



The

UNIVERSITY
of **VERMONT**

MS4 ANNUAL REPORT

January 1, 2015 to December 31, 2015

**NATIONAL POLLUTANT DISCHARGE
ELIMINATIONS SYSTEMS (NPDES)**

GENERAL PERMIT 3-9014

**FOR STORMWATER DISCHARGES FROM SMALL MUNICIPAL SEPARATE
STORM SEWER SYSTEMS**

**Prepared by:
Krebs & Lansing
Consulting Engineers, Inc.
164 Main Street
Colchester, Vermont 05446
(802) 878-0375**

April 1, 2016

KREBS & LANSING

Consulting Engineers, Inc.

164 Main Street, Suite 201
Colchester, VT 05446
Telephone (802) 878-0375, Fax 878-9618
email@krebsandlansing.com

April 1, 2016

Christy Witters
MS4 and MSGP Program Coordinator
VT DEC Stormwater Program
One National Life Drive
Montpelier, Vermont 05620-3522

Re: 2015 MS4 Annual Report - General Permit 3-9014 (2013-2017)
University of Vermont

Dear Christy:

Please find enclosed the 2015 annual report for the University of Vermont under General Permit 3-9014 (Stormwater Discharges from Small Municipal Separate Storm Sewer Systems). The General Permit 3-9014 is the second phase of the Environmental Protection Agency National Stormwater Program. The 5-year permit (2013-2017) requires implementation of practices to prevent or control stormwater runoff from municipal separate storm sewer systems (MS4) located in urbanized areas. There are nine municipalities in Chittenden County that are classified as traditional MS4's; Burlington, Colchester, Essex, Essex Jct., Shelburne, South Burlington, Williston, Winooski and Milton. The University of Vermont, Vermont Agency of Transportation, and the Burlington International Airport are considered non-traditional MS4s and therefore are required to obtain coverage under General Permit #3-9014.

In summary, the University had another successful year of managing stormwater runoff including;

- continuing strong operation and maintenance program through the Physical Plant Department,
- designing structural and non-structural best management practices into proposed new construction through the Facilities and Design Construction Department, and Campus Planning Services.
- implementing new best management practices, including construction of a new weather resistant salt storage shed, diverted additional untreated/undetained impervious from Centennial Field complex to North Campus Treatment and Detention Facility, and installed information board at Southwest Campus Treatment and Detention Facility explaining functions of stormwater pond.

Page Two
Christy Witters
April 1, 2016

Please call if you have any questions or comments.

Sincerely,



William H. Nedde III

Enclosure

cc: Richard Cate, Vice President for Finance and Treasurer*
Tom Gustafson, Vice President for University Relations and Admissions*
Bob Vaughan, Director, Capital Planning and Management*
Linda Seavey, Director, Campus Planning Services (2)
Lani Ravin, Associate Planner, Campus Planning Services*
Lisa Kingsbury, Planning Relations Coordinator, Campus Planning Services*
Sal Chiarelli, Director, Physical Plant Department*
Luce Hillman, Assistant Director, Physical Plant Department (1)
Paula Carlaccini, Director, Facilities Design & Construction*
Ken Bean, University Architect, Facilities Design & Construction*
Todd Merchant, Senior Construction Administrator, Facilities Design & Construction*
David Blatchly, Project Engineer, Physical Plant Department*
Rose Leland, Grounds Manager, Physical Plant Department*
Rick Paradis, Lecturer and Natural Area Manager for Rubenstein School*
Francis Churchill, Senior Assistant Director, Safety and Health Risk Management *
Jeff Rogers, Environmental Compliance Program, Safety and Health Risk Management *
(* Electronic copy only)

WHN/kee

2015 ANNUAL REPORT

EPA MS4 PHASE II – GENERAL PERMIT 3-9014 January 1, 2015 to December 31, 2015

Prepared by
Krebs & Lansing Consulting Engineers, Inc.
164 Main Street
Colchester, Vermont 05446

April 1, 2016

Introduction

On September 29, 2015 the University of Vermont submitted an amendment application for the University of Vermont MS4 General Permit (Stormwater Discharges from Small Municipal Separate Storm Sewer Systems) (7028-9014). UVM included the impervious surfaces for most of the current and expired permits within the North, East, and Southwest Campus watersheds into the MS4 Permit coverage. UVM provided plans and calculations for each watershed and subsequent stormwater treatment practice within the watershed. The application was separated by watershed and formatted in accordance with the Operational Stormwater Discharge Permit requirements.

The Stormwater Management Plan was modified to transfer impervious surfaces currently covered under Individual Operational Stormwater Discharge Permits to coverage under MS4 permit 7028-9014. The table below provides an outline of the permitted impervious by permit number and watershed.

Project	Permitted Impervious (acres)	Proposed New Impervious with this Application	Existing Impervious to included with this application
North Campus Watershed *			
3627-INDS.ARA1	24.19		
East Campus Watershed			34.57 **
3471-INDS.R1	8.32		
3471-INDS.1A1	2.54		
Southwest Campus Watershed			12.60
3753-INDS.A1	8.94		
Slade Hall Project		0.03	

* Hills Courtyard Project does not increase impervious surface.

Hills includes 0.02 acres of expanded impervious, 0.06 acres of redevelopment, and 0.02 acres of impervious removed.

** MS4 Amendment Application Schedule A for East Campus Watershed indicates 32.24 acres existing impervious. 2.33 acres of RLC/Gutterson (Permit 3471-INDS.R1) impervious (10.65 acres) is being considered existing impervious.

In addition to the Individual permits, the MS4 amendment included expanded impervious from a Slade Hall improvement project located in the Southwest Campus Watershed. The amendment also included the existing impervious surfaces in the North, East, and Southwest Campus Watersheds that were previously covered under expired permits 1-1444, 1-1040, and 1-1055 respectively.

The University of Vermont first applied for coverage under General Permit #3-9014 on March 10, 2003. The Application was revised and resubmitted on May 9, 2003 after receiving comments from the State of Vermont Agency of Natural Resources. On September 11, 2003 the State of Vermont acknowledged by letter the University's Stormwater Management Plan complies with the terms and conditions of the General Permit. They further indicated that the University's MS4 discharges are eligible for continued coverage under the terms and conditions of the General Permit.

On January 31, 2004, January 31, 2005, April 1, 2006, April 1, 2007, April 1, 2008, April 1, 2009, April 1, 2010, April 1, 2011, April 1, 2012, April 1, 2013, April 1, 2014, and April 1, 2015 the University of Vermont submitted their MS4 Annual Report.

On February 22, 2008, the University of Vermont prepared an application for coverage under General Permit #3-9014 for the second 5-year term. Additional information was provided on March 3, 2008 as requested by the State of Vermont.

On June 3, 2013, the University of Vermont prepared an application for coverage under General Permit #3-9014 for a third 5-year term (2013-2017). The application was deemed complete and effective on October 1, 2013.

The purpose of this document is to report on the status of the University's implementation of the permit requirements, including compliance with the standard of reducing the discharge of pollutants from the University's MS4 discharges to the Maximum Extent Practicable (MEP).

Flow Monitoring Update

On March 16, 2015, Blaine Hastings from the Agency of Natural Resources emailed a proposed "Request for Proposal" for stream flow monitoring. The RFP would establish three year stream monitoring for all Chittenden County impaired streams. If MS4s approve the RFP, the monitoring could be initiated as early as possible in 2016. On June 3, 2015, the MS4s emailed Blaine Hastings to formulate an RFP for flow monitoring (attached).

Flow Restoration Plans Update

Centennial Brook Flow Restoration Plan Project

The University of Vermont partnered with the Vermont Agency of Transportation, the City of Burlington and the City of South Burlington to hire Horsley-Whitten to complete the technical aspects of Centennial Brook's Flow Restoration Plan. All the MS4 partners met with the Agency of Natural Resources to review the preliminary findings.

Highlights of the preliminary FRP include:

- Both the North Campus Stormwater Treatment and Detention Facility and the Main Street East Stormwater Treatment and Detention Facility could be used as "regional stormwater facilities" shared by the City of Burlington and South Burlington. Future agreements regarding compensation and maintenance shall be required between the University and Burlington/So. Burlington for these regional facilities.
- Although most of the impervious in the watershed was being captured and treated, the model did not reflect full compliance with the Centennial TMDL flow reductions. The estimated unpermitted growth in the TMDL was broadly understood to be high.
- The next step is to have all MS4 partners meet to establish implementation and funding mechanisms. We anticipate submitting FRP for approval prior to 3 year deadline October 1, 2016.

Bartlett Brook Flow Restoration Plan Project

The City of South Burlington has hired a consultant who has issued a draft (2/2/2015) Flow Restoration Plan for Bartlett Brook. The only land owned by the University of Vermont in the Bartlett Brook Watershed is the Horticulture Farm, which is not part of UVM's MS4 lands. The University participated in the FRP process regarding the Horticulture Farm.

Sunderland Brook Flow Restoration Plan Project

The Town of Essex and Village of Essex Junction has hired a consultant to complete both the Indian Brook and Sunderland Brook Flow Restoration Plans. The University of Vermont does not own any impervious surface in the Indian Brook Watershed. The University of Vermont owns one student housing complex in the Sunderland Brook Watershed. The County Apartments are located on the southwest corner of Fort Ethan Allen and has a comprehensive stormwater infiltration system that contains the 1 year 24 hour rainstorm event. The consultant started work in June 2014. UVM is participating in the FRP process and assisting in gathering mapping.

Potash Brook Flow Restoration Plan Project

We have contacted the City of South Burlington and agreed to partner on the Potash Brook Flow Restoration Plan Project. The University only has two properties subject to the MS4 permit in the Potash Brook Watershed; the Bioresearch Complex and the Forestry Building on Spear Street. Many of UVM properties in Potash are agricultural and exempt from the MS4 permit including Miller Farm, Wheelock Farm and East Woods. South Burlington has started the FRP late in 2014. UVM has provided mapping assistance to the FRP consultant.

Englesby Brook Flow Restoration Plan Project

We have contacted the City of Burlington and agreed to partner on the Englesby Brook Flow Restoration Plan Project. The University's Southwest Watershed is located in Englesby Brook. Both stormwater detention and treatment facilities are fully compliant with the current state stormwater regulations.

Measurable Goal	Description of Goal Implementation	Status
<u>Year #1 (2013)</u> Convene MS4s to discuss flow monitoring. Work with ANR to determine what an acceptable stream flow monitoring program would look like. What equipment could be used? Who could or could not do it on behalf of the MS4s.	<u>Year #1 (2013)</u> Convene MS4s to discuss flow monitoring. Issue letter to ANR regarding the three options available to implement the flow monitoring.	Complete
<u>Year #2 (2014)</u> Convene MS4s to discuss a plan for implementing flow monitoring. Make a final determination regarding whether or not ANR will run the monitoring program. Discuss cost sharing between MS4s for the monitoring project. Discuss how non-traditional MS4s could be involved.	<u>Year #2 (2014)</u> See stream flow monitoring summary on page 1 of 12.	Complete
<u>Year #3 (2015)</u> Develop an RFP, invest in equipment and complete other tasks as necessary to being monitoring in year 4.	<u>Year #3 (2015)</u> See stream flow monitoring summary on page 2 of 13.	Complete
<u>Year #4 (2016)</u> Begin monitoring in the stormwater impaired streams.	<u>Year #4 (2016)</u>	
<u>Year #5 (2017)</u> Continue monitoring in the stormwater impair streams.	<u>Year #5 (2017)</u>	

1. Implementation Status of the Stormwater Management Plan

A. Minimum Control Measure #1 – Public Education and Outreach

The University of Vermont is one of many key members in the Regional Stormwater Education Program.

Measurable Goal	Description of Goal Implementation	Status
<u>Year #1 (2013)</u> Maintain a website for stormwater information, post MS4 NOI, SWMP and annual reports on website, provide links to www.startwaterways.org web site. Participate in RSEP.	<u>Year #1 (2013)</u> The Regional Stormwater Education Program has established a stormwater educational website at www.smartwaterways.org . The University has posted over 90 website links regarding stormwater or stormwater education. Go to www.uvm.edu and search under “stormwater”. UVM has posted the MS4 NOI, SWMP, and 2012 annual report within the Campus Planning Section of the UVM website.	Complete
<u>Year #2 (2014)</u> Maintain a website for stormwater information, post MS4 NOI, SWMP and annual reports on website, provide links to www.startwaterways.org web site. Participate in RSEP.	<u>Year #2 (2014)</u> The Regional Stormwater Education Program has established a stormwater educational website at www.smartwaterways.org . The University has posted over 90 website links regarding stormwater or stormwater education. Go to www.uvm.edu and search under “stormwater”. UVM has posted the MS4 NOI, SWMP, and 2012 annual report within the Campus Planning Section of the UVM website	Complete
<u>Year #3 (2015)</u> Maintain a website for stormwater information, post MS4 NOI, SWMP and annual reports on website, provide links to www.startwaterways.org web site. Participate in RSEP.	<u>Year #3 (2015)</u> The Regional Stormwater Education Program has established a stormwater educational website at www.smartwaterways.org . The University has posted over 90 website links regarding stormwater or stormwater education. Go to www.uvm.edu and search under “stormwater”. UVM has posted the MS4 NOI, SWMP, and 2013 annual report within the Campus Planning Section of the UVM website	Complete
<u>Year #4 (2016)</u> Maintain a website for stormwater information, post MS4 NOI, SWMP and annual reports on website, provide links to www.startwaterways.org web site. Participate in RSEP.	<u>Year #4 (2016)</u>	
<u>Year #5 (2017)</u> Maintain a website for stormwater information, post MS4 NOI, SWMP and annual reports on website, provide links to www.startwaterways.org web site. Participate in RSEP.	<u>Year #5 (2017)</u>	

B. Minimum Control Measure #2 – Public Involvement Participation

The University of Vermont is one of many key members participating in a regional stormwater public involvement and participation program. (See attached)

<u>Measurable Goal</u>	<u>Description of Goal Implementation</u>	<u>Status</u>
<u>Year #1 (2013)</u> Participate in stream team or other approved regional stormwater public involvement and participation program.	<u>Year #1 (2013)</u> The University of Vermont is one of many key members participating in “The Stream Team”, and approved regional stormwater public involvement and participation program.	Complete
<u>Year #2 (2014)</u> Participate in stream team or other approved regional stormwater public involvement and participation program.	<u>Year #2 (2014)</u> The University of Vermont is one of many key members participating in “The Stream Team”, and approved regional stormwater public involvement and participation program.	Complete
<u>Year #3 (2015)</u> Participate in stream team or other approved regional stormwater public involvement and participation program.	<u>Year #3 (2015)</u> The University of Vermont is one of many key members participating in “The Stream Team”, and approved regional stormwater public involvement and participation program.	Complete
<u>Year #4 (2016)</u> Participate in stream team or other approved regional stormwater public involvement and participation program.	<u>Year #4 (2016)</u>	
<u>Year #5 (2017)</u> Participate in stream team or other approved regional stormwater public involvement and participation program.	<u>Year #5 (2017)</u>	

C. Minimum Control Measure #3 – Illicit Discharge and Elimination

<u>Measurable Goal</u>	<u>Description of Goal Implementation</u>	<u>Status</u>
<u>Year #1 (2013)</u> Update utility master plan with recently completed projects	<u>Year #1 (2013)</u> UVM has updated the utility master plan to include Votey Steam project, Waterman Entrance, Greenhouse project and Redstone Lofts.	Complete
<u>Year #2 (2014)</u> Update utility master plan with recently completed projects	<u>Year #2 (2014)</u> UVM has updated the utility master plan to include Simpson water main improvements, 284 East Avenue, Allen House pavement improvements and Pomeroy parking improvements.	Complete
<u>Year #3 (2015)</u> Update utility master plan with recently completed projects	<u>Year #3 (2015)</u> UVM has updated the utility master plan to include Cook shuttle improvements and Centennial storage water line.	Complete
<u>Year #4 (2016)</u> Update utility master plan with recently completed projects	<u>Year #4 (2016)</u>	
<u>Year #5 (2017)</u> Update utility master plan with recently completed projects	<u>Year #5 (2017)</u>	

<u>Measurable Goal</u>	<u>Description of Goal Implementation</u>	<u>Status</u>
<u>Year #1 (2013)</u> Complete dry weather/inspection North Campus	<u>Year #1 (2013)</u> Completed inspections of all pond in deep freeze of 2013-2014 and recorded no flow, or we estimated rate of flow.	Complete
<u>Year #2 (2014)</u> Complete dry weather/inspection at East Campus and Main Street East	<u>Year #2 (2014)</u> Completed in 2013.	Complete
<u>Year #3 (2015)</u> Complete dry weather/inspection at Southwest Campus	<u>Year #3 (2015)</u> Completed in 2013.	Complete
<u>Year #4 (2016)</u> Establish priority for elimination of illicit connection. Eliminate connection in accordance with priority schedule.	<u>Year #4 (2016)</u>	
<u>Year #5 (2017)</u> Establish priority for elimination of illicit connection. Eliminate connection in accordance with priority schedule. Review catch basins on campus to make sure they all have stickers.	<u>Year #5 (2017)</u>	

D. Minimum Control Measure #4 – Construction Site Runoff Control

<u>Measurable Goal</u>	<u>Description of Implementation</u>	<u>Status</u>
<p><u>Year #1 (2013)</u> Identify all projects that have Low, Moderate or Individual Permits to Agency of Natural Resources with Annual Report.</p> <p>Submit list of all construction activities that exceed 5,000 s.f. of disturbance that did not require State permit with Annual Report.</p>	<p><u>Year #1 (2013)</u> The University had the following projects that disturbed more than 1 acre: Redstone Lofts, Athletic Sidewalk Project.</p> <p>The University had the following low risk projects that exceeded 5,000 s.f. of disturbance that did not require State permit: Trinity Discharge Project, Trinity Directional Drill, Wheeler House, Southwick Parking Lot.</p>	Complete
<p><u>Year #2 (2014)</u> Identify all projects that have Low, Moderate or Individual Permits to Agency of Natural Resources with Annual Report.</p> <p>Submit list of all construction activities that exceed 5,000 s.f. of disturbance that did not require State permit with Annual Report.</p>	<p><u>Year #2 (2014)</u> The University had the following projects that disturbed more than 1 acre: Athletic Sidewalk Project, Trinity Slope Repair.</p> <p>The University had the following low risk projects that exceeded 5,000 s.f. of disturbance that did not require State permit: None.</p>	Complete
<p><u>Year #3 (2015)</u> Identify all projects that have Low, Moderate or Individual Permits to Agency of Natural Resources with Annual Report.</p> <p>Submit list of all construction activities that exceed 5,000 s.f. of disturbance that did not require State permit with Annual Report.</p>	<p><u>Year #3 (2015)</u> The University had the following projects that disturbed more than 1 acre: STEM, First Year Student Housing.</p> <p>The University had the following low risk projects that exceeded 5,000 s.f. of disturbance that did not require State permit: None.</p>	Complete
<p><u>Year #4 (2016)</u> Identify all projects that have Low, Moderate or Individual Permits to Agency of Natural Resources with Annual Report.</p> <p>Submit list of all construction activities that exceed 5,000 s.f. of disturbance that did not require State permit with Annual Report.</p>	<p><u>Year #4 (2016)</u></p>	
<p><u>Year #5 (2017)</u> Identify all projects that have Low, Moderate or Individual Permits to Agency of Natural Resources with Annual Report.</p> <p>Submit list of all construction activities that exceed 5,000 s.f. of disturbance that did not require State permit with Annual Report.</p>	<p><u>Year #5 (2017)</u></p>	

E. Minimum Control Measure #5 – Post Construction Runoff Control

<u>Measurable Goal</u>	<u>Description of Implementation</u>	<u>Status</u>
<u>Year #1(2013)</u> Provide site visits to all stormwater treatment facilities to evaluate performance. All projects that disturb more than 1 acre, but do not require a Stormwater Discharge Permit, shall be included in the Annual Report to the Agency of Natural Resources.	<u>Year #1 (2013)</u> The North Campus, East Campus, Southwest Campus and Main Street Stormwater Facilities are reviewed quarterly, if not more frequently. There were no projects at the University of Vermont that disturbed more than 1 acre that did not require a permit.	Complete
<u>Year #2 (2014)</u> Provide site visits to all stormwater treatment facilities to evaluate performance. All projects that disturb more than 1 acre, but do not require a Stormwater Discharge Permit, shall be included in the Annual Report to the Agency of Natural Resources.	<u>Year #2 (2014)</u> The North Campus, East Campus, Southwest Campus and Main Street Stormwater Facilities are reviewed quarterly, if not more frequently. There were no projects at the University of Vermont that disturbed more than 1 acre that did not require a permit.	Complete
<u>Year #3 (2015)</u> Provide site visits to all stormwater treatment facilities to evaluate performance. All projects that disturb more than 1 acre, but do not require a Stormwater Discharge Permit, shall be included in the Annual Report to the Agency of Natural Resources.	<u>Year #3 (2015)</u> The North Campus, East Campus, Southwest Campus and Main Street Stormwater Facilities are reviewed quarterly, if not more frequently. There were no projects at the University of Vermont that disturbed more than 1 acre that did not require a permit.	Complete
<u>Year #4 (2015)</u> Provide site visits to all stormwater treatment facilities to evaluate performance. All projects that disturb more than 1 acre, but do not require a Stormwater Discharge Permit, shall be included in the Annual Report to the Agency of Natural Resources.	<u>Year #4 (2015)</u>	
<u>Year #5 (2017)</u> Provide site visits to all stormwater treatment facilities to evaluate performance. All projects that disturb more than 1 acre, but do not require a Stormwater Discharge Permit, shall be included in the Annual Report to the Agency of Natural Resources.	<u>Year #5 (2017)</u>	

F. Minimum Control Measure #6 – Pollution Prevention/Good Housekeeping

Measurable Goal	Description of Goal Implementation	Status
Inspect all catch basins annually	<u>Year #1 (2013)</u> Physical Plant has inspected all catch basins.	Complete
	<u>Year #2 (2014)</u> Physical Plant has inspected all catch basins.	Complete
	<u>Year #3 (2015)</u> Physical Plant has inspected all catch basins.	Complete
	<u>Year #4 (2016)</u>	
	<u>Year #5 (2017)</u>	
Limit salt use. Establish Master Plan policy to restrict use of salt.	<u>Year #1 (2013)</u> The University already has in place a master plan and policy that restricts salt use on Campus.	Complete
	<u>Year #2 (2014)</u> The University already has in place a master plan and policy that restricts salt use on Campus.	Complete
	<u>Year #3 (2015)</u> The University already has in place a master plan and policy that restricts salt use on Campus.	Complete
	<u>Year #4 (2016)</u>	
	<u>Year #5 (2017)</u>	
Sweep all sidewalks and pavements in spring. Identify location of sand disposal.	<u>Year #1 (2013)</u> From April 2013 to June 2013 the University contracted to sweep pavements and walks. The contractor removed the sands from the University Campus and recycled it in a crushed gravel batch plant for road subbase. (A. Marcelino and Company)	Complete
	<u>Year #2 (2014)</u> From April 2014 to June 2014 the University contracted to sweep pavements and walks. The contractor removed the sands from the University Campus and recycled it in a crushed gravel batch plant for road subbase. (A. Marcelino and Company)	Complete
	<u>Year #3 (2015)</u> From April 2015 to June 2015 the University contracted to sweep pavements and walks. The contractor removed the sands from the University Campus and recycled it in a crushed gravel batch plant for road subbase. (A. Marcelino and Company)	Complete

2015 MS4 Annual Report

April 1, 2016

Sweep all sidewalks and pavements in spring. Identify location of sand disposal.	<u>Year #4 (2016)</u> <u>Year #5 (2017)</u>	
--	--	--

Measurable Goal	Description of Goal Implementation	Status
Visually inspect outlet devices once per week and remove debris as required.	<u>Year #1 (2013)</u> Physical Plant has reviewed the trash racks weekly. <u>Year #2 (2014)</u> Physical Plant has reviewed the trash racks weekly. <u>Year #3 (2015)</u> Physical Plant has reviewed the trash racks weekly. <u>Year #4 (2016)</u> <u>Year #5 (2017)</u>	Complete Complete Complete
Visually inspect for winter damage	<u>Year #1 (2013)</u> It is an event that the University has completed every year regardless of requirements of MS4. <u>Year #2 (2014)</u> It is an event that the University has completed every year regardless of requirements of MS4. <u>Year #3 (2015)</u> It is an event that the University has completed every year regardless of requirements of MS4. <u>Year #4 (2016)</u> <u>Year #5 (2017)</u>	Complete Complete Complete
Semi-annual reviews of stormwater treatment facilities.	<u>Year #1 (2013)</u> Spring and fall inspections were completed on the North, Southwest, East Campus, and Main Street Stormwater Facilities. <u>Year #2 (2014)</u> Spring and fall inspections were completed on the North, Southwest, East Campus, and Main Street Stormwater Facilities. <u>Year #3 (2015)</u> Spring and fall inspections were completed on the North, Southwest, East Campus, and Main Street Stormwater Facilities. <u>Year #4 (2016)</u> <u>Year #5 (2017)</u>	Complete Complete Complete

Measurable Goal	Description of Goal Implementation	Status
<u>Year #1 (2013)</u> Meet with CWD and City of Burlington to review source protection plan and stormwater management plan	<u>Year #1 (2013)</u> Krebs & Lansing Consulting Engineers will meet with CWD, City of Burlington and City of South Burlington in 2014 to review changes to MS4 stormwater plans.	Complete
<u>Year #2 (2014)</u> Continue to maintain and inspect grounds and storm system. Continue to complete dry weather and wet weather monitoring of stormwater runoff. Analyze annually.	<u>Year #2 (2014)</u> Krebs & Lansing Consulting Engineers met with City of Burlington and City of South Burlington in 2014.	Complete
<u>Year #3 (2015)</u> Continue to maintain and inspect grounds and storm system. Continue to complete dry weather and wet weather monitoring of stormwater runoff. Analyze annually.	<u>Year #3 (2015)</u> The University of Vermont's Physical Plant Department continues to maintain and inspect the UVM property and storm system.	Complete
<u>Year #4 (2016)</u> Continue to maintain and inspect grounds and storm system. Continue to complete dry weather and wet weather monitoring of stormwater runoff. Analyze annually.	<u>Year #4 (2016)</u>	
<u>Year #5 (2017)</u> Continue to maintain and inspect grounds and storm system. Continue to complete dry weather and wet weather monitoring of stormwater runoff. Analyze annually.	<u>Year #5 (2017)</u>	

2. Assessment of Stormwater Management Plan Success in Year 3 (2015)

Even though the University of Vermont historically has prioritized the management of its stormwater, the institution has had a very successful 13th year (2015) of the MS4 permit.

- We feel the stormwater issue has become much more public and with that exposure the public has become more knowledgeable. The regional solution to Minimum Measure 2 has been very effective.
- Projects that were subject to the Individual Permit for Construction Sites; STEM, First Year Student Housing, and Chiller Plant.
- The University had invested in mapping a majority of its storm system prior to the MS4 permit. The Physical Plant Department of the University of Vermont started a Utility mapping program in 2006. The storm system had been mapped previously, but it was very helpful to map water and wastewater lines as part of the investigation for cross connection. Accurate mapping also ensures a future cross connection is not made inadvertently. Additional aerial mapping was completed in 2011.

- In summary, the University had another successful year of managing stormwater runoff including;
 - continuing strong operation and maintenance program through the Physical Plant Department,
 - designing structural and non-structural best management practices into proposed new construction through the Facilities and Design Construction Department, and Campus Planning Services.
 - implementing new best management practices, including construction of a new weather resistant salt storage shed, diverted additional untreated/undetained impervious from Centennial Field complex to North Campus Treatment and Detention Facility, and installed information board at Southwest Campus Treatment and Detention Facility explaining functions of stormwater pond.
 - Although a tremendous amount of work is being completed by Physical Plant as part of the implementation of this permit, they historically have been very proactive in prioritizing stormwater management.

3. Year 14 Activities (2016)

The activities scheduled for completion in Year #14 are identified in the Stormwater Management Plan for the next 5 year term of the permit.

4. Proposed Changes to the University's Stormwater Management Plan (SWMP)

Year #3 (2015)

No changes in this year.

5. Shared Permit Obligations

The University of Vermont is one of many key members in the Regional Stormwater Education Program.

The University of Vermont is one of many key members in the Stream Team, an approved regional stormwater participation program.

END OF REPORT



Chittenden County Regional Stormwater Educational Program

Annual Review: 2015 Calendar Year Summary

2015 was a maintenance year for RSEP, utilizing 2014's "*Slow the Flow*" campaign creative around rain barrels and rain gardens and also the creative informing people about the best time to fertilize (if at all). In 2015, we saw strong results, with the second-highest website visits on record. (Only 2014 was higher.) We continued to use data from past campaign performance to tweak media buys and try some different ad formats, consistently working to reach more people.

In 2015 we also continued to improve our website, focusing on cleaning up links, developing stronger verbiage, and deleting outdated content. Building on the design refresh of 2014, the website is now technically and visually more modern, more clearly written, and easier to navigate.

Spring Advertising Campaign

During the Spring campaign we utilized some new ad formats with *Xfinity*, specifically a home page takeover and Comcast Video Plus, which allowed us to advertise on *Comcast* partner sites. Compared with Table 2: Fall 2015 Online Campaign Results, it's clear that the traditional pre-roll ads (ads that run prior to watching a video) prove to be more effective than these new ad opportunities.

The online portion of the advertising budget accounts for 36% of the overall expenditure of \$19,855. The remainder covers radio, television and print advertising. Media beyond online ads raises awareness and allows consumers additional impressions, but the vast majority of web clicks come from online ads, driven by the ease by which people can access the Smart Waterways site from an online ad.



Table 1: Spring 2015 Online Media Results

	Impressions	Clicks	Cost	Cost per Click
WCAX	90,000 impressions	198	\$990	\$5.00
Xfinity*		373	\$1,725	\$4.62
	video pre-roll, 16,300 impressions	252		
	home page takeover	33		
	Comcast Video Plus, 26,300 impressions	88		
Front Porch Forum	210,000 impressions	253	\$1,500	\$5.93
Google ad network	pay-per-click	382	\$1,398	\$3.66
Seven Days	100,000 impressions	116	\$1,093	\$9.42
TOTAL		1695	\$6,706	\$3.96

Fall Advertising Campaign

For the Fall campaign we focused back on the issue of not using fertilizer in the spring. In order to use past material, we worked with local Fox television affiliate *WFFF* to remake the old television spot (which was not digital and looked grainy) in an HD format. This spot can now be used into the foreseeable future.

In addition, as mentioned above, based upon what we learned using the *Xfinity* ad formats, we decide to revert back to using pre-roll ads only, driving down the cost per click. Even with the high cost per click for *WFFF/ABC 22* ads, our overall cost per click was very low at \$3.07, as shown below in Table 2. The online portion of the advertising budget was 51% of the overall expenditure of \$9,940.

Table 2: Fall 2015 Online Campaign Results

	Impressions	Clicks	Cost	Cost per click
WCAX	120,000 impressions RSS feed	316	\$600	\$1.90
Xfinity	55,000 video pre-roll impressions	832	\$1,980	\$2.38
Front Porch Forum	50,000 impressions	77	\$750	\$9.74
Google ad network	pay-per-click	329	\$860	\$2.61
WFFF/ABC 22	90,000 impressions	38	\$700	\$18.42
TOTAL		1,592	\$4,890	\$3.07



Traffic to Program Website (www.smartwaterways.org)

Presented below in Figure 1 and Table 3 is the website visitor information for 2015, compared to preceding years.

The site had 4,659 visits during 2015, not as strong as 2014 but still the second highest on record. Website traffic increases correlate with media campaigns. The Chittenden County’ Stream Team’s *Connecting the Drops* program ran in Williston during the June timeframe, keeping web traffic high in between campaigns.

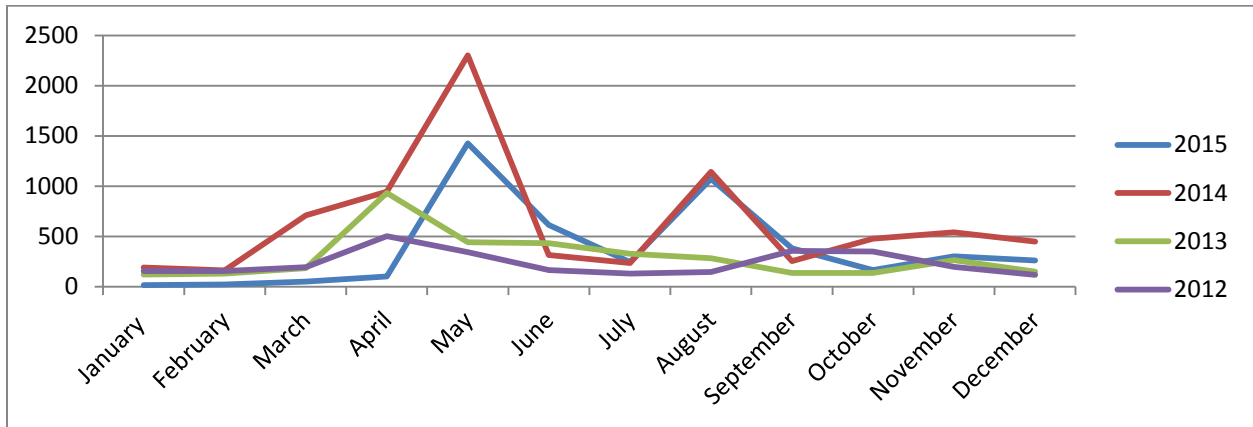


Figure 1: Total Internet Traffic to SmartWaterways.org

Table 3: Total Internet Traffic to Smartwaterways.org

YEAR	TOTAL
2015	4,659
2014	7,728
2013	3,542
2012	2,817
2011	2,859



Chittenden County Stream Team Summary of Activities January-December 2015



This report summarizes CCST activities in the 2015 calendar year. Demographic data about participant numbers from each town is presented in tabular form following the narrative.

Social Media

Facebook

- 120 total “likes”-- a 15% increase in likes from 2014 annual report numbers (104 total likes)
Facebook ‘likes’ can’t be isolated by year; only total numbers over time can be counted.
- 20% of the people who like CCST are from Burlington (23 people)
- 41% of the people who like CCST live in CCST member towns (49 people)

CCST Website

Google Analytics provides website traffic data from: January 1, 2015 to December 31, 2015

- 1,773 website visits, spending an average of 1 minute and 53 seconds on the website per visit. The number of visits is up 22% from 2014 (1,454 visits)
- 3,603 page views, similar to the 2014 quantity (3,683)
- 80.5% of visitors were new visitors to the site.
- The highest spike in page views occurred on April 2nd, with 39 visits, which coincided with the announcement that the Chittenden County Regional Planning Commission was recognized by The New England Water Environment Association with a *Stormy Award* for “Regional Collaboration for Enhanced Stormwater Program Efficiency.” Website traffic remained relatively high through April and May as the Connecting the Drops display was planned and installed. There were also spikes in July around the time of the rain barrel give-away and two rain barrel workshops. On average, the busiest months for web traffic were April, May, June and July.

Newsletter and e-correspondence

- In 2015, there were 459 subscribers to the CCST newsletter, up 55% from 295 in 2014.
- A spring newsletter was sent out in May with a 37.1% open rate. A fall newsletter was sent out in October with a 42.1 % open rate. CCST E-News open rate is high; the typical open rate for similar industries is between 20-25% according to research completed by Mail Chimp.
- The Mail Chimp email list was used throughout the year to announce rain barrel workshops and to request volunteers for water quality monitoring.



Chittenden County Stream Team

Summary of Activities January-December 2015

Organizational Partnerships

The Chittenden County Stream Team partnered with nine different organizations in 2015; CCST partnered with 12 organizations in 2014.

- A local gardener donated plants for the Stream Team's rain gardens. In 2015, Ann Pearce provided CCST with dozens of iris, lobelia and native grasses for multiple rain gardens (Chamberlin School, South Burlington and Williston Town Hall Annex, Williston).
- CCST worked with multiple schools and school groups this year for hands-on events and for outreach opportunities. The Stream Team partnered with teachers from South Burlington High School, Winooski High School and the Winooski Teen Center. Additionally, students from Champlain Valley Union High School decorated two of the rain barrels for the Connecting the Drops 3.0 display.
- CCST partnered with towns and other local organizations to host two rain barrel workshops. CCST partnered with the South Burlington Natural Resources Committee, the South Burlington Department of Public Works and the Town of Williston Public Works Department to hold the rain barrel workshops.
- During the 2015 Connecting the Drops outreach campaign and events, CCST partnered with the Let it Rain program (administered by Winooski Natural Resources Conservation District and UVM's Lake Champlain Sea Grant) to develop outreach materials and to manage the events. Lake Champlain Sea Grant staff member Becky Tharp recruited the artists for the displayed rain barrels and coordinated press and advertising. CCST partnered with the Town Williston to provide outreach for Connecting the Drops, display the barrels and engage citizens.
- CCST worked with the Milton Conservation Commission to provide outreach to the community and to build-up future ideas for hand-on participation in the town.

Media

The Chittenden County Stream Team had six media appearances this year, and increase from 4 in 2014. Copies of each article are archived in the CCST 3-ring binder housed at the office of the CCST chair (if applicable).

- Water Environment Federation (WEF) Stormwater Report May 5, 2015 (Stormy Award recognition) <http://stormwater.wef.org/2015/05/stormy-awards-elevate-new-england-stormwater-efforts/>
- Milton Independent: May 7, 2015. The Stream Team is not mentioned in the linked article, but there was a picture of CCST tabling at Milton's Green-Up Day and a caption in the print edition. <http://www.miltonindependent.com/retro-rubbish/>
- Williston Observer: May 21, 2015 <http://www.willistonobserver.com/artsy-stormwater-management-i-89-northbound-rest-stop-gets-new-rain-barrel/>
- Williston Observer: July 30, 2015 <http://www.willistonobserver.com/photos-building-a-rain-barrel/b> Photos of the Connecting the Drops rain barrel workshop
- The Citizen: May 14, 2015: <http://www.thecitizenvt.com/2015/05/14/partnership-offers-rain-barrel-workshop-june-7/>
- Shelburne News: May 6, 2015: <http://www.shelburnenews.com/2015/05/06/build-your-own-rain-barrel-june-7/>

Outreach



Chittenden County Stream Team Summary of Activities January-December 2015

Outreach events include tabling and the distribution of educational materials or information. There were nine outreach events in 2015 in which the Stream Team interacted with 324 people. See Table 1 below for detailed outreach audience information. An additional 36 people clicked on Front Porch Forum advertisements about the Connecting the Drops 3.0 outreach campaign, bringing total outreach numbers to 360.

- Milton Green-Up Day (5/2/2015, 36 people reached)
- Connecting the Drops 3.0 ribbon cutting ceremony in Williston (5/18/15, 35 people reached)
- Presentation to Milton Conservation Commission (6/23/15, 7 people reached)
- Williston Independence Day Celebration (7/3/15, 35 people reached)
- Burlington farmers Market (8/1/15, 46 people reached)
- Water Works Fair in Burlington (8/9/15, 26 people reached)
- Summervale in Burlington (8/20/15, 28 people reached)
- Shelburne Farmers Market (9/12/15, 33 people reached)
- Shelburne Harvest Festival (9/19/15, 88 people reached)

Event-Driven Tasks

There were nine hands-on events held and the continuation of on-going tasks including, rain garden adoption and maintenance, and water quality monitoring in 2015. Detailed participation data is provided in Table 2.

- Rain Barrel Painting for Connecting the Drops 3.0 Display (April/May 2015)
 - Partnered with Champlain Valley Union High School's Art club to decorate two rain barrels for the Connecting the Drops 3.0 display in Williston
 - Six students and one teacher worked to paint two display barrels
- Rain Garden Adopters are Supplied with Plants and Mulch for work days in mid-May (May2015)
 - Rain garden adopters worked to maintain the gardens at Williston Town Hall Annex, Chamberlain Elementary School in South Burlington and at the Coast Guard Station in Burlington.
 - Donated rain garden plants were planted in the Chamberlin School garden in South Burlington, the Williston Town Hall Annex garden, and in the Coast Guard Station garden in Burlington. Other volunteers maintained the gardens but were not in need of supplies.
- Volunteer Water Quality Monitoring Training/Sampling and Volunteer Thank You (6/16/2015)
 - Interest in the water quality monitoring program was high; 28 people contacted CCST to find out more information about volunteering. Of those who contacted CCST, 22 volunteers participated in the water quality monitoring training session. Sampling occurred on five scheduled dates (6/23, 7/07, 7/21, 8/04, 8/18, 9/1)
 - Sampling was expanded this year to include e. coli sampling at Wheeler Park in South Burlington
 - Volunteers were recognized for their dedication with pizza and appreciation during the water quality monitoring training event.
 - Analyzed sampling data was uploaded to the CCST [website](#).
- Rain Barrel Decorating at the Williston Independence Day Celebration (7/3/2015)
 - 17 Williston residents participated in rain barrel decoration during the Connecting the Drops 3.0 rain barrel give away at the Independence Day Celebration; most of these people also signed up to win a rain barrel.
- South Burlington Rain Barrel Workshop (7/7/2015)



Chittenden County Stream Team Summary of Activities January-December 2015

- Partnered with South Burlington’s Natural Resources Committee and the South Burlington Department of Public Works to hold a rain barrel workshop
- 32 participants built 29 barrels. All participants received outreach materials about rain barrels and stormwater.
- Connecting the Drops 3.0 Rain Barrel Workshop (7/25/2015)
 - Partnered with the Town of Williston’s Public Works Department and Lake Champlain Sea Grant to prepare and advertise for the event.
 - 32 participants built 26 rain barrels. All participants received outreach materials about rain barrels and stormwater.
- Potash Brook Stream Clean-Up with South Burlington High School (9/20/2015)
 - Partnered with South Burlington High School Environmental Science class
 - 21 students and 1 teacher participated in the clean-up, removing four bags of trash from Potash Brook.

CCST Outreach and Event Demographic Impacts

Since participation numbers for Milton and Shelburne were low in 2014 and because CCST had not focused on Burlington in some time, these towns were identified as the outreach target towns in 2015. Displayed in the table below, 2015 outreach efforts in these towns were a success and all workplan goals were met. Hands-on events are planned for these 3 towns in 2016.

Table 1: Participation in Outreach Activities by CCST Member Town

Activity	Location	Participant Town									Total
		Burlington	South Burlington	Essex	Essex Jct	Milton	Shelburne	Williston	Winooski	Other/Unkown	
Facebook 'Likes'	N/A	23	10	0	4	2	2	4	4	71	120
Website Visits	N/A	236	42	58	0	4	7	27	5	1,394	1773
e-news Mailing List	N/A	56	40	10	34	30	13	71	25	180	459
Green-Up Day	Milton	0	0	1	0	32	0	0	0	3	36
Milton Conservation Commission	Milton	0	0	0	0	7	0	0	0	0	7
CtD 3.0 Ribbon Cutting Ceremony	Williston	3	0	3	0	0	1	18	0	0	25
Independence Day Celebration	Williston	0	0	5	2	0	0	28	0	0	35
Farmers Market	Burlington	25	8	0	2	2	1	0	3	5	46
Summervale	Burlington	18	1	0	3	0	0	0	3	3	28
Water Works Fair	Burlington	19	2	1	3	0	0	0	0	1	26
Harvest Festival	Shelburne	35	0	3	0	0	5	11	9	25	88
Farmers Market	Shelburne	0	0	0	0	0	28	0	1	4	33
Front Porch Forum CtD 3.0 Ad 'clicks'	Williston	0	0	0	0	0	0	36	0	0	36
	Total	415	103	81	48	77	57	195	50	1686	2712

**Colchester represents a portion of the “other” participants, with 51 Colchester residents engaged with CCST outreach events (See Table 3 for details).

Hands-on participation events in 2015 were targeted to the towns of Williston, Winooski and South Burlington. The workplan goals for participation were met and exceeded in all three towns. There were a total of 188 event participants in 2015, surpassing the workplan goal of 100 participants. Outreach towns for the following year are selected from end-of-year event participation numbers and frequency of targeting a town. Based on the participation numbers from 2015 and the inclusion of Colchester into CCST, the towns that will be targeted for outreach in 2016 are: Colchester, Essex and Essex Junction.



Chittenden County Stream Team Summary of Activities January-December 2015

Table 2: Participation in Hands-On /Event-Driven Projects

Activity	Location	Participant Town									Total
		Burlington	South Burlington	Essex	Essex Jct	Milton	Shelburne	Williston	Winooski	Other/ Unkown	
Adopt-a Rain Garden Maintenance Days	Multiple	7	12	0	9	0	0	4	0	0	32
WQ Monitoring Training and Volunteer appreciation	Williston	7	5	1	2	0	1	4	2	0	22
WQ Monitoring Volunteers	Multiple	5	4	0	0	0	1	3	1	0	14
Stream Clean-Up	Winooski	0	0	0	0	0	0	0	10	0	10
Painting Barrels for CTD Display	Hinesburg (CVU)	0	0	0	0	0	1	3	0	3	7
Rain Barrel Workshop	South Burlington	9	14	0	0	0	3	0	0	6	32
Rain Barrel Decorating	Williston	0	0	0	0	0	0	17	0	0	17
Rain Barrel Workshop	Williston	0	3	1	1	3	0	22	0	2	32
Stream Clean-Up	South Burlington	0	22	0	0	0	0	0	0	0	22
		28	60	2	12	3	6	53	13	11	188

Other Vermont towns that are not part of the Chittenden County Stream Team participate in CCST activities. The chart below identifies towns with significant participation (Table 3).

Table 3. Participation in CCST Activities from Non-Member Towns

CCST Outreach and Event Participation Beyond Participating MS4 Towns									
	Huntington	Jericho	Richmond	Hinesburg	Charlotte	Colchester	Montpelier	St. Albans	Total
Facebook likes	1	4	0	3	0	7	4	4	23
e-news	1	2	4	3	1	12	0	2	25
website visits	0	2	1	6	1	26	48	8	92
Green-Up Day tabling in Milton	0	0	0	0	0	3	0	0	3
Burlington Farmers Market	0	0	0	0	0	2	0	0	2
Burlington's Summervale	0	0	0	0	1	0	0	0	1
Water Works Fair (BTV)	0	0	0	0	0	1	0	0	1
Shelburne Harvest Fest	0	0	0	0	0	0	2	2	4
Shelburne Farmers Market	0	0	0	2	0	0	0	0	2
	2	8	5	14	3	51	54	16	153

Connecting the Drops 3.0

In 2013, the Winooski Natural Resources Conservation District received a grant from the Ecosystem Restoration Program, VT DEC, for Let it Rain, a technical and financial assistance program aimed at supporting landowners in the installation of low impact development practices, and subsequently received funding from the Lake Champlain Basin Program to support this initiative with funding for outreach and education to landowners about stormwater. Connecting the Drops emerged from Let it Rain as an art and education installation about stormwater, featuring rain barrels, in downtown Burlington in the summer of 2013. WNRCD received a \$40,000 grant from ECOS to develop Connecting the Drops. RSEP provided an additional \$12,500 to leverage the exhibit's exposure for logo placement on print and web ads, signage, website, fliers, and verbal recognition at public events associated with the exhibit.



Chittenden County Stream Team Summary of Activities January-December 2015

Based on the successful outcomes of the 2013 campaign, RSEP members requested a proposal for a second year of the Connecting the Drops Project, known as Connecting the Drops 2.0 (CtD 2.0). With a significantly smaller scope, Lake Champlain Sea Grant (LCSG) worked with The Chittenden County Stream Team (CCST) to develop a “traveling” version of the Connecting the Drops exhibit to be held in Essex Junction during the summer of 2014. CtD 2.0 had a significant impact on successfully meeting and exceeding CCST’s outreach goals in 2014. The amount spent by CCST (\$1,728.77) on CtD2.0 was six percent of CCST’s FY15 budget. This relatively small budget percentage had a large impact on overall community participation numbers, which exceeded workplan goals in 2014. Due to the success of CtD2.0, CCST decided to pursue a third year of the campaign, Connecting the Drops 3.0 (CtD 3.0). The Town of Williston was selected because it was a 2015 CCST target town and there was support from town representatives.

Full reports on the details of the CtD 3.0 and all of the Connecting the Drops campaigns are available and on file with the CCST chairs.

A total of seven rain barrels were displayed at Williston Community Park for the CtD 3.0 exhibit displayed from May 23-June 29, 2015. Five barrels were decorated by local artists and two barrels were decorated by student artists from the Champlain Valley Union High School Art Club. In addition to the display in Williston Community Park, there were two outreach events associated with CtD 3.0 and a build-your-own rain barrel workshop. Throughout the five weeks that the rain barrels were on display in Williston Community Park before the give-away, 85 people applied through the Let it Rain website/QR code on the display signage to win a rain barrel (Table 4); an additional 30 people signed up during the Independence Day celebration (Table 5) for a total of 115 sign-ups.

Table 4. Rain Barrel Sign-Ups by Town (QR Code)

Town	# of People
Burlington	4
Essex	2
Essex Junction	9
South Burlington	2
Williston	55
Colchester	2
Other	11
TOTAL	85

Table 5. Rain Barrel Sign-Ups by Town (During Event)

Town	# of people
Williston	26
Essex	2
Essex Junction	1
Burlington	1
Total	30

The total cost to plan, manage and implement CtD 3.0 was \$3,800.84. In addition to personnel hours for project management and travel funds, the primary costs are compensation for the five professional artists (\$1,000) and paid advertising (\$722.10). CCST staff used 48.5 personnel hours and \$94.55 of mileage to plan and execute CtD3.0.

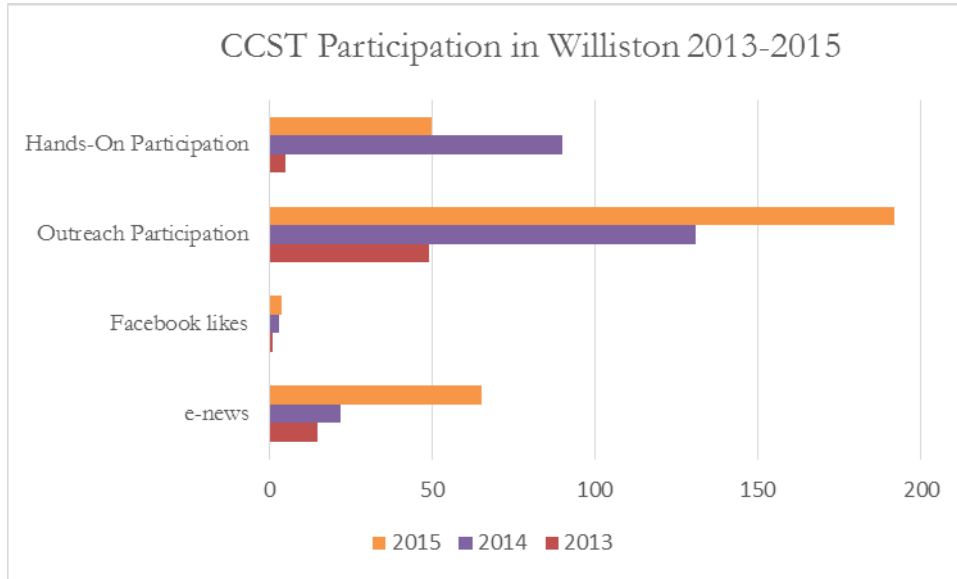
Connecting the Drops 3.0 had a significant impact on CCST’s successful year in 2015. The amount spent by CCST (\$3,800.84) is 14 percent of CCST’s FY15 budget. This relatively small budget percentage had a large impact on the overall participation numbers in 2015. All workplan targets for outreach and event participation in Williston were exceeded through the CtD 3.0 events. Additionally, the draw of signing up to win a rain barrel at the Williston Independence Day Celebration resulted in the largest impact in terms of outreach that CCST has made in Williston to date. Not only did Williston residents sign up to win a barrel, but many of them took outreach materials, talked with CCST staff and/or decorated CCST’s chalkboard rain



Chittenden County Stream Team Summary of Activities January-December 2015

barrel. A comparison of participation numbers in Williston between 2013, 2014 and 2015 for equivalent events and interactions is provided below (Figure 1). The elevated outreach numbers may be attributed to the increased CCST presence and advertising efforts that occurred through CtD3.0.

Figure 1. Williston Participation Numbers 2013-2015



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 clean and attractive by performing basic maintenance activities like picking up litter, pulling weeds, and installing new mulch. The “adopted” gardens are of varying age and origin. A few were installed by the Winooski Natural Resources Conservation District/Chittenden County Stream Team, some have been in existence for a long time and needed extra care, while others are new. Information about CCST adopt-a-rain garden program is available on the Stream Team [website](#). In 2015, CCST chairs approved funding to create signage for the rain gardens. The signs were printed and installed in several gardens.

Following is a description of the status of each of the CCST public rain gardens; Table 6 condenses the information:

Brownell Library Rain Garden

Location: 6 Lincoln St. Essex Junction

Status: This garden has existed for many years and has several mature shrubs. Unfortunately, several of the mature shrubs are the invasive burning bush (*Euonymus alatus*.) Although the garden does not currently have an adopter, it has had an active adopter over the last several years. Additional plants and mulch were added to the garden in 2013 and 2014. It has been weeded and well-maintained in 2013, 2014 and 2015. Brownell Library staff are interested in getting rid of the burning bush. CCST would like to work with the Village of Essex Junction to remove the invasive plants and seek replacement shrubs.



Chittenden County Stream Team

Summary of Activities January-December 2015

Callahan Park Rain Garden

Location: Locust St., Burlington

Status: This garden has been functioning well for some time, despite its surrounding conditions. In 2013 the garden began to experience significant slumping. Work was done to repair the slumping, which caused the loss of many plants. However, the garden appears to be building back up and doing better. This garden has an active volunteer, Brad Ketterling, who is committed to weeding and monitoring the garden. This garden received donated plants in 2015. Brad is interested in adding more pollinator species in the future.

Chamberlain School

Location: 262 White Street, South Burlington

Status: This garden was installed in partnership with WNRCDC and the Let it Rain Program in 2013. This is one of several rain gardens on the grounds of Chamberlain Elementary. Chris Provost has adopted this garden and actively maintains it. He often uses his students to help maintain the gardens and uses the gardens as an educational aide. Additional plants and mulch were provided to these gardens in 2014 and 2015.

Coast Guard Station

Location: Depot Street, Burlington

Status: This garden was very overgrown for some time. It is a small garden in a large parking lot at the edge of Lake Champlain. In 2014, CCST worked with the ECHO summer kids program to engage elementary school children in rain gardens. In several work sessions over the summer, the students pulled weeds, removed trash, planted dozens of new plants and applied mulch. The garden is doing very well and now has an active adopter, Wiley Reading.

Correctional Facility

Location: 7 Farrell St., South Burlington

Status: This garden is visible from the road and appears to be functioning. Originally, employees of the prison adopted this garden and would occasionally maintain the garden with inmates. There has been a lot of staff turn-over in the past few years without a clear adopter. In 2013, CCST delivered upwards of 50 plants to the center to be planted by the inmates. We were told that there was a weed-pulling day in 2014.

Farrell Park

Location: Swift Street, South Burlington

Status: This garden is unique in terms of its design. It is called an “advanced wetland stormwater filter.” It was installed in 2012. Stormwater enters the garden through inlet, flows through the gravel wetland filter media, is cleaned and exits through 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 not ever in need of additional plants or maintenance. It would not be appropriate to add mulch to this garden. CCST would like to find another adopter to bring any issues to our attention.

Landry Park

Location: North St., Winooski

Status: This garden was constructed in 2006. It was originally constructed as two separate gardens along the narrow strip of grass between a fence at Landry Park and the road. Over the years, the garden has fallen into



Chittenden County Stream Team Summary of Activities January-December 2015

disrepair. 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 most of the vegetation and caused gullies to form. Over the years, CCST has attempted to add more vegetation and mulch in hopes of slowing the flow, but these attempts have not been successful. The City of Winooski is willing to work with CCST to repair the garden. Currently UVM students in an Ecosystem Design course are developing recommendations to repair the garden. There is no current adopter; the adoption program was put on hold for this garden as we try to address its problems.

Williston Town Hall Annex

Location: 7900 Williston Rd, Williston

Status: This small garden, near the entrance walkway to the Annex building and the parking lot, has had an active adopter since 2014, Rita Desseau. Each year she weeds the garden and has installed plants and mulch as needed. In 2013, after an absence of care for a year, UVM students helped clear the garden of trash and weeds.

Williston Library

Location: 21 Library Lane, Williston

Status: This garden has had an active adopter for many years. Andrew Wolf cares for the garden and keeps CCST posted on its status. The garden is functioning properly, is weeded and not in need of any extra care.

New Garden:

South Burlington Fire Department

575 Dorset St.

Status: South Burlington recently installed a bioretention area/rain garden to improve stormwater management at the Fire Department. <http://www.sburlstormwater.com/stormwater-projects/city-offices-stormwater-improvement-project/>. We have been actively looking for a volunteer to maintain this garden over time.

Table 6. CCST 2015 Rain Garden Status Update

Town	Garden Name	Adopter	Last Miantenance	Needs
Burlington	Coast Guard Station	Yes	plants/mulch 2014, 2015 weeding	None
Burlington	Callahan Park	Yes	plants/weeding 2015	None
South Burlington	Farrell Park	No	monitored through 2014	Nothing for garden, but do need a new adopter
South Burlington	Correctional Center	Yes	2014 plants/weeding	Touch base with new staff
South Burlington	Chamberlain School	Yes	2015 plants/mulch	none
South Burlington	Fire Station	No	new garden	needs adopter
Essex Junction	Brownell Library	No	2014/2015 new plants, weeding	Needs new adopter, needs removal of invasives
Williston	Town Hall Annex	Yes	2015 weeding/2014 mulch and plants	None
Williston	Willsiton Library	Yes	2015 plants/weeding	None
Winooski	Landry Park	No	2014 plants, weeding (2015 maintenance on hold)	Serious attention/redesign



June 3, 2015

Mr. Blaine Hastings, Hydro geologist
VT DEC Watershed Mgmt. Div.
1 National Life Drive, Main 2
Montpelier, VT 05620-3522

Representatives of the MS4's met in Winooski to discuss the Flow Monitoring RFP, DRAFT cost distribution summary presented by the ANR. The goal of the meeting was to have an open discussion and to develop consensus on key points to present to you for your consideration in developing the final Flow Monitoring Plan (FMP) Request for Proposals.

The following are items for your consideration and for further discussion:

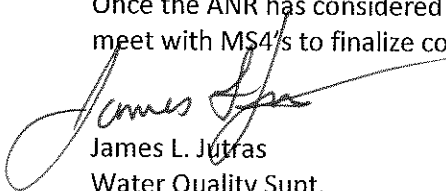
1. Please require Bidders respond with two specific costs:
 - a. **Program Administration** to include:
 - i. Overall program management
 - ii. General maintenance of the program annually
 - iii. General monitoring and reporting for all stations
 - b. **Stream Gauge** Per each location or watershed: Total cost of equipment, installation of equipment, maintenance as well as monitoring, hardware and software costs, spare parts, etc..
2. One Multi-year contract 3-5 years. A multiyear contract is not an issue for municipalities. (The duration of the current arrangement is short thus increasing bidder risk and driving costs up.)

FYI Payment: We are discussing options to provide direct payment from the MS4's to ANR through one source. The MOU process could be handled outside this agreement using formula based on impervious area, etc. and the information requested broken out as requested above. This is best discussed further at a meeting.

One outstanding question was generated: for this or future contracts:

- 1) If the flow target is met and macro-invertebrate recovery is completed, does monitoring need to continue? If so, for how long?
- 2) If the stream is delisted, does monitoring need to continue? If so, for how long?

Once the ANR has considered these items and modified the RFP, we feel it would be appropriate to meet with MS4's to finalize comments and a package that can be put out to bid.



James L. Jutras
Water Quality Supt.
Village of Essex Junction