



TOWN OF PLYMOUTH

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April 27, 2011

U. S. Environmental Protection Agency
Water Technical Unit
P.O. Box 8127
Boston, MA 02144

Subject: NPDES Phase II Small MS4
Annual Report (No. 8 March 10 – March 11)
Town of Plymouth, MA
EPA NPDES Permit Number: MAR 041150
MA DEP Transmittal Number W 40949

To Whom It May Concern:

Enclosed please find the eighth (8th) Annual Report in reference to the above mentioned permit. The Town of Plymouth has been very active in the past year. Among our accomplishments are significant improvements to the Department of Public Works (DPW) good housekeeping operations along with several educational and outreach activities. Lastly, the Town has managed to continue its water quality monitoring in our lakes, ponds and rivers in spite of considerable fiscal constraints.

We appreciate the opportunity to submit this report.

Thank you for your support.

Please call me if you have any questions, or need additional information concerning this matter.

Very truly yours,

David Gould
Environmental Manager

Administration (508) 830-4070 Water (508) 830-4155 Engineering (508) 830-4080 Highway (508) 830-4162 Sewer (508) 830-4159
Parks & Cemeteries (508) 830-4095 Recreation (508) 830-4110 Maintenance/Solid Waste (508) 830-4166

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Attachments:

1. 2010 Engineering Division Stormwater Work

**cc: Jonathan Beder, DPW Director
Sid Kashi, Town Engineer**

Municipality/Organization: Town of Plymouth

EPA NPDES Permit Number: MAR 041150

MaDEP Transmittal Number: W-40949

**Annual Report Number
& Reporting Period:** No. 8: March10 – March11

NPDES PII Small MS4 General Permit Annual Report

Part I. General Information

Contact Person: David Gould **Title:** Environmental Manager

Telephone #: 508-747-1620 Ext. 134 **Email:** dgould@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: David Gould

Title: Environmental Manager/Acting DPW Director

Date: 4/28/11

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 11.B.8** **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” (attached). 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:**
- **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, resource crossing regulations and standards including fish passage and openness ratios, and removal rates;**
 - **Plant selection guidelines for vegetated BMPs;**
 - **Water quality and water quantity management guidelines;**
 - **Design guidelines for BMPs Low Impact Design (LID) standards and Conventional Standard Design standards for various structures including those functions listed above;**
 - **Selection criteria for BMPs;**
 - **Incentives for implementing LID practices.**

Part III. Summary of Minimum Control Measures

1. Public Education and Outreach

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) Permit Year 6	Progress on Goal(s) Permit Year 7	Progress on Goal(s) Permit Year 8
1-1	Educational Flyer	Town Engineer/ Town Manager	Post in all schools & Town buildings	The Town renewed the “Sprink” educational contract for the Town’s Website & Public Access Channel. The link on the Town’s website includes interactive computer games for children as well as information on Hazardous Waste Days and the educational information on stormwater. Public service announcements are posted on the local access cable television on a rotating basis. The SuAsCo stormwater display has been rotated in various locations through Town Hall and also displayed at DPW Day.	The Town renewed the “Sprink” educational contract for the Town’s Website & Public Access Channel. The link on the Town’s website includes interactive computer games for children as well as information on Hazardous Waste Days and the educational information on stormwater. Public service announcements are posted on the local access cable television on a rotating basis. The SuAsCo stormwater display has been rotated in various locations through Town Hall and also displayed at DPW Day.	The Town renewed the “Sprink” educational contract for the Town’s Website & Public Access Channel. The link on the Town’s website includes interactive computer games for children as well as information on Hazardous Waste Days and the educational information on stormwater. Public service announcements are posted on the local access cable television on a rotating basis. The SuAsCo stormwater display has been rotated in various locations through Town Hall and also displayed at DPW Day.
Revised						
1-2	Form Public Education Task Force	Town Engineer/ Environmental Manager	Participation in town wide events & schools	The Town’s Planning Department was the lead on conducting meetings and moving forward with the stormwater management guidelines (attached).		The Town’s Environmental Manager participated in the development of four (4) workshops aimed at public education with the Plymouth-Carver Aquifer Advisory Committee.

Revised	Educational Workshops	Town Engineer/ Environmental Manager	Schedule Workshops		The Town of Plymouth worked with the state to host the NE Regional BMP meeting in Plymouth in May 2010 due to the Town's recent stormwater accomplishments.	Town Environmental Management staff participated in presenting stormwater and water quality information at the annual DPW Day and a workshop sponsored by the Plymouth-Carver Aquifer Advisory Committee.
1-3	Air stormwater message on local cable access channel	Town Engineer	Post one message every month	Four (4) "Sprink" public service announcements were purchased and ran on local cable for one year as in the previous year.	Four (4) "Sprink" public service announcements were purchased and ran on local cable for one year as in the previous year.	Four (4) "Sprink" public service announcements were purchased and ran on local cable for one year as in the previous year.
Revised						
1-4	Storm Drain Stenciling	Town Engineer/Conse rvation Comm./Environ mental Manager	Stencil Storm Drains with Messages (25% each year)	The Town has purchased additional storm drain markers for the downtown harbor area which will be installed this year.	The Town utilized volunteers to continue its ongoing storm drain marker program.	The Town utilized volunteers to continue its ongoing storm drain marker program. Volunteers contributed over 40 hours of time and insalled over 200 storm drain markers.
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.)	Complete and updated as needed by Town Engineering Department.	Completed	Completed
Revised						
Revised						

1a. Additions

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) Permit Year 6	Progress on Goal(s) Permit Year 7	Progress on Goal(s) Permit Year 8
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1a.	Media coverage	Town Engineer	Story coverage on NPS Pollution Projects.	March 24, 2009 Presented before Board of Selectman on the Section 319 Grant Stormwater Pollution Remediation Project. More planned media coverage and educational signs.	There were two separate newspaper articles in the local newspaper regarding the construction of bioretention facilities along Plymouth Harbor and Town Brook. In addition, there was a journal article written about the Town's stormwater efforts over the last several years.	There were newspaper stories on both the DPW Day events and all of the workshops sponsored by the Plymouth Carver Aquifer Advisory Committee. Each of the workshops will also be run on local cable television and cd's will be distributed to each respective communities public library.
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2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goals – Permit Year 6	Progress on Goals – Permit Year 7	Progress on Goals – Permit Year 8
2-1	Hazardous waste collection	DPW Recycling Coordinator	Twice/yr. (min.)	Two events were held in 2008.	Two events were held in 2009.	Two events were held in 2010.
Revised		DPW				
2-2	Volunteer Water Quality Monitoring	Environmental Management	Level of participation	The Town implemented the Pond Monitoring Program in collaboration with 4 Pond Associations. The Town also applied for additional funding through grant applications.	The Town continued the pond monitoring program in collaboration with the 4 Pond Associations as well as a local group. The Town received the MET grant in the amount of \$30,000 over the next three years for continued sampling of our lakes and ponds.	The Town continued the pond monitoring program in collaboration with the 4 Pond Associations as well as a local group. The Town received the MET grant with funding for one more year for continued sampling of our lakes and ponds.
Revised	Rain Barrel Program			The Town received a grant from DEP to discount the first 100 rain barrels and the Town is currently implementing the program to be completed in May.	The Town coordinated with NSRWA to post on our website the availability of rain barrels.	
2-3	Citizen Stormwater Committee/Lake Associations	Town Engineer/Natural Resources Officer	Hold meeting to plan for stormwater issues/mgmt.	Not completed		
Revised		Town Engineer/Environmental Manager				

2-4	“Adopt a Storm Drain Program”	Town Engineer/Natural Resources Officer	Participation in Community Clean-ups	Two community clean-ups were organized and held.	Several community based cleanups were held in 2009.	Several community based cleanups were held in 2010.
Revised						
2-5	Citizen watch Groups	Town Engineer/Natural Resource Officer	Aid Local Enforcement author. In the identification of polluters	Not complete	In 2009 the Town began working with a coalition of local watershed groups called the Open Space Network and will continue to work with this group in the upcoming year on stormwater education and enforcement.	In 2010 the Town worked with a coalition of local watershed groups called the Open Space Network to organize volunteer cleanup days, install storm drain markers and provide public education.
Revised						
Revised						

3. Ellicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6	Progress on Goal(s) – Permit Year 7	Progress on Goal(s) – Permit Year 8
3-1	Develop illicit dischg. id. & elim. plan	Town Engineer/BOH/ Environmental Manager/ Planning Bd.	Make recommendations for the plan	Investigating drainage area of outfalls, and to locate sources when and if will be identified.		
Revised	Screen outfalls for Illicit connections	Public Works	Screen outfalls by Winter 07-08			

3-2	Drainage Network Mapping	Town Engineer	Drainage of urbanized areas	Outfalls and catch basins have been completed.	Mapping of outfalls and catch basins were completed in previous years.	Mapping of outfalls and catch basins were completed in previous years.
Revised						
3-3	Public Info. on illicit connections/illegal discharges	Town Engineer/Board of Health	Educating the public-hazards associated with these activities	Section twelve of the Sewer Division Rules & Regulations has been approved and states that surface runoff is prohibited.	Section twelve of the Sewer Division Rules & Regulations has been approved and states that surface runoff is prohibited.	Section twelve of the Sewer Division Rules & Regulations has been approved and states that surface runoff is prohibited.
Revised						
3-4	Develop/Modify general illicit discharge bylaw	BOH/Planning Board	Developing/modifying the plan	The Town adopted a Guide for Storm Drainage Facilities that address illicit discharges in 2008 by Planning Board, DPW and Inspectional Services.	This guide is now being utilized.	This guide is now being utilized.
Revised						
3-5	Present Bylaw for town meeting action	BOH/Planning Board	Make presentations for town Meeting action	Section twelve of the Sewer Division Rules & Regulations has been approved and states that surface runoff is prohibited. The Guide for Storm Drainage Facilities was adopted in 2008 by Planning Board, DPW & Inspectional Services.	Section twelve of the Sewer Division Rules & Regulations has been approved in previous years and states that surface runoff is prohibited. The Guide for Storm Drainage Facilities was adopted in 2008 by Planning Board, DPW & Inspectional Services and is being utilized.	Section twelve of the Sewer Division Rules & Regulations has been approved in previous years and states that surface runoff is prohibited. 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 6	Progress on Goal(s) – Permit Year 7	Progress on Goal(s) – Permit Year 8
4-1	Wetlands by-law for stormwater management	Conservation Commission	Town Meeting Action	Adopted by Town Meeting – Fall 2007	This by-law is now being enforced by the Conservation Commission.	This by-law is now being enforced by the Conservation Commission.
Revised						
4-2	Subdivision regulations for stormwater management	Planning Board	Change subdivision Rules and Regulations	Included in The Guide for Storm Drainage Facilities was adopted in 2008 by Planning Board, DPW & Inspectional Services.	These regulations are now being utilized.	These regulations are now being utilized.
Revised						
4-3	Erosion control by-law	Planning/Zoning Board of Appeals	Town Meeting Action	Included in The Guide for Storm Drainage Facilities was adopted in 2008 by Planning Board, DPW & Inspectional Services	These regulations are now being utilized.	These regulations are now being utilized.
Revised						
4-4	Reporting hotline	Town Engineer/Planning Board	Set up procedures in response to info submitted by public	Hotline number was included within the Sprink PSA's and on the Town website.	Hotline number was included within the Sprink PSA's and on the Town website.	Hotline number was included within the Sprink PSA's and on the Town website.
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.	These regulations are now being utilized.
Revised						

4a. Additions

4a-1	Guide for the Design of Storm Drainage Facilities in the Town	Planning Department/DPW	In March of 2009 the "Guide for the Design of Storm Drainage Facilities in the Town of Plymouth" was established as part of the Town's grant application with EOE/Smart Growth Funding.
4a-2	Rain Gardens	Environmental Management Town Engineering	The Town completed the bioretention facilities at Water Street and Billington Street.
4a-3	BMPs Eel River Watershed	Environmental Management/Town Engineering	The Town has and will be implementing additional BMPs within the Eel River Watershed.

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 6	Progress on Goal(s)-Permit Year 7	Progress on Goal(s)-Permit Year 8
5-1	Stormwater Mng. By-law-Development Construction Site Runoff Control and Pretreatment	Planning/Zoning Bd. & Conservation Commission	Strategies to be developed	Included in The Guide for Storm Drainage Facilities was adopted in 2008 by Planning Board, DPW & Inspectional Services.	The Guide for Storm Drainage Facilities is now being utilized by Planning Board, DPW & Inspectional Services.	The Guide for Storm Drainage Facilities is now being utilized by Planning Board, DPW & Inspectional Services.
Revised						
5-2	Stormwater Mng. By-law Development Post Construction Stormwater Management	Planning/Zoning Bd. & Conservation Commission	Formulation of the By-law	Included in The Guide for Storm Drainage Facilities was adopted in 2008 by Planning Board, DPW & Inspectional Services.	The Guide for Storm Drainage Facilities is now being utilized by Planning Board, DPW & Inspectional Services.	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	Conservation incorporated the Guide for Storm Drainage Facilities manual in the regulations.	These regulations are now being utilized.	These regulations are now being utilized.
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 6	Progress on Goal(s)-Permit Year 7	Progress on Goal(s)-Permit Year 8
6-1	Street sweeping program	Highway	Spring annual sweeping record sweeping as needed	Completed annual sweeping program. Sweeping program is now in place.	Completed annual sweeping program. Sweeping program is now in place.	Environmental Management staff has developed new draft street sweeping routes and record keeping sheets for implementation in 2011.
Revised						
6-2	Catch basin/drain cleaning	Highway	500 per year (record)	2000 catch basins were cleaned in 2008.	2000 catch basins were cleaned in 2009.	Environmental Management staff is developing new catch basin cleaning routes and record keeping sheets.
Revised			Clean all catch basins once every 3 years.		50 catch basins were retrofitted with eliminators in 2009.	Several catch basin and drainage improvement projects were undertaken (See attached list of work).
6-3	Annual training at town facilities	Town Engineer	Conduct training, prepare literature, record attendance	Conducted ½ -day training to all key department staff regarding pollution prevention practices and SWMP implementation.	A training was held with Highway employees regarding the use and operation of the jet rod truck for stormwater system maintenance.	
Revised						

6-4	Policy Guide	Town Engineer	Developing the Policy Guide	Included in The Guide for Storm Drainage Facilities was adopted in 2008 by Planning Board, DPW & Inspectional Services. Town is developing stormwater O&M procedures.	This regulation is now being implemented.	This regulation is now being implemented.
Revised	O & M program for town-owned structural BMP's		Implement O & M program by Spring 06		The Town rehabilitated an existing (but unusable) jet rod truck for use in O & M of stormwater structures. This allows the Town to have two such pieces of equipment. The Town has developed a general stormwater operation and maintenance permit in coordination with Engineering and the Conservation Commission.	Environmental Management staff is currently working with Norfolk-Ram Group to conduct an environmental audit of the DPW facility and to update the Spill Prevention, Control and Countermeasure Plan. In 2011 DPW will be removing two (2) underground storage tanks from its site to be replaced with double walled above-ground tanks with additional containment.
6-5	Permit filing for the town's activities related to Phase II	Town Engineer	Permits Filed as needed	Continuing program.	Continuing program	Continuing program

6a. Additions

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s)- Permit Year 6	Progress on Goal(s)- Permit Year 7	Progress on Goal(s)- Permit Year 8
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6.6	Vehicle washing	Public Works	Implemented washing policy and constructed washing facility.	Continuing program.	Continuing program.	DPW is in the process of designing an improved car wash bay system.
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.	Inventory current chemicals, quantities, and practices used on town parcels. Training has not been completed.	Inventory current chemicals, quantities, and practices used on town parcels. Training has not been completed.

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 7	Planned Activities – Permit Year 8
	Development of the Nitrogen Management Analysis for Plymouth-Duxbury Harbor-Kingston Bay Embayment System is underway.	DPW – Environmental Management		The Town has completed 4 years of monitoring for the program as well as completed 3 of the 8 Tasks analysis and funded another Task in 2009-2010.	The Town continues to work with DEP and the Estuaries Program on the development of the model for Plymouth Bay.
Revised					

Revised					
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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)	

▪ community participation	344 vehicles	
▪ material collected	(tons or gal)	
School curricula implemented	(y/n)	

Legal/Regulatory

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

Mapping and Illicit Discharges

Outfall mapping complete	(100%)	
Estimated or actual number of outfalls	(#350)	
System-Wide mapping complete	(100%)	
Mapping method(s)		
▪ Paper/Mylar	(NA)	
▪ CADD	(NA)	
▪ GIS	(100%)	
Outfalls inspected/screened	(100%) mapped and conditions noted	
Illicit discharges identified	(#0)	

Illicit connections removed	(#0) (est. gpd)	
% of population on sewer	(5%)	
% of population on septic systems	(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)	
Total number of structures cleaned	(#2000)	
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 % CaCl ₂ % MgCl ₂ % CMA % Kac % KCl % 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)

2010
Engineering Division
Stormwater Work

1. **Newfield Street** – The construction project involved obtaining a drainage easement and replacing the outfall at #63 Newfield Street, installing a number of precast Double Grate Catch Basins with four foot sumps or Double Grate Curb Inlets connected to Manholes with four foot sumps and Eliminators up to Birch Avenue and installing two Curb Inlets connected to a Manhole with four foot sump below Jackson Lane. **Approx. Cost: \$ 80,000**
2. **Carver Road** – High water drainage issues at 267 Carver Road and at Little Clear Pond were addressed by installing a special precast inlet weir structure with drop boards and replacing a broken clay pipe with approximately eighty (80) feet of eighteen inch (18) HDPE pipe. . **Approx. Cost: \$ 25,000**
3. **John Alden Road** – **Drainage design** beginning at Charlmont Road and running to Priscilla Beach Road to eliminate an existing outfall without benefit of a drainage easement. This work to be done by Town forces will involve the installation of a series of precast Catch Basins with four foot sumps and Eliminators, Gutter Inlets connected to Manholes with four foot sumps and Eliminators connected to an eighteen (18) inch HDPE pipe tying to an existing outfall opposite Cochituate Road. **Anticipated Approx. Cost: \$ 400,000**
4. **Long Pond Road** – Drainage issues at #911 were addressed by Town forces installing a precast Catch Basin with a four foot sump and Eliminator and approximately seven hundred thirty-five (735) feet of twelve (12) and fifteen (15) inch HDPE pipe and six (6) Drain Manholes on Town property adjacent to Lunn’s Way, tying into an existing outfall from Lunn’s Way to property owned by the Town. . **Approx. Cost: \$ 40,000**
5. **Seven Hills Road** – Drainage issues at the intersection at Carver Road were addressed during the Carver Road reconstruction project mentioned below. This was accomplished by installing a precast Catch Basins with a four foot sump and Eliminator and re-grading the two northbound lanes. . **Approx. Cost: \$10,000**
6. **Carver Road** – Drainage issues between Summer Street and Seven Hills Road were addressed during the Carver Road reconstruction project mentioned below by installing five (5) precast Catch Basins with a four foot sump and Eliminators. . **Approx. Cost: \$ 20,000**
7. **Priest Road** – Drainage issues at Carver Road were addressed during the Carver Road reconstruction project mentioned below by replacing the existing basin with a precast Catch Basin with a four foot sump and Eliminator and replacing the existing leaching pit. . **Approx. Cost: \$ 5,000**
8. **Cracstone Road** – Drainage issues at Carver Road were addressed during the Carver Road reconstruction project mentioned below by

replacing two (2) existing basins with two (2) precast Catch Basins with four foot sumps and Eliminators and replacing the existing leaching pit.

Approx. Cost: \$ 10,000

9. **Standish Avenue** – Drainage issues at Alden Street were addressed during the Standish Avenue reconstruction project mentioned below by installing two (2) precast Catch Basins with a four foot sumps and Eliminators at the design low point and a Drain Manhole. **Approx.**

Cost: \$ 10,000

10. **Long Pond Road** – As part of the Eel River Restoration Project four (4) Catch Basins with four foot sumps and Eliminators were installed. .

Approx. Cost: \$ 20,000

11. **Bourne Road** – Provided project administration and inspection for the installation of a drop inlet and piping in the vicinity of House #228.

Approx. Cost: \$ 10,000