

Proposed for: Liberty Mutual

Liberty Mutual
 225 Borthwick Ave.
 Portsmouth, NH 03801

Driver for Corrective Action

 Attention Needed
  Action Needed
  Action Required



Shoreline Stabilization – Two wet detention ponds with side slope erosion. Easter Pond 252 linear Feet/Western Pond 335 Linear feet

Summary of Issues

The following scope details a proposed option to stabilize the noted side slopes of two wet detention ponds at Portsmouth, Liberty Mutual. This proposed stabilization technique will incorporate engineered fabrics, vegetation, as well as a sub-water level stone toe footer. We recommend this scope, as it coincides with the existing aesthetic and provides a more dynamic approach to stabilizing the soils. The migrated and sloughed soil will be excavated and removed from the toe of the slope and stock-piled for re-use and/or disposal. The toe of each slope will be excavated in order to install a 12”x12” stone toe footer beneath the water line. The trench will be lined with geo-textile fabric to provide separation from the basin’s soil, and prevent side slope soil migration, due to uniform pressure from the stone. TRM 250 (or equivalent) will be installed, extending from the stone to footer to the existing landscape features (replacing the existing turf buffer). A choir log will be installed at the normal water level to be staked into the ground using 2’ engineers’ stakes, which will then have native wetland plants installed on the uphill side of the choir log. Native wetland plants will be installed through the TRM to provide a vegetative buffer during the growing season, though the TRM 250 will provide stability during the winter and cold months.

The following scope includes both ponds shoreline as highlighted in the aerial diagram below (587LF)

Scope of Work

AQUALIS will provide the Services and Deliverable(s) as follows:

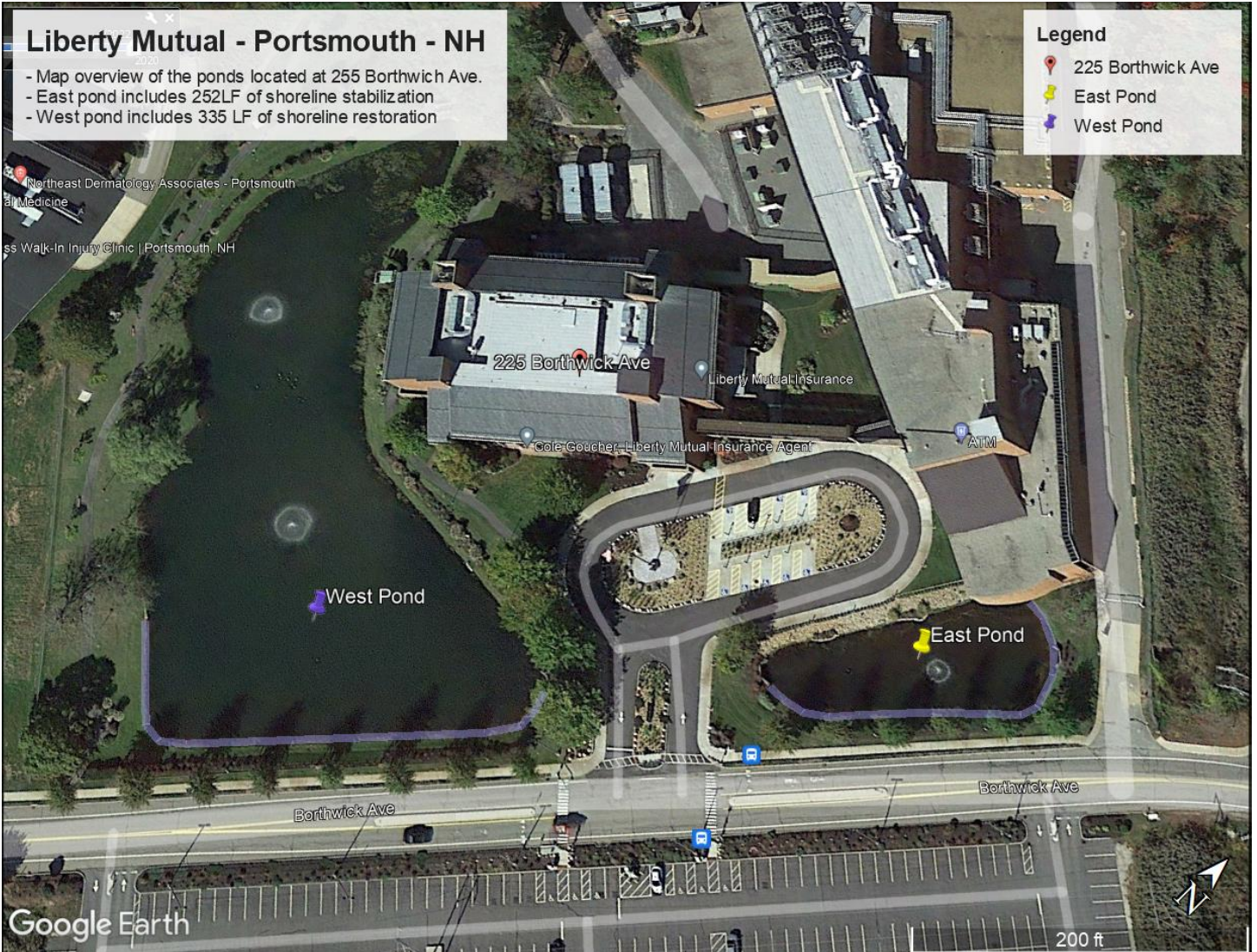
- Mobilize all equipment and labor to the site
- Deploy temporary traffic barricades as necessary for crew and customer safety
- Establish pump around to dewater pond as needed to install buffer
- De-water pond as needed using high flow de-watering pumps and boosters
- Excavate and “strip” non-compactable soil, to be stockpiled for reuse or disposal depending on composition
- Excavate and grade 12”x12 toe stone trench
 - Installation of geo-textile fabric according
 - Installation of 4-6 rip rap mixed with surge stone
- Finish grade of pond slope and embankment, to be confirmed using a rotary laser level and temporary benchmark
- Installation of TRM 250
 - Trench leading edge of TRM
 - Secure TRM 250 using 10” U staples
 - TRM to extend from the top of berm to the toe of slope and tie into stone footer
- Installation of choir log
 - Secured choir log with 2’ engineers stakes driven deep into the ground
- Installation of Native Wetland Plants
 - Installation of 6 native wetland plugs per SY

- A variation of 4 species will be used to prevent monoculture and vector vulnerability
- Perforations in the TRM 250 for the installation of the plants will be stapled, and zip tied to prevent soil migration
- Repair landscaping as needed and replace disturbed mulch
- Remove temporary traffic barricades; perform general site cleanup
- Demobilize

*Includes both ponds

*This cost does not include vector truck work

*This cost does not include any camera investigations



Living Shoreline Example (De-watered)



Newly Constructed Coir Log shoreline (Coir Log will be visible for apx. 1 growing season)

