

Municipality/Organization: **Marlborough, MA**

EPA NPDES Permit Number:

MaDEP Transmittal Number: **W-035393**

Annual Report Number

& Reporting Period: **No. 7 – May 09- May 10**

NPDES PII Small MS4 General Permit

MAR041128

Annual Report

#7

Part I. General Information

Contact Person: Priscilla Ryder

Title: Conservation Officer

Telephone #: 508-460-3769

Email: pryder@marlborough-ma.gov

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: Nancy E. Stevens

Title: Mayor

Date:

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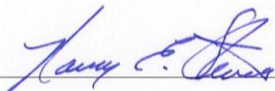
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Signature: _____



Printed Name: Nancy E. Stevens

Title: Mayor

Date: _____

4/30/10

Part II. Self-Assessment

The City of Marlborough has completed the required self assessment and has determined that our municipality is in compliance with all permit conditions, except as noted below. Below we have highlighted items that were completed and proved successful, and items which were changed slightly or delayed for reasons noted, for this past year- May '09-May'10.

Part D 1-1 – Informational brochures. The informational storm water pollution brochures will be mailed in the spring '10 water bills. 10,500 pieces will be mailed. A copy of the brochure can be found at the following link http://www.marlborough-ma.gov/Gen/MarlboroughMA_PublicWrks/MarlboroughMA_Engineerng/stormwater-flyer.pdf

Part D 1-2 – Storm Drain Stenciling. We now have more than 95% of the storm drains marked with plastic circular markers which say “No Dumping Drains to Waterways”. However, the markers which were installed 8+ years ago are now fading, chipping or have fallen off due to the adhesive wearing out. This year we will work with some boy scouts/ volunteer groups to replace markers that have been removed and to begin replacing markers that have faded. When doing marker replacements we will also require that the door hangers be hung on every door near the replaced marker as an added reminder to residents.

We are also working on institutionalizing the storm drain marking program and combine it with the storm drain cleaning program to have markers replaced when missing as an ongoing way of keeping these in place, the logistics of which are still being worked out. This will need to be included in the new contract.

Part D 1-3 – Cable TV show- A Public Service Announcement has been airing since fall of '09 which follows a small rubber duck down a storm drain sharing a message that only clean water should go down the drain. The You-Tube link to this PSA through both the Conservation and Engineering web pages on the city web site will be made in early May '10 and can be seen at this link.

http://www.youtube.com/watch?v=ieIm6bT5j10&feature=player_embedded

Also the local cable station followed the Stream Teams and put together a program titled “The Importance of Streams” which airs monthly. And includes a message about keeping storm drains clean.

Part D 1-4 Student Education- The Conservation Commission worked again with the local watershed group the Organization for the Assabet River and taught the curriculum for the” Water Wise workshops” which were held again during the summer months in '09. <http://www.assabetriver.org/projects/education/waterwise2008> A summary of our outreach this past year is as follows:

- 6 workshops were held in Marlborough throughout the summer
- 2 high school students gained valuable work experience on the environment, stewardship and teaching
- workshop titles: "Watersheds and The Water Cycle", "Water Plants & Animals", "Water Testing & Conservation", and "Water Bugs Mystery".
- family workshop skit "Water Matters" covered storm water, environmental lawn care and invasive species

In addition, again several more students did high school science fair projects related to storm water, and non point source pollution based on things they had learned in the school as well.

Part D 1-5 – Web site - The Storm Water web page has been designed and is still posted at http://www.marlbrough-ma.gov/Gen/MarlboroughMA_PublicWrks/MarlboroughMA_Engineerng/Stormwater-Management. A copy of the first page of the web page information is attached in the appendix. This will be updated annually and as needed.

Part D 2-5- Stream Teams. –One additional stream team groups went out in the Spring of '09, and now again in spring '10. The stream team reports have revealed that for the most part our streams are healthy. Although we did find an illicit discharge of sudsy water and dumping of grease by a restaurant which were identified, reported and corrected. But in general the inspections are revealing a relatively healthy systems. The stream team reports are now posted on line at the following link. http://www.marlbroughma.gov/Gen/MarlboroughMA_ConCommisn/StreamTeamReports. We will be holding a stream team survey group in the fall to cover the last four remaining sub-basins. Each report contains a to-do list to address items identified.

Part D 2-4;3-2, 3-3, 3-4, 4-2- The City adopted two ordinances in November of 2009 these are titled: “Stormwater Managemen” and “Detection and Elimination of Illicit Discharge To Municipal Storm Drain system”. Both these new ordinances provide the city with a better means of monitoring, controlling and enforcing against storm drain violations. Stormwater Regulations to accompany the Stormwater Management Ordinance are being drafted now and should be adopted by the end of May '10. The Illicit discharge ordinance stands on its own and does not need further regulations. Both ordinances are on the books and are currently being enforced and followed.

The web links to both these ordinances are as follows:

Link to City Code: <http://www.ecode360.com/?custId=MA1056>

Search word: Stormwater Management:

[http://www.ecode360.com/documents/MA1056/source/346020.pdf#search= stormwater stormwater stormwater](http://www.ecode360.com/documents/MA1056/source/346020.pdf#search=stormwaterstormwaterstormwater)

Detection and Elimination of Illicit Discharge to Municipal Storm Drain System:

[http://www.ecode360.com/documents/MA1056/source/346018.pdf#search= discharge discharge illicit discharges illicit discharge discharged discharges discharge illicit](http://www.ecode360.com/documents/MA1056/source/346018.pdf#search=discharge)

Part D 4-2; 4-4– We have not established a baseline testing protocol for the streams in the city. As noted in previous reports we do have some baseline data on several of the major stream systems done on Ft. Meadow Reservoir, Millham Reservoir, and the Sudbury Reservoir and Hop Brook which can be used in the future as needed for future comparison. The Stream Team reports noted above have provided valuable data and information about stream health and have allowed for follow up and elimination of discharges into the stream system. With new testing requirements anticipated in the next round of EPA permits it was determined that the specific testing protocol would be developed once these new criteria are established.

Part D 6-3 Employee Training - The DPW has an Integrated Contingency Plan dated Sept. '03 which was updated in '06. The purpose of the plan is: “To describe how the Marlborough DPW handles emergencies associated with fires, injuries and releases and spills of hazardous chemicals, hazardous and extremely hazardous substances, hazardous wastes, hazardous matters and petroleum products at their Neil St. facility.” As noted in previous reports this documents helps guide the handling and proper storage of hazardous materials at the DPW facility. This document will be updated in September of '10.

Part III. Summary of Minimum Control Measures

1. Public Education and Outreach

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) Permit Year 7 (Reliance on non-municipal partners indicated, if any)	Planned Activities – continuing
1-1	Informational brochures	Conservation/ Priscilla Ryder	Distribute city wide annually	The brochure is complete. (web link noted above) This will be mailed out in the water bill cycle in May of '10	The effectiveness of the mailing is being evaluated to determine if this is a cost effective means of distributing information.
1-2	Storm drain stenciling	Conservation/ Priscilla Ryder	Stencil ¼ of drains per year	All city storm drains were marked in 2009.	We will work on replacing old markers that have faded or have been removed by snow plows. Will monitor markers to see how often they may need to be replaced.
1-3	Cable TV Program	Conservation/ Priscilla Ryder	Tape/ air once annually	A one minute PSA has been running regularly since Fall of 2009 on the local cable channel. (see link above)	PSA will continue to air indefinitely and will be posted on the city stormwater web page in May 2010.
1-4 Revised	Student Education	Organization for the Assabet River and Conservation Comission/ Priscilla Ryder	Speak to middle school class Water Wise workshop program developed and implemented	The Water Wise Workshop series was held again in summer of '09 and was successful. http://www.assabetriver.org/projects/education/waterwise2008	Funding has been provided for another summer of Water Wise Workshops in summer of '10 in conjunction with the Organization for the Assabet River and The Mass Audubon society to continue the success of summer '09.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) Permit Year 7 (Reliance on non-municipal partners indicated, if any)	Planned Activities – continuing
1-5	Web site posting	Conservation/ Priscilla Ryder	Post storm water information on City Web site	The Stormwater web page has been posted at http://www.marlbrough-ma.gov/Gen/MarlboroughMA_PublicWorks/MarlboroughMA_Engineering/Stormwater-Management	Information to be updated as needed annually in May of each year.
1-6	Prepare compliance report	Conservation/ Priscilla Ryder	Prepare annual report	Report prepared April '10	Report to be prepared April '11
1-7	Annual Reporting Reminders	Conservation/ Priscilla Ryder	Notices to non-residential properties	10 inspections done of commercial and industrial sites. Annual reports from companies are being filed. We received several such reports and did follow up compliance.	Ongoing monitoring and letters of compliance will occur annually. With new ordinance a new reporting and inspection requirement will be developed.
1.7a NEW	Annual Reporting Reminders	Conservation /Priscilla Ryder	Notices to commercial properties	The ordinance was adopted in November of 2009, regulations to be promulgated in spring 2010 followed by a brochure to commercial properties about their responsibilities.	Develop a brochure to educate businesses to meet stormwater maintenance requirements. Include enforcement provision of ordinance in brochure.

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 7 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Continuing
2-1	Volunteer for stenciling	Conservation/ Priscilla Ryder	Volunteers to install storm drain markers	Ft. Meadow Neighborhood Association replaced some of the old markers and distributed door hangers.	All street storm drains have been marked, but old ones have faded and need replacing. Some newer ones have become unglued and need replacing. We will work on replacing markers as needed and hanging door hangers when that is done. Where available we'll use volunteers.
2-2	Household Hazardous Waste Collection day	Emerg. Mgt/ Don Cusson	Hold HHWCD Annually	Two events were held in May and November of '09	Two events scheduled annually spring and fall.
2-3	Storm Water Management Advisory Committee	Conservation/ Priscilla Ryder	Form SWMAC	The SWMAC met in November 6, '09 to review ordinance.	SWMAC will meet several times in '10 to assist in review of storm water regulations .
2-4	Public Hearings	Conservation/ Priscilla Ryder	Hold Public Meeting on SWP	The public meeting was held in Nov. '09 as part of passage of Stormwater Ordinance at City Council.	No additional meetings needed.
2-5	Stream Team	Conservation/ Priscilla Ryder	Form Stream Team	Stream team leadership groups went out to investigate additional streams in the city. Several illicit discharges were detected and followed up on. Reports are on line as noted above in the self-assessment.	Stream Team to monitor remaining streams in the city in spring and fall '10 before leaf out and annually until all streams have been monitored.

2-6	Clean up day	Mayor and City Council	Sponsor city wide Clean-up day	200 volunteers worked for three hours collecting 6.6 tons of trash and 120 lbs of recyclable material During the annual city wide Clean Sweep in May'09.	Annual cleanup to continue 5-1-10 and annually.

3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 7 (Reliance on non-municipal partners indicated, if any)	Planned Activities – continuing
3-1	GIS Mapping	DPW/ Nat Bowen GIS coordinator	Map City ¼ of Drainage System	95% of the city's drainage system has been entered onto the GIS mapping system. This includes catchbasin locations and pipe connectivity. It also identifies detention basins and underground facilities. (see attached example)	The remaining 5% of the final drainage linkages through private property will be done by interns as time permits and as as-built plans are submitted. This will be ongoing.
3-2	Ordinance Review	DPW/ city engineer Tom Cullen and Priscilla Ryder Conservation Officer	Review applicable ordinances	The Stormwater Management Ordinance was passed in November of '09. See link above in self assessment section to view the ordinance	Regulations will be promulgated in May '10.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 7 (Reliance on non-municipal partners indicated, if any)	Planned Activities – continuing
3-3	Protocol development for IDDE	DPW/ city engineer Tom Cullen	Develop protocol for IDDE	Detection and Elimination of Illicit Discharge to Municipal Storm Drain System Ordinance was passed in Nov. '09 which outlines protocol for identifying and eliminating illicit discharges. (see link to ordinance noted in self assessment)	Enforce ordinance.
3-4	Ordinance Modifications	DPW/ city engineer Tom Cullen	Drainage ordinance modifications	Detection and Elimination of Illicit Discharge to Municipal Storm Drain System Ordinance was passed in Nov. '09	Done Ordinance passed.
3-5	Stream Team inspections	Conservation/ Priscilla Ryder	Inspect city's streams/outfalls	See 2-5 above	See 2-5 above
3-6	Ill. Dis. Notice/Enforcement	DPW/ city engineer Tom Cullen	Disconnect w/in 6 mos.	This is currently ongoing when detections are made they are required to disconnect. This is outlined in the ordinance	This will be ongoing

4. Construction Site Storm water Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 7 (Reliance on non-municipal partners indicated, if any)	Planned Activities – continuing
4-1	Regulation Review	DPW/ City Engineer- Tom Cullen	Review applicable regulations	Stormwater Management Ordinance passed in Nov. '09	Done – ordinance passed.
4-2	Sampling/Testing	DPW/city engineer- Tom Cullen	Sample/test to est. baseline	Have not established baseline for sampling.	Protocol for baseline sampling will be developed '10 after new permit is issued.
4-3	Storm water management policy	DPW/ City Engineer- Tom Cullen	Adopt DEP Policy	Stormwater Management Ordinance passed in Nov. '09	Done – ordinance passed
4-4	Re-sampling retesting discharges	DPW/ city engineer- Tom Cullen	Resample/retest discharges	See 4-2 above	See 4-2 above

5. Post-Construction Storm water Management in New Development and Redevelopment

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 7 (Reliance on non-municipal partners indicated, if any)	Planned Activities – continuing
5-1	Regulation Reviews	DPW/ city engineer- Tom Cullen	Review applicable regulations	See 4-1 above	See 4-1 above
5-2	Sampling/testing	DPW/city engineer- Tom Cullen	Sample/test to est. baseline	See 4-2 above	See 4-2 above
5-3	Storm water management policy	DPW/ city engineer- Tom Cullen	Adopt DEP Policy	See 4-1 and 4-3 above	See 4-1 and 4-3 above

5-4	Re-sampling/retesting	DPW/ city engineer- Tom Cullen	Resample/retest discharge	See 4-4 above	See 4-4 above
5-5	Annual Reporting	Conservation/ Priscilla Ryder	Achieve annual reporting compliance	See 1-7 above	See 1-7 above
5-6	Random inspections	Conservation/ Priscilla Ryder	Inspect 10 facilities	See 1-7 and 1-7a above	See 1-7 and 1-7a above

6. Pollution Prevention and Good Housekeeping in Municipal Operations

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 7 (Reliance on non-municipal partners indicated, if any)	Planned Activities – continuing
6-1 revised	Street Sweeping	DPW/ Tom Temple	Sweep all streets annually	All streets were swept between April and Nov. 2009 (see map from city web link below)	All streets will be swept between April and Nov. 2010
6-2 revised	Catch basin cleaning	DPW/ Tom Temple	Clean ½ catch basins annually	1/3 of catch basins were cleaned in 2009. (based on budget constraints)	Anticipated 1/3 of catch basins will be cleaned in 2010 (based on budget appropriation.)
6-3	Employee training	DPW/ city engineer	Train DPW employees	Training on integrated pest management practices was done for school buildings and field maintenance. The DPW has been keeping up with good housekeeping practices discussed in pervious years.	In-house employee training will be ongoing regarding materials storage, sweeping, and IPM management. In the future custodial staff will also be trained.

7. BMPs for Meeting Total Maximum Daily Load (TMDL) Waste Load Allocations (WLA)

– The TMDL for the Assabet River and “Brook and Pond assessment” for Hop Brook were both issued. In short the Assabet River TMDL requires the city to implement stringent controls on its POTW’s and reduce sediment phosphorous loads, both of which are currently being pursued. The report does not require any non-point source controls at this time. However, the implementation of the city’s Stormwater Ordinance and Detection and Elimination of Illicit Discharges to the Stormwater System Ordinance, for all projects in the city will help to reduce phosphorous inputs for runoff from new developments and existing developments.

Currently the City is beginning the construction for upgrades to its Westerly Wastewater Treatment Plant (Assabet River) . The design and construction of upgrades to the Easterly Wastewater Treatment Plant (Hop Brook) will follow construction of the Westerly Wastewater Treatment Plant. The design of both plants will include facilities that will markedly reduce point source nutrient loadings to the receiving waters by reducing phosphorus from our present permitted limit of .75 mg/L to .1 mg/L, an 80% reduction.

In addition, the Army Corps of Engineers is conducting separate sediment and dam removal studies on the Assabet River and the Hop Brook pond and stream system to identify other sources of water quality impairment to these resources such as sediment reflux, storm water, impoundment management, etc. This report was released in fall of '09. No conclusions were drawn. Discussions will continue regarding options to reduce non point sources of pollution in the Hop Brook river system.

Part IV. Summary of Information Collected and Analyzed

All applicable information is included in Part II and III above.

Attachments:

The following documents are attached through the various web links as noted above and attached below for convenience.

1. Stormwater brochure for city wide distribution (1-1) http://www.marlbrough-ma.gov/Gen/MarlboroughMA_PublicWrks/MarlboroughMA_Engineerng/stormwater-flyer.pdf *if is also attached below.*
2. Storm Water Management Web site- (1-5)
3. Stream Team report – copy of first page of each report and web link (2-5)
4. Clean Sweep – city wide cleanup day flier (2-6)
5. GIS – drainage map – sample map showing catch basins and piping and direction of flow and detention basins (3-1) see below
6. Drainage Report Check list (3-2) see below
7. Street sweeping schedule –(6-1) check link http://www.marlbrough-ma.gov/Gen/MarlboroughMA_PublicWrks/MarlboroughMA_Operations/MarlboroughMA_DPWStreets/2010StreetSweeping.pdf
8. Stormwater Public Service Announcement (1-3) check link http://www.youtube.com/watch?v=ieIm6bT5j10&feature=player_embedded

#1. Brochure for city wide distribution (1-1)

Stormwater Pollution

What is Stormwater?

It's the rain or melted snow that runs down our roads and into the drains in the streets and then into lakes, rivers, or streams.

What is the problem?

Every time it rains, gallons and gallons of Stormwater runoff from our roads flow **UNTREATED** into the nearest lake, pond or river and our drinking water.

What Pollutes?

Motor oil, fertilizers, pesticides, dirt, yard clippings, pet waste, mud and other pollutants that end up on road surfaces from cars and adjacent lawns and construction sites are pollutants.

What is this round marker?



These markers are found on the side of most catch basins in the street throughout the city to remind us not to pollute our waterways by being part of the solution.



Don't be a part of the

Problem

Excess Fertilizers, pesticides & herbicides used on lawns can wash off into roadways, into drains then untreated into bodies of water. Fertilizers cause algae blooms, or increased pond weed growth!



An Algae Bloom

Oil, paint, gas, metals

and detergents from cars are toxins that are harmful to aquatic life and when in our water supply, are expensive to remove.

Pet Waste is rich in nutrients, like fertilizers. But they also include fecal bacteria, which can close down beaches!

Be a part of the Solution

- ⇒ Don't dump anything into the storm drain
- ⇒ Use fertilizers and pesticides sparingly
- ⇒ Keep grass clippings, trash, and dirt off the streets and out of the gutter
- ⇒ Prevent automobile fluid leaks-oil, gas, etc.
- ⇒ Wash your car on the lawn so water and soap get absorbed
- ⇒ Use low phosphate detergents in small amounts
- ⇒ Clean up pet waste; put in trash
- ⇒ Spread the word about protecting our water
- ⇒ Participate in the annual clean sweep—the city works to sweep streets and remove sand from streets & catch basins
- ⇒ Participate in Household Hazardous Waste Collection days
- ⇒ Report illegal dumping to the Fire Department 508-485-2323

City of Marlborough



Stormwater
Pollution

You can help
keep our
streams, lakes
and drinking
water clean
with a few
easy steps!!

How Do These Drains Work?

The drain on the left, the sewer, takes in water from your house (sinks, tubs, toilets). It gets treated in a waste water treatment plant. The drain on the right, the storm drain, takes in water from the pavement, lawns and parked cars and DOES NOT get treated. This water flows directly back into lakes, streams and ponds. Only clean water should go down storm drains.



For more information, contact the
Marlborough Conservation Office
at:
508-460-3768 or
pryder@marlborough-ma.gov

Brochure by: Nicole Shanks
2006

#2. Storm Water Management Web site- (1-5)

City of Marlborough, MA - Stormwater Management

Page 1 of 2

Stormwater Management
Printer-Friendly Version

Department Links
Public Works

Quick Links
Online Services
Directions
City Departments
Mayor's Office
City Council
Ongoing Projects
Community
School Committee
Marlborough Public Schools Web Site

Stormwater Information

Stormwater discharges are generated by runoff from land and impervious areas during rainfall and snow events. Stormwater picks up litter, sand, bacteria, oil and other chemicals as it flows over the land and it carries these pollutants to our streams, rivers, ponds and wetlands. Runoff from paved surfaces, such as roads, parking lots and rooftops, drain through pipes and contribute large amounts of polluted storm water to our waterways. Cleaning up storm water not only benefits our neighborhoods and town, it also ~benefits the entire network of water bodies and land that make up our watershed [Sudbury-Assabet-Concord (SuAcCo) Watershed].

In Marlborough, stormwater is regulated at the federal level by the Environmental Protection Agency (EPA), the state level by the Massachusetts Department of Environmental Protection (DEP) and at the city level it is regulated by local regulations which will help prevent dirty water from homes and construction sites from discharging into our streams and ponds. Currently the Conservation Commission and Engineering Departments ensure construction sites are not discharging into streams and that no dumping of contaminants into the storm drains or streams occurs.

As authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into ditches. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters.

Tips for Keeping Stormwater Clean

Car Care Tips:

- * Maintain your car to prevent fluid leaks
- * Recycle motor oil, antifreeze, tires, and batteries
- * Use a commercial carwash that treats and/or recycles the wash water
- * If you wash your car at home, wash it on the lawn so that the water can seep into the soil, and use low-phosphate detergents in small amounts.

Lawn Care and Garden Tips:

- * Use fertilizer, pesticides and herbicides sparingly
- * Try using organic lawn care methods
- * Mow grass 2 to 3 inches high to encourage dense growth and deter weeds
- * Mulch lawn clippings and leaves (Not in the wetlands or streams)
- * Do not over water your lawn
- * Reduce lawn size in favor of natural vegetation or rock gardens
- * Cover soil piles with tarps and replant bare areas to stop erosion

General Tips:

- * NEVER pour or sweep anything down a storm drain, including: motor oil, ~litter, leaves, sand, pet waste or paint (only rainwater should enter the drain)

http://www.marlborough-ma.gov/Gen/MarlboroughMA_PublicWrks/MarlboroughMA_En... 4/30/2009

#3 Stream Team Report

All three stream team reports for 2007, and Spring and Fall 2008 and Spring 2009 can be found at the following web site.

http://www.marlborough-ma.gov/Gen/MarlboroughMA_ConCommisn/StreamTeamReports

Below, please find the cover sheet, and areas inspected for the spring 2009 report.

Stream Team Report 2009



Two Marlborough Stream Team photos, May 2009

- Broadmeadow Brook
- Hop Brook
- North East Marlborough Streams

Study Conducted April-May 2009

Submitted

June 2009

by Jennifer Boudrie

Jen@GreenMarlborough.org

T 508-481-0569

	Pages
Introduction	2-3
Broadmeadow Brook Study	4-14
Hop Brook Stream Study	15-25
North East Marlborough Streams Study	26-38

Marlborough

PROJECT CLEAN SWEEP

Saturday, MAY 1, 2010



GO GREEN

MAYOR NANCY STEVENS & THE MARLBOROUGH
CITY COUNCIL
INVITE YOU TO TAKE PRIDE AND HELP BEAUTIFY OUR
COMMUNITY
by helping with

"PROJECT CLEAN SWEEP" - SATURDAY, MAY 1

VOLUNTEERS SHOULD ARRIVE by: 9:00 AM at

****DPW MUNICIPAL GARAGE, 135 NEIL
STREET *****

***** NOTE NEW LOCATION *****

IF YOU HAVE EXTRA, PLEASE BRING RAKES & GLOVES.
EVERYONE IS ASKED TO PICK UP LITTER THROUGHOUT THE
CITY.

VOLUNTEERS WILL RECEIVE “ PROJECT CLEAN SWEEP”
T-SHIRTS

REFRESHMENTS WILL BE SERVED

For Questions and to sign up please:

CONTACT YOUR WARD COUNCILOR AT (508) 460-3711 OR

Ken Calder @ DPW (508) 624-6910 x 7300 or sign up on
line at kcalder@marlborough-ma.gov

RAIN DATE: SUNDAY, MAY 2nd: NOON-3:00PM

Following the cleanup please join the
Marlborough Earth Day Fair 11am-4pm at Ghiloni Park and Recreation Area,
Concord Rd.

Learn about energy efficiency, solar energy, water conservation, recycling and
more.

Family fun and activities.

PARA INFORMACION EN ESPANOL LLAME (508) 624-6925
PARA TRADUCOA EM PORTUGUES (508) 624-6925

#5 GIS- drainage map sample



#6

DRAINAGE REPORT CHECKLIST

Owner's Name: _____ Engineer's Name: _____
Site Address: _____ Date: _____

The following checklist is not all-inclusive, but is generally representative of the requirements of the Marlborough Site Plan Review and Approval Ordinance (SPR&A) and the Planning Board's Rules and Regulations (S/D R&R). In all cases, you should use the checklist in conjunction with the SPR&A and S/D R&R as appropriate.

All reports shall be bound and include the following information:

Report Cover

- ☐ Project title/development name
- ☐ Site address
- ☐ Site map and parcel
- ☐ Owner's name, address, and telephone number
- ☐ Developer's name, address, fax and telephone number
- ☐ Engineer's and Surveyor's names, address, fax and telephone number
- ☐ Date of report (with latest revision date(s))
- ☐ Engineer's stamp

Pre- and Post-development Plans

- ☐ Pre- and post-development plans on 24"x36" sheets in AutoCAD format
- ☐ Clearly show all pre and post subcatchment areas
- ☐ Show all ultimate point source discharge locations for each subcatchment area
- ☐ Show all Tc paths with lengths and slopes for each subcatchment area
- ☐ Plans should show enough topographic information outside of the site to show pre and post discharge impacts

Summary

- ☐ Description of project
- ☐ Locus map
- ☐ Soil Conservation Service maps
- ☐ Description of existing conditions/use
- ☐ Description of proposed conditions/use
- ☐ Flow Summary table showing changes in pre and post-development flows for the 2, 10, 25, and 100-year storm events-Post-development flows shall not exceed pre-development flows

Pre-Development Conditions

- ☐ Pre-development drainage conditions (describe in report and coordinate with pre-development plans)
- ☐ Describe all existing subcatchment areas
- ☐ Describe (and label on plan) impervious and pervious areas within each subcatchment
- ☐ Provide CN number calculations
- ☐ Provide Tc calculations
- ☐ Provide flow calculations for the 2, 10, 25, and 100-year storm events
- ☐ Provide hydrographs showing time-stage relationship (peak flow, peak hour)
- ☐ Test Pit Data (locations shall be shown on pre- and post-construction plans)
- ☐ Groundwater elevations
- ☐ Percolation test results

Post-Development Conditions

- ☐ Post-development drainage conditions (describe in report and coordinate with post-development plans)
- ☐ Describe all existing subcatchment areas

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