

Municipality/Organization: Town of Brewster - DPW

EPA NPDES Permit Number: MAR 041096

MassDEP Transmittal Number: W-X251404

Annual Report Number & Reporting Period: **Year 9**
April 1, 2011 – March 31, 2012

**NPDES PII Small MS4 General Permit
Annual Report
(Due: May 1, 2012)**

Part I. General Information

Contact Person: Robert L. Bersin, PE Title: DPW Superintendent

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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 27, 2012

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. This is evidenced by approval of a Coastal Zone Management – Non-Point Source Pollution (CZM - NPS) grant for the Stony Brook Water Shed in 2007. Water quality projects that are a direct result of this grant are as follows:

- ◆ The CZM-NPS assessment led to the submittal and approval of a Coastal Zone Management – Coastal Pollution Remediation (CZM - CPR) Grant for the design of stormwater remediation plans at the Town's alewife fish run. This project relied on the NPS assessment and stormwater remediation facilities were designed to prevent untreated stormwater from entering Stony Brook. The final piece of this project was the approval of a Section 319 grant for the installation of remediation facilities at the aforementioned fish run. Remaining construction issues were completed in the 2010.
- ◆ The CZM-NPS assessment also identified several other areas in need of stormwater remediation. With the assistance of the Town's Department of Natural Resources, the town was able to secure funding for the design of two stormwater remediation projects and a small culvert replacement project at one of the town's more popular beaches. Natural Resource Conservation Service (NRCS) funding sources were used for the design of an undersized culvert at Paines Creek Beach near the parking area. Last year, it was reported that this culvert was scheduled for installation in the fall of 2011. Regulatory and property easement disputes have delayed the project and we plan on a Fall 2012 Construction Schedule.
- ◆ NRCS funds were also used in the design and construction of stormwater remediation projects along Paines Creek Road and at Saints Landing. These projects are at two popular beach resource areas and direct discharges of untreated stormwater to surrounding coastal resources were eliminated through the installation of catch basins and leaching areas designed to eliminate pollutants associated with first flush stormwater runoff. In order to complete these projects, the NRCS funds were complemented with Town funds as well as MassDOT State Aid Chapter 90 funds. The majority of these two projects were completed in the Spring of 2011 with final paving and re-vegetation occurring in the Fall.
- ◆ The final project for the reporting period was also completed along Paines Creek Road, but further away from the beach resource area. This project, Paines Creek South, included the design permitting and installation of drainage facilities near the intersection of Paines Creel Road and Stony Brook Road. Again, direct discharges to wetland resources were eliminated through the use of catchbasins and leaching areas sized to remediate first flush runoff.

In all of the above projects, town funds and the town's MassDOT State Aid Chapter 90 funds were used to augment these other outside funding sources for these projects. Also, the town was able to provide in kind matching services through the use of town material, equipment, labor, and professional services to meet certain funding requirements of these grants.

As described in previous Stormwater II assessments, the town also received a grant from the Gulf of Maine Council to address an undersized culvert under Route 6A. The assessment was completed and a replacement culvert was sized. In kind services through the DPW were used in sizing the culvert and installation of the replacement culvert was completed in the spring of 2010. Final cleanup occurred in the spring and fall of 2011 and in the early part of spring in 2012.

In other areas related to the Stormwater II program, financial constraints and workload issues have limited DPW's response in past years. Education and outreach that was originally limited to the town's website and handouts has been expanded as the Town is currently in the second stage of its Comprehensive Water Management Plan (CWMP). Work on the CWMP has resulted in a wide range of water quality related reports, meetings and presentations. Although Comprehensive 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 Town's GIS system has been updated to include all known discharge points of untreated stormwater runoff and a wide variety of hand drawn sketch plans depicting stormwater components have been scanned and made part of the GIS system. The informational display includes steps individuals can take to reduce their impact on the environment among other informational items.

As mentioned earlier, the Town of Brewster has continued development of its Comprehensive Water Management Plan. Several positive events have been mentioned above. Also included in this effort is a website dedicated to the CWMP which is linked to the town's official website. Documents related to the regions 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.

Another significant item in our stormwater efforts is the drafting, review, and town meeting approval of an Illicit Discharge Detection and Elimination (IDDE) By-Law. This by-law was approved at the November 2011 Special Town Meeting after many months of discussion, debate and rewrite. The approval of this by-law is a major step in the town's water quality improvement effort. The Department of Public Works has been assigned the enforcement duties of this By-Law which will likely require additional staffing in the department in future years.

The Paines Creek Beach Parking Area was relocated in 2011 as outlined in the 2010 report. The relocation work became a secondary component of a water quality improvement project that was in the final stages of design. By working closely with the USDA Natural Resources Conservation Service and the town's Department of Natural Resources, Conservation Commission, and Conservation Agent, the DPW and its consultant were able to design, permit, and relocate this parking area to a more landward location. Although not an ideal location, it is a major improvement. Final paving for this parking area is scheduled for the spring of 2012. We are currently awaiting final approval of the work from the Conservation Commission. The asphalt from the original paved parking has been removed and replaced with beach sand, increasing the useable beach area. Final planting of appropriate plants and grasses are scheduled to be completed by May 2012. The work on this project required numerous public hearings with the Conservation Commission and Board of Selectmen.

Each of these items reflects the Town's effort to educate the public of the natural resources in our area and describes our efforts in protecting them. Based upon this information, it is clear the Town has an interest in maintaining and improving our coastal environment. The Town is certainly aware of the plan requirements and intends to continue its efforts in this area. As DPW Superintendent with Professional Engineering Licensure and experience in public works and stormwater related issues, it is my responsibility to oversee the program and propose improvement projects for funding. We have identified several areas where remediation is required and we plan to follow through with funding requests. Unfortunately, the demands on limited public financial resources put DPW type projects in competition with other legitimate town projects. Our internal funding opportunities are generally limited and we are continually researching alternative funding sources/methods to achieve our various goals.

Please review the above information and related material in the attached report and contact me directly with any questions or comments.

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 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
Revised	Develop and distribute educational materials	BoH - Nancy Ellis-Ice	Biannual Mailings	Due to the increased costs associated with individual mailings, reproduction costs, and workload in the Health Department this measurement was not as effective as anticipated. However much Public Education and Outreach was accomplished while dealing with a water quality issue affecting any communities - dogs and dog waste at a popular public park. The Town of Brewster purchased a large homestead parcel in the mid 90's. The buildings were removed and the open area is now a popular open space and includes facilities for children, a band shell, and is host to a wide variety of public functions. During the last 5-10 years, the area became the regional “dog park”. Although many dog owners addressed the pet waste problem, many did not and the board of health voted to ban dogs from the park until a workable solution can be developed. Needless to say, the public debate was significant. A wide variety of pet waste related articles, posters, and discussion were made available to members of the town. Although the pet waste problem was not truly solved, pet waste was removed from this area abutting Cape Cod Bay and the public was educated about the problem.	Increase the use of the Town’s website with links to flyers, documents, and other water quality related websites (EPA, DEP, etc).

Revised	Additional Educational Materials	DPW – Bob Bersin	Information Documents	<p>The DPW has placed links on the Town’s web site to various web related stormwater sites, but not to the extent that was planned.</p> <p>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</p> <p>Although a second reference document was delivered to Brewster residents via an insert in a local newspaper in late June, the information was gathered and the document designed during the current reporting year. Additional copies of the flyer were also placed at several locations in town. The flyer outlined our efforts in the Paines Creek/Stony Brook area and explained the benefits of and the need for stormwater remediation projects.</p>	<p>The DPW also intends on preparing flyers etc for handout at the Transfer Station, during Beach/Transfer Station sticker sales, and for display/pick up at the Town Hall. Some of the material will be include solid waste based information, as proper management of solid waste is a related component to our overall pollution/natural resource problems.</p>

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
Revised	Establish Stormwater Web Site with pollution reporting capability	IT – Kathleen Lambert	Town Web Site is operational with Stormwater links under DPW section	<p>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.</p> <p>However, as mentioned in the summary, the town is in the second phase of developing its Comprehensive Water Management Plan. A component of the work by our consultant, Horsley and Whitten, is the development of a web based informational tool. This 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.</p>	The Town of Brewster will continue to add/update Stormwater issues on its website as the Comprehensive Water Management Plan is further developed.
Revised					
Revised					
Revised					

3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
Revised	Map Stormwater facilities	Bob Bersin DPW Supt, Sue Leven, Town Planner	Update Stormwater data on Town GIS system.	In previous years, the Town of Brewster’s GIS system was not used to its full capabilities. However, the system was upgraded this past year and locations of untreated stormwater runoff discharges were mapped by our consultant. Training was provided for personnel associated with stormwater/water quality issues but with limited use. Training and upkeep of the system has been limited due to funding shortfalls. The DPW has attempted to update the GIS system for its own purposes but other work related activities have affected this effort.	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	By-Law prohibiting illicit discharge	Sue Leven Town Planner Robert L. Bersin, PE DPW Supt	Pursue passage of Illicit Discharge By-Law	In the Fall of 2011, an Illicit Discharge Detection and Elimination By-Law was endorsed by the Annual Special Town Meeting. The by-law is no in effect and the DPW is the enforcement authority.	As mentioned in last years report, we were able to secure funding for stormwater mapping which is integrated into the Town’s GIS system. The current efforts are to develop feasibility plans to address these untreated outfalls and incorporate this information into our capital improvement plans.
Revised	Illicit discharge detection	Chris Miller Natural Resources Coordinator	Sampling and Analysis of water bodies	Mr. Miller continued his departments 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					

4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
Revised	Revise Development Plan Review By-Law	Planning Board Sue Leven and Elizabeth Taylor	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.
Revised	Establish public input mechanism	Planning Board Sue Leven and Elizabeth Taylor	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 in all by-laws and regulations. Public input for stormwater related issues is achieved through public hearings required of our consultants that assist with the CWMP.	We plan to continue with the CWMP and the public informational sessions that we require of our consultants. Also, with the wealth of information available on the town's website, Public information to the public is working well. Getting the public to respond to our water quality improvement efforts is the challenge.
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 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
Revised	Revise Development Plan Review By-Law	Planning Board Sue Leven and Elizabeth Taylor	By-Law update	See Section 4 above. A comprehensive group of By Laws and Regulations was developed and approved, as described above. In addition, the Town in continuing the development of its Comprehensive Water Management Plan in conjunction with activities related to work on Pleasant Bay and Clean Water Act recommendations.	We plan to move the project forward.
Revised	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 enforcement of this issue is more effective with appropriate regulations and approval conditions.	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.
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 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
	Employee Education	Robert L. Bersin, PE DPW Supt Jeff Day DPW Foreman	Training programs	Continue with employee training. Mr. Day is continuing the staff training required. We again 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 program
Revised					
	Operation & Maintenance Schedule	Robert L. Bersin, PE DPW Supt 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. The town received a Beneficial Use Determination (BUD) approval from MassDEP for use of the collected materials based upon the results of sampling and analysis. The BUD promotes the reuse of materials and some of these materials are mixed with site developed compost and the mixture is used as a soil amendment for various open areas which promotes the goals of our water quality program.	Continue program
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 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
Revised	N/A				
Revised					
Revised					
Revised					

7a. Additions

7b. WLA Assessment

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 2011 Special Town Meeting, funding was authorized with the specific intent of addressing the requirements of the upcoming Stormwater II change in law. This funding does not include any additional staffing.	(\$)N	\$60,000

Education, Involvement, and Training

Estimated number of residents reached by education program(s)	ESTIMATE ONLY	(# or %)	4,000
Stormwater management committee established		(y/n)	No
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		(#)	6
▪ community participation		(%)	33.5%
▪ material collected		(tons or gal)	6.1 T
School curricula implemented		(y/n)	No

Legal/Regulatory

	In Place Prior to Phase II	Under Review	Drafted	Adopted
Regulatory Mechanism Status (indicate with “X”)				
▪ Illicit Discharge Detection & Elimination				X
▪ Erosion & Sediment Control		X		
▪ Post-Development Stormwater Management		X		
Accompanying Regulation Status (indicate with “X”)				
▪ Illicit Discharge Detection & Elimination				X

▪ Erosion & Sediment Control		X		
▪ Post-Development Stormwater Management		X		

Mapping and Illicit Discharges

Outfall mapping complete	(%)	100%
Estimated or actual number of outfalls	(#)	50
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	(#)	
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.)	250 ft
Qty. of screenings/debris removed from storm sewer infrastructure	(lbs. or tons)	250 T
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. Otherwise 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)	850 T weighed – including moisture from dust control procedures.

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 – In 2011 the Brewster DPW installed tanks and pumps to reduce the amount of salt being used in Snow and Ice Removal Operations. We now use a 50/50 blend of Calcium Chloride and Brewers Condensed Solubles. The use of this material reduces corrosion on equipment, reduces the amount of chloride ions introduced to the environment, and outperforms dry salt reducing the amount of salt by 33-50%.	% NaCl	0
	% CaCl ₂	2:1 Sand/CaCl ₂
	% MgCl ₂	0
	% CMA	0
	% Kac	0
	% KCl	0
	% Sand	2:1 Sand/CaCl ₂
Pre-wetting techniques utilized	(y/n)	Y
Manual control spreaders used – in our smaller vehicles	(y/n)	Y
Automatic or Zero-velocity spreaders used – in our larger vehicles	(y/n)	Y
Estimated net reduction in typical year salt application – unknown due to mild winter	(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