

Cold Brook Dam Removal, Wilmington, Vermont



Services / Expertise

Dam Removal Assessment
Aquatic Organism Passage Design
Channel Restoration Plan
Sediment Analysis, Characterization and Management
Topographic Survey
Geomorphic Assessment
Infrastructure Stability Analysis
Hydraulic & Hydrologic Modeling
Erosion Prevent and Sediment Control Plan
Permitting Support
Final Design & Construction Oversight
Stakeholder Collaboration & Stewardship

Markets

Watershed Protection Organizations
Local and Regional Government
Property/Site Owners

Project Location

Wilmington, Vermont

Date Completed

2017-2018

Project Owner

Connecticut River Conservancy

Project ID#

18-048

Project Manager

Gabe Bolin, PE, Senior Engineer
gbolin@stone-env.com
(603) 273-9253



View along top of dam, looking northeast (left); View of dam and sluice, looking north (right). During a topographic survey in May 2017, Stone observed brook trout trying to unsuccessfully jump over the dam. (Source: Stone)

FOLLOWING the development of 30% design plans by Gabe Bolin while at Trout Unlimited in 2017, Stone Environmental was hired by the Connecticut River Conservancy to complete dam removal design and provide permitting support for the removal of a small dam located on Cold Brook in the Town of Wilmington, Vermont. Cold Brook is a roughly 5-mile long tributary to the North Branch of the Deerfield River. The 4-foot-high by 50-foot-long concrete gravity dam was constructed in the 1980s by a private landowner to generate power. Although in fair condition, the owner permitted the removal of the dam to improve fish passage for native brook trout and other aquatic organisms, as well as reestablish natural stream flows and sediment transport.

Building on the 30% design plans, Stone completed hydrologic (HEC-HMS) and hydraulic (HEC-RAS) modeling to evaluate removal scenarios, computed the volume of impounded sediment via probing, characterized the sediment, determined dominant grain size via grab samples, and completed a slope stability analysis. One of the primary challenges to removal was site access. Stone combined publicly available LiDAR data with the existing survey data to further define upland areas and accurately depict access and material loadout scenarios. In 2018, Stone finalized engineering design plans and provided construction oversight for the removal. The final plans included dam demolition plan and stream feature designs using longitudinal profile analysis to ensure fish passage following removal.

The restoration project took less than two weeks to complete. Funding was provided by the US Fish and Wildlife Foundation, Conservation Alliance, Vermont State Wildlife Grant Program, and US Fish and Wildlife Service's National Fish Passage Program

The Connecticut River Conservancy and US Fish & Wildlife Service will continue to monitor the site.