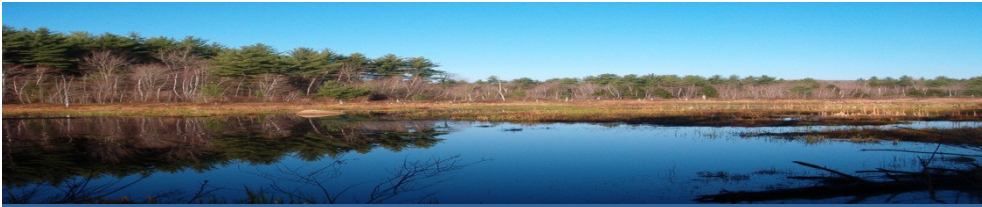


New Hampton Snake River Conservation Area

1 mile along the
Snake River that
flows to Lake
Waukewan, the
drinking water
supply for the
Town of Meredith

\$100,000 ARM
grant





NHDES Aquatic Resource Mitigation Program

Developing A Town Priority List

Permittee – Responsible

- Must first consult with Towns prior to proposing in lieu fee.

Types of projects to include:

- Preservation
- Wetland Restoration/Fill Removal
- Stream Passage Improvement



Sample Priority List – Preservation Project

- Includes significant wetland or stream resources
- Parcels adjacent to existing conservation lands (also in Tier 1 WAP map locations)
- Town forests or parcels acquired not currently protected – consider habitat value for restoration
- Land in vicinity to drinking water supplies
- Floodplains and riparian areas, vernal pool habitat
- Farmlands with focus for enhancing wetland and stream buffers



Sample Priority List – Restoration/Enhancement Projects

- Wetland restoration – remove fill or ditches, restore hydrology
- Restoration of streams where they have been culverted, buried, or channels straightened
- Buffer Enhancement
- Water quality improvements - look at impaired waters for best locations for improvements



Berry Brook, Dover, NH October 2011

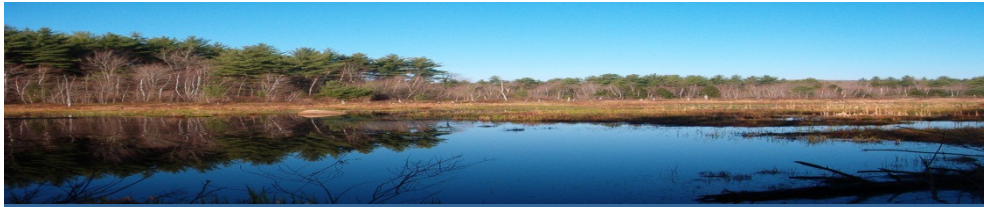
Sample Priority List- Stream Passage Improvement

- Culvert replacements and dam removals
- Connecting sections of streams to improve aquatic organism passage
- Stream bank restoration/vegetated enhancement

Other:

- Eradication of invasive species – with long-term monitoring program established





NHDES Aquatic Resource Mitigation Program

Data Analysis and GIS Tools

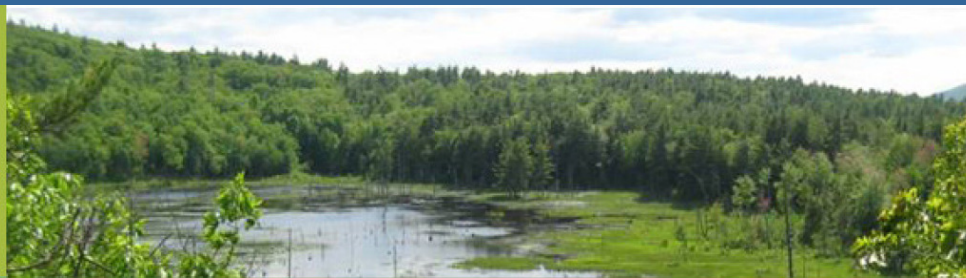
NHDES One Stop <http://des.nh.gov/onestop>

NH Fish & Game Wildlife Action Plan
<http://www.wildlife.state.nh.us>

NH GRANIT <http://www.granit.unh.edu/>

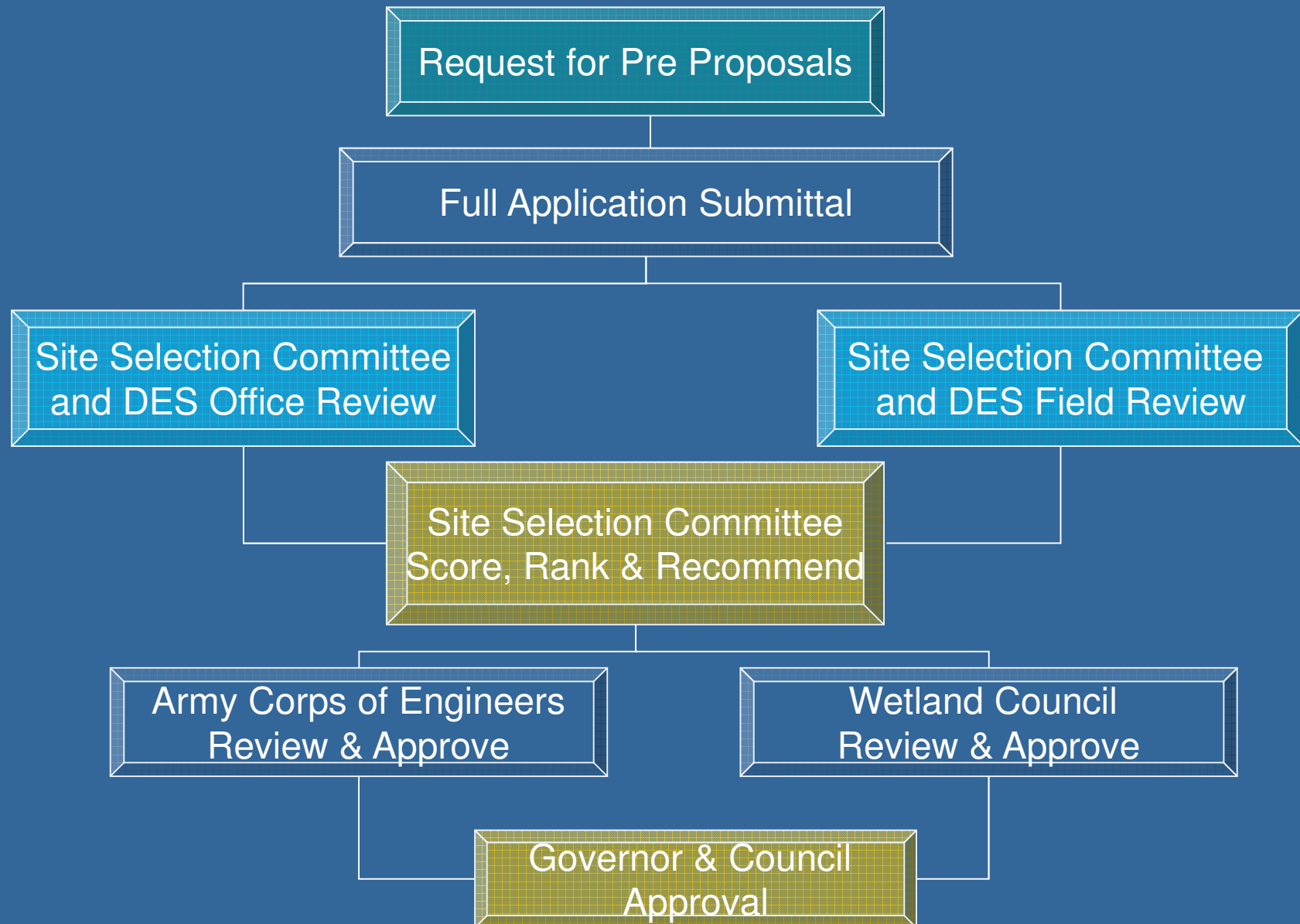
NH Wetlands Mapper <http://nhmethod.org/>

**NH
METHOD**



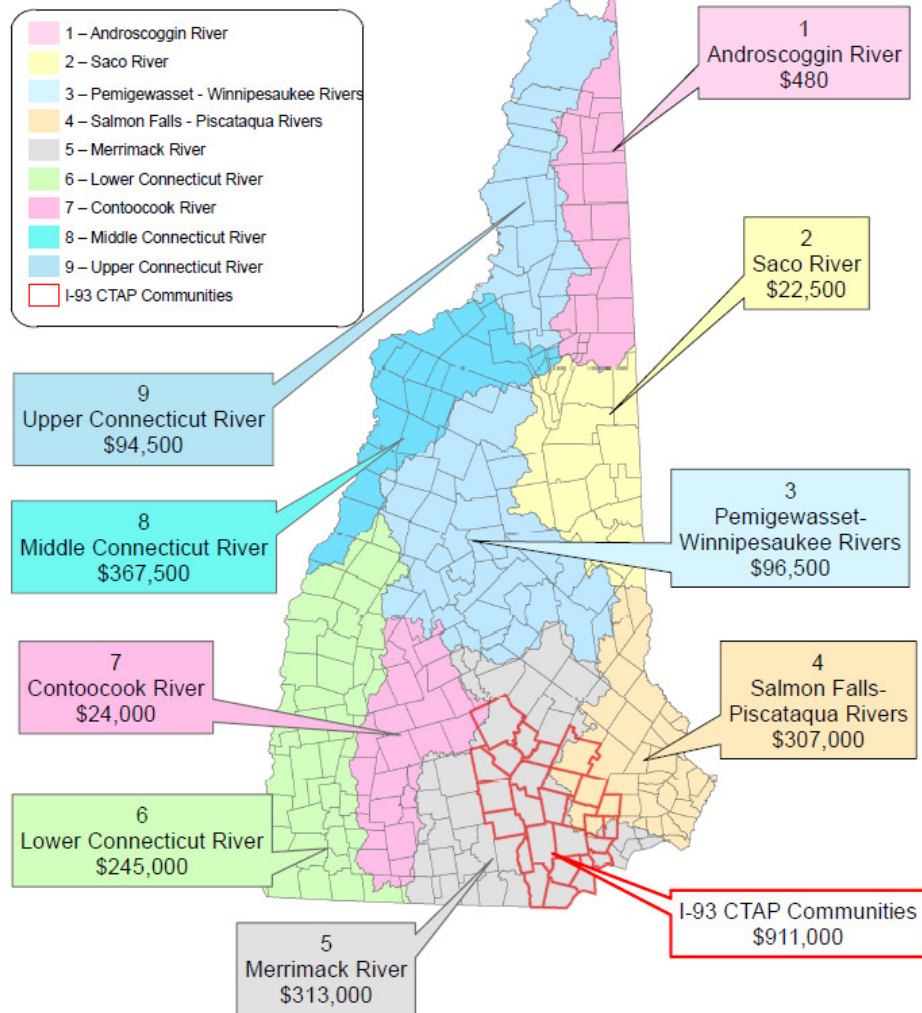
Method for Inventorying and Evaluating Freshwater Wetlands in New Hampshire

How Can I Apply For Funding?



ARM Funds Available

Updated 2/3/2016



Document Path: N:\GIS\GIS_Projects\Land_Resources_Management\Misc\ARM_MAPS\ARM_Funds_by_Service_Area2016.mxd

2016 ARM Fund Grant Round Deadlines

- Nine watersheds with available funding
- 2 Page Pre-proposal Due: 4/29/16
- Final Application Due: 8/31/16

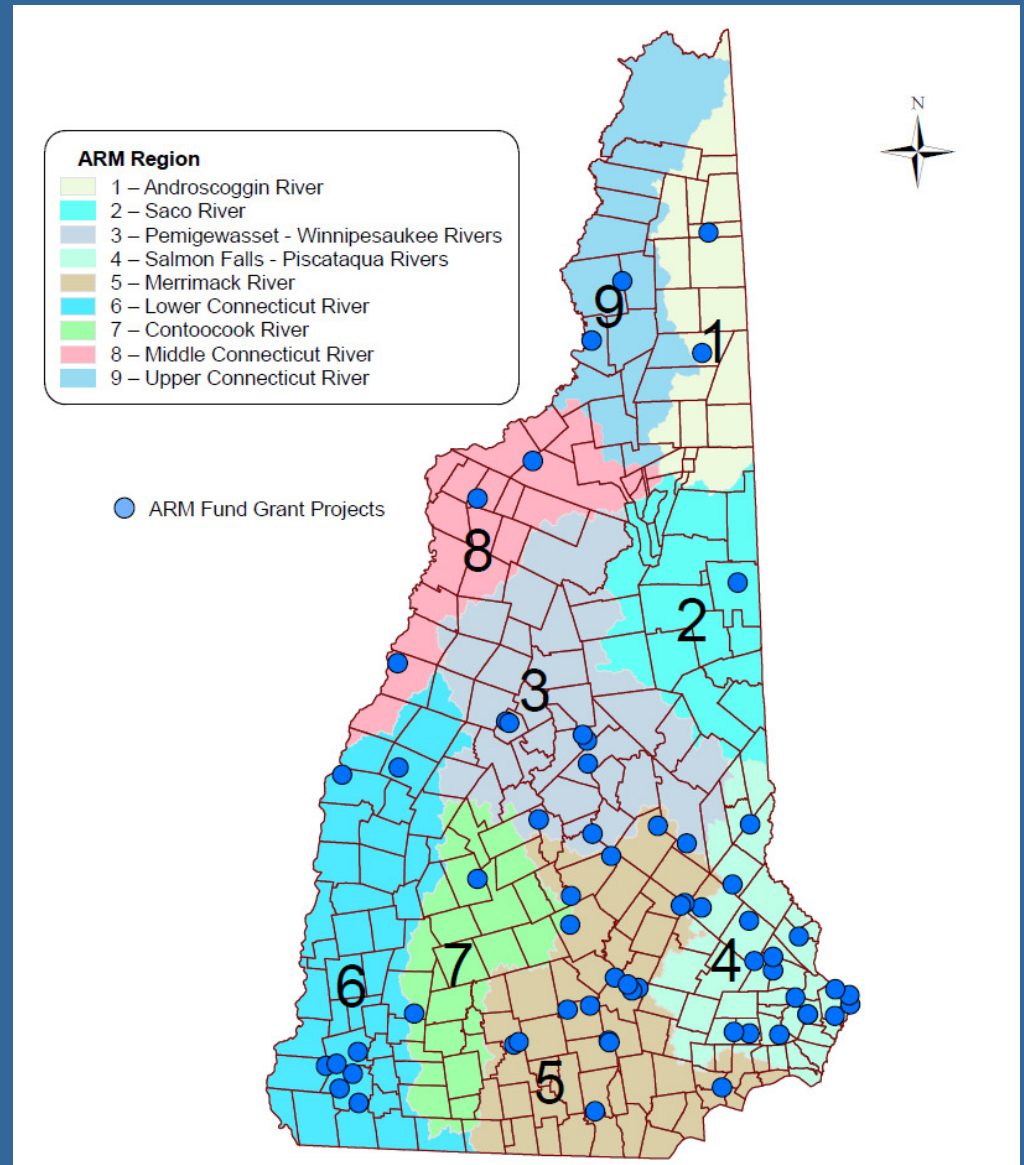
Pre-Proposal Process

- Not more than 1,000 words and two attached maps or exhibits.
- Brief project description and objectives
- How the proposal fits into one or more of the ARM Fund categories.
- Description of tasks, budget, and results.
- Feedback provided to applicants



ARM FUND PROJECTS/ CREDIT SITES 2009-2015

- 63 projects
- Approx 12,300 acres of land protected
- 18 acres of wetland restoration
- 82 acres of wetland enhancement
- Over 1-mile of stream restoration with up to 49 miles of stream connectivity improvement.



What Makes A Good Project?

- Restores or retains wetland functions & values that were lost in the HUC 8 watershed.



Newington, NH Cutt's Cove Restoration Site October 2015

What Makes A Good Project

-Overall Environmental Significance-

- Water Protection Area
- Endangered Species
- Exemplary Natural Communities
- Highest Quality Habitat

What Makes A Good Project

-Proximity/Connectivity

- Same sub-watershed (HUC 10) as the impact area
- Connections
- Unfragmented Block
- Adjacent Lands



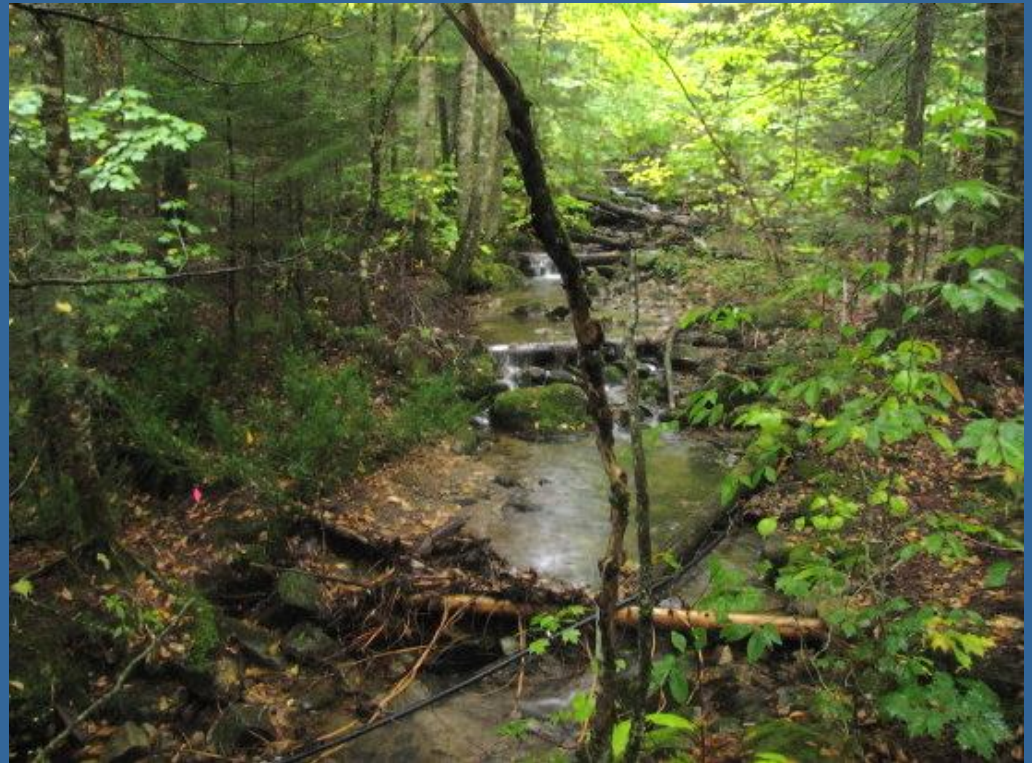
What Makes A Good Project

-Overall Mitigation Potential/Protection

- How much of the aquatic resource will be protected
- Prime Wetland?
- Buffers?
- Connections
- Likelihood of project success

Stream Passage Improvement Projects

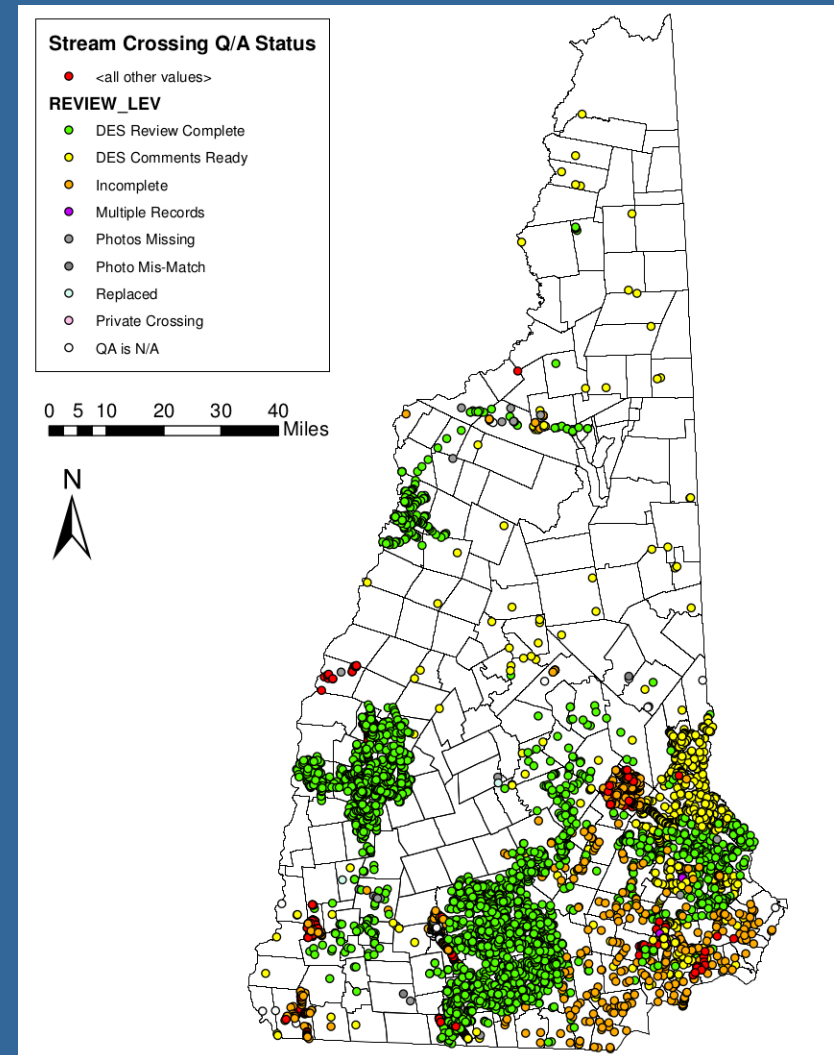
- How much of the aquatic resource will be protected
- Buffers
- Connections
- Likelihood of project success



Stabilized woody addition.

Stream Passage Improvement Program

- Collaboration among State Agencies including NHDOT, NHF&G and DES, in consultation with other entities.
- Coordinated by NH Geologic Society



Stream Passage Improvement Program



- Establish data collection protocol to assess Aquatic Organism Passage, hydraulic and geomorphic capacity.
- Statewide Asset Data Exchange System (SADES) – Central repository for data
- Available to view on GranitviewII

Stream Passage Improvement Program

- Conduct stream assessments at crossings to determine deficiencies based on and aquatic organism passage and geomorphic compatibility.
- Work with communities to develop criteria for prioritizing replacements.



Culvert Assessments

- Assist and provide funds for improving a state/municipal crossing that is deemed eligible for the stream mitigation program



- Utilize information for mitigation option to replace deficient crossings for aquatic passage and address infrastructure needs

What Can I Do?



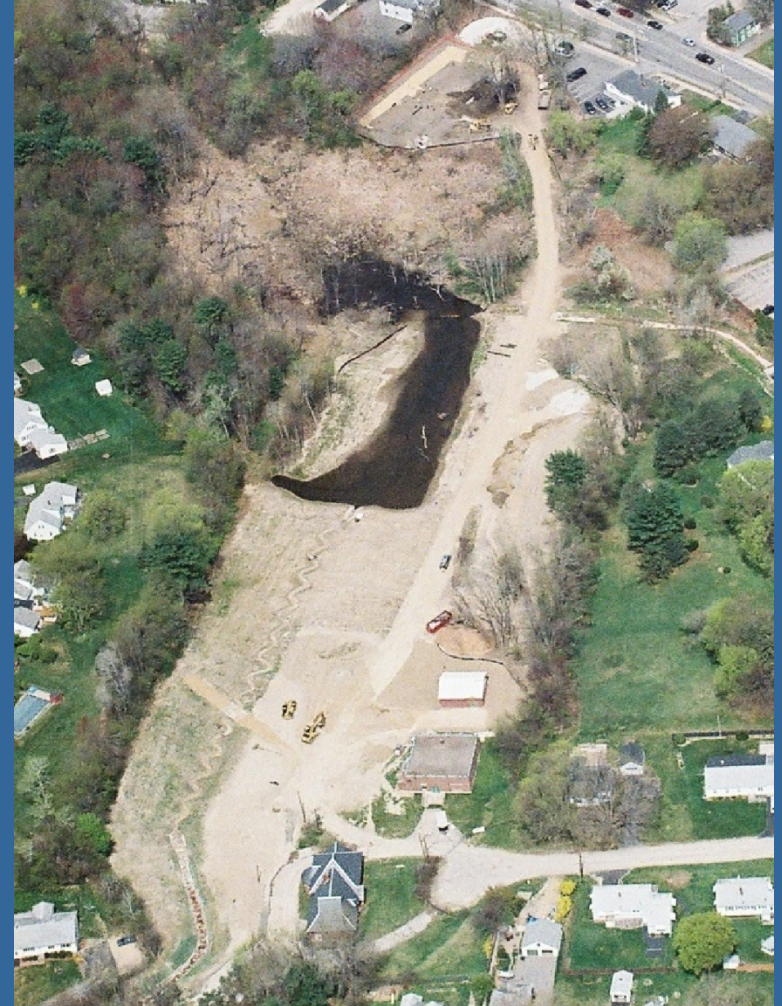
- Where could restoration occur?
- What groups might be involved?
- Where do I start?
- Who would I contact?

Example sites to get you thinking!

Berry Brook Watershed Restoration

Wetland & Stream Restoration, Buffer Development and LID Retrofits

- Restored 0.9 miles of 1st order stream to the Cocheco River
- Removed fish barriers
- Provides treatment of 164 acres of the watershed
- Restored 2.5 acres wetland/floodplain habitat
- Preserved 5 acres of land at the mouth of the Cocheco River
- Engaged abutting landowners by planting riparian area and improved recreational opportunities



Existing Conditions



Stream Headwaters



Wetland Outflow/Stream



Site Constraints


- Existing Building
- Steep Slope
- Buried Utilities and "other" pipes
- Existing Headwater Control Elevation
- Invasives
 - Japanese Knotweed
 - Bittersweet
 - Glossy Buckthorn



Ready for Wetland and Stream Restoration



View of the wetland restoration September 2011.
Wetland soil hauled by the City to the site from nearby development.



NHDES Aquatic Resource Mitigation Program

Stream and Restoration Activities

Intermittent rain, sunshine and continued warm weather helped with restoration activities through the fall (October below) and into December (Photo to the left)!



Community Planting Events



Step-Pools



Steps are curbing provided by
the City (December 2011)



June 2012

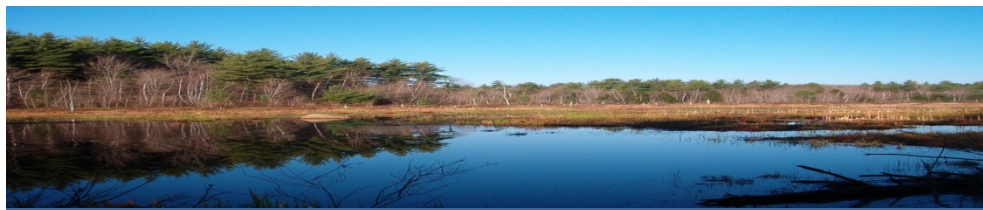
Step-Pools



September 2013

August 2014





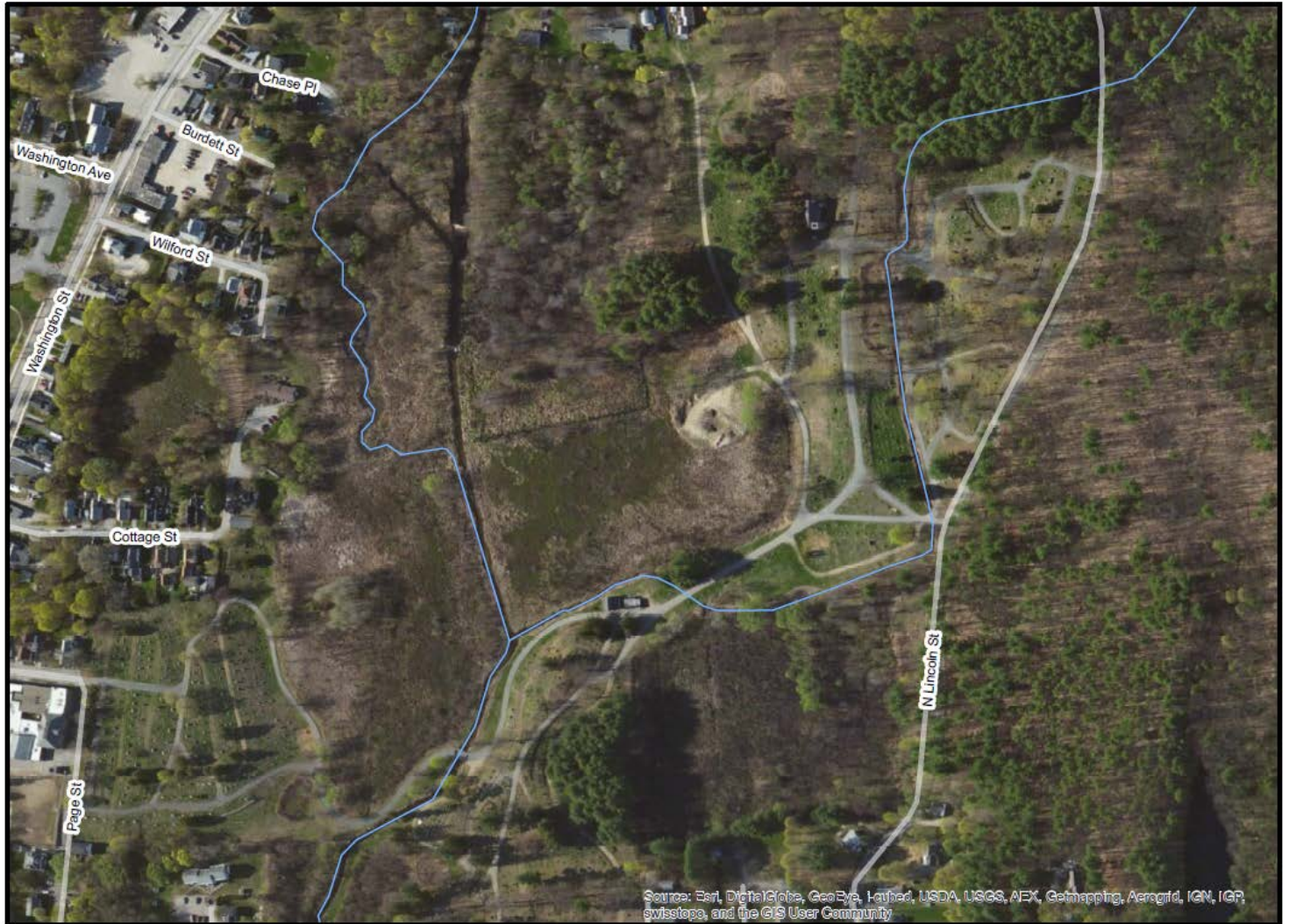
Beaver Brook Wetland & Stream Restoration Project

- Restoration of approximately 1-acre of historically filled wetlands
- Approximately 400 feet of stream restoration activity within the Beaver Brook watershed in the City of Keene.

Objectives include:

- Advancement of the on-going effort to restore Beaver Brook;
- Augmentation of flood storage in this area of the City; and
- Creation of additional scientific and educational opportunities that complement on-going projects within the Beaver Brook Watershed.

Project Location



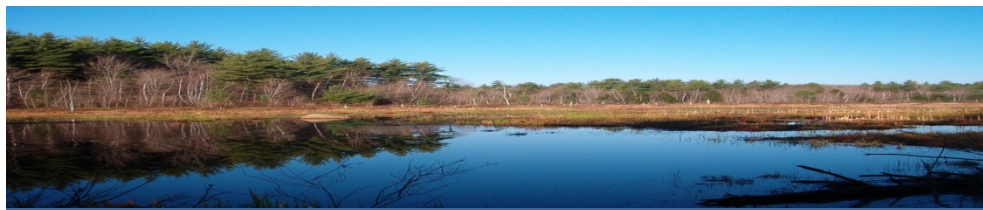
Woodland Cemetery Restoration Project

Existing Conditions

Keene, New Hampshire



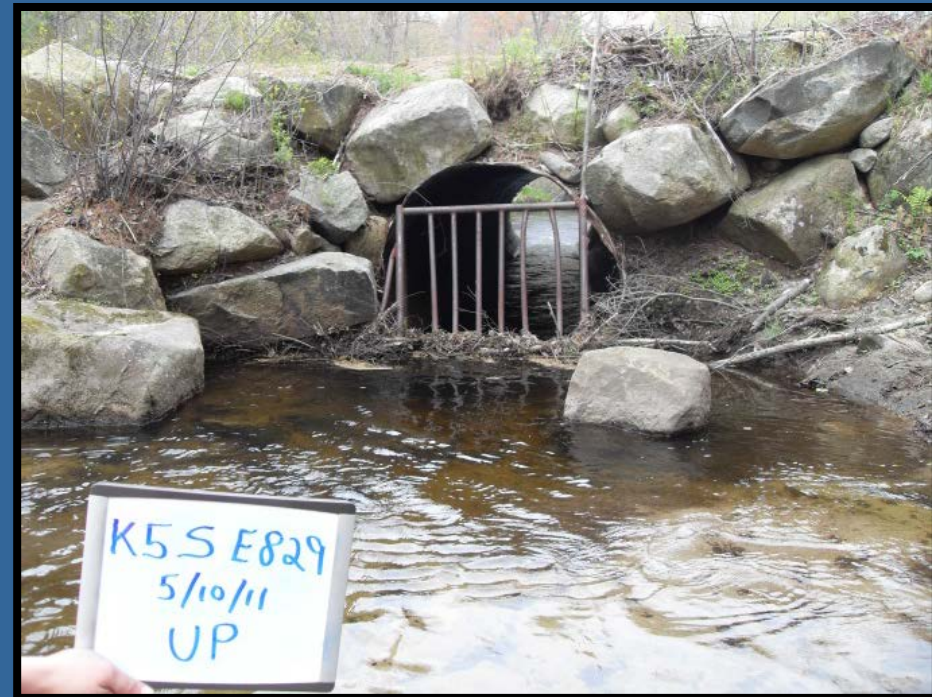
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com



Other Restoration and Stream Passage Improvement Projects

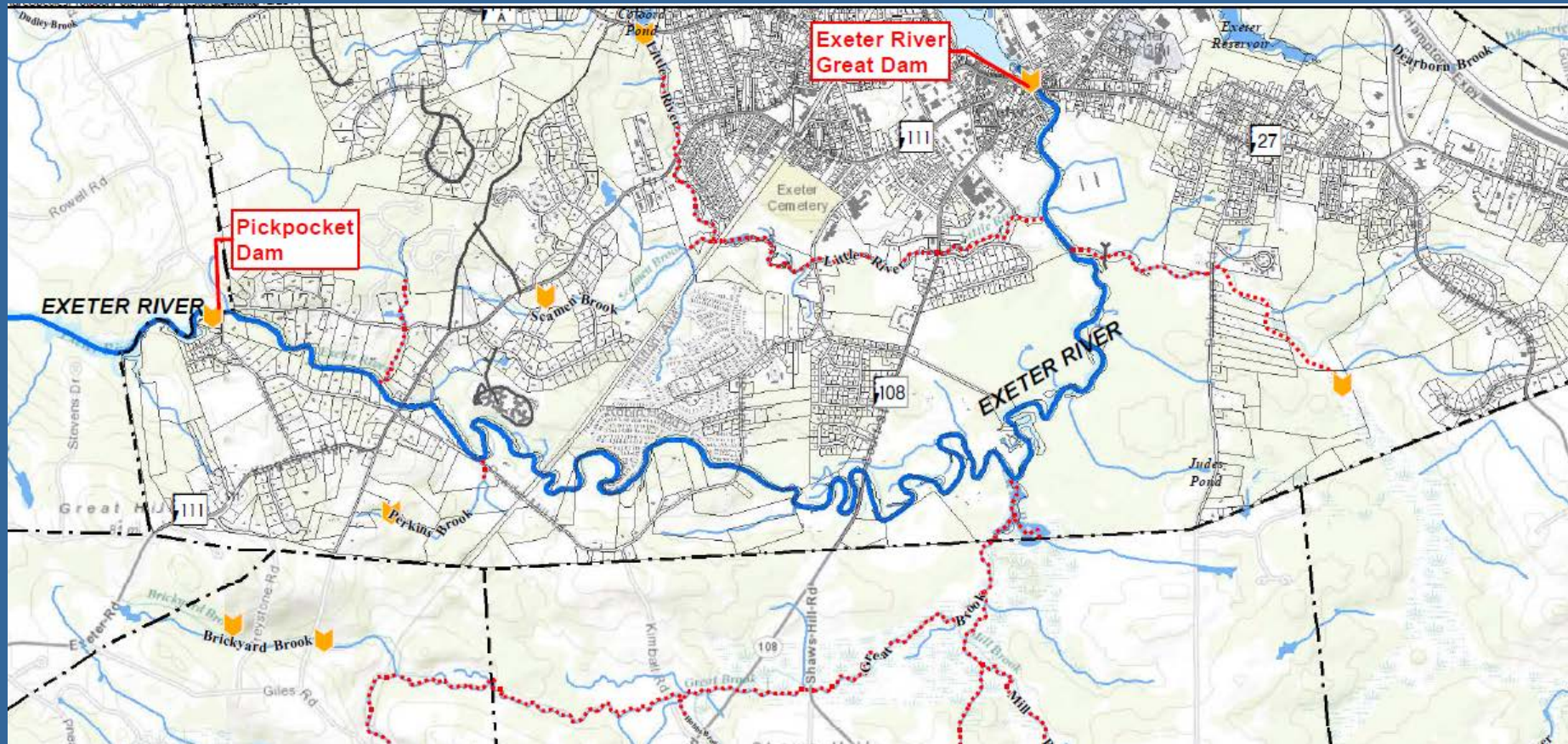
Falls Brook–Culvert Replacement

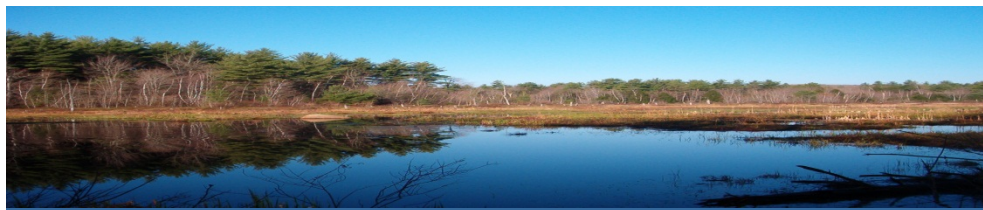
McQuesten Brook,
Manchester/Bedford–
Culvert Replacement
and Dam Removal



Fall Brook, Swanzey NH –Existing
Crossing Structure Upstream

Great Dam Removal Exeter, New Hampshire





Break-Out Session!

Resource Reminders

- NHDES One Stop <http://des.nh.gov/onestop>
- NH Fish & Game Wildlife Action Plan
<http://www.wildlife.state.nh.us>
- NH GRANIT <http://www.granit.unh.edu/>
- NH Wetlands Mapper <http://nhmethod.org/>

www.des.nh.gov/wetlands
(603) 271-2147