

**Municipality/Organization:** Town of Plymouth

**EPA NPDES Permit Number:** MAR 041150

**MaDEP Transmittal Number:** W-40949

**Annual Report Number  
& Reporting Period:** No.11: March15 – March16

## **NPDES PII Small MS4 General Permit Annual Report**

### **Part I. General Information**

**Contact Person:** Jonathan Beder **Title:** DPW Director

**Telephone #:** 508-830-4162 ext 107 **Email:** jbeder@townhall.plymouth.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:** Jonathan Beder

**Title:** DPW Director

**Date:** 4/26/16

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

**The Town of Plymouth has completed the required self-assessment and has determined that our municipality is in compliance with all permit conditions, except for the following provisions:**

**Part 1.B.2 (e) (Vi)**

The Town of Plymouth's permit eligibility with regard to the Endangered Species Act is still pending at the time of our NOI submission. Our MS4 discharges will have the potential to impact the existence of specific species protected under the Endangered Species Act. We will investigate more on this issue of concern.

**Part 1.B.2 (k)**

Some discharges have been determined (through DMF Sanitary Survey) to be contributing to exceedance of water quality standards in Plymouth Harbor. These discharges have been made priorities in our NPS Pollution Grant Program.

### 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 10</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------|------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1-1             | Educational Flyer                                    | Town Engineer/<br>Town Manager                                 | Post in all schools & Town buildings               | The Town's Department of Marine & Environmental Affairs created an educational watershed management brochure containing tips on reducing pollutants in stormwater runoff. This brochure is made available at Town Hall. The Department of Marine & Environmental Affairs is active in updating the stormwater management webpage which includes interactive computer games for children, educational information on stormwater and background of stormwater permit with reports available for download. The SuAsCo stormwater display have been rotated in various locations through Town Hall and also displayed at Department of Public Works Educational Day. |
| 1-2             | Form Public Education Task Force                     | Town Engineer/<br>Environmental Manager                        | Participation in town wide events & schools        | The Department of Marine & Environmental Affairs actively participates in educational opportunities with local watershed groups and citizens concerning stormwater issues. The Town worked with the Herring Ponds Association in the continuation of the distribution of watershed management postcards for the Herring Pond Watershed. In addition, The Herring Pond Association created and distributed watershed books.                                                                                                                                                                                                                                       |
| Revised         | Educational Workshops                                | Town Engineer/<br>Environmental Manager                        | Schedule Workshops                                 | The Herring Ponds Watershed Association and the Six Ponds Watershed Association has held Association meetings to discuss and review stormwater issues in their watershed. DMEA held an educational public meeting with the UMASS Dartmouth-SMAST to discuss water quality in the ponds and activities which impair water quality - there were over 40 residents in attendance.                                                                                                                                                                                                                                                                                   |
| 1-3             | Air stormwater message on local cable access channel | Town Engineer                                                  | Post one message every month                       | Service announcements for the Town's Household Hazardous Waste Days are broadcasted spring and fall.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Revised         |                                                      |                                                                |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 1-4             | Storm Drain Stenciling                               | Town Engineer/Conse<br>rvation Comm./Environ<br>mental Manager | Stencil Storm Drains with Messages (25% each year) | The Town continues to utilize watershed groups, volunteers as well as staff to continue the ongoing storm drain marker program.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

|         |                                   |                       |                                                      |           |
|---------|-----------------------------------|-----------------------|------------------------------------------------------|-----------|
| Revised | Storm drain Markers               | Environmental Manager | 50 per year                                          |           |
| 1-5     | Map outfalls and receiving waters | Town Engineer         | Map of discharge pipes to waters & wetland (20%/yr.) | Completed |
| Revised |                                   |                       |                                                      |           |
|         |                                   |                       |                                                      |           |
| Revised |                                   |                       |                                                      |           |

### 1a. Additions

| BMP ID # | BMP Description | Responsible Dept./Person Name | Measurable Goal(s)                        | Progress on Goal(s)<br>Permit Year 10                                                                                                                                                                                                                                   |
|----------|-----------------|-------------------------------|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1a.      | Media coverage  | Town Engineer                 | Story coverage on NPS Pollution Projects. | The bioretention and rain garden projects the Town DPW has completed have become an educational piece for various workshops held in the area. These bioretention areas, which are in or close to downtown Plymouth, have become destinations for educational workshops. |

## 2. Public Involvement and Participation

| <b>BMP ID #</b> | <b>BMP Description</b>                                | <b>Responsible Dept./Person Name</b>           | <b>Measurable Goal(s)</b>                               | <b>Progress on Goals – Permit Year 10</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------|-------------------------------------------------------|------------------------------------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>2-1</b>      | <b>Hazardous waste collection</b>                     | <b>DPW Recycling Coordinator</b>               | <b>Twice/yr. (min.)</b>                                 | Two events were held in this permit period.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Revised         |                                                       | DPW                                            |                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>2-2</b>      | <b>Volunteer Water Quality Monitoring</b>             | <b>Environmental Management</b>                | <b>Level of participation</b>                           | The Town continues to work with several Watershed Associations and volunteers in collecting water quality data as part of the regular monitoring program. In addition DMEA received grant funding from the Massachusetts Environmental Trust for the implementation of a larger education and monitoring project, Plymouth Ponds and Lakes Stewardship (PALS) Project. This funding enable's the Town and Consultant UMASS Dartmouth-SMAST to conduct water sample collection, cover laboratory fees, compile data and analyze with a final report atlas. The PALS project kicked off in August of 2014 with over 50 volunteers from project partners as well as residents who live on or nearby ponds. Due to the substantial volunteer efforts, we were able to add an additional 4 ponds to the list, totaling 39 for sampling and analysis. UMASS Dartmouth-SMAST has completed the PALS Atlas report, available on the Town DMEA website. In addition DMEA held an educational public meeting with UMASS Dartmouth-SMAST to discuss water quality in the ponds and activities which impair water quality - there were over 40 residents in attendance. |
| Revised         | <b>Rain Barrel Program</b>                            |                                                |                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>2-3</b>      | <b>Citizen Stormwater Committee/Lake Associations</b> | <b>Town Engineer/Natural Resources Officer</b> | <b>Hold meeting to plan for stormwater issues/mgmt.</b> | The Town continues to work closely with the Herring Ponds Association whom holds numerous meetings regarding water quality and stormwater management issues in the watershed. The Town also works closely with 3 other Watershed Associations and assists on remediating stormwater issues to the best ability.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Revised         |                                                       | <b>Town Engineer/Environmental Manager</b>     |                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>2-4</b>      | <b>“Adopt a Storm Drain Program”</b>                  | <b>Town Engineer/Natural Resources Officer</b> | <b>Participation in Community Clean-ups</b>             | Several community based cleanups were held during this permit year. Over 1,153 10 gallon bags were collected for spring and fall 2015 cleanups.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

|         |                             |                                               |                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------|-----------------------------|-----------------------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Revised |                             |                                               |                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 2-5     | <b>Citizen watch Groups</b> | <b>Town Engineer/Natural Resource Officer</b> | <b>Aid Local Enforcement author. In the identification of polluters</b> | The Town Conservation and Planning Department as well as the Department of Marine & Environmental Affairs continue to work closely with the Network of Open Space Friends in coordinating cleanups, stewardship as well as many other activities. The Department of Marine & Environmental Affairs has a Natural Resource Warden whom has walked and evaluated land issues including dumping and ATV use which causes erosion. In addition, DMEA now has 2 Natural Resource Wardens whom monitor and evaluate land issues. |
| Revised |                             |                                               |                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|         |                             |                                               |                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Revised |                             |                                               |                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

### 3. Elicit Discharge Detection and Elimination

| <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 10</b>                                                                                                                                                                                                                                     |
|-----------------|---------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>3-1</b>      | <b>Develop illicit dischg. id. &amp; elim. plan</b>           | <b>Town Engineer/BOH/ Environmental Manager/ Planning Bd.</b> | <b>Make recommendations for the plan</b>                             | The Town DPW Sewer Division utilizes the Illicit Discharge and Elimination Plan under the Sewer Division Rules & Regulations.                                                                                                                                                   |
| Revised         | Screen outfalls for Illicit connections                       | Public Works                                                  | Screen outfalls by Winter 07-08                                      |                                                                                                                                                                                                                                                                                 |
| <b>3-2</b>      | <b>Drainage Network Mapping</b>                               | <b>Town Engineer</b>                                          | <b>Drainage of urbanized areas</b>                                   | Mapping of outfalls and catch basins were completed in previous years.                                                                                                                                                                                                          |
| Revised         |                                                               |                                                               |                                                                      |                                                                                                                                                                                                                                                                                 |
| <b>3-3</b>      | <b>Public Info. on illicit connections/illegal discharges</b> | <b>Town Engineer/Board of Health</b>                          | <b>Educating the public-hazards associated with these activities</b> | Section twelve of the Sewer Division Rules & Regulations has been approved and states that surface runoff is prohibited.                                                                                                                                                        |
| Revised         |                                                               |                                                               |                                                                      |                                                                                                                                                                                                                                                                                 |
| <b>3-4</b>      | <b>Develop/Modify general illicit discharge bylaw</b>         | <b>BOH/Planning Board</b>                                     | <b>Developing/modifying the plan</b>                                 | The guide for Storm Drainage Facilities that address illicit discharges is now being utilized.                                                                                                                                                                                  |
| Revised         |                                                               |                                                               |                                                                      |                                                                                                                                                                                                                                                                                 |
| <b>3-5</b>      | <b>Present Bylaw for town meeting action</b>                  | <b>BOH/Planning Board</b>                                     | <b>Make presentations for town Meeting action</b>                    | Section twelve of the Sewer Division Rules & Regulations has been approved in previous years and states that surface runoff is prohibited.<br>The Guide for Storm Drainage Facilities was adopted in 2008 by Planning Board, DPW & Inspectional Services and is being utilized. |
| Revised         |                                                               |                                                               |                                                                      |                                                                                                                                                                                                                                                                                 |

#### 4. Construction Site Stormwater Runoff Control

| BMP ID # | BMP Description                                   | Responsible Dept./Person Name    | Measurable Goal(s)                       | Progress on Goal(s) – Permit Year 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------|---------------------------------------------------|----------------------------------|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4-1      | Wetlands by-law for stormwater management         | Conservation Commission          | Town Meeting Action                      | This by-law is now being enforced by the Conservation Commission. The 10ft no-touch buffer approved as part of the Towns Wetland Protection Act Bylaw was increased to a 35ft no-touch buffer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Revised  |                                                   |                                  |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 4-2      | Subdivision regulations for stormwater management | Planning Board                   | Change subdivision Rules and Regulations | <p>The Guide for Storm Drainage Facilities was adopted in 2008 by Planning Board, DPW &amp; Inspectional Services and is now being utilized. The DPW Engineering and Planning Departments worked in cooperation to complete the “Guide for the Design of Storm Drainage Facilities in the Town of Plymouth, Massachusetts”. The guide is now part of the Planning Subdivision Regulations as well as DPW policy. The guidelines include, but are not limited to, the following items:</p> <ul style="list-style-type: none"> <li>• Acceptable Best management Practices with specific reference to State of Massachusetts BMP standards including Low Impact Standards and Conventional Standards for various structures and functions including nutrient removal in harbors and ponds, total suspended solids(TSS) removal in streams, ground water recharge, resource crossing regulations and standards including fish passage and openness ratios, and removal rates;</li> <li>• Plant selection guidelines for vegetated BMPs;</li> <li>• Water quality and water quantity management guidelines;</li> <li>• Design guidelines for BMPs Low Impact Design (LID) standards and Conventional Standard Design standards for various structures including those functions listed above;</li> <li>• Selection criteria for BMPs;</li> <li>• Incentives for implementing LID practices.</li> </ul> |
| Revised  |                                                   |                                  |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 4-3      | Erosion control by-law                            | Planning/Zoning Board of Appeals | Town Meeting Action                      | The Guide for Storm Drainage Facilities was adopted in 2008 by Planning Board, DPW & Inspectional Services and is now being utilized.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Revised  |                                                   |                                  |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

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|---------|--------------------------------------------------|-------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| 4-4     | Reporting hotline                                | Town Engineer/Planning Board              | Set up procedures in response to info submitted by public | Residents contact DPW Highway Administration. The information is submitted to the Highway Superintendent for remediation. |
| Revised |                                                  |                                           |                                                           |                                                                                                                           |
| 4-5     | Site plan review/constr. Site inspection program | Town Engineer, Planner/Building Inspector | Review all plans, inspect, & visit construction site      | These regulations are now being utilized.                                                                                 |
| Revised |                                                  |                                           |                                                           |                                                                                                                           |

#### 4a. Additions – Projects

|      |                                                     |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------|-----------------------------------------------------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4a-1 | Drainage Project – Water St Roundabout to Nelson St | DPW | The roadway was re-constructed and drainage improvements provided to properly treat stormwater prior to discharging to the existing outfalls in Plymouth Harbor. Drainage project included the installation of deep sump catch basins with eliminator hooded outlets. This project also consisted of roadway improvements which created a net decrease in impervious area by creating green space.<br><b>Project 100% Complete.</b>                                                                                                                                                    |
| 4a-2 | Drainage Project – 590 Federal Furnace Rd           | DPW | Drainage Project at 590 Federal Furnace Road was constructed by Town forces installing two precast catch basins with four foot sump and eliminator hooded outlet connecting to stormwater infiltration system.<br><b>Project 100% Complete.</b>                                                                                                                                                                                                                                                                                                                                        |
| 4a-3 | Drainage Project – George St                        | DPW | Drainage project currently under construction. The roadway is constantly flooded and the existing drainage systems have failed. The proposed drainage systems were installed, deep sump hooded catch basins and infiltration systems last summer/fall. The roadway is currently in asphalt binder. The roadway will receive the top coat of asphalt and slope stabilization will take place this summer<br><b>Project 80% Complete. Construction to resume this summer.</b>                                                                                                            |
| 4a-4 | Drainage Project – Valley Road & Roxy Cahoon Road   | DPW | The existing gravel roadways do not have any drainage systems. The stormwater on this roadway is currently sheeted off the gravel way to low points on the shoulder through earthen swales and cuts in the banking. The existing gravel ways will be widened and paved. The roadway improvements will direct stormwater to deep sump hooded catch basins, water quality inlets/sediment forebay, and underground/above ground infiltration systems.<br><b>Project 100% Complete. All drainage systems have been installed. The roadway paving and slope stabilization are complete</b> |

|       |                                                                         |                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------|-------------------------------------------------------------------------|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4a-5  | <b>Drainage Project – Water Street</b>                                  | <b>DPW/Department of Marine &amp; Environmental Affairs</b> | Construction for the Water Street Bridge is nearing completion and includes stormwater improvements to Town Brook and Plymouth Harbor.<br><b>Project Completed.</b>                                                                                                                                                                                                                                                                                                                                                            |
| 4a-6  | <b>Project – Stephens Field Building Demolition and Soil Excavation</b> | <b>Department of Marine &amp; Environmental Affairs</b>     | The Town completed the demolition of the former DPW A.K Finney building and removed 880 tons of petroleum impacted soil (380 tons more than expected). There is an estimated 400-500 additional tons to be removed due to unknown soil impact underneath the building. The Town DMEA applied for Brownfield funding to complete the soil excavation, however, the project was not eligible for funding. The Town will utilize the Stephens Field Rehabilitation funding prior to project construction for the soil excavation. |
| 4a-7  | <b>Taylor Avenue Dune Restoration</b>                                   | <b>Department of Marine &amp; Environmental Affairs</b>     | The Town DMEA removed two structures and septic system within a dune system abutting Bartlett Brook/White Horse Beach, thereby removing the nutrient load to the resource areas. DMEA has restored the dune in this area and will be installing sand fence and additional plantings spring 2016.                                                                                                                                                                                                                               |
| 4a-8  | <b>Drainage Project – Stephens Field</b>                                | <b>DPW</b>                                                  | The Town is in the design process of the Stephens Field Rehabilitation Project. The project will include upgrading the existing and providing new drainage systems. The project will include the installation of Tree Box Filters for stormwater treatment and a detention system.                                                                                                                                                                                                                                             |
| 4a-9  | <b>Intensive Stormwater Assessment at Great Herring Pond</b>            | <b>Department of Marine &amp; Environmental Affairs</b>     | In the Fall/Winter of 2015-2016, DMEA and UMASS Dartmouth-SMAST conducted an intensive stormwater assessment and nutrient loading to Great Herring Pond. Assessments were performed through the duration of three separate storms and samples/flow measurements collected at intervals during each storm. From the assessment DMEA was able to prioritize stormwater sites for design and implementation. DMEA will be applying for grant funding to assist with these projects.                                               |
| 4a-10 | <b>Samoset St Re-Construction</b>                                       | <b>DPW/State TIP Project</b>                                | The roadway is being planned to be re-constructed and drainage improvements provided to properly treat stormwater prior to discharge to existing outfalls in Plymouth Harbor. Drainage project to install deep sump catch basins with eliminator hooded outlets. Drainage systems and new roadway/sidewalks have been installed.<br><b>Project 95% Complete.</b>                                                                                                                                                               |
| 4a-11 | <b>Plymco Dam Removal – Town Brook</b>                                  | <b>Department of Marine &amp; Environmental Affairs</b>     | The Plymco Dam Removal began late 2014 and by the end of March 2015 the dam has been removed, bridge installed, river channel constructed and impacted soil in impoundment removed. Grading, utility work and plantings will continue throughout the spring.<br><b>Project Completed.</b>                                                                                                                                                                                                                                      |

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|-------|-----------------------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4a-12 | Holmes Dam Removal and Newfield Street Bridge Replacement | Department of Marine & Environmental Affairs | Both the Holmes Dam Removal and Newfield Street Bridge projects are in the permitting phase. DMEA is applying for grant funding for construction of the project. Anticipated construction start date is July 2017.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4a-13 | Tidmarsh Farms West – Acquisition and Restoration         | Department of Marine & Environmental Affairs | The Town DMEA is working with Community Preservation Committee to acquire the retired 80+ acre bog property west of Beaver Dam Road as well as purchase the lot up into the pinehills. Part of the project will be restoring the river channel to connect with restoration activities on the east side of Tidmarsh Farms as well as restoring wetland habitat.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 4a-14 | Town Hall Project Russell and South Russell Street        | DPW – Private Contractor                     | The Town will be removing existing portions of the 1820 Court House and be reconstructing a new Town Hall Facility. The project will include roadway and drainage improvements for Russell & South Russell Street which currently drain to Town Brook and Plymouth Harbor. The current drainage system consists of 4 catch basins to serve approximately 1800 feet of roadway and parking areas. The improvements will include the installation of deep sump catch basins with hooded outlets (16 basins), water quality units (3 units) and underground infiltration systems (2 systems). The new Town Hall Building will also be provided with a roof drain recharge system also. The project will also result in a net decrease in impervious area. <b>Project under construction. 75% Percent of drainage systems installed but not on-line yet.</b> |
| 4a-15 | Water Street – Sandwich Street to State Pier              | DPW                                          | The Town will be improving the existing drainage system by replacing existing catch basins that have little to no sumps with deep sump catch basins with hooded outlets where existing utilities allow. The installation of water quality inlets and the use of perforated drain drainage pipes to promote infiltration will be incorporated into the design. <b>Project Design 90% Complete. Construction to start this spring/summer.</b>                                                                                                                                                                                                                                                                                                                                                                                                              |
| 4a-16 | Birch Street & Worcester Street                           | DPW – Private Contractor                     | The existing gravel roadway is prone to flooding abutting properties. The Town plans to install deep sump hooded catch basins, water quality units and infiltration system. The Town also plans to pave a portion of the existing gravels ways. <b>Project Under Design – 90% Complete. Construction to start this spring/summer</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 4a-17 | William Ave & Homer Homer Ave                             | DPW - Private Contractor                     | The existing paved roadway currently has no drainage systems and the roadway surface is in poor condition. The existing roadways drain directly to Bartlett Pond. Due to high groundwater and poor soil material the installation of upstream infiltration systems is not possible. The Town will repave/regrade the existing roadways and provide a water quality swale/sediment forebay adjacent to the roadway to treat stormwater prior to discharging to Bartlett Pond. <b>Project Under Design – 50% Complete. Construction to start this summer</b>                                                                                                                                                                                                                                                                                               |

## 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 10                                                                           |
|----------|-----------------------------------------------------------------------------------------|-----------------------------------------------|--------------------------------------|---------------------------------------------------------------------------------------------------------------|
| 5-1      | Stormwater Mange. By-law- Development Construction Site Runoff Control and Pretreatment | Planning/Zoning Bd. & Conservation Commission | Strategies to be developed           | The Guide for Storm Drainage Facilities is now being utilized by Planning Board, DPW & Inspectional Services. |
| Revised  |                                                                                         |                                               |                                      |                                                                                                               |
| 5-2      | Stormwater Mange. By-law Development Post Construction Stormwater Management            | Planning/Zoning Bd. & Conservation Commission | Formulation of the By-law            | The Guide for Storm Drainage Facilities is now being utilized by Planning Board, DPW & Inspectional Services. |
| Revised  |                                                                                         |                                               |                                      |                                                                                                               |
| 5-3      | Conservation Comm. Wetlands By-law                                                      | Planning/Zoning Bd. & Conservation Commission | Presentation for Town Meeting Action | These regulations are now being utilized.                                                                     |
| Revised  |                                                                                         |                                               |                                      |                                                                                                               |
| Revised  |                                                                                         |                                               |                                      |                                                                                                               |
|          |                                                                                         |                                               |                                      |                                                                                                               |

## 6. Pollution Prevention and Good Housekeeping in Municipal Operations

| BMP ID # | BMP Description                                             | Responsible Dept./Person Name | Measurable Goal(s)                                                             | Progress on Goal(s)- Permit Year 10                                                                                                                                                                                                                                                                                                                                           |
|----------|-------------------------------------------------------------|-------------------------------|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6-1      | Street sweeping program                                     | Highway                       | Spring annual sweeping record sweeping as needed                               | Completed annual sweeping program. Sweeping program is now in place.                                                                                                                                                                                                                                                                                                          |
| Revised  |                                                             |                               |                                                                                |                                                                                                                                                                                                                                                                                                                                                                               |
| 6-2      | Catch basin/drain cleaning                                  | Highway                       | The Town has purchased a new jet rod/vactor truck for the drainage maintenance | Catch basins were cleaned during the permit period.                                                                                                                                                                                                                                                                                                                           |
| Revised  |                                                             |                               | Clean all catch basins once every 3 years.                                     |                                                                                                                                                                                                                                                                                                                                                                               |
| 6-3      | Annual training at town facilities                          | Town Engineer                 | Various Work Shops were attended                                               |                                                                                                                                                                                                                                                                                                                                                                               |
| Revised  |                                                             |                               |                                                                                |                                                                                                                                                                                                                                                                                                                                                                               |
| 6-4      | Policy Guide                                                | Town Engineer                 | Developing the Policy Guide                                                    | The Guide for Storm Drainage Facilities was adopted in 2008 by Planning Board, DPW & Inspectional Services and is being utilized.                                                                                                                                                                                                                                             |
| Revised  | O & M program for town-owned structural BMP's               |                               | Implement O & M program by Spring 06                                           | <p>The Town rehabilitated an existing jet rod/vactor truck for use in O &amp;M of stormwater structures. This allows the Town to have two such pieces of equipment. Along with a clamshell bucket truck for sediment removal from catch basins.</p> <p>The Town has purchased a new jet rod/vactor truck and street sweeper for the DPW drainage and roadway maintenance.</p> |
| 6-5      | Permit filing for the town's activities related to Phase II | Town Engineer                 | Permits Filed as needed                                                        | The Town has developed a general stormwater operation and maintenance permit in coordination with Engineering and the Conservation Commission.                                                                                                                                                                                                                                |

## 6a. Additions

| BMP ID # | BMP Description                                                         | Responsible Dept./Person Name | Measurable Goal(s)                                                  | Progress on Goal(s)- Permit Year 10                                                                           |
|----------|-------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| 6.6      | Vehicle washing                                                         | Public Works                  | Implemented washing policy                                          | Continuing program.                                                                                           |
| 6.7      | Implement Integrated Pest Management (IPM) at Town Facilities           | Parks & Recreation            | Train facility employees and practice IPM town-wide by Summer 2008. | Inventory current chemicals, quantities, and practices used on town parcels. Training has not been completed. |
| 6.8      | Development of Spill Prevention, Control and Countermeasure Plan (SPCC) | DPW                           | Complete a SPCC plan.                                               | The SPCC for the DPW facility has been completed.                                                             |
| 6.9      | Environmental Audit at DPW Facility                                     | DPW/Environmental Management  | Complete the Environmental Audit of the DPW Facility.               | The Environmental Audit of the DPW Facility at Camelot Park has been completed.                               |
| 6.10     | UST for oil and waste at DPW Facility                                   | DPW                           | Installation of UST                                                 | Installation of UST's for oil and waste oil at DPW Facility.                                                  |

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)                                                                                          | Planned Activities – Permit Year 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------|--------------------------------------------------------------------------------|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          | 319 NONPOINT SOURCE POLLUTION GRANT PROGRAM<br>Approximately \$250,000 awarded | DPW – Department of Marine & Environmental Affairs | Water Street Stormwater Implementation to Improve Water Quality in Plymouth Harbor, a Category 5 Waterbody. | <p><b>PROJECT SUMMARY/OBJECTIVES –</b><br/>The proposed project will improve water quality in Town Brook, Plymouth Harbor (Category 5 Water) and adjacent Plymouth Bay by mitigating Stormwater pollution (specifically suspended sediments, VOC's and bacteria) through the design and implementation of a Stormwater Best Management Practices (BMPs) on Water Street. It is anticipated that this Stormwater pollution remediation project, coupled with several other pollution remediation projects along the waterfront, Town Brook and in Plymouth Harbor, will significantly improve water quality in the Harbor as well as protect, enhance, and restore sensitive coastal resources such as shell fish beds and recreational beaches.</p> <p>This project is working site for the CZM Shellfish Clean Waters Initiative. The components of this project will support TMDL implementation efforts by reducing pollutant loadings to Plymouth Harbor and Plymouth Bay, which are on the state's 303(d) list of impaired waters for nutrients and pathogens.</p> |
|          |                                                                                |                                                    |                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

7a. Additions

|  |  |  |  |  |  |
|--|--|--|--|--|--|
|  |  |  |  |  |  |
|  |  |  |  |  |  |

## 7b. WLA Assessment

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

As noted in the Mapping Section below and in the attached map the town has completed the outfall mapping and is 100% complete with the catch basin mapping.

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

#### Programmatic

|                                                |       |  |
|------------------------------------------------|-------|--|
| Stormwater management position created/staffed | (y/n) |  |
| Annual program budget/expenditures             | (\$)  |  |
|                                                |       |  |
|                                                |       |  |

#### 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 | (7 mi.)    |  |
| Household Hazardous Waste Collection Days                               |            |  |
| ▪ days sponsored                                                        | (2 days)   |  |

|                                  |                     |  |
|----------------------------------|---------------------|--|
| ▪ <b>community participation</b> | <b>339 vehicles</b> |  |
| ▪ <b>material collected</b>      | (tons or gal)       |  |
| School curricula implemented     | (y/n)               |  |

### Legal/Regulatory

|                                                        | In Place<br>Phase II | Prior to<br>Review | Prior to<br>Drafted | Under<br>Adopted |
|--------------------------------------------------------|----------------------|--------------------|---------------------|------------------|
| Regulatory Mechanism Status (indicate with "X")        |                      |                    |                     |                  |
| ▪ <b>Illicit Discharge Detection &amp; Elimination</b> |                      |                    |                     | X                |
| ▪ <b>Erosion &amp; Sediment Control</b>                |                      |                    |                     | X                |
| ▪ <b>Post-Development Stormwater Management</b>        |                      |                    |                     | X                |
| Accompanying Regulation Status (indicate with "X")     |                      |                    |                     |                  |
| ▪ Illicit Discharge Detection & Elimination            |                      |                    |                     |                  |
| ▪ Erosion & Sediment Control                           |                      |                    |                     |                  |
| ▪ Post-Development Stormwater Management               |                      |                    |                     |                  |

### Mapping and Illicit Discharges

|                                               |        |  |
|-----------------------------------------------|--------|--|
| <b>Outfall mapping complete</b>               | (100%) |  |
| <b>Estimated or actual number of outfalls</b> | (#350) |  |
| <b>System-Wide mapping complete</b>           | (100%) |  |
| <b>Mapping method(s)</b>                      |        |  |
| ▪ <b>Paper/Mylar</b>                          | (NA)   |  |
| ▪ <b>CADD</b>                                 | (NA)   |  |
| ▪ <b>GIS</b>                                  | (100%) |  |

|                                          |                                             |  |
|------------------------------------------|---------------------------------------------|--|
| <b>Outfalls inspected/screened</b>       | (100%)<br>mapped and<br>conditions<br>noted |  |
| <b>Illicit discharges identified</b>     | (#0)                                        |  |
| <b>Illicit connections removed</b>       | (#0 )<br>(est. gpd)                         |  |
| <b>% of population on sewer</b>          | (5%)                                        |  |
| <b>% of population on septic systems</b> | (95%)                                       |  |
|                                          |                                             |  |
|                                          |                                             |  |

### 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) |  |
|---------------------------------------------------------------------------------|------------|--|

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

|                                                                                      |                |  |
|--------------------------------------------------------------------------------------|----------------|--|
| Average frequency of street sweeping (non-commercial/non-arterial streets)           | (times/yr)     |  |
| Average frequency of street sweeping (commercial/arterial or other critical streets) | (times/yr)     |  |
| Qty. of sand/debris collected by sweeping                                            | (lbs. or tons) |  |
| Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.)                | (location)     |  |
| Cost of sweepings disposal                                                           | (\$)           |  |
| 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 %) |  |
| ▪ Herbicides                                                                           | (lbs. or %) |  |
| ▪ Pesticides                                                                           | (lbs. or %) |  |
|                                                                                        |             |  |
|                                                                                        |             |  |

|                                    |                                                                                           |  |
|------------------------------------|-------------------------------------------------------------------------------------------|--|
| Anti-/De-Icing products and ratios | % NaCl<br>% CaCl <sub>2</sub><br>% MgCl <sub>2</sub><br>% CMA<br>% Kac<br>% KCl<br>% Sand |  |
| Pre-wetting techniques utilized    | (y/n)                                                                                     |  |

|                                                          |             |  |
|----------------------------------------------------------|-------------|--|
| Manual control spreaders used                            | (y/n)       |  |
| Automatic or Zero-velocity spreaders used                | (y/n)       |  |
| Estimated net reduction in typical year salt application | (lbs. or %) |  |
| Salt pile(s) covered in storage shed(s)                  | (y/n)       |  |
| Storage shed(s) in design or under construction          | (y/n)       |  |
|                                                          |             |  |
|                                                          |             |  |