BSC GROUP

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Nature-Based Solutions Implementation Resource Guide

Nature-based Solution (NbS): Daylighting Streams

Project Number per matrix: **12**

PREREQUISITES

- Obtain Town or City Conservation Commission, DPW, and/or landowner approval.
- Obtain appropriate permits, i.e. permit for excavation adjacent to wetlands.
- Coordinate restoration with funder (e.g., MA MVP), if applicable.
- Hire a Licensed Site Professional (LSP) to be available for unexpected hazards.
- Ensure an accessible route for diversion or upland dewatering area.

RECOMMENDED IMPLEMENTATION STEPS

- **Project Planning and Administration**
  - Assess potential local flooding, erosion, and contamination impacts.
  - Assess invasive soil seed bank and rootstock.
  - Assess bordering threats such as the proximity of established invasive seed sources.
  - Assess opportunities for coordinated habitat enhancement flood storage and stormwater controls.
  - Test soil for infiltration, contamination, and roadside hazards/impacts.
  - Ensure clear communication and understanding of maintenance personnel. Take into consideration the costs for oversight.
  - Plan for the construction period and post-construction period environmental monitoring.
- **NbS Installation**
  - Maintain stability through critical mass planting and coordinated invasive control.
  - Evaluate existing structure for stability during excavation.
  - Evaluate available space for appropriate banks and slopes.
  - Evaluate potential traffic hazards and plans for inclusion of barriers.
  - Install access control measures for excavations where required.
  - Conduct site preparation to include erosion control and stockpile/mobilize staging area.
  - Prepare for significant soil disruption.
  - Place flow-altering features and root wads.
  - Install stream bed soil and stone with rill features.
  - Plant selected native species, along with mulching, watering, and weeding during the maintenance period.
- **Maintenance**
  - Support two years establishment period to include bi-annual removal of invasive plants and weeds, annual replacement of failed plantings, and watering, as needed, to naturalize plantings.

NATURE-BASED SOLUTION SPECS

- Typical project size: 30’ X 100’.

BUDGET ESTIMATE

- Typical project budget (order of magnitude): N/A
- Use the BSC Group Nature-based Solutions budget tool to develop more detailed concept budgets

SCHEDULE ESTIMATE

- Pre-construction monitoring of groundwater table (minimum 1 growing season, preferably multiple growing seasons)

- 2 days of construction per unit
- 2-year establishment period