

## Northfield Water Street River Park

**Introduction.** On August 28, 2011 – nearly five years ago – Tropical Storm Irene barreled into Vermont with pelting rain and strong winds. Overnight, the landscape of the state was changed, in some places permanently, as floodwaters rose and rivers carved new courses. In Northfield, the storm dropped more than six inches of rain in 12 hours, flooding homes along Water Street and the surrounding area. Today, the town continues to work diligently with landowners and the Federal Emergency Management Agency (FEMA) to secure “flood-buyouts” for over a dozen houses. If all 18 applications for buyouts – including multi-family dwellings – go forward, 25 households in Northfield’s Water Street neighborhood will no longer be in danger from flooding. Besides helping landowners move out of harm’s way, the buyouts have allowed the town to acquire a five-acre contiguous area of floodplain along the Dog River – just upstream from downtown – that can store water during future floods and help decrease flood damage to the remaining homes in the neighborhood.

**Water Street River Park.** Northfield’s plans to restore the ravaged area along Water Street involve creating a place where the river can be enjoyed for recreation, relaxation, and community engagement, while also serving as a critical safety valve floodplain when waters rise. FEMA’s deed restrictions for buyout properties require that the land be used strictly for open space purposes in perpetuity and stay in either public ownership or be conveyed to a land trust or other non-profit organization that has a land conservation mission. Ultimately, the community, with approval from the Northfield Selectboard, will determine what uses the site will support within the constraints of the FEMA deed restrictions and the physical floodplain restoration.

Where there once were homes, there are now grassy vacant lots that will become the Water Street River Park. Town residents, Water Street neighbors, and Norwich University students and faculty have all been involved in discussing the park’s future use. The consensus from recent meetings is to keep the site as natural as possible, focus on supporting quiet activities like dog walking and the appreciation of nature, provide walking paths that can be used by people with limited mobility, and designate an access point to the river for wading and fishing. Norwich University Professor Tara Kulkarni and her students have investigated the idea of incorporating educational stations throughout the park that illustrate relevant topics such as flood resilience and green stormwater infrastructure.

**Floodplain Restoration.** In order to restore the floodplain so that it can effectively store water during future floods, some changes to the site are necessary. The buyouts and removal of the damaged houses was and continues to be the first step. As part of the park design, the site underwent an engineering hydraulic study to explore alternatives to reduce flood and erosion risks. The Friends of the Winooski River secured funding to hire Milone & MacBroom, an engineering consulting firm, to develop a concept plan (see Dog River Flood Study Map) that evaluated several options to create the best floodplain storage systems to reduce risks to surrounding private property and public infrastructure. After an evaluation of the alternatives, the engineering study recommended three tasks:

- removal of a berm that contains flows in the Dog River Channel during floods;
- removal of fill around the wall of the Wall Street Bridge which will alleviate some sediment and debris jamming that has occurred during past floods; and
- lowering the floodplain to allow river access during floods at the buyout area and at the confluence of the Dog River and Union Brook.

The floodplain restoration will reduce flooding during small to medium floods, like the ones that plague Northfield every 10 years or so, but will just drop flood levels a little during larger floods. It is important to understand that flooding will still occur when areas get hit with huge storms like Irene.

The Friends of the Winooski River secured additional funding to complete the engineering design for the recommended practices. Milone & MacBroom set a schedule to have the plans finalized by mid-summer. Execution of the three tasks and site restoration is scheduled for 2017, with a riparian buffer planting scheduled for the spring of 2018. The Northfield Selectboard has directed that prior to holding a town-wide public hearing on a final Water Street River Park design, they would like to have a landscape architect provide a rendering that incorporates the floodplain restoration along with neighborhood feedback.

**Celebrating the River.** This summer, through a grant from the Lake Champlain Basin Program, the Friends of the Winooski River will coordinate a comprehensive community outreach program focusing on flood risk and resilience in Northfield. This effort will complement the physical transformation of the Water Street River Park site and help the community move from disaster recovery to a new relationship and respect for the river that runs through its core. Activities include river flume demonstrations; working with Norwich University to integrate student designs and educational stations; green stormwater infrastructure practices that could be installed in the park; outdoor education for Northfield school children; publishing a series of articles and interviews on various river-related topics in the *Northfield News*; and, coinciding with the Northfield Labor Day celebration, a Water Street River Park booth and walking tour of the site.

**Conclusion.** August is the five year anniversary of Tropical Storm Irene. Since then, just the name “Irene” brings to mind the larger issues of disaster recovery, floodplain management, climate change, and personal loss. Says Northfield Hazard Mitigation Planner Michele Braun, “At a very difficult time for the Water Street neighborhood, the prospect of using the floodplain for a town park and doing river restoration work brought in interest from the local university and others that will benefit the town. We’ve also had time to think through a more comprehensive solution considering how to include parcels upstream and downstream from the future park.” The Northfield Water Street Park is a model for other village centers around the state that shows it is possible to restore river corridors in a downtown area in a way that reduces flood risk and enhances the downtown while at the same time increasing community resilience.

For more information, please contact Milly Archer, VLCT Water Resources Coordinator, at [marcher@vlct.org](mailto:marcher@vlct.org).

*Nothing gets done without hard work, money, and good advice! Organizations associated with the Northfield Water Street River Park project include:*

Davis Educational Foundation  
Edward Miller, Esq.  
Federal Emergency Management Agency  
Friends of the Winooski River  
Lake Champlain Basin Program  
Mad/Dog Chapter of Trout Unlimited  
Milone & MacBroom, Inc.  
Northfield Electric Department  
Northfield High School Class of 1957  
Northfield/Roxbury Long-Term Recovery Committee  
Norwich University Interdisciplinary Team

Norwich University School of Architecture + Art  
 Town of Northfield Conservation Commission  
 Town of Northfield Selectboard and Hazard Mitigation Planner  
 Two Rivers-Ottawaquechee Regional Commission  
 U.S. Fish and Wildlife Service  
 U.S. Housing and Urban Development  
 U.S. Senator Patrick Leahy  
 Vermont Agency of Commerce and Community Development Downtown Program and  
 Community Development Block Grant Program  
 Vermont Department of Emergency Management and Homeland Security  
 Vermont Department of Environmental Conservation  
 Vermont Downtown Action Team  
 Vermont Housing and Conservation Board  
 Vermont Legal Aid  
 Winooski Natural Resources Conservation District

