Seaver Brook Road-Stream Crossing Upgrade, Plaistow, New Hampshire

STONE ENVIRONMENTAL

Services / Expertise
Culvert Replacement
Aquatic Organism Passage Design
Geomorphic Analysis
Stream Restoration
Channel Restoration Plan & Design
Hydrologic & Hydraulic Modeling
Erosion Prevention & Sediment Control Plan
Cost-Benefit Analysis of Select Alternatives
100% Design Plans & Opinion of Probable Cost
Stakeholder Collaboration & Stewardship
Permitting Support
Project Implementation

Markets
Municipalities

Project Location
Plaistow, New Hampshire

Date Completed
2018-2020

Project Owner
Town of Plaistow, NH

Project ID#
17-149

Project Manager
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Project Team
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Peter Lazorchak, PE, LEED AP

Concrete box culvert installation at Seaver Brook and Pollard Road, August 2020.

STONE assisted Normandeau Associates and the Town of Plaistow, NH with an upgrade to a road-stream crossing that frequently flooded Pollard Road during large storm events. The road-stream crossing was listed in the Town's Hazard Mitigation Plan as a location where chronic flooding occurred and was a priority for replacement.

Stone conducted a geomorphic assessment which characterized the stream as Type E (Rosgen classification) with well-established floodplains. Stone's H&H work indicated that a significant increase in conveyance was required to mitigate flooding and meet design objectives, which included matching upstream and downstream water surface elevations during storm events and ensuring reasonable flow velocities downstream of the structure. Final design included a 18' wide by 5' high concrete box culvert, set at a slope that matched gradients in reference reaches upstream and downstream of the structure. Banks through the structure were included to accommodate terrestrial animal passage along this moderately busy residential road. Stone provided 100% design plans, an opinion of probable construction cost, bid documents and support, construction oversight and developed construction as-built plans. Construction was completed in summer of 2020.

Left: Top sections of box culvert being installed following bottom section and channel bed material installation. Right: Completed channel restoration and box culvert installation, prior to final roadway improvements (paving, guardrail installation, etc.).