



# Stormwater Management Plan

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*City of South Burlington, Vermont*

*November 23, 2015 (revision approved on July 26, 2016)*



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## **Introduction**

This Stormwater Management Plan (SWMP) documents the City of South Burlington's strategy to address and reduce the impacts of stormwater runoff. The preparation of this plan is required by the Vermont Municipal Separate Storm Sewer System (MS4) permit number 3-9014 issued by the Vermont Department of Environmental Conservation (DEC) on December 5, 2012. This plan contains all the required elements described in the 2012 Vermont MS4 permit and is intended to minimize the adverse impact that unmanaged stormwater runoff from the City of South Burlington can have on water quality.

## **Impacts of Stormwater**

The impervious surfaces created by the buildings and pavement that make up our urban areas causes rainwater and snowmelt to flow quickly over the landscape rather than soak naturally into the soil. This can lead to changes in stream flow, increase flooding, damage private and public property, erode stream banks, and destroy aquatic habitat. As runoff flows over impervious surfaces it can collect pollutants such as sediment, petroleum products from automobiles, nutrients from lawn fertilizer, trash, bacteria from pet waste, soaps, detergents, and other chemicals. These pollutants are then carried by runoff to lakes and streams. The combined impacts of hydrologic change in streams and water pollution can have serious negative impacts for water bodies.

## **Municipal Background**

The City of South Burlington is located in the northwest corner of Vermont along the shores of Lake Champlain (Figure 1). The City covers 29.6 square miles and includes numerous commercial enterprises that are critical to Vermont and the region, including the Burlington International Airport. During the 1960's South Burlington was the fastest growing municipality in the State of Vermont. The City has continued to grow since that time and with a population of 18,017 (2010 census data) is one of Vermont's largest municipalities.

## **Watershed Descriptions**

All of South Burlington drains to Lake Champlain (Figure 2). Runoff from the City reaches the lake via the Winooski River and its tributaries, or small streams that drain directly to the Lake (Figure 3).

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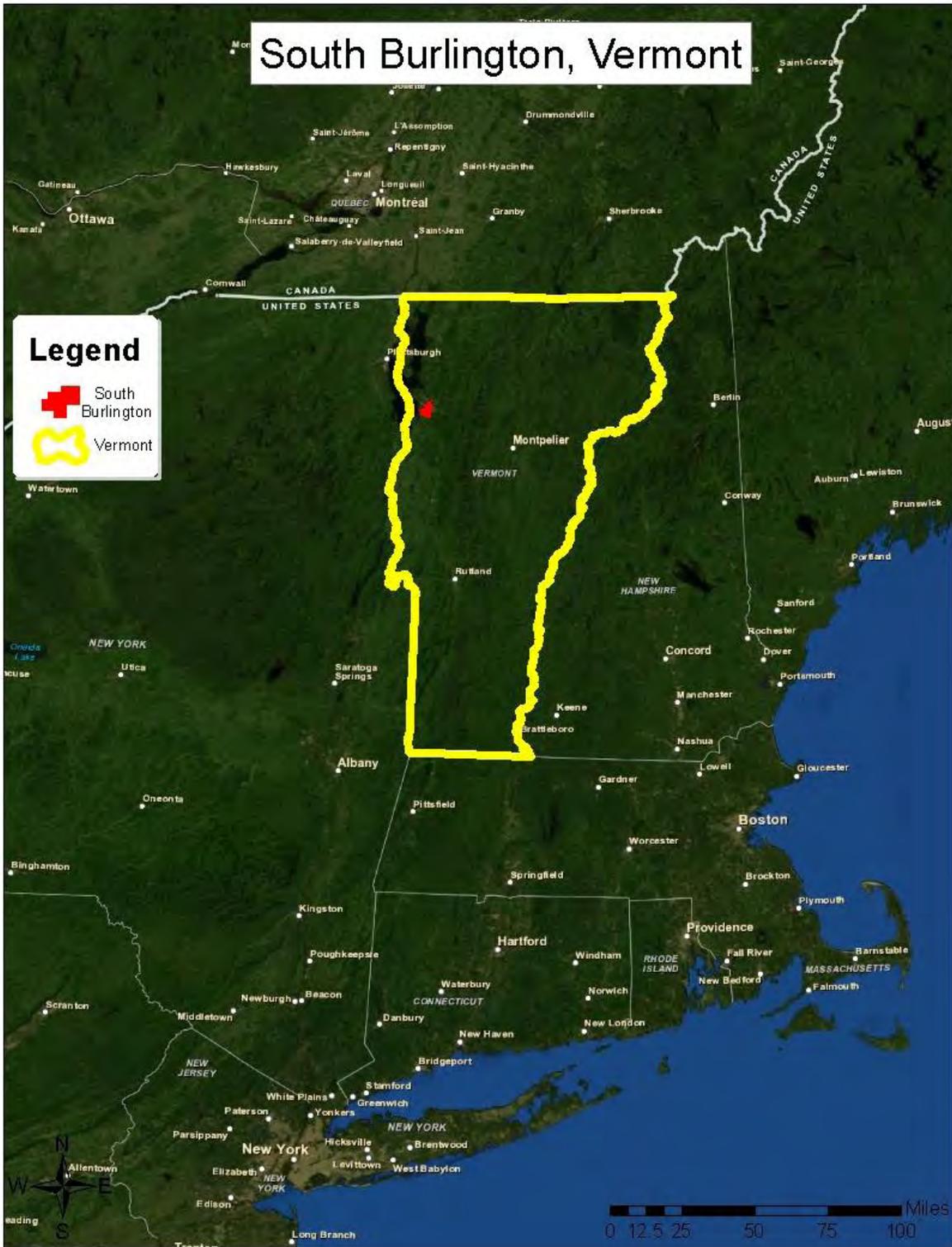


Figure 1 – City of South Burlington Vermont Location Map

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**Figure 2 - South Burlington Watershed Summary Information**

<u>Watershed</u>	<u>Total Watershed Drainage Area (Acres)</u>	<u>Drainage Area in South Burlington (Acres)</u>	<u>Watershed Impervious Area (Acres)</u>	<u>Total Number of Stormwater Outfalls in the Watershed</u>	<u>Number of South Burlington Owned Stormwater Outfalls in the Watershed</u>	<u>303(d) Listed Pollutants</u>
Lake Champlain (Citywide)	5,269,760	10,640	1,965	490	202	Phosphorus
Winooski River	691,200	4,436	646	107	64	Mercury
Muddy Brook	13,594	2,384	192	35	18	Nutrients, Temperature
Potash Brook	4,673	4,511	968	315	112	Stormwater, E. coli
Bartlett Brook	704	667	134	56	19	Stormwater
Centennial Brook	884	587	153	36	20	Stormwater
Munroe Brook	3,540	327	19	4	4	Stormwater
Englesby Brook	609	91	32	0	0	Stormwater, E. coli
North Brook	218	218	91	0	0	None
Lakeshore Direct Drainages	661	384	74	8	3	None

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Figure 3 - Map of South Burlington Watersheds

## Stormwater Management Program

The MS4 permit is a federally mandated stormwater permit under the National Pollutant Discharge Elimination Systems (NPDES) program. In Vermont, the MS4 permit program is administered by the Department of Environmental Conservation (DEC), which is a division of the Agency of Natural Resources (ANR). The MS4 permit is issued by DEC for a five year period. The primary mechanism by which the City of South Burlington meets requirements of the MS4 permit is through the activities of the South Burlington Stormwater Utility.

## Stormwater Discharges

The MS4 permit authorizes discharges of stormwater to enter waters of the State and waters of the United States. The following non-stormwater discharges are allowed to co-mingle with discharges of stormwater provided they are not substantial contributors of pollution to the MS4:

- Water line flushing
- Landscape irrigation
- Diverted stream flows
- Rising ground waters
- Uncontaminated ground water
- Uncontaminated pumped ground water
- Discharges from potable water sources
- Foundation drains
- Air conditioning condensate
- Irrigation water
- Springs
- Water from crawl space pumps
- Footing drains
- Lawn watering
- Flows from riparian habitats and wetlands, and
- Discharges from firefighting activities.

Any discharge to the City's MS4 that is not contained in the above list, or covered under a separate NPDES permit, will be treated as illicit discharges and dealt with according to requirements of the MS4 permit and regulations established in City ordinance.

## Stormwater Utility Description

The City of South Burlington was the first municipality in Vermont to create a Stormwater Utility. The Utility was created in order to address increasing environmental problems and regulatory requirements associated with stormwater runoff. The South Burlington Stormwater Utility (SBSU) is a division of the Department of Public Works (DPW) and its operation is overseen by the Deputy Director of Public Works, who is also designated as the Stormwater Superintendent. The SBSU collects fees from all developed property in the City. This funding is used to manage the City's stormwater program.

Additional information on the SBSU can be found on line at [www.sburlstormwater.com](http://www.sburlstormwater.com) or by calling (802) 658-7961.

### **Six Minimum Measures and Measurable Goals**

Much of the SBSU's time is spent complying with the MS4 permit requirements called the "six minimum measures". These measures include:

1. Public Education and Outreach
2. Public Participation/Involvement
3. Illicit Discharge Detection and Elimination
4. Construction Site Runoff Control
5. Post-Construction Runoff Control
6. Pollution Prevention/Good Housekeeping.

The MS4 permit requires that the City identify Best Management Practices (BMPs) by which it will achieve the goals of each minimum measure. The City must also provide a rationale regarding why each BMP was selected and a measureable goal for each BMP.

### **Public Education and Outreach on Stormwater Impacts**

In order to comply with minimum measure 1, Public Education and Outreach, the City must implement a public education program that distributes educational materials to the community. In order to meet this requirement the City will take the following steps:

- ❖ Maintain a website dedicated to stormwater management – The City previously created a web site ([www.sburlstormwater.com](http://www.sburlstormwater.com)) dedicated to stormwater management in South Burlington. The site has proven to be an excellent way for the City to communicate directly with the public on topics related to stormwater, including updates on stormwater improvement projects. Use of the web site will be continued.
  - Measureable Goal: The City's annual report will contain information on web site visitors and other web statistics.
- ❖ Participate in the Regional Stormwater Education Program (RSEP) – The Vermont MS4 communities previously worked together to create the RSEP program. The RSEP combines the resources of multiple MS4 communities to create and distribute educational materials related to stormwater. RSEP is able to distribute this information to a wider audience than any municipality could reasonably achieve on its own. The City is a signatory on the RSEP Memorandum of Understanding (MOU) that runs from 2013 to 2018 (Appendix A).
  - Measureable Goal: The City will continue to participate on the RSEP steering committee and make payments in accordance with the terms of the MOU. The City will provide a summary of RSEP activities, RSEP web site statistics ([www.smartwaterways.org](http://www.smartwaterways.org)), and a total of the City's cash contributions to the RSEP program on an annual basis.

### Public Involvement and Participation

In order to comply with minimum measure 2, Public Involvement and Participation, the City must implement a public involvement/participation program designed to engage the public in stormwater issues. In order to meet this requirement the City will take the following steps:

- ❖ Participate in the Chittenden County Stream Team (CCST) program - The CCST program leverages the resources of multiple communities to create a more engaging public participation program than any single municipality could reasonably achieve on its own. The City will continue to participate on the CCST steering committee and make payments in accordance with the terms of the CCST MOU (Appendix B). More information on the CCST can be found on-line at: <http://www.ccstreamteam.org/>
  - Measureable Goal: The City will report annually on CCST activities including the number of volunteers that participated in stormwater related events and a total of the City's cash contributions to the CCST program.
- ❖ Storm drain stenciling program - The City previously established a storm drain stenciling program. As part of this program, metal markers that contain a "No Dumping" or similar water quality message are affixed to the storm drain grates. In some cases, the asphalt adjacent to the storm drain is painted with a similar message. These "stencils" will be installed/painted by SBSU staff and public volunteers whenever possible.
  - Measureable Goal: The City will continue its storm drain stenciling program and report the number of new "no dumping" labels put in place on an annual basis.

### Illicit Discharge Detection and Elimination

In order to comply with minimum measure 3, Illicit Discharge Detection and Elimination (IDDE), the City must develop, implement, and enforce a program to detect and eliminate non-stormwater discharges that may be entering the MS4. In order to meet this requirement the City will take the following steps:

- ❖ Maintain a storm sewer systems map – Knowing the location and type of structures that make up the City's storm sewer system is critical to its maintenance. The City previously developed a Geographic Information System (GIS) based map of stormwater infrastructure located in South Burlington. The SBSU will continue to maintain and improve this information and make it available upon request.
  - Measureable Goal: The City's annual report will contain information on the number of stormwater drainage structures, miles of stormwater conveyance, and stormwater outfalls that are located in South Burlington. Digital versions of the map will be made available upon request.
- ❖ Conduct video inspections of the storm sewer system – The DPW previously purchased equipment that enables us to complete video inspections of our underground pipe systems. While above ground inspections are still a valuable tool, a proactive underground pipe inspection program will allow the SBSU to find maintenance issues or illicit connections that may otherwise have gone unnoticed until they resulted in a serious problem.

- Measureable Goal: The City will continue its video inspection program and report the linear feet of pipe inspected each year.
- ❖ Conduct stormwater outfall inspections – Evaluating the water at stormwater outfalls allows the City to identify potential locations where illicit discharges may be entering the MS4. The City previously developed a program to inspect City owned stormwater outfalls and will continue this program. Should the City determine that there are significant water quality concerns at an outfall it will take proactive steps to identify the source of the problem. This may include video inspection of the upstream system or sample collection and analysis.
  - Measureable Goal: The City will inspect no less than 50% of its stormwater outfalls each year and report the number of inspections completed annually.
  - Measureable Goal: The City will report the number of outfall samples collected annually. Sample results will be made available upon request.
- ❖ Enforce existing ordinances regulating non-stormwater discharges to the MS4 –The City’s “Ordinance Regulating the Use of Public and Private Sanitary Sewerage and Stormwater Systems” was last amended on October 5, 2015. The ordinance makes it clear that illicit discharges are not allowed to enter the stormwater system (see Article V Section 5).
  - Measureable Goal: The City will report the number of illicit discharges encountered each year and provide a summary of the discharge and actions taken to correct the situation.
  - Measureable Goal: The City will continue to enforce its existing ordinance.
  - Measureable Goal: The City will review its existing ordinance and make any updates required by the new permit within 2 years of authorization under the 2012 MS4 permit.
- ❖ Inform public employees, businesses and the general public of hazards associated with illegal discharges and improper disposal of waste – The City’s stormwater web site has a section dedicated to detection and elimination of illicit discharges. Information on the site indicates how illicit discharges were successfully eliminated and describes the resulting benefits to water quality.
  - Measureable Goal: The City will dedicate a section on its stormwater website (<http://www.sburlstormwater.com/stormwater-projects/>) to illicit discharge detection and elimination success stories.
- ❖ Coordination with drinking water suppliers – The Champlain Water District (CWD) operates the potable water system within the City of South Burlington MS4 area. As part of their normal preventative maintenance procedures, the district must annually flush the lines and fire hydrants in the water system. This flushing is necessary to keep the pipes clean and prevent accumulation of silt and tuberculation in the pipes that would be stirred up during a hard use (e.g. firefighting) of the system. Regular flushing helps ensure the reliability of water system components and that customers receive high quality, sanitary potable water at their tap. The CWD has BMPs in place to ensure that their maintenance activities will not result in discharges to the MS4 that could contribute to water quality issues. Example BMPs include the use of a hydrant diffuser and dechlorinator, as applicable and positioning diffusers to prevent erosion when flushing hydrants.

- **Measureable Goal:** The CWD will continue to use BMPs to prevent pollution from entering the MS4. Before the end of the permit cycle the City will meet with CWD to review their BMPs relating to discharges of drinking water to the MS4. If necessary, improvements will be made to CWD BMPs.

### **Construction Site Stormwater Runoff Control**

In order to comply with minimum measure 4, Construction Site Stormwater Runoff Control, the City must develop and enforce a program to reduce pollutants originating at construction sites from entering the MS4. The City recognizes construction site runoff control as a key means of protecting and improving surface water quality in South Burlington. Therefore, the City will assist the ANR in implementing requirements of the Construction General Permit (3-9020) and maintain its own standards related to construction erosion control. In order to meet this requirement the City will take the following steps:

- ❖ **Implement local regulations related to erosion control** – The City previously established standards dealing with erosion from all construction sites. These requirements are codified in Article 16 (Construction and Erosion Control Standards) of the Land Development Regulations (LDRs). Through this provision in the LDRs, the City has the authority to issue zoning violations and to pursue enforcement of construction and erosion control non-compliance on sites of all sizes in Vermont Environmental Court.
  - **Measureable Goal:** Continue to enforce the existing LDRs pertaining to Construction and Erosion Control Standards.
- ❖ **Conduct construction site inspections** – SBSU staff will be trained in the appropriate use of construction site BMPs and conduct inspections to ensure that construction contractors working in the City are implementing BMPs in compliance with local regulations and any State permits that their project may be subject to.
  - **Measureable Goal:** The City will report the number of construction site inspections it conducts each year.
- ❖ **Distribute construction BMP handout** – The City will develop a simple brochure that summarizes local regulations regarding stormwater runoff from construction sites. The brochure will also provide information on BMPs for construction sites and identify sources of additional information.
  - **Measureable Goal:** Before the conclusion of permit year 3 the City will develop a simple informational brochure that can be distributed to construction contractors working in the City.
  - **Measureable Goal:** After year 3 of the permit, the City will report the number of building permits and construction site BMP brochures it distributes each year.
- ❖ **Assist the ANR with implementation of its Construction General Permit (3-9020)** – The Vermont ANR has issued General Permit 3-9020 for stormwater runoff from construction activities which result in land disturbance of greater than 1 acre. The City will assist ANR with its implementation of this program.

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- **Measureable Goal:** When a project will disturb greater than 1 acre of land the City will include in its findings of fact a note that we believe the project requires a State of Vermont Construction General Permit (3-9020). A summary of the projects in South Burlington that will exceed 1 acre of disturbance will be reported each year.

### Post Construction Stormwater Management for New Development and Redevelopment

In order to comply with minimum measure 5, Post Construction Stormwater Management, the City must develop and enforce a program to control stormwater runoff from new and re-development projects. This goal is primarily achieved through the actions of the SBSU and its staff. One of the SBSU's primary functions is to maintain STPs that were installed to manage post-construction stormwater runoff. In order to meet this requirement the City will take the following steps:

- ❖ **Maintain an updated list of the Stormwater Treatment Practices (STPs) covered by the City's MS4 permit authorization -** The SBSU maintains numerous STPs located throughout the City. All STPs that receive permit coverage under the City's MS4 permit authorization are included in the SWMP in Figure 4. The list included in Figure 4 will be updated as the City assumes responsibility for more stormwater systems. The City will report on an annual basis all new STPs for which it has assumed responsibility.

**Figure 4 – Stormwater Treatment Practices Maintained by the City of South Burlington and Covered Under the MS4 Permit**

<b>Stormwater Treatment Practice Name</b>	<b>Street</b>	<b>State Stormwater Permit</b>	<b>SBStrmID</b>	<b>Year SWU Began Maintenance</b>
Bartlett Bay Stormwater Treatment System	Bartlett Bay Rd	None	Pd0019	2002
Butler Farms Pond	Marcy Street	2-0312	Pd0134	2012
City Hall Bio-Retention Area	Dorset St	2-0909	BR0002	2014
City Hall Underground Infiltration	Dorset St	2-0909	ST0026	2014
Dorset Park Pond	Swift St	1-1033	Pd0032	2007
Farrel Street Swirl Separator	Farrell St	5080-INDO.R	Sw0001	2008
Farrell Park Constructed Wetland	Swift St	None	Pd0091	2007
Farrell Street Bio-Retention	Farrell St	5080-INDO.R	Pd0030	2007
Farrell Street Pond	Farrell St	5080-INDO.R	Pd0029	2007
Hayes Avenue Stormwater Detention Basin	Kinsington Street	6553-INDO	Pd0072	2013
Kennedy Drive Pond 1	Kennedy Dr	1-1582	Pd0042	2007
Kennedy Drive Pond 2	Kennedy Dr	1-1582	Pd0043	2007
Kennedy Drive Pond 3	Kennedy Dr	1-1582	Pd0044	2007
Kennedy Drive Pond 4	Kennedy Dr	1-1582	Pd0045	2007
Kennedy Drive Pond 5	Kennedy Dr	1-1582	Pd0046	2007
Kennedy Drive Pond 6	Kennedy Dr	1-1582	Pd0047	2007
Kennedy Drive Pond 7	Kennedy Dr	1-1582	Pd0048	2007
Mayfair Park Swirl Separator	Mayfair Street	7226-INDO	SW0008	2014
National Guard Avenue	National Guard Avenue	6627-9015	Pd0143	2013
Oak Creek Village Micropool (Pond 1)	Hinesburg Rd	1-0464	Pd0111	2009
Oak Creek Detention Pond 2	Mill Pond Lane	1-0464	Pd0054	2012
Oak Creek Detention Pond 3	Moss Glen Lane	1-0464	Pd0055	2012
Williston Road Expansion Dry Swale	Williston Road	6676-INDS	IA0025	2016
Winding Brook Pond	Winding Brook Dr	6391-INDS	Pd0041	2010

- ❖ Inspect and ensure the proper maintenance of all STPs covered under the City’s MS4 permit authorization – The SBSU will inspect and ensure proper maintenance of all STPs included in Figure 4.
  - Measureable Goal: The City will ensure proper maintenance of all STPs included in Table 4. These STPs will be inspected at least twice a year. The City will report the number of inspections conducted on an annual basis. The results of these inspections will be made available upon request.
  - Measurable Goal: The City will track the number of new STPs constructed by the City and the existing STPs that were transferred to the City and report this information annually.
- ❖ Implement local regulations related to post-construction stormwater management - The City’s Land Development Regulations (LDRs) include requirements for stormwater controls to minimize water quality impacts from runoff on projects of any impervious acreage, irrespective of the area disturbed. The City addresses these needs through the following requirements in the LDRs: Article 12 (surface water protection, including stream buffers), Article 14 (site plan review; includes trash management, snow storage areas, and landscaping standards), and Article 16 (construction and erosion control standards). These regulations apply City-wide to all new development, redevelopment and construction and are enforceable in Vermont Environmental Court.
  - Measureable Goal: Continue to enforce the stormwater management regulations contained in the LDRs.
  - Measurable Goal: Before the conclusion of permit year 3, the City will evaluate the existing Stormwater Management Overlay district found in section 12.03 of the LDRs and determine what changes could be made to improve and expand these regulations. Progress towards this goal will be reported annually until completed.
  - Measurable goal: City staff in the department of planning and zoning and the SBSU will ensure that stormwater management related regulations found in the City’s LDRs are properly interpreted and implemented during the City’s project approval process.
- ❖ Assist the ANR with implementation of its stormwater permitting program (3-9015) – The Vermont ANR has issued General Permit 3-9015 that regulates post-construction stormwater runoff. All projects that create greater than 1 acre of impervious area must obtain permit coverage from the ANR. The City will assist ANR with its implementation of this program.
  - Measureable Goal: When a project will create greater than 1 acre of impervious area the City will include in its findings of fact a note that we believe the project requires a State of Vermont General Stormwater Permit (3-9015). A summary of the projects in South Burlington that will create 1 acre of impervious area will be reported each year.

### **Pollution Prevention / Good Housekeeping for Municipal Operations**

In order to comply with minimum measure 6, Pollution Prevention / Good Housekeeping for Municipal Operations, the City must evaluate the systems it has in place to prevent and reduce polluted runoff from municipal operations. The City must also develop and enforce a program to control stormwater

runoff from new and re-development projects. In order to meet this requirement the City will take the following steps:

- ❖ Proper disposal of animal waste - The City is responsible for cleaning up animal wastes left on City property, when they are not appropriately taken care of by residents. In order to facilitate residential assistance, the City hands out pet waste bags when dog licenses are purchased from City Hall. In addition, City parks and other recreation areas have permanent pet waste bag dispensers and signage reminding residents to pick up after their pets.
  - Measureable Goal: The City will report the number of pet waste bags distributed on an annual basis.
- ❖ Participate in the Municipal Compliance Assistance Program (MCAP) – Municipal staff and facilities are subject to many different state and federal environmental regulations. In order to ensure continued compliance with these regulations the City works with ANR staff in the Environmental Assistance Office to identify shortfalls in current practices and design solutions to address any issues that could result in non-compliance with environmental regulations.
  - Measureable Goal: The City will work with ANR staff and complete an MCAP inspection before the end of the 5 year permit cycle.
- ❖ Inspection of City Maintained STPs – The SBSU maintains numerous STPs located throughout the City. As part of normal maintenance activities, the City conducts inspections of these STPs to ensure that they are functioning properly. Some of these STPs are subject to State permits that also require inspections. In order to minimize efforts related to duplicative inspection and reporting requirements, inspection information for all City maintained STPs will be relayed to DEC as part of the MS4 annual report.
  - Measureable Goal: The City will inspect all STPs for which it has maintenance responsibility at least twice a year. The City will report the number of inspections conducted on an annual basis. The results of these inspections will be available upon request.
- ❖ Street sweeping - The Department of Public Works and Stormwater Utility are responsible for the maintenance of the streets, bike paths, and municipal parking lots within the City. Maintenance of these facilities includes sweeping on a regular basis. The City's current practice is to sweep all curbed roads, curbed paths, and parking lots with curb twice per year. The first sweeping occurs as soon as practicable following snowmelt in the spring. The latter occurs as late in the fall as possible to allow for the collection of leaves. Main roads are swept more frequently, as staff time allows or as needed.
  - Measureable Goal: Sweep all curbed streets, curbed bike paths, and parking lots with curb that the City owns at least twice per year. The total volume of material removed will be reported annually.
- ❖ Storm drain cleaning – The SBSU is responsible for maintenance of the publicly owned stormwater drainage system in South Burlington. The municipality owns over 3,218 storm drains and 96 miles of pipe, ditch, or other stormwater conveyance. If the system is not properly maintained it can result in increased pollution and flooding issues.

- Measureable Goal: The SBSU will clean a minimum of 250 storm drains and the associated piping each year. The total volume of material removed will be reported annually.
- ❖ Storm drain inspections - The SBSU is responsible for maintenance of the publicly owned stormwater drainage system in South Burlington. Part of the SBSU's established maintenance program includes regular inspection of drainage structures to ensure their proper operation and condition.
  - Measureable Goal: Inspect a minimum of 350 storm drains each year. The total number of storm drains inspected will be reported annually.
- ❖ Properly dispose of materials collected from street sweeping, pond maintenance, and the stormwater drainage system – The City previously developed and implemented procedures for disposing of materials collected from street sweeping, maintenance of STPs, and cleaning of the stormwater drainage system (Appendix C).
  - Measureable Goal: Continue to implement the City's approved procedure for handling of materials collected during street sweeping, maintenance of STPs, and cleaning of the stormwater drainage system.
- ❖ Minimize winter sand and salt usage – The DPW's current practice is to manage winter snow and ice with the application of salt products and normal plowing practices. All of the City's salt trucks have calibrated systems on board to regulate the flow of salt from the trucks. In the winter of 2008, the City began purchasing equipment that allows the use of a liquid chloride salt product. Treating road salt with this liquid chloride mixture prior to spreading on the road reduces the amount of salt lost to scatter (i.e. salt that bounces off the road). In addition, application of liquid chloride reduces the operating temperature of the salt allowing it to work at more effective at lower temperatures. These practices will reduce the total amount of salt needed to achieve similar results. The use of the liquid chloride is currently being expanded to the entire fleet.
  - Measureable Goal: The salt delivery systems on plow trucks will be calibrated at the beginning of each winter to ensure proper distribution of salt.

### **Technical Assistance for Low Impact Best Management Practices**

Section IV.C.1(e)(4) of the MS4 permit required that within two years of receiving authorization under the 2012 MS4 permit the City will develop a program to identify opportunities for and provide technical assistance related to low impact BMPs to landowners in South Burlington. The City has met this requirement in the following ways:

- In May 2009 the City developed a LID guidance manual to support requirements in the Land Development Regulations (LDRs). The South Burlington planning commission is currently in the process of revising the City's LDRs to require the use of infiltration or LID practices on a City wide basis. The revised language includes reference to LID and the existing Guidance Manual (available for download at: <http://www.sburlstormwater.com/download-material/>)

- The Chittenden County Stream Team (CCST) and Regional Stormwater Education Program (RSEP) provide on-going education and technical support related to LID practices. The City participates in these programs and makes financial contributions to support this work. In addition, these organizations help the City meet MS4 minimum control measures 1 and 2. Additional information on these programs can be found at [www.smartwaterways.org](http://www.smartwaterways.org) and <http://www.ccstreamteam.org/>.

### **Regulation of Development in Stream Corridors of Stormwater Impaired Waters**

Section IV.C.1(e)(5) of the MS4 permit requires that within two years of receiving authorization under the 2012 MS4 permit the City will prepare a report on the legal authorities or strategies that have been adopted to protect and regulate development in the stream corridors of stormwater impaired waters.

Section IV.C.1(e)(6) of the MS4 permit requires that within two years after receiving authorization under the MS4 permit that the City will prepare a plan for outlining options for enhanced protection of stream corridors in stormwater impaired waters. The City of South Burlington meets this requirement in the following way:

- In December 2007 the City prepared a “Stream Buffer Report” that detailed existing encroachments into stream buffers and evaluated the sufficiency of the City’s existing stream buffer protections. A copy of this report is available at: <http://www.sburlstormwater.com/download-material/>

### **Stream Flow Monitoring**

Section IV.C.1(e)(7) of the 2012 MS4 permit requires that the City prepare a plan for flow monitoring in stormwater impaired streams. The City’s plan for completing this work is as follows:

- Work with Vermont DEC to hire a contractor qualified to perform stream flow monitoring services for all MS4s. This task was completed in the summer 2015.
- Sign an MOU with Vermont DEC related to paying for stream flow monitoring services. Anticipated for winter 2015.
- Make payments to Vermont DEC per the signed MOU. The City will begin making payments per the schedule agreed upon on the MOU.
- Once data collection begins, the City will evaluate the data collected as part of the stream flow monitoring MOU. Anticipated to begin in 2016.

### **Municipally Operated Industrial Facilities**

The City owns facilities that are subject to the ANR’s Multi-Sector General Permit (MSGP). These facilities are listed below:

- ❖ Bartlett Bay Wastewater Treatment Plant (4889-9003)
- ❖ Airport Parkway Wastewater Treatment Plant (4888-9003)

These facilities have obtained coverage under the MSGP. Management of these facilities is the responsibility of the City's Wastewater Superintendent. Stormwater Utility staff provides assistance as appropriate.

## Impaired Waters and TMDL Requirements

Impaired waters are those waters that the Secretary of ANR has identified as not meeting Vermont Water Quality Standards. Once a waterbody is designated as impaired, the State of Vermont lists it on the Vermont "303(d) list" and submits this information to the U.S. Environmental Protection Agency (EPA). In some cases, ANR will prepare a Total Maximum Daily Load (TMDL) for an impaired waterbody. A TMDL is a calculation of the maximum amount of a particular pollutant that a waterbody can receive and still meet water quality standards. Below is a description of each waterbody in South Burlington with an approved TMDL and a summary of the additional actions that the City will take to comply with TMDL requirements.

## Stormwater Impaired Watersheds and Flow Restoration Plans

The City of South Burlington will develop Flow Restoration Plans (FRPs) for the following stormwater impaired watersheds: Bartlett Brook, Centennial Brook, Englesby Brook, Munroe Brook, and Potash Brook. Once developed, each approved FRP will be included in the SWMP as an appendix.

## Schedule

The City will complete FRPs for the stormwater impaired watersheds listed above within 3 years of receiving authorization under the 2012 MS4 permit.

## Regulatory Analysis and Assistance

Section IV.C.1(e)(1)(e) of the permit requires that the City identify the regulatory assistance needed from the ANR Secretary in order to effectively implement the FRP. Section IV.C.1(e)(3) of the permit requires that the City submit a plan for addressing expired State stormwater permits discharging to the City's MS4 system. This section also requires that this work be completed within 6 months of the City receiving authorization under the 2012 MS4 permit (April 1, 2014 based on the City's October 1, 2013 authorization). In order to comply with these permit requirements, the City will work with ANR to take the following steps:

- Exclusively residential properties with expired and current State stormwater permits (e.g. 3-9015, 3-9010, 3-9030, and INDS permits): The City will work with willing property owners to upgrade their systems in order to transfer responsibility of these permits to the City. This includes maintenance of the stormwater systems described under the existing permit. At the time of transfer the existing state stormwater permits will be superseded by the City's Federal MS4 permit coverage. These systems will be included in the list of City Maintained STPs (Figure 4) described in minimum measure 5 "Post Construction Stormwater Management For New Development and Redevelopment" of the City's SWMP. Due to the fact that transfer of these systems and permits will require the existing property owners grant the City easements for

access and maintenance some property owners may not be willing to transfer the permit to the City. In these situations, the City will request that Vermont DEC use its Residual Designation Authority (RDA) permitting authority to permit these properties.

- Commercial properties with expired and current State stormwater permits (e.g. 3-9015, 3-9010, 3-9030, and INDS permits): The City will work with willing property owners to upgrade their systems to allow the City to provide coverage for these properties under its existing MS4 permit. In these situations, the existing permittee will continue to conduct maintenance of the system, but the City will ultimately be responsible for ensuring that the systems are maintained. State permit coverage of these systems will be superseded by coverage under the City's MS4 permit. Some property owners may not be willing to allow the City access to their property for the purpose of inspection. In these situations, the City will request that Vermont DEC use its Residual Designation Authority (RDA) permitting authority to permit these properties.
- Properties identified as part of a FRP that do not have existing State stormwater permit coverage: Based on requirements defined in the FRP for individual watersheds the City may request that DEC use its RDA authority to achieve improved stormwater management and treatment on properties that were not previously permitted.

### Reporting

Once FRPs are approved by the Vermont DEC the City will include updates on FRP implementation in its annual report.

### Lake Champlain Phosphorus TMDL

All of South Burlington ultimately drains to Lake Champlain. Vermont's 303(d) list of impaired waters indicates that Lake Champlain is impaired due to excessive phosphorus. The state of Vermont had an established TMDL for Lake Champlain but it was reconsidered and disapproved by EPA in 2011. EPA is currently drafting a new TMDL for the Lake. This section of the SWMP will be updated when the Lake Champlain Phosphorus TMDL and implementation plan is approved. This section will include a Phosphorus Control Plan (PCP), or similar information as required by the approved TMDL.

### Review and Updates to the SWMP

In order for the SWMP to remain effective it must be reviewed and updated on a regular basis.

### Annual Reporting

The City will submit an annual report to the Vermont ANR on or before April 1 of each year. The report will detail the City's efforts over the previous calendar year and include the following information:

- The status of the City's compliance with MS4 permit conditions
- An assessment of the appropriateness of the BMPs identified in the SWMP
- A report on progress towards implementation of the BMPs identified in the SWMP
- A report on the progress of FRP development and implementation
- A summary of stream flow monitoring data in the stormwater impaired watersheds

- A summary of stormwater activities that the City plans to undertake during the next reporting cycle (i.e. calendar year)
- Proposed changes to the City’s approved SWMP
- Notice that the City is relying on another entity to satisfy permit obligations.

### Amendments

Amendments or changes to the City’s SWMP will be made in writing to ANR and contain the signatures of appropriate City staff. These changes may occur at any time, but efforts will be made to coordinate these requests with scheduled reporting activities. Appendix I contains a summary of amendments made to the City’s SWMP.

### Individual Responsible for Implementation

The South Burlington City Manager is ultimately responsible for implementation of the City’s SWMP. The Stormwater Superintendent, Deputy Director of Public Works, Director of Public Works, City Health Officer, Director of Planning and Zoning, and Wastewater Superintendent are responsible for various subcomponents of the plan, but through the City Manager’s overall authority.

### Signatures

“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  
City Manager

\_\_\_\_\_  
Date

\_\_\_\_\_  
Thomas J. DiPietro Jr.  
Deputy Director of Public Works / Stormwater Superintendent

\_\_\_\_\_  
Date

## **Appendix A - RSEP MOU**

## **Appendix B – CCST MOU**

## **Appendix C – Procedure for Handling Material Collected During Street Sweeping, Catch Basin and Stormwater Pipe Cleaning, and Stormwater Pond Maintenance**

### **Appendix D – Bartlett Brook Flow Restoration Plan**

This appendix is reserved for the Bartlett Brook Flow Restoration Plan (FRP). The City's SWMP will be amended to include this FRP when it is completed and approved by the Vermont ANR.

### **Appendix E – Centennial Brook Flow Restoration Plan**

This appendix is reserved for the Centennial Brook Flow Restoration Plan (FRP). The City's SWMP will be amended to include this FRP when it is completed and approved by the Vermont ANR.

### **Appendix F - Englesby Brook Flow Restoration Plan**

This appendix is reserved for the Englesby Brook Flow Restoration Plan (FRP). The City's SWMP will be amended to include this FRP when it is completed and approved by the Vermont ANR.

### **Appendix G – Munroe Brook Flow Restoration Plan**

This appendix is reserved for the Munroe Brook Flow Restoration Plan (FRP). The City's SWMP will be amended to include this FRP when it is completed and approved by the Vermont ANR.

### **Appendix H – Potash Brook Flow Restoration Plan**

This appendix is reserved for the Potash Brook Flow Restoration Plan (FRP). The City's SWMP will be amended to include this FRP when it is completed and approved by the Vermont ANR.

## **Appendix I – Summary of Amendments to the SWMP**

1. November 2015 – SWMP amended to include a plan and schedule for stream flow monitoring in stormwater impaired watersheds. SWMP amended to include maintenance of certain private stormwater systems. These systems will now receive permit coverage under the City’s MS4 permit.