



College Brook Drainage Structure

Full Mitigation Best Practice Story

Strafford County, New Hampshire

Durham, NH - The College Brook flows through property owned by the University of New Hampshire and down through residential and commercial neighborhoods in the Town of Durham, ultimately emptying into Mill Pond. High water resulting from heavy rains or snow melt inundates the College Brook area approximately twice a year. The culverts under Mill Road and Mill Pond Road are overwhelmed, causing backup and flooding to 37 properties. There is recurring damage to homes, improved property, and infrastructure.



In 1997 and 1998, FEMA Region I partnered with the State of New Hampshire, the Town of Durham, and local residents to improve the drainage capacity of the two culverts. The project consisted of upgrading two culverts along the College Brook in order to maintain the flow of water during a storm event. The existing culvert was upgraded with a bottomless multi-plate pipe arch set on pre-cast footings. This pipe arch will be sized to allow the flow due to a 25-year storm event. The project removed the granite slabs that roof the exiting box culvert and widened the box culvert from 8 foot to 10 foot at the base; and then stabilized the slope with granite slabs and constructed a timber pedestrian bridge on top. Engineering studies have shown that these upgrades will carry the flow of a 25-year storm event.

The project has been tested during heavy rain events and there has been no damage due to flooding. The real test will be during the Spring snow melt. As of December 1998, benefits in avoided damages are \$170,000.

Activity/Project Location

Geographical Area: **Single County in a State**

FEMA Region: **Region I**

State: **New Hampshire**

County: **Strafford County**

City/Community: **Durham**

Key Activity/Project Information

Sector: **Public**

Hazard Type: **Severe Storm; Flooding**

Activity/Project Type: **Flood Control**

Activity/Project Start Date: **05/1998**

Activity/Project End Date: **12/1998**

Funding Source: **Local Sources**

Funding Recipient: **Local Government**

Funding Recipient Name: **Town of Durham**

Activity/Project Economic Analysis

Cost: **\$225,000.00 (Estimated)**

Activity/Project Disaster Information

Mitigation Resulted From Federal
Disaster? **Unknown**

Value Tested By Disaster? **No**

Repetitive Loss Property? **Unknown**

Reference URLs

Reference URL 1: <http://www.floodsmart.gov/floodsmart/pages/index.jsp>

Reference URL 2: <http://www.nhoem.state.nh.us/>

Main Points

- FEMA Region I partnered with the State of New Hampshire, the Town of Durham, and local residents to improve and upgrade the drainage capacity of the two culverts.
- The project consisted of upgrading two culverts along the College Brook in order to maintain the flow of water during a storm event.
- Engineering studies have shown that these upgrades will carry the flow of a 25-year storm event.