Ahead of the Storm

Hinesburg Community School

VT Route 116, Hinesburg

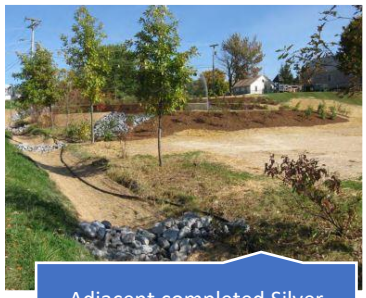
Introduction

Ahead of the Storm (AOTS) grew out of a group of citizens from Charlotte, Hinesburg, and Shelburne who were concerned about the serious decline of Lake Champlain's health and water quality. Stormwater runoff from driveways, fields, parking areas, and lawns is a major factor in the deterioration of our water quality. Most impervious surfaces were created before regulations requiring water quality treatments were in place or fall below regulatory thresholds. Therefore, runoff is not managed to remove pollutants or slow flows and soils and phosphorus are mobilized and end up in Lake Champlain. AOTS helps communities change the way stormwater is managed on properties to reduce water pollution and be more prepared for extreme weather events and impacts of climate change. Fifteen municipal, educational, and private properties have been selected to become demonstration sites to showcase more optimal conservation practices in a variety of landscape settings. Monitoring and stewardship over time is crucial to successfully addressing water quality issues.

Why here?

Hinesburg Community School is located at the intersection of VT Route 116 and Silver Street. Runoff is collected from 5.2 acres of existing impervious surfaces from the Route 116 corridor and the school parking lots, play areas, sidewalks, and buildings. The LaPlatte River is directly adjacent to the school and has shown elevated levels of phosphorus and sediment for years. This location presents an opportunity to treat a large amount of stormwater before it enters the LaPlatte River and will showcase optimal conservation practices for students and the Town of Hinesburg. There is already a rain garden on the corner of Silver Street and Route 116 (a different AOTS site called “The Silver Street Rain Garden”) which collects and treats different existing impervious areas.

HCS lower parking lot, the proposed spot for stormwater desgin



Adjacent completed Silver Street rain garden

The adjacent LaPlatte River where all water and pollutants from the school flows

Take a tour of the AOTS locations at lewiscreek.org!

Design: how can we filter the water?

In order to improve water quality, engineers at Milone & MacBroom created preliminary designs to slow runoff, increase infiltration, and enhance vegetation in two key locations. West of the school, engineers propose a bio-retention area (rain garden) that will store water during large rain and snow melt events, and allow water to slowly infiltrate through soils to filter out excess nutrients before entering the LaPlatte River. South of that, engineers propose a bio-infiltration swale with a stone trench and tree mound check dams, which will slow down and filter water running off the school's impervious surfaces like the roof and parking lot.

Implementation

Final design and implementation are contingent on securing financing and will likely occur in the next 5 years.

Bio-infiltration trench example from Silver Street rain garden

Bio-infiltration swale with stone trench example from the Silver Street rain garden

Log check dam example in Hinesburg

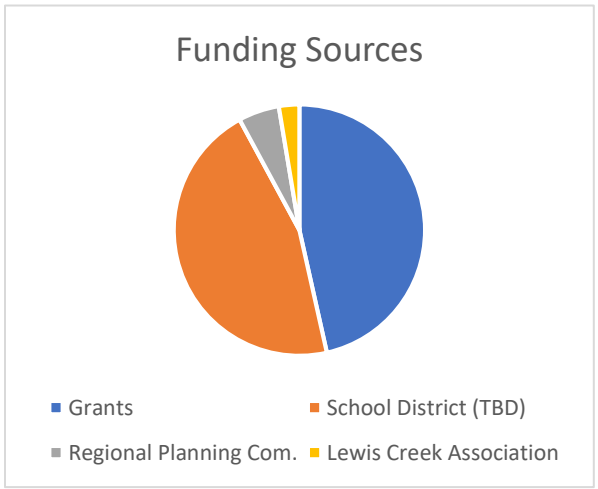
How much did it cost?

Funding for this project occurred in phases:

Concept Design $6,000

Planning and Design Phase II $12,000 (did not yet occur)

Implementation $94,000 (estimated)



LEWIS CREEK ASSOCIATION

MILONE & MACBROOM

NEIWPCC New England Interstate Water Pollution Control Commission

Lake Champlain Basin Program