

Introduction

The Buzzards Bay Stormwater Collaborative Project is a pilot program of the Buzzards Bay Action Committee (BBAC) to map stormwater collection networks and monitor stormwater discharges that are contributing to shellfish bed closures and other pollution-caused impairments in the Buzzards Bay watershed¹. The elimination of illicit discharges to stormwater networks and the treatment of stormwater discharges conveying non-point sources of pollution will help reduce these impairments, but these actions can only be taken if problem discharges can be identified and prioritized. The Buzzards Bay National Estuary Program is providing technical support for this effort.

The Buzzards Bay Stormwater Collaborative is a regional inter-municipal program that through cost-effectively sharing of resources and expertise has begun the vital first steps of monitoring discharges and mapping stormwater networks. Tasks and deliverables of this project include:

- 1) an updated GIS database including connections between catch basins and discharge points;
- 2) a water quality database that will be available for use by government and researchers;
- 3) a report, with a prioritization of stormwater discharges based on water quality data and GIS analysis;
- 4) a list of priority stormwater networks with potential illicit connections;
- 5) a cross-municipal public education program, including informational flyers in direct mailers.

This report provides your town a preliminary look at the data collected during the summer and fall of 2016 by the BBAC Stormwater Collaborative. Additional data will be collected in the spring and summer of 2017 and a final report will be issued in late 2017. The final report for your town will include all collected stormwater quality data, GIS mapping of stormwater infrastructure, identification of possible illicit connections, and recommendations for municipal stormwater priorities.

Relationship of the Collaborative to your town's MS4 Permit

As noted above, the primary area of focus for the Collaborative is to monitor discharges and map connections of stormdrain outfalls that directly discharge into shellfish beds and other impaired coastal waters of Buzzards Bay. Many of these discharges must also be monitored, and their stormwater collection systems mapped, under your municipality's Small Municipal Separate Storm Sewer Systems (MS4) permit required by the US Environmental Agency (EPA). In fact, the Collaborative's discharge monitoring program adheres to the U.S. EPA MS4 permit monitoring requirements². Therefore, the activities of the Collaborative will partially help your town meet its MS4 permit, including the Collaborative's outreach and education efforts, and water quality testing training. However, the Stormwater Collaborative will monitor and map only a fraction of your town's MS4 discharges and discharge networks through this first phase of the program (the Collaborative is not looking at inland discharges for example).

¹ Funding for the start-up of the program was provided by a U.S. EPA Healthy Communities grant program to the Buzzards Bay Action Committee.

² The Collaborative's monitoring program adheres to the *EPA New England Bacterial Source Tracking Protocol* as described in the EPA MS4 permitting guidance documents.

Under MS4 permits, town's must assess discharges to any impaired waters³ or wetlands from their "urbanized area" (UA), not just discharges to coastal waters. The new small MS4 permits in Massachusetts will become effective on July 1, 2017. The new permit is a continuation your 2003 MS4 permit, but also contains additional requirements for Best Management Practices, including, but not limited to monitoring, and mapping of stormwater networks. Within some municipalities, the Urbanized Area has also expanded under the new permit.

One of your town's first obligations to obtain a new MS4 permit is prepare and submit a Notice of Intent (NOI) by September 29, 2017. The NOI provides an update of the 2003 permit and an outline of future activities within the scope of the 2016 permit requirements. By July 1, 2018, each permittee will also need to develop a Stormwater Management Plan (SWMP) where your town will describe in more detail how your town will accomplish the activities outlined in the NOI. To summarize, the key differences between the Buzzards Bay Stormwater Collaborative Program efforts and your MS4 permit requirements are:

- the activities of the Collaborative are limited (at this point) to monitoring discharges and mapping discharge networks affecting impaired *coastal* waters. These discharges may or may not be within UAs as defined by EPA.
- EPA's MS4 permit requires that municipalities obtain a permit and evaluate *all* stormwater discharges serving their UA. Stormwater collection networks and discharges to impaired waters outside the UA are not included in your 2016 MS4 permit.

Monitoring Summary

Monitoring data collected for each discharge are summarized in the subsequent pages. Table 1 defines the meaning of each column field heading. Table 2 summarizes monitoring and mapping goals and activities to date under the Stormwater Collaborative's grant. Monitoring data collected for each discharge.

Table 1. Definition of data field column headings

Field Name	Description
FacilityID	Unique identifier for all infrastructure in the database
SampleDate	Date the water sample was taken
SampleID	The sample identification number on the bottle as submitted to the water quality testing laboratory
Sample Type	Location or type of sample collected
Water Classification	Fresh (<2 ppt) or mixed with salt water
Last Rain	hrs before sample was taken as calculated from nearest weather underground station
12 hr. Rain	inches of rain in previous 12 hours
pH	ph of the sample
Temp	degrees centigrade
Conduct	conductivity in μ S
Ammo	ammonia concentration in ppm
Nitrate	ammonia concentration in ppm
Surfact	Surfactants (detergent indicator) concentration in ppm
Enterococcus	colony forming units per 100 ml
Fecal Coliform	colony forming units per 100 ml

³ Category 4a and Category 5 on Department of Environmental Protection 303d list available at <http://www.mass.gov/eea/docs/dep/water/resources/07v5/14list2.pdf>.

Table 2. Summary status and targets for stormwater Collaborative monitoring and mapping efforts (percent based on town wide features except where noted)

BBAC Healthy Communities Grant Project Task for Wareham	Project Target Summer 2017	Complete as of Jan 2017
GPS Stormwater Features	100%	85%
Preliminary Mapping	100%	70%
Plan Scanning	100%	0%
Plan Geo-referencing	25%	0%
Connectivity Mapping	25%	0%
Feature Attributing	25%	0%
Field Verification	25%	5%
Evaluate Project Discharges	100%	95%
Percent of MS4 Discharges Evaluated (Note 1)	20%	20%
Characterize Discharge Catchments	10%	0%
Project Dry Weather Monitoring	100%	15%
Project Wet Weather Monitoring	100%	15%
Percent of MS4 Discharges Monitored (Note 1)	20%	2%

Note 1: Estimate does not include discharges from state owned roads (about 20% of all discharges in Wareham)

