

Organization:

City of Laconia, Conservation Commission

45 Beacon Street East, Laconia, NH, 03246

Representative: Taylor Daigle, Conservation Technician, tdaigle@laconianh.gov. 603-527-1264 (Ext. 262) and/or Dean Anson, chair of Conservation Commission, deananson@aol.com, 603-581-8620

Organization's Mission and Goals:

The City of Laconia's Conservation Commission aims to promote and preserve the natural resources in the area and to protect and manage the City's watershed resources and wildlife habitat areas. The Commission is responsible for: preserving and protecting forests, water quality, and recreation; reviewing site plans for compliance with state/local wetlands and shoreland regulations; making recommendations to the City Planning Board; and outreach and education on environmental issues.

Organization Director:

Name: Dean Trefethen

Signature:

Date:

Representative Client:

Name: Taylor Daigle

Signature:

Date:

Project Description: Stormwater/Flood Assessment for Laconia, NH

Problem: Laconia has faced a number of flooding events that have overwhelmed the streets in the City, with Union Avenue being particularly affected (arguably our largest, busiest, and most densely developed road). These floods affect the City's infrastructure, private businesses, and homeowners/renters, traffic flow, and pedestrians. In addition to concerns regarding life and property, the city has concerns about water quality on Paugus Bay (Lake Winnepesaukee) following significant flooding/stormwater events (Paugus Bay is the city's drinking water source). The city needs to begin investigating and understanding the ways in which we can mitigate the concerns that come with flooding events and manage our stormwater more efficiently. Just this year, Laconia experienced the wettest July in recent history. Lake and water table levels were higher than typical for the time of year, and the city was not prepared for the effects of this weather. A stormwater/flood analysis for this city is the first step in taking preventative action and identifying Laconia's weak points.

Project: The City is interested in pursuing a stormwater/flooding assessment for the community. This assessment would focus on identifying how our physical landscape would respond to storm events of varying degrees. By observing/analyzing the land use, development, natural resources, and management practices in the city, we hope to answer the following questions:

1. Where are our flood-prone areas in the community and what is contributing to this risk?
2. What opportunities are there to mitigate flooding by modifying water storage in these areas?
3. How might we prioritize mitigation projects with the financial, technical, and personnel resources available?
4. How can this information be utilized in updating city documents? (master plan, emergency operations, hazard mitigations plans)

A Stormwater/Flood Assessment would help Laconia in addressing our concerns in a few ways. First, the assessment would familiarize the community with general stormwater concerns and serve as an educational reference for community members and city employees. Second, the results of the assessment would allow the planning department, conservation commission, planning board, public works, and city council to make more informed decisions about development/changes occurring in the city with regards to the long-term effects they may have on our capacity to manage stormwater. And finally, this assessment would provide the city with a planning tool to recommend and implement mitigation strategies for stormwater management and flood prevention. This project would ultimately improve the community's knowledge, health, and safety with regards to stormwater and flooding hazards, prior to their occurrence.

The Conservation Commission envisions this project as the community's baseline for approaching flood concerns. Our approach would involve:

- Combining spatial data and area-specific knowledge to identify flood-prone areas in the city under various precipitation events (for example, X inches of rain). Spatial data would likely include topography, natural resources, land use, etc.

- Identifying how we might utilize the existing natural resources and landscapes this area to mitigate flooding events.
- Identify how we might be able to further mitigate flooding events through specific projects/recommendations (zoning, ecological restoration, etc.)

A project of this nature will be engaging and educational for students. Students participating would get exposure to the concerns/needs of a municipal planning department and gain familiarity with the roles of a conservation commission. They will apply real-world data to a community with a specific need and have the opportunity to present their work to the department/commission and the public. Additionally, a project of this nature would be a good model for stormwater research at the regional level; there are 44 other municipalities in the Lakes Region that would benefit from similar research, presenting a number of opportunities for students interested in this field.

Skills/Expertise: Some of the skills needed to complete this project would include familiarity or interest in hydrology/stormwater/land use, experience with spatial analysis and GIS, strong writing and public speaking capabilities, and creativity for recommending projects.

Deliverables/Timeline/Completion: The City does not have a strict timeline or completion date requirement for this project and would be flexible in setting deadlines with the students. We would, however, like as much as possible to be completed by the end of the student's semester. Deliverables for this project would include:

- A map of flood prone areas in the city in accordance with the rainfall estimates decided on (for example 5, 10, 15 inches of rain). The data from this would ideally be compatible with the city's GIS database for future uses (ESRI's ArcGIS).
- A list of tangible projects for the city to pursue for flood mitigation. Ideally, these projects/recommendations would be ranked priority-wise.
- A final report that summarizes the findings from this research. We hope that content from this final report would be valuable in updating emergency operations, hazard mitigation, and land use plans for the city.
- A few public presentations directed at the general public, the city, and property owners.