



FEMA

Brigham Hill Road Preventing Washouts

Towns of Essex, Colchester and Milton, VT - The Vermont highway system can be vulnerable to flooding if proper mitigation techniques are not employed. Vermont has a high proportion of major roads that are gravel. Typically these roads follow watercourses between steep rocky hills. The bedrock slopes are impervious to water, so runoff flows quickly downhill. Soil saturation further aggravates the potential for flash flooding.

In recent years, development has been stimulated in vulnerable areas from tourism and the construction of seasonal and retirement homes. Federal agencies, state and local highway engineers have developed numerous mitigation techniques to reduce damage to those gravel roads.

The towns of Colchester, Milton and Essex joined together following the damage to tackle persistent flood damage on a shared thoroughfare, the Brigham Hill and Mars Hollow Roads. Today residents are seeing significant benefits from this mitigation. A grant from FEMA's Hazard Mitigation Grant Program (HMGP) covered 75 percent of the \$95,245 cost.

For the mitigation project, Essex supplied the engineering work and submitted the Federal grant application on behalf of all three communities. Each town paid a share of the mitigation activities including the addition of stone lined ditches and larger culverts that included several high-density polyethylene pipes.

Testing the project in the fall of 2004 was a series of severe storms and flooding, which struck the area and resulted in the declaration of yet another Federal disaster. The town highway departments reported only minor damage to the Brigham Hill and Mars Hollow Roads. In previous years, annual municipal repair costs on the two roads exceeded \$18,000.

Essex Public Works Director Dennis Lutz commented that FEMA funded work on Brigham Hill Road demonstrated how to include effective mitigation during construction. Essex has since adopted local Codes and Standards for all roadwork. When extensive water damage occurred in August on Pettingill Road in Essex, their department quickly made repairs and installed stone ditching before federal staff had arrived. FEMA Public Assistance personnel inspected the Pettingill Road work and the town will be reimbursed for the mitigation ditching and other work currently underway.

The adoption of the Codes and Standard, developed for local communities in an initiative by the Vermont Agency of Transportation (AOT), has been a great benefit to many cities and towns. Communities that have adopted and enforced these Codes and Standards have secured over \$500,000 additional dollars in federal assistance that otherwise would not have been available.

With driveway runoff a source of limited damage in Essex, the Public Works department is initiating a public education program to inform homeowners how residents can prevent washouts on their private property and reduce damages to connecting town roads.

Vermont Emergency Management is distributing a flyer "Things to Consider When Constructing or Repairing Your Driveway" to communities. The literature was developed using information provided by the Vermont AOT and FEMA.



Chittenden County,
Vermont



Quick Facts

Sector:

Public

Cost:

\$95,245.00 (Actual)

Primary Activity/Project:

Flood Control

Primary Funding:

Hazard Mitigation Grant Program (HMGP)