







# MINIMUM CONTROL MEASURE #1: PUBLIC EDUCATION AND OUTREACH (Part IV.B.1 General Permit)

## SECTION I. OVERALL EVALUATION:

### GENERAL SUMMARY, STATUS, APPROPRIATENESS AND EFFECTIVENESS OF MEASURABLE GOALS:

Include information relevant to the implementation of each measurable goal, such as activities, topics addressed, audiences and pollutants targeted. Discuss activities to be carried out during the next reporting cycle. If addressing TMDL requirements, please indicate rationale for choosing the education activity to address the pollutant of concern.

**(Note: Identify parties responsible for achieving the measurable goals and reference any reliance on another entity for achieving measurable goals.)**

**Responsible Party Contact Name:** Edward M. Tanner, Principal Planner, Department of Community Development

**Phone:** (401) 253-7000

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IV.B.1.b.1	Use the space below to provide a General Summary of activities implemented to educate your community on how to reduce stormwater pollution. For TMDL affected areas, with stormwater associated pollutants of concern, indicate rationale for choosing the education activity. List materials used for public education and topics addressed. Summarize implementation status and discuss if the activity is appropriate and effective.
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The Department of Community Development is responsible for achieving this goal. Public education information was provided by the Town as well as various community groups including Save Bristol Harbor (SBH), Save the Bay (STB), the Kickemuit River Council (KRC), Roger Williams University (RWU), Mosaico Business and Community Development Corporation (Mosaico), and the Audubon Society of Rhode Island. Public education has been centered on shoreline cleanups, water quality monitoring, storm drain stenciling, student education, and pet waste disposal. The Town of Bristol also maintains a "Soil Erosion and Stormwater Management" page on its public web site (see <http://www.bristolri.us/292/Soil-Erosion-Stormwater-Management>). This site includes general information about stormwater and stormwater pollution topics, as well as resources and links to other information sources relating to soil erosion & sedimentation control and stormwater management.

In 2015, Mosaico, Save Bristol Harbor, Save the Bay, and the Town's Keep Bristol Clean taskforce (operated by the Department of Public Works (DPW)) organized several shoreline cleanups. The Town's DPW assisted with the cleanups by removing, recycling or disposing of all items collected. On April 25, 2015 STB sponsored a 2 hour long shoreline cleanup along Mt. Hope Bay that included 11 students from Roger Williams University and one STB staff member where approximately 165 pounds of refuse was collected for proper disposal. On May 9, 2015, 125 volunteers participated in the Town's Keep Bristol Clean program by spending 3 hours cleaning refuse and debris from sites located throughout the town (approximately 375 volunteer hours) collecting 2.31 tons of refuse. On this day, 30 volunteers organized by STB cleaned the shoreline of Bristol Harbor and Silver Creek. On June 23, 2015, STB sponsored a two hour long cleanup of the Narragansett Bay shoreline at Colt State Park where eight participants collected approximately 96 pounds of refuse for proper disposal. On September 17, 2015, STB sponsored a 2 hour shoreline cleanup of the Narragansett Bay shoreline at Colt State Park with assistance from 46 employees of Citizens Bank where approximately 103 pounds of refuse was collected for proper disposal.

On May 29<sup>th</sup>, STB coordinated with elementary students from Our Lady of Mt. Carmel School to install educational "No Dumping" stormdrain markers within downtown Bristol. A total of 20 students and four (4) adults participated in the event and installed markers at approximately 40 stormdrain locations.

Through Mosaico's 2015 "Sense of Pride" program, volunteers from Save Bristol Harbor - using a realistic watershed model - presented hands-on educational activities on watershed hydrology and stormwater pollution to approximately 175 fourth grade students from three elementary schools. In addition, students participating in these programs conducted gardening and neighborhood cleanup activities.

In 2013 Save Bristol Harbor completed the fourth year of field work and data collection on its Predictive Habitat Model for Bristol Harbor. Field work in previous years included the placement of wind meters and the collection of tidal flow data from the harbor to build and calibrate a Predictive Habitat Model that is being developed through a partnership between SBH, the University of Rhode Island (URI) Graduate School of Oceanography and Brown University. The SBH Predictive Habitat Model, was further developed in 2014, and is now the first of its kind to focus exclusively on a local harbor and its health. SBH is working with the Town of Bristol in this effort and expects this model will be beneficial in making informed decisions regarding the harbor's future health, development and use.

With assistance and training from the URI Watershed Watch program and scientists from URI and Brown University, volunteers from SBH, including students from Roger Williams University and Mt. Hope High School conducted water quality sampling and testing at 14 sites located both within and along the perimeter of Bristol Harbor and at several locations upstream within the Silver Creek watershed. Surface water samples are collected from these 14 locations weekly and analyzed in the field for a variety of parameters. In addition, samples are collected monthly from each location and delivered to URI for laboratory analysis. This valuable work – now in its seventh year - helps the Town, other government agencies, and the public further understand water conditions in the harbor and guide decision making within the watershed. In 2015, the Town of Bristol contributed funds to support SBH's efforts by paying for the cost of laboratory analysis for five (5) sampling locations within Silver Creek, a significant tributary to Bristol Harbor. See **attached** sampling report from URI documenting 2015 monitoring results. In addition to sampling activities SBH and the Town of Bristol provided funding and support to the Mount Hope High School Marie Science program Silver Creek Field Studies project in which upper grade high school students work with staff from STB to study and monitor the health of the coastal environment within Silver Creek.

In 2015, Save the Bay also worked with local students at Mt. Hope High School senior environmental science course to study issues relating to stormwater runoff impacts on Silver Creek, which flows through the school property. Students studied the creek and the contributing watershed on school property and evaluated ways to curb runoff from buildings and impervious parking areas to improve water quality and reduce flooding and stream bank erosion. In May 2015, students worked under the direction of STB staff to construct and plant a small "rain garden" water quality structure to slow runoff from a parking lot and improve infiltration to lessen impacts to Silver Creek. See **attached** project description and newspaper article describing the student activities.

In 2012, the Town of Bristol completed construction of a Gravel Wet Vegetated Treatment System (GWVTS) to reduce water quality impacts from storm drain discharges to Narragansett Bay near the Bristol Town Beach. This project was conducted in conjunction with other water quality projects completed in recent years at the Bristol Town Beach, including construction of a re-designed impervious parking lot and surrounding recreational facilities to incorporate water quality BMP's, including low impact development techniques such as bioretention systems, to improve water quality and limit runoff entering Narragansett Bay in the Town Beach area. These water quality improvement projects include public education components such as a kiosk that holds information about stormwater pollution and diagrams and descriptions of the GWVTS and its purpose and benefits. In addition, these highly visible improvements were conducted at a large recreational facility that is visited by thousands of children and their families each year for sporting events and summer day camp activities. The Town recreation program includes education about these water quality improvements in the summer day camp program which includes over 500 registered local elementary and middle school aged campers. In 2015, the Town continued to promote these public education activities.

In 2015, "Bristol Recycles" conducted its third annual Bristol Recycles Day on the Bristol Town Common and at the Bristol transfer station during resident drop off weekend. With funding assistance from the Town, this group provided educational information and activities to residents about the importance of proper recycling, water conservation, and composting. This organization also worked within the Bristol Warren Regional School District to fund installation of recycling stations within school cafeterias and provided educational opportunities to students such as sponsoring recycling education presentations at each school with assistance from Rhode Island Resource Recovery Corporation (RIRRC). The Town of Bristol also coordinated with RIRRC to provide public educational information and to host an "Eco-Depot" day at the DPW facility on July 11<sup>th</sup> where the public could properly dispose of household hazardous wastes.

In 2015, the Town of Bristol completed construction of the Guiteras School Stormwater Retrofit project. This project included the implementation of water quality improvements to this 4½ acre elementary school property located along the shoreline of Silver Creek adjacent to Bristol Harbor. Funding assistance was provided by a Section 319 water quality grant from RIDEM. The Town coordinated the design and implementation of this project with the Bristol Warren Regional School District administration, STB, SBH, and the Guiteras School "Green Team" parents group. The Guiteras School building, constructed in 1920, occupies a prominent location overlooking Bristol Harbor and Silver Creek. Prior to construction, landscaped lawn areas surrounding the school building extended to the shoreline of Silver Creek and commonly attracted flocks of Canada Geese. In addition, impervious surfaces on the property (building roofs, pavement) as well as other compacted turf surfaces pitched towards Silver Creek allowing stormwater runoff from the site to flow uncontrolled and untreated towards the creek and Bristol Harbor. The stormwater retrofit project successfully redirected, captured, and treats runoff from these surfaces to limit the transport of pollutants to Silver Creek and Bristol Harbor. Select plantings also reduce the number of geese congregating nearby the school. This project included a significant public education

component including lessons to several hundred elementary school children and their families. Educational information was provided to students about the project, and upon completion, school children led tours of the newly constructed improvements and explained their purpose and function to adults. The school faculty and the Green Team parent group will continue to utilize stormwater improvements for educational purposes and have begun to incorporate several planned gardens and other hands on outdoor education components into the landscape and the school curriculum. Copies of a newspaper and magazine article pertaining to this project are attached.

In the following permit year, the Town of Bristol plans to continue to work with various community groups and schools to achieve its public education and outreach goals. The Town will also continue to update and enhance its website to include additional stormwater education information.

IV.B.1.b.2	Use the space below to provide a general summary of how the public education program was used to educate the community on how to become involved in the municipal or statewide stormwater program. Describe partnerships with governmental and non-governmental agencies used to involve your community.
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The Department of Community Development is responsible for achieving this goal. The Town of Bristol also utilized activities and membership of Save Bristol Harbor, Save the Bay, the Kickemuit River Council, Mosaico CDC, school groups, and Bristol Recycles to assist with this goal. The Town also maintains a website with a section dedicated to "soil erosion and stormwater management" issues and including public education materials and links to stormwater pollution education resources. In 2015, with the assistance of the Save Bristol Harbor, Save the Bay, and Mosaico CDC, the Town used the water quality sampling, shoreline cleanup, stormdrain marking, and watershed modeling events as opportunities to educate the community on the stormwater program. These events include shoreline and town-wide cleanup and Earth Day events. In 2015, the Town continued its partnership with Save Bristol Harbor and the Mt. Hope High School's marine science and environmental science classes to evaluate and understand water quality impacts from stormwater, and conduct water quality monitoring activities. In previous permit years, the SBH volunteers and students have also assisted the Town with dry-weather screening of stormwater outfalls. In the following permit year, the Town will continue to partner with Save Bristol Harbor and Mt. Hope High School, and will utilize these volunteers to conduct further water quality monitoring activities.

In 2015, the Town of Bristol and RIDEM commenced a public process to assess the feasibility of implementing a stormwater management district and enterprise fund to aid in the financing of municipal stormwater management program activities. This study will build upon the Stormwater Utility District Feasibility Study completed by RIDEM in 2012 (see Year 9 report). A consultant team was retained in spring 2015 to assist with this project and to develop the plan document. This ongoing study includes a detailed analysis of Bristol's stormwater management program, its current costs and funding sources; future funding needs, as well as an evaluation of future funding mechanisms. The study is being conducted with input from staff representing several Town departments, RIDEM, and a committee of over 20 Bristol residents and business owners. In the next permit year, we intend to complete this study and to present findings to the Town Council and general public for consideration.

**PUBLIC EDUCATION AND OUTREACH cont'd**

Check all topics that were included in the Public Education and Outreach program during this reporting period. For each of the topics selected, provide the target pollutant (e.g. construction sites, total suspended solids):

<b>Topic</b>	<b>Target Pollutant(s)</b>
<input checked="" type="checkbox"/> Construction Sites	Sediment
<input checked="" type="checkbox"/> Pesticide and Fertilizer Application	Nutrients
<input checked="" type="checkbox"/> General Stormwater Management Information	Bacteria, Sediment, Nutrients, Floatables
<input checked="" type="checkbox"/> Pet Waste Management	Bacteria
<input checked="" type="checkbox"/> Household Hazardous Waste Disposal	Hydrocarbons
<input checked="" type="checkbox"/> Recycling	Floatables
<input checked="" type="checkbox"/> Illicit Discharge Detection and Elimination	Bacteria
<input checked="" type="checkbox"/> Riparian Corridor Protection/Restoration	Sediment, Nutrients
<input type="checkbox"/> Infrastructure Maintenance	
<input checked="" type="checkbox"/> Trash Management	Floatables, Bacteria
<input type="checkbox"/> Smart Growth	
<input type="checkbox"/> Vehicle Washing	
<input checked="" type="checkbox"/> Storm Drain Marking	Bacteria, Hydrocarbons
<input type="checkbox"/> Water Conservation	
<input checked="" type="checkbox"/> Green Infrastructure/Better Site Design/LID	Nutrients, Bacteria
<input type="checkbox"/> Wetland Protection	
<input type="checkbox"/> Other:	
<input type="checkbox"/> None	

**Specific audiences targeted during this reporting period:**

<input type="checkbox"/> Public Employees	<input checked="" type="checkbox"/> Contractors
<input checked="" type="checkbox"/> Residential	<input type="checkbox"/> Developers
<input checked="" type="checkbox"/> Businesses	<input checked="" type="checkbox"/> General Public
<input type="checkbox"/> Restaurants	<input type="checkbox"/> Industries
<input checked="" type="checkbox"/> Other: students	<input type="checkbox"/> Agricultural

**Additional Measurable Goals and Activities**

Please list all stormwater training attended by your staff during the 2015 calendar year and list the name(s) and municipal position of all staff who attended the training.

Trainings:  
 On December 17, 2015 a Town representative attended a discussion hosted by RIDOT and the University of Rhode Island T2Transportation Center regarding municipal stormwater management. Topics of discussion included the RIPDES stormwater program, MS4 compliance, stormwater utilities, TMDL requirements, and the potential for greater collaboration on stormwater management between municipalities and RIDOT.

Attending name of staff and title: Edward M. Tanner, Principal Planner



**MINIMUM CONTROL MEASURE #2:  
PUBLIC INVOLVEMENT/PARTICIPATION (Part IV.B.2 General Permit)**

**SECTION I. OVERALL EVALUATION:**

**GENERAL SUMMARY, STATUS, APPROPRIATENESS AND EFFECTIVENESS OF MEASURABLE GOALS:**

Include information relevant to the implementation of each measurable goal, such as types of activities and audiences/groups engaged. Discuss activities to be carried out during the next reporting cycle. If addressing TMDL requirements, please indicate rationale for the activities chosen to address the pollutant of concern.

**(Note: Identify parties responsible for achieving the measurable goals and reference any reliance on another entity for achieving measurable goals.)**

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IV.B.2.b.2.ii	Use the space below to describe audiences targeted for the public involvement minimum measure, include a description of the groups engaged, and activities implemented and if a particular pollutant(s) was targeted. If addressing TMDL requirements indicate how the audience(s) and/or activity address the pollutant(s) of concern. Name of person(s) and/or parties responsible for implementation of activities identified. Assess the effectiveness of BMP and measurable goal.
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The Department of Community Development is responsible for achieving the measurable goals. The Town of Bristol utilizes a variety of activities to encourage public involvement in its stormwater program. This includes utilizing the membership and activities of the Kickemuit River Council, Save Bristol Harbor, Mosaico CDC, Save the Bay, Bristol Recycles, and the Bristol-Warren Regional School District to assist with this goal. In addition, the Town's Conservation Commission acts as the Town's stormwater committee and reviews the program goals and objectives, and participates in field activities.

The public participates in the stormwater management program primarily through the cooperation of several nonprofit organizations operating in town and the local school district. The Kickemuit River Council, Save Bristol Harbor, Mosaico CDC, Save the Bay, Bristol Recycles, and the Bristol-Warren Regional School District all provide public involvement opportunities that are supported by the Town through shoreline cleanup activities, storm drain marking programs, coastal water quality monitoring, and educational talks and presentations. These activities are generally directed towards elementary and middle school aged children and their families. Coastal shoreline cleanups, stormdrain marking, and watershed modeling programs and other public involvement activities were conducted during 2015. Bristol Town Beach and sports complex users, including summer day campers, and elementary school students at Guiteras School also were engaged in stormwater management projects on these properties. In addition, the Town continued to support field activities, including a stormwater monitoring program and coastal marsh habitat studies program, through a partnership with Save Bristol Harbor that involved senior students from Mt. Hope High School.

Opportunities provided for public participation in implementation, development, evaluation, and improvement of the Stormwater Management Program (SWMP) Plan during this reporting period. Check all that apply:

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Cleanup Events     | <input checked="" type="checkbox"/> Storm Drain Markings |
| <input type="checkbox"/> Comments on SWMP Received     | <input checked="" type="checkbox"/> Stakeholder Meetings |
| <input type="checkbox"/> Community Hotlines            | <input checked="" type="checkbox"/> Volunteer Monitoring |
| <input checked="" type="checkbox"/> Community Meetings | <input checked="" type="checkbox"/> Plantings            |
| <input type="checkbox"/> Other (describe)              |  |

**Additional Measurable Goals and Activities**

BMP ID 2-2 (Hold regular storm water steering committee meetings) and BMP ID 2-3 (Hold quarterly storm water steering committee meeting (2<sup>nd</sup> through 5<sup>th</sup> Year):

In Year 12 (2015), the Town's drainage committee met approximately quarterly during the year to review known drainage problems and appropriate improvements to the municipal storm drain system. In addition, the Conservation Commission, which acts as the Town's stormwater committee, met monthly and continued working on several community outreach ideas relating to water quality and stormwater management such as community cleanups and public education initiatives.

BMP ID 2-4 (Coordinate with Save the Bay to continue storm drain stenciling program)

In previous permit years, community groups and school children marked numerous storm drains in the downtown areas surrounding Bristol Harbor. In Year 12 (2015), approximately 40 stormdrains were marked in downtown Bristol by elementary school students with coordination by STB. In the following permit year, the Town will evaluate additional needs for storm drain stenciling and marking to identify additional locations where it may be beneficial.

BMP ID 2-5 (Identify locations of marked storm drains using GIS in year 2)

During Year 7 (2010), the Town of Bristol completed field and mapping work to update the GIS to include locations of all storm drain structures, including pipelines, catch basins, manholes, and outfalls. In Year 8 (2011), these maps were refined as new information was obtained and maintenance/repair work was completed. The maps do not yet specifically identify marked storm drains.

BMP ID 2-6 (Develop a program to prioritize storm drain stenciling using GIS in year 2 and 3)

In 2010, the Town of Bristol completed its storm drain and outfall mapping, and updated this information on its GIS. The Town also works with Mosaico CDC, Save the Bay, and Save Bristol Harbor to coordinate a storm drain stenciling program. The GIS drainage mapping is available to these organizations, and is now used to identify storm drains for stenciling. In recent years, the focus of the stenciling program has been on the downtown area with dense population close to Bristol Harbor and neighborhood elementary schools. The stenciling program has also been conducted in neighborhoods to the north of downtown and along Hope Street (Rt. 114), where drains discharge directly to Bristol Harbor or Silver Creek. In 2015, approximately 40 stormdrains were marked in downtown Bristol by elementary school students with coordination by STB.

BMP ID 2-7 (Stencil a minimum of 25 storm drains per year in years 3, 4, and 5)

In previous permit years, community groups and school children marked numerous storm drains in the downtown areas surrounding Bristol Harbor and in neighborhoods along Hope Street (Rt. 114). In Year 12 (2015), approximately 40 stormdrains were marked in downtown Bristol by elementary school students with coordination by STB.

BMP ID 2-8 (Utilize GIS to identify town maintained shorelines and streams for cleanup and monitoring in 2<sup>nd</sup> year).

In Year 12 (2015), over 600 volunteer hours were documented cleaning shorelines and other areas throughout town. In past years, the Town has not utilized its GIS to identify shoreline cleanup areas. However, the Town makes available its revised GIS based storm drain system maps to community organizations, such as Save the Bay and Save Bristol Harbor, for use in prioritizing and tracking shoreline cleanup activities.

BMP ID 2-9 (Continue coordinating and hosting annual Earth Day events in years 3, 4, and 5)

In Year 12 (2015), the Town of Bristol held a town-wide Earth Day clean up on May 9<sup>th</sup>. Approximately 125 residents participated in this event.

**SECTION II. Public Notice Information (Parts IV.G.2.h and IV.G.2.i) \*Note: attach copy of public notice**

Was the availability of this Annual Report and the Stormwater Management Program Plan (SWMPP) announced via public notice? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	If YES, Date of Public Notice: February 10, 2017 to March 3, 2017
How was public notified: <input checked="" type="checkbox"/> List-Serve (Enter # of names in List: <u>40+</u> ) <input checked="" type="checkbox"/> Newspaper Advertising <input type="checkbox"/> TV/Radio Notices <input checked="" type="checkbox"/> Other: Website Enter Web Page URL: <a href="http://www.bristolri.us">www.bristolri.us</a>	
Was public meeting held? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO Date: _____ Where: _____	
Summary of public comments received: The public comment period was advertised from February 10, 2017 through March 3, 2017. No public comments were received during the public comment period.	
Planned responses or changes to the program: None.	



## MINIMUM CONTROL MEASURE #3: ILLICIT DISCHARGE DETECTION AND ELIMINATION (Part IV.B.3 General Permit)

### SECTION I. OVERALL EVALUATION:

#### GENERAL SUMMARY, STATUS, APPROPRIATENESS AND EFFECTIVENESS OF MEASURABLE GOALS

Include information relevant to the implementation of each measurable goal, such as activities implemented (when reporting tracked and eliminated illicit discharges, please explain the rationale for targeting the illicit discharge) to comply with on-going requirements, and illicit discharge public education activities, audiences and pollutants targeted. Discuss activities to be carried out during the next reporting cycle. If addressing TMDL requirements, please indicate rationale for the activities chosen to address the pollutant of concern.

**(Note: Identify parties responsible for achieving the measurable goals and reference any reliance on another entity for achieving measurable goals.)**

**Responsible Party Contact Name:** Edward M. Tanner, Principal Planner, Department of Community Development

**Phone:** (401) 253-7000

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IV.B.3.b.1:	<p>If the outfall map was not completed, use the space below to indicate reasons why, proposed schedule for completion of requirement and person(s)/ Department responsible for completion. (The Department recommends electronic submission of updated EXCEL Tables if this information has been amended.)</p> <p><b>Number of Outfalls Mapped:</b> 174</p> <p><b>Percent Complete:</b> 100%</p> <p><b>If 100% Complete, Provide Date of Completion:</b> 2009 – revised through September 2014</p>
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The Town of Bristol completed its first GIS-based outfall map in Year 5 (2008). Prior to that the map was a “working document” that was being revised as plans and site surveys became available. In Year 6, the outfall map was field checked for accuracy by Town staff and volunteers from Save Bristol Harbor and the Mt. Hope High School senior marine science program as part of our outfall inspection and dry weather investigation program. The Town then revised the outfall map to include additional information collected during 2009 survey work, and further investigated a relatively small number of outfalls whose location could not be verified in the field. A total of 148 Town-owned outfalls were identified through the end of Year 6 (2009).

In Year 7 (2010), the Town contracted with an engineering consultant to field-verify and GPS locate our entire storm drainage system. This project included locating and inspecting every catch basin, manhole and outfall; in addition to determining drain pipe location, size, and direction of flow to complete a detailed storm drain GIS layer. A significant number of new drainage structures were identified through this effort, including 25 additional Town-owned outfalls. A total of 173 Town-owned outfalls have now been identified. The Town previously submitted maps depicting the locations of each outfall, along with a list of all Town-owned outfalls, including outfall identification number, location, and any previous inspection data with its Year 7 annual report.

In year 11 (2014), the Town revised its stormwater GIS layer to incorporate recent drainage improvements, new development projects, and some miscellaneous field edits to the mapping completed in 2010. These edits included the identification of one new Town-owned stormdrain outfall, bringing the total number of Town-owned outfalls to 174. Copies of revised stormwater system maps were submitted with our Year 11 annual report.

IV.B.3.b.2	<p>Indicate if your municipality chose to implement the tagging of outfalls activity under the IDDE minimum measure, activities and actions undertaken under the 2015 calendar year.</p>
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As the Town continues to use its GIS and GPS units to map outfall locations, this requirement is optional. The information used to create the GIS maps is of sufficient accuracy to allow the identification of individual pipes when revisiting their locations. Thus, the Town has not tagged its outfall pipes.

IV.B.3.b.3	<p>Use the space below to provide a summary of the implementation of recording of system additional elements (catch basins, manholes, and/or pipes). Indicate if the activity was implemented as a result of the tracing of illicit discharges, new MS4 construction projects, and inspection of catch basins required under the IDDE and Pollution Prevention and Good Housekeeping Minimum Measures, and/or as a result of TMDL related requirements and/or investigations. Assess effectiveness of the program minimizing water quality impacts.</p>
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**ILLICIT DISCHARGE DETECTION AND ELIMINATION cont'd**

In 2010, the Town of Bristol completed the mapping and recording of all additional drainage system elements, including catch basins, manholes, and drain pipes. To accomplish this task, the Town contracted with an engineering consultant to accurately locate and inspect every catch basin, manhole, outfall, and other structure (such as detention basins and water quality units); in addition to determining drain pipe location, size, and direction of flow to complete a detailed town-wide storm drain GIS layer. The locating of these additional drainage system elements was completed with sufficient accuracy to allow for the revisiting of the location of these elements. Each drainage system element has been assigned a unique identification number and inspection notes have been recorded in a database linked to the GIS. The DPW uses the database and identification numbers of each element to track and map future maintenance and repair activities. In year 11 (2014), the Town revised its stormwater GIS layer to incorporate recent drainage improvements, new development projects, and some miscellaneous field edits to the mapping.

IV.B.3.b.4	<p>Indicate if the IDDE ordinance was <b>not</b> developed, adopted, and submitted to RIDEM, explain reasons why, submit proposed schedule for completion and identify person(s) / Department and/or parties responsible for the completion of this requirement.</p> <p><b>Date of Adoption: October 28, 2008</b></p> <p>If the Ordinance was amended in 2015, please indicate why changes were necessary.</p>
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The Town of Bristol developed and adopted an IDDE ordinance in 2008 (Chapter 13, Article VIII of Bristol Town Code). A copy of this ordinance was submitted to RIDEM on November 12, 2008 along with a letter from the Town Solicitor. This ordinance was not amended in 2015.

IV.B.3.b.5.ii, iii, iv, & v	<p>Use the space below to provide a summary of the implementation of procedures for receipt and consideration of complaints, tracing the source of an illicit discharge, removing the source of the illicit discharge and program evaluation and assessment as a result of removing sources of illicit discharges. Identify person(s) / Department and/or parties responsible for the implementation of this requirement.</p>
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Throughout this permit cycle, the Department of Public Works and the Wastewater Department worked together to investigate complaints or other evidence of potential illicit connections to the Town's drainage system. Complaints or direct observations by Town employees or consultants are investigated by the DPW and their sources identified and removed (if necessary). Priority areas for illicit discharge detection include the downtown district and industrial areas, and residential areas in the vicinity of the Town Beach. In 2015, the Town continued to investigate complaints and is currently logging complaints in paper format. The Town plans to continue this process of tracking complaints and enforcing the IDDE ordinance where necessary. If a non-storm water discharge is identified, the Town will follow the guideline set forth in the IDDE ordinance and if necessary refer the discharge to RIDEM for assistance.

IV.B.3.b.5.vi	<p>Use the space below to provide summary of implementation of catch basin and manhole inspections for illicit connections and non-stormwater discharges. If the required measurable goal of inspecting all catch basins and manholes for this purpose was not accomplished, please indicate reasons why, the proposed schedule of completion and identify person(s) / Department and/or parties responsible for the implementation of this requirement. Evaluate effectiveness of the implementation of this requirement. The operator must keep records of all inspections and corrective actions required and completed.</p> <p><b>Number of Catch Basins and Manholes Inspected for illicit connections/IDDE: 3,425</b></p> <p><b>Percent Complete: 100%</b></p> <p><b>Date of Completion: Permit Year 7 (2010)</b></p>
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**ILLICIT DISCHARGE DETECTION AND ELIMINATION cont'd**

The Department of Public Works is responsible for the implementation of this requirement. In 2010, the Town contracted with an engineering consultant to locate, inspect; and document the condition of every storm drainage system structure, including every catch basin and manhole to help identify potential illicit connections. A total of 2,884 catch basins and 541 manholes were located and inspected during 2010. In addition, in 2014, the Town revised its stormwater GIS layer to incorporate recent drainage improvements, new development projects, and some miscellaneous field edits to the mapping. This information has been entered into a town-wide drainage system database that has been linked to the GIS, with each drainage structure having a unique identification number. This information has been utilized by DPW to improve its field inspection database and allow for the mapping of priority areas for additional cleaning, maintenance, and investigation. In addition, in 2015 the DPW cleaned a total of 189 catch basins. The Town's vacuum truck is used for cleaning catch basins and manholes. All catch basins that were cleaned were also inspected for illicit connections by DPW staff. If suspected illicit connections were identified, they were investigated in the field by DPW staff. All catch basin cleaning and inspection information is maintained by DPW in an electronic database to track field inspections and document suspected illicit connections. A copy of DPW's catch basin cleaning database for work conducted in 2015 is attached.

IV.B.3.b.5.vii	<p>If dry weather surveys including field screening for non-stormwater flows and field tests of selected parameters and bacteria were not completed, indicate reasons why, proposed schedule for the completion of this measurable goal and person(s) / Department and/or parties for the completion of this requirement. Evaluate effectiveness of the implementation of this requirement. <b>The results of the dry weather survey investigations must be submitted to RIDEM electronically, if not already submitted or if revised since 2009, in the RIDEM-provided EXCEL Tables and should include visual observations for all outfalls during both the high and low water table timeframes, as well as sample results for those outfalls with flow. The EXCEL Tables must include a report of all outfalls and indicate the presence or absence of dry weather discharges.</b></p> <p><b>Number of Outfalls Surveyed once: 185 (public and private) Number of Outfalls Surveyed twice: 157</b> <b>Percent Complete: 100 %</b> <b>Date of Completion: October 2011</b></p>
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The Department of Community Development and DPW are responsible for the implementation of this requirement. In Year 5 (2008), the Town of Bristol implemented a dry weather survey program. In October 2008, the Town began a partnership with Save Bristol Harbor and the Mt. Hope High School's senior marine science class to locate, inspect, and document flow conditions at all Town-owned stormwater outfalls. Students and volunteers were trained by the Town's engineering consultant in the classroom and in the field prior to conducting inspections. The students, along with adult volunteers and Town staff inspected approximately 142 outfalls throughout the town. This effort continued into 2009 and was completed in March 2009. A total of 148 Town-owned outfalls were identified through the end of Year 6 (2009). In Year 7 (2010), the Town contracted with an engineering consultant to field verify and GPS located our entire storm drainage system. This project included locating and inspecting every catch basin, manhole and outfall; in addition to determining drain pipe location, size, and direction of flow to complete a detailed storm drain GIS layer. A significant number of new drainage structures were identified through this effort, including 25 additional Town-owned outfalls. A total of 173 Town-owned outfalls have now been identified.

Although the Town had conducted inspections of 100% of its outfalls, the dates of these surveys varied in 2008 and 2009 with many outfalls inspected outside of the specified time frames of the Phase II Stormwater Regulations. While this inspection effort was successful in providing public education and engaging local volunteers and students in a hands-on project to increase awareness of water quality impacts from stormwater, it was not in full compliance for required time frames due to the varying schedules of volunteers and high school students. In addition, these surveys did not include field screening for non-storm water flows and field tests of selected parameters and bacteria. Furthermore, additional outfalls were identified and located by the Town's engineering consultant in 2010 as part of a system-wide inspection and mapping project. These additional outfalls were not however properly inspected for Dry Weather Surveys at the time that they were located in 2010.

**ILLICIT DISCHARGE DETECTION AND ELIMINATION cont'd**

In an effort to bring the Town into compliance with the dry weather survey requirements, the Town in 2011 retained the services of private engineering consultants to complete two rounds of Dry Weather Surveys of all identified Town-owned outfalls. These surveys were conducted in April 2011 and October 2011, within the time frames specific in the Phase II Stormwater Regulations, and included field sampling and laboratory analysis as required for those outfalls found to be flowing. During the April 2011 (spring high groundwater) survey, a total of 157 outfalls were inspected and those having flow (59 total) were sampled and screened in the field for temperature, conductivity, and pH. As nearly all of Bristol is serviced by sanitary sewers, bacteria sampling is not required during the spring high groundwater survey. The results of the April dry weather survey investigation were submitted to RIDEM on July 19, 2011. During the October 2011 (fall low groundwater) survey, the Town's engineering consultant attempted to inspect a total of 185 publicly and privately owned outfalls. All identified outfalls were inspected and those having flow (60 total) were sampled and screened in the field for temperature, conductivity, and pH. In addition, samples from flowing outfalls were collected for laboratory analysis for fecal coliform bacteria, surfactants, and ammonia as these parameters may indicate the presence of an illicit discharge. Of the 60 outfalls that were sampled and analyzed during the 2011 dry weather surveys, a total of seven (7) were considered to have a potential or suspect likelihood of an illicit discharge. Copies of dry weather survey investigation results, including the required EXCEL tables were submitted to RIDEM with our Year 8 (2011) report.

In 2012, the Town conduct additional survey and sampling work to further investigate those seven (7) outfalls identified in 2011 as having potential illicit discharges, as well as those Town-owned outfalls located within unsewered areas. Flowing outfalls were sampled and screened in the field for temperature, conductivity, and pH. In addition, samples from flowing outfalls were collected for laboratory analysis for fecal coliform bacteria, surfactants, and ammonia as these parameters may indicate the presence of an illicit discharge. Of the 11 outfalls surveyed on April 6, 2012, six (6) were found to be flowing and were sampled. Of these six samples, one (1) sample was found to contain elevated levels of contaminants that indicate the potential presence of an illicit discharge. The findings and results of this survey and sampling effort were submitted to RIDEM with our Year 9 (2012) report. In 2013, the Town conducted further investigation of the one suspect outfall (Outfall 113) and its connecting drainage system in an effort to identify potential illicit connections. This outfall discharges to the west branch of Silver Creek and is located south of Gooding Avenue and the Gooding Plaza shopping center parking lot. Storm drainage system components were inspected and samples were collected from the outfall, as well as from several manholes and catch basins during dry weather conditions in July and October 2013. This investigation identified elevated levels of Fecal Coliform Bacteria within samples collected from Outfall 113 and three interconnected drainage manholes. However, the levels of bacteria identified were within ranges of typical urban runoff and the investigation was not able to conclude if the bacteria were entering the drainage system from surface runoff or from an illicit connection to the drainage system. The findings and results of this investigation were submitted to RIDEM with our Year 10 (2013) report.

In 2015, the Town of Bristol continued to investigate the source of bacteria identified at Outfall 113. The Town determined that there is a municipal gravity sanitary sewer line that is located in the area and that it crosses over the drainage lines contributing to this outfall. In order to rule out the possibility of a cross connection between the drain and sanitary sewer lines, the Town's engineering consultant worked with a private contractor to conduct a closed circuit television (CCTV) inspection of drain lines contributing to Outfall 113 and the adjacent Outfall 112. This investigation did not identify any direct or indirect connections between the drain and sanitary sewer lines. The investigation did identify that the outfalls were partially clogged with sediment and vegetation which was not allowing water to flow freely. The consultant recommended that outfall area be cleared and that the drain pipes be cleaned as wildlife animal waste may be a potential source of the bacteria and that it may be breeding in standing water. A copy of the memorandum report detailing this investigation by Beta Group, Inc. is **attached**. In the next permit year, the Town will conduct further investigation in an effort to determine the source of bacteria at this outfall.

IV.B.3.b.7

Use the space below to provide a description of efforts and actions taken as a result of for coordinating with other physically interconnected MS4s, including State and federal owned or operated MS4s, when illicit discharges were detected or reported. Identify person(s) / Department and/or parties responsible for the implementation of this requirement. Evaluate effectiveness of the implementation of this requirement.

**ILLICIT DISCHARGE DETECTION AND ELIMINATION cont'd**

RIDOT owns numerous storm drains along Metacom Avenue (Rt. 136) and Hope Street (Rt. 114) as well as several connecting streets (Chestnut Street, Gooding Avenue and State Street). The drains on these streets are interconnected with the Town's storm drain system. Bristol's DPW contacts RIDOT whenever a problem is identified with the State-owned system. Also, if requested by the State, the DPW will assist RIDOT with the cleaning of structures. In addition, the Town participated in an MS4 Coordination Group Exchange with the RIDOT stormwater coordinator and other MS4 communities to discuss stormwater related issues of mutual interest and concern. On December 17, 2015 the Town participated in a discussion hosted by RIDOT and the University of Rhode Island T2 Transportation Center regarding municipal stormwater management. Topics of discussion included the RIPDES stormwater program, MS4 compliance, stormwater utilities, TMDL requirements, and the potential for greater collaboration on stormwater management between municipalities and RIDOT. In the next permit year, the Town intends to continue working with RIDOT to share information and coordinate efforts related to the maintenance of our interconnected systems.

IV.B.3.b.8	Use the space below to provide a description of efforts and actions taken for the referral to RIDEM of non-stormwater discharges not authorized in accordance to Part I.B.3 of this permit or another appropriate RIPDES permit, which the operator has deemed appropriate to continue discharging to the MS4, for consideration of an appropriate permit. Identify person(s) / Department and/or parties responsible for the implementation of this requirement. Evaluate effectiveness of the implementation of this requirement.
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The Department of Public Works is responsible for the implementation of this requirement. The Town adopted the IDDE ordinance in 2008. If a non-storm water discharge is identified, the Town will follow the guideline set forth in the IDDE ordinance and if necessary refer the discharge to RIDEM. No non-stormwater discharges were referred to RIDEM in 2015.

IV.B.3.b.9	Use the space below to provide a description of efforts and actions taken to inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste, as well as allowable non-stormwater discharges identified as significant contributors of pollutants. Include a description on how this activity was coordinated with the public education minimum measure and the pollution prevention/good housekeeping minimum measure programs. Identify person(s) / Department and/or parties responsible for the implementation of this requirement. Evaluate effectiveness of the implementation of this requirement.
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The Department of Community Development and the Department of Public Works are responsible for the implementation of this goal. The Town has adopted an IDDE ordinance (Chapter 13, Article VIII of Bristol Town Code). Notice of this ordinance was placed in the local newspaper and a televised public hearing was held where Town staff explained the rationale for the ordinance and problems associated with the improper disposal of wastes in stormwater. The Town also utilizes and assists private groups such as Save Bristol Harbor, Save the Bay, Bristol Recycles, and Mosaico CDC to educate residents and students about improper waste disposal and stormwater impacts. The Town web site includes stormwater pollution education information, including the IDDE ordinance. The Town also collects many waste items (including waste oil) for proper disposal at its transfer station and coordinates an annual hazardous waste collection day with Rhode Island Resource Recovery Corporation. The Town plans to continue these activities in the next permit year. In addition, the Town will partner with community groups to provide an education program with specific information to educate the public on IDDE and improper waste disposal. The Town has also added additional waste disposal and recycling information to its website and to provide brochures and other public education information within public buildings.

**ILLICIT DISCHARGE DETECTION AND ELIMINATION cont'd**

**Additional Measurable Goals and Activities**

**BMP ID 3-9: (Develop a strategy for illicit discharge education)**

In 2008, the Town of Bristol adopted its IDDE ordinance and began researching for education materials to specifically inform the community about illicit discharge and improper disposal of waste (see discussion above). With assistance and information provided by the URI NEMO storm water public education and outreach program, the Town plans to continue these activities and to partner with community groups to provide an education program with specific information to educate the public on IDDE and improper waste disposal. The Town has also added additional waste disposal and recycling information to its website and to provide brochures and other public education information within public buildings.

**BMP ID 3-4: (Inspect all town outfalls)**

In 2010, the Town contracted with an engineering consultant to field verify and GPS located our entire storm drainage system. This project included locating and inspecting every catch basin, manhole and outfall; in addition to determining drain pipe location, size, and direction of flow to complete a detailed storm drain GIS layer. A total of 173 Town-owned outfalls have now been identified. In Year 8 (2011), the Town complete two rounds of Dry Weather Surveys of all identified Town-owned outfalls. These surveys included sampling and analysis of all outfalls found to be flowing.

**SECTION II.A Other Reporting Requirements - Illicit Discharge Investigation and System Mapping (Part IV.G.2.m)**

# of Illicit Discharges Identified in 2015: 0	# of Illicit Discharges Tracked in 2015: 1
# of Illicit Discharges Eliminated in 2015: 0	# of Complaints Received: 0
# of Complaints Investigated: 0	# of Violations Issued: 0
# of Violations Resolved: 0	# of Unresolved Violations Referred to RIDEM: 0
Total # of Illicit Discharges Identified to Date (since 2003): 2	Total # of Illicit Discharges remaining unresolved at the end of 2015: 1
<p>Summary of Enforcement Actions:</p> <p>The Department of Public Works and the Wastewater Department currently work together to investigate complaints or other evidence of potential illicit connections to the Town's drainage system. Complaints or direct observations by Town employees or consultants are investigated by the DPW and their sources identified and removed (if necessary). In 2015, the Town conducted additional survey and sampling work to further investigate the outfall (Outfall 113) identified in previous years as having a potential illicit discharge. This outfall, as well as several interconnecting catch basins and manholes has been inspected and samples collected for laboratory analysis. No specific source or illicit connections were identified during this investigation. The Town determined that there is a municipal gravity sanitary sewer line that is located in the area and that it crosses over drainage lines contributing to this outfall. In order to rule out the possibility of a cross connection between the drain and sanitary sewer lines, the Town's engineering consultant worked with a private contractor to conduct a closed circuit television (CCTV) inspection of drain lines contributing to Outfall 113 and the adjacent Outfall 112. This investigation did not identify any direct or indirect connections between the drain and sanitary sewer lines. In the next permit year, the Town will conduct further investigation to determine the source of bacteria at this outfall.</p>	

**ILLICIT DISCHARGE DETECTION AND ELIMINATION cont'd**

Extent to which the MS4 system has been mapped:

The Town of Bristol has mapped 100% of its MS4 system. In Year 7 (2010), the Town contracted with an engineering consultant to field-verify and GPS located our entire storm drainage system. This project included locating and inspecting every catch basin, manhole and outfall; in addition to determining drain pipe location, size, and direction of flow to complete a detailed storm drain GIS layer. A total of 173 Town-owned outfalls, 2,884 catch basins, and 541 manholes were located, inspected, and mapped in 2010. In year 11 (2014), the Town revised its stormwater GIS layer to incorporate recent drainage improvements, new development projects, and some miscellaneous field edits to the mapping completed in 2010. These edits included the identification of one new Town-owned stormdrain outfall, bringing the total number of Town-owned outfalls to 174. Copies of revised stormwater system maps were submitted with our Year 11 annual report.

Total # of Outfalls Identified and Mapped to date:

The Town of Bristol has identified and mapped a total of 174 Town-owned outfalls. In addition, the Town has identified and mapped approximately 58 privately-owned outfalls and 22 State-owned outfalls.

**SECTION II.B Interconnections (Parts IV.G.2.k and IV.G.2.l)**

Interconnection:	Date Found:	Location:	Name of Connectee:	Originating Source:	Planned and Coordinated Efforts and Activities with Connectee:
RIDOT	2010	Metacom Avenue (Rt. 136)	RIDOT	Various Town-owned side streets	Contact RIDOT if maintenance is required
RIDOT	2010	Hope Street (Rt. 114)	RIDOT	Various Town-owned side streets	Contact RIDOT if maintenance is required or if illicit connection(s) is detected.



**MINIMUM CONTROL MEASURE #4:  
CONSTRUCTION SITE STORMWATER RUNOFF CONTROL  
(Part IV.B.4 General Permit)**

**SECTION I. OVERALL EVALUATION:**

**GENERAL SUMMARY, STATUS, APPROPRIATENESS AND EFFECTIVENESS OF MEASURABLE GOALS:**

Include information relevant to the implementation of each measurable goal, such as activities implemented to support the review, issuance and tracking of permits, inspections and receipt of complaints. Discuss activities to be carried out during the next reporting cycle. If addressing TMDL requirements, please indicate rationale for the activities chosen to address the pollutant of concern.

**(Note: Identify parties responsible for achieving the measurable goals and reference any reliance on another entity for achieving measurable goals.)**

**Responsible Party Contact Name:** Edward M. Tanner, Principal Planner, Department of Community Development

**Phone:** (401) 253-7000

**Email:** etanner@bristolri.us

IV.B.4.b.1	<p>Indicate if the Sediment and Erosion Control and Control of Other Wastes at Construction Sites ordinance was <b>not</b> developed, adopted, and submitted to RIDEM, explain reasons why, submit proposed schedule for completion and identify person(s) / Department and/or parties responsible for the completion of this requirement.</p> <p><b>Date of Adoption: January 25, 2006; amended January 23, 2008</b></p> <p>If the Ordinance was amended in 2015, please indicate why changes were necessary. <b>Please also indicate if amendments have been made based on the 2010 RI Stormwater Design and Installation Standards Manual, and provide references to the amended portions of the local codes/ordinances.</b></p>
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The ordinance was adopted on January 25, 2006 and was amended on January 23, 2008 (Chapter 29 of Bristol Town Code). The amended ordinance was submitted to RIDEM on November 12, 2008 with a letter from the Town Solicitor. The ordinance was not amended in 2015. However, in 2014, the Town of Bristol commissioned a private engineering consultant to conduct an audit of the Town's stormwater regulations to determine how we could improve the review and the processing of stormwater related permits. This audit was conducted in response to concerns raised by the public at Town Council meetings regarding the impact to neighboring properties from recent residential and commercial developments. Bristol's Soil Erosion, Runoff and Sediment Control Ordinance as well as the Planning Board's Subdivision and Development Review Regulations were included in this audit. The consultant worked with Town staff to identify inconsistencies between local and state regulations and to identify and recommend edits to local regulations that would enhance and clarify stormwater management related permitting activities. This audit report was received in January 2015, and the Town Council and the Planning Board held a joint public meeting in February 2015 to review and discuss the audit report findings. A copy of the consultant's audit report is **attached**. In the next permit year, the Town will work to implement the consultant's recommendations and revise local ordinances accordingly.

IV.B.4.b.6	Use the space below to describe actions taken as a result of receipt and consideration of information submitted by the public.
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Complaints or comments are received by the Building Inspector, DPW staff, the Planning Department, or the Code Compliance Coordinator. All comments submitted by the public are follow up quickly and any site modifications or repairs to erosion/sediment controls that may be necessary are discussed with the site contact. In nearly all instances, Town staff members are aware of construction activities, as some type of permit is required, and site contact information is readily available. A file is maintained in the Department of Community Development for each permitted construction site and inspection and enforcement actions are noted within each file.

IV.B.4.b.8	Use the space below to describe activities and actions taken as a result of referring to the State non-compliant construction site operators. The operator may rely on the Department for assistance in enforcing the provisions of the RIPDES General Permit for Stormwater Discharges Associated with Construction Activity to the MS4 if the operator of the construction site fails to comply with the local and State requirements of the permit and the non-compliance results or has the potential to result in significant adverse environmental impacts.
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The Town of Bristol did not use the assistance of RIDEM to enforce the Erosion, Runoff, & Sediment Control Ordinance in 2015.

**CONSTRUCTION SITE STORMWATER RUNOFF CONTROL cont'd**

Additional Measurable Goals and Activities

BMP ID 4-8 (Track the number of non-compliant sites reported)

Since the Soil Erosion, Runoff, & Sediment Control Ordinance was first adopted in 2006, we have inspected 100% of construction projects within the regulated area, including most small projects such as single-family house lots. Compliance inspections are performed by Town officials (Principal Planner, Building Inspector, DPW foreman, or Code Compliance Officer) and in many cases by a professional engineer consultant contracting with the Planning Board. Where non-compliant sites are found, the applicant's and/or contractors are notified and follow up inspections are performed to ensure compliance. All projects are inspected periodically, and significant inspection or enforcement issues are noted in the project's file. However, many routine inspections are not well documented or tracked. The Town is considering implementing a computer spreadsheet database program to specifically track the issuance of these permits, inspections, and compliance issues.

**SECTION II. A - Plan and SWPPP/SESC Plan Reviews during Year 12 (2015), Part IV.B.4.b.2:** Issuance of permits and/or implementation of policies and procedures for all construction projects resulting in land disturbance of greater than 1 acre.  
**Part IV.B.4.b.4:** Review 100% of plans and SWPPPs/SESC Plans for construction projects resulting in land disturbance of 1-5 acres must be conducted by adequately trained personnel and incorporate consideration of potential water quality impacts.

# of Construction Reviews completed: 15  
# of Permits/Authorizations issued: 15  
% of Total: 100%

Summary of Reviews and Findings, include an evaluation of the effectiveness of the program. Identify person(s) /Department and/or parties responsible for the implementation of this requirement.

The Town of Bristol adopted its Soil Erosion, Runoff & Sediment Control Ordinance in January 2006. Since that time, we have reviewed 100% of plans for construction projects resulting in land disturbance of 1-5 acres (and many smaller projects including single-family house lots). Prior to this ordinance, the Town relied on soil erosion and runoff control regulations contained in Article IX, Division 3 of the Zoning Ordinance (adopted in September 1996) and the design and construction standards included in Appendix F of the Planning Board's Subdivision & Development Review Regulations (adopted in September 1995). In September 2009, the Planning Board adopted amendments to the Subdivision and Development Review Regulations that include revisions to the design and construction standards for drainage control structures and stormwater management systems.

All plans for construction projects greater than one acre are reviewed by Town officials and in many cases also by a professional engineer consultant contracting with the Planning Board. A permit is issued for each project and files are maintained, including compliance inspections and follow up. The Town is considering implementing a computer spreadsheet database program to specifically track the issuance of these permits, inspections, and compliance issues. In Year 12 (2015), the Town reviewed soil erosion, runoff and sediment control plans for 15 construction sites (most less than one acre).

**CONSTRUCTION SITE STORMWATER RUNOFF CONTROL cont'd**

**SECTION II.B - Erosion and Sediment Control Inspections during Year 12 (2015), Parts IV.G.2.n and IV.B.4.b.7:**  
Inspection of 100% of all construction projects within the regulated area that discharge or have the potential to discharge to the MS4 (the program must include two inspections of all construction sites, first inspection to be conducted during construction for compliance of the Erosion and Sediment controls at the site, the second to be conducted after the final stabilization of the site).

# of Active Construction Projects: 15+/-	
# of Site Inspections: 30+/-	# of Complaints Received: 2
# of Violations Issued: 0	# of Unresolved Violations Referred to RIDEM: 0
<p>Summary of Enforcement Actions, include an evaluation of the effectiveness of the program. Identify person(s) /Department and/or parties responsible for the implementation of this requirement.</p> <p>The Principal Planner, Building Inspector, and DPW are responsible for implementing this requirement. All construction sites are inspected for erosion and sediment controls and compliance with permits. Approximately 30 site inspections were conducted during 2015, though many more informal "drive by" inspections occur by Town staff during routine operations. Several sites required compliance / enforcement and follow-up. In nearly all cases, compliance is accomplished with a phone call or personal conversation with the applicant or site contractor. If compliance is not accomplished by these means, a notice of inspection letter is sent to the applicant/property owner. No such letters were sent in Year 12 and no formal recorded violation notices were issued for erosion and sediment controls in Year 12. A file is maintained for each project, including permits, plans, compliance inspection notes and follow up. However, we have not maintained this information in a tracking database. The Town is considering implementing a computer spreadsheet database program to specifically track the issuance of these permits, inspections, and compliance issues.</p>	



**MINIMUM CONTROL MEASURE #5:  
POST CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND  
REVELOPMENT  
(Part IV.B.5 General Permit)**

**SECTION I. OVERALL EVALUATION:**

**GENERAL SUMMARY, STATUS, APPROPRIATENESS AND EFFECTIVENESS OF MEASURABLE GOALS:**

Include information relevant to the implementation of each measurable goal, such as activities implemented to support the review, issuance and tracking of permits, inspections and receipt of complaints, etc. Please indicate if any projects have incorporated the use of Low Impact Development techniques. Discuss activities to be carried out during the next reporting cycle. If addressing TMDL requirements, please indicate rationale for the activities chosen to address the pollutant of concern.

**(Note: Identify parties responsible for achieving the measurable goals and reference any reliance on another entity for achieving measurable goals.)**

**Responsible Party Contact Name:** Edward M. Tanner, Principal Planner, Department of Community Development

**Phone:** (401) 253-7000

**Email:** etanner@bristolri.us

IV.B.5.b.5	Use the space below to describe activities and actions taken to coordinate with existing State programs requiring post-construction stormwater management.
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In Year 12 (2015), the Town of Bristol reviewed all plans under the Town's ordinances and regulations including Subdivision and Development Plan Review Regulations and the Soil Erosion, Runoff, and Sediment Control Ordinance. In most cases these regulatory mechanisms require the same design standards as State regulations. The Soil Erosion, Runoff, and Sediment Control Ordinance requires that if any approvals for a project that are received from Rhode Island Freshwater Wetlands permit or a Coastal Resource Management Council Assent contains provisions for erosion and sediment controls, that the approved site plan be a component of the overall soil erosion, runoff and sediment control plan.

IV.B.5.b.6	Use the space below to describe actions taken for the referral to RIDEM of new discharges of stormwater associated with industrial activity as defined in RIPDES Rule 31(b)(15) (the operator must implement procedures to identify new activities that require permitting, notify RIDEM, and refer facilities with new stormwater discharges associated with industrial activity to ensure that facilities will obtain the proper permits).
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In Year 12 (2015), the Town of Bristol did not refer any new discharges of storm water associated with industrial activity to the State.

IV.B.5.b.9	Indicate if the Post-Construction Runoff from New Development and Redevelopment Ordinance was <b>not</b> developed, adopted, and submitted to RIDEM, explain reasons why, submit proposed schedule for completion and identify person(s) / Department and/or parties responsible for the completion of this requirement. <b>Date of Adoption: October 28, 2009</b> If the Ordinance was amended in 2015, please indicate why changes were necessary. <b>Please also indicate if amendments have been made based on the 2010 RI Stormwater Design and Installation Standards Manual, and provide references to the amended portions of the local codes/ordinances.</b>
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The post-construction stormwater management ordinance was adopted on October 28, 2009 as an amended to the Town's Soil Erosion, Runoff and Sediment Control ordinance (Chapter 29 of Bristol Town Code). This ordinance was submitted to RIDEM on December 2, 2009 with a letter from the Town Solicitor. The ordinance was not amended in 2015. However, in 2014, the Town of Bristol commissioned a private engineering consultant to conduct an audit of the Town's stormwater regulations to determine how we could improve the review and the processing of stormwater related permits as well as our standards for construction and long-term monitoring and maintenance of stormwater BMP's. This audit was conducted in response to concerns raised by the public at Town Council meetings regarding the impact to neighboring properties from recent residential and commercial developments. Bristol's Soil Erosion, Runoff and Sediment Control Ordinance as well as the Planning Board's Subdivision and Development Review Regulations were included in this audit. The consultant worked with Town staff to identify inconsistencies between local and state regulations and to identify and recommend edits to local regulations that would enhance and clarify stormwater management related permitting activities. This audit report was received in January 2015, and the Town Council and the Planning Board held a joint public meeting in February 2015 to review and discuss the audit report findings. In the next permit year, the Town will work to implement the consultant's recommendations and revise local ordinances accordingly.

**POST CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT**  
*cont'd*

IV.B.5.b.12	Use the space below to describe activities and actions taken to identify existing stormwater structural BMPs discharging to the MS4 with a goal of ensuring long term O&M of the BMPs.
<p>In October 2009, the Town of Bristol adopted an ordinance that specifically regulates the installation and maintenance of post-construction BMP's, including long-term operation and maintenance. In addition, the Planning Board in September 2009 adopted amendments to the Subdivision and Development Review Regulations that include enhanced provisions for long-term operation and maintenance of stormwater BMP's. The Department of Community Development and the Public Works Department have compiled an inventory of private stormwater BMP's installed prior to adoption of this ordinance based upon knowledge of private developments in the past 20+ years. The Town will inspect these locations and notify property owners of the need for proper operation and maintenance of their systems. The Town will also work with its solicitor to explore further regulatory mechanisms to require long-term O&amp;M of existing privately-owned BMP's.</p>	
Additional Measurable Goals and Activities	

**SECTION II.A. - Plan and SWPPP/SESC Plan Reviews during Year 12 (2015), Part IV.B.5.b.4:** Review 100% of post-construction BMPs for the control of stormwater runoff from new development and redevelopment projects that result in discharges to the MS4 which incorporates consideration of potential water quality impacts (the program requires reviewing 100% of plans for development projects greater than 1 acre, not reviewed by other State programs).

<p># of Post-Construction Reviews completed: 4 – All projects greater than one acre have been reviewed                  # of Permits/Authorizations issued: 4                  % of Total: 100%</p>
<p>Summary of Reviews and Finding, include an evaluation of the effectiveness of the program. Identify person(s) /Department and/or parties responsible for the implementation of this requirement.</p> <p>The Town of Bristol adopted its Soil Erosion, Runoff &amp; Sediment Control Ordinance in January 2006. Since that time, we have reviewed 100% of plans for post-construction BMP's at construction projects resulting in land disturbance of greater than one acre. We also review plans for many smaller commercial and residential projects where post-construction BMP's may be required. In September 2009, the Planning Board adopted amendments to their Subdivision and Development Review Regulations that include revisions to the design and construction standards for drainage control structures and stormwater management systems, including future operation and maintenance. All plans for construction projects greater than one acre are reviewed by Town officials and in many cases also by a professional engineer consultant contracting with the Planning Board. A permit is issued for each project and files are maintained, including compliance inspections and follow up.</p> <p>In Year 12 (2015), we reviewed plans for post-construction BMP's at four (4) sites greater than one acre in size. These sites included three residential subdivisions and one commercial development. Plans for each of these projects were reviewed by Town staff and an engineering consultant retained by the Planning Board.</p>

**SECTION II.B. - Post Construction Inspections during Year 12 (2015), Parts IV.G.2.o and IV.B.5.b.10 - Proper Installation of Structural BMPs:** Inspection of BMPs, to ensure these are constructed in accordance with the approved plans (the program must include inspection of 100% of all development greater than one acre within the regulated areas that result in discharges to the MS4 regardless of whom performs the review).

# of Active Construction Projects: 5	
# of Site Inspections for proper Installation of BMPs: 15+/-	# of Complaints Received: 0
# of Violations Issued: 0	# of Unresolved Violations Referred to RIDEM: 0

**POST CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT**  
*cont'd*

**Summary of Enforcement Actions:**

The Town of Bristol inspects 100% of post-construction BMP's at development and redevelopment sites greater than one acre (and many smaller ones) to ensure that they are constructed in accordance with the approved plans. In addition to periodic inspections by trained Town officials, these sites are inspected regularly by professional engineer consultants contracted through the Planning Board. When deficiencies are found, the engineering consultants submit reports to the Town and these reports are maintained with each project file. Property owners and their contractor are notified of any deficiencies or violations and these are usually corrected after verbal or written notification from the Town. Final inspections are conducted prior to the release of all conditions, bonds, or Certificates of Occupancy. The regulatory mechanism used to achieve these inspections is the Planning Board's Subdivision & Development Review Regulations. Review and approval by the Planning Board under these regulations is required for all projects involving the subdivision of land and for nearly all other commercial, industrial or residential developments. The regulations require applicants to pay engineering review fees that include inspections by the Town's consultant. Post-construction inspections were conducted during 2015 on several projects that were under construction on sites greater than one acre, including commercial (re)developments, and residential subdivisions. While there were few development projects occurring in Bristol during 2015 that disturbed more than one acre of land, all were subject to review and inspections under the Planning Board's Subdivision & Development Review Regulations. While we are currently inspecting all sites, and project files with inspection notes are being maintained, we have not maintained this information in a tracking database. The Town is considering implementing a computer spreadsheet database program to specifically track the issuance of these permits, inspections, and compliance issues

**SECTION II.C. - Post Construction Inspections during Year 12 (2015), Parts IV.G.2.p and IV.B.5.b.11 - Proper Operation and Maintenance of Structural BMPs:** Describe activities and actions taken to track required Operations and Maintenance (O&M) actions for site inspections and enforcement of the O&M of structural BMPs. Tracking of required O&M actions for site inspections and enforcement of the O&M of structural BMPs.

# of Site Inspections for proper O&M of BMPs: 0	# of Complaints Received: 0
# of Violations Issued: 0	# of Unresolved Violations Referred to RIDEM: 0

Summary of Activities and Enforcement Actions. Evaluate the effectiveness of the Program in minimizing water quality impacts. Identify person(s) /Department and/or parties responsible for the implementation of this requirement.

In October 2009, the Town of Bristol adopted its "post-construction" ordinance that specifically regulates the installation and maintenance of privately owned post-construction BMP's, including long-term operation and maintenance. In addition, the Planning Board in September 2009 adopted amendments to the Subdivision and Development Review Regulations that include enhanced provisions for long-term operation and maintenance of stormwater BMP's. The Department of Community Development and the Public Works Department have compiled an inventory of privately owned stormwater BMP's based upon knowledge of private developments in the past approximate 20 years. The Town will inspect these locations and notify property owners of the need for proper operation and maintenance of their systems. In addition, we will work with the Town Solicitor to review our existing regulations and ordinances to identify what regulatory mechanism might be available to compel private owners of stormwater BMP's to properly maintain their systems and report this maintenance information to the Town.

**POST CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT**  
*cont'd*

Strategies being implemented to ensure long-term Operation and Maintenance (O&M) of privately-owned BMPs, check all that apply in your municipality/MS4:

- None
- Ordinances or by-laws identify BMP inspection responsible party
- Ordinances or by-laws identify BMP maintenance responsible party
- Ordinances or by-laws identify BMP inspections and maintenance requirements
- Ordinances or by-laws provide for easements or covenants for inspections and maintenance
- Ordinances or by-laws require for every constructed BMP an inspections and maintenance agreement
- Ordinances or by-laws contain requirements for documenting and detailing inspections
- Ordinances or by-laws contain requirements for documenting and detailing maintenance
- Ordinances or by-laws contain authority to enforce for lack of maintenance or BMP failure
- The MS4 is responsible for inspections of all privately-owned BMPs
- The MS4 is responsible for maintenance of all privately-owned BMPs
- Establishment of escrow account for use in case of failure of BMP
- Other strategies to ensure long-term O&M of privately-owned BMPs, describe:

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Do you have an inventory of privately owned BMPs?  YES  NO

Do you have a system for tracking:

- a. Agreements and arrangements to ensure O&M of BMPs?  YES  NO
- b. Inspections?  YES  NO
- c. Maintenance plans and schedules of privately-owned BMPs?  YES  NO
- d. Complaints?  YES  NO
- e. Non-Compliance?  YES  NO
- f. Enforcement actions?  YES  NO

Do you use an electronic tool (e.g. GIS, database, spreadsheet) to track post-construction BMPs, inspections, and maintenance?  YES  NO

If yes, please elaborate on which tools are used:

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*NOTE: BMP maintenance tasks can be a great way to involve and educate the community to their purpose and function. BMPs have the potential to create a highly interactive environment for community members and volunteers to get involved.*



**MINIMUM CONTROL MEASURE #6:  
POLLUTION PREVENTION AND GOOD HOUSEKEEPING IN MUNICIPAL OPERATIONS  
(Part IV.B.6 General Permit)**

**SECTION I. OVERALL EVALUATION:**

**GENERAL SUMMARY, STATUS, APPROPRIATENESS AND EFFECTIVENESS OF MEASURABLE GOALS:**

Include information relevant to the implementation of each measurable goal, such as activities and practices used to address on-going requirements, and personnel responsible. Discuss activities to be carried out during the next reporting cycle. If addressing TMDL requirements, please indicate rationale for the activities chosen to address the pollutant of concern.

**(Note: Identify parties responsible for achieving the measurable goals and reference any reliance on another entity for achieving measurable goals.)**

**Responsible Party Contact Name:** Kevin R. McBride, P.E., Director of Public Works

**Phone:** 253-4100

**Email:** kmcbride@bristolri.us

IV.B.6.b.1.i Use the space below to describe activities and actions taken to identify structural BMPs owned or operated by the small MS4 operator (the program must include identification and listing of the specific location and a description of all structural BMPs in the SWMPP and update the information in the Annual Report). Evaluate appropriateness and effectiveness of this requirement.

Do you have an inventory of MS4-owned BMPs?  YES  NO

The Town of Bristol owns and operates structural BMP's connected to its roadway drainage system. These BMP's include detention/retention basins and ponds, swales, subsurface infiltration systems, and proprietary water quality structures. The vast majority of these structures were constructed in the past two decades as part of residential subdivisions. In 2010, the Town contracted with an engineering consultant to field verify and GPS locate our entire storm drainage system. This project included locating and inspecting every catch basin, manhole, outfall and other structure (such as detention basins and water quality units); in addition to determining drain pipe location, size, and direction of flow to complete a detailed storm drain GIS layer. The locating and mapping of these drainage system elements was done with sufficient accuracy to allow for the revisiting of the location of these elements. Each drainage system element has been assigned a unique identification number and inspection notes have been recorded in a database linked to the GIS. In year 11 (2014), the Town revised its stormwater GIS layer to incorporate recent drainage improvements, new development projects, and some miscellaneous field edits to the mapping. The DPW utilizes this database and the identification numbers of each element to track and map maintenance and repair activities. A list of each structural BMP located at 37 individual sites owned and operated by the Town, including specific locations and a description of each is included in Section II.A below.

IV.B.6.b.1.ii Use the space below to describe activities and actions taken for inspections, cleaning and repair of detention/retention basins, storm sewers and catch basins with appropriate scheduling given intensity and type of use in the catchment area. Evaluate appropriateness and effectiveness of this requirement.

Do you have a system for tracking:

- a. Inspection schedules of MS4-owned BMPs?  YES  NO
- b. Maintenance/cleaning schedules of MS4-owned BMPs?  YES  NO
- c. Repairs, corrective actions needed?  YES  NO
- d. Complaints?  YES  NO

Do you use an electronic tool (e.g. GIS, database, spreadsheet) to track stormwater BMPs, inspections, and maintenance?  YES  NO

The DPW inspects detention/retention basins, storm sewer catch basins, and manholes as part of its routine inspections of MS4 components. In 2010, the Town contracted with an engineering consultant to locate, inspect, and document the condition of every storm drainage system structure, including every catch basin, manhole, outfall and detention/retention basin. This location and inspection information has been entered into a town-wide drainage system database that is linked to the GIS, with each drainage structure having a unique identification number. This information is being utilized by DPW to improve its field inspection activities and allow for the mapping of priority areas for additional cleaning, maintenance, and investigation. In addition to regular maintenance of BMP's, the Town also retained the services of a private contractor in 2015 to remove sediment and debris from the forebay and outfall areas at the newly constructed gravel wet vegetated treatment system (GWVTS) installed at the Bristol Town Beach. In the following permit year, the Town of Bristol plans to continue routine inspections of drainage system components and to utilize the inspection database and GIS to prioritize any necessary cleaning and repairs.





**POLLUTION PREVENTION AND GOOD HOUSEKEEPING IN MUNICIPAL OPERATIONS cont'd**

IV.B.6.b.1.vii	Use the space below to describe activities and actions taken for controls to reduce floatables and other pollutants from the MS4. Evaluate appropriateness and effectiveness of this requirement.
<p>In Permit Year 12 (2015), the Town provided public education about littering through coordination with the schools and other community organizations. The Town's Keep Bristol Clean taskforce, operated by DPW, organizes an annual town-wide cleanup to remove litter. Trash receptacles are available and maintained by the Town in public areas throughout the downtown, the town common, public recreation areas, public transit bus stops, and at the town beach. In addition, many stormwater catch basins have been marked and fitted with hoods to reduce the amount of floatables within the system. For the following permit year, the Town of Bristol plans to continue this practice.</p>	
IV.B.6.b.1.viii	<p>Use the space below to describe the method for disposal of waste removed from MS4s and waste from other municipal operations, including accumulated sediments, floatables and other debris and methods for record-keeping and tracking of this information.</p> <p>Do you have a system for tracking actions to remove and dispose of waste?    <input type="checkbox"/> YES            <input checked="" type="checkbox"/> NO</p>
<p>All wastes collected by DPW from roadway sweeping and catch basin cleaning operations are dewatered in a designated dewatering area at the Town's transfer station (former landfill). The quantity of this waste collection is not measured or tracked as it is often mixed with water used with the vacuum truck and weights would not be considered accurate.</p>	
IV.B.6.b.4 and IV.B.6.b.5	<p>Use the space below to describe and indicate activities and corrective actions for the evaluation of compliance. This evaluation must include visual quarterly monitoring; routine visual inspections of designated equipment, processes, and material handling areas for evidence of, or the potential for, pollutants entering the drainage system or point source discharges to a waters of the State; and inspection of the entire facility at least once a year for evidence of pollution, evaluation of BMPs that have been implemented, and inspection of equipment. A Compliance Evaluation report summarizing the scope of the inspection, personnel making the inspection, major observations related to the implementation of the Stormwater Management Plan (formerly known as a Stormwater Pollution Prevention Plan), and any actions taken to amend the Plan must be kept for record-keeping purposes.</p>
<p>The Department of Public Works has developed and implemented a spill prevention and good housekeeping plan for their primary maintenance and storage facility at Mt. Hope Avenue. The plan has been approved by RIDEM &amp; EPA and includes provisions for fuel storage, salt and sand storage, vehicle washing, and stormwater management. The plan was approved in March 2005 (Permit Year 2). In 2006 (Permit Year 3), the Town constructed a new vehicle washing building. In 2003, the Town constructed a new 40ft.x80ft. salt storage building. In 2015, DPW installed a replacement floor drain system within its garage and vehicle washing buildings. This replacement drainage system was designed to meet EPA requirements as it includes oil/water separators, individual baffles to separate sediments and floatables, as well as "pig filters" to remove hydrocarbons prior to discharge to the municipal drainage system.</p> <p>The Town's transfer station (closed and capped landfill), located off Minturn Farm Road, was constructed under the direction of RIDEM and includes a spill prevention and good housekeeping plan approved by RIDEM along with a stormwater management system specifically designed for the property's use as a transfer station with appropriate water quality BMP's.</p> <p>The Town's Wastewater Treatment Facility, located off of Wood Street, also has pollution prevention procedures in place to prevent the release of hazardous materials or other contaminants to the environment. This facility is not served by any stormwater drainage structures, and runoff is directed from impervious areas to vegetated swales and woodlands. The facility is inspected annually by RIDEM. In Year 12 (2015), the Town continued these practices. For the following permit year, the Town of Bristol plans to continue these practices.</p>	

**POLLUTION PREVENTION AND GOOD HOUSEKEEPING IN MUNICIPAL OPERATIONS cont'd**

<p>IV.B.6.b.6</p>	<p>Use the space below to describe all employee training programs used to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance for the past calendar year, including staff municipal participation in the URI NEMO stormwater public education and outreach program and all in-house training conducted by municipality or other parties. Evaluate appropriateness and effectiveness of this requirement.</p> <p>How many stormwater management trainings have been provided to <i>municipal employees</i> during this reporting period? 0</p> <p>What was the date of the last training? N/A</p> <p>How many <i>municipal employees</i> have been trained in this reporting period? 0</p> <p>What percent of <i>municipal employees</i> in relevant positions and departments receive stormwater management training? 100%</p>
<p>All new DPW employees are trained on good housekeeping and spill prevention plan procedures to reduce storm water pollution from municipal operations. Municipal staff from the Departments of Community Development and Public Works also attended URI NEMO trainings along with other training offered by RIDEM. These training programs have been effective in minimizing storm water pollution from municipal operations at DPW facilities and from equipment use throughout the town by municipal employees. In addition, members of Bristol's all volunteer Fire Department — consisting of approximately 100 members — each receive training in oil and hazardous materials spill prevention and containment/cleanup before joining the department. Beyond this basic level of training, approximately 10 to 15 members of the fire department have received specialized training in hazardous materials spill response. Many municipal employees, including numerous DPW and Wastewater Department staff, are members of the Bristol Fire Department and receive this training.</p>	
<p>IV.B.6.b.7</p>	<p>Use the space below to describe actions taken to ensure that new flow management projects undertaken by the operator are assessed for potential water quality impacts and existing projects are assessed for incorporation of additional water quality protection devices or practices. Evaluate appropriateness and effectiveness of this requirement.</p>
<p>The Town's drainage committee, with representatives of the DPW, Planning Department, and consulting engineer, met approximately quarterly in 2015 to prioritize and coordinate maintenance and repairs to areas with problematic flooding or drainage problems. Any repairs to existing drainage structures or installations of new stormwater management structures are assessed by the committee for water quality impacts and appropriate structures and BMP's are selected for a given location.</p>	
<p>Additional Measurable Goals and Activities          BMP ID 6-4 (Sweep environmentally sensitive areas twice per year)          The Department of Public Works currently conducts an annual road-sweeping program that includes all public roadways and parking areas. The town sweeps all streets twice per year and many within the downtown area are swept more often. The Town owns and operates two sweeping trucks to complete this task.</p>	

**SECTION II.A - Structural BMPs (Part IV.B.6.b.1.i)**

**POLLUTION PREVENTION AND GOOD HOUSEKEEPING IN MUNICIPAL OPERATIONS cont'd**

<b>BMP ID:</b>	<b>Location:</b>	<b>Name of BMP Owner/Operator:</b>	<b>Description of BMP:</b>
1	Patricia Anne Drive	Town of Bristol	Retention Basin
2	Elm Farm Road	Town of Bristol	Detention Basin
3	White Tail Drive	Town of Bristol	Detention Basin
4	Deer Run Road	Town of Bristol	Detention Basin
5	Quenton Lane	Town of Bristol	Detention Basin
6	St. Louis Avenue	Town of Bristol	Water Quality Unit
7	Sherman Avenue @ Everett Street	Town of Bristol	Water Quality Unit
8	Sandy Lane #1	Town of Bristol	Detention Basin
9	Sandy Lane #2	Town of Bristol	Detention Basin
10	Michael Drive @ Metacom Avenue	Town of Bristol	Subsurface Infiltration Units
11	Casey Drive	Town of Bristol	Detention Basin
12	Lisa Lane	Town of Bristol	Detention Basin
13	Anchorage Court	Homeowners Association	Detention / Infiltration Basins
14	Cox Court	Town of Bristol	Detention / Infiltration Basins
15	Tina Court @ Metacom Avenue	Town of Bristol	Detention Basin
16	Broadcommon Road	Town of Bristol	Vegetated Swales to Duck Pond Retention Area
17	Ballou Boulevard	Town of Bristol	Retention Basins and Vegetated Swales
18	Town Beach Parking Lot	Town of Bristol	Vegetated Swale and detention basin
19	Town Beach at Brookwood Rd	Town of Bristol	Gravel Wet Vegetated Treatment System
20	Hillside Road	Town of Bristol	Rip Rap & Vegetated swale
21	Hamlet Court	Town of Bristol	Detention Basin
22	Liberty Lane	Town of Bristol	Detention / Infiltration Basin
23	Varnum Avenue	Town of Bristol	Detention Basin
24	Elbow Street	Town of Bristol	Vegetated Swales
25	Highview Drive	Town of Bristol	Detention Basin
26	Fransesca Lane	Town of Bristol	Vegetated Swale
27	Viking Drive #1	Town of Bristol	Water Quality Unit
28	Viking Drive #2	Town of Bristol	Water Quality Unit
29	Portside Drive	Town of Bristol	Rip Rap Swale

**POLLUTION PREVENTION AND GOOD HOUSEKEEPING IN MUNICIPAL OPERATIONS cont'd**

30	West Harbor Road	Town of Bristol	Vegetated Swales
31	Sandra Court	Town of Bristol	Detention Basin
32	State Street	Town of Bristol	State Street Reservoir Retention Area
33	Minturn Farm Road	Town of Bristol	Transfer Station BMP's swales and water quality units.
34	Vanwinkle Lane	Town of Bristol	Vegetated Swales and Infiltration Basin
35	Annawamscutt Drive at Fire and Rescue Headquarters	Town of Bristol	Detention / Infiltration Basins
36	Kickemuit Avenue roadway	Town of Bristol	Sediment Forebay and Settling Basin
37	Guiteras School Washington Street	Town of Bristol	Bioretention Basins and Swales

**SECTION II.B - Discharges Causing Scouring or Excessive Sedimentation (Part IV.B.6.b.1.v)**

Outfall ID:	Location:	Description of Problem:	Description of Remediation Taken, include dates:	Receiving Water Body Name/Description:
Outfall inspection logs, including information on scouring and sedimentation was submitted with our Year 8 Annual Report. No additional inspection information was prepared for 2015.				

**SECTION II.C - Note any planned municipal construction projects/opportunities to incorporate water quality BMPs, low impact development, or activities to promote infiltration and recharge (Part IV.G.2.j).**

In 2015, the Town of Bristol completed construction of the Guiteras School Stormwater Retrofit project. This project included the implementation of water quality improvements to this 4½ acre elementary school property located along the shoreline of Silver Creek adjacent to Bristol Harbor. Funding assistance was provided by a Section 319 water quality grant from RIDEM. The Town coordinated the design and implementation of this project with the Bristol Warren Regional School District administration, STB, SBH, and the Guiteras School "Green Team" parents group. The Guiteras School building, constructed in 1920, occupies a prominent location overlooking Bristol Harbor and Silver Creek. Prior to construction, landscaped lawn areas surrounding the school building extended to the shoreline of Silver Creek and commonly attracted flocks of Canada Geese. In addition, impervious surfaces on the property (building roofs, pavement) as well as other compacted turf surfaces pitched towards Silver Creek allowing stormwater runoff from the site to flow uncontrolled and untreated towards the creek and Bristol Harbor. The stormwater retrofit project successfully redirected, captured, and treated runoff from these surfaces to limit the transport of pollutants to Silver Creek and Bristol Harbor. This project included a significant public education component including lessons to several hundred elementary school children and their families. Educational information was provided to students about the project, and upon completion, school children led tours of the newly constructed improvements and explained their purpose and function to adults. The school faculty and the Green Team parent group will continue to utilize stormwater improvements for educational purposes and have begun to incorporate several planned gardens and other hands on outdoor education components into the landscape and the school curriculum. In the coming years, the Town will evaluate additional opportunities to incorporate water quality BMP's into other similar public properties.

In 2015, the Town of Bristol assisted the Mosaico Business and Community Development Corporation (Mosaico) with the design and permitting of several water quality improvements at the 10+ acre Bristol Industrial Park located at 500 Wood Street. Stormwater management BMP's were installed and/or are planned for this historic mill complex, which is being redeveloped by Mosaico as part of a multi-year project to improve the industrial park and increase economic activity in the Wood Street neighborhood. Stormwater BMP's installed in 2015 include new parking lot drainage structures which direct stormwater to a large subsurface sand filter to treat stormwater prior to its discharge to existing municipal stormdrain lines in Wood Street. Further water quality improvements, including additional stormwater BMP's are planned for future phases of this redevelopment project and are anticipated to be undertaken in 2016.

**SECTION II.D - Please include a summary of results of any other information that has been collected and analyzed. This includes any type of data (Part IV.G.2.e).**

Trained volunteers from SBH conducted water quality sampling and testing at 14 sites located both within and along the perimeter of Bristol Harbor and at several locations upstream within the Silver Creek watershed. Surface water samples were collected from these 14 locations weekly and analyzed in the field for a variety of parameters. In addition, samples are collected monthly from each location and delivered to URI for laboratory analysis. This valuable work helps the Town, other government agencies, and the public further understand water conditions in the harbor and guide decision making within the watershed. In 2015, the Town of Bristol contributed funds to support SBH's efforts by paying for the cost of laboratory analysis for five (5) sampling locations within Silver Creek, a significant tributary to Bristol Harbor. The **attached** sampling report from URI documents 2015 monitoring results.



## TOTAL MAXIMUM DAILY LOAD (TMDL) or other Water Quality Determination REQUIREMENTS

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**SECTION I. If you have been notified that discharges from your MS4 require non-structural or structural stormwater controls based on an approved TMDL or other water quality determination, please provide an assessment of the progress towards meeting the requirements for the control of stormwater identified in the approved TMDL (Part IV.G.2.d). Please indicate rationale for the activities chosen to address the pollutant of concern.**

The Town of Bristol is aware that RIDEM has finalized a TMDL for Mt. Hope Bay and the Kickemuit River Estuary. Town officials have been notified of the TMDL plan document and its recommended and required actions to improve water quality in Mt. Hope Bay and the Kickemuit River. These actions for the Town of Bristol include: public education and outreach specifically targeting areas that contribute stormwater runoff to TMDL areas; illicit discharge detection and elimination within the targeted areas; implementation of development and re-development post-construction stormwater controls; wet weather sampling and analysis of priority outfalls; analysis of stormwater discharges to priority streams within contributing watershed areas; construction of stormwater BMP's at priority outfalls; and continued sanitary sewer maintenance and improvements within TMDL watershed areas. The Town is also aware that it will be required to submit a revised Storm Water Management Program Plan (SWMPP) shortly after RIDEM re-issues its RIPDES General Permit for Storm Water Discharge from Small Municipal Separate Storm Sewer Systems (MS4 GP). In February 2011, Town officials met with RIDEM representatives as well as municipal officials from both Tiverton and Warren to discuss TMDL implementation requirements. Additional outfall monitoring and sampling activities were conducted in 2012, including one outfall discharging to Mt. Hope Bay. In addition, the Town is working with RIDEM and the USEPA on a Sump Pump Disconnection Program Pilot Study to eliminate sump pump discharges to sanitary sewer lines within a portion of the Mt. Hope Bay watershed to limit the potential for overflows and untreated discharge during heavy precipitation events. The Sump Pump Disconnection Program Pilot Study was permitted by USEPA and RIDEM in 2012, and construction on new drainage lines and sump pump connections was completed in 2014. Sump pump discharges from a total of 26 residential dwellings were removed from the sanitary sewer and connected to the drainage system. In 2014, the Town of Bristol also worked with Save the Bay to design, permit and construct a stormwater management demonstration project at the eastern terminus of Kickemuit Avenue adjacent to the shoreline of the Kickemuit River. The purpose of this project was to design and evaluate end of roadway solutions to managing stormwater that otherwise flows untreated directly to coastal waters (in this case a waterbody with a TMDL). Bristol, as with many other coastal communities, has numerous roadways that "dead end" at the shore. Often these areas have heavy sedimentation and scouring from roadway runoff, but have very limited space for any water quality treatment. This "end-of-road retrofit" project involved the removal of pavement and the construction of a sediment forebay and stone lined settling basin detention area to collect and treat roadway runoff before discharge to the river. Since completion of this drainage improvement project, the DPW and STB have continued to monitor the effectiveness of the selected treatment methods and evaluate its applicability to other similar roadway locations.



## SPECIAL RESOURCE PROTECTION WATERS (SRPWs)

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**SECTION I.** In accordance with Rule 31(a)(5)(i)G of the *Regulations for the Rhode Island Pollutant Discharge Elimination System (RIPDES Regs)*, on or after March 10, 2008, any discharge from a small municipal separate storm sewer system to any Special Resource Protection Waters (SRPWs) or impaired water bodies within its jurisdiction must obtain permits if a waiver has not been granted in accordance to Rule 31(g)(5)(iii). A list of SRPWs can be found in Appendix D of the *RIDEM Water Quality Regulations* at this link:

<http://www.dem.ri.gov/pubs/regs/regs/water/h20q09a.pdf>

The 2008 303(d) Impaired Waters list can be found in Appendix G of the *2008 Integrated Water Quality Monitoring and Assessment Report* at this link: <http://www.dem.ri.gov/programs/benviron/water/quality/pdf/iwqmon08.pdf>

**If you have discharges from your MS4 (regardless of its location) to any of the listed SRPWs or impaired waters (including impaired waters when a TMDL has not been approved), please provide an assessment of the progress towards expanding the MS4 Phase II Stormwater Program to include the discharges to the aforementioned waters and adapting the Six Minimum Control Measures to include the control of stormwater in these areas. Please indicate a rationale for the activities chosen to protect these waters. Please note that all of the measurable goals and BMPs required by the 2003 MS4 General Permit may not be applicable to these discharges.**

The Town of Bristol does not contain any Special Resource Protection Waters (SRPWs). Thus, there are no discharges from our MS4 to any SRPWs.

Two coastal water bodies that border Bristol, the Kickemuit River and Mt. Hope Bay, are listed on the 2008 303(d) Impaired Waters list. The Town has identified discharges from our MS4 to these waters, and has included these discharges in our Phase II Stormwater Program. Outfalls in these areas have been inspected, and all contributing drainage systems have been mapped. Dry weather screening of each of these outfalls has been conducted by the Town, and the information has been included with this and previous annual reports. The Town is also working proactively with RIDEM and the USEPA on a Sump Pump Disconnection Program Pilot Study to eliminate sump pump discharges to sanitary sewer lines within a portion of the Mt. Hope Bay watershed to limit the potential for overflows and untreated discharge during heavy precipitation events.



# RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Office of Water Resources



## INSTRUCTIONS FOR THE RI POLLUTANT DISCHARGE ELIMINATION SYSTEM (RIPDES) SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS AND INDUSTRIAL ACTIVITY AT ELIGIBLE FACILITIES OPERATED BY REGULATED SMALL MS4s ANNUAL REPORT FORM

### **WHO MUST SUBMIT AN ANNUAL REPORT:**

Owners/Operators of regulated small municipal separate storm sewer systems (MS4s) and industrial activities authorized to discharge stormwater under the Rhode Island Pollutant Discharge Elimination System (RIPDES) Stormwater General Permit for Small Municipal Separate Storm Sewer Systems and Industrial Activity at Eligible Facilities Operated by Regulated Small MS4s (hereafter referred to as "the General Permit"), must submit an Annual Report, outlined in Part IV.G of the permit. The Report must be submitted each year after permit issuance by March 10<sup>th</sup> to track progress of compliance. If you have questions regarding this Annual Report Form contact Margarita Chatterton of the Rhode Island Department of Environmental Management (RIDEM), Office of Water Resources, Permitting Section at (401) 222-4700 ext. 7605.

The Annual Report must be submitted to:

RIDEM  
Office of Water Resources  
RIPDES Program  
Permitting Section  
235 Promenade Street  
Providence, RI 02908  
ATTN: Jennifer Stout

### **INSTRUCTIONS FOR COMPLETION:**

#### **GENERAL INFORMATION PAGE:**

##### ***"RIPDES Permit #"***

Include your permit ID # to ensure proper tracking.

##### ***"Operator of MS4"***

Give the legal name of the person, firm, public (municipal) organization, or any other entity that is responsible for day-to-day operations of the MS4 described in this application (RIPDES Rules 3 & 12). Enter the complete address and telephone number of the operator. Circle the appropriate choice to indicate the legal status of the operator of the MS4.

##### ***"Owner of MS4"***

If the owner is the same as the operator do not complete this section. Give the legal name of the person, firm, public (municipal) organization, or any other entity that owns the MS4 described in this application (RIPDES

Rules 3 & 12). Do not use a colloquial name. Enter the complete address and telephone number of the owner.

##### ***"Certification"***

State and federal statutes provide for severe penalties for submitting false information on this application form. State and federal regulations require this application to be signed as follows (RIPDES Rule 12);

*For a corporation:* by a responsible corporate officer, which means: (i) president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information or permit application requirements; and where authority to sign documentation has been assigned or delegated to the manager in accordance with corporate procedures;

*For a partnership or sole proprietorship:* by a general partner or the proprietor;

*For a Municipality, State, Federal or other public site:* by either a principal executive officer or ranking elected official.

#### **SECTION I- OVERALL EVALUATION OF BMPS AND MEASURABLE GOALS:**

One or more pages, front and back, are provided to report on the status of measurable goals which have been developed to aid in the implementation of strategies, procedures, and programs used to achieve each of the six minimum control measures in Part IV.B of the General Permit. This section provides narrative space for a descriptive explanation and evaluation of the actions taken to satisfy each of the minimum control measures for the 2015 calendar year. Please type or print. If additional space is needed, modify as necessary. Please submit attachments to the appropriate minimum control measure following the format provided.

A Permit ID # has been provided, which refers to the part of the permit where you can find a listing or description of the required measurable goal.

Please provide a general summary of actions taken (implementation of BMPs, development of procedures, events, etc.) to meet the measurable goals of the minimum measure. **Be sure to identify parties responsible for achieving each measurable goal** and reference any reliance on another entity for achieving any measurable goal.

Describe whether each measurable goal was completed within the time proposed in the General Permit or your Stormwater Management Program Plan (SWMP). Why or why not? Provide a progress report and discussion of activities that will be carried out during the next reporting cycle to satisfy the requirements of the minimum measures. If applicable, assess the appropriateness of the actions taken to meet the requirements of the minimum measure. In determining appropriateness, you may want to consider at a minimum the local population targeted, pollution sources addressed, receiving water concerns, integration with local management procedures, and available resources and violations or environmental impacts eliminated or minimized.

Also, discuss the effectiveness of the implementation of BMPs to meet the requirements of the minimum measure and the overall effectiveness of the minimum measure. Describe your progress towards achieving the overall goal of reducing the discharge of pollutants. Please include assessment parameters/indicators used to measure the success of the minimum measure. Also include a discussion of any proposed changes to BMPs or measurable goals.

After evaluation, it may be necessary to make changes or modifications to your Implementation Schedule if the time frame, appropriateness or effectiveness cannot be assured. If so, please include descriptions of changes or modifications, and detailed justification in the appropriate sections.

## **SECTION II- ADDITIONAL ANNUAL REPORT REQUIREMENTS**

Section II refers to additional reporting requirements that the General Permit requires to be submitted to the Department as part of the Annual Report. Section II requirements apply to Minimum Control Measures 2 through 6.

**Minimum Control Measure #2: Section II:**  
Specify the date of and how the annual report was public noticed. If a public meeting was needed, provide the date and place. Include a summary of public comments received in the public comment period of the draft annual

report and planned responses or changes to the program (new or revised BMP's and measurable goals, partnerships, etc.). Be sure to attach a copy of your public notice (Parts IV.G.2.h and IV.G.2.i) to the Annual Report.

**Minimum Control Measure #3: Section II.A:**  
Provide the number of illicit discharges identified in 2015, number of illicit discharges tracked in 2015, number of illicit discharges eliminated in 2015, complaints received, complaints investigated, violations issued and resolved with a summary of enforcement actions, number of unresolved violations that have been referred to RIDEM, the total number of illicit discharges identified to date, and the total number of illicit discharges remaining unresolved at the end of 2015. Include a short narrative describing the extent to which your system has been mapped (Part IV.G.2.m), and the total number of outfalls identified to date.

**Minimum Control Measure #3: Section II.B:**  
List identified MS4 interconnections, including location, date found, operator of the physically interconnected MS4, and originating source of newly identified physical interconnections with other small MS4s. Also note any planned or coordinated activities with the physically interconnected MS4 (Part IV.G.2.k and IV.G.2.l).

**Minimum Control Measures #4 & 5: Section II.A:**  
Identify the number of construction and post-construction plan and SWPPP/SESC Plan reviews completed during Year 12 (2015) and any additional information. This includes, but is not limited to a summary of the reviews, responsible parties, and types of projects reviewed.

**Minimum Control Measure #4: Section II.B:**  
Construction inspection information for erosion and sediment control should be submitted annually as stated in Part IV.G.2.n. Provide a summary of the number of site inspections conducted, inspections that have resulted in enforcement actions, violations that have been resolved and of those unresolved, referred to RIDEM.

**Minimum Control Measure #5: Section II.B:**  
Post-construction inspection information for proper installation of post-construction structural BMPs should be submitted annually as stated in Part IV.G.2.o. This should provide a summary of the number of site inspections conducted, inspections that have resulted in enforcement actions, violations that have been resolved and of those unresolved, referred to RIDEM.

**Minimum Control Measure #5: Section II.C:**  
Inspection information for proper operation and maintenance of post-construction structural BMPs should be submitted annually as stated in Part IV.G.2.p. This should provide a summary of the number of site inspections conducted, inspections that have resulted in enforcement actions, violations that have been resolved and of those unresolved, referred to RIDEM.

Minimum Control Measure #6: Section II.A:

As prescribed in Part IV.B.6.b.1.i of the General Permit, the MS4 operator must identify and list the specific location and description of all structural BMPs in the SWMPP at the time of application and update the information in the annual report.

Minimum Control Measure #6: Section II.B:

Part IV.B.6.b.1.v of the General Permit states to identify and report annually, as part of the annual report, known discharges causing scouring at outfall pipes or outfalls with excessive sedimentation. Include Outfall ID #, location, description of the problem, any remediation taken, and the ultimate receiving water body.

Minimum Control Measure #6: Section II.C:

As noted in Part IV.G.2.j of the General Permit, specify any planned municipal construction projects or opportunities to include water quality BMPs, low impact development, or seek to promote infiltration and recharge.

Minimum Control Measure #6: Section II.D:

Please include a summary of results of any other information that has been collected and analyzed. This includes any type of data, including, but not limited to, dry weather survey data (Part IV.G.2.e).

**TOTAL MAXIMUM DAILY LOAD (TMDL) or other Water Quality Determination REQUIREMENTS**

Section I:

Complete this section only if your MS4 is subject to an approved TMDL. TMDL requirements may require the implementation of the six minimum control measures to address the pollutants of concern, and/or additional structural stormwater controls or measures that are necessary to meet the provisions of the approved TMDL. Be sure to identify the approved TMDL and assess the progress towards meeting the requirements for the control of stormwater (Part IV.G.2.d).

Provide a progress report on the present status and discussion of activities that have been accomplished or will be carried out during the next reporting cycle to satisfy the requirements of the TMDL. If applicable, assess the appropriateness of the BMPs selected under each of the six minimum control measures to meet the requirements of the TMDL. In determining appropriateness, you may want to consider violations or environmental impacts eliminated or minimized.

Please include assessment parameters/indicators that will be used to measure the success of the selected BMPs. Also include a discussion of any proposed changes to BMPs or measurable goals.

**SPECIAL RESOURCE PROTECTION WATERS (SRPWs)**

Section I:

Complete this section only if your MS4, located outside Urbanized Areas or Densely Populated Areas, discharges to:

a SRPW as listed in Appendix D of the *RIDEM Water Quality Regulations* at this link:

<http://www.dem.ri.gov/pubs/regs/regs/water/h20q09a.pdf>

or

an impaired water body including water bodies with no approved TMDL as listed in Appendix G of the *2008 Integrated Water Quality Monitoring and Assessment Report* at this link:

<http://www.dem.ri.gov/programs/benviron/water/quality/pdf/iwqmon08.pdf>.

In accordance with Rule 31(a)(5)(i)G in the *Regulations for the Rhode Island Pollutant Discharge Elimination System* (RIPDES Regulations), MS4s were required to incorporate any discharges to these water bodies into their MS4 Program on or after March 10, 2008 unless a waiver has been granted in accordance with Rule 31(g)(5)(iii).

Provide a progress report on the present status and discussion of activities that have been accomplished or will be carried out during the next reporting cycle to incorporate these areas into the MS4's Phase II Stormwater Program.