

Rethink Runoff: Chittenden County's Residential Stormwater Education and Engagement Program

Submitted by www.rethinkrunoff.org

Vermont's water quality of its lakes and streams is a valued attribute of the State. With water resources like Lake Champlain, the United States' sixth largest lake, in need of improved water quality, obtaining a long-term and sustainable solution starts with significant education and engagement of residents. In the case of Chittenden County, located in northwest Vermont and part of the Lake Champlain Basin, nine municipalities and three institutions have worked together since 2003 by combining resources to professionally engage the public in a one message, one outreach effort. This effort, known today as Rethink Runoff, is bringing awareness to the need for individual action to assist in combating the negative effects of stormwater runoff.

These nine communities – Burlington, Colchester, Essex, Essex Junction, Milton, Shelburne, South Burlington, Williston, and Winooski – along with Burlington International Airport, the University of Vermont, and the Vermont Agency of Transportation have been designated by the U.S. Environmental Protection Agency (EPA) as Municipal Separate Storm Sewer System (MS4) permittees due to their operation of stormwater systems that discharge into local streams designated as “impaired” by excess stormwater runoff. As part of their permit, these twelve organizations are obligated to both educate the public about the impacts of stormwater as well as get them involved in hands-on solutions. Rather than undertaking individual efforts, the MS4s decided to work together to pool their resources and develop a regional effort.

In 2003, to meet the public education & outreach MS4 permit requirements of Minimum Control Measure #1, they formed the Chittenden County Regional Stormwater Education Program (RSEP) and hired the Chittenden County Regional Planning Commission (CCRPC) as their Lead Agency. The CCRPC contracted with a social marketing firm to devise a Communications Plan and accompanying Media Plan. These Plans were implemented through a combination of television, radio, and on-line ads to drive people to the program's website to distribute messages linked to specific stormwater problems, such as pet waste, fertilizer use, car washing, and redirecting gutter downspouts. The RSEP has tracked the effectiveness of its efforts through

periodic phone or mail surveys. The most recent survey in 2018 showed that 53% of those surveyed agreed that their personal actions affect the quality of Lake Champlain's water compared to 44% in 2013. Other results from 2018 showed that 83% of those surveyed pick up pet waste compared to only 62% in 2003. Similarly, only 21% of citizens surveyed use fertilizers on their lawn, down from 50% in 2003. The RSEP also tracks website visits as a metric of effectiveness. Google analytics shows an increase in annual visits from 2,400 in 2009 to 7,832 in 2018.

Based upon the success of RSEP, the MS4s formed the Chittenden County Stream Team (CCST) in 2011 to act as the outreach and hands-on event arm of the regional education program in order to effectively meet the public involvement and participation requirements of MS4 Minimum Control Measure #2. To carry out this work, the CCRPC contracted with the Winooski Natural Resources Conservation District (WNRCD). The WNRCD utilizes local events such as farmer's markets and festivals to engage and connect with citizens about water quality issues. The CCST brainstorms with these citizens and local municipal staff to develop projects for implementation in their community, such as rain barrel workshops, lawn care workshops, or riparian buffer plantings. On an annual basis, key citizen volunteers assist the Stream Team by gathering samples in impaired streams for water quality testing. Additionally, the CCST works closely with schools to educate Vermont's youth about the impacts of stormwater and to host stream clean-ups ensuring that engagement is reaching a wide variety of audiences. The CCST also collaborates closely with various groups and organizations throughout the Lake Champlain Basin whose interest is improving and preserving Vermont's natural resources. The success of CCST is illustrated in the number of participants and volunteers which has doubled since the inception of the program to engage over 600 people to date.



Some of CCST's most successful projects have been those that link stormwater runoff,



water quality, and art. For four years, CCST contracted with local artists to paint designs on rain barrels which were put on display in a public area during the summer months in a hosting MS4 community. The exhibit, called *Connecting the Drops*, featured a stormwater runoff story attached to the barrels bringing awareness to how stormwater damages

natural waterways and to actions a homeowner can do to reduce their impact on stormwater runoff through the use of green infrastructure, such as rain barrels, rain gardens, and pervious pavement. At the end of the summer, the rain barrels were raffled off to homeowners with instructions on how to successfully install the barrels on their property. For the past three years, CCST has worked with local artists to design and paint storm drain murals on sidewalks or pavement surrounding the drains with a creative “only rain down the drain” message. In 2018, the murals received media attention from several news outlets further increasing the public's awareness of stormwater runoff



and its negative impacts. To continue to encourage the theme of art and stormwater runoff awareness, Rethink Runoff made a new storm drain stencil reading “Drains to Champlain” with a picture of Vermont's own lake monster “Champ” and the Rethink Runoff website URL which can be shared among the MS4 communities to mark neighborhood drains.

Both of Chittenden County's MCM #1 and MCM #2 efforts have achieved local and regional recognition. The RSEP garnered a 2005-2006 Vermont Governor's Award for Environmental Excellence for recognition of “innovative projects that inform and educate Vermonters about environmental responsible practices leading to behavior change that

encourage environmental quality”. In 2011, the Green Mountain Water Environment Association’s Stormwater Award was received for “outstanding performance in stormwater education, and significant contribution to the stormwater field”. Recognizing the innovation and energy of the Stream Team, the Burlington Free Press, ECHO Leahy Museum and All-Earth Renewables gave the Team a 2012 Green Mountain Environmental Leadership Award for Collaboration. In 2014, both RSEP and CCST along with the CCRPC received a 2014 Best Stormwater Idea in New England “Stormy Award” from the New England Stormwater Collaborative for “Regional Collaboration for Enhanced Stormwater Program Efficiency.”

Though both programs were successful individually, in April 2017, RSEP and CCST launched Rethink Runoff, www.rethinkrunoff.org, as a collaborative program that both educates the public and gets them involved in hands-on activities through the Stream Team <http://rethinkrunoff.org/get-involved/get-involved-stream-team/>. While the message stayed the same, the MS4s worked with a new marketing firm to launch new creative elements. Advertisements were simplified and linked back to Vermont’s local culture by incorporating elements such as the aforementioned “Champ”, dog walking, and paddle boarding. Rethink Runoff created Ms. Drop, a mascot used to provide residents with her Monthly Tips on how they can reduce their stormwater impact. The website was updated to include an interactive map that invites users to find their watershed and impaired streams in their area as well as an animation that educates about projects around the house that can help mitigate stormwater runoff. It includes water quality data collected by the Stream Team volunteers to inform the public about the status of the water quality of their watersheds. The website acts as a one-stop shop by listing up-coming hands-on CCST events or volunteer opportunities and providing data, educational resources, tutorials and engagement opportunities that teach residents about the effects of stormwater and the steps residents can take to help keep Lake Champlain clean.



Having a unified brand and message is important now more than ever in the Lake Champlain Basin. In recent years, Lake Champlain has seen an increase in the number of cyanobacteria algal blooms as a result of excess phosphorus from stormwater runoff. Beach closures have become an expected occurrence during the late summer months and residents are becoming more aware linking the effects of stormwater to the quality of the lake. In 2016, the State of Vermont and the U.S. EPA issued the Lake Champlain Phosphorus Total Maximum Daily Load Implementation Plan outlining actions to be taken across multiple sectors – municipalities, wastewater treatment facilities, farms, etc. – to reduce the amount of phosphorus entering the Lake. As part of this Plan, the MS4s are required to reduce the amount of phosphorus entering the Lake by approximately 20% from developed lands. Since the release of the TMDL, a critical aspect of Rethink Runoff's program has been including information about the effects of excess phosphorus on water quality. It is important for residents to have a resource available that educates them on how to identify algal blooms, dangerous effects, and what they can do to help reduce their occurrence. The program has also shifted towards more online advertising which has enabled better tracking of efficacy as well as being easier to adapt to current events. For example, advertisements now run simultaneously with any beach closures that occur as a way to bring attention to how vital the water quality in Lake Champlain is to Vermont's natural resources, tourism and economy.

While the initial intent of the program was to fulfill permit requirements, what the MS4s, the CCRPC, WNRCD, and its marketing firm has created is much more. Together a program was formed that effectively and efficiently educates the community about the impacts of stormwater and how it affects the water quality of Vermont's lakes and streams by providing a resource to homeowners about individual actions they can take on their property to mitigate the impacts of stormwater. Rethink Runoff is a mechanism to listen and work closely with Vermont's citizens by understanding their problems and goals and tailoring the program to address those concerns. It's a way to connect and establish partnerships with various local water quality groups who are all working towards the same goal, restoring water quality in Lake Champlain.