ENGINEERING SERVICES: WHITFORD BROOK WATERSHED INFRASTRUCTURE IMPROVEMENTS

RFQ REFERENCE NO: 2023-07

April 12, 2023

SLR

THE TOWN OF LEDYARD · CONNECTICUT · INCORPORATED · 1836 ·

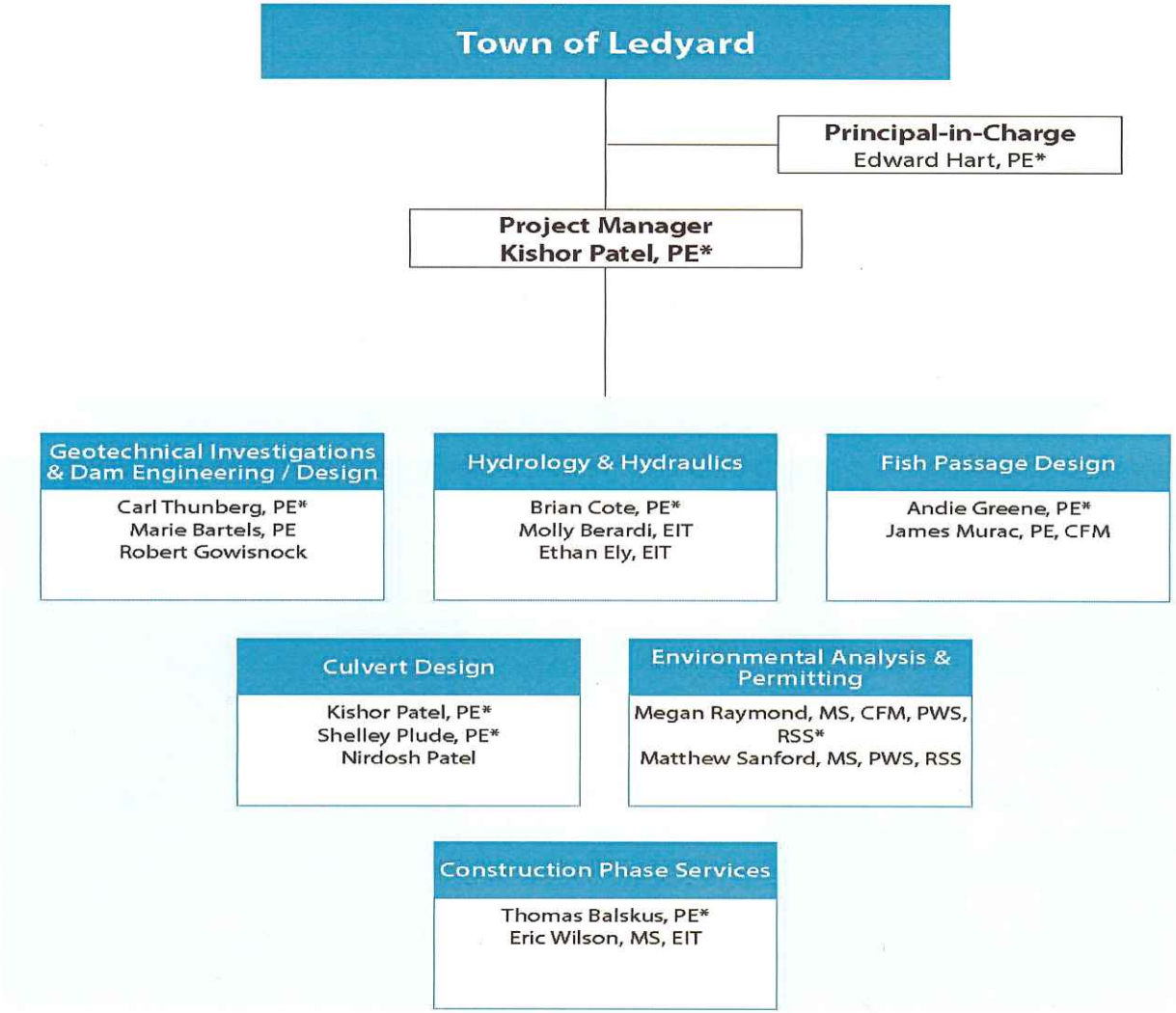
MEET THE TEAM

Edward Hart, PE
Principal Civil Engineer

Kishor Patel, PE
Principal Structural Engineer

- **25 years** of experience involving **dam** studies & designs as well as engineering experience including **bridges/culverts in CT**
- Local project experience working on the **Shewville Dam Fishway in Ledyard, CT**
- Core Engineering values center around **working closely with town staff and commissions**

ORGANIZATION CHART



* Indicates SLR Staff Resumes Inlcuded within the Proposal

FIRM PROFILE

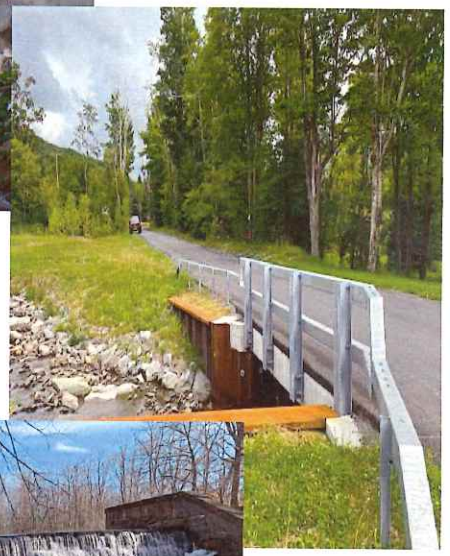
SLR Consulting (SLR) is a multidisciplinary consulting firm offering services across New England for over 35 years. SLR has more than 500 employees located in 41 offices throughout the United States.

Our team represents a broad and diverse range of technical and environmental capabilities.

SLR's in-house professionals offer a blend of experience incorporating engineers, landscape architects, geologists, planners, remediation specialists, regulatory and compliance specialists, and environmental scientists.

DAM / CULVERT ANALYSIS AND EVALUATION EXPERIENCE

Current and Recently Completed CT Dam & Culvert Projects:



- Tingue Dam – Seymour, CT
- Graham Road Culvert – South Windsor, CT
- Rockland Pond Dam – Montville, CT
- Silver Brook Flood Control Study – Westport, CT
- Woodtick Reservoir Dam Rehabilitation – Wolcott, CT

Core Team's other Recently Completed Projects:

- Water Street bridge over Town Brook – Plymouth, MA
- Hardenburgh Culvert Replacement – Hardenburgh, NY
- Fallkill Dam Improvements – Poughkeepsie, NY
- Herdman Road Bridge over Fox Hollow Creek – Shandaken, NY
- Woodstock Culvert Replacement – Woodstock, NY

OUR APPROACH

Our approach is simple:

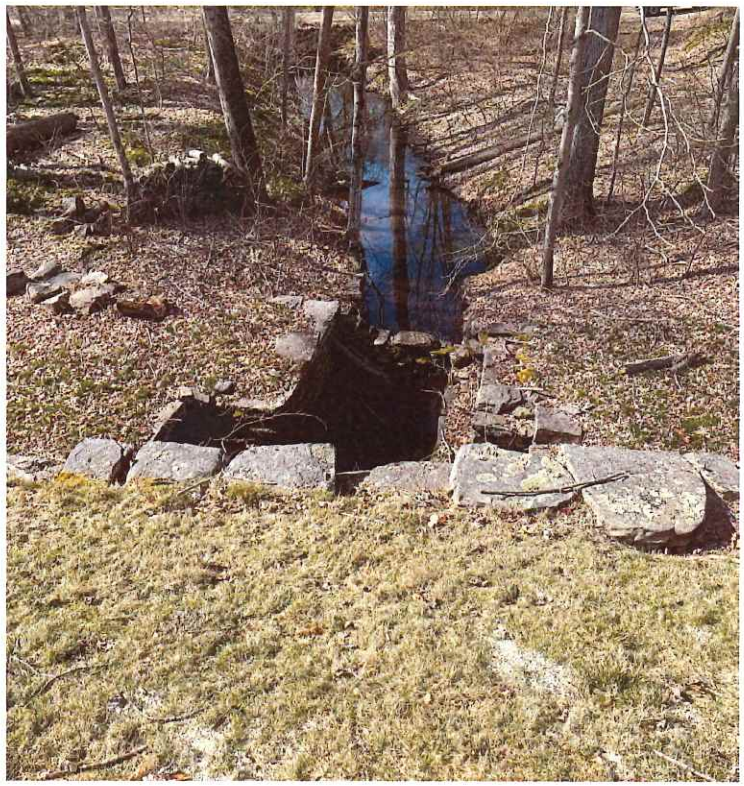
The Town of Ledyard's need for improvements are crucial to the Whitford Brook Watershed's overall infrastructure repair – we are here to **Guide, Advise** & **Engage**.

SLR will:

- **Perform** a site visit to review hydraulic characteristics of the bridges & dams on Whitford Brook between Lantern Hill Pond Dam downstream to Wolf Neck Road/Whitford Road
- **Prepare** a topographic survey at each of the five sites to define the shape of the structures and the topography of the immediate surroundings.
- **Develop** an existing conditions hydrologic analysis of the Whitford Brook watershed
- **Prepare** permit applications for each structure & submit to CT DEEP as well as the Town Land Use Commissions
- **Modify** plans to incorporate comments and construction details. Technical specifications will be incorporated into bid documents

SURVEY

- **Prepare** a topographic survey at each of the five sites to define the shape of the structures and the topography of the immediate surroundings.
- As part of the survey one of our soil scientists will **delineate** the wetlands.

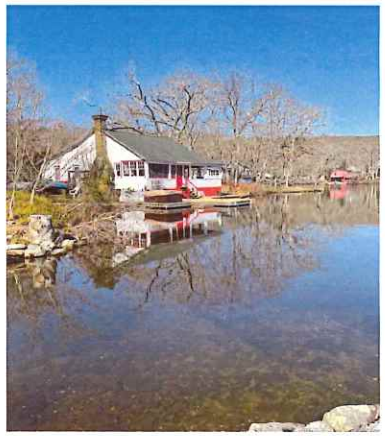


HYDROLOGY & HYDRAULICS

- **Develop** an existing conditions hydrologicy analysis of the Whitford Brook watershed upstream of the parallel crossings at Wolf Neck Road/Whitford Road using the latest version of the HEC-HMS modeling software developed by the U.S. Army Corps of Engineers (USACE) to obtain peak discharge rates
- **Incorporate** the extreme rainfall data from NOAA Atlas 14 as required by the Connecticut Dam Safety Regulations.
- **Analyze** the existing dams and culverts that are the subject of this project to determine if they are adequately sized to pass the design storm. Modifications to the structures, spillways, or culverts will be modeled to **determine** the appropriate size to pass the design storm.

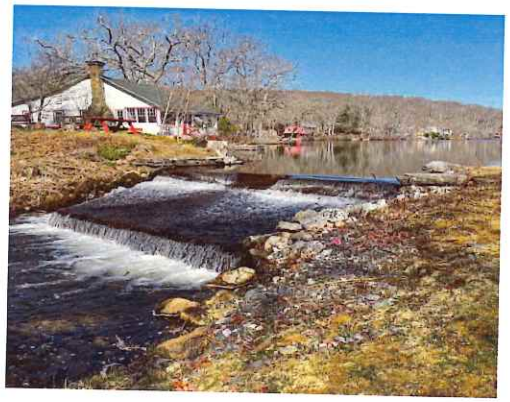
HYDROLOGY & HYDRAULICS

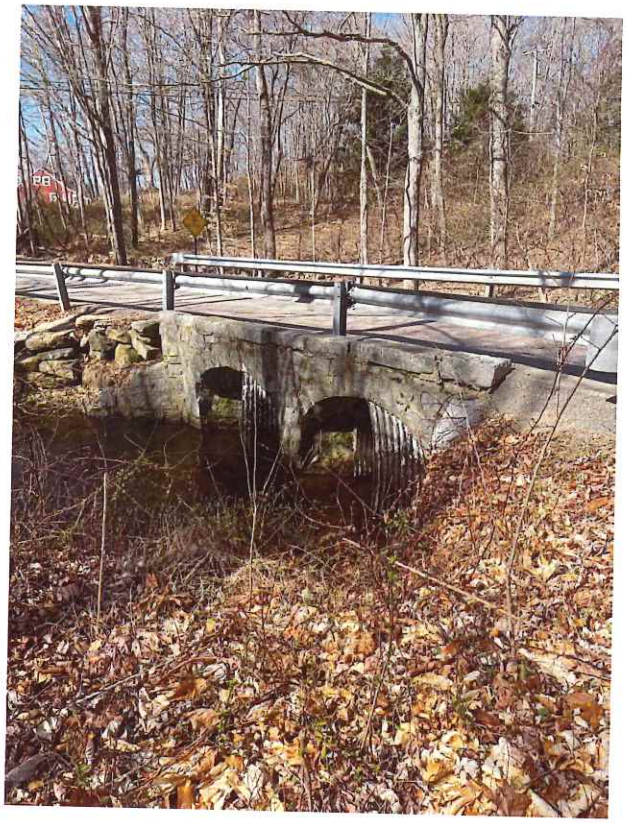
- **Model** the redirection of flood flows to Bush Pond Dam and possibly a new spillway structure at the dam using HEC-HMS model
- **Determine** the design flows of for the Lantern Hill Road Culvert at Whitford Brook and the design flows at Hyde Mill Pentway Culvert using the HEC-HMS model
- **Utilize** FEMA Flood Insurance Rate Maps along with results of the HEC-HMS model to review flooding along Lantern Hill Road at the areas of Long Pond Dam, Bush Pond Dam, and Lantern Hill Road Culvert
- **Assess** possible solutions to protect the road from future flooding



DESIGN

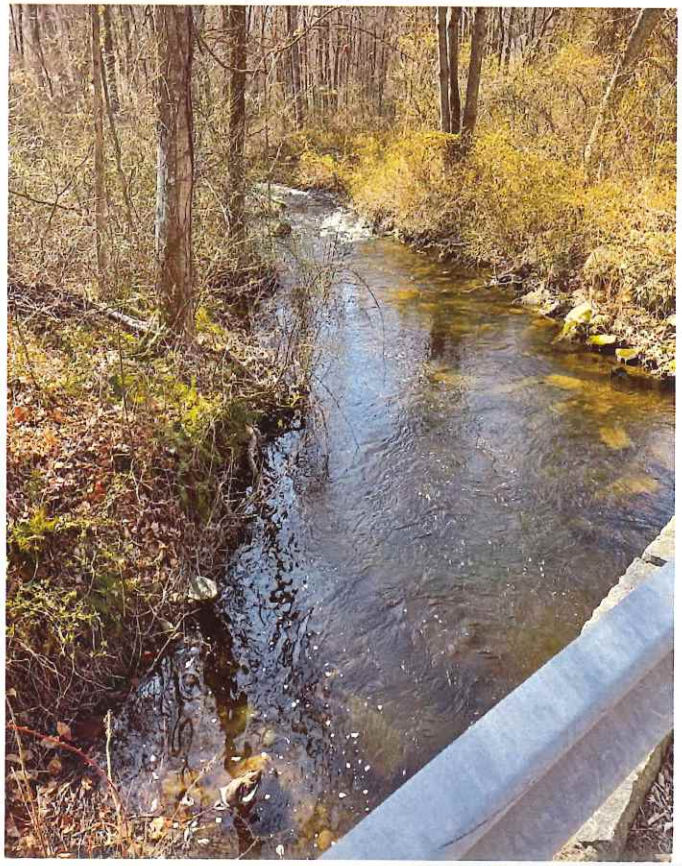
- **Prepare** preliminary designs of repairs or replacement structures and meet with the Town and DEEP Dam Safety staff to review the results of the modeling and the preliminary design plans for the dams and culverts
- **Incorporate** comments from the Town/stakeholders and prepare final plans.





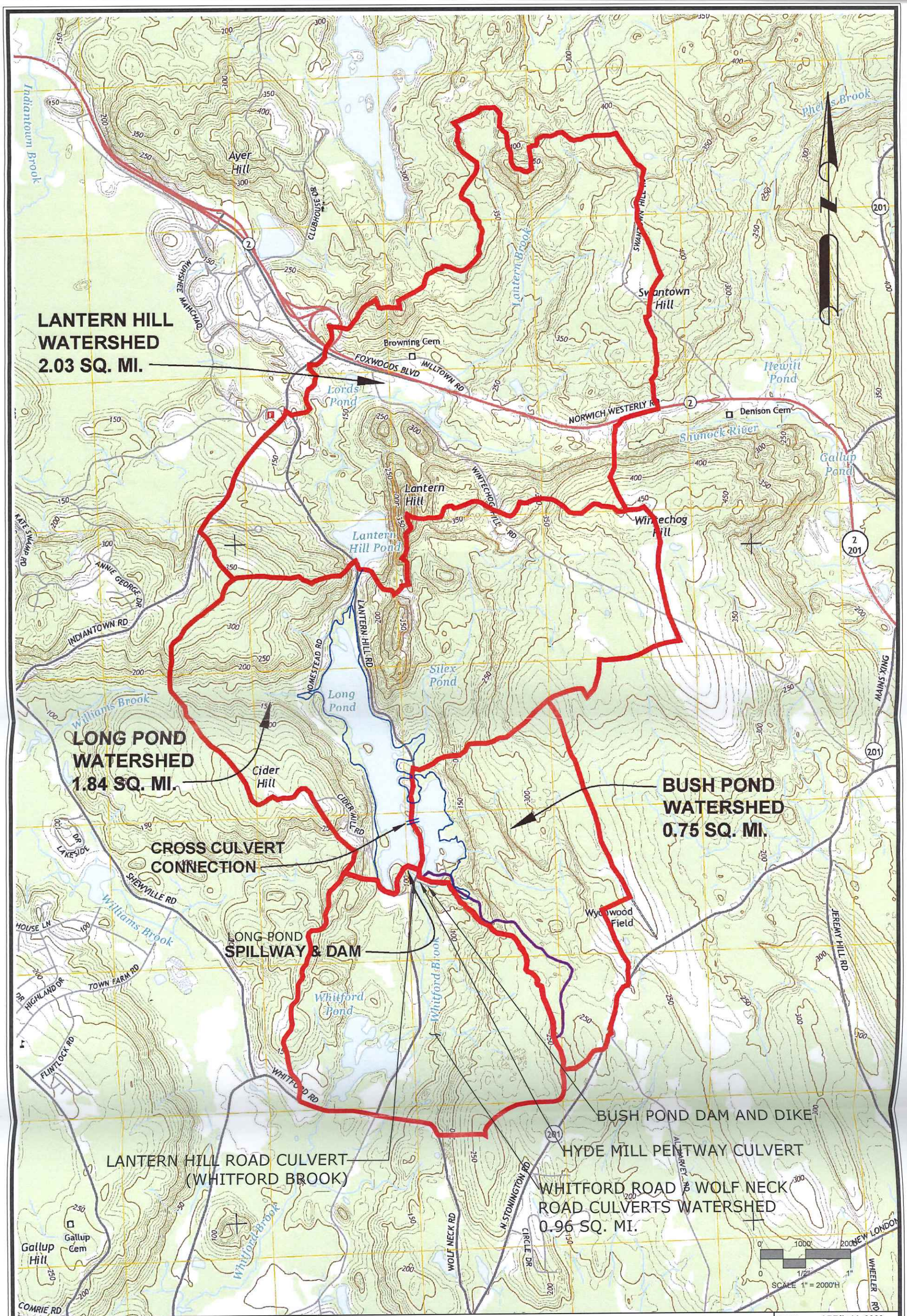
PERMITTING

- **Prepare** permit applications for each structure identifying the wetland impacts associated with each
- **Submit** applications for the Dam repair projects to the CT DEEP and the bridge projects will be submitted to the Town Land use Commissions for their review.



CONSTRUCTION PLANS & SPECIFICATIONS

- **Modify** plans to incorporate the review comments and construction details
- **Prepare** and incorporate technical specifications for the work into bid documents



SLR
99 REALTY DRIVE
CHESHIRE, CT 06410
203.271.1773
SLRCONSULTING.COM

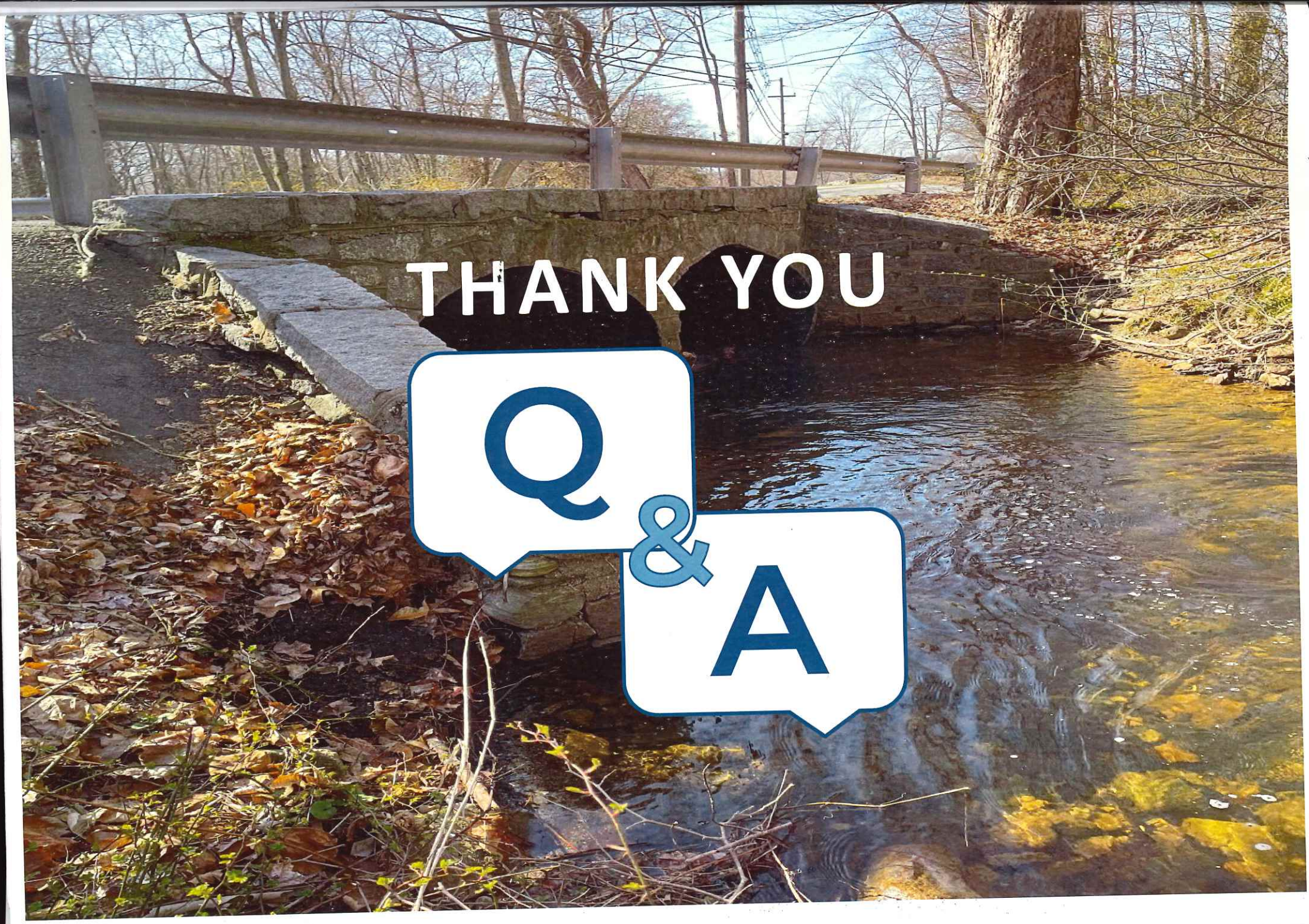
WHITFORD BROOK WATERSHED MAP

WHITFORD BROOK WATERSHED INFRASTRUCTURE IMPROVEMENTS

LEDYARD, CONNECTICUT

PROJECT PHASE: **FOR CONSTRUCTION** REV: ---

DATE	APRIL 11, 2023
SCALE	1"=2000'
PROJ. NO.	12174.00011
DESIGNED	---
DRAWN	MCB
CHECKED	EAH
DRAWING NAME:	FIG. 1


THANK YOU
Q & A