



April 30, 2010

Ms. Glenda Velez
US EPA
5 Post Office Square – OEP06-01
Boston, MA 02109-3912

**Re: NPDES Phase II Stormwater General Permit
2009-2010 Annual Report
Town of Orleans, MA**

Dear Ms. Velez:

On behalf of the Town of Orleans, MA, please find enclosed the NPDES Phase II Stormwater General Permit 2009-2010 Annual Report. The Annual Report has simultaneously been filed with the Massachusetts Department of Environmental Protection (MassDEP).

Should you have any questions or require any additional information, please do not hesitate to contact me at 978-692-9090 x308.

Sincerely,

AMEC Earth & Environmental, Inc.

A handwritten signature in black ink, appearing to read "Rich Niles".

Rich Niles
Water Resources Project Manager

cc: Fred Civian, MassDEP, Boston Office
John Kelly, Town Administrator, Town of Orleans, MA
Mark Budnick, Highway Department Manager, Town of Orleans, MA

Enclosure – NPDES Phase II Small MS4 General Permit 2009-2010 Annual Report

AMEC Earth & Environmental, Inc.
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Municipality/Organization: Orleans, MA

EPA NPDES Permit Number: MAR041146

MaDEP Transmittal Number: W-035744

**Annual Report Number
& Reporting Period:** No. 7: May 1, 2009-April 30, 2010

NPDES PII Small MS4 General Permit Annual Report

Part I. General Information

Contact Person: Mark Budnick **Title:** Manager, Highway Department

Telephone #: 508-240-3790 **Email:** mbudnick@town.orleans.ma.us

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: John F. Kelly

Title: Town Administrator

Date: 4/30/10

Part II. Self-Assessment

The Town of Orleans has completed the required self-assessment and has determined that our municipality is in compliance with all permit conditions, except for the following provisions: modifications were made to the schedule for obtaining measurable goals, as discussed in the applicable sections of this report. Permit eligibility information related to Historic Properties and Endangered Species, notable accomplishments and additions to the Town's Stormwater Management Program (SWMP) are discussed below. Many of the additions to the SWMP include ongoing activities that were not specifically discussed in the NOI or previous annual reports.

Permit Eligibility Regarding Historic Properties & Endangered Species:

As discussed in the Year 6 Annual Report, the permit eligibility regarding the protection of Historic Properties was listed as pending at the time Orleans submitted the Notice of Intent (NOI). From investigations in Permit Year 6 it was concluded that that the MS4 discharges within the Town of Orleans do not adversely affect properties listed on the National Register of Historic Places and historical sites in Town. Permit eligibility regarding the protection of Endangered Species was also noted as pending on the NOI; however, this information was improperly reported. The Town previously received letters dated April 8, 2003 from the U.S. Fish and Wildlife Service and the Massachusetts Division of Fisheries and Wildlife indicating that the stormwater discharges in Orleans are not likely to affect federally-listed "Threatened" or "Endangered" species.

Notable Accomplishments:

The Town of Orleans has developed significant ongoing programs to improve marine and fresh water quality and work towards the goals of the Phase II Permit and the final TMDLs for pathogens and nutrients. The efforts of the Marine and Fresh Water Quality Task Force, past and planned BMP construction projects and the development of the draft 2009 Comprehensive Wastewater Management Plan (CWMP) have or will result in significant water quality and habitat improvements. As discussed in the Year 6 Annual Report, funding was appropriated for the construction of stormwater BMPs at Crystal Lake. The BMPs were designed and constructed in Permit Year 7 to remove suspended solids and attenuate pollutants through infiltration. In March 2009, the Town developed and submitted a grant application to the Natural Resources Conservation Service (NRCS) for the design and construction of stormwater BMPs at 4 locations to address key outfalls and water quality concerns. The project also includes an anadromous fish run/ladder. The Town appropriated \$157,000 to provide the required grant match. The project focuses on water quality and habitat improvements to Pochet Inlet, Pilgrim Lake, Meetinghouse Pond and Pleasant Bay. The total project budget is ~\$714,000 and the Town is awaiting the award of the successful grantees.

As part of the development of the draft CWMP, the necessary waste load reduction and environmental impact related to structural wastewater improvements and non-structural BMPs have been assessed. Additionally, the necessary improvements have been evaluated as part of a CWMP Capital Improvement Plan (CIP). The Town anticipates reviewing the new Phase II permit and the

requirements related to TMDLs and impaired water bodies to develop a strategy and BMPs that consider these ongoing efforts to improve water quality.

Additions to SWMP in Permit Year 7:

- BMP B.6 - Water Day Celebration
- BMP C.4 - Comprehensive Wastewater Management Plan
- BMP C.5 - Public Education for Illicit Discharges
- BMP D.3 - Establish a Procedure for Receipt of Information by Public
- BMP F.8 - Inventory of BMP Locations & Needs
- BMP F.9 - Stormwater Training for Highway Staff

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 7 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
A.1 Revised	Develop and Broadcast Via PA CATV Storm Water Video	Mark Budnick, Highway Manager	One per year – in conjunction with County Group # website hits/views for video	The video “After the Storm” was made available through an internet media player on the Highway Department’s web page. The video was broadcast on a regular basis on the Town’s cable channel during the permit year.	Continue broadcasting “After the Storm” video on local cable. Evaluate methods for tracking the number of video views/hits on website. Evaluate methods to broadcast stormwater information.
A.2 Revised	Household Hazardous Waste Control	Mark Budnick, Highway Manager	Annual HHW Collection # residents participating	Collection days were held in Eastham on July 18 th and in Orleans on September 19, 2009. 246 Orleans households participated and a total of ~12,201 lbs. was collected from Orleans residents based on an average weight of 49.6 lbs./household. Event organizers also tracked the effectiveness of the various advertisement methods and ~67% of participants heard of the events through the brochure.	Continue reciprocal HHW collections with the Town of Eastham. Continue tracking resident participation and results.
A.3 Revised	Education Flyers	Mark Budnick, Highway Manager	Distribute 2 per year at Transfer Station # flyers taken by residents	Two different flyers (500 each) were made available at the Transfer Station and Town Facilities. The Highway Department began coordinating with each facility to track the number of flyers taken. Additional public education materials from the EPA website were reviewed to identify potential flyers for use by the Town.	Develop additional flyers based on EPA sample materials. Continue to distribute educational flyers and/or other materials and begin tracking materials taken.

1a. Additions

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 7 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
A.4	Web Page Information	Mark Budnick, Highway Manager & Peter VanDyck, IT Coordinator	Short Article – one per year	As discussed under BMP A.1, the video “After the Storm” was posted on the Highway Department’s web page. The links to EPA’s NPDES Stormwater Program web page and the Town’s stormwater bylaws were maintained. Agendas, meeting minutes and additional information were posted on the web page for the Marine and Fresh Water Quality Task Force.	Continue to maintain existing web pages related to stormwater and water quality. Evaluate additional web page links and begin tracking the number of hits. Develop short articles or topics that can be posted annually on web pages.
Revised			# website hits		
A.5	Other Public Education In Year 6	Mark Budnick, Highway Manager		Copies of “The Orleans Blue Pages” water quality protection booklet (50+ pages) developed by the Orleans Pond Coalition were made available at no cost for residents at Town Hall. Pollution awareness posters were displayed and/or renewed at the Library, Town Hall, Police Station, hardware stores, local veterinary hospitals and kennels. Posters included information related to vehicle washing, pet waste disposal, fertilizer use and vehicle maintenance, as appropriate. The Highway Department evaluated materials for use at a stormwater display at the August 2010 Town Block Party.	Continue existing public awareness activities and evaluate methods to track materials taken, posters, displays and audience (number) reached.
Revised	Other Public Education Activities in Year 7		# copies of “Orleans Blue Pages” taken by residents # posters displayed		
A.6	Storm Drain Stenciling	Mark Budnick, Highway Manager	Stencil storm drains leading to critical priority outfalls.	The Orleans Highway Department stenciled 30 catch basins in April 2010 in the highly visible downtown area.	Continue storm drain stenciling activities at highly visible areas and areas that drain directly to priority outfalls and waterways. Solicit volunteers through the Marine and Fresh Water Quality Task Force. Evaluate a potential stenciling event as part of the anticipated Water Day Celebration in Fall 2010.
Revised		Marine & Fresh Water Quality Task Force	# stenciled drains per year		

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 7 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
B.1 Revised	Water Quality Monitoring Program	Marine & Fresh Water Quality Task Force Town Administrator & Board of Selectmen	Ongoing # samples collected, water bodies assessed each year & water quality improvements	Water quality monitoring was performed over the permit year for all estuaries and freshwater bodies. The Marine & Fresh Water Quality Task Force met once per month to review monitoring activities and results related to priority water bodies and potential improvement projects.	Continue monitoring water quality and tracking program results. Use monitoring results to develop remediation plans for high priority areas. Continue to support Task Force and hold monthly meetings.
B.2 Revised	Estuaries Program Estuaries Program & Comprehensive Wastewater Management Plan	Director of Planning and Development	Ongoing Development of MEP Reports, Progress towards a final CWMP	<p>The Town continued work to develop the April 2009 CWMP, which requires the elimination of 52% of individual septic systems to control nutrients. The CWMP also evaluates and recommends additional nutrient controls such as fertilizer control, stormwater management, water conservation, wastewater flow and load reduction, enhancement of embayment flushing and land use controls.</p> <p>The goal of the program is to meet the TMDL for Pleasant Bay, the anticipated TMDLs for the Nauset system and Rock Harbor, and help protect 8 priority ponds. Work continued on the Nauset MEP Report.</p> <p>As part of the ongoing work to develop the CWMP, 4 public hearings were held to review and provide input for the program.</p>	Continue to work on the CWMP, involve the public, and progress towards a final plan. Incorporate elements of the CWMP into the SWMP to meet the new permit requirements, as appropriate.

2a. Additions

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 7 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
B.3	Storm Drain Stenciling	Mark Budnick, Highway Manager	Stencil storm drains in downtown area and other at systems leading to critical priority outfalls.	As discussed under BMP A.6, the Orleans Highway Department stenciled 30 catch basins in April 2010 in the highly visible downtown area.	Continue storm drain stenciling activities at highly visible areas and areas that drain directly to priority outfalls and waterways. Continue to solicit volunteers through the Marine and Fresh Water Quality Task Force or other community groups. Evaluate a potential stenciling event as part of the anticipated Water Day Celebration in Fall 2010.
Revised		Volunteers	# stenciled drains per year & # volunteers		
B.4	Outfall Monitoring	Mark Budnick, Highway Manager	Perform dry weather outfall monitoring of all outfalls that were initially observed to have flow during the GIS locating.	4 volunteers inspected 15 critical priority outfalls throughout the permit term and any dry weather flows were noted. Remaining outfall inspections were completed by Highway staff. Both staff and volunteers were trained on data collection.	Continue to support the efforts of the Marine & Fresh Water Quality Task Force to perform dry weather monitoring and coordinate with BMP C.4. Coordinate efforts with the Orleans Pond Coalition volunteers.
Revised	Volunteer Outfall Monitoring Program	Marine & Fresh Water Quality Task Force	# volunteer participants	The results of inspection activities were reviewed by the Marine & Fresh Water Quality Task Force and incorporated into the prioritization scheme for future improvement projects.	
B.5	Maintain Animal Waste Collection Bags in Key Areas of Concern	Orleans Pond Coalition		“Mutt Mitts” animal waste collection bags were maintained by volunteers from the Orleans Pond Coalition at key areas of concern for residents to properly dispose of waste. Town Departments assisted with proper waste disposal.	Continue maintenance of “Mutt Mitts” program and ensure proper disposal of wastes. Evaluate methods to track the number of bags taken.
Revised		Mark Budnick, Highway Manager			
B.6	Water Day Celebration	Orleans Pond Coalition	List of activities & participants	The Orleans Pond Coalition began planning a Water Day Celebration for the Fall 2010 and anticipates activities related to water resource protection.	Continue planning Water Day Celebration and host in Fall 2010 as resources allow.
Revised					

3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 7 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
C.1	Storm Water System Mapping and Database Development	Mark Budnick, Highway Manager	Comprehensive town-wide survey by year 2 – as funding allows	The GIS database for the MS4 was updated based on previously collected GPS data to fill in data gaps. The Highway Department updated the GIS database and began training staff to utilize the program for infrastructure and stormwater management.	Update drainage system base map as needed. Continue to train Highway staff on the use of the GIS system for stormwater management.
Revised					
C.2	Review Existing By-Laws	Director of Planning and Development	Review existing by-laws and adopt storm water ordinance FY06	The Town drafted a floor drain bylaw to prohibit improper connections to the MS4. The bylaw was reviewed and placed on the warrant for the May 10, 2010 Town Meeting. The Town also has requirements to prohibit dumping and improper pet waste disposal that are enforced by the Board of Health. The Highway Department obtained and reviewed a sample Illicit Discharge Bylaw.	Seek to adopt and implement the floor drain bylaw. Continue to monitor and enforce local requirements related to dumping and pet waste control. Finalize and evaluate adoption of Illicit Discharge Bylaw for Town Meeting in May 2011.
Revised					
C.3	Identify and Document Illicit Connections	Mark Budnick, Highway Manager	Review C.1 results, finalize database by Year 4	The Highway Department inspects all catch basins during cleaning operations and completes a form to document condition and any potential illicit discharges. Two unknown connections to the MS4 (suspect yard drain & sump pump discharge) were identified and remain under investigation. The Highway Department obtained and reviewed procedures and inspection forms for illicit discharge detection and elimination (IDDE) activities.	Identify the source of the two unknown connections to the MS4 and remove/disconnect, as appropriate. Continue to review mapping results with catch basin and pipe cleaning and inspection information. Incorporate existing procedures into future IDDE procedures, as well as the future storm drain inspection and maintenance program under Control Measure 6.
Revised	Identify & Remove Illicit Connections & Discharges		# discharges identified, removed within 1 year of discovery		

3a. Additions

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 7 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
C.4 Revised	Comprehensive Wastewater Management Plan	Director of Planning and Development	Progress towards a final CWMP	As discussed under BMP B.2, the Town continued work to develop the draft April 2009 CWMP, which requires the elimination of 52% of individual septic systems to control nutrients. Failing or inadequate septic systems represent indirect illicit discharges.	Continue to work on the CWMP, involve the public, and progress towards a final plan. Incorporate elements of the CWMP into the SWMP to meet the new permit requirements, as appropriate.
C.5 Revised	Public Education for Illicit Discharges	Mark Budnick, Highway Manager		As outlined in BMPs A.1 through A.6 and B.5, various entities have incorporated information regarding illicit discharges into existing public education and involvement activities. The Highway Department evaluates the results of these efforts.	Continue to incorporate illicit discharge information into existing public education and involvement activities and evaluate results.

4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 7 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
D.1 Revised	Review Existing By-Laws	Director of Planning and Development	Review existing by-laws and adopt construction ordinance	As discussed in the Year 6 Annual Report, the Town adopted the Drainage and Erosion and Sediment control bylaw at Town meeting in May 2008. The Highway Department identified one site with erosion issues and worked with the Town Administrator to address the issue in accordance with the bylaw.	Continue to enforce bylaws and document actions.
D.2 Revised	Propose amendments and articles at Town Meeting	Director of Planning and Development	Spring 06 Ongoing	As discussed in the Year 6 Annual Report, the Town adopted the Drainage and Erosion and Sediment control bylaw at Town meeting in May 2008. No amendments were deemed necessary at this time.	Continue to evaluate effectiveness of bylaws and amend if necessary.

4a. Additions

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 7 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
D.3	Establish a Procedure for Receipt of Information by Public	Mark Budnick, Highway Manager	# calls received & record of corrective actions	The Highway Department did not receive any calls related to construction sites.	Respond to calls regarding construction site erosion and sediment issues. Begin logging and documenting calls and actions.
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 7 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
E.1	Review Existing By-Laws	George Meservey, Director of Planning and Development	Review existing by-laws and adopt Runoff Control Ordinance F	As discussed in the Year 6 Annual Report, the Town adopted the Drainage and Erosion and Sediment control bylaw at Town meeting in May 2008.	Continue to enforce bylaw and review plans through Site Plan Review committee.
Revised				Any plans for significant development are reviewed for compliance through the Site Plan Review committee.	
E.2	Propose amendments and articles at Town Meeting	George Meservey, Director of Planning and Development		Refer to BMP E.1. No amendments were deemed necessary at this time.	Continue to evaluate effectiveness of bylaws and amend if necessary.
Revised			Ongoing		

5a. Additions (none at this time)

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 7	Planned Activities – Next Permit Term
F.1	Street Sweeping	Mark Budnick, Highway Manager	Sweep as part of annual winter cleanup and as needed	All streets were swept at least once. Additional streets are swept 2-3 times during the year based on known areas of sediment/sand accumulation, downtown areas and environmentally sensitive areas. Approximately 967 tons of street sweepings were collected during the year and reused in accordance with the existing BUD.	Continue annual street sweeping program and focus additional sweeping efforts on needed and environmentally sensitive areas.
Revised					
F.2	Catch Basin Cleaning	Mark Budnick, Highway Manager	Clean all basins in town on yearly rotating schedule	All basins were cleaned once and approximately 270 tons of catch basin cleanings were collected during the year. Materials were reused in accordance with the existing BUD.	Continue annual catch basin cleaning Program. Consider evaluating drainage areas to prioritize cleaning efforts as appropriate.
Revised					
F.3	Develop Drainage System Improvement Plan	Mark Budnick, Highway Manager	Prepare Capital Plan Article for FY06	Ongoing Capital Plan includes an allotment of \$150,000 for water quality related drainage improvements. A construction plan for water quality improvements projects is maintained annually based on addressing regulated outfalls and the results and input from the Marine and Fresh Water Quality Task Force. The BMPs at Crystal Lake were designed and constructed to remove suspended solids and attenuate pollutants through infiltration.	Continue funding in capital plan, remediation of outfalls and implementation of stormwater BMPs. Consider improvements to water quality with future strategies to address impaired waters and TMDLs.
Revised			Prepare Capital Plan Article for FY10		
F.4	Propose Amendments and Articles at Town Meeting	Mark Budnick, Highway Manager	Spring 06	Consistent with the efforts under BMP F.3, the Town approved \$157,000 for the design and construction of stormwater BMPs at 4 locations to address key outfalls. The funding was appropriated to provide the required match under a grant with the NRCS, which included a fish ladder. The project focuses on water quality and habitat improvements to Pochet Inlet, Pilgrim Lake, Meetinghouse Pond and Pleasant Bay. The total project budget is ~\$714,000.	Pending award of the NRCS grant, design and construct the planned water quality and habitat improvement projects.
Revised			Prepare Capital Plan Articles Annually		The Town plans to develop improvements and allocate funding for improvements at a major stormwater outfall at the Town Beach area on Cape Cod Bay.

6a. Additions

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 7 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
F.5	Maintain Animal Waste Collection Bags in Key Areas of Concern			“Mutt Mitts” animal waste collection bags were maintained by volunteers from the Orleans Pond Coalition at key areas of concern for residents to properly dispose of waste. Town Departments assisted with proper waste disposal.	Continue maintenance of “Mutt Mitts” program and ensure proper disposal of wastes. Evaluate methods to track the number of bags taken.
Revised		Orleans Pond Coalition			
F.6	Nutrient Loading Reductions	Paul Fulcher, Parks and Beaches Superintendent	Implement Organic Based Land Management Program	The Organic Based Land Management Program began for Town properties, consistent with NOFA guidelines. Organic compost was purchased in April 2010 for spring application. The program focuses on reducing nutrient loads through the use of cultural land management practices and organic enhancements for healthy turf and native vegetation. Mowing practices at the Town Cove conservation viewing areas were modified to reduce the need for rigorous turf management. Also, the Town has only used limited organic-based pesticides for the last 3 years.	Continue organic based land management program to address nutrient loading. Continue turf and pesticide management practices to reduce the need for chemical applications.
Revised					
F.7	Trash Management	Mark Budnick, Highway Manager & Paul Fulcher, Parks and Beaches Superintendent	Maintain a proactive trash collection program	The Highway Department maintained the active Trash collection program at all Town properties. The program provides a means of waste disposal at public areas to discourage littering.	Continue proactive trash management program.
Revised					
F.8	Inventory of BMP Locations & Needs	Mark Budnick, Highway Manager	Ongoing inventory of BMP locations and needs to address water quality issues	A list of locations with stormwater BMPs was maintained and coordinated with the Marine & Fresh Water Quality Task Force to develop projects for water quality improvement. This BMP supports BMPs F.3 and F.4.	Continue to maintain and update the BMP inventory and develop projects with the Marine & Fresh Water Quality Task Force.
Revised					

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 7 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
F.9	Stormwater Training for Highway Staff	Mark Budnick, Highway Manager	Annual training on various topics, record of training attendance & materials	Highway Department staff are trained annually for the inspection and maintenance of the drainage system. Staff responsible for cleaning catch basins are trained on how to identify potential illicit discharges.	Continue to train staff annually and begin maintaining copies of curriculum and attendance sheets.
Revised				Additional topics and sample curricula were reviewed to develop future training programs.	

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 7 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
Revised					

7a. Additions (none at this time)

7b. WLA Assessment

As discussed in this annual report, the Town of Orleans has developed significant ongoing programs to improve marine and fresh water quality and work towards the goals of the Phase II Permit and the final TMDLs for pathogens and nutrients. The efforts of the Marine and Fresh Water Quality Task Force, past and planned BMP construction projects and the development of the draft 2009 Comprehensive Wastewater Management Plan (CWMP) have or will result in significant water quality and habitat improvements. As part of the development of the draft CWMP, the necessary waste load reduction and environmental impact related to structural wastewater improvements and non-structural BMPs have been assessed. Additionally, the necessary improvements have been evaluated as part of a CWMP Capital Improvement Plan (CIP). The Town anticipates reviewing the new Phase II permit and the requirements related to TMDLs and impaired water bodies to develop a strategy and BMPs that consider these ongoing efforts to improve water quality.

Part IV. Summary of Information Collected and Analyzed

Beach monitoring was performed by the Town of Orleans Health Department in Permit Year 7. Additional water quality data was collected for various water bodies in Permit Year 7. This data is available upon request through the Marine & Fresh Water Quality Task Force and the Town Planner.

Part V. Program Outputs & Accomplishments (OPTIONAL)

Programmatic

Stormwater management position created/staffed	(y/n)	
Annual program budget/expenditures	(\$)	\$170,000

Education, Involvement, and Training

Estimated number of residents reached by education program(s)	(# or %)	~500
Stormwater management committee established	(y/n)	N
Stream teams established or supported	(# or y/n)	N
Shoreline clean-up participation or quantity of shoreline miles cleaned	(y/n or mi.)	
Household Hazardous Waste Collection Days		
▪ days sponsored	(#)	2
▪ community participation	(%)	246 homes
▪ material collected	(tons or gal)	6.1 tons
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	(#)	60
System-Wide mapping complete	(%)	75
Mapping method(s)		
▪ Paper/Mylar	(%)	40
▪ CADD	(%)	
▪ GIS	(%)	60
Outfalls inspected/screened	(# or %)	100%
Illicit discharges identified	(#)	2*
Illicit connections removed	(#) (est. gpd)	
% of population on sewer	(%)	
% of population on septic systems	(%)	100
Note: *2 potential illicit connections to the MS4 were identified and remain under investigation.		

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
Average frequency of catch basin cleaning (commercial/arterial or other critical streets)	(times/yr)	1
Total number of structures cleaned	(#)	780
Storm drain cleaned	(LF or mi.)	500
Qty. of screenings/debris removed from storm sewer infrastructure	(lbs. or tons)	297 tons
Disposal or use of sweepings (landfill, POTW, compost, recycle for sand, beneficial use, etc.)		BUD
Cost of screenings disposal	(\$)	~\$3,000

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)	unknown
Qty. of sand/debris collected by sweeping	(lbs. or tons)	967 tons
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.)	(location)	BUD
Cost of sweepings disposal	(\$)	~\$3,000
Vacuum street sweepers purchased/leased	(#)	
Vacuum street sweepers specified in contracts	(y/n)	

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

Anti-/De-Icing products and ratios	% NaCl % CaCl ₂ % MgCl ₂ % CMA % Kac % KCl % Sand	50% 50%
Pre-wetting techniques utilized	(y/n)	N
Manual control spreaders used	(y/n)	Y
Automatic or Zero-velocity spreaders used	(y/n)	N
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