

Municipality/Organization: Town of Framingham

EPA NPDES Permit Number: MA R041116

MaDEP Transmittal Number: W-041299

**Annual Report Number
& Reporting Period:** No. 10: March '12 – March '13

NPDES PII Small MS4 General Permit Annual Report

Part I. General Information

Contact Person: Robert Halpin

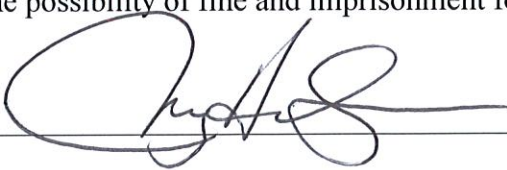
Title: Town Manager

Telephone #: 508-532-5400

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Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: 

Printed Name: Robert Halpin

Title: Town Manager

Date:

4/17/13

Part II. Self-Assessment

The Town of Framingham has completed the required self-assessment for Permit Year Ten and finds that our municipality is in compliance in general with the permit conditions.

Work was begun on the third phase of the Town's Stormwater Master Plan in June 2012. It addresses issues and requirements of four sub-basins with a level of difficulty of problems next after the five sub-basins studied in the first and second phases. The four sub-basins include the Hop Brook, Dunsdell Brook, 9/90, and Old Town Center Sub-Basins. The plan will look at the hydrology of the watershed in these sub-basins, the infrastructure, and potential solutions for problems of flooding, capacity, water quality, and recharge. The Town is continuing to implement one of the recommended projects from the first phase of the master plan, namely replacement or rehabilitation of structures at high risk with high consequence of failure. There are ten remaining sub-basins after the Phase III study: North Saxonville, South Saxonville, Baiting Brook, Birch Meadow Brook, Square Meadow Brook, Cherry Meadow Brook, Willow Brook, North Reservoir, South Reservoir, and Course Brook [Wayside Inn is outside the MS4 area].

The Town undertook several education and participation efforts, including:

- Neighborhood-wide notifications regarding illicit discharges as they occur, including SuAsCo materials in the notifications
- Provided a booth with educational materials at the Town's Earth Day (April 28, 2012) and Riverfest (June 24, 2012) celebrations.
- Led an educational seminar to a local Boy Scouts club.
- Created and produced a brochure on Rain Gardens that has been distributed through the Earth Day and Riverfest activities as well as through the Conservation Commission and local organizations (attached).
- Obtained and distributed Wayne the Storm Drain coloring books, courtesy of the Massachusetts Water Resources Authority.
- Continued coordination with and encouraging local watershed groups, including: SuAsCo, OARS, Lake Cochituate Watershed Council, Framingham Sierra Club, and Framingham State University student field projects.

The Town performed water quality monitoring and sampling at outfalls identified as high risk in the six sub-basins of Baiting Brook, North Reservoir, 9/90, Willow Brook, South Reservoir and Course Brook Sub-Basins.

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 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 11 and beyond
NA	Continue to find uses for SuAsCo postcards. Participate in Earth Day and Riverfest.	SuAsCo/ Framingham DPW	NA (none created for the 10 th permit year)	SuAsCo Postcards continue to be included in notifications that were mailed to neighborhoods where illicit discharges were observed by Town staff. Created Rain Garden Brochure (see attached). Stormwater Booth at Earth Day Celebration on Framingham Town Common April 28, 2012. Handed out cards, information on rain gardens Stormwater Booth at Riverfest on Framingham Town Common June 24, 2012. Handed out cards, information on rain gardens.	Continue public education as part of IDDE management program. Continue participation in environmentally related events Remainder to be determined for the next 5-year permit based on EPA requirements to be published.

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 11 and beyond
NA	Continue Drain Marking Program Provide support to local groups.	SuAsCo/ Framingham, DPW	NA (none created for the 10 th permit year)	Provided assistance to Framingham State University, Framingham High School, and Boy Scouts field projects	To be determined for the next 5-year permit based on EPA requirements to be published.

3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 11 and beyond
NA	Continue implementation of IDDE bylaw and program.	DPW, with participation by Con Comm, Board of Health, Dept of Inspectional Services	<i>Implement IDDE outfall monitoring program.</i>	Monitoring and sampling performed at major outfalls in the Baiting Brook, North Reservoir, 9/90, Willow Brook, South Reservoir and Course Brook sub basins. Samples were taken, based on visual inspection, for: - temperature - pH - phosphorus (reactive) - nitrogen (as ammonia) - detergents - chlorine.	Monitoring and sampling to be performed at major outfalls in the Beaver Dam Brook and Farm Pond sub basins. Samples will be taken for: - temperature - pH - phosphorus - nitrogen (as ammonia) - detergents - chlorine Other activities to be determined for the next 5-year permit based on EPA requirements to be published.

4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 10	Planned Activities – Permit Year 11 and beyond
NA	Construction site runoff controls	Framingham DPW/Con Comm	Review, implement, inspect and enforce construction site runoff controls.	Plans that come before the Planning Board were reviewed using the Massachusetts DEP Stormwater Management Standards. These plans include all construction that fell under the requirements for the NPDES Phase II permit, whether it was near a wetland (as regulated by Massachusetts DEP) or not. Detailed stormwater impact analysis was required as part of this review.	Other activities to be determined for the next 5-year permit based on EPA requirements to be published.

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 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 11 and beyond
NA	Implement Drainage Master Plan.	Framingham DPW/Con Comm	Continue implementation.	The third phase of the Stormwater Master Plan is was begun June 2012, looking at 4 sub-basins (Hop Brook, Dunsdell Brook, Old Town Center, and 9/90).	The third phase of the Stormwater Master Plan will be completed. Other activities to be determined for the next 5-year permit based on EPA requirements to be published.

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 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 11 and beyond
NA	Evaluate CB Cleaning	Framingham DPW	Implement the Plan.	Effectively all catch basins (CBs) in Town were cleaned this year, due again to unusual funding availability. Jetted, cleaning and TV survey of lines especially identified as High Risk from the Phase I Stormwater Master Plan, and also associated with the third phase of the Stormwater Master Plan.	Return to normal operations (clean one-half of CBs per year) Other activities to be determined for the next 5-year permit based on EPA requirements to be published.

7. BMPs for Meeting Total Maximum Daily Load (TMDL) Waste Load Allocations (WLA) <<if applicable>>

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 11 and beyond
				DEP has not released the TMDL report and targets for the Sudbury River.	Once the TMDL report is released by DEP, develop plans to obtain the goals.

7b. WLA Assessment - Not applicable

Part IV. Summary of Information Collected and Analyzed

Results of Water Quality monitoring and sampling at the Baiting Brook, North Reservoir, South Reservoir, 9/90, Willow Brook and Course Sub-Basins are provided in the attached report. We will further assess the data and target the problem areas for water quality improvement in 2013.

A log of IDDE problems and resolutions is attached. Several illicit discharges were investigated.

**Town of Framingham
Illicit Discharges or Connections**

Last update: March 21, 2013

Str. No.	Street	Applicable Authority	Status	Open Date	Problem and Resolution	Close Date	Notes
Permit Year 4 (2006 - 2007)							
1	51 Mellen St	Con Com / DEP	Resolved	2/2/07	Illicit discharge to Town drain, discharging to wetland. Photo processing silver compounds	6/11/07	Reported to DEP, cleaned up under MCP, RTN 3-26580
Permit Year 5 (2007 - 2008)							
2	115 Howe Street	DPW	In Process	5/18/07	Illicit connection from residence to catch basin. Catch basin is eroding. Area around CB eroded with private property drainage.		Fixed 2007, re-reported January 2008. Hwy investigating
3	Centennial Place	DPW	Resolved	10/3/07	Outlet to wall southwest of dam - 15" clay pipe in stone wall (upstream of Colonna Bridge)	10/4/07	Sewer Overflow. Sealed by DPW, sewer backup in main trunkline repaired.
4	10 Snow Street	DPW	In Process	10/18/07	Parking lot catch basin was connected to drainage line in the fall of 2007, outfall to Beaver Dam Brook (American Rooters Suburban Athletic Club)		See hand-drawn sketch by B. McCarty. Engineering to follow up following IDDE regulations implementation
5	39 Grant	DPW	Resolved	1/4/08	GW pumping disconnected byowner from sewer at Sewer Dept's order. Potential illicit connection to drainage system	2/20/09	No drain line seen. Likely intermitently used after storm events.
6	683 Water Street	DPW-DEP	Resolved	1/28/08	Fuel tank leak from Frito-Lay panel truck - diesel fuel > 10 gallons	1/28/08	Adequately regulated under DEP RTN3-27465
7	31 Pershing Ave.	DPW	Closed	2/12/08	GW pump disconnected from sewer at Sewer Dept's order, led to discharge to street. DPW approved temporary discharge to CB on Vose. Connection not seen in subsequent visits. Assume handling on property	2/20/09	Needs to request permanent attachment to Town system.
8	30 Vose	DPW	Closed	2/21/08	GW pumping dumping into street	4/15/08	Stopped after DPW went out to investigate (source still unknown)
9	15 Flanagan Rd	DPW	In Process	2/20/08	GW pumping dumping into CB creating sinkhole		Highway Ops investigating. Engineering to follow up following IDDE regulations implementation
Permit Year 6 (2008 - 2009)							
10	329 Singletary Rd	DPW	Resolved	3/7/08	Addition to structure cut into hillside, creating permanent GW pumping requirement	5/15/08	Town approved tie-in to drainage system
11	330 Concord St	DPW	Resolved	4/18/08	Illicit connection to sewer system. Sewer Dept. removed connection.	8/5/08	Town approved tie-in to drainage system
12	6 Woodward	DPW	Resolved	4/25/08	Drainage to Hastings from pool	7/31/08	Highway Ops removed connection
13	9 Aaron	DPW	Closed	3/19/08	Small black hose draining to street	2/15/09	No drain line seen by Highway on subsequent investigations
14	Burton Road	DPW	Closed	6/4/08	Small hose draining to street	2/15/09	No drain line seen by Highway on subsequent investigations
15	263 Hollis Street	DPW	Resolved	6/5/08	Hose draining washing machine to CB, reported by John DeLuca		Disconnected, sent to sewer
16	12 Charles	BoH	Resolved	6/26/08	Illegal dumping to catch basin in yard at illegal auto body shop	6/28/09	Citations from the BoH
17	3 Foley Dr	DPW	Resolved	7/3/08	Lines filled, probably roadway sediment. However, significant grass clippings and other items in catch basin at cul-de-sca	7/15/08	DPW Ops cleaned out, Notice sent to residents.
18	355 Singletary Rd	DPW	Resolved	7/30/08	Pipe discharging to roadway	1/5/09	Engineering sent notice to resident 1/5/09, Highway Ops will remove connection
19	Many Bantry/Pitt Rds	DPW	Resolved	11/7/08	CBs filled with bagged pet waste during CB cleaning	11/15/08	Engineering sent notice to residents
20	26 Whittier	BoH	Resolved	11/12/08	Sanitary Sewer backing up, overflowing into Drainage system	11/13/08	From BJ's. BoH had them call in cleaning and jetting company to clean drain lines. Lines cleaned before getting to street.
21	7-11 Oakvale Rd	DPW/ Con Com	Resolved	11/14/08	Dumping leaves and debris into wetland	11/16/08	Notice sent to residents from DPW and Con Com
22	38 Fay Rd	DPW	Resolved	12/10/08	Sewer backup uncovered illicit connection to sewer system. Sewer Dept. removed connection.	12/12/08	Engineering sent notice to residents, visited site, made recommendations for dry well
23	73 Indian Head Hgts	DPW	Closed	1/7/09	Pipe discharging to roadway. Although this is an ongoing problem, it is only a safety issue as the discharge is groundwater. Therefore, it is not an illicit discharge issue.	2/25/12	This is an ongoing problem, which the DPW will resolve.
24	Worcester Rd	MHD	Closed	1/21/09	Sewer overflow	1/25/09	Referred to DEP and Mass Highway Dept

**Town of Framingham
Illicit Discharges or Connections**

25	69 Londonderry Rd	DPW	Closed	12/1/08	Pipe discharging to roadway.	2/15/09	Homeowner told to remove pipe. No drain line seen by Highway on subsequent investigations.
26	9 Aaron St	DPW	Resolved	2/15/09	Pipe discharging to roadway. Owner warned of discharge.	2/20/09	No further discharge observed.
27	99 - Beaver Street 111	DPW	Resolved	2/25/09	Dumping leaves and debris into drainage swale	2/26/09	DPW notice sent to residents
Permit Year 7 (2009 - 2010)							
28	115 Beaver Street	BOH & Con Com	Closed	4/3/09	Debris and trash near Beaver Dam Brook	4/3/09	Con Com Notice of Violation
29	Waverley St	DPW	Closed	4/16/09	Spill of transmission fluid	4/16/09	Discussed with owner of service station. Preventative measures were taken, education on methods for cleanup of spills.
30	Woodmere Rd	DPW	Closed	4/26/09	Pet Waste in CB near intersection with Belknap Rd	5/1/09	DPW notice sent to residents. Drain marking performed. DEP reported that the followup test results showed improvement in water quality.
31	32 Mary Agnes	DPW	Resolved	9/25/09	Sewer service broken, dumping sewage into drain lines	9/28/09	Sewer notified DEP of SSO, Line to be repaired by Sewer, homeowner
32	Waushakum	DPW	Closed	2/2/10	PVC pipe dumps onto sidewalk. The discharge is groundwater, therefore not an illicit discharge issue.		Intermittent water from sump pump
33	485 Franklin	DPW	Closed	2/10/10	Kathleen Daniel Nursing Home - 508-872-8801 - PVC pipe travels under dumpster and then dumps into roadway	2/12/10	Notice sent to property owner from DPW
34	655 Belknap	DPW	Closed	2/2/10	Discharge from sump pump directly to street	2/8/10	Notice sent to residents from DPW
Permit Year 8 (2010 - 2011)							
35	15 Hillside	DPW	Closed	3/3/10	Washout from gravel driveway to street	3/3/10	Notice sent to residents from DPW
Permit Year 9 (2011 - 2012)							
36	138 Leland	BoH	Closed	3/22/11	BoH observed floor drain that may discharge to surface. Dye test performed that confirmed discharge to ground surface outside the building.	3/23/11	Owner closed drain (no longer in use).
37	Speen	DPW	Resolved	6/16/11	Septage flow into Cochituate Brook (reported by Brownlea Road resident). Sewer Department removed the blockage, and flow was restored.	6/17/11	Blockage in sewer pipe created backup out of manhole.
38	192 Irving Street	BoH	Ongoing	5/13/11	Citizen complaint of sheen in discharge pipe behind autobody operations. DPW investigated in May and June 2011. DPW and BoH investigated November 2011. BoH will cite owner for various deficiencies, however, no illicit discharge observed in any of the 3 visits (two during rainfall).		Owner advised to ensure that no oil or other discharge enter the catch basin on the property that drains to the swale behind the garage (the location observed by the complainant).
39	14 Louis W Farley Drive	DPW	Resolved	12/27/11	Discharge from sump pump directly to street. This is only a safety issue as the discharge is groundwater. Therefore, it is not an illicit discharge issue.	6/17/11	The homeowner installed additional dry wells on the property to reduce flow to the street.
40	749 Worcester Rd	DPW	Resolved	5/1/11	Discharge of oil or hazardous material discovered while excavating for deep sewer construction. Excavation was dewatered and soil removed per the URAM plan submitted to DEP.	12/21/11	Adequately regulated under DEP RTN3-26467
41	846 Concord St	DPW	Resolved	7/13/11	Discharge of oil or hazardous material discovered while excavating for deep sewer construction. Excavation was dewatered and soil removed per the URAM plan submitted to DEP.		Adequately regulated under DEP RTN3-2100
42	350 Irving Street	DPW	Resolved	1/19/12	Citizen complaint of "spraying some blue liquid all over the parking lot" and not containing roadway salt properly. No action taken.	2/28/12	The business owner sprays a solution of calcium chloride for dust suppression. The salt is stored in large bins with protective walls and roof over 200 feet from the brook, with two earthen berms protecting the brook.
Permit Year 10 (2012 - 2013)							
43	213 Bishop St	DPW	Closed	6/7/12	Citizen complaint of dumping a gallon of paint down a catch basin outside the residence at 213 Bishop Street	6/12/12	Notification sent to the neighborhood describing the incident and educating the residents regarding proper disposal.
44	Vaillencourt Dr.	DPW	Closed	6/18/12	Bagged pet waste at outfall near Hickey Drive	6/20/12	Notices sent to Vaillencourt, Hickey, and Ford Lane residents
45	18-20 Old Wood Rd	DPW	Closed	6/18/12	Debris in channel behind houses - tree limbs	6/20/12	Notices sent to two residences

Town of Framingham
Illicit Discharges or Connections

46	1372 Concord St	DPW	Closed	6/21/12	BoH observed sump pump from unoccupied house that may discharge non-GW liquids to surface.	6/26/12	Observed flow - appears clear, only operates in rain.
47	494 Franklin St	Con Com	Ongoing	6/28/12	Multiple discharges directly to the Sudbury River	11/14/12	NOI reviewed by Conservation Commission, addressing runoff from two major locations.
48	22 Hollis Street	BoH	Closed	7/3/12	Discharge from washing machine to floor drain to sump to SW drain	7/7/12	BoH cited property owner.
49	East / South Sts	DPW	Closed	9/10/12	Dumping of waste into area surrounding open channel	10/18/12	Notices sent to surrounding residences
50	Cherry Street	DPW	Closed	10/9/12	Dumping of waste into area surrounding open channel	11/8/12	Notices sent to surrounding residences

**Town of Framingham - DPW/Engineering
2012 NPDES Outfall Sampling Results**

No.	Outfall Location	Day	Time	pH 5-n-1 strips	Total Chlorine (ppm) 5-n-1 strips	Free Chlorine (ppm) 5-n-1 strips	Total Hardness (ppm) 5-n-1 strips	Total Alkalinity (ppm) 5-n-1 strips	Nitrogen - Ammonia (mg/L) strips	Deter- gents (ppm) (Chemets)	Nitrogen Ammonia (mg/L) Hach DR890	Reactive Phospho- rus (mg/L) Hach DR890	Water Temp. (°F)	Flouride (mg/L) Hach DR890	Notes	Headwall Information
Test Equipment																
Baiting Brook																
1	39 Winter St	06/11/12	1:35 PM	7.0	0.0	0.0	50	60	NA	0.20	0.02	0.24	65	0.00	Water clear, no odor. Outfall was dry, Water clear, no odor. Could not find outfall (poison ivy), sample collected from brook Water clear, no odor. Outfall dry, sample Could not find outfall	
2	1161 Worcester Rd (Elliot St)	06/11/12	2:05 PM	7.0	0.0	0.0	50	60	NA	0.20	0.05	0.00	66	0.00		
3	20 Knight Rd	06/11/12	2:35 PM	7.0	0.0	0.0	60	40	NA	0.20	0.05	0.12	66	0.00		
4	31 Blackberry Lane	06/11/12	3:00 PM	NS												
North Reservior																
1	Sullivan Terrace out of Flanagan Dr	06/18/12	9:45	6.8	0.0	0.0	80	60	NA	0.20	0.14	0.21	52	0.20	Good flow, clear water. Sample has no smell but area around outfall had an odor. Trickle flow (almost no flow), no sample Low flow, clear with no odor. Sample taken	Stone and mortar, short curved wing walls. Pipe 36" RCP Stone and mortar. 6' long, 3' tall.
2	Foxhill Rd	06/18/12	10:40	NS												
3	Pleasant St @ Bosworth	06/18/12	10:20	6.8	0.0	0.0	80	60	NA	0.20	0.00	0.17	NA	0.20	Clear, no odor and trickle flow. Pet waste observed below outfall. no flow, dry.	Stone and mortar, 7' long by 1' wide, short wing walls. Stone and mortar, curved 12' long by 1 ' wide. Pipe 15" RCP Stone and mortar 8' long. Pipe 24" RCP, 1/3 full of sediment
4	Vaillencourt Dr close to Hickey Dr	06/18/12	10:50	7.0	0.0	0.0	60	60	NA	0.20	0.00	0.13	58	0.10		
5	Kings Row Ln	06/18/12	11:15	NS											no flow, dry. Debris around headwall (branches) and debris downstream bed Clear, no odor. 3 outfalls coming through headwall, all contain some sediment.	Concrete w/granite top, 15' long by 1.5' wide by 8' tall, 1 wing wall
6	Westgate Rd	06/18/12	11:30	NS												
7	Old Worcester Rd @ Oak Crest Dr (Stream)	06/18/12	11:40	6.8	0.0	0.0	80	60	NA	0.20	0.02	0.15	56	0.20	trickle flow, foul odor and reddish color. Sediment at base of outfall	
7A	Old Worcester Rd @ Oak Crest Dr (Eastern Outfall)	06/18/12	11:40	7.0	0.0	0.0	120	180	NA	0.60	0.60	0.25	56	0.10		
9/90																
1	California Ave Near Mountain Rd 1 (Western)	06/27/12	10:00 A.M	7.2	0.0	0.0	150	120	NA	0.25	0.06	0.31	61	0.30	Clear no odor low steady flow.	Headwall 5 1/2" long 12" wide with 2 wing walls @ 45° 4' long
2	California Ave Near Mountain Rd 2 (Eastern)	06/27/12	10:35 A.M	7.2	0.0	0.0	25	80	NA	0.35	0.28	0.09	67	1.20		
3	New York Ave North	06/27/12	9:30 A.M	7.2	0.0	0.0	140	120	NA	0.75	0.05	0.12	64	0.20	Steady low flow, east off corner of base lot next to parking garage Could not access outfall, gathered sample Sample taken from back water, could not reach outfall. Pipe was fully submerged	Straight headwall no wings Headwall with 2 wing walls, 48" Headwall with 2 wing walls.
4	New York Ave South	06/27/12	9:15 A.M	6.8	0.0	0.0	100	60	NA	0.75	0.11	0.11	62	0.00		
5	New York Ave - Stoney Brook Outfall	07/17/12	9:30 A.M.	7.0	0.0	0.0	200	220	NA	0.25	0.04	0.10	NA	NA	Possibility of re-testing to compare upstream & downstream sites?	
Willow Brook																
1	Willow Brook Rd off Parker Rd	08/08/12	9:20 A.M.	7.2	0.0	0.0	120	100	NA	0.10	0.22	0.07	68	NA	Sample taken from brook	Headwall cracked, 12' X 1' X 4', Pipe 30" RCP
2	Parker Rd close to Framingham Country Club	08/08/12	9:00 A.M.	7.2	0.0	0.0	120	100	NA	0.10	0.04	0.06	NA	NA		
3	Salen End Rd after Gates	08/08/12	8:50 A.M.	NS											Outfall dry, sample was taken from main stream below outfall, 1 picture	Stone 8' long 1' wide and 3' tall, headwall severely cracked. Pipe
4	Gates St @ Roackridge	08/08/12	9:35 A.M.	NS												
5	Worcester Rd from Pond Outfall	08/08/12	9:42 A.M.	6.8	0.0	0.0	100	80	NA	0.10	0.02	0.03	78	NA	Outfall dry, 2 pictures Sample taken from pond below Worcester Rd on Gates St	
South Reservior																
1	18-22 Louis W Farley	06/28/12	11:15 A.M	6.8	0.0	0.0	50	60	NA	0.20	0.00	0.00	64	0.00	Clear slightly brown color, no odor	Headwall concrete 5 1/2' long 18" wide 3' to pipe. 2 wing walls 5' No headwall, 48" RCP
2	15-17 Jodie Rd across of Pavia Place	06/28/12	10:10 A.M	6.8	0.0	0.0	80	60	NA	0.25	0.11	0.02	63	0.00		
3	Pond off of Fountain St, near Pincushion Rd	06/28/12	9:50 A.M	7.2	0.0	0.0	120	100	NA	0.25	0.10	0.17	60	0.00	Trickle flow (1-2 gpm) clear no odor	Headwall 6' long X 1' wide X 2' to pipe, pipe 24" cast iron
4	Corner of Pincushion Rd @ Fountain St	06/28/12		NS												
5	47-49 Crest Rd	06/28/12	9:26 A.M	6.8	0.0	0.0	80	60	NA	0.25	0.03	0.00	73	0.00	Good flow, no odor	Headwall stone and mortar, 4' long X 1' wide x 12" to pipe
6	Candlestick Ln off of Lantern Rd															
7	Salem End Rd N of Lantern Rd														Opening 24" tall and 18" wide. 100' channel with debris built up at mouth of the Low flow not much movement in pipe, no odor slightly brown and cloudy	
8	North of 180 Singletary Ln north of Hickory Hill Ln	06/28/12		NS												
															No flow	Headwall concrete 4' long X 18" wide with 2 wing walls @ 5' long X 18" wide and Pipe 18" RCP

Town of Framingham - DPW/Engineering
2012 NPDES Outfall Sampling Results

No.	Outfall Location Test Equipment	Day	Time	pH 5-n-1 strips	Total Chlorine (ppm) 5-n-1 strips	Free Chlorine (ppm) 5-n-1 strips	Total Hardness (ppm) 5-n-1 strips	Total Alkalinity (ppm) 5-n-1 strips	Nitrogen - Ammonia (mg/L) strips	Deter- gents (ppm) (Chemets)	Nitrogen Ammonia (mg/L) Hach DR890	Reactive Phospho- rus (mg/L) Hach DR890	Water Temp. (°F)	Flouride (mg/L) Hach DR890	Notes	Headwall Information
9	West side of 280 Singletary Ln east of Gannon Terr	06/28/12	10:45	7.2	0.0	0.0	120	100	NA	0.20	0.03	0.51	64	0.00	Clear no odor, good flow (5 gpm)	Headwall destroyed (concrete), Pipe 24" RCP
10	330-332 Singletary Ln across Hodder Ln	06/28/12		NS											Dry no flow	Headwall stone and mortar 5 1/2' long X 1' wide X 1' to pipe, pipe 15" RCP
11	Edgewater Dr with Dunster Rd															
12	East side of 340 Singletary Ln	06/28/12		NS											No flow could not find headwall/pipe, covered by debris	
Course Brook																
1	Loring Dr	08/08/12	10:50 A.M.	NS											Could not locate	
2	Curtis Rd	08/08/12	10:40 A.m.	NS											Could not locate	
3	Kendall Ave	08/08/12	10:20 A.M.	NS											Outfall was dry, as well as stream bed	
4	Course Brook @ Merchant Rd	08/15/12	3:30 P.M.	6.8	0.0	0.0	120	80	NA	0.15	0.02	0.08	NA	NA	Sample taken from brook in front of culvert under Merchant Rd	Headwall concrete with a debris gate in front
5	Exiting Framingham on Course Brook	08/08/12	NA	NS												
	Average			7	0	0	96	87		0.27	0.09	0.13	64	0.15	Additional comment: On all detergent readings done before 7/2/2012 should have a reduction of .1 ppm on each value due to recalibrating the equipment.	

Notes: Strips are all by Hach

Detergents analysis: field test Chemets® Kit by Chemetrics

Lowest

Highest

Above Average

Rain Garden Shrubs & Plants

Choose a variety of native plants that provide color and interest throughout the growing season. They produce nectar and berries to attract wildlife such as butterflies, hummingbirds, cedar waxwings and winter robins.

Plant List for Sun:

Shrubs:

Sweet Pepperbush
Dogwood
Shamrock Inkberry
Winterberry
Gro-Low Sumac
Lowbush Blueberry
Highbush Blueberry
Dwarf Fothergilla
Buttonbush
American Elderberry

Perennials:

Dwarf Aster
Marsh Milkweed
Joe Pye Weed
Coneflower
Blazing Star
Beebalm
Blackeyed Susan
Crested Iris
Yarrow

Plant List for Shade:

Shrubs:

Cypresses
Western Cedar
White Cedar
Cranberry Viburnum
Goat's Beard
Wood Vamp
Virginia Sweetpire
Spicebush
Dwarf Bush
Honeysuckle

Perennials:

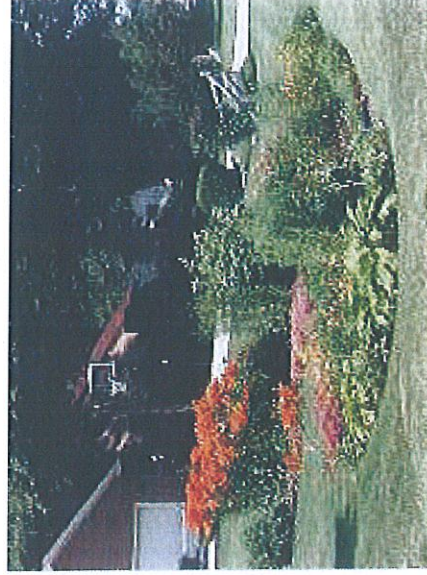
Cardinal Flower
Bleeding Heart
Solomon's Seal
Columbine
Royal Fern
Maidenhair Fern
Sensitive Fern
Foamflower
Ostrich Fern

Plant List for Clay Soils:

Blue lobelia
Sweet flag
Fringed brome
Fox Sedge
Joe Pye Weed

Common ironweed
Blue Vervain
Porcupine Sedge
Cord Grass
New England Aster

Going Green with Storm Water Rain Gardens



What is a Rain Garden?

A rain garden is a shallow depression planted with perennial native plants that are tolerant of both dry and wet conditions. Rain gardens capture runoff from impervious surface areas such as rooftops and driveways and allow it to seep slowly into the ground. Rain gardens help preserve nearby streams and ponds by reducing the amount of polluted runoff and filtering pollutants.

Why Plant a Rain Garden?

Stormwater runoff from residential areas often contains excess lawn and garden fertilizers, pesticides and herbicides, oil, yard wastes, sediment and animal wastes which cause water pollution.

Rain gardens fill with stormwater and allow the water to slowly filter into the ground rather than running off into storm drains, and eventually into streams and lakes.

Rain gardens reduce peak storm flows, helping to prevent stream bank erosion and lowering the risk for local flooding.

By collecting and using rainwater that would otherwise run off your yard, you not only return rain to the water table, but you are also creating a beautiful solution to water pollution.



Frammingham High School Rain Garden

A Best Management Practice

to:

- Reduce Stormwater Runoff
- Improve Water Quality
- Enhance Your Landscape

Make your own beautiful contribution to
cleaner water in the

Sudbury River Watershed

How to Create a Rain Garden

Designing and planting a rain garden is much like creating any other perennial garden, with a few unique differences.



- The garden must be located where runoff can be diverted into it, at least 10 feet away from building foundations and septic systems.
- A shallow, saucer-shaped depression is created in the garden to hold rain as it soaks in. The garden should be about 20-30% of the area from which it is receiving runoff. Make the depression 6 to 18 inches deep, throughout the area of the garden.
- Soil replacement and additional preparations are sometimes needed for success. A good soil mix for rain gardens is 50-60% sand, 20-30% topsoil, and 20-30% compost. This mixture will allow excellent root growth and recharge of water

- Species of perennial plants and shrubs native to our region are recommended, as they are adapted to local conditions and will not need extra care once they are established. Plant flood tolerant species in the center and drought tolerant ones around the edges. Berry-bearing and nectar-producing plants attract and nourish wildlife.
- Ideally, plant at least 15 species of plants at a density of 1 plant per square foot. As the rain garden matures, thin the population of some of the plants to allow others to grow. When planting, put the tallest flowers and shrubs in the deepest part of the swale.
- A mulch of shredded hardwood is an integral part of your rain garden. It keeps the soil moist and ready to soak up rain, and makes your garden low-maintenance.

Did You Know? The average home roof is 1,300 square feet and generates 832 gallons of runoff during a single 1" rainfall event



- In the weeks following planting, hoe dandelions and other weeds until the mature garden plants crowd them out. Also, during the first year, your rain garden will require monthly weeding during the growing season. In subsequent years, it will only be necessary to weed once per year and replace mulch to retain moisture. Shrubs should be pruned annually. During extremely dry periods it may also be necessary to water several times per week.

Rain Garden Resources

New England Wildflower Society:
<http://www.newfs.org/publications-and-resources/rain-gardens.html>

URI Healthy Landscapes:
www.uri.edu/ce/healthylandscapes/raingarden.htm

Natural Resources Conservation Service:
www.ia.nrcs.usda.gov/features/raingardens.html

Remember that anything that enters a storm drain in the road is discharged untreated into the water bodies we use for swimming, fishing, paddling, and recharging our drinking water supplies. The more we can all do to reduce stormwater impacts to our waterways, the healthier they will be.

