RAN Fact Sheet

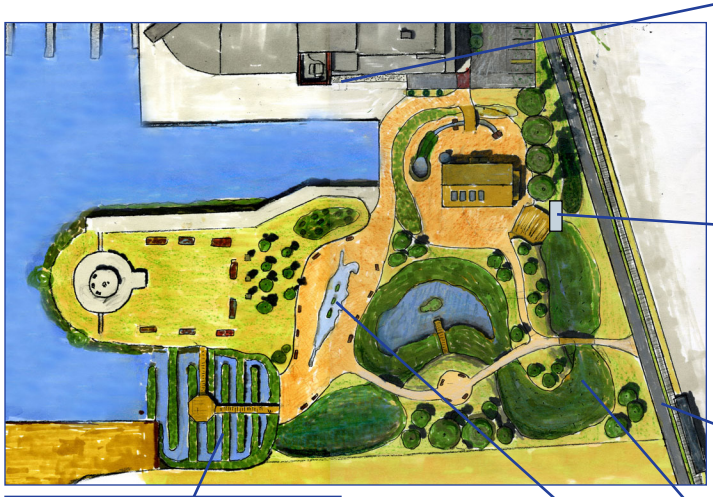
Redesigning the American Neighborhood

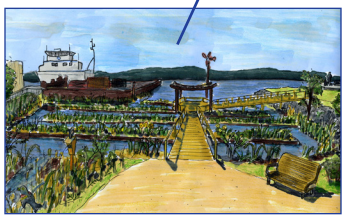
Burlington, Vermont Stormwater Park: *Function through Design*

The City of Burlington, Vermont has pursued principles of sustainable development for several decades. More than 40 programs, projects, and initiatives have been designed to create a community that is both environmentally and economically sustainable. These initiatives rely on the recognition that economic and environmental health are intertwined and that efforts to protect the environment ultimately produce economic gains, the success of which are measured over the long-term.

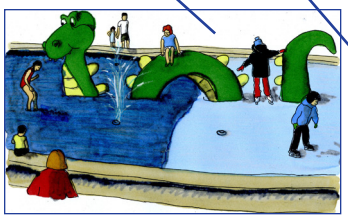
Revitalization of the Lake Champlain waterfront is a major effort in Burlington's sustainable development initiative. This includes a concept design for a Stormwater Park located at the base of College Street near the ECHO Lake Aquarium and Science Center at the Leahy Center for Lake Champlain. The ECHO Stormwater Experience was designed as a "thought piece" by students in the University of Vermont's Rubenstein School of Environment and Natural Resources to meet the needs of diverse stakeholders, including the Community and Economic Development Office of Burlington, Leahy Center affiliates, and the public. The Stormwater Park would serve three important functions as described below.

Current status of proposed Burlington, Vermont Stormwater Park site: Gravel parking lot. (Photo: Google Earth)





Stormwater Park restorer



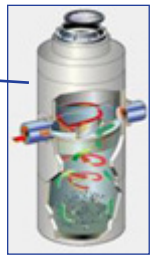
Sculpture and water fountain

Phase II design of proposed Burlington, Vermont Stormwater Park.

Stormwater Park's ecological function

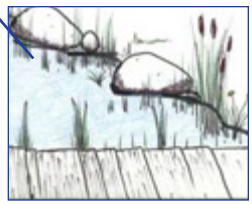
Pollutants in stormwater threaten the health of Lake Champlain. Without proper remediation, pollutants found in Burlington stormwater (phosphorus, fecal coliform bacteria, petrochemicals, and heavy metals such as lead, copper, cadmium, and zinc) make their way to Lake Champlain and disrupt ecosystems and endanger the health of humans and aquatic organisms. The Park would serve the ecological function of stormwater remediation, as it treats runoff from the 23-acre College Street drainage basin.

Living wall



Water enters constructed wetland from vortex separator (Photo: Contech CPI).

Porous pavement (Photo: UNH Stormwater)



Constructed wetland

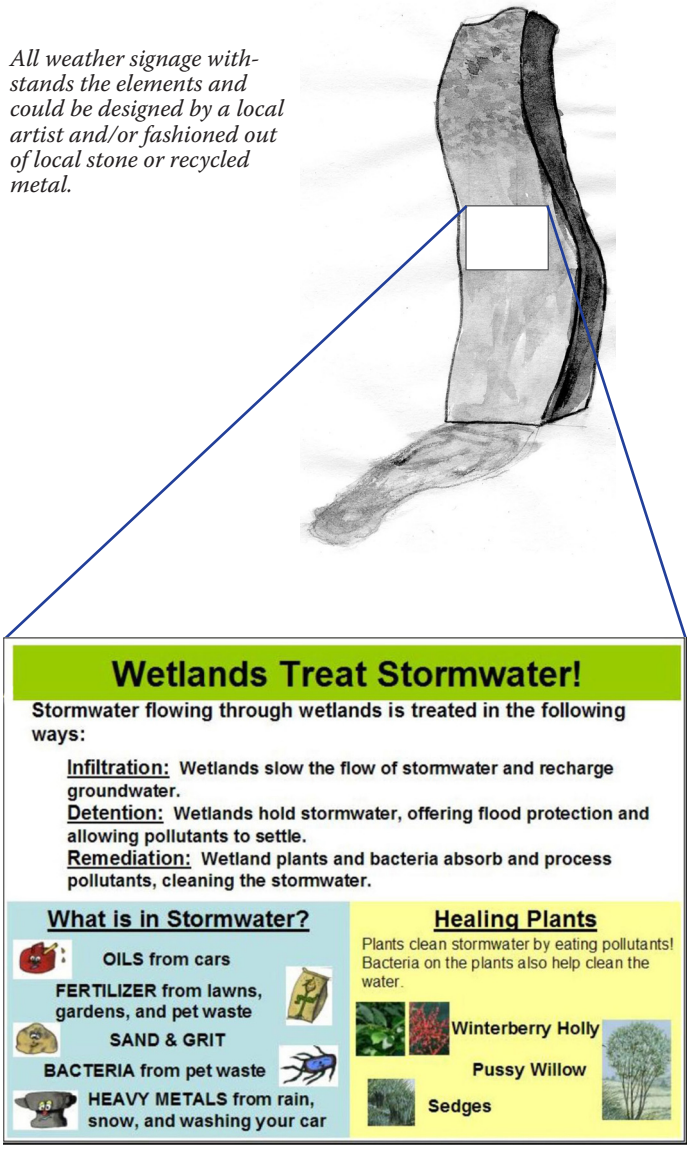
A constructed wetland and restorer would provide over 50,000 cubic feet of storage area for filtration, detention, and remediation. It is also designed to meet Vermont's water quality protection standards. A supplementary underground storage unit would increase pollutant reduction by extending detention time. Permeable pavement would allow precipitation to filter through the pores which recharges groundwater and reduces surface flow, thereby offering flood protection. Living walls would capture stormwater, insulate buildings, improve air quality, and provide an aesthetic feature.

Burlington, Vermont Stormwater Park: *Function through Design*

Stormwater Park's educational function

The Park would serve an educational function as the various low impact design stormwater remediation elements would be exhibits which explain the challenges and offer solutions for municipal and residential stormwater management. Data monitoring of the site would inform stormwater management research.

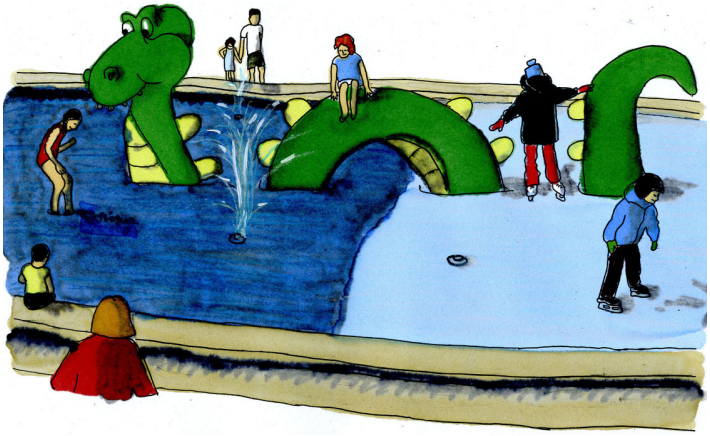
All weather signage withstands the elements and could be designed by a local artist and/or fashioned out of local stone or recycled metal.



An example of informational signs that could be found throughout the Stormwater Park to help educate vistors about municipal and residential stormwater management.

Stormwater Park's recreational function

The Park would also serve a recreational function as children and adults would be able to interact with both the park elements and with each other. A life-size sculpture of Champ, the legendary Lake Champlain monster, could be designed by a local artist and constructed of recycled materials to provide a recreational centerpiece.



Using treated stormwater, a shallow pool could provide a fountain for cooling off in the summer and a learning rink for young ice skaters in the winter.

For more information, contact

RAN Project
320 Aiken Center
The Rubenstein School
of Environment and Natural Resources
The University of Vermont
Burlington VT 05405
802-656-2691
breck.bowden@uvm.edu

Or visit

www.uvm.edu/~ran/ran/