

LAKE SUNAPEE WATERSHED INFRASTRUCTURE PROJECT

Project Overview

Extreme and record storms in recent years exceed the design capacity of many drainage systems in New Hampshire. This trend is a worsening of an already-increasing trend in 20th century extreme weather and flooding that numerous scientific studies observed. And there is no evidence that these trends will reverse.

Communities are losing the window of opportunity to prepare before storms and runoff become disastrously undersized. Yet, information sufficiently reliable and specific to support local-scale disaster prevention programs is sparse. Officials, at both the state and national levels, seek to provide communities with the information that leaders need to plan. Previous work by this project team has attracted the attention of these officials because we have studied the impact of changed runoff conditions at an on-the-ground, practical scale.

To address this issue in the Lake Sunapee watershed we propose to develop, implement, and disseminate a quantified, local-scale, and actionable protocol for maintaining historical risk levels for communities facing significant impacts from changing storms, runoff, and population growth. The proposed project will utilize an interdisciplinary team of investigators and stakeholders, to model the impact of changing runoff on the local-scale stormwater infrastructure, in a form understandable to planners, resource managers and decision-makers. This project seeks to protect towns in the Lake Sunapee watershed by helping develop long-term plans for managing stormwater.

The proposed analyses and associated outreach program provide both new and synthesized science-based knowledge; identify impacts and societal vulnerability; and provide a practical template to support stakeholder-driven implementation of flood disaster-prevention programs. At the local, regional, and national scale, this study will make a significant contribution toward the generation of reliable and specific local-scale estimates of impacts from worsening runoff and flooding trends, in support of programs to adapt civil infrastructures.