

**City of Winooski Annual Stormwater Report
2010
General Permit 3-9014**

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EXECUTIVE SUMMARY

2010 represented the eighth year of the Municipal Separate Storm Sewer Systems (MS4) program in Winooski has been implemented. The following briefly describes the highlights of the six minimum control measures, which are more fully described later in this report. Reporting requirements in Section 5.3 of the MS4 Permit are addressed in this report.

Minimum Control Measure #1 – Public Education and Outreach on Storm Water Impacts

- The Regional Stormwater Education Program (RSEP) continued an advertising campaign and the smartwaterways.org web site benefiting the Chittenden County area.

Minimum Control Measure #2 – Public Involvement/Participation

- Winooski's annual Public Participation requirement involved the Winooski Environmental Leadership Board (WELB), the Vermont Youth Conservation Corps, and several Winooski citizen volunteers. Our public involvement projects were the complete rehabilitation of three public rain gardens, and two stream clean-ups and a wastewater treatment facility student tour. The WELB continued periodic meetings and led stream clean efforts on Green Up Day.

Minimum Control Measure #3 – Illicit Discharge Detection and Elimination

- Illicit Discharge Detection and Elimination (IDDE) work continued in Winooski. Our efforts are currently focused on studying the West Canal SW systems for probable replacement. It is our most at risk area. The IDDE Ordinance is in effect as part of the overall Stormwater Ordinance which was adopted by the City Council.

Minimum Control Measures #4 and #5 – Construction Site/Post- Construction Storm Water Control/Management

- Construction activities involving the new Community College of Vermont (CCV) project utilized the General Stormwater Permit for Construction requirements issued for the larger Downtown Project, which it is a part of. An erosion control ordinance was incorporated in the Stormwater Ordinance, in effect since 2008, that includes a checklist for residential projects that involve soil disturbance of any size. These efforts help with enforcement and provide education for the "do it yourselfers."

Minimum Control Measure #6 – Pollution Prevention/Good Housekeeping

- The City conducted regular street sweeping activities throughout the city with its regenerative street sweeper. 140+ Catch basins were systematically cleaned, inventoried, stenciled, and information entered into a database. Remedial work was performed on catch basins requiring immediate attention. The City has 20 catch basin filter systems, all were serviced, with all filters replaced. In 2010, Public Works employees attended the MS4 Municipal Employees Workshop held at the CCRPC, and other stormwater seminars throughout the year.

**Chittenden County Regional Stormwater Educational Program
Annual Review: 2010- 2011 Program Year Summary**

During the 2010-2011 program year (March 1, 2010 through February 28, 2011) of the Regional Stormwater Educational Program (RSEP) included some new elements while maintaining a consistent stream of public education and outreach. The program included paid media and website redesign to educate the public about the effects of stormwater runoff on water bodies and the simple steps that the public can take to reduce these effects.

As in previous years, key messages of the campaign have remained the same, and include stormwater runoff and stormwater systems education, tips on prevention methods related to pet waste, car washing, fertilizer/chemicals, and home construction erosion or debris. Within the stormwater runoff and stormwater system messaging, there has been an increasing emphasis on water volume. Marketing Partners, Inc. continues to work on a contract basis with RSEP to implement the public outreach campaign.

RSEP Communications Plan goals achieved in 2010-2011 have included:

- Complete website re-design and rebuild, including installation of Content Management System (CMS) software; new design/layout development; transfer of existing website content to the new CMS site; launch and troubleshooting of the newly designed site; and training of the selected CCRPC representative to make website content updates.
- New print creative was developed to reflect the look and feel of the new website.
- Extension of the "Soil Test" campaign in partnership with the University of Vermont (UVM) Agricultural Testing Lab to provide residents within the MS4 a free soil test. The ad campaigns drove people to the RSEP website where 261 eligible residents downloaded a printable coupon during this program year. UVM continues to track the number of coupons redeemed during paid media campaigns running in the spring and fall. Twenty-eight tests were submitted.
- The 2010 spring media campaign included a low-frequency schedule of four weeks of radio spots on VPR and WCPV; four weeks of cable TV spots; print ads in Seven Days; and four weeks of advertising on Front Porch Forum (an opt-in community e-newsletter). The spring 2010 media budget totaled \$4,988.60, a significant reduction as compared to the 2009 spring media budget.
- Another small paid media campaign was completed throughout Chittenden County in fall of 2010 that consisted of two weeks of print ads in core community papers, radio spots airing for four weeks on VPR, and four weeks of placement on Front Porch Forum. The fall 2010 ad campaign budget totaled \$7,500. This also represents a significant reduction in media budget as compared to the 2009 fall media budget.
- Compiled website and other media visibility tracking data in order to monitor outreach effectiveness.
- Continued to collaborate with partners in furthering stormwater education outreach.

**Gross Impressions/Audience Reach
Chittenden County Regional Stormwater Educational Program
Annual Review: 2010-2011 Program Year Summary**

1. Unpaid Media (Public Relations)

In program year 2010-2011, there was no public relations effort. There were no impressions measured.

2. Total Paid Media Impressions, 2010-2011 (Spring and Fall campaigns)

The 2010-2011 paid media budget was less than half of the previous program year. The number of media spots, time period that paid media appeared, and the number of media outlets were reduced.

Print: 509,569*

Cable TV: 15,444 (Nielsen program ratings)

Radio: 130,172 (based on Arbitron ratings of adult listeners age 25-54, M-F 6a – midnight)

Online: 67,800 (based on circulation reported by media outlet)

Total impressions: 722,985

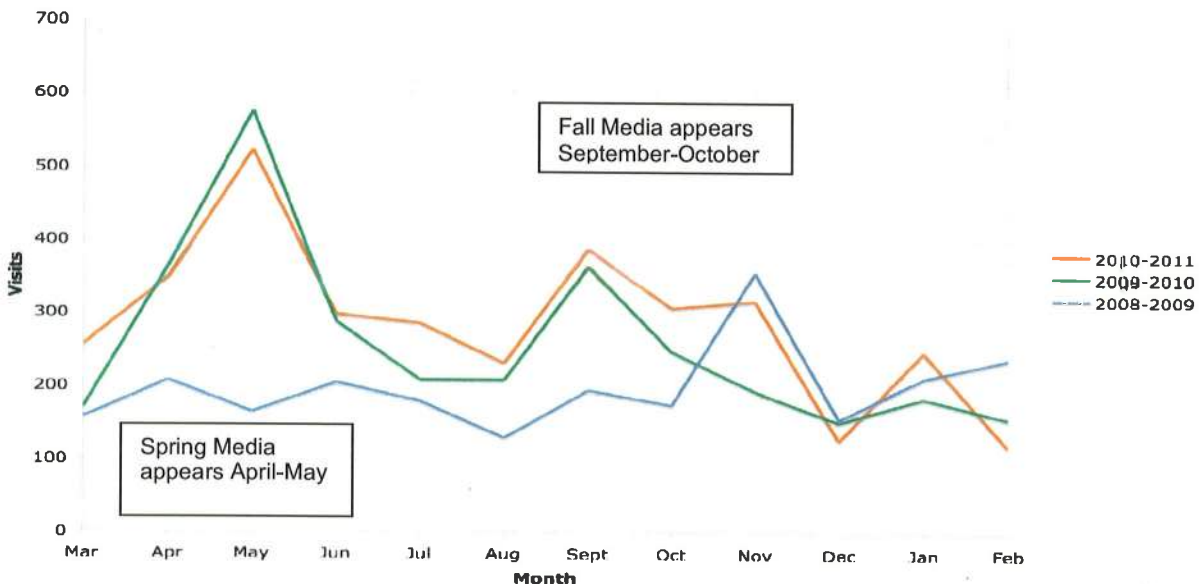
**Impressions are based on circulation as reported by outlet and an average readership of 2.34 per issue for community newspapers.*

3. Website

Below is the website visitor information for 2010, as compared to the two most recent preceding years. Website traffic increases are marked in conjunction with paid media campaigns.

Smartwaterways.org Website Visits

3-Year Comparison



NOTE: This chart includes data Google Analytics for reporting. In program years 2004-5 to 2007-8, Urchin website pageviews were reported. As noted previously, Google Analytics provides a more accurate picture of actual website traffic, hence the switch in 2008.

Minimum Control Measure #2 - Public Involvement and Participation



VYCC Students scooping Intervale 'Black Gold' into North St. Rain Gardens

The Winooski Environmental Leadership Board (WELB) led Elm Street stream clean-up efforts on Green-up Day. Two pick-up truck loads of debris were eliminated. One hundred forty stormwater catch basins were stenciled this year. A high school group (tech ed) from the Vermont Youth Conservation Corps (VYCC) completely rehabilitated the triplex rain gardens on North ST at Landry Park with support from the WPCD staff. The VYCC class also conducted stream clean efforts in Morehouse Brook just downstream of Landry Park. Finally, the same VYCC class took a guided, educational tour of the Winooski WWTF on which they were tested on certain aspects of the operation.

Status of Compliance (5.3.1)

Schedule	ID #	Best Management Practice	Status
Year 5	2-5	WELB maintained and active	Done
Year 4	3-5	Storm Drain Project Stencil > 20%	Done
Year 4	4-5	Conduct Stream Clean Up	Done

Minimum Control Measure #3 - Illicit Discharge Detection and Elimination

Over the past several years, the City has undertaken a proactive approach to eliminating Winooski's Illicit Discharges. In 2000, the EPA funded a project that involved E-coli and DNA testing of Winooski's major stormwater outfalls. Since that time, Winooski has revisited the problem outfalls and eliminated several Illicit Discharges (see annual report from 2004) through the use of Optical Brightener Monitoring (OBM). This testing procedure has proven to be simple and cost effective at identifying any IDDE containing laundry detergent, a marker for "human" sources. This method is capable of detecting sewer seeps and leaks as well as laundry hook ups, provided there is laundry detergent present. More recent data indicates that further illicit discharges appear to be very few and intermittent. In 2010 the City further developed its plan on West Canal St (and surrounding) stormwater system infrastructure for replacement. This is our most at risk system due to its age, proximity to the river, and presence of one outfall pipe experiencing structural deficiencies. The City has new construction plans to replace the system, complete with a swirl separator and the elimination of that at risk outfall pipe. The bond for that project will be brought to the voters on Town Meeting in March 2011.

The City recently updated its detailed stormwater map with the help of Grassroots GIS (Chuck and Judy Bond). The map was originally completed in 2003, and is one of the more detailed stormwater maps in the area. As Winooski cleans and further inventories the stormwater system, any field corrections noted will be updated yearly. The map also has layers of data on infrastructure that are updated continuously. Winooski recently purchased the newest edition of our GIS program. Further updates were noted during catch basin cleaning, and they were entered into the database in May 2008. More updates are scheduled to be completed in summer of 2011.

Lastly, Winooski has a formally adopted a Stormwater Ordinance with, amongst others, an IDDE section based on model ordinances and other ordinances, which were reviewed. At least one enforcement action has already occurred for this ordinance.

Status of Compliance (5.3.1)

Schedule	ID #	Best Management Practice	Status
Year 5	1-5	Update Stormwater Map	Done

Minimum Control Measures # 4 and #5 - Pre and Post Construction Site Stormwater Management

The Winooski Development Project 1st, 2nd, and 3rd phases are complete. The project Consultant identified and reported construction activities to the State concerning Construction General Permit number 3161-9001 issued May 19, 2004 for large construction sites during the most recent phase of the construction. Except for permit # 3161-9001, there were no other construction activities, large or small, in the city which were greater than or equal to one acre of disturbance. The city has adopted an Erosion Control Ordinance as part of the overall Stormwater ordinance, as well as a checklist to be filled out when the zoning department issues small construction permits. This checklist was modeled from the City of Burlington's erosion and sediment control checklist. The city adopted the ordinance this year and has implemented the checklist.



Figure 1: Erosion controls in place at Barlow Place construction site

Status of Compliance (5.3.1)

Schedule	ID #	Best Management Practice	Status
Year 5	1-5	Identify and report Const. activities	Done
Year 5	2-5	Assist the State in inspecting permitted sites	Done
Year 5	3-5	Properly permit City construction activities	Done
Year 5	5-5	adopt an erosion control ordinance	Done

Minimum Control Measure #6 - Pollution Prevention/Good Housekeeping for Municipal Operations

The Water Pollution Control Department completed their efforts to clean, stencil, assess, and inventory all publicly owned catch basins in the city in 2008. In 2010 we continued our efforts in our 'Year 2' section and cleaned, stenciled, assessed, and inventoried over 140 additional catch basins. The city will start 2011 at the third year of the five year cycle with the goal of 20% or more catch basins cleaned per year as outlined in the Stormwater Management Plan. At least a dozen catch basins that didn't meet conditions assessment standards were rehabilitated or replaced. The 17 catch basins that have storm drain filters were maintained, with all filters being replaced both spring and fall this year. Of these 17 catch basins, 14 are in the Morehouse brook watershed, 2 are at the City hall parking lot, and 1 is located at the wastewater facility. Three more catch basin filters were fabricated and placed in targeted locations within the Morehouse Brook watershed. The City assisted the Downtown Redevelopment Association in their efforts to remove sediment from their stormwater pond, allowing the reissuance of the associated 9010 permit.



WPCD staff cleaning and stenciling catch basins

Street sweeping efforts continued spring through fall, with the street sweeper that we bought in 2004. This regenerative air type sweeper picks up finer particulates from the street in comparison to the older mechanical version. The entire 38 curb miles of the City were swept regularly, with targeted, high priority areas (Mallets Bay Ave and the downtown construction area) being swept once a week, spring through fall. A total of **255 cubic yards of debris** was removed by street sweeping in 2010. Training continued for city staff, most notably, through a workshop organized by the RSEP and conducted at the CCRPC in July 2010.



The City of Winooski's regenerative street sweeper

Status of Compliance (5.3.1)

Schedule	ID #	Best Management Practice	Status
Year 5	1-5	Clean and inventory Catch Basins >20% yr	Done
Year 5	2-5	Complete CB inventory in MS4 area	Done
Year 5	3-5	Train City Staff	Done
Year 5	5-5	Sweep City Streets Spring & Fall	Done


5.3.3 Looking ahead, we will continue following the schedule as outlined in our stormwater management plan.

5.3.4 There are no major changes proposed to our Stormwater Management Plan at this time. We will notify the director in the event we propose or amend changes to our plan.

5.3.5 We are not relying on another government entity to satisfy our permit obligations, other than the RSEP program.

This report was prepared by Erik Bailey,  WPCD Superintendent

6.7 Signatory requirement – Original NOI, Principal executive officer

This report approved by ^{Katherine R.} Kathy Decarreau,  City Manager



An angler fly-fishing for trout at Winooski Falls