BSC GROUP

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Nature-Based Solutions Implementation Resource Guide

Nature-based Solution (NbS): Stormwater Treatment Wetlands

Project Number per matrix: **11**

PREREQUISITES

- Obtain Town or City Conservation Commission, DPW, and/or landowner approval.
- Obtain appropriate permits, e.g., permit for excavation adjacent to wetlands.
- Coordinate restoration with funder (e.g., MA MVP), if applicable.
- Test soil for infiltration, contamination, and roadside hazards/impacts.
- Hire a Licensed Site Professional (LSP) to be available for unexpected hazards.

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.
  - Evaluate water table and soil profile for effective infiltration, and groundwater monitoring well(s).
  - 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.
  - Select native plant species adapted to stormwater flood/drought conditions.
  - Install access control measures where required (fenced for standing water).
  - Install pre-treatment drainage and collection structures.
  - Prepare for significant soil disruption.
  - Conduct site preparation to include erosion control and stockpile/mobilize staging area.
  - Plant select native species, along with mulching, watering, and weeding during maintenance period.
  - (Optional) Engage volunteers to design, build, and install signage explaining the ecological and climate resiliency value of nature-based stormwater control features.
- **Maintenance**
  - Support 2 year 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: 15’ X 30’ (5’ X 10’ minimum).

BUDGET ESTIMATE

- Typical project budget (order of magnitude): $10,000 - $20,000
- 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