



## **Part II. Self-Assessment**

**The Town of Harwich has completed the required self-assessment and has determined that our municipality is in substantial compliance with all permit conditions.**

**The Town has completed the Muddy Creek Bridge project which replaces small culverts with a bridge at Route 28 to better flush the Muddy Creek channel at Pleasant Bay.**

**The Allen Harbor parking lot was reconstructed with porous pavement to better comply with MS4 requirements.**

**In the past permit year, the Town completed additional field work to locate and map stormwater outfalls, prepare a draft bylaw regarding illicit discharges, prepare an IDDE framework, and identify potential funding sources to assist with developing a robust budget to address items required by the new MS4 permit that will go into effect on July 1, 2017. Based on the past year's effort to review town-owned roadways and properties in the field as well as review of existing infrastructure mapping, the Town located additional outfalls in the field that were documented using GPS and depicted on an outfall map. Town staff continue to record observations of new, previously unknown discharges when conducting regular operation and maintenance inspections. In addition, our staff records observations of any dry weather flows or signs of illicit discharges (such as unusual color or odor) when conducting regular operation and maintenance activities. Any signs of an illicit discharge would be investigated following the IDDE framework we have established. To date, no illicit discharges have been identified.**

**Part III. Summary of Minimum Control Measures**

**1. Public Education and Outreach**

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./Person Name</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s) – Permit Year 14 (Reliance on non-municipal partners indicated, if any)</b>	<b>Planned Activities</b>
E1 Revised	Channel 18	Assist. Admin	Video Production	Information gathering ongoing interdepartment	Production and display of video
E2 Revised	Hand outs and flyers	Various Departments	Provided at Public Facilities	Handouts available at various facilities	Continued and additional handouts available at various public facilities
E3 Revised	Posters	Various Departments	Posters displayed at all public facilities	Posters displayed at all municipal facilities	Continue to display and update posters at Municipal Facilities
E4 Revised	Town Web Site	Town Planner	Post Homeowners Guide	Guide Posted on Website	Review and update guide as needed
Revised					
Revised					

**1a. Additions**


## 2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 14 (Reliance on non-municipal partners indicated, if any)	Planned Activities
P1 Revised	Town Web site	Assist. Admin	Provide Response	Plan posted and explained on web site	Posting on web site with response area
P2 Revised	Public hearings	Rules and Regulations various Departments	Enact Rules and Regulations	Rules and Regulations for Subdivision Control and Site Plan review continually reviewed to ensure compliance with Stormwater Regulations	Enforce Rules and Regulations for compliance by applicants
P3 Revised	Hazardous Waste Collection	DPW Director	Reduce Hazardous waste	Six hazardous waste days per year . 3,300 gallons of hazardous waste collected and disposed of.	Flyers and mailers sent for hazardous waste days
P4 Revised	Oil, Antifreeze, etc.	DPW Director	Increase amount collected	Increase ease and availability of recycling facility oil – 4800 gallons of oil and antifreeze collected	Facility open daily and antifreeze and oil filter recycling facility available.
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 14 (Reliance on non-municipal partners indicated, if any)	Planned Activities
D1 Revised	Locate discharge to water	Harbormaster	Reduce number of discharges	Mapping of existing drainage system completed	Mapping of system completed and field verification ongoing.
D2 Revised	Locate discharge areas	Engineering Department,	Fly over	Planimetric data available from a fly over conducted by the Cape Cod Commission was used to map manholes , inlets, culverts and open drains	Town staff will continue to record observations of new, previously unknown discharges when conducting regular operation and maintenance inspections.
D3 Revised	Review of existing data and compliance with MS4 requirements	Engineering Department	Update data	With consultant assistance, reviewed MS4 requirements and conducted additional review of town infrastructure based on mapping and field surveys and located additional outfalls in the field using GPS to create a map of outfall locations	Town staff will continue to record observations of new, previously unknown discharges when conducting regular operation and maintenance inspections.
Revised					
Revised					
Revised					

#### 3a. Additions

D4	Enact By-Law prohibiting illicit discharges	Engineering and Planning Departments, as well as Town Meeting Approval	Draft by-law and put forward for Town Meeting approval	A consultant was engaged to prepare a draft by-law based on review of existing model by-laws. The Town is reviewing the draft by-law.	Finalize and enact by-law.

#### 4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 14 (Reliance on non-municipal partners indicated, if any)	Planned Activities
S1	Subdivision Control Rules and Regulations Amended	Planning Department	Adopted by Planning Board	Engaged consultant to conduct review of existing Rules and Regulations and identify recommended changes to address requirements of current MS4 permit as well as new permit going into effect on July 1, 2017. Continued to enforce current rules and regulations to full extent.	Continue to Enforce Rules and Regulations for on all relevant construction sites as well as consider changes for compliance with new permit going into effect on July 1, 2017
Revised					

#### 4a. Additions




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

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./Person Name</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s) -- Permit Year 14</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities</b>
C1	Subdivision Control Rules and Regulations Amended	Planning Department	Adopted by Planning Board	Amended Rules and Regulations were enforced on all new construction.	Continue to enforce regulations on all new work.
Revised					
C2	Site Plan Regulations amended	Planning Department	Adopted by Planning Board	Amended Rules and Regulations were enforced on all new construction.	continue to enforce regulations on all new work
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 14 (Reliance on non-municipal partners indicated, if any)	Planned Activities
G1 Revised	Street Sweeping	DPW Director	All Roads Swept Annually	Street Sweeping program reviewed and all roads included for sweeping. Two sweepers in use	All roads to be swept for 2017
G2 Revised	Review Town Property for Drainage	DPW Director	Locate problems and repair	Continual inspection of drainage structures	Inspections ongoing
Revised					

### 6a. Additions


**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 14 (Reliance on non-municipal partners indicated, if any)	Planned Activities
M1 Revised	Continue Drainage installation and update	DPW Director	Improve Drainage system	53 drainage systems installed or upgraded	Continuation of Town Installation of drainage systems throughout the Town
Revised					

**7a. Additions**


#### **Part IV. Summary of Information Collected and Analyzed**

Harwich is also a member of the Pleasant Bay Resource management Alliance with Chatham, Brewster and Orleans. The Alliance has over 100 volunteers who collect water samples throughout the Bay from June through September.

The samples are analyzed for Nitrates and Phosphates as well as color and turbidity in order to establish a baseline for future testing.

In September 2016, Harwich Natural Resources worked in conjunction with Harwich Conservation Trust to host COASTSWEEP 2015. Volunteers spent the day cleaning debris from beaches. All debris/trash was taken to the Harwich Transfer station in the back of a dump truck.

In March 2017 (several days) - Natural Resources Dept., with the help of Americorps of Cape Cod, cleaned streams related to our herring runs. Connections between Seymour Pond, Long Pond & Hinckleys pond as well as Herring River were cleaned. Debris and fallen trees/limbs were removed in order to assist migrating Herring up the run. Red River connecting to Skinequit Pond was also cleaned.

Waste oil from boats is collected at Saquatucket Harbor. In the past year the oil holding tank was emptied 4 times, (250 gal, 275 gal, 250 gal, 250 gal). A total of Approx 1,000 gallons of waste oil was collected and hauled away to an approved disposal site.

**Part V. Program Outputs & Accomplishments (OPTIONAL)**

(Since beginning of permit coverage unless specified otherwise by a \*\*, which indicates response is for period covering April 1, 2010 through March 31, 2014)

**Programmatic**

	(Preferred Units)	Response
Stormwater management position created/staffed	(y/n)	no
Annual program budget/expenditures **	(\$)	
Total program expenditures since beginning of permit coverage	(\$)	
Funding mechanism(s) (General Fund, Enterprise, Utility, etc)	Local & Federal funds	

**Education, Involvement, and Training**

Estimated number of property owners reached by education program(s)	(# or %)	90%
Stormwater management committee established	(y/n)	Yes
Stream teams established or supported	(# or y/n)	yes
Shoreline clean-up participation or quantity of shoreline miles cleaned **	(y/n or mi.)	2 mi per year
Shoreline cleaned since beginning of permit coverage	(mi.)	2 mi per year
Household Hazardous Waste Collection Days		
▪ days sponsored **	(#)	6
▪ community participation **	(# or %)	100%
▪ material collected **	(tons or gal)	4,496 gal
School curricula implemented	(y/n)	yes

**Legal/Regulatory**

	In Place Prior to Phase II	Reviewing Existing Authorities	Drafted	Draft in Review	Adopted
Regulatory Mechanism Status (indicate with "X")					
▪ Illicit Discharge Detection & Elimination		X	X	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

	(Preferred Units)	Response
Outfall mapping complete	(%)	100
Estimated or actual number of outfalls	(#)	17
System-Wide mapping complete (complete storm sewer infrastructure)	(%)	100
Mapping method(s)		
▪ Paper/Mylar	(%)	100
▪ CADD	(%)	0
▪ GIS	(%)	100
Outfalls inspected/screened **	(# or %)	0
Outfalls inspected/screened (Since beginning of permit coverage)	(# or %)	6
Illicit discharges identified **	(#)	0
Illicit discharges identified (Since beginning of permit coverage)	(#)	0
Illicit connections removed **	(# ); and (est. gpd)	0
Illicit connections removed (Since beginning of permit coverage)	(#); and (est. gpd)	0
% of population on sewer	(%)	0
% of population on septic systems	(%)	100

### Construction

	(Preferred Units)	Response
Number of construction starts (>1-acre) **	(#)	4
Estimated percentage of construction starts adequately regulated for erosion and sediment control **	(%)	100%
Site inspections completed **	(# or %)	100%
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	(%)	100%
Site inspections (for proper BMP installation & operation) completed **	(# or %)	100%
BMP maintenance required through covenants, escrow, deed restrictions, etc.	(y/n)	N
Low-impact development (LID) practices permitted and encouraged	(y/n)	Y

### 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
Qty of structures cleaned **	(#)	375
Qty. of storm drain cleaned **	(%, LF or mi.)	200
Qty. of screenings/debris removed from storm sewer infrastructure **	(lbs. or tons)	200+TONS
Disposal or use of screenings (landfill, POTW, compost, beneficial use, etc.) **	(location)	Recycle for sand and closed landfill berm

Basin Cleaning Costs		
• Annual budget/expenditure (labor & equipment)**	(\$)	
• Hourly or per basin contract rate **	(\$/hr or \$ per basin)	
• Disposal cost**	(\$)	3000

Cleaning Equipment		
• Clam shell truck(s) owned/leased	(#)	1
• Vacuum truck(s) owned/leased	(#)	0
• Vacuum trucks specified in contracts	(y/n)	0
• % Structures cleaned with clam shells **	(%)	100
• % Structures cleaned with vector **	(%)	

	(Preferred Units)	Response
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)	1
Qty. of sand/debris collected by sweeping **	(lbs. or tons)	200 tons
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.) **	(location)	Closed landfill cover berm
Annual Sweeping Costs		
• Annual budget/expenditure (labor & equipment)**	(\$)	
• Hourly or lane mile contract rate **	(\$/hr. or ln mi.)	
• Disposal cost**	(\$)	3000
Sweeping Equipment		
• Rotary brush street sweepers owned/leased	(#)	2
• Vacuum street sweepers owned/leased	(#)	1
• Vacuum street sweepers specified in contracts	(y/n)	n
• % Roads swept with rotary brush sweepers **	%	90%
• % Roads swept with vacuum sweepers **	%	10%

Reduction (since beginning of permit coverage) in application on public land of: ("N/A" = never used; "100%" = elimination)		
▪ Fertilizers	(lbs. or %)	0
▪ Herbicides	(lbs. or %)	N/A
▪ Pesticides	(lbs. or %)	N/A
Integrated Pest Management (IPM) Practices Implemented	(y/n)	Y

	(Preferred Units)	Response
Average Ratio of Anti-/De-Icing products used ** (also identify chemicals and ratios used in specific areas, e.g., water supply protection areas)	% NaCl % CaCl <sub>2</sub> % MgCl <sub>2</sub> % CMA % Kac % KCl % Sand	50salt      50sand
Pre-wetting techniques utilized **	(y/n or %)	no
Manual control spreaders used **	(y/n or %)	yes
Zero-velocity spreaders used **	(y/n or %)	yes
Estimated net reduction or increase in typical year salt/chemical application rate	(±lbs/ln mi. or %)	15%
Estimated net reduction or increase in typical year sand application rate **	(±lbs/ln mi. or %)	10%
% of salt/chemical pile(s) covered in storage shed(s)	(%)	100%
Storage shed(s) in design or under construction	(y/n or #)	no
100% of salt/chemical pile(s) covered in storage shed(s)	(y/n)	yes

### Water Supply Protection

Storm water outfalls to public water supplies eliminated or relocated	# or y/n	N/A
Installed or planned treatment BMPs for public drinking water supplies and their protection areas	# or y/n	N/A
<ul style="list-style-type: none"> <li>Treatment units induce infiltration within 500-feet of a wellhead protection area</li> </ul>	# or y/n	N/A

