Office of
Department of Public Works

Town of Marshfield

Department of Public Works
870 Moraine Street
Marshfield, Massachusetts, 02050

April 28, 2006

United States Environmental Protection Agency
Water Technical Unit (WTU)
P.O. Box 8127
Boston, Massachusetts 02114

Massachusetts Department of Environmental Protection
Division of Watershed Management
627 Main Street
Worcester, Massachusetts 01608

RE: NPDES Phase II Small MS4 General Permit
Town of Marshfield, Massachusetts Annual Report
MADEP Transmittal No. W-036194
EPA Permit Number MA 041048

To Whom It May Concern:

The Town of Marshfield, Massachusetts is pleased to provide you with the attached National Pollutant Discharge Elimination System (NPDES) Phase II Small MS4 General Permit Annual Report for the period from March 2005 to March 2006.
Should you have any questions, do not hesitate to call me at (781) 834-5575. The contact person for this project is Rod Procaccino, Town Engineer.

Sincerely,

Jeb Deloach P.E.

Supt. of Public Works

cc: John Clifford, Town Administrator

Municipality/Organization: Town of Marshfield, MA

EPA NPDES Permit Number: MA041048

MADEP Transmittal Number: W- 036194

Annual Report Number
& Reporting Period: No. 1: March 05-March 06

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: **April 28, 2006**

Part II. Self-Assessment

The Town of Marshfield's stormwater management activities for the third year of the General Permit (March 2005 through March 2006) were in compliance with the Notice of Intent (Massachusetts DEP form BRP WM 08A) and schedule submitted 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 it's support of NSRWA Greenscapes Program. Brochures and Reference guide are on display at the Town Hall and referenced in the Town's CCR Report. This information is posted on the Town's Website.

The Town's Conservation Agent attended the Watershed Planning Forum, "To protect and preserve the water in your community" which was held 4/10/06 in Norwell. The DPW interviewed with a representative of the Watershed Action Alliance who sponsored the forum to discuss progress with our stormwater program.

The Town's DPW staff and attended the Stormwater Workshop " is LID for Real" by CEI in October 2005.

(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. 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 Association Greenscapes program to send out brochures to single family residences. The brochures promoted alternative landscaping, ground water recharge, pesticide and fertilizer alternatives and water conservation through workshops advertised.

The Town obtained 200 " Dwayne the Storm Drain" Coloring Books in May of 2005 through a grant and dispersed them to general public at Town Hall.

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

The Water Quality Report, the DPW's Operational Plan and **new DPW monthly report** is posted on the Town's website

Public Participation:

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

   The volunteer BMP project that was initiated by the Town Planner, and Conservation Dept. in partnership with NSRWA and High school students was constructed in fall of 2005. The BMP (Bio Swale) was constructed at the rear of Town Hall Parking lot by volunteers. This site was one of the sites recommended through an investigation of potential drainage outfalls within the down town area conducted by consultant Horsley and Witten and volunteers who helped sample the outfalls.

2. Community Cleanup Days (BMP ID No. 5)

   The Town conducted its annual cleanup day in April 2005 (Rid Litter day) The next Rid litter day is scheduled for April 29, 2006.

3. An open space committee with representation from 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 to acquire two parcels for watershed protection (5 acres) and for a water supply (7.9 acres). The Town received a watershed protection grant in the amount of $190,000 towards the purchase of a 7.9-acre parcel.

4. Telegraph Hill Moratorium: The Town imposed a building Moratorium on approximately 35 acres of land subdivided into 5000 and 10,000 sq. foot lots for a period of one year. There are severe erosion and drainage problems related to recent building on steep slopes and poor soils within the old subdivision. A committee was appointed with representation from DPW, Conservation, Building, Planning departments, and 3 private citizens to provide a conceptual plan to address the problems.

Illicit Discharge Detection and Elimination:

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

The Town is in it's second year developing GIS Mapping capabilities. The Town's IT dept. contracted to have the Town flown over to conduct photography in March 2004 in order to obtain the most up to date information at a very high resolution. The Town was last flown over in 1975. A contract was issued to develop the GIS system, which included limited planimetric mapping. The mapping was completed fall of 2004. The Topography Map overlay was added in 2005. This topographical information has been a very useful tool in determining the extent of drainage areas and trouble shooting drainage problems. Approximately 80 percent of the Towns 4500 catch basins, manholes, and outfalls, along with receiving waters were presented on 40 scale maps. The Town's consultant has located and screened a total of 962 outfalls. The locations have been added to the GIS generated Map. There are approximately 20 sites scheduled to be traced back this June for potential erroneous discharges.

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

The balance of the 962 outfall locations were screened to determine size condition, flow condition, PH, Temperature, Specific Conductance and Total Dissolved Solids. Dry weather samples were taken in Southport Subdivision and at Keene road. The outfalls were field screened, sampled and analyzed for Temperature, PH, Conductivity, Total Suspended Solids, E-Coli, TKN, Soluble Phosphorous, Total Phosphorous and Total Suspended Solids during dry weather. There were no elevated E-coli levels. The wet weather sampling scheduled for Spring 2005 was postponed indefinitely. Our consultant has advised us to consider only suspected sites due to the difficulty in obtaining the wet weather samples. The current estimate for total number of outfalls is 962.

3. Regulatory Review (BMP ID No. 7)

The Town of Marshfield, Town of Duxbury, and the Town of Plymouth applied for and received a grant to develop a model storm water management bylaw in 2004. The Town has not moved to implement the bylaw due to extreme budget cutting within the DPW. However a Storm Water Overlay district was developed in January and approved at Town meeting April 2006 to control development within the Telegraph Hill.

Construction Site Runoff Control:

1. Regulatory Review (BMP ID No. 7)

Storm water management measures are required by subdivision regulation. Historically, these structures required by regulation fail during the construction phase. The BMP's are often short circuited during the initial phases of construction. Town officials have had to issue stop work orders to several developers during the past permit year. The developers were instructed to take corrective action. The DPW, Conservation Dept. and Planning Dept. have recognized the need to require more detailed explanation of construction methods being proposed. Erosion control plans, and proper construction sequencing should be addressed in the model bylaws and corresponding regulations are being developed.

2. Permit Enforcement (BMP ID No. 8)

The Town has issued stop work and enforcement orders on the following subdivisions to address erosion control problems during construction:
Spy Glass Landing located off Grove St. (Still under Construction)
Telegraph Hill Moratorium was put in place to stop building, clearing of land and tree removal and until a drainage solution could be recommended, funded and put in place.
Mount Skirgo Subdivision: Stop work order given to stop building until erosion measures put in place by developer.

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

The Town had not discovered any illegal connections or illegal dumping impacting storm water over the past year. There was one leaky transformer (minor leak near Furnace Brook) that was recently reported for replacement on Furnace Street. Additional field work will be required after locations are added to the new mapping to verify connectivity. There is adequate funding to hire a part time engineer to field verify connectivity of twenty potential problem sites over the next several months.

Post Construction Site Runoff Control

1. Regulatory Review (BMP ID No. 7)

Several extreme rainfall events occurring just prior to this permit period alerted Town officials to capacity issues with existing drainage structures. During these recent storm events, flooding conditions caused significant erosion and sediment problems to brooks and ponds. Increased development has definitely impacted existing infrastructure despite

of regulation in place. Several problem areas have been identified and the Town is formulating a plan to address at least two specific problems. The Town will be formulating a master drainage plan as part of the newly created DPW Operation Plan.

Telegraph Hill and Stony Brook Subdivision impact to South River St. The Town is using chapter 90 funds ($25,700) and obtained easements to replace a undersized culvert and will be constructing a drainage collection system with deep sump catch basins including and outfall sediment trap to resolve a flooding issue.

Telegraph Hill Subdivision impact to Peregrine White Drive. The Town obtained approval of a Stormwater Management Overlay District and zoning By-law to regulate building within the Telegraph Hill and Snake Hill as areas part of a plan to address the drainage problem. Developers will be required to submit a site plan to a committee for compliance review prior to getting a building permit.

Permit Enforcement (BMP ID No. 8)

The Contractors from both subdivisions had originally agreed to participate to correct the South River St. drainage problem mentioned above however it is uncertain at this time when these issues will be resolved. The Town has obtained authorization from Town Meeting in (April 2006) to obtain the necessary easements to construct a drainage trunkline for individual lot owners to tie into when the moratorium is lifted in fall of 2007. Funding to purchase 4 parcels ($60,000) for the outfall location was obtained at Town Meeting. A drainage collection system will be constructed, including sediment forebay and detention area.

Municipal Good House Keeping:

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

The Town had implemented a plan to sweep the entire Town during the spring of 2005. Additional funding was obtained to allow the DPW to hire a private contractor to work together with the DPW sweeping operation to expedite the sweeping of the entire Town to reduce impact to the drainage system. The Town did increase the budget in 2006 for road sweeping to be able to get the sand off the road a month earlier.

2. Improved Catch Basin Cleaning (BMP ID No. 12)

The Town's new Operations Director conducted an investigation of the Departments past practices of catch basin cleaning. There are approximately 1200 manholes, 3200 catch basins and 100 drop- inlets that require extensive cleaning. Based on current productivity, plans were made to obtain additional funding to hire a private contractor to expedite the process. The contractor and Town completed the comprehensive cleaning of catch basins and manholes. An extensive evaluation of the drainage system was conducted and approximately 400 catch basins are in need of masonry repair or outright replacement during the next permit period. This work will be accomplished partly with in house staff and by contract through state funding. Approximately 900 catch basins were cleaned by subcontract and approximately half of the remaining by Town forces in 2005. Catch Basins were repaired on Furnace St. in 2005. Catch basin cleaning will start in April 06 by Town Forces and in June 06 by contract and carry into July for funding purposes to complete the entire Town.

The Town cleaned a sand filter on Riverside Circle which was constructed to protect the river from potentially contaminated runoff within a subdivision. The basins were cleaned and lines jetted within the area.

3. Household Hazardous Waste Days: (BMP ID No. 13)

The Town conducted its Household Hazardous Waste Day on September 17, 2005 and continues to participate in the South Shore Recycling Organization. As a member of this organization residents are allowed to participate throughout the year in hazardous waste collection days offered by surrounding member Towns.

4. Drain Stenciling: (BMP ID No. 14)

The Town has taken no action to date.

BMP's for Meeting TMDL:

1. GIS Mapping Priority Waters and Drainage Patterns (BMP ID No. 6)

The Towns GIS program is under way and the DPW obtained planimetric mapping in the fall of 2004 new topographical mapping and assessors map overlay in 2005 during this reporting period. The new photography will serve as the basis for developing a new Geographic Information System (GIS) of the storm drain system, receiving waters and watersheds.

Water Quality Testing (BMP ID No. 4)

Water quality testing was performed in the downtown area. Outfalls were identified and connectivity was verified in June 2004.

BMP's were evaluated and construction and maintenance costs presented for 12 possible sites. The BMP site located at the Town Hall Parking lot was designed and constructed by volunteers in 2005.

The DPW is reviewing a proposed drainage improvement at the Union St. Bridge proposed as part of the Bridge reconstruction project. The DPW is working with the Conservation Agent and NSWRA to improve the proposal.

2. Storm Water Modeling (BMP ID no. 15)

Storm water modeling was conducted by Amory Engineers ($8,000) to resolve the flooding problem near 1237 South River St. and the Telegraph Hill area between Hingham Ave and Cohasset Ave. The GIS Mapping and Topographical information was made available to the consultant to expedite the project. There was a significant savings realized.

The Town has obtained approval to acquire property for a sediment forebay and retention area for a proposed drainage collection system in South River St. near Parkway. (Cost $200,000)