2019 Water Quality Monitoring Interim Report

2/24/2020

2019 Stream Team Volunteers say “cheers” to clean water during the volunteer training day in June.

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Monitoring Team

The Rethink Runoff Stream Team (formerly the Chittenden County Stream Team) is a program that engages citizens across a nine-municipality region to implement projects that reduce nonpoint source pollution and stormwater volume at the local level. The participating municipalities are Burlington, Colchester, Essex, Essex Junction, Milton, Shelburne, South Burlington, Williston, and Winooski. The Water Quality Monitoring program is managed by the Chittenden County's Municipal Stormwater Separate System Committee, coordinated by the Winooski Natural Resources Conservation District, and made possible through the support of the Vermont Department of Environmental Conservation LaRosa program. This report describes the results from the 2019 collection season; the eighth, consecutive year data was collected by this volunteer-led stream water quality monitoring effort in Chittenden County.

When, Where, and What the Stream Team Monitors

The Rethink Runoff Stream Team (RRST) has collected biweekly water quality samples at several pollutant "impaired" or "stressed" stream sites in Chittenden County since 2012. These urban or suburban streams suffer from excessive nutrient loads, sodium chloride, sedimentation, high temperatures, bacteria, and/or other pollutants. Samples were collected on six different dates in 2019: on five, scheduled bi-weekly dates and on one "high-flow" dates (i.e. during a rain event). High-flow sampling provides a snapshot of the potentially, elevated or diluted pollutant-loads moving through these systems when it rains. Samples were analyzed for total phosphorus, and chloride at all 21 sites. The specific sampling sites and their locations are listed in Table 1 and a map of the sites is shown in Figure 1.

Biweekly sampling occurred on: June 25th, July 9th, July 23th, and August 6th and August 20th Rain event sampling or "high-flow"(freshet) sampling occurred on August 8th at sites on Indian, Muddy, Potash, Centennial and Morehouse brooks. Between August 7th and 8th 1.19 inches of rain fell overnight, therefore the sampling on August 8th is classified as a highflow event. All other biweekly sampling dates fell during dry conditions or base flow events.

Table 1. Rethink Runoff Stream Team 2019 Water Quality Sampling Sites

Stream	*Location*	*Site ID*	*Sampling Reason*	*Types of Samples*	*Lat / Long*
Centennial Brook	Grove Street in Burlington	Centennial 10	Long Term monitoring since 2012	TP, Chloride	44.48453, -73.18423
	Patchen Road in Burlington	Centennial 20	Monitoring since 2017	TP, Chloride	44.47402, -73.17334
Indian Brook	Essex High School	Indian 10	Long Term monitoring since 2012	TP, Chloride	44.49668, -73.11093
	Lang Farm in Essex	Indian 20	Long Term monitoring since 2012	TP, Chloride	44.50442, -73.09190
Malletts	McMullen Road	Malletts 10	Long Term monitoring since	TP,	44.60855,

Creek			2012	Chloride	-73.10693
Munroe Brook	Spear & Webster Intersection	Munroe 20	Monitor impact of new housing development upstream. Monitored since 2012	TP, Chloride, Turbidity	44.38984, -73.20103
Morehouse Brook	Landry Park Winooski - Pine Grove Terrace Branch	Morehouse PGT	Town of Winooski will install a detention pond this year. Monitor effectiveness.	TP, Chloride, Turbidity	44.50081, -73.194
	Landry Park - Industrial Park Branch	Morehouse IPB	Compare two branches of Morehouse brook	TP, Chloride, Turbidity	44.50015, -73.1937
Muddy Brook	River Cove Road in Williston	Muddy 10	Long Term monitoring since 2012	TP, Chloride	44.47293, -73.13505
	Exact location TBD	Muddy 20	Monitor effectiveness of new town easements in watershed	TP, Chloride	Needs scoping
	Van Sicklen Road in Williston	Muddy 30	Long Term monitoring since 2012	TP, Chloride	44.42823, -73.14622
Potash Brook	Kindness Court in South Burlington	Potash 10	Long Term monitoring since 2012	TP, Chloride	44.44572, -73.21348
	Farrell Street in South Burlington	Potash 20	Long Term monitoring since 2012	TP, Chloride	44.44660, -73.20415
	Dorset Street in South Burlington	Potash 30	Long Term monitoring since 2012	TP, Chloride	44.45150, -73.17849
Engelsby Brook	Pine St in Burlington	Engelsby 10	Long Term monitoring since 2012	TP, Chloride	44.45627, -73.21394
	Redstone Campus in Burlington	Engelsby 20	Monitoring since 2017	TP, Chloride	44.46654, -73.19741
Sunderland Brook	Pearl St Park in Essex Junction	Sunderland 10	Part of Town of Essex chloride Study	TP, Chloride	44.50179, -73.12983
	Just above Rte 2/7 culvert in Colchester	Sunderland 20	Part of Town of Essex chloride Study	TP, Chloride	44.51685, -73.20421
Sunnyside Brook	Near Hercules Rd. Colchester	Sunnyside 10	Brook impaired for chloride, awaiting TMDL	TP, Chloride	TBD

Winooski Natural Resources Conservation District

RETHINK RUNOFF

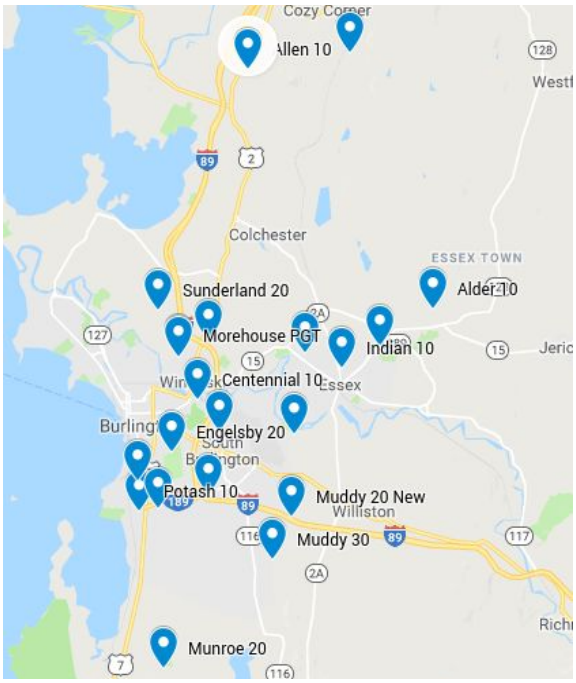
THE STREAM TEAM

VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WATERSHED MANAGEMENT DIVISION

Allen Brook*	Milton	Allen 10	Currently NOT stormwater impaired. Will monitor for changes	TP, Chloride, Turbidity	TBD - needs scoping
Alder Brook	Off of Rte 289 in Essex	Alder 10	Part of Town of Essex chloride Study	TP, Chloride	44.51742, -73.06559

* Although we planned to sample on Allen Brook, our volunteer experienced issues accessing the site so we were not able to submit any samples to the lab. We will try to find a better site in 2020.

Figure 1: 2019 Rethink Runoff Stream Team Sample Sites



Sampling Summary

Altogether, samplers collected 200 field samples (100 phosphorus samples and 100 chloride samples). Additionally they collected ~20 duplicate samples and ~20 blank samples for data quality checking purposes. These duplicate and blank numbers represent 10% of the total sampling effort, aligning with the requirements in the QAPP and the guidance of the lab. The combined total resulted in **140** samples submitted to the lab.

Challenges

As of 2/24/2020 the Stream Team has not received quality checked data from the LaRosa Program and has therefore not been able to complete the analyses needed to write the 2019 Water Quality Sampling Final Report. As soon as the data is received we will work on analysis and report writing. We plan to use similar format and statistical analyses to those completed in the 2019 Water Quality Sampling Report.