

Municipality/Organization: Town of Brewster – DPW/Planning Board

EPA NPDES Permit Number: MAR 041096

MassDEP Transmittal Number: X255752

Annual Report Number & Reporting Period: Year 12
April 1, 2014 – March 31, 2015

NPDES PII Small MS4 General Permit Annual Report (Due: May 1, 2015)

Part I. General Information

Contact Person: Susan M. Leven, AICP

Title: Town Planner

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Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature:



Printed Name: Charles L. Sumner

Title: Town Administrator

Date: April 30, 2015

Part II. Self-Assessment

Brewster is a coastal community with an interest in protecting its surrounding fresh and salt water resources. Catch basin cleaning and street sweeping programs are completed annually and small stormwater projects are designed and installed either through contract services or using DPW personnel. As local financing of DPW activities is generally lower than required, we continue to be proactive in our search for outside funding opportunities related to stormwater projects.

The Town is in the next stage of its Integrated Water Resource Management Plan (IWRMP). Work on the IWRMP has resulted in a wide range of water quality related reports, meetings and presentations. Although Comprehensive Wastewater Management Plans are typically concerned with wastewater, the Town's Planning Department and Health Department have expanded the program to include water supply and stormwater runoff. Several public hearings have taken place, a water quality informational display has been placed in Town Hall, and various department heads have attended GIS training classes with the intent of expanding our stormwater records management effort. The informational display includes steps individuals can take to reduce their impact on the environment. The Town's GIS system was further updated during the summer of 2012 to include all known discharge points of untreated stormwater runoff, additional components of the Town's drainage system (catchbasins, drain manholes, stormwater BMP systems, and drainage pipe), and the locations of possible interconnections between private properties and the Town's drainage system. In addition, a wide variety of hand drawn sketch plans depicting stormwater components have been scanned and included within the GIS system.

Activities completed for the IWRMP within the most recent reporting period include some significant steps that have bridged the span between planning and actual implementation of water resource protection strategies. These include production of an alternatives analysis, selection of preferred alternatives and completion of a preliminary Implementation Plan.

Also included in this effort is a website dedicated to the IWRMP which is linked to the Town's official website. Documents related to the region's water quality efforts are available on this site as well as maps showing groundwater elevations, watershed/sub-watershed delineations feeding coastal embayments and freshwater resources, as well as results of a wide variety of water quality sampling and analysis. The completed reports cited above have also been posted to this website.

In addition, the Town applied for and was awarded a coastal resiliency grant and green infrastructure grant that allowed the evaluation of a managed retreat from an existing town beach parking lot. The plan called for pulling back the pavement, restoring the dune system and tying it into an adjacent dune system and recently restored area. It included a bio-retention facility to manage remaining parking lot runoff and installation of a swale to convey flows from the adjacent road. This project is a good example of the pro-active efforts the Town has undertaken to meet the obligation of the NPDES program, but also the vision of the local community.

Part III. Summary of Minimum Control Measures

1. Public Education and Outreach

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 13
Revised	Develop and distribute educational materials	BoH Nancy Ice	Biannual Mailings	Increased costs associated with mailings, reproductions, and workload in the Health Department has limited the effectiveness of some distribution options. Information is always available at Town Hall and educational materials are distributed through the Comprehensive Water Planning Committee. Public education and outreach was also accomplished while dealing with water quality issues affecting many communities, including dog waste.	Increase the use of the Town's website with links to flyers, documents, and other stormwater related websites (EPA, DEP, etc).
Revised	Additional Educational Materials	DPW – TBA (no permanent Director yet named)	Information Documents	The DPW has not created links to Stormwater related public information from their web page, but information is available through the Comprehensive Water Planning Committee. In addition to the above effort, DPW was able to develop a GIS based plan depicting our stormwater efforts in the Stony Brook Watershed. Besides providing a broad overview to the public, the document was also used to describe our efforts to the funding authorities in Town.	The DPW working in concert with the Planning Board will continue to work on educational outreach material, and will evaluate requirements of the pending Draft 2014 Permit in order to incorporate required new information as appropriate.

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 13
	Establish Stormwater Web Site with pollution reporting capability	IT – Kathleen Lambert	Town Web Site is operational with water quality links available through multiple committee and department pages.	The Town's website is a viable alternative for conveying Town related information. Again, the IT department consists of one person and other duties and projects have taken precedence over our Stormwater II efforts.	The Town of Brewster will continue to add/update Stormwater issues on its website as the Comprehensive Water Management Plan is further developed.
Revised				In addition, as mentioned in the summary, the Town has just begun the third phase of developing its Integrated Water Resources Management Plan (IWRMP). A component of the work by our consultant, Horsley Witten Group, is the development of a web based informational tool. The website has been developed and is accessed via a link on the Town of Brewster home webpage. Much information is available on this site and will be updated as additional information is available. The website can be accessed at: http://www.town.brewster.ma.us/committees-mainmenu-29/comprehensive-water-planning-committee/1185-integrated-water-management-website	Recent additions to the Website include copies of completed reports related to Schoolhouse Pond watershed assessment, the Pleasant Bay Nitrogen Management Alternatives Analysis Report, the Mill Ponds Management Plan and the Herring River Nitrogen management Assessment Technical Memo.
Revised					
Revised					

2a. Additions

	Community Meetings for Integrated Water Resources Management Plan (IWRMP)	Planning – Susan Leven	Several meetings annually	Brewster's Comprehensive Water Planning Committee (CWPC) hosts several community meetings each year to bring the public up to date on the Town's IWRMP process, including information on stormwater and BMP's for homeowners.	Additional meetings will be held as the project continues and will include proposed stormwater remediation projects.
	Lower Cape Expo	Planning – Susan Leven	Signing up people for e-mail list, providing handouts	The CWPC has had a table at the Expo for the last 2 years. Between the two Expo appearances, over 40 people have joined the e-mail list, many have come to community meetings and many more took printed information. Due to costs, the Town did not attend this year as originally planned.	The CWPC is planning to participate in next year's Expo based on current funding.
	Brewster Conservation Day	Planning – Susan Leven	Signing up people for e-mail list, providing handouts	The CWPC had a table at last year's Conservation Day and spent the day talking to residents and property owners about the IWRMP and things they can do, signing people up for the e-mail list, and providing printed information.	Conservation Day in Brewster is expanding, and the CWPC has committed to participate fully.

3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 13
	Map Stormwater facilities	Sue Leven, Town Planner	Update Stormwater data on Town GIS system.	In the previous year, the Town of Brewster's GIS system was upgraded and locations of untreated stormwater runoff discharges were mapped by our consultant. This work was continued over the past year as additional system upgrades were made and our consultant continued the process of mapping untreated stormwater discharge locations, as well as the locations of recently installed stormwater BMPs, possible system interconnections, and additional drainage structures. Some new information related to water use by parcel was also incorporated into the GIS.	Continue the implementation of the GIS System at the DPW. Staffing issues will have an effect on this program. Training and/or additional personnel to implement the program are limited.
Revised				Training was provided for personnel associated with stormwater/water quality issues but with limited use.	The Town is still seeking a permanent replacement for DPW Supt. The individual hired will eventually take over this responsibility.
	By-Law prohibiting illicit discharge	Sue Leven Town Planner	Pursue passage of Illicit Discharge By-Law	The by-law was passed by Town meeting in November of 2011.	The CWPC and Planning Board will be looking at ways to update by-laws and regulations to better address stormwater remediation, particularly as it regards any new requirements associated with the 2014 Draft General Permit.
Revised					
	Illicit discharge detection	Chris Miller		Mr. Miller continued his department's sampling and analysis program and was instrumental in obtaining the Natural Resources Conservation Service funding for the aforementioned stormwater related grants.	Continue the program.
Revised		Natural Resources Coordinator	Sampling and Analysis of water bodies		

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 13
Revised					

3a. Additions

	Illicit Discharge Detection & Elimination (IDDE) Plan	DPW Supt, Sue Leven, Town Planner	Update IDDE Plan	The Town's consultant prepared an updated IDDE Plan that meets the anticipated forthcoming requirements of the new MS4 Permit (as described in the 2010 IMS Draft Permit). The Plan was delivered in January 2013.	The Town continues to use the original IDDE plan for guidance, but will evaluate modified requirements of the plan on the basis of the 2014 Draft General Permit.
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4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 13
	Revise Development Plan Review By-Law	Planning Board	By-Law update	The Development Plan Review By-Law was updated this past year and replaced with a Staff-Review By-Law which improves the exchange of development information from department heads to prospective builders, developers, and/or property owners. Water quality issues are an important component of these discussions.	The members of the Staff review Committee will continue to improve the discussions with prospective developers with regards to development requirements including stormwater quality. The town reviewed 20 plans in 2014 and 7 so far in 2015.
Revised		Sue Leven			
	Establish public input mechanism	Planning Board	In progress	Public input is a required component of any by-law change or development. The Commonwealth of Massachusetts has well defined open meeting law requiring public access to all deliberations, with some exceptions. As such public input is included in the development of all by-laws and regulations. Public input for stormwater related issues is achieved through public hearings required of our consultants that assist with the IWRMP.	We plan to continue with the IWRMP and the public informational sessions that we require of our consultants. Also, with the wealth of information available on the Town's website, getting information to the public is working well. Getting the public to respond to our water quality improvement efforts is the challenge.
Revised					
Revised					
Revised					

5. Post-Construction Stormwater Management in New Development and Redevelopment

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 13
	Revise Development Plan Review By-Law	Planning Board	By-Law update	The Town passed a revised development review process called Staff Review, and also adopted a Site Plan Review by-law in May 2011.	The Town is looking at ways to promote the Staff Review process. Brochures are available to the public through the website and at the office.
Revised		Sue Leven			
	Construction Inspection	Construction inspection by proponent engineer and DPW	Continued project construction inspection.	The Town does not have a formal Engineering Department and uses contract services as well as trained staff in the DPW. Also, development in the area is of a residential nature, and projects disturbing more than an acre are rare. The Town requires the project proponent's engineer to provide inspection reports and stamp reports for recordkeeping purposes.	Continue our inspection program and continue to improve and update regulations with regards to water quality in all areas, including but not limited to water quality, water supply, wastewater, and stormwater runoff. Any new requirements associated with the new permit will be incorporated in accordance with timelines provided in the permit.
Revised					
Revised					
Revised					
Revised					
Revised					

6. Pollution Prevention and Good Housekeeping in Municipal Operations

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 13
	Employee Education	DPW Supt (TBA) Jeff Day DPW Foreman	Training programs	Continued with employee training. Mr. Day is continuing the staff training required. We employed the services of the Barnstable County Health Department for assistance with training. Some of the recommended improvements have been completed and additional staff training is currently being scheduled.	Continue the program.
Revised					
	Operation & Maintenance Schedule	DPW Supt (TBA) Jeff Day DPW Foreman	Annual catch basin cleaning and annual winter sand cleanup	These two programs are completed annually. The sweeping is completed with Town personnel and equipment while the catchbasin cleaning is completed using contracted services.	Continue the program
Revised				The Town also provides services for a discounted fee to private roads where cleaning will take place on a per catch basin fee basis. This allows the Town to ensure to the extent possible that private systems contributing to the MS4 are maintained properly	
Revised					
Revised					

7. BMPs for Meeting Total Maximum Daily Load (TMDL) Waste Load Allocations (WLA) <<if applicable>>

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 13
Revised					
Revised					
Revised					

7a. Additions

	Public Education about Pet Waste	Sue Leven - Planning	Distribute Educational Materials	See BMP #1. Brochures are available at the Planning Board offices.	Re-assess existing signage and educational materials and develop plan to modify if necessary to enhance the message.
	Septic Systems – Tracking and Education	Nancy Ice - Health Department	Distribute Educational Materials	The locations of failing septic systems are tracked in a Board of Health database. These systems will eventually be incorporated into the Town's GIS.	Re-assess existing outreach activities and educational materials and develop a plan to modify if necessary to enhance the message.
	Outfall & Runoff Inventory	- DPW	GIS Map all Outfalls and parking area runoff	All mapping complete.	Implement IDDE Plan catchment investigations.
	Water Quality Testing	Chris Miller – Natural Resources	Water Quality Testing	See BMP 3	Re-assess existing sampling efforts and develop a plan to modify if necessary to monitor impaired waters.

7b. WLA Assessment

The MS4 Permit has requirements specific to stormwater discharges to Impaired Waters with approved TMDLs. In Brewster's case, currently these waters include Namskaket and Quivett Creeks, which are impaired for pathogens (fecal coliform). Although there are two impaired ponds (Sheep Pond and Baker), these ponds are impaired for mercury in fish; pollution that has been attributed to air pollution and is not applicable to the NPDES MS4 program. Pleasant Bay, although impaired for nutrients, does not receive stormwater discharge from Brewster's MS4. The applicable TMDL is the Cape Cod Basin Pathogen TMDL (August 2009). The Implementation Plan for the Cape Cod Pathogen TMDL states the following:

"The watershed based approach applied to complete the Cape Cod watershed pathogen TMDL is straightforward. The approach is focused on identification of sources, source reduction, and stepwise implementation of appropriate management plans. Once identified, sources are required to meet applicable WQS for indicator bacteria or be eliminated. This approach does not include water quality analysis or other approaches designed to link ambient concentrations with source loadings. For pathogens and indicator bacteria, water quality analyses are generally resource intensive and provide results with large degrees of uncertainty. Rather, this approach focuses on sources and required load reductions, proceeding efficiently toward water quality restoration activities."

Likely sources of coliform could include:

- Failing septic systems
- Illicit connections from septic systems or graywater
- Stormwater runoff from pet waste
- Wildlife (waterfowl)
- Boat pump-out discharges

Part IV. Summary of Information Collected and Analyzed

N/A

Part V. Program Outputs & Accomplishments (OPTIONAL)

Programmatic

Stormwater management position created/staffed	(y/n)	N
Annual program budget/expenditures – At the Fall 2012 Special Town Meeting, funding was authorized with the specific intent of addressing the requirements of the upcoming Stormwater II change in law. This funding did not include any additional staffing. The Town continues to assess their program and did provide public comment to EPA during the public comment period for the Draft 2014 General Permit.	(\$)	

Education, Involvement, and Training

Estimated number of residents reached by education program(s)	(# or %)	4,000
Stormwater management committee established	(y/n)	No – although the Comprehensive Water Planning Committee serves similar purpose.
Stream teams established or supported	(# or y/n)	No
Shoreline clean-up participation or quantity of shoreline miles cleaned	(y/n or mi.)	Y – 9 miles
Household Hazardous Waste Collection Days		
▪ days sponsored	(#)	
▪ community participation	(%)	
▪ material collected	(tons or gal)	
School curricula implemented	(y/n)	No

Legal/Regulatory

In Place
Prior to Under

	Phase II	Review	Drafted	Adopted
Regulatory Mechanism Status (indicate with "X")				
▪ Illicit Discharge Detection & Elimination				
▪ Erosion & Sediment Control				
▪ Post-Development Stormwater Management				
Accompanying Regulation Status (indicate with "X")				
▪ Illicit Discharge Detection & Elimination				
▪ Erosion & Sediment Control				
▪ Post-Development Stormwater Management				

Mapping and Illicit Discharges

Outfall mapping complete	(%)	100%
Estimated or actual number of outfalls	(#)	
System-Wide mapping complete	(%)	100%
Mapping method(s)		
▪ Paper/Mylar	(%)	75% (hand Sketches)
▪ CADD	(%)	0%
▪ GIS	(%)	100%
Outfalls inspected/screened	(# or %)	10% (Est)
Illicit discharges identified	(#)	0
Illicit connections removed	(#) (est. gpd)	0
% of population on sewer	(%)	0%
% of population on septic systems	(%)	100%

Construction

Number of construction starts (>1-acre)	(#)	0
Estimated percentage of construction starts adequately regulated for erosion and sediment control	(%)	0
Site inspections completed	(# or %)	0 (Est)
Tickets/Stop work orders issued	(# or %)	0
Fines collected	(# and \$)	0
Complaints/concerns received from public	(#)	0

Post-Development Stormwater Management

Estimated percentage of development/redevelopment projects adequately regulated for post-construction stormwater control	(%)	0
Site inspections completed	(# or %)	0
Estimated volume of stormwater recharged	(gpy)	unknown

Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets)	(times/yr)	Annual
Average frequency of catch basin cleaning (commercial/arterial or other critical streets)	(times/yr)	Annual
Total number of structures cleaned	(#)	600
Storm drain cleaned	(LF or mi.)	
Qty. of screenings/debris removed from storm sewer infrastructure	(lbs. or tons)	
Disposal or use of sweepings (landfill, POTW, compost, recycle for sand, beneficial use, etc.)		Although the Town of Brewster has a Beneficial Use Determination (BUD) for these materials, the catch basin cleaning contract in 2011 included the removal of cleanings from the Town. As such, we were able to reduce our on hand stockpile by not adding to it.
Cost of screenings disposal	(\$)	\$40,000

Average frequency of street sweeping (non-commercial/non-arterial streets)	(times/yr)	Two times per year in a wetlands discharge environment. Other\wise annual sweeping.
Average frequency of street sweeping (commercial/arterial or other critical streets)	(times/yr)	Two times per year
Qty. of sand/debris collected by sweeping	(lbs. or tons)	

Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.)	(location)	We have a DEP approved Beneficial Use Determination (BUD) for the management of Street Sweepings and Catch Basin Cleanings. Our efforts are to amend soils on fields, parks, and cemeteries by testing these materials and then combining them with compost made on site in a 1:1 ratio. These procedures are described in our BUD permit.
Cost of sweepings disposal	(\$)	\$60,000 (est)
Vacuum street sweepers purchased/leased	(#)	1
Vacuum street sweepers specified in contracts	(y/n)	N/A

Reduction in application on public land of: ("N/A" = never used; "100%" = elimination)		
▪ Fertilizers – We generally fertilize our fields using compost.	(lbs. or %)	unknown
▪ Herbicides	(lbs. or %)	Not used
▪ Pesticides	(lbs. or %)	Not used

Anti-/De-Icing products and ratios	% NaCl	2:1 Sand/NaCl
	% CaCl ₂	0
	% MgCl ₂	0
	% CMA	0
	% Kac	0
	% KCl	0
	% Sand	2:1 Sand/NaCl
Pre-wetting techniques utilized	(y/n)	Y
Manual control spreaders used	(y/n)	Y
Automatic or Zero-velocity spreaders used	(y/n)	Y
Estimated net reduction in typical year salt application	(lbs. or %)	unknown
Salt pile(s) covered in storage shed(s)	(y/n)	Y
Storage shed(s) in design or under construction	(y/n)	N

