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Municipality/Organization: Town of Marshfield, MA

EPA NPDES Permit Number: MA041048

MADEP Transmittal Number: W-036194

**Annual Report Number
& Reporting Period:** No. 08 : March 10 - April 11

MAY - 6 2011

NPDES PII Small MS4 General Permit Annual Report

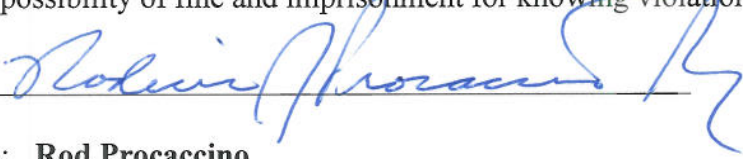
Part I. General Information

Contact Person: Rod Procaccino **Title:** Town Engineer

Telephone #: 781-834-5575 **Email:** Rprocaccino@townofmarshfield.org

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: Rod Procaccino

Title: Town Engineer

Date: May 6, 2011

Part II. Self-Assessment

The Town of Marshfield's stormwater management activities for the 8th year of the General Permit (March 2010 through April 2011) were consistent with the Notice of Intent (Massachusetts DEP form BRP WM 08A) and schedule, submission dated July 21, 2003. The following assessment of activities that were included in the plan is provided below:

Public Education: 1. Continue Partnership with North and South River Watershed Association (NSRWA) (BMP ID No.1) The Town continues its support of NSRWA Greenscapes Program. Brochures and Reference guide are on display at the Town Hall and Marshfield's Stormwater Management Plan is referenced in the Town's CCR (Water Quality) Report.

(Website - <http://www.townofmarsfield.org>)

2. Develop Brochures: (BMP ID No. 2)

The Town added language to the Water Quality Report to emphasize Storm Water Management Plan. This information is sent out on an annual basis. The water quality report was sent out to all customers representing 98% of the Town.

The DPW contracts with the North and South River Watershed Association Greenscapes program. This year, four press releases were issued through the Greenscapes Program which promoted water conservation, water resource protection and awareness. The titles of the press releases were: "Living with a Water Ban , Marshfield fifth Graders – Water All Around You Program, Outdoor Watering Bans Highlight need for Water Conservation Planning and Greenscapes Water Challenge Yields Interesting Results."

The CCR (Water Quality Report) is available at the DPW office.

3. Develop Web Site for Public Service Posting: (BMP ID No. 3)

The IT department has developed the Town wide website and is responsible for it's maintenance. Visit the Town's website at <http://www.townofmarsfield.org> Access is provided to the NPDES Phase II Small MS4 General Permit Annual Report.

Public Participation:

1. Water Quality Testing (BMP ID No. 4)

Water Quality Testing was conducted by the North River by NSRWA at multiple outfalls under wet and dry conditions contributing to the South River as part of the South River Bacterial Source Assessment Project a 604(b) grant the Town received . There were elevated fecal coliform levels detected.

The Town's Consultant Comprehensive Environmental Inc.(CEI) and North and South River Watershed Association (NSRWA) will meet with The Board of Public Works at a public meeting on May 9, 2011 to discuss final results of water quality testing as part of the South River Bacteria Assessment Project conducted in 2010 and proposed conceptual designs of Stormwater BMP's. The priority sites for BMP's were the Library Plaza, RTR and Highpoint Realty property (behind Dairy Queen). The Town obtained a drainage easement for Library drainage outfall at the RTR Property and proposed constructed wetland for stormwater treatment.

NSRWA has taken over sampling and testing of the Green Harbor estuary to monitor water quality. This effort is conducted on a voluntary basis. This information is also being used to assist the DPW in its efforts to restore drainage in the Rexhame/ Fieldston area and the permitting for Bass Creek dredging project. **The Conservation Agent secured a grant to purchase and install two water level devices. These devices were installed and the DPW supports the collection of data through a website connection.**

Community Cleanup Days (BMP ID No. 5)

2. The Town conducted its annual "**Keep Marshfield Clean**" weekend on April 9, and 10th 2011. There were 744 participants and 630 bags collected weighing 4.28 tons along with tires and scrap metal. The Town's Solid Waste Transfer Station also supports other neighborhood clean-up efforts and the

NSRWA annual River Clean-up Day.

3. The DPW, Town Assessors, and Conservation Commission and other volunteers from the general public developed an Open Space Plan. Watershed protection was the highest priority included in the evaluation criteria. The DPW obtained support and authorization through Open Space Committee and funding from Town Meeting and acquired the following parcels: **15 Ferry St., a .6 acre developed parcel within Zone I of municipal water supply for control and watershed protection, and an undeveloped parcel F14-02-03 containing 6.4 acres off Eames Way, and a partially developed 20 Acre parcel 40B subdivision known as Metuxet Woods for the purpose of watershed protection.**
4. The NSRWA as part of the Greenscapes Program supported by the Town conducted a field trip to various locations in Town with 180 fifth graders from Martinson and Daniel Webster Schools to help students understand the local water resources.

Illicit Discharge Detection and Elimination:

1. Catch basin/Outfall and Receiving Water Mapping (BMP ID No. 6)

The Town is in it's 7th year developing GIS Mapping capabilities. **The Engineering Dept. field checked the Towns drainage system for the purpose of identifying missing structures. Approximately 500 additional structures were found. The Town hired a consultant to develop a new drainage system map to show connectivity and to develop a GIS Layer to include the new structures found and the previously mapped 4500 catch basins, manholes, and outfalls. The Town's consultant previously located and screened a total of 962 outfalls. The locations have been added to the GIS generated Map.**

Previously, detention basins were located and field checked for sediment accumulation by seasonal hired student. A total of 44 basins (11 Town Owned) were inspected and an estimated 7000 cubic feet of sediment will be required to be removed at some point. This effort will require coordination with the Conservation Agent.

Sediment removal was completed in 2 basins.

Potential Illicit Discharge locations previously identified through outfall screening process were reviewed for connectivity. Field inspection was completed in June 2009. **The Union St. drainage system which was previously screened and sampled for bacteria was monitored for sump pump discharge. Letters were sent out to residents regarding the discharge of water to the street and towns drainage system.**

Water Quality Testing (BMP ID No.4)

32 sites were sampled in areas tributary to the South River by NSRWA through contract with CEI and Town.

1 Regulatory Review (BMP ID No. 7)

The Town hired a consultant and completed a review of the Watershed Protection By Law and Regulations and presented proposed changes to the Board of Public Works and the Planning Board (Special Permit Granting Authority). This Bylaw remained unchanged for 20 years. **The Town accepted the revised Bylaw at the ATM April 2011. The Bylaw specifies performance and design standards for stormwater management in accordance with Massachusetts Stormwater Management Standards. Now, all site plan reviews, and Special Permits required within the WRPD District require review by the Planning Board (WRPD Special Permit authority).**

The DPW developed a Municipal Storm Drain Bylaw and regulations, and obtained Town Meeting approval in April 2007. Regulations will allow connections to the Town's municipal drain system as part of the bylaw. **The Town has yet to implement a town wide investigation due to manpower requirement, however based on discussions with the BPW, staff plans on sending each resident a questionnaire allowing the opportunity for residents to disclose private connections and sump pumps in areas identified as problem areas. Residents will be asked to obtain a license from the DPW and comply with the bylaw and obtain a license to be connected to the Town's storm drain system. The Engineering Division obtained funding to hire a seasonal student in 2011 to increase this effort.**

Construction Site Runoff Control:

1. Regulatory Review (BMP ID No. 7)

Stormwater management measures are required by subdivision regulation. The revised Water Resource Protection Bylaw approved April 2011, requires all site plan approvals and special permit applications within the WRPD to be reviewed by the Planning Board, the Special Permit Granting authority. The WRPD covers over 50 % of the Town.

Permit Enforcement (BMP ID No. 8)

The Town has issued enforcement orders on the following subdivisions to address erosion control problems during construction:

Developers on Indiana St. and Peregrine White Drive were warned several times to contain site erosion. Corrective measures were taken to stabilize a severe slope which was disturbed as a result of installation of a drainage pipe. Sediment was removed from drainage structures. **This issue is still outstanding and the conservation agent has been monitoring the site.**

Developers of Proprietors Way and Enterprise Drive were contacted and they responded to a major erosion problem impacting the Town's drainage system on Enterprise drive. **This issue is still outstanding and the conservation agent has been monitoring the site.**

3. Misconnection/ Illegal Dumping (BMP ID No. 9)

The new developer involved with Marshhawk subdivision located off Grove St. will be addressing site clean-up. **The Planning Board approved the subdivision revision and the developer committed to clean up the site.**

Post Construction Site Runoff Control

1.Regulatory Review (BMP ID No. 7 Water Resource Protection District By Law approved in April 2011 includes

standards to address post construction runoff.

2. Permit Enforcement (BMP ID No. 8)

To resolve a severe erosion control problem caused by development on Telegraph Hill (Spy Glass Landing) within an area off Mather Road, The Engineering and Planning Department have met onsite with the designer and notified the owner that there is a problem. The Town will be looking into the feasibility of extending drainage pipes to resolve the issue. The designer will be looking at the detention basin to reduce impact from single discharge point from outfall. A meeting was held between concerned parties and the owners of Spy Glass were not interested in participating in a joint private - **Town solution to resolve the problem. The issue remains unresolved.**

The Town met with the Developer of Peregrine White Drive to discuss future maintenance and dredging of manmade pond impacted by numerous flood events and soil erosion. The Town removed approximately 200 cy of sediment from the roadside as directed by the Conservation Agent in April 2010. The DPW was unable to dredge the pond with equipment on hand. **The Town authorized a contractor in April 2011 to remove the sediment from the pond as directed by the Conservation Agent.**

The Town installed drainage structures in Summer St. to handle and treat stormwater and constructed an under drain and swale to treat road runoff and handle runoff from a field that was degrading the road surface. **Approximately 500 linear feet of drainage work remains near Murdock Pond. A notice of intent is required for this portion of the project. (Estimated construction date summer 2011)**

Owner of the parking lot at Ferry St. and Neptune Rd. addressed erosion and sediment impacting adjacent creek from parking lot by creating a sediment trap and rain garden, as directed by the Conservation Agent.

Municipal Good House Keeping:

1. Improved Street sweeping (BMP ID No. 11)

The DPW swept the entire Town during the spring of 2010 (170 miles). Several major streets were swept several times including Brant Rock and Rexhame/Fieldston Area several times related to storms, including Down-town Area.

2. Improved Catch Basin Cleaning (BMP ID No. 12) The Marshfield Highway Department has cleaned 2500 catch basins by contract and repaired the following: 68 catch basins, 20 manholes, 3 drop inlets
3. Household Hazardous Waste Days: (BMP ID No. 13) The Town conducted its Household Hazardous Waste Day on September 18, 2010.
4. The Town accepts **waste oil and paint** from May to November at the Transfer Station.
5. The Town conducts roadside clean-up with seasonal personnel several times a week during the summer (16 Weeks)
6. Drain Stenciling: (BMP ID No. 14) The Town has taken no action to
7. The Town has been in contact with DEP and is in the process of preparing a Beneficial Use Determination (BUD) Application to dispose of catch basin cleanings. (Estimated Quantity 300CY) The Town tested an accumulation of catch basin cleanings to determine disposal alternatives, for metals, fecal coliform, VPH, and EPH. Three tests were conducted over a 6 month period.

BMP's for Meeting TMDL:

Water Quality Testing (BMP ID No. 4)

1. Sediment was retested in April 2010 as required by DEP to support Permitting of Bass Creek Dredging Phase I. The Bass Creek which is tributary to the Green Harbor River and is heavily obstructed by vegetation and sediment. The Town obtained Permits to conduct maintenance dredging of the Bass Creek and applied and obtained a Beneficial Use Determination in 2010 to dispose of the sediment. Approximately 250 CY of sediment was removed in January 2011 which represented about 20% of the total dredging required in Phase I.

Background: Water quality testing was performed in the Green Harbor River. The Town received the draft report on Green Harbor River Tidal Hydraulics Study, by Applied Coastal Research and Engineering, Inc. March 2007 and draft report on Hydrology and Ecological Analysis of the Upper Green Harbor River, by Dr. David S. White & Dr. Brian L. Howe's Coastal Systems Program February 23, 2007. Louis Berger Group Inc. is the Prime Contractor. This study was funded by a Grant obtained through CZM and the Gulf of Maine Council on Marine Environment. The Tidal Hydraulics portion of the study considered the impact of altering the flow through the tide gates for the purpose of improving the water quality of a severely degraded upper Green Harbor. The water quality portion of the project involved estimate of freshwater flow and nutrient discharge from the fresh water portion of the Green Harbor River, evaluate the nutrient loading from two tributaries Bass Creek and Wharf Creek, and evaluate sediment/ porewater constituents in restricted and unrestricted wetland habitats within the Green Harbor River. The DPW helped fund the project by providing Topographical Survey of the area with one foot contour accuracy. The DPW provided contract labor to support inspection and manipulation of the tide gates. The Town has purchased the adjustable tide gate for Dyke Rd. funded through a CZM grant program (\$20,000). The Tide Gate was installed in December 2009. The gate has been adjusted open on a gradual basis to observe its effectiveness.

2. 2009-05/ARRA 604 South River Bacteria Assessment Project, Town of Marshfield South River has history of being impaired by Pathogens. The Town hired consultant CEI and NSRWA to conduct a bacteria assessment study to determine areas of high bacteria contributing to the South River, and to recommend BMP's to provide removal of TSS and bacteriological treatment. A total of 30 sites tributary to the South River were tested . Sites were prioritized and three sites were selected. BMP's were brought to 30 % design for each of those 3 sites.

Implementation of other BMP's. :

The DPW plans on implementing a proposed drainage improvement at the Union St. Bridge. The bridge reconstruction was completed in fall 2009. **The State Highway Dept. participated in the proposed improvement by constructing the low flow bypass within the drainage system within the paved areas and limit of work during the bridge reconstruction project in the summer of 2009 at DPW's request. The DPW will be working with the Conservation Agent and NSRWA to implement the proposal.**

Storm Water Modeling (BMP ID no. 15)

1. The Town hired Amory Engineers to design BMP in Ferry St. at Medford St. – Modeling is underway to determine impact to wetland. The drainage structures have been sized and a plan has been prepared. The Town has met with the Conservation Commission and a NHESP representative and prepared and filed a MESA Review check list for consideration of proposed drainage structures and work within an area designated as Priority Habitat. **Design modifications were required and was modeling adjusted in fall of 2010 to handle additional stormwater and to change outfall location. A notice of intent will be filed in Spring of 2011.**

Status of the following drainage improvement projects:

Ferry St. (Drainage from Medford St.)

Design was modified in 2010 and Notice of Intent is Required

Summer St. Drainage

Obtained partial funding (\$100,000) ATM April 2009 Part of drainage modification was completed in 2009 and 500Lf of drainage system remain to be designed, permitted and constructed. The field survey has been conducted. **The NOI is required and is expected to be filed in Summer 2011.**

Pine Street Drainage Design and Construction

Design was completed and the project was permitted and partially constructed in the Fall of 2010. The Town installed a under drain and water quality swale approximately 1600 feet long along Pine Street in the fall 2010 to treat stormwater runoff. The grass swales will require final stabilization and 10 catch basins will be installed in the Spring 2011.

Bass Creek dredging/channel restoration \$650,000

Permitting completed by June 2010. Funding for Phase I Construction was approved in April 2010 in the Amount of \$50,000. **Dredging was conducted in January 2011 by Town and private contract. Phase I is 20% complete.**

South River Bacterial Assessment Project – 604B Grant

Town received \$49,430 Grant- **Contract issued with CEI**

Project involved sampling, analysis, and BMP Design to 30% and **the project is substantially complete.**

EPA Phase II- SW Compliance Testing and Mapping

Drainage System Mapping and GIS Drainage Layer under way
Design Contract issued (\$9,500)

South River Greenway Park

Design is complete – Construction- summer 2011

Route 139 Corridor Improvement Project

100% Plans are complete – Detention Basin design is complete

End of Report.