

Municipality/Organization: Town of Chatham

EPA NPDES Permit Number: MAR041101

MADEP Transmittal Number: W-035745

Annual Report Number

& Reporting Period: No. 12: April 14 - March 15

NPDES PII Small MS4 General Permit Annual Report

Part I. General Information

Contact Person: Robert Duncanson, Ph.D.

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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: Jill Goldsmith

Title: Town Manager

Date: April 30, 2015

Part II. Self-Assessment

The Town of Chatham has completed the required self-assessment and has determined that our municipality is working toward full compliance as submitted to EPA and approved as Chatham's NOI to the General Permit issued to Massachusetts under Phase II of the Regulations. This annual report demonstrates and documents our efforts toward full compliance.

The Town of Chatham continues to work aggressively to address stormwater problems identified through past shoreline sanitary surveys and other water quality programs. Stormwater evaluation and BMP designs are now routinely incorporated into road and sewer collection system expansion projects to reduce or eliminate stormwater discharge(s) into sensitive resource areas. New municipal facilities are incorporating stormwater BMPs into facility design.

Since the beginning of the Phase II Program in Chatham 10 stormwater discharges have been mitigated through the installation of stormwater BMPs. In most cases the direct discharge of stormwater has been eliminated through the installation of infiltration BMPs, in several cases the stormwater has been directed to treatment BMPs prior to discharge.

The Town continues engineering, permitting and implementation of projects involving stormwater mitigation. A project to separate stormwater that is combined with the natural stream flow of a herring run on Old Queen Anne Road (CHA-24 [Chatham stormwater ID number]) was completed during the reporting period. This project eliminated the direct discharge of stormwater runoff into Muddy Creek (aka Monomoy River). The stormwater was separated from the stream flow and diverted into a detention basin in a naturalized low area. Two other discharges onto the shoreline of Muddy Creek were eliminated as well. This design allows for nutrient uptake by existing vegetation during the growing season. Nutrient uptake is a critical issue that is driving alternative designs compared to past designs that simply infiltrated stormwater below the root zone.

Work continues with the Town Of Harwich and MassDOT-Highway Div. on the Muddy Creek Restoration Bridge Project. Although primarily a wetlands restoration project, the project, which involves the replacement of an earthen embankment and under-sized culverts with a single-span bridge, includes stormwater mitigation (CHA-22). Stormwater is currently discharged via paved waterways into the shoulder of the roadway without any treatment. The new bridge design incorporates treatment BMP's for solids removal and infiltration prior to overflow discharge to vegetated shoulders. The site is very space constrained due to the proximity of wetlands and open water and thus the use of BMP's more targeted to nutrient removal are not feasible. The project received MassDOT 25% design approval with construction expected to begin in fall 2015.

The Mitchell River Bridge Project, a MassDOT-Highway project began construction in June 2014 with completion expected in June

2016. This project incorporates stormwater BMPs for the approach road sections that will provide treatment and infiltration prior to any overflow being discharged to the Mitchell River (CHA-8).

The Town continues dialogue with MassDOT - Highway to address stormwater runoff from state road Route 28 as part of planned upgrades of the roadway. State funding limitations continue to stymie actual progress on remediation.

Stormwater mitigation improvements in the area of the Little Mill Pond Landing (CHA-15) were completed during the reporting period as part of sanitary sewer extensions installed as part of Phase 1C of the town's Comprehensive Wastewater Management Plan. Additional stormwater improvements are being incorporated into other phases of the wastewater project.

In January 2015 the Town was selected to participate in an EPA stormwater BMP demonstration project targeting nitrogen removal as part of the Southeast New England Coastal Watershed Restoration program. This project is designed to demonstrate the feasibility and efficacy of an innovative surface gravel wetland design for the removal of nitrogen as an "add-on" to existing stormwater infrastructure. Permitting for the project was completed during the reporting period with construction expected in late spring 2015. Following construction the project will be monitored for several years and used as an educational tool for other Cape and SE Massachusetts communities.

The Town believes that these actions, as well as others completed prior to the Phase II Permit, demonstrate Chatham's ongoing commitment to addressing stormwater issues.

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
1.1	Educational Flyer	Department of Health & Environment (DHE)	Distributed Annually	Goal met. Continued distribution of educational materials at municipal office locations, during public events and during public	Flyer on newly enacted Board of Health Fertilizer Regulation to be distributed.

Revised				information presentations. Continued cooperation in the development and distribution of materials with the Pleasant Bay Alliance. Development of flyer on newly enacted Board of Health Fertilizer Regulation completed.	
1.2	Web Page	DHE	Develop & Maintain	Goal met. Storm water information/education web page maintained on Town's web site. Has information from and links to EPA, MADEP and regional storm water web sites. IT Dept. indicates 90 views for reporting period, a significant decrease over the previous period.	Maintain and update web page as needed.
Revised					
1.3	Annual Program Review	DHE, DPW, Board of Selectmen	Meeting held per schedule	Goal met. Progress/update meeting held annually as part of yearly budget process.	Same as year 12.
Revised					
1.4	Pet Waste Control	DHE, Animal Control	Expand/document Mutt Mitt program	Goal met. Mutt Mitt program continues to be expanded, funded and maintained by the Town. The total number of Mutt Mitt dispenser locations in Chatham is 23. In excess of 40,000 Mutt Mitts distributed in calendar year 2014.	Same as Year 12.
Revised					

Revised					
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1a. Additions

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
2.1	Citizen Water Quality Monitoring	DHE	Program goals met/annual meeting held	Goal met. Summer water quality nutrient monitoring completed as per program goals. Continued coordination with Chatham Water Watchers and Pleasant bay Alliance to meet program goals.	Same as Year 12.
Revised					
2.2	Storm Drain Marking	DHE	Document number marked/year	Effort postponed to Year 13 due to staff time limitations and re-evaluation of program effectiveness.	Begin storm drain marking in cooperation with volunteers from Friends of Chatham Waterways and other local groups.
Revised					
2.3	Annual Program Review	DHE, DPW, Board of Selectmen	Meeting held per schedule	Goal met. Progress/update meeting held annually as part of yearly budget process.	Same as Year 12.
Revised					
2.4	Household Hazardous Waste Collections	DHE	Document participation	Goal met. Six household hazardous waste	Same as Year 12.

Revised				collections were held May through October 2014, jointly with 2 adjoining towns, in cooperation with Cape Cod Cooperative Extension. In 2014 216 households participated, compared to 201 in 2013, generating approximately 16,600 pounds of waste, up slightly from the 16,500 collected in 2013.	
2.5	Web Page	DHE	Documents hits	Goal met. Storm water information/education web page maintained on Town's web site. Has information from and links to EPA, MADEP and regional storm water web sites. IT Dept. indicates 90 views for reporting period, a significant decrease over the previous period.	Maintain and update web page as needed.
Revised					
Revised					

2a. Additions

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
3.1	Stormwater System Mapping	DHE, DPW, GIS	Complete mapping by year 4 of program	Integration into GIS system and QA/QC is ongoing as resources allow.	Consultant to be hired to complete integration into GIS system.

Revised					
3.2	Identify and Document Illicit Connections	DPW, DHE	Document illicit connections	Progress limited to due staff time limitations. Past monitoring of discharges during DMF Sanitary Surveys have not documented the presence of illicit discharges.	Staff training in the detection of illicit discharges. Continued monitoring of discharges during DMF Sanitary Surveys.
Revised					
3.3	Eliminate Illicit Connections	DPW, DHE	Quantify illicit connections corrected	Progress limited due to staff time limitations. Discharges are being corrected as part of overall efforts to mitigate stormwater discharges.	Continue monitoring.
Revised					
3.4	Review Existing Regulatory Mechanisms	DHE	Complete review by December 2004	No progress, due to staff time limitations.	Complete review and recommend necessary additions/changes.
Revised					
3.5	Educational Flyer	DHE, DPW	Distributed annually	No progress, due to staff time limitations.	Develop and distribute flyer.
Revised					
Revised					

3a. Additions

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
4.1	Conservation Bylaw/Regulation Review	Conservation Commission/DHE	Necessary regulatory changes implemented	Goal met.	Continue review and recommend additions/changes as new information becomes available.
Revised					
4.2	Subdivision Control review	Planning Board, Community Development Dept.(CDD), DHE	Necessary regulatory changes implemented	Goal met.	Continue review and recommend additions/changes as new information becomes available.
Revised					
4.3	Site Plan Review	Planning Board, CDD, DHE	Necessary regulatory changes implemented	Planning Board and CDD undertaking a complete re-write of the town's zoning bylaw. Proposed changes include revisions to site plan review; expected completion date TBD.	Re-program to year 13. Planning Board initiated review of needed changes late in Year 10 will continue into Year 13. Review as propose bylaw changes are promulgated for comment.
Revised					
Revised					
Revised					

4a. Additions

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
5.1	Conservation Bylaw/Regulation Review	Conservation Commission/DHE	Necessary regulatory changes implemented	Goal met.	Continue review and recommend additions/changes as new information becomes available.
Revised					
5.2	Subdivision Control Review	Planning Board, CDD, DHE	Necessary regulatory changes implemented	Goal met.	Continue review and recommend additions/changes as new information becomes available.
Revised					
5.3	Site Plan Review	Planning Board, CDD, DHE	Necessary regulatory changes implemented	Planning Board and CDD undertaking a complete re-write of the town's zoning bylaw. Proposed changes include revisions to site plan review; expected completion date TBD. Goal is dependent on community consensus on proposed zoning changes; this has been illusive so far.	Re-program to year 13. Planning Board initiated review of needed changes late in Year 10 will continue into Year 13. Review as propose bylaw changes are promulgated for comment.
Revised					
Revised					
Revised					
Revised					

5a. Additions

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
6.1	Catch Basin Cleaning	DPW	Clean/document 1/3 of town basins per year	Goal met.	Same as Year 12.
Revised					
6.2	Street Sweeping	DPW	Sweep/document roads once per year	Goal met.	Same as Year 12.
Revised					

6.3	Utilize Appropriate BMP's for All Municipal Projects	DHE, DPW, Building Maintenance	Document implementation	Goal met, ongoing. Mitchell River Bridge replacement project incorporates stormwater BMPs (CHA-8). Chatham and Harwich working cooperatively with MassDOT-Highway, USDA NRCS, and MA Div. of Ecological Restoration on Muddy Creek Restoration Bridge Project that will incorporate stormwater BMPs where Route 28 crosses muddy Creek at Pleasant Bay (CHA-24). Old Queen Anne Road reconstruction completed that incorporates separation of stormwater and herring run stream drainage. Stormwater diverted into detention basin to allow nutrient uptake be naturalized vegetation prior to groundwater recharge.	Continue implementation of BMP's and initiate design for new projects.
Revised					
6.4	Pet Waste Control	DHE, Animal Control	Expand/document Mutt Mitt program	Goal met. Mutt Mitt program continues to be expanded, funded and maintained by the Town. The total number of Mutt Mitt dispenser locations in Chatham is 23. In excess of 40,000 Mutt Mitts distributed in calendar year 2014.	Same as Year 12.

Revised					
6.5	Annual Training	DPW, DHE	Held annually/participation documented.	Staff attends training provided by third party organizations, MassDOT, professional organizations, etc.	Continued utilization of outside opportunities.
Revised					
Revised					

6a. Additions

6.6	Stormwater staff Education/Training	DPW, DHE	Document participation.	Chaired a meeting of Cape Cod Phase II Stormwater Coordinators on update of new Phase II permit and discussion regarding re-constitution of regular Coordinator meetings.	Continue professional education as opportunities arise.
6.7	DPW Permit Filing	DPW	File for applicable Conservation Permits	Goal Met. DPW routinely files for applicable permits.	Continue to file as applicable.

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
7.1	No Discharge Area (NDA)	DHE	NDA enacted	Goal met. All Chatham near-shore and coastal waters now covered by No Discharge Area designation.	Ongoing public education. Operate and maintain vessel pump-out facilities.
Revised					

7.2	Comprehensive Wastewater Management Plan (CWMP)	DHE, CAC, Water & Sewer	CWMP completed. Town Meeting action to begin implementation.	Phase 1A of sewer expansion completed and new Enhanced Nutrient Removal (ENR) treatment facility operational. Sewer expansion Phase 1B completed. Sewer Expansion Phase 1C-1 under construction during reporting period. Design of sewer expansion contracts 1C-2 to 1C-5 continues.	Complete construction of Phase 1C-1 sewer expansion. Complete engineering design for Phase 1C-2 to 1C-5 and initiate bid phase
Revised					
7.3	Muddy Creek Restoration Bridge Project and Old Queen Anne Rd. reconstruction	DHE, DPW, MassDOT, Town of Harwich and other partners	Stormwater improvements implemented.	25% design completed and permitting underway. \$4.3M in grant funds secured for Bridge project; construction to begin in fall 2015. Old Queen Anne Rd. project construction completed.	Complete design and permitting for Muddy Creek Restoration Bridge Project. Initiate construction in Fall 2015.
Revised					
Revised					
Revised					
Revised					

7a. Additions

7.3			Completed		
7.4	Fertilizer Management	DHE	Implement fertilizer management BMPs	Board of Health adopted, and Cape Cod Commission, approved fertilizer regulation.	Implement Board of Health fertilizer regulation. Distribute educational flyer on fertilizer regulation. Work with Cape Cod Cooperative Extension on implementation of fertilizer applicator certification program.

7b. WLA Assessment

Part IV. Summary of Information Collected and Analyzed

The Town of Chatham was the first Massachusetts community to have nitrogen-loading thresholds (TMDLs) completed as part of the MADEP's Massachusetts Estuaries Project. The thresholds were incorporated into the town-wide Comprehensive Wastewater and Nutrient Management Planning Program. Final CWMP/Final EIR completed and approved; Phase 1A & 1B sewer expansions completed and new Enhanced Nutrient Removal (ENR) wastewater treatment facility completed and operational. Construction underway for Phase 1C-1 sewer expansion and SRF funding obtained. Engineering design underway for Phase 1C-2 to 1C-5 sewer expansions, SRF and local funding appropriation obtained. Stormwater improvements are incorporated into all contracts as necessary.

Part V. Program Outputs & Accomplishments (OPTIONAL)

Programmatic

Stormwater management position created/staffed	(y/n)	1, collateral duty
Annual program budget/expenditures	(\$)	\$20,000*

*** Specific funding for Phase II implementation, in addition to DPW funding for routine drainage maintenance/improvements.**

Education, Involvement, and Training

Estimated number of residents reached by education program(s)	(# or %)	
Stormwater management committee established	(y/n)	
Stream teams established or supported	(# or y/n)	
Shoreline clean-up participation or quantity of shoreline miles cleaned	(y/n or mi.)	Yes
Household Hazardous Waste Collection Days		Yes
▪ days sponsored	(#)	6

▪ community participation	(%)	216 Households
▪ material collected	(tons or gal)	16,600± pounds
School curricula implemented	(y/n)	

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	(#)	30
System-Wide mapping complete	(%)	100
Mapping method(s)		
▪ Paper/Mylar	(%)	
▪ CADD	(%)	

▪ GIS	(%)	60
Outfalls inspected/screened	(# or %)	All As part of shoreline sanitary surveys
Illicit discharges identified	(#)	
Illicit connections removed	(#) (est. gpd)	
% of population on sewer	(%)	10
% of population on septic systems	(%)	90

Construction

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

Post-Development Stormwater Management

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

Estimated volume of stormwater recharged	(gpy)	

Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets)	(times/yr)	1/3 OF TOWN PER YEAR
Average frequency of catch basin cleaning (commercial/arterial or other critical streets)	(times/yr)	1/3 OF TOWN PER YEAR
Total number of structures cleaned	(#)	400±
Storm drain cleaned	(LF or mi.)	600 L.F.
Qty. of screenings/debris removed from storm sewer infrastructure	(lbs. or tons)	10 tons
Disposal or use of sweepings (landfill, POTW, compost, recycle for sand, beneficial use, etc.)		COMPOST.
Cost of screenings disposal	(\$)	

Average frequency of street sweeping (non-commercial/non-arterial streets)	(times/yr)	1
Average frequency of street sweeping (commercial/arterial or other critical streets)	(times/yr)	3
Qty. of sand/debris collected by sweeping	(lbs. or tons)	40 tons
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.)	(location)	COMPOST
Cost of sweepings disposal	(\$)	
Vacuum street sweepers purchased/leased	(#)	1
Vacuum street sweepers specified in contracts	(y/n)	

Reduction in application on public land of: (“N/A” = never used; “100%” = elimination)		
▪ Fertilizers	(lbs. or %)	
▪ Herbicides	(lbs. or %)	
▪ Pesticides	(lbs. or %)	

Anti-/De-Icing products and ratios	% NaCl % CaCl ₂ % MgCl ₂ % CMA % Kac % KCl % Sand	50 50
Pre-wetting techniques utilized	(y/n)	No, available but not used last winter
Manual control spreaders used	(y/n)	
Automatic or Zero-velocity spreaders used	(y/n)	Yes
Estimated net reduction in typical year salt application	(lbs. or %)	
Salt pile(s) covered in storage shed(s)	(y/n)	Yes
Storage shed(s) in design or under construction	(y/n)	