



**Municipal Separate Storm Sewer System (MS4)
2019 Annual Report**

A. Permittee Information

1. Name of MS4: City of South Burlington

2. Permit Number: 7027 - 9014

B. Attached Documents

The following documents have been prepared and submitted with this Annual Report:

- ☒ Annual Report Workbook (.xlsx)
- ☒ BMP Tracking Table (.xlsx)

C. Certification of STPs constructed to comply with the FRP or PCP

The following BMPs were built or implemented within the past calendar year and were constructed in compliance with the approved Flow Restoration Plan (FRP) or Phosphorus Control Plan (PCP).

Name of System	Location
PB0042 - Kennedy Drive Pond 3	44.45417, 73.17028
PB0114 - Kennedy Drive Pond 5/6	44.45750, 73.16028

Kirstin DiPietro Worden, P.E.

Name of Qualified Designer

Signature

Design Engineer

Title

March 25, 2020

Date

D. MS4 Operator Certification

This Annual Report shall be signed by a principal executive officer, ranking elected official or other duly authorized employee consistent with 40 CFR §122.22(b) and certified as follows:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Kevin Dorn

Print Name

Signature

City Manager

Title

March 30, 2020

Date



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Name of System	Location
BB0014 - Pinnacle at Spear Pond A	44.43556, 73.19056
BB0015 - Pinnacle at Spear Pond B	44.43444, 73.19167
MB0005 - Pinnacle at Spear Pond M05 & MB0007 - Pinnacle at Spear Pond M07	44.43111, 73.18833 & 44.43139, 73.18750
CB0023 - Picard Circle Infiltration	44.47500, 73.16444

Jason R. Booth, PE, Aldrich + Elliott, PC

Name of Qualified Designer

Signature

Vice-President

Title

3/25/2020

Date

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I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

KEVIN DORN

Print Name

Signature

CITY MANAGER

Title

3/31/20

Date

**Appendix A –
Chittenden County Regional Stormwater Educational Program
Annual Review: 2019 Program Year Summary**

MCM #1
REGIONAL STORMWATER EDUCATION PROGRAM
RETHINK RUNOFF

JANUARY–DECEMBER 2019
ANNUAL REPORT

Prepared by:

Pluck

Introduction

Since 2003, Chittenden County's twelve MS4s have worked to pool resources to professionally engage the public in a one message, one outreach effort known as the Regional Stormwater Education Program. Through regular spring and summer advertisements to drive people to the program's website, www.smartwaterways.org, this cooperative approach to fulfilling its NPDES Permit Minimum Control Measure #1 (Public Education & Outreach) requirements has built a regional awareness among the public of the need for individual action to assist in fighting stormwater problems.

In the summer of 2016, the MS4s contracted with Tally Ho through their Lead Agency, the Chittenden County Regional Planning Commission, to rebrand the Smart Waterways campaign into a combined effort with the MS4's Minimum Measure #2 regional effort known as the Chittenden County Stream Team. The goal was to create one cohesive organization and outreach effort to both educate the public about stormwater and boost public participation in implementation of projects to combat the negative impacts of stormwater. In spring of 2017, Rethink Runoff was publicly launched, including a new website and revised creative.

In late 2017, Tally Ho transitioned to Pluck, retaining the same client contact. Pluck subsequently took over the creative, administration, and management of Rethink Runoff.

This 2019 calendar year report recaps the work done primarily related to Minimum Control Measure #1.

2019 Initiatives

Having completed the initial rebranding to Rethink Runoff and the website redesign in 2017, and a focus on updating the advertising in 2018, this past year left us a canvas to improve on the work done.

We revised digital display advertising and updated all three video animations for YouTube. Similar to last year, we targeted various demographics in all MS-4 towns based on subject matter and interests (home improvement, gardening, fishing, water recreation, pets, etc.).

In addition to a heavy YouTube presence, videos were also shown on WCAX in limited quantity as well as on Comcast/Infinity cable stations.

Print advertising in *Seven Days* also continued our seasonal approach, increasing visibility for specific activities at specific times.

In addition to advertising, we revised content across the website. We simplified top-level messaging, simplifying terms and making headlines and introductions more conversational in nature. The same shift in content was carried throughout the subpages as well.

We also created a new system of materials for the Stream Team. For events, we created a tabling system, including a branded tablecloth and a large-scale pop-up banner with top-level messaging. In addition, we finalized the Rain Garden signage.

We created a series of print materials:

- A rack card highlighting simplified actions that homeowners can take to mitigate runoff.
- Another rack card highlighting the Stream Team and its various activities and initiatives.
- A small call-to-action card, printed on seed-based paper that could be planted with wildflowers native to the Northeast.
- Series of downloadable posters, 8.5x11 and 11x17, for each of our ad series: Champ, Car Care, Rain Gardens, Pets, Rain Barrels, and The Stream Team.

Stream Team Outreach Materials



COMMUNITY RAIN GARDEN SIGNAGE



POP-UP BANNER



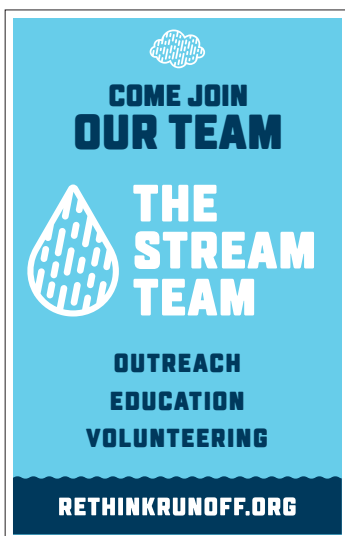
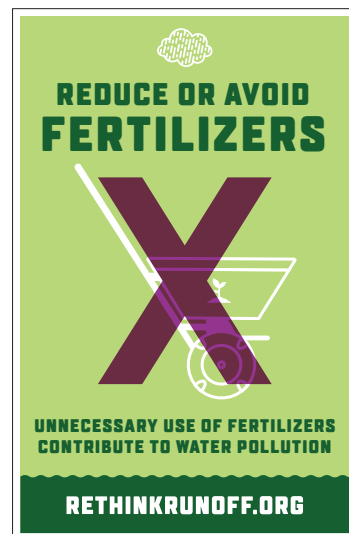
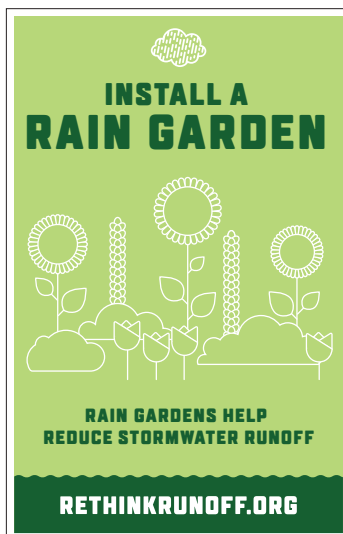
CALL-TO-ACTION SEED CARD



RACK CARDS



Downloadable Posters



Media Buy Breakdown

Below is a cost breakdown of media buys, compared with 2016, 2017, and 2018. Overall, we've continued to reduce our radio media buys, shifting to a larger digital media buy. This past year, we also increased our television media buy, since we have three different focused animated spots.

We added a small media buy in January/February, focused on pet waste pick-up—something we will continue to do in 2020. In addition, we've continued to roll over any excess spring digital media buys into a longer summer media buy.

2016 — MEDIA BUY			
SOURCE	SPRING	SUMMER	FALL
RADIO	\$4,500	-	\$3,258
DIGITAL	\$7,500	-	\$4,985
TV	\$5,500	-	\$2,379
PRINT	\$2,500	-	
TOTAL	\$20,000	-	\$10,622

2018 — MEDIA BUY			
SOURCE	SPRING	SUMMER* 6/16–08/27	FALL
RADIO	\$2,675	-	\$1,044
DIGITAL	\$3,394	\$7,534	\$2,987
TV	\$3,710	-	\$2,472
PRINT	\$1,755	-	\$1,006
TOTAL	\$11,534	\$7,534	\$7,509

2017 — MEDIA BUY			
SOURCE	SPRING	SUMMER* 05/28–08/02	FALL
RADIO	\$3,088	-	\$1,080
DIGITAL	\$3,600	\$3,826	\$4,582
TV	\$2,015	-	\$1,833
PRINT	\$1,755	\$585	\$1,170
TOTAL	\$13,191	\$4,235	\$8,666

2019 — MEDIA BUY				
SOURCE	WINTER	SPRING	SUMMER* 5/27–09/2	FALL
RADIO	\$360	\$1,008		\$1,025
DIGITAL	\$1,800	\$2,320	\$5,830	\$3,000
TV		\$5,830		\$3,306
PRINT	\$503	\$2,012		\$1,006
TOTAL	\$2,663	\$11,170	\$5,830	\$7,509

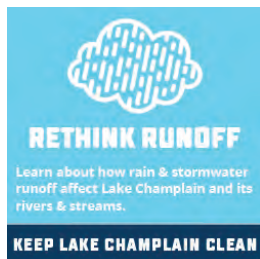
* For 2017 and 2018, Summer was initially planned as part of the spring 2018 budget. Moving forward, the spring media buy will include all purchases made through 7/1. The Fall media buy will include any media buys made from 7/1 to the end of the summer.

Creative

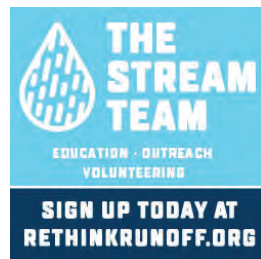
Advertising during 2017 included redesigned creative, incorporating existing messaging with a new visual language based on Rethink Runoff. In 2018, we created a series of three :30 animated video spots (installing a rain garden, installing a rain barrel, and avoiding fertilizer), exporting one on as a radio spot. In addition, we began introducing additional seasonal display advertising, including a series for Clean Water Week.

Advertising for 2019 included updated 2017 creative as well as new ads released from April–July, tied to spring/summer activities. All ads were rolled out in 8–10 different sizes. Fertilizer and Rain Garden ads were positioned in early spring and fall. Rain Barrel and Fishing ads were positioned in late spring through fall. Water Recreation was pushed through summer to early fall while the General, Champ and Stream Team ads were positioned from early spring through fall. The media buys for the video reflected the display ad media buys. We also created winter-specific Pet Waste ads to target pet owners who may not pick up their pet waste in the winter, placing media buys in late January/February 2019.

Revised Creative



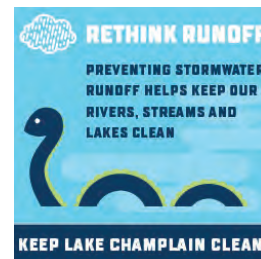
GENERAL LAKE



STREAM TEAM



FERTILIZER



GENERAL CHAMP



SLOW THE FLOW



RAIN GARDEN



RAIN BARREL



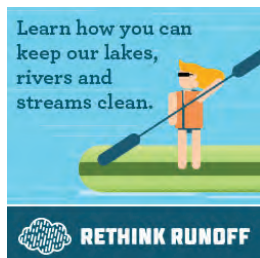
FISHING



PET WASTE 1



PET WASTE 2



WATER RECREATION

Videos



APRIL - FERTILIZER
[HTTPS://WWW.YOUTUBE.COM/WATCH?V=T8BY6UBQSUW](https://www.youtube.com/watch?v=T8BY6UBQSUW)



MAY - RAIN GARDEN
[HTTPS://WWW.YOUTUBE.COM/WATCH?V=E9RNXJSYEIG](https://www.youtube.com/watch?v=E9RNXJSYEIG)



JUNE - RAIN BARREL
[HTTPS://WWW.YOUTUBE.COM/WATCH?V=ZZJ_MEP9Q_Q](https://www.youtube.com/watch?v=ZZJ_MEP9Q_Q)

Advertising Click-through Rates, 2019

SOURCE	IMPRESSIONS	INTERACTIONS/ VIEWS	COST	COST PER CLICK
DISPLAY ADS	4,432,126	4,870	\$6,910	\$1.41
VIDEO (YOUTUBE)	380,633	176,983	\$3,850	\$0.02
WCAX DIGITAL	200,004	116	\$1,500	\$12.93

Google Display Ads Overview, 2019

Most Popular by Impressions

CALENDAR YEAR 2019 NAME	SPRING: 4/15-MEMORIAL DAY NAME	SUMMER: MEMORIAL-LABOR DAY NAME	FALL: LABOR DAY-10/31 NAME
GENERAL LAKE	RAIN GARDEN	RAIN GARDEN	GENERAL LAKE
PET WASTE	GENERAL CHAMP	GENERAL LAKE	FERTILIZER
RAIN GARDEN	GENERAL LAKE	GENERAL CHAMP	GENERAL CHAMP

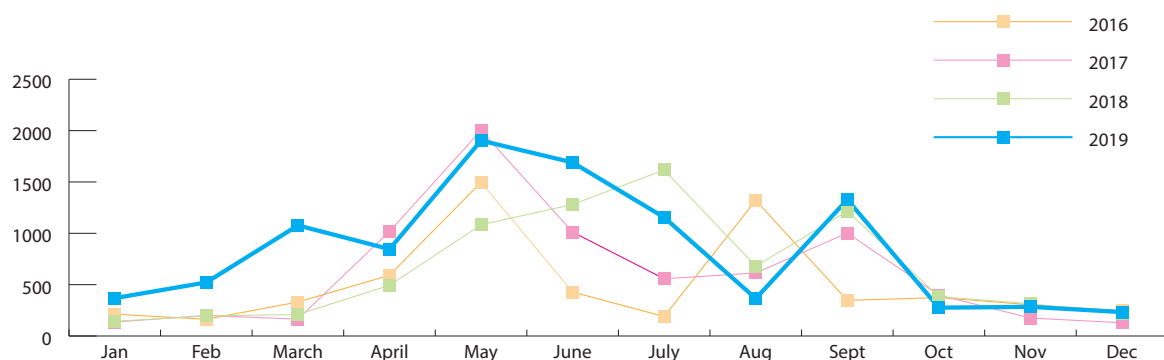
Most Popular by Interaction

CALENDAR YEAR 2019 NAME	SPRING: 4/15-MEMORIAL DAY NAME	SUMMER: MEMORIAL-LABOR DAY NAME	FALL: LABOR DAY-10/31 NAME
GENERAL LAKE	GENERAL LAKE	RAIN GARDEN	GENERAL LAKE
PET WASTE	GENERAL CHAMP	GENERAL LAKE	FERTILIZER
RAIN GARDEN	RAIN GARDEN	PET WASTE	GENERAL CHAMP

Most Effective by Cost-per-click

CALENDAR YEAR 2019		SPRING: 4/15-MEMORIAL DAY		SUMMER: MEMORIAL-LABOR DAY		FALL: LABOR DAY-10/31	
TOTAL	TIME PERIOD	TOTAL	TIME PERIOD	TOTAL	TIME PERIOD	TOTAL	TIME PERIOD
FERTILIZER	\$0.55/CLICK	GENERAL CHAMP	\$0.55/CLICK	RAIN GARDEN	\$0.58/CLICK	FERTILIZER	\$0.54/CLICK
RAIN GARDEN	\$0.58/CLICK	RAIN GARDEN	\$0.56/CLICK	GENERAL CHAMP	\$0.63/CLICK	GENERAL CHAMP	\$0.58/CLICK
GENERAL CHAMP	\$0.59/CLICK	GENERAL LAKE	\$0.67/CLICK	GENERAL LAKE	\$0.69/CLICK	GENERAL LAKE	\$0.76/CLICK

Website Metrics for 2013–2019



2019 vs. 2018 Users

+26.05%
8,531 vs 6,768

New Users

+27.95%
8,529 vs 6,666

Pageviews

+30.64%
15,769 vs 12,071

Total Sessions/Visits (1/1–12/31)

TOTAL	TIME PERIOD
10,111	2019
7,832	2018
7,407	2017
6,004	2016
4,659	2015
7,728	2014
3,541	2013
2,787	2012

Website visits by device

DEVICE	2019	2018	2017	2016
DESKTOP	40.2%	50.1%	52.8%	65.7%
MOBILE	44%	40.6%	36.4%	24.5%
TABLET	15.8%	9.3%	10.8%	9.8%

Top Vermont Cities and Towns, 2019

TOTAL	USERS	
BURLINGTON	1354	27.32%
SOUTH BURLINGTON	877	17.73%
COLCHESTER	784	15.84%
ESSEX/ESSEX JCT.	770	15.56%
SHELBURNE	254	5.12%
HINESBURG	120	2.43%
WILLISTON	98	1.98%
SAINT ALBANS CITY	97	1.96%
MONTPELIER	59	1.17%

Most visited pages, 2019


TOTAL
HOMEPAGE
GET EDUCATED/PROBLEMS & SOLUTIONS/RAIN GARDEN
GET EDUCATED/PROBLEMS & SOLUTIONS/PET WASTE
GET EDUCATED
GET EDUCATED/PET WASTE
GET INVOLVED
EXPLORE THE LAKE CHAMPLAIN BASIN
GET EDUCATED/KIDS
GET EDUCATED/REDUCE FERTILIZER
GET EDUCATED/ALGAE BLOOMS

New York, 193 Users

Boston, 47 Users

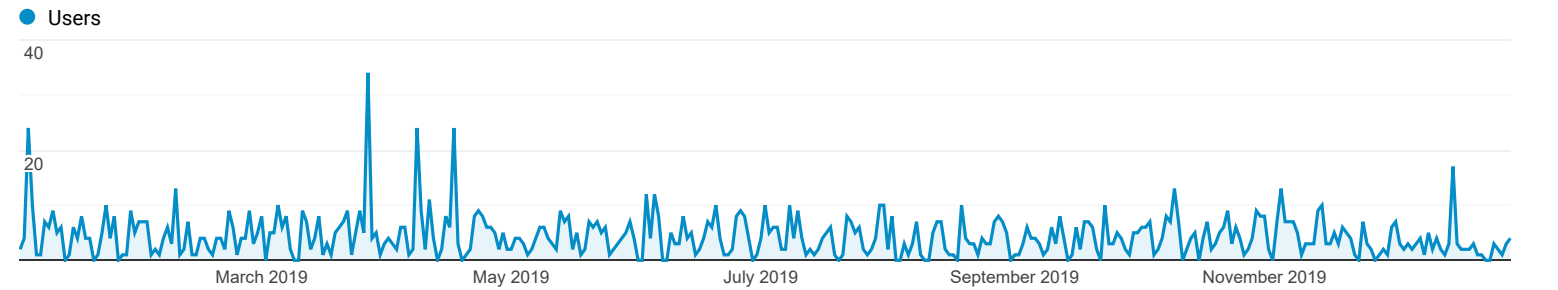
**Appendix B –
Summary Data for www.sburlstormwater.com**

Audience Overview

 All Users
100.00% Users

Jan 1, 2019 - Dec 31, 2019

Overview



Users
1,350

New Users
1,347

Sessions
1,729

Number of Sessions per User
1.28

Pageviews
4,010

Pages / Session
2.32

Avg. Session Duration
00:01:32

Bounce Rate
59.40%

New Visitor 10.2%

Returning Visitor 89.8%

Language		Users	% Users
1.	en-us	1,241	91.93%
2.	en-gb	49	3.63%
3.	en-ca	12	0.89%
4.	c	10	0.74%
5.	en-au	4	0.30%
6.	ar	2	0.15%
7.	en-nz	2	0.15%
8.	en-za	2	0.15%
9.	fr-fr	2	0.15%
10.	it-it	2	0.15%

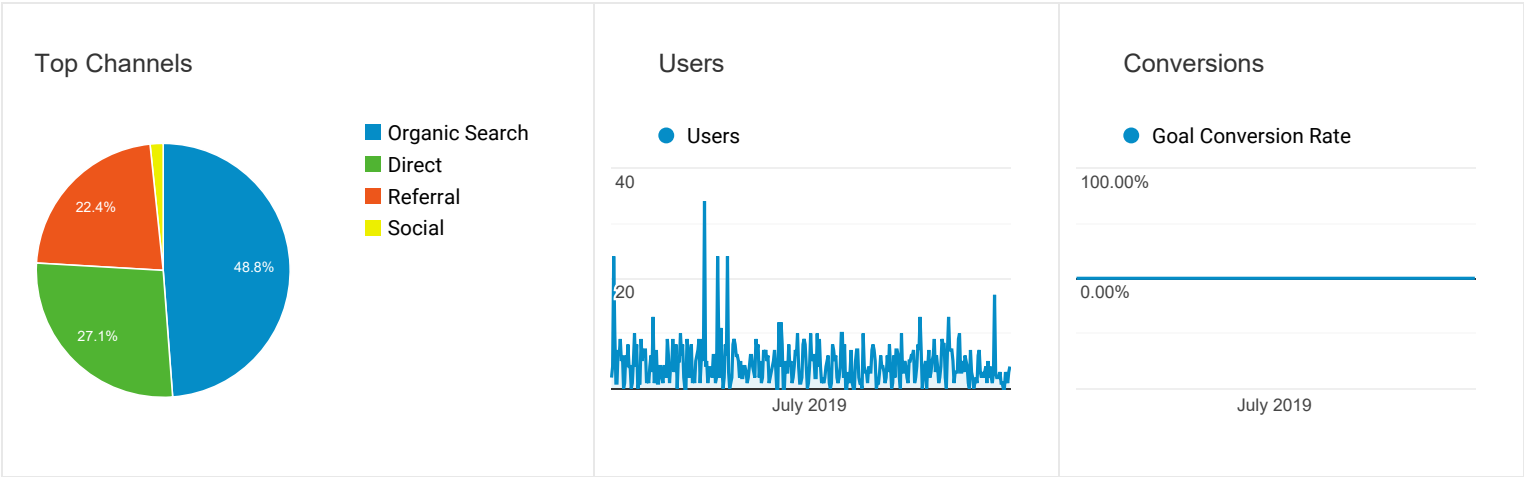
Acquisition Overview

 All Users
100.00% Users

Jan 1, 2019 - Dec 31, 2019


Primary Dimension:
Top Channels

Conversion:
All Goals



Acquisition				Behavior		
	Users	New Users	Sessions	Bounce Rate	Pages / Session	Avg. Session Duration
	1,350	1,347	1,729	59.40%	2.32	00:01:32
1 Organic Search	677			69.47%		
2 Direct	376			64.80%		
3 Referral	311			35.03%		
4 Social	23			63.16%		

Conversions




Set up a goal.

To see outcome metrics, define one or more goals.

GET STARTED

To see all 4 Channels click [here](#).

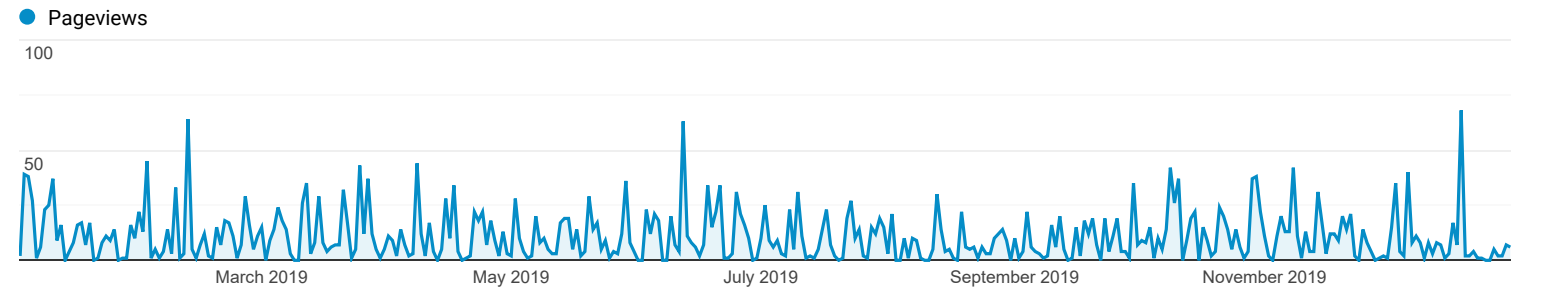
Overview



All Users
100.00% Pageviews


Jan 1, 2019 - Dec 31, 2019

Overview




Pageviews

4,010




Unique Pageviews

3,157




Avg. Time on Page

00:01:10




Bounce Rate

59.40%



% Exit

43.09%



Page	Pageviews	% Pageviews
1. /index.shtml	1,163	29.00%
2. /stormwater-projects/index.shtml	293	7.31%
3. /download-material/index.shtml	255	6.36%
4. /contact-us/index.shtml	252	6.28%
5. /about-us/index.shtml	209	5.21%
6. /public-outreach/how-do-i-safely-drain-my-swimming-pool/index.shtml	145	3.62%
7. /stormwater-projects/paint-or-oil-dumped-down-storm-drains/index.shtml	125	3.12%
8. /map/index.shtml	115	2.87%
9. /stormwater-resources/index.shtml	96	2.39%
10. /picardcircle/index.shtml	82	2.04%

**Appendix C –
Chittenden County Stream Team Summary of
Activities January-December 2019**

MCM #2: Rethink Runoff Stream Team Summary of Activities 2019 Calendar Year



Social Media

Facebook

- Total Posts = 29
- 254 total “likes”
- 294 total “follows”

Instagram

- Total Posts = 16
- 179 total “follows”

RRST Website

- See final report from Dave Barron (Pluck Design)
- Added outreach events to calendar on website

Newsletter and e-correspondence

- As of 12/9/19 there were **629** subscribers to the RRST newsletter (an increase from 508 in 2018)
The average open rate for emails was about 30%
- Spring Newsletter Published on 2/26/19 Opens: 179 Clicks: 21
- Summer Newsletter Published on 7/9/19 Opens: 185 Clicks: 29
- Fall Newsletter Published on 11/22/19 Opens: 172 Clicks: 23

Organizational Partnerships

The Rethink Runoff Stream Team partnered with 11 organizations in 2019:

1. **Shelburne Community School** - A teacher at Shelburne Community School invited the RRST coordinator to teach a 1-hour class to 5th graders to kick off their watershed and ecology unit - Lesson taught to 90 students on 4/4/19, 40 of those students also helped complete the Storm Drain Mural project in Shelburne by designing and painting raindrops to contribute to Julie Holmes’s mural on 9/27/19
2. **Essex Middle School** - Taught a mini rain barrel workshop to 8 students 5/10/19
3. **Williston Master Naturalists** - The Master Naturalists volunteered to help organize riparian stewardship days at the Allen Brook tree planting site from last year. They recruited community volunteers to help weed, clear trash and inventory tree survival rates. (4/28/19 and 5/4/19)
4. **Winooski Valley Parks District** - WVPD hosted Conservation Field Day 5/15/19 bringing together area schools for a day in Ethan Allen Homestead Park. RRST facilitated a station called “Build a Watershed” where students created a 3D model of a fictional community and used a spray bottle to observe the impact of runoff and pollution in their community.
5. **Cub Scout Pack 678** - Rain Garden adopters in S. Burlington
6. **Marsh-Billings Rockefeller National Historical Park** A guest intern from the park visited for a day to assist the Stream Team coordinator with checking in samples and to learn about the structure of the citizen science program.
7. **Williston Conservation Commission** - Coordinated to decrease the cost of delivering water quality samples to the new lab in Randolph by sharing a courier service.



This document was prepared by the Winooski Natural Resources Conservation District, who is contracted by Chittenden County’s MS4 Committee to run the RRST program.

8. **Brownell Library** - Allowed RRST to host a kid's watershed activity hour as part of their "Wonder Wednesday" series and to set up a "pop up" style information table before their most popular speaker series for adults. (11/6/19) Also displayed books from the Clean Water Reading List for the month of November.
9. **State of Vermont: LaRosa Water Quality Sampling Grant** - The RRST coordinator successfully applied for a grant from the State of Vermont to cover for the cost of analyzing water quality samples at the VAEL lab in Randolph. The value of the lab services that this grant made available this year was approximately \$3,000.
10. **Shelburne Farms** - Invited RRST to table at the annual Shelburne Harvest Festival
11. **Watersheds United Vermont (WUV) & Watershed Consulting Associates (WCA)**: WNRCDC was awarded a grant that allows them to meet with a watershed data professional to discuss the analysis of water quality sampling data. Discussions with WCA will inform the Stream Team water quality sampling program in 2020 and beyond.

Media Rethink Runoff Stream Team had 7 media appearances in 2019:

1. Article published in international Stormwater Management publication (published by WEF Stormwater Institute) Volume 7, Issue 1 Spring 2019 - Cover picture and article on pages 20-21
<https://www.wef.org/resources/publications/all-magazines/world-water-stormwater/>
2. Article published in The Other Paper to recruit water quality monitoring volunteers (5/9/19)
https://www.otherpapersbvt.com/news/around_town/volunteer-as-a-summer-water-quality-monitor/article_e0a70cd2-7290-11e9-b09b-a3c0e2ed59fc.html
3. Call for Artists published in Milton Independent on (7/4/19)
https://issuu.com/miltonindependent/docs/2019_0704_forweb
4. Milton Independent Follow-Up (7/31/19)
<https://www.miltonindependent.com/art-for-awareness-muralists-adorn-milton-storm-drains/>
5. Call for Artists Shelburne News (8/29/19)
<http://www.shelburnenews.com/2019/08/29/call-artists-storm-drain-mural-project/>
6. Stream Clean Up Article in Williston Observer (9/26/19)
https://issuu.com/vermontmaturity/docs/9-26-19_no_2_final
7. Shelburne Storm Drain Mural Article in Shelburne News (10/3/19)
<http://www.shelburnenews.com/2019/10/03/pavement-murals-point-trouble-water-runoff-real-problem/>



Figure 1: Thumbnails of some 2019 RRST appearances in local newspapers



This document was prepared by the Winooski Natural Resources Conservation District, who is contracted by Chittenden County's MS4 Committee to run the RRST program.

Outreach

Outreach includes any educational opportunities or tabling events where resources or information are provided to the community about the RRST program. There were **six** outreach events in 2019, with an estimated total outreach to = **278** people.

Outreach events in 2019 targeted the municipalities of **Colchester, Essex and Essex Junction**

- **Colchester** Community Dinner Tabling Event (3/4/19)
 - 25 residents reached
- **Shelburne** Watershed Lesson at Shelburne Community School (4/4/19)
 - Reached 90 5th grade students and 10 adults = **100** total
- **Various Municipalities:** Conservation Field Day with Winooski Valley Parks District (5/15/19)
 - Taught a 25-minute station called “Build a Watershed” to 5 groups of 5th grade students
 - Reached **60** students and chaperones (equal amounts from S. Burlington, Burlington, Colchester and Essex Junction)
- **Various Municipalities:** Shelburne Harvest Festival (9/21/19)
 - Table was hosted by Winooski NRCD with a portion of the table dedicated to Stream Team materials. Many residents in the RRST area had questions about water quality and engaged with the stream team materials. About **50** total people reached: 10 Burlington, 10 S. Burlington, 10 Essex & Essex Junction, 20 Shelburne)
- **Essex Junction** Library Project 11/6/19
 - The RRST coordinator taught a kid’s watershed activity hour as part of the ongoing “Wonder Wednesday” series. 13 kids and 10 parents attended. Kids played “Butterfly River” and “Build a Watershed.” Kids who arrived early also studied that map of the Lake Champlain Basin to look for clues about the meaning of the word “Watershed.” Many families took handouts and copies of the Stormwater Maze at the end of the session.
 - RRST set up a “pop up” style information table before their most popular speaker series for adults. The RRST coordinator spoke with 20 people. Many people took handouts or asked questions about stormwater on their property. Many residents expressed frustration at living in condo associations where they feel less empowered to make water-friendly changes to their space. We may explore opportunities for outreach to condo associations in the future to address this need.
 - Total in-person outreach = **43 residents**
 - The library also displayed books from the Clean Water Reading List for the month of November. The books were available for library members to check out and RRST stickers and handouts were also available for anyone to take for free.
- **Essex** Library Project
 - An outreach event was planned at Essex Library for fall 2019 that was similar to the Brownell Library program, but the library experienced flooding in their community room. This program has been rescheduled to January 2020



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Figure 2: Left: Books from the Clean Water Reading List on display at Brownell Library. Right: Tabling display set-up including the new Clean Water Trivia Board and newly printed Rethink Runoff tablecloth

The 2019 work plan goal for outreach was 80 people, which was surpassed. A total of **278** people were engaged through outreach in 2019. Outreach towns for 2020 are Williston, Winooski and South Burlington.

New Outreach Activities Created:

1. Clean Water Reading List
2. Trivia Board
3. Watershed Curriculum from Shelburne Community School Program

New Outreach Tools Created with assistance from Pluck

1. “Get Involved” Rack Card
2. “Keep Lake Champlain Clean Rack Card”
3. Large standing sign
4. Tablecloth printed with RRST logo

Projects

Six hands-on events were held in 2019. Event-Driven Tasks involve community members in some form of hands-on engagement. Hands-on participation events in 2019 targeted the towns of Burlington, Shelburne, and Milton.

- **Burlington** Rain Barrel Workshop (5/4/19)
 - 32 barrels built, 47 Burlington residents attended
- **Essex** Mini Rain Barrel Workshop (5/10/19) 10 Essex residents reached (8 students, 2 adult chaperones = **10** total), 3 barrels created.
- **Williston** Riparian Stewardship Days
 - Williston, Allen Brook (4/28/19 and 5/4/19)
 - Over the course of both days about **20** volunteers helped tend to trees planted along the brook last year. They removed choking vines, weeded around the base of the trees and took an inventory of the trees to estimate survival rate (over 90%)
- **Milton** Storm Drain Murals (7/29/19)
 - Two murals painted in Milton - articles published in Milton Independent, great social media coverage. People involved included 2 artists, 5 family members of artists and 1 reporter.



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Total: **8** people directly engaged.

- **Williston** Stream Clean Up (9/14/19)
 - **11** volunteers removed 15 bags of trash from tributaries to Muddy Brook
- **Shelburne** Storm Drain Murals (9/27/19)
 - Two murals painted in Shelburne. People involved included 2 artists, 40 local students involved in painting process and 1 reporter. (Total: **43**) Article published in Shelburne News.

A total of **139** people participated in hands-on RRST events in 2019. (A subcategory: A total of **86** people volunteered their time through RRST activities in 2019). Project towns for 2020 are Essex, Essex Junction, and Colchester.

City of Burlington Project: Rain Barrel Workshop

Summary: RRST coordinated a rain barrel workshop for the City of Burlington on May 4, 2019. 47 people attended and 34 barrels were constructed. Registration was \$35 and sign-ups were coordinated online through Google Forms and the WRNCD PayPal account.

Advertising: Planning for the event began in January. The City of Burlington created a poster and the RRST coordinator created a press release and Facebook event. The following media venues were used to spread the word: Facebook, Instagram, Front Porch Forum, Rethink Runoff website, City of Burlington website, posters around town. This outreach garnered interest from 100 people (50 from Burlington, who were given top priority and 50 from other towns).

Challenges: RRST did encounter some challenges sourcing materials. The main supplier of plastic barrels discontinued ordering products in those containers, so the RRST coordinator sought other sources in the community. Unfortunately, the price of each barrel was more than double with the alternate sources. Plenty of staff time was spent troubleshooting this challenge. In the future we anticipate this project taking less time and costing less money.

Impact: The 34 barrels that were built will be installed at residences around Burlington and will help decrease the volume of stormwater during rain events. Participants will become advocates for clean water solutions in the City. The mailing list increased by 70 people due to folks who signed up for the list during the event registration period. Finally, we know there is high demand for rain barrel workshops. The RRST coordinator will work to secure a more stable source for the plastic barrels so that we can offer the workshop at an affordable rate for many years to come.

Costs: The total estimated cost to plan, manage, and implement this project was **\$3,300**. The approximate personnel time used to plan and execute the project was 70 hours (\$3,150). The total cost of supplies (less registration income) was \$100. The mileage was about \$50.



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Figure 3: Participants at the Burlington Rain Barrel Workshop drill, assemble and caulk their new barrels.

Town of Milton Project: Storm Drain Mural

Summary: RRST coordinated a storm drain mural project in Milton. Four artist applications were received and two were selected: Erin Schmitt (a high school art teacher from Milton) and Jessica Zawicki (from St. Albans). On July 29, 2019 the artists painted their murals working from 9am to 5pm to complete the artwork.

Advertising: The RRST coordinator created a call for artists press release and used the following media venues to spread the word: Facebook, Instagram, Front Porch Forum and in the Milton Independent. A reporter from the Milton Independent also interviewed the RRST coordinator and took pictures of the artists on the day of the event. An article was published on 7/31/19. A link to the article can be found in the summary of publications on page 2.

Impact: The murals will stand as an enduring reminder to the residents of Milton that everyone is responsible for keeping storm water and Lake Champlain clean.

Costs: The total estimated cost to plan, manage, and implement this project was **\$1,940**. The approximate personnel time used to plan and execute the project was 30 hours (\$1,350). The total cost of supplies was \$20. The mileage was about \$40. Each of the artists was granted a \$250 stipend for their materials and time, creating a contractual cost of \$500.



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Figure 4: Artist Jessi Zawicki paints her mural at the corner of Rt. 7 and Main St (7/29/19) Text says: “Drains to Champlain”

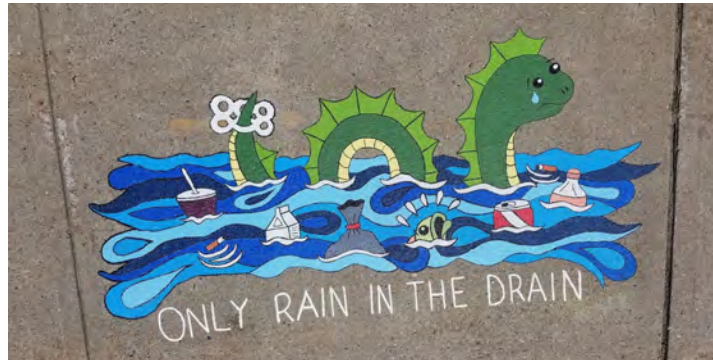


Figure 5: Artist Erin Schmitt paints her mural of Champ on Center Drive between Kinney Drugs and VT Federal Credit Union (7/29/19) Text says: “Only Rain in the Drain”



Fig 6: Social Media Splash! The Facebook post about the completed murals was shared by more than 10 people or organizations and seen by over 4,500 people.

Town of Shelburne: Storm Drain Mural

Summary: RRST coordinated a storm drain mural project in Shelburne in September. Twenty-four applications were received and two were selected. Heatheranne Lee (a high school student from Shelburne) and Julie Holmes (an artist and music teacher from Charlotte) submitted the winning designs. On September



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27, 2019, the artists painted their murals. 40 Students from Shelburne Community School helped artist Holmes create her mural. Holmes's message was "Every Drop Counts." She wanted each student to paint a unique raindrop in the lake to represent how each person is unique and how each person's actions make a difference.

Advertising: The RRSST coordinator created a call for artists press release and used the following media venues to spread the word: Facebook, Instagram, Front Porch Forum and a press release in the Shelburne News. A reporter from Shelburne News interviewed the RRSST coordinator and artists. An article was published on 10/3/19. A link to the article be found in the summary of publications on page 2.

Impact: The murals will stand as an enduring reminder to the residents of Shelburne that everyone is responsible for keeping storm water and Lake Champlain clean.

Cost: The total estimated cost to plan, manage, and implement this project was **\$1,960**. The approximate personnel time used to plan and execute the project was 30 hours (\$1,350). The total cost of supplies was \$55. The mileage was about \$25. Each of the artists was granted a \$250 stipend for their materials and time, creating a contractual cost of \$500.



Figure 7: Artist Heatheranne Lee's Mural outside of Shelburne Country Store (9/27/19) Text says: "Keep the Water Clear, Remember Champ Lives Here"



Figure 8: Artist Julie Holmes's Mural outside of Pierson Library (9/27/19) Text says: "Every Drop"



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Counts, Keep It Clean



Figure 9: Students from Shelburne Community School help Artist Julie Holmes's paint her mural outside of Pierson Library (9/27/19) Each student created a unique design to fit the theme "Every Drop Counts"

Stream Clean Up Program Summary

In partnership with Winooski NRCD, RRST completed a Stream Clean Up event in Williston on Sept 14, 2019. Eleven people attended and removed 15 bags of trash out of two tributaries to Muddy Brook. Most of the time spent on this event was covered by Winooski NRCD's independent agreement with the Town of Williston. Some advertising time was charged to RRST and Stream Team tabling materials and shirts were shared with all participants on the day of the event. The cost to RRST was approximately 10 hours or **\$450**. Matching funds from WNRCD to fully execute the event were approximately \$3,500.



Figure 10: Volunteers at the Williston Stream Clean Up 9/14/19

Water Quality Monitoring Program Summary

RRST has maintained an ongoing water quality monitoring program since 2012. Citizen science volunteers take water samples in urban or suburban streams that are impacted by sedimentation, excessive nutrient loading, high temperatures, bacteria, and other pollution. This data provides information to towns about long term trends and may help towns identify good locations for stormwater BMPs.

With another year of support from VT DEC's LaRosa program, RRST collected biweekly water quality samples at twenty-one sites on twelve streams in 2019. Twenty-one volunteers and one intern helped collect grab samples on five, biweekly Tuesdays from 6/25/19 - 8/20/19. Grab samples were analyzed for total phosphorus and chloride. These parameters were also sampled at five of the sites during one rain event. See



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the 2019 Water Quality Monitoring Report in Appendix A for more information.

The training day for citizen science samplers took place on 6/11/19 at Landry Park in Winooski. This year two sessions were offered (morning and evening) to accommodate volunteers' schedules. RRST coordinator demonstrated sampling procedures, described the data collection sheets and answered questions. Throughout the season, volunteers returned their samples to the WNRCDC office after sampling, and the RRST coordinator ensured all samples were accounted for and delivered to the lab. A challenge this year was that the lab moved from Burlington to Randolph VT. RRST partnered with the Williston Conservation Commission (which takes weekly water samples) to share the cost of a courier service (Green Mountain Messenger) to deliver samples and bringing back supplies. Volunteers were recognized at the volunteer appreciation event in Williston on 9/18/19.

The RRST coordinator sent bi-weekly emails to WQ volunteers to check in about sampling procedure and share interesting local water tidbits, and other ways to get involved. The coordinator also joined volunteers in the field periodically to discuss technique or clarify site locations.

Cost: The total estimated cost to plan, manage, and implement this project was **\$3,650**. The approximate personnel time used to plan and execute the project was 80 hours (\$3,600). The mileage was about \$50. For match, the LaRosa grant offset approximately \$2,600 of lab analysis fees.

Municipality	Number of Volunteers
Essex & Essex Junction	3
Colchester	2
S. Burlington	7
Burlington	4
Williston	3
Shelburne	1
Hinesburg	1
TOTAL	21

Table 1: Stream Team Water Quality Sampling Volunteers by town



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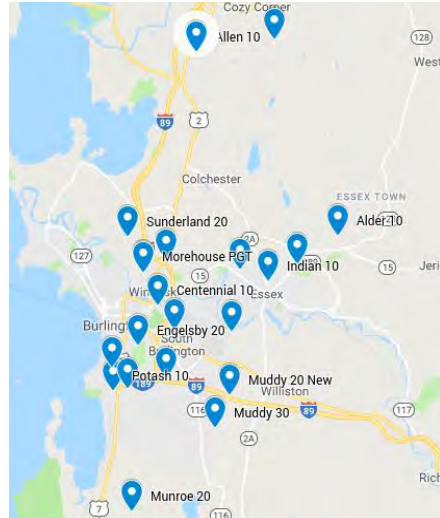


Figure 11: Map of Stream Team Sampling Sites 2019 *Link to Interactive Map:*
<https://drive.google.com/open?id=1K98F4bBO2E6p5ILKgSw7bxRSpQlzo08Q&usp=sharing>



Figure 12: Stream Team volunteers learn sampling protocol at the evening training (6/11/19)



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Adopt-a Rain Garden Program Summary

The Stream Team's Adopt-a-Rain Garden program is an opportunity for individuals to assist in keeping Chittenden County's public rain gardens functional and attractive. This involves basic maintenance activities like picking up trash, pruning, pulling weeds, installing new mulch, and informing the coordinator of non-functioning gardens. There are currently ten public rain gardens managed by RRSST. In 2018, there were four official adopters. In 2019, all ten gardens were cared for by various partners and volunteers. See table 2 for more details.

Signage: This year, with the help of Pluck, we rebranded the signs in all of the gardens with the new Rethink Runoff logo. A volunteer was recruited to assist with installing the signs.

Cost: The cost to manage and grow this program in 2019 was approximately 15 hours or **\$675** for staff time.

Garden Status Update

Callahan Park Rain Garden

Location: 45 Locust St., Burlington

This garden has been functioning well for some time thanks to efforts by Brad Ketterling, who has adopted this garden for several years. In 2017, Burlington Public Works brought a load of mulch to the garden and Brad spread the mulch and kept up with weeding and monitoring the garden. Several understory shrubs and flowers have been shaded out by larger, overstory plants that need to be thinned. There are several locations that also need to be replanted, so efforts will be made to locate surplus plants that can be added in 2020.

Chamberlain School

Location: 262 White Street, South Burlington

This garden was installed in partnership with WNRCD and the Let it Rain Program in 2013. This is one of several rain gardens on the grounds of Chamberlain Elementary. School teacher Chris Provost adopted this garden again in 2019 and has actively maintained it for several years.

Coast Guard Station

Location: Depot Street, Burlington

This small garden is located in the parking lot abutting the bike path next to the Burlington Coast Guard Station. In 2014, RRSST worked with the ECHO summer kids program to engage elementary school children in cleaning the garden and in 2015 a local resident, Wiley Reading, adopted the garden. The garden did not have an adopter from 2016-2018, but this garden got a "boost" of energy from 10 community volunteers through the Day in the Dirt event hosted by the Vermont Community Garden Network in spring of 2018. In 2019, it was adopted by Larry Kaupferman.

Farrell Park

Location: Swift Street, South Burlington

This garden is unique in terms of its design. It is called an "advanced wetland stormwater filter" and was installed in 2012. Stormwater enters the garden through an inlet, flows through the gravel wetland filter



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media, is cleaned and exits through the other end. The garden requires very little maintenance because it has a flushing system that prevents sediment from building up. This garden had an active adopter for its entire life, until 2015 when the adopter moved away. The garden was never in need of additional plants or maintenance. It would not be appropriate to add mulch to this garden. In 2019, this garden was adopted by the O'Leary family. They completed a work day weeding and clearing the inlet and plan to keep an eye on the garden.

Landry Park

Location: North St., Winooski

This garden was constructed in 2006 as two, separate gardens along the narrow strip of grass between a fence at Landry Park and the road. Over the years, the gardens have become overgrown, but Winooski DPW officials believe it still functions well, even with the tall, dense shrubs. A few years ago, nearby road construction altered the slope of the road carrying larger volumes of water into the garden. The increased flows have killed some of the vegetation and caused gullies to form, but the vegetation seems to have rebounded. In 2016, a group of UVM students in an Ecosystem Design course developed recommendations to repair the garden. In 2019, RRST coordinator spoke with Tim Grover and Jon Choate of Winooski DPW who agreed to take on responsibility for the garden.

Williston Town Hall Annex

Location: 7900 Williston Rd, Williston

This small garden near the entrance walkway to the Annex building and the parking lot has had an active adopter since 2014: Rita Desseau. Rita maintained the garden in 2018. In 2019, additional work done was weeding, thinning larger shrubs, re-planting in bare spots, and mulching the garden.

Williston Library (aka. Dorothy Alling Memorial Library)

Location: 21 Library Lane, Williston

The Williston Library garden is in good condition and is primarily being cared for by the staff of the library. This garden was previously cared for by Andrew Wolf.

South Burlington High School (formerly the location of the South Burlington Library)

540 Dorset St., South Burlington

WNRCDC received a grant to construct a rain garden at the entrance to what was the South Burlington Library (now South Burlington High School) in 2013. The rain garden received minimal maintenance by the library staff over the years, and was formally adopted in 2016 by Amy Niggel's Cub Scout 678 pack. The pack's leadership changed hands in 2018 and the new cubmaster Bill Kett agreed to continue maintenance of the garden with his pack. In 2019, scout parent Eric Bishop-vonWettberg took ownership of the garden stewardship program with the scouts. The RRST coordinator hosted an orientation and work day for a small group of scouts and leaders in spring 2019 and they have been keeping an eye on the garden ever since.

South Burlington Fire Department

575 Dorset St., South Burlington

The City of South Burlington installed this bioretention area/rain garden in 2015 to improve stormwater management at the Fire Department. Cub Scout pack 678 has volunteered to adopt this rain garden since



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2016. Since there is new leadership in the pack, the RRST coordinator hosted an orientation and work day for a small group of scouts and leaders in spring 2019 and they have been keeping an eye on the garden since.

Rain Garden	Adopter 2019	Notes
Chamberlin School, South Burlington	Chris Provost and students	Long-time volunteer
Coast Guard Station, Burlington	Larry Kupferman	New volunteer this year - met in the fall for an orientation
Landry Park, Winooski	Town of Winooski	Spoke with Tim Grover in spring about maintenance plan
Williston Annex	Rita Dresseau	Long-time volunteer
Williston Town Library	Library grounds staff	Spoke with library leadership in 2018. Next year plan to formalize and agreement.
Callahan Park, Burlington	Brad Ketterling	Long-time volunteer.
Farrell Park, South Burlington	Roan O'Leary	New volunteer this year - local high school student. Met for orientation and work day.
Department of Corrections, South Burlington	Town of S. Burlington	Spoke with Tom DiPietro in spring about town taking on responsibility.
South Burlington Fire Station	Cub Scouts 678 (Eric Bishop-vonWettberg)	Met with leaders and scouts in spring for a work day/orientation
South Burlington Library	Cub Scouts 678 (Eric Bishop-vonWettberg)	Met with leaders and scouts in spring for a work day/orientation

Table 2: 2019 Rain Garden Adopters



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Volunteer Appreciation Event Summary

2018 Appreciation Event

- In March 2019, we hosted a volunteer appreciation event for the previous year's volunteers. All rain garden adopters and water quality monitors from the 2018 field season were invited. Three people attended. A tour of the Essex Junction Wastewater Treatment Facility was given by Chelsea Mandigo and the RRSST coordinator discussed the results of the 2019 season.

2019 Appreciation Event

- In September 2019, we hosted a volunteer appreciation event at CSWD Materials Recycling Facility in Williston for 2019 field season volunteers. The event was attended by 11 people. The tour was led by Lauren Layn, a Stream Team volunteer who also works for CSWD. Attendees provided positive feedback noting that they enjoy educational appreciation events and also enjoyed the breakfast spread.



Figure 13: Volunteers tour the Essex Junction Wastewater Treatment Facility as part of the 2018 volunteer appreciation event. (3/20/19)



Figure 14: Volunteers enjoy breakfast and tour the CSWD Materials Recycling Facility as part of the 2019 volunteer appreciation event. (9/18/19)



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RRST Estimated Impact by Municipality

The table below depicts an estimate of the number of individuals engaged in-person in each RRST municipality in 2019.

Town	# of people reached in-person in 2019
Burlington (Project)	78
Colchester (Outreach)	42
Town of Essex (Outreach)	18
Village of Essex Junction (Outreach)	67
Milton (Project)	10
Shelburne (Project)	163
Williston	28
South Burlington	43
Winooski	0
TOTAL	449

Table 3: Interaction with RRST by member town. Note that although no residents in Winooski were directly reached with programming this year, two storm drain murals are still highly visible in the city.



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Appendix A: Clean Water Reading List

Rethink Runoff Stream Team Clean Water Reading List

This list was developed by the Rethink Runoff Stream Team (RRST). RRST is a stormwater education campaign managed by the Chittenden County Regional Planning Commission and run by the Winooski Natural Resources Conservation District. RRST offers community outreach, volunteer opportunities, workshops, and events in the municipalities of: Burlington, Colchester, Essex, Essex Junction, Milton, Shelburne, South Burlington, Williston & Winooski. If you would like to use this list please display the following text "This list was created by Rethink Runoff Stream team in collaboration with the Lake Champlain Basin Program Resource Library." If you are located in one of the nine municipalities we serve we may be able to run a clean water workshop or activity hour for adults or kids for free and/or loan items to you (like water sampling vials and informational brochures) for a display. Contact kristen@winooskinrcd.org for more information.

Title	Author	Category	Source of Recommendation
A Drop of Water	Walter Wick	Adult	LCBP Resource Library at Echo
Disconnected Rivers: Linking Rivers to Landscapes	Ellen Wohl	Adult	Brownell Librarians
In the Land of the Wild Onion: Travels Along Vermont's Winooski River	Charles Fish	Adult	LCBP Resource Library at Echo
Lake Champlain: A Natural History	Mike Winslow	Adult	LCBP Resource Library at Echo
One Life At A Time Please	Edward Abbey	Adult	Stream Team: James Sherard
Paddler's Guide to the Champlain Valley : Exploring the Rivers, Creeks, Wetland and Ponds	Margret Holden	Adult	Kristen Balschunat: Stream Team
Round River	Aldo Leopold	Adult	Stream Team: James Sherard
Snow Crystals	WA Bentley	Adult	LCBP Resource Library at Echo
The Art of Lake Champlain: Inspiring Landscape	Unknown	Adult	LCBP Resource Library at Echo
The Death & Life of the Great Lakes	Dan Egan	Adult	Stream Team: Chelsea Mandigo
The Water Between: A Photographic Celebration of Lake Champlain		Adult	LCBP Resource Library at Echo
Vernal Pools: Natural History and Conservation	Elizabeth A. Colburn	Adult	Brownell Librarians
Water: A Natural History	Alice Outwater	Adult	Stream Team: Tom DiPietro
Watersheds: A Practical Handbook for Healthy Water	Clive Dobson	Adult	LCBP Resource Library at Echo
Wetland, Woodland, Wildland: A Guide to the Natural Communities of Vermont	Elizabeth H. Thompson	Adult	Stream Team: Kristen Balschunat



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Around the Pond: Who's Been Here?	Lindsay Barrett George	Childrens	LCBP Resource Library at Echo
Champ and me by the Maple Tree	Ed Shankman	Childrens	LCBP Resource Library at Echo
Dwayne the Storm Drain	Mass. Water Professionals	Childrens	Stream Team: Chelsea Mandigo
From Raindrop to Tap	Michael Bright	Childrens	Brownell Librarians
Muskrat will be Swimming	Cheryl Savageau	Childrens	LCBP Resource Library at Echo
Over and Under the Pond	Kate Messner	Childrens	LCBP Resource Library at Echo
Racoon's Last Race	Joseph Bruchac and James Bruchac	Childrens	LCBP Resource Library at Echo
Song of the Water Boatman and Other Poems	Joyce Sidman	Childrens	LCBP Resource Library at Echo
Thirteen Moons on the Turtle's Back	Joseph Bruchac and Jonathan London	Childrens	LCBP Resource Library at Echo
Trout are Made of Trees	April Pulley Sayre	Childrens	LCBP Resource Library at Echo
Water: Up, Down, and All Around	Natalie M. Rosinsky	Childrens	LCBP Resource Library at Echo
Hatchet & The River	Gary Paulsen	Young Adult	Stream Team: James Sherard



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**Appendix D –
Stormwater Outfalls in South Burlington and Inspections
Completed in 2019**

Appendix D: 2019 Stormwater Outfall Inspections

March 26, 2020

Legend

■ Outfall Inspections -- 253 in 2019

— Roads

— Streams

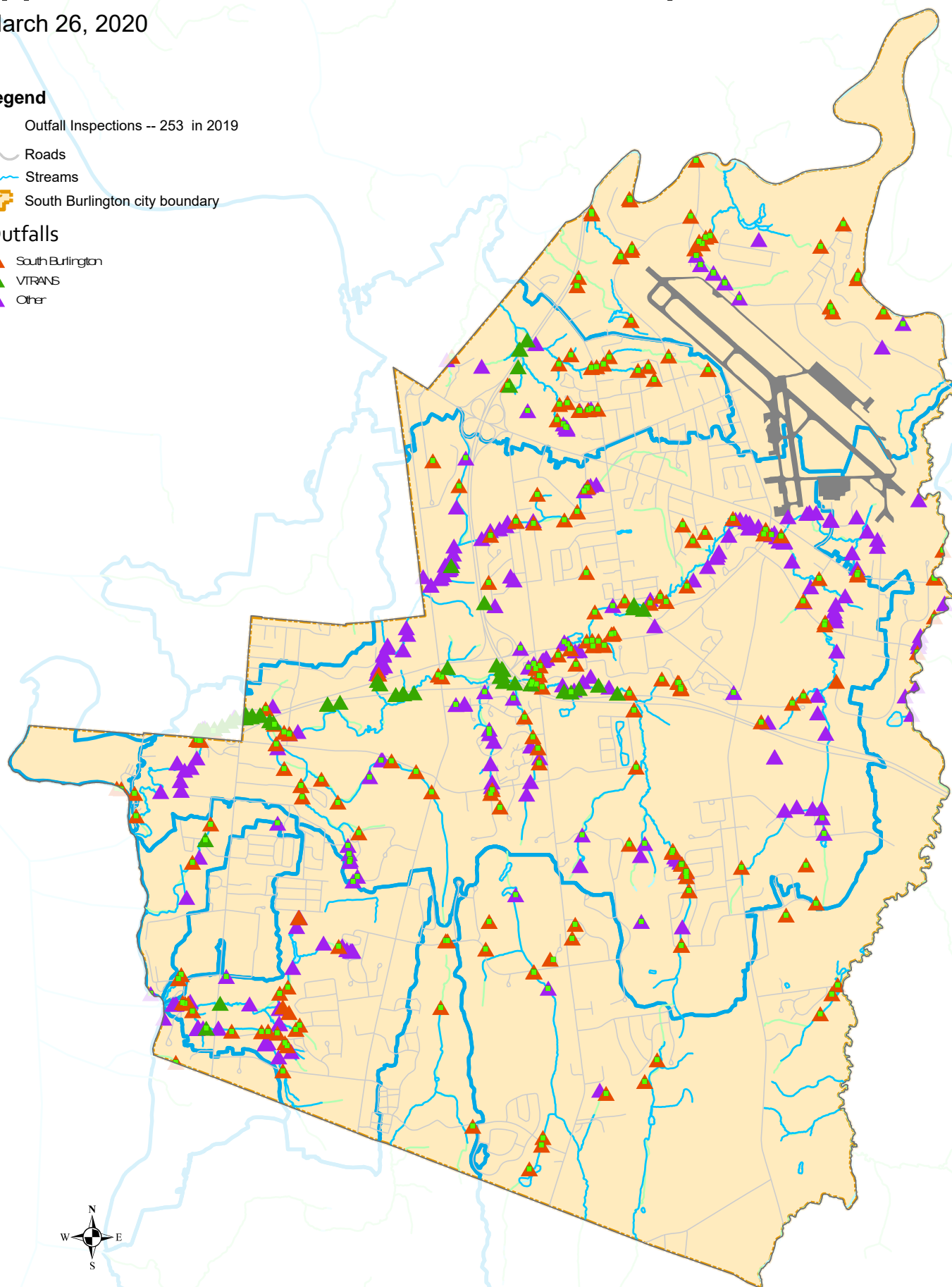
■ South Burlington city boundary

Outfalls

▲ South Burlington

▲ VTRANS

▲ Other



Data Disclaimer: Maps and GPS data ("material") made available by the City of South Burlington are for reference purposes only. The City does not guarantee accuracy. Users release the City from all liability related to the material and its use. The City shall not be liable for any direct, indirect, incidental, consequential, or other damages. Contact GIS@sburli.com with questions

**Appendix E –
Table of Projects in South Burlington
That Disturbed Greater Than 1 Acre of Land and/or Created
Greater Than 1 Acre of Impervious Area in 2019**

Street #	Street Name	Project Description	Lot Size (sf)	Existing Impervious (sf)	Proposed Impervious (sf)	Impervious Increase (sf)	Construction Disturbance (sf)
284	Meadowland Drive	2 lot subdivision w/25560 sf building		-	98,527	98,527	313,632
1200	Airport Drive	building for car rental				(4,900)	117,118
1680	Shelburne Road	1 story credit union building	43,560	-	23,310	23,310	42,690
1200	Airport Drive	hotel	41,033,520			14,845	32,200
47	Tilley Drive	4500 sf retail & restaurant building	43,834	-	6,613	6,613	67,954
600	Swift Street	building expansion	2,992,572	361,548	373,950	12,402	23,136
2	Holmes Road	commercial parking lot	374,616	123,275	151,589	28,314	60,984
635	Community Drive	144,000 sf warehouse	1,907,928	46,020	570,636	524,616	958,320

**Appendix F –
List of Construction Site Inspections Conducted in 2019**

Construction Site Inspections Conducted By South Burlington DPW in 2019

	ADDRESS	DATE	RESULTS	NOTES
1	Market Street	1/3/2019	PASS	Checked entrance for Adam - spoke with contractor who was in the process of cleaning
2	Golf Course Road	1/15/2019	FAIL	Black Rock project - no fence & pile too close to the road
3	Golf Course Road	1/15/2019	PASS	Black Rock installed double fencing and moved spoil pile
4	Quarry Hill	2/6/2019	PASS	
5	Windswept	2/20/2019	PASS	
6	South Village	3/5/2019	PASS	Phase 3 - Met with Clovis (SDI) regarding expectations
7	O'Brien Farms	4/11/2019	PASS	
8	O'Brien Farms	4/22/2019	FAIL	Fencing needs to be addressed. Street needs to be swept. Spoke with Justin
9	O'Brien Farms	4/23/2019	PASS	Fencing replaced with new. Street has been swept.
10	O'Brien Farms	5/7/2019	PASS	Fencing not perfect - will notify Justin Parker and monitor
11	O'Brien Farms	5/11/2019	PASS	Fencing improved
12	Cider Mill	5/13/2019	PASS	
13	Rye Meadows	5/13/2019	PASS	Spoke with Brett (Omega) regarding basin questions - no issue
14	South Village	6/12/2019	PASS	
15	Cider Mill	6/13/2019	PASS	
16	Hannafor / K Mart	6/20/2019	FAIL	Turbid discharge. Spoke with contractor & engineer to update EPSC plan
17	O'Brien Farm	6/20/2019	FAIL	Turbid discharge. Spoke with contractor & engineer to update EPSC plan
18	O'Brien Farm	6/24/2019	PASS	Met with Owner and David Murrish (Environmental Enforcement Officer) onsite
19	Hannafor / K Mart	6/25/2019	PASS	Contractor installed larger check dams and fabric
20	O'Brien Farm	6/26/2019	PASS	Contractor installed additional silt fence and hay mulch
21	Cider Mill	7/15/2019	PASS	
22	South Village	7/17/2019	PASS	
23	Cider Mill	7/19/2019	PASS	
24	South Village	7/23/2019	PASS	
25	South Village	7/25/2019	PASS	Phase 3
26	Hannafor / K Mart	7/31/2019	PASS	Inspected site after noticing turbidity in Potash Brook. Site was in good shape
27	O'Brien Farms	8/6/2019	FAIL	Fencing needs attention
28	O'Brien Farms	8/7/2019	PASS	Fencing has been repaired and replaced - in good standing
29	Picard Circle	8/8/2019	PASS	Inspection following rain
30	O'Brien Farm	8/8/2019	PASS	Inspection following rain
31	Cider Mill	8/13/2019	PASS	
32	Windswept	8/21/2019	PASS	Prepping for final walkthrough - in excellent shape
33	Cider Mill	8/23/2019	PASS	
34	O'Brien Farms	9/4/2019	PASS	
35	Rye Meadows	9/19/2019	PASS	
36	Cider Mill	10/9/2019	PASS	
37	O'Brien Farm	11/1/2019	PASS	Site held up following significant storm event
38	Hannafor / K Mart	11/1/2019	PASS	Site held up following significant storm event
39	Quarry Hill	11/18/2019	FAIL	Spoke with SDI regarding cleaning entrance
40	Quarry Hill	11/19/2019	PASS	Entrance cleaned and street swept
41	Dubois Drive	12/9/2019	PASS	

**Appendix G –
Stormwater Treatment Practices
Maintained by the City of South Burlington**

				Last updated on	3/18/2020
Stormwater Treatment Practice Name	Street	State Stormwater Permit	SBStrmID	Year SWU Began Maintenance	Type
Bartlett Bay Stormwater Treatment System	Bartlett Bay Rd	None	PD0019	2002	Treatment Wetland
Bartlett Brook Central Gravel Wetland	Keari Ln	None	CW0002	2017	Treatment Wetland
Butler Farms Pond	Marcy Street	2-0312	PD0134	2012	Detention Pond
Cider Mill Pond 2	Winesape Lane	3144-9010.2	PD0090	2018	Detention Pond
Cider Mill Pond 3	Royal Drive	3144-9010.2	PD0064	2018	Detention Pond
Cider Mill Pond 4	Crispin Drive	3144-9010.2	PD0062	2018	Detention Pond
Cider Mill Pond 5	Braeburn Street	3144-9010.2	PD0066	2018	Detention Pond
Cider Mill Pond 6	Crispin Drive	3144-9010.2	PD0061	2018	Detention Pond
City Hall Bio-Retention Area	Dorset St	2-0909	BR0002	2014	Bioretention Area
City Hall Underground Infiltration	Dorset St	2-0909	ST0026	2014	Underground Infiltration
Commerce Square	Midas Ave	7294-INDO, 7294-INDS	PD0006	2018	Detention Pond
Dorset Farms Basin A	Midland Ave	3049-9010.RT	PD0058	2018	Detention Pond
Dorset Farms Basin B	Floral Dr	3049-9010.RT	PD0057	2018	Detention Pond
Dorset Farms Basin C	Catkin Dr	3049-9010.RT	PD0056	2018	Detention Pond
Dorset Park Pond	Swift St	1-1033	PD0032	2007	Detention Pond
Farrel Street Swirl Separator	Farrell St	5080-INDO.R	SW0001	2008	Swirl Separator
Farrell Park Constructed Wetland	Swift St	None	PD0091	2007	Treatment Wetland
Farrell Street Bio-Retention	Farrell St	5080-INDO.R	PD0030	2007	Bioretention Area
Farrell Street Pond	Farrell St	5080-INDO.R	PD0029	2007	Detention Pond
Farrell Street Porous Asphalt	Farrell St	None	PA0001	2007	Porous Surface
Gregory Drive Swirl Separator	Gregory Dr	3351-9010	SW0002	2007	Swirl Separator
Harbor Heights Swirl Separator	Harbor View Rd	6294-9030	SW0005	2010	Swirl Separator
Harbor Heights Underground Storage	Harbor Heights	6294-9030	ST0021	2010	Underground Detention
Hayes Avenue Stormwater Detention Basin	Kinsington Street	6553-INDO	PD0072	2013	Detention Pond
Heatherfield Pond 1	Songbird Rd	3658-INDS.A1RT	PD0065	2018	Detention Pond
Heatherfield Pond 2	Songbird Rd	3658-INDS.A1RT	PD0011	2018	Detention Pond
Heatherfield Pond 3	Mockingbird Lane	3658-INDS.A1RT	PD0098	2018	Detention Pond
Heatherfield Offset Pond	Songbird Rd	3864-INDO.R1T	PD0009	2018	Detention Pond
Iby Street Gravel Wetland	Iby Street	None	CW0004	2018	Treatment Wetland
Indian Creek Dry Detention Basin 1	Indian Creek Dr	6285-9030	PD0119	2010	Detention Pond
Indian Creek Dry Detention Basin 1	Indian Creek Dr	6285-9030	PD0120	2010	Detention Pond
Kennedy Drive Pond 1	Kennedy Dr	1-1582	PD0042	2007	Detention Pond
Kennedy Drive Pond 2	Kennedy Dr	1-1582	PD0043	2007	Detention Pond
Kennedy Drive Pond 3	Kennedy Dr	1-1582	PD0044	2007	Detention Pond
Kennedy Drive Pond 4	Kennedy Dr	1-1582	PD0045	2007	Detention Pond
Kennedy Drive Pond 5	Kennedy Dr	1-1582	PD0046	2007	Detention Pond
Kennedy Drive Pond 6	Kennedy Dr	1-1582	PD0047	2007	Detention Pond
Kennedy Drive Pond 7	Kennedy Dr	1-1582	PD0048	2007	Detention Pond
Laurel Hill Stormwater Detention Tanks	Laurel Hill Dr	None	ST0001	2002	Underground Detention
Laurel Hill Stormwater Detention Pipes	Sebring Rd	None	ST0002	2017	Underground Detention
Lime Kiln Bridge Swirl Separator	Lime Kiln Rd	None	SW0003	2007	Swirl Separator
Mayfair Park Swirl Seperator	Mayfair Street	7226-INDO	SW0008	2014	Swirl Separator
National Guard Avenue	National Guard Avenue	6627-9015	PD0143	2013	Detention Pond
Oak Creek Village Micropool (Pond 1)	Hinesburg Rd	1-0464	PD0111	2009	Detention Pond
Oak Creek Detention Pond 2	Mill Pond Lane	1-0464	PD0054	2012	Detention Pond
Oak Creek Detention Pond 3	Moss Glen Lane	1-0464	PD0055	2012	Detention Pond
Pinnacle Pond A	Pinnacle Dr	1-1155	PD0010	2019	Gravel Wetland
Pinnacle Pond B	Spear Street	1-1155	PD0023	2019	Sand Filter
Pinnacle Pond MO5	Nowland Farm Rd	1-1155	PD0068	2019	Gravel Wetland
Pinnacle Pond MO7	Nowland Farm Rd	1-1155	PD0024	2019	Detention Basin
Picard Circle Infiltration System	Airport Parkway	None	IA0026	2019	Infiltration Chambers
Quarry Ridge Pond	Juniper Dr	1-1257	PD0025	2009	Detention Pond
Route 2 Widening STP5200(18)	Williston Road	6676-INDS	IA0025	2015	Swale
Ridgewood Pond	Lexington Green	6285-9030	PD0121	2010	Detention Pond
South Pointe Pond 1	Parkside Road	3443-INDS.R1A	PD0063	2018	Detention Pond
South Pointe Pond 2	UpSwept Lane	3443-INDS.R1A	PD0026	2018	Detention Pond
South Pointe Dry Swale 1	UpSwept Lane	3443-INDS.1T	SWAL009	2016	Swale
South Pointe Dry Swale 2	UpSwept Lane	3443-INDS.1T	SWAL010	2016	Swale

Stormwater Treatment Practice Name	Street	State Stormwater Permit	SBStrmID	Year SWU Began Maintenance	Type
Stonehouse Village Pond	Cobblestone Dr	3153-9010.R	PD0031	2007	Detention Pond
Stonehedge Stormwater Pond	Stonehedge Dr	2-0100	PD0168	2016	Detention Pond
Stonehedge Northeast Bioretention Area (1)	Stonehedge Dr	2-0100	BR0006	2016	Bioretention Area
Stonehedge Southwest Bioretention Area (2)	Stonehedge Dr	2-0100	BR0005	2016	Bioretention Area
Stonehedge Northwest Bioretention Area (3)	Stonehedge Dr	2-0100	BR0004	2016	Bioretention Area
Summerfield Dry Detention Basin	Wildflower Lane	None	PD0118	2010	Detention Pond
Twin Oaks Pond	N Twin Oaks Terr	2-0825	PD0109	2009	Detention Pond
Valley Ridge	Valley Ridge Dr	3301-9010	SWAL001	2009	Swale
Village at Dorset Park Pond 1	Brand Farm Drive	1-0647	PD0172	2018	Detention Pond
Village at Dorset Park Pond 2	Brand Farm Drive	1-0647	PD0173	2018	Detention Pond
Village at Dorset Park Pond 3	Brand Farm Drive	1-0647	PD0174	2018	Detention Pond
White Rocks Pond	Country Club Dr	4124-9010.R	PD0050	2012	Detention Pond
Winding Brook Pond	Winding Brook Dr	6391-INDS	PD0041	2010	Detention Pond
WNRCD Pond	Dorset St	None	PD0095	2005	Detention Pond
WNRCD Swale Forebay	Dorset St	None	PD0094	2005	Detention Pond

**Appendix H –
Municipal Compliance Assistance Program (MCAP) Inspection
Summary Letter**



State of Vermont
Agency of Natural Resources
Department of Environmental Conservation

Tom DiPietro, Deputy Director/Stormwater Superintendent
South Burlington Public Works
575 Dorset Street
South Burlington, VT 05403

Environmental Assistance Office
1 National Life Drive, Main 2
Montpelier, VT 05620-3804
(802) 522-0224
john.daly@vermont.gov

July 18, 2016

Dear Mr. DiPietro:

I enjoyed meeting with you at the South Burlington Public Works facility on June 30th. As you know, this onsite was part of your efforts to meet the Good Housekeeping Provision of the MS4 Stormwater Permit. It was nice to speak with you about environmental compliance issues, as well as take some time to walk around the entire yard surrounding the facility. I have summarized our visit by listing both direct compliance issues for you to address, as well as BMPs we hope you will consider. Feel free to call me if you have any questions or if you're not sure about something.

Overall, I noted that the facility is in really good shape and that you have management systems and/or operating procedures in place to address each operational area. With ongoing improvement and effort, the facility will continue to operate in a manner that minimizes the potential for compliance problems in the future.

During our time together, I noted several issues in bullet format for you to consider. These BMPs/suggestions are ideas we discussed that will help improve upon the good work already being done at the facility. You should also feel free to call me with questions or if you need additional clarification on anything.

BMPs and other suggestions:

- We discussed the magnesium-chloride tanks at the facility, and I recommend you consider a secondary containment structure or berm system around the tanks. In general, we advise secondary containment or diversionary systems for tanks that could catastrophically fail and discharge to surface waters or wetlands. At minimum, a locking value system would remove the temptation of someone vandalizing the tanks by simply opening the value and discharging the contents which would quickly reach the lower storm drain and discharge down the hill into wetlands and surface water.
- I like the berm along the entire edge of your materials management area, which ultimately directs stormwater to the low spot where it can settle and slowly infiltrate and sheet flow to the vegetated area below. I encourage you to maintain that berm and continue to clean out any sediment that collects at that low spot, and manage it with your fill pile.
- During our walk behind the shop, we saw a few areas that could use a little seasonal attention. The area has clearly been organized and maintained, but we did see evidence that it could use some attention. I noted a set of 4 tires laying on the ground collecting water, some of the items along the back edge looked like they needed to be disposed of or recycled, and the area around the trash roll-off needed to be cleaned up. Perhaps a load of stone would help the area where the roll off is, collect less



water and not be so muddy. All the recycling should go over to the CSWD drop-off center and the trash should be picked up.

- I recommend an annual walk thru the swale along the back edge of the facility, to remove trash and inspect for any deep storm water cuts. I did note that where the swale transitions to a steeper gradient storm water was starting to cause a cut. You could place a stone check dam or two just before that cut, to slow the water down before it heads down into the gully.
- I recommend anyone using the fuel system at the facility be trained both in fuel system operations, as well as how to deal with a spill if one should occur. I noted you have a spill kit near the fuel area, and recommend you place a few more oil soaking pads in that kit. While you have done active spills training in the past, each person using the fuel island should be formally trained on how to handle a spill. Consider placing numbers to call in the event of a spill at the island, keeping in mind the 2-gallon regulatory reporting threshold for petroleum spills that are released to the environment.
- While we looked at the fuel island, we noticed the map detailing where the tanks were had been removed. I also noted you took care of this issue at the end of our visit, remember to keep an eye on this UST compliance issue, and replace the map as necessary.
- We discussed your wash bay, and the amount of sediment that collects in the trench drain during washing. Consider a baffle or two along the trench, which will collect sediment and trap it in the trench, which might make it easier to maintain.
- Make sure your SPCC plan is current and up to date. The plan must be updated and recertified every 5-years.
- Confirm that you have proper spent fluorescent bulb storage at the facility, or make sure when bulbs are replaced, spent bulbs are immediately taking over to the CSWD Depot. Any spent bulbs present onsite should be properly stored.

Conclusion

I enjoyed the chance to spend some time with you at the City of South Burlington highway facility. Our walk around the entire yard was a good opportunity to get a snap-shot of how you are doing with regard to Good Housekeeping as it applies to the MS4 Stormwater Permit. I noted you are doing an excellent job and should easily be able to address the items we discussed during our time together.

I hope you will use this letter as a source of information to help you in your efforts, and please feel free to call if you're not sure about something. See the fact sheets in the vehicle service guide book for additional information, or take a look at our web site at www.eaovt.org

Thank you for working with our assistance program. We appreciate your positive attitude towards environmental compliance and your willingness to make changes. I look forward to additional work with the City of South Burlington Public Works. I will be happy to assist you whenever possible and encourage you to use all of the resources available from the Environmental Assistance Office. If there is anything we can do in the immediate future, please do not hesitate to call. I can be reached directly at 802-522-0224.

Sincerely,



John Daly
Environmental Assistance Specialist

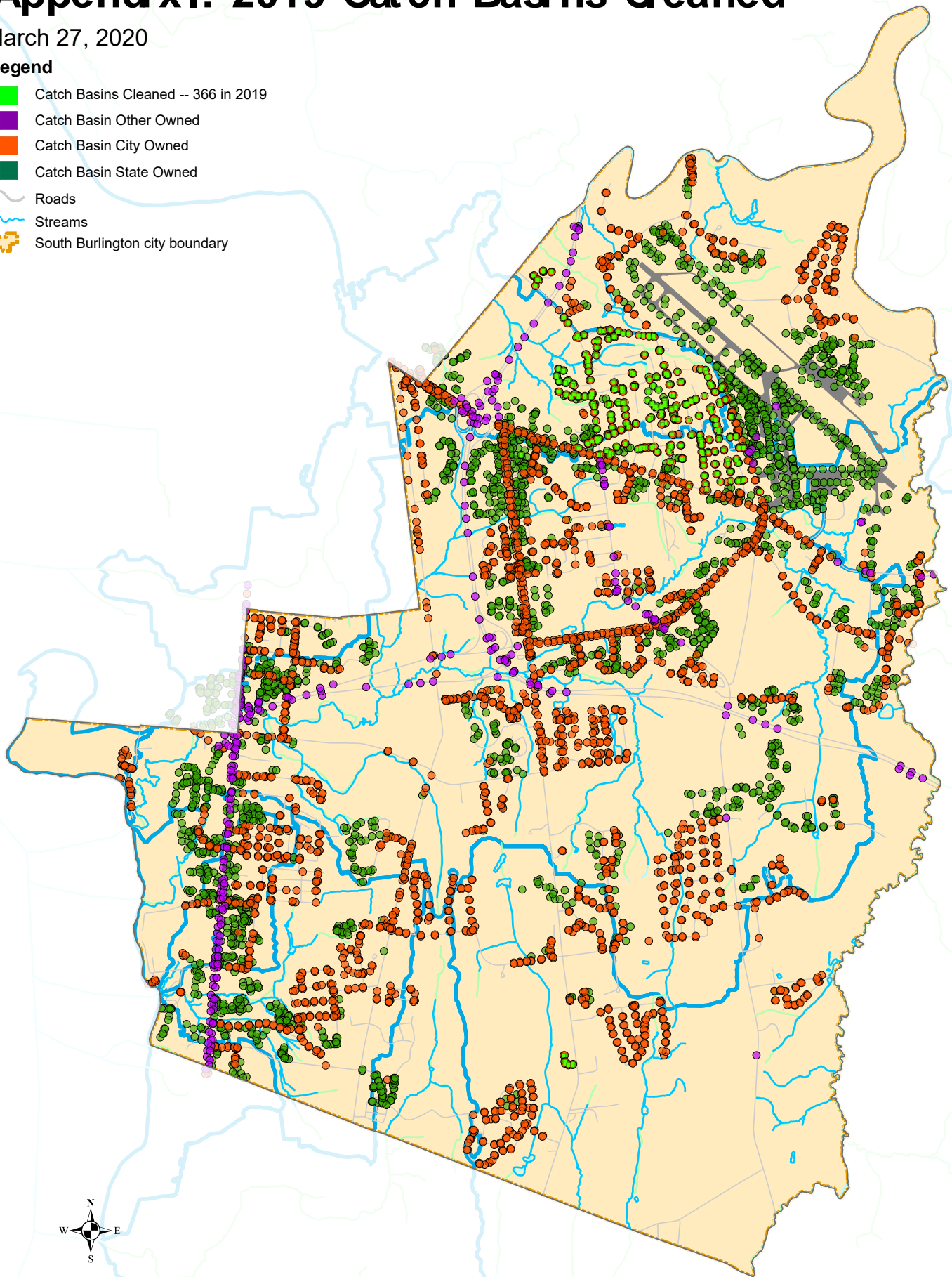
**Appendix I –
Map of Storm Drains Cleaned
in 2019**

Appendix I: 2019 Catch Basins Cleaned

March 27, 2020

Legend

- Catch Basins Cleaned -- 366 in 2019
- Catch Basin Other Owned
- Catch Basin City Owned
- Catch Basin State Owned
- Roads
- Streams
- South Burlington city boundary



Data Disclaimer: Maps and GPS data ("material") made available by the City of South Burlington are for reference purposes only. The City does not guarantee accuracy. Users release the City from all liability related to the material and its use. The City shall not be liable for any direct, indirect, incidental, consequential, or other damages. Contact GIS@sburl.com with questions

**Appendix J –
Municipal Employee Training Workshop Sign in Sheet**

City of South Burlington

Safety Meeting Sign-in Sheet

LOCATION: South Burlington Police Station	INSTRUCTOR: Emmalee Cherington	SUBJECT: Environmental & Stormwater Training	
The employees listed have satisfactorily participated in and fulfilled all requirements of the above training.			
NAME (Print)	DEPARTMENT	NAME (Signature)	DATE
1. Michael McCarthy	Highway	Michael McCarthy	7/30/19
2. George Lambert	Parks	George Lambert	
3. JEFF GORDON	Storm	Jeff Gordon	
4. DAVID MEYNIER	Highway	David Meynier	
5. Patrick Adams	Highway	Patrick Adams	
6. Greg Maguigan	Highway	Greg Maguigan	7/30
7. Emmalee Cherington	Stormwater	Emmalee Cherington	7/30
8. DAVID METHOT	PARKS	David Methot	7/30
9. JOHN M. DEVLIN	HIGHWAY	John M. Devlin	7-30-19
10. Jason Morin	Highway	Jason Morin	7-30
11. Bill Morin	Highway	Bill Morin	7-30
12. Erik Busselle	Parks	Erik Busselle	7-30
13. ANDREW NOONAN	PARKS	Andrew Noonan	7-30-19
14. Scott D Jacobs	Traffic	Scott D Jacobs	7-30-19
15. Dan Guillemette	Highway	Dan Guillemette	7-30-19
16. TODD GREGORY	Highway	Todd Gregory	7-30-19
17. Rob Gordon	Stormwater	Rob Gordon	7-30-19
18. SL. PETA	SW	SL. PETA	7-30-19
19. Tom DiPietro	SW	Tom DiPietro	7/30/19
20. ADAM CATE	DPW	Adam Cate	7/30/19
21. Squire Gallette	SW	Squire Gallette	7/30/19
22. David Wheeler	SW	David Wheeler	7/30/19
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