BSC GROUP

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Nature-Based Solutions Implementation Resource Guide

Nature-based Solution (NbS): Soil Protection-Puncheon-Boardwalk

Project Number per matrix: **29**

PREREQUISITES

- Coordinate restoration with MVP and the Town/City Master Plan.
- Approval of Conservation Commission and/or landowner.
- Obtain appropriate permits.

RECOMMENDED IMPLEMENTATION STEPS

- **Project Planning and Administration**
  - Evaluate site conditions for needed puncheon boardwalks over wet or unstable ground.
  - Determine dimensions and specifications based on site requirements and foot traffic.
  - Install access control measures and signage to guide pedestrians onto the boardwalk.
  - Construct stable support structures using wooden planks, logs, or beams.
  - Prepare the site by implementing erosion control measures and clearing obstacles.
  - Assess visibility and safety considerations for user safety.
  - Select boardwalk locations based on existing trails or desired lines.
  - Consider vegetation and erosion issues for additional protection measures.
  - Coordinate with maintenance personnel for regular inspections and repairs.
  - Monitor the construction process for proper alignment and durability.

- **NbS Installation**
  - A puncheon-boardwalk is a raised pathway constructed from wooden planks or logs placed side by side over wet or marshy ground, allowing safe and accessible passage through challenging terrain.
  - It provides an elevated walking surface that protects sensitive ecosystems and allows people to navigate wetlands, muddy areas, or unstable ground without causing damage.
  - Materials range from planks on logs, timber frame, or double wall HDPE pipe, to fiberglass grating in wood or plastic framing. The use of pipe facilitates delivery and limits flood volume displacement. Using local logs is feasible but will require more frequent maintenance. Select seasoned rot-resistant hardwoods.
  - Puncheon must be limited to Massachusetts building code fall heights without railing (29-inch max). Above this height consider engineered boardwalk structures or bridges.
  - There is a shading of wetlands impact to be assessed. Check federal, state, and local wetland regulations.

- **Maintenance**
  - Routine annual maintenance may be required.

NATURE-BASED SOLUTION SPECS

- Typical project size: 20 linear feet

BUDGET ESTIMATE

- Typical project budget (order of magnitude): $500 (Puncheon) - $5,000 (Boardwalk with Rail)
- Use the BSC Group Nature-based Solutions budget tool to develop more detailed concept budgets

SCHEDULE ESTIMATE

- 1 year of preparation.
- Puncheon 20-feet per hour. Boardwalk schedule specific to system requirements.