

**Municipality/Organization: Hanscom Air Force Base**

---

**EPA NPDES Permit Number: MAR042029**

---

**MaDEP Transmittal Number: W-041288**

---

**Annual Report Number**

**& Reporting Period: [No. 7: 1 May 09 – 30 April 10](#)**

---

## **NPDES PII Small MS4 General Permit Annual Report**

### **Part I. General Information**

Contact Person: DONALD C. MORRIS, PE

Title: Environmental Director

---

Telephone #: 781-377-2475

Email: [Donald.morris@hanscom.af.mil](mailto:Donald.morris@hanscom.af.mil)

---

#### 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: CHRIS PERKINS, PE

---

Title: Base Civil Engineer, Government Organization

---

Date: 30 April 2010

---

## **Part II. Self-Assessment**

Hanscom Air Force Base (AFB) has completed the required self-assessment and has determined that our base is in compliance with all permit conditions, except for the following provisions:

None.

### 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 – Permit Year 8
3.1a Revised	Partnering w/Massport, Towns	66 MSG/CEV	1 partnering event per year	Telcons with Massport and meetings with Lincoln and Bedford Conservation Commission Agents and Lexington Town Planner.	Complete similar effort.
3.1b Revised	Partnering w/Base Organizations	66 MSG/CEV	1 partnering event per year	BMP meetings with Engineering Design Department every Thursday plus multiple undocumented meetings with all levels of Roads & Grounds Dept. All projects under design by Air Force Civil Engineering are documented for stormwater review using AF Form 813.	Complete similar effort and document formal meeting with managers, foremen.
3.1c Revised	Educational Materials, Base	66 MSG/CEV	Pamphlets, flyers, electronic messages	Shawsheen River cleanup flyer and e-mail 6 April 10. Hanscom Middle School 7 <sup>th</sup> Grade Science Class river cleanup workshop 16 Apr 10.	Complete similar effort.
3.1d Revised	Educational Displays, Notices	66 MSG/CEV	1 display event per year	12-16 April 10 river cleanup displays in four high visibility buildings on base.	Complete similar effort.
3.1e Revised	Pollution Prevention Events	66 MSG/CEV	1 P2 event per week	Hazardous Waste (office, commercial, industrial) and Materials Drop-off Day are held each week, on Tuesday at 8-9 AM. Privatized housing contractor has sponsored separate collection events on Sundays. New collection booms installed in Shawsheen River. Shawsheen River cleanup (50 volunteers) 16 Apr 10.	Complete similar effort
Revised					

**1a. Additions**


**2. Public Involvement and Participation**

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./Person Name</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s) – Permit Year 7</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities – Permit Year 8</b>
3.2a Revised	Public Stakeholder Meeting	MSG/CEV	1 stakeholder meeting per year	The public was informed about storm water improvements at Hanscom AFB during the 24 June 09 Restoration Advisory Board public hearing at the Bedford Town Hall.	Complete similar effort.
3.2b Revised	Annual MS4 Public Notice	MSG/CEV	1 notice per year and document responses	The Hanscom AFB Restoration Advisory Board meeting which covers MS4 stormwater/groundwater, public notice advertisement was placed in the local and base newspapers on 11 & 12 June 09 and by e-mail on 1 June 09.	Complete similar effort.
3.2c Revised	Oil, Vehicle Fluid Disposal Info	MSG/CEV	Document distributed info & waste turn-ins	Info posted on base environmental web site, in housing info packets and at auto hobby shop.	Complete similar effort.
Revised					
Revised					

Revised					
---------	--	--	--	--	--

## 2a. Additions


## 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 – Permit Year 8
3.3a Revised	Update Storm Water & Sewer Maps on CAD	66 MSG/CE	Update as changes occur.	Weekly meetings with implementing contractor document updating as changes occur. New GIS (GEOBASE) includes stormwater infrastructure data.	Complete similar effort.
3.3b Revised	Inspect Sewer By-pass Valve, Train Personnel	66 MSG/CE	Sewer valves operate, zero sewer discharge.	Training of implementing contractor is performed continuously. Sewer force main sampling ports not installed but flume grates opened for use by MWRA. Sewerage compliance parameters sampled on 21 Dec 09.	Complete similar effort.
3.3c Revised	Inspect, Clean Oil/Water Separators	66MSG/CE	Document conditions, verify connections	All base oil/water separators were cleaned on 9 Sep 09 and Mar 10 documented in a report.	Complete similar effort.
3.3d Revised	Inspect for Non-Storm Water Connections	66 MSG/CE	Document findings, eliminate connections	Air Force Institute for Operational Health performed a comprehensive cross connection survey 21-29 Apr 08. Corrective action began Sep 08.	Corrective action to continue until all documented deficiencies are complete.
3.3e	Sample, Analyze Storm Water	66 MSG/CEV	Sample 2 events per year	Visual inspections for pollutants were routinely performed. Stormwater	Complete similar effort.

Revised					
Revised					

**3a. Additions**


**4. Construction Site Storm water Runoff Control**

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./Person Name</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s) – Permit Year 7</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities – Permit Year 8</b>
3.4a Revised	Stabilize Drainage, Exposed Soil	66 MSG/CEV	Approve construction P2 plans, inspect sites	Construction of B1604 required hay bales and silt fence to comply with approved P2 plan.	Complete similar effort.
3.4b Revised	Sediment Control	66 MSG/CEV	Inspect before, during and after	Silt sacks installed at downstream catch basins during ARRA contract work to install new deep sump catch basins, new curbing and paving during summer and fall 09. Inspected daily.	Complete similar effort.
3.4c Revised	Protect Wetlands, Buffer Zones	66 MSG/CEV	Approve staging, storage, access	Staging area at Motor Pool and Hamilton Street for ARRA paving projects resulted in zero impact to wetlands.	Complete similar effort.
3.4d Revised	Sequence Construction Activity	66 MSG/CEV	Approve job sequence, minimize impact	ARRA paving projects phased over construction season to assure manageable controls and minimal negative impact.	Complete similar effort.

3.4e Revised	Implement Good Housekeeping	66 MSG/CEV	No-notice site inspections	No-notice inspections at B1604, ARRA project sites, gas main excavations, soil pile screening project and Camp Patriot confirmed effective active controls.	Complete similar effort.
Revised					

**4a. Additions**


**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 – Permit Year 8
3.5a Revised	Structural Controls	66 MSG/CE	Design to 5 year watershed action plan	In 2009 deep sump catch basins were installed at 27 locations (24 replacements and 3 new), two new grass settling basins were installed to receive parking lot runoff, 20,000 SF of pavement at the base Motor Pool was replaced with grass swales and 750 SF of pavement was replaced with a recharge area accepting runoff from 2000 SF of roof .	Complete similar effort.
3.5b Revised	Non-Structural Controls	66 MSG/CEV	Link Watershed goals to planning	Planning process includes storm water element maximizing progress toward flow & recharge targets.	Complete similar effort.
3.5c	Natural Controls	66 MSG/CEV	Maintain vegetation buffers	Existing buffers were improved by maintaining no-cut zones base wide	Complete similar effort.

Revised					
Revised					
Revised					

**5a. Additions**


**6. Pollution Prevention and Good Housekeeping in Municipal Operations**

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./Person Name</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s) – Permit Year 7</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities – Permit Year 8</b>
3.6a Revised	Catch Basin Cleaning	66 MSG/CE	Sweep streets, clean catch basins	Regular street sweeping after winter sanding and in Spring. Catch basin cleaning accomplished Aug 09 (600 catch basins) .	Sustain sweeping and catch basin cleaning.
3.6b Revised	Vehicle Wash Controls	66 MSG/CEV	Inspect wash facilities, discharges to sewer	Inspections performed, New car wash facility completed. Oil water separator cleaned twice/year.	Complete similar effort.
3.6c	Organic Runoff Controls	66 MSG/CE	Inspect hydro-seeding, composting areas	New Compost Management Plan developed Jul 09 and revised through	Complete similar effort.

Revised					
3.6d Revised	Spill Response Procedure, Plan	66 MSG/CEV	Inspect, train, assure on-call spill response	Spill Response Plan update completed in Feb 10. Base-wide training exercise conducted Oct 09 to simulate response to plane crash and hazmat release.	Complete similar effort.
3.6e Revised	Conduct Environmental Audits	66 MSG/CEV	Annual audit & report	Environmental compliance audit was conducted by 14person internal team for 5-days (1-5 Jun 09)	Complete similar effort. The next compliance audit is scheduled for 12-18 June 10.
Revised					

**6a. Additions**


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

Part I.B.2 (l) A TMDL has been established but not approved by the EPA. The TMDL Report MA83-08-2003-01, dated 9 June 2003, DWM Control Number CN: 168.00 is for Segment MA83-08 of the Shawsheen River. The Storm Water Pollutant TMDL identifies storm water pollutants (sediment as reflected in suspended solids, metals, excessive storm water flow rates and insufficient stream flow rates) as impairing aquatic life uses and impacting river habitat. Implementing BMPs addressing storm water detention and groundwater recharge over several years is required however measurable progress is being achieved.

During a 23 April 2007 meeting at Hanscom Field between the Air Force, Massport, DEP and EPA it was agreed that the Air Force and Massport will submit a formal request to the EPA to change the impaired segment on the Clean Water Act 303(d) list of impaired waters from Category 5 to Category 4b. Additional progress telephone meetings were held during 2009. The Air Force and Massport plan to formally submit the redesignation request in 2010. This new direction in achieving water quality goals stresses management by schedule and a mutually agreeable enforcement mechanism which may include the MS4 Permit.

<<if applicable>> NOT APPLICABLE

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 – Permit Year 8
Revised				NO APPROVED TMDL	
Revised					

**7a. Additions**


**7b. WLA Assessment**

#### **Part IV. Summary of Information Collected and Analyzed**

The Air Force continued to fund the operation of a stream gage by the U.S. Geological Survey (USGS). The stream gage is located on the Shawsheen River between Hanscom Air Force Base and Hanscom Field. It continuously monitors and records flow and analytical water quality data. This information, especially the hydrograph will be used to assess the effectiveness of flow control structural BMPs installed over the past 7 years.

#### **Part V. Program Outputs & Accomplishments (OPTIONAL)**

The Air Force at Hanscom AFB has obtained funding to install additional structural BMPs to address the need to reduce peak flows and increase groundwater recharge to improve base flows.

In FY09 the Base received \$110,000.00 for structural storm water controls described in Section 3.5a. These funds were used to construct additional water quality swales and detention areas ancillary to existing parking areas.

**Programmatic**

Storm water management position created/staffed	(y/n)	
Annual program budget/expenditures	(\$)	Y\$160.0 K
Total program expenditures since beginning of permit coverage	(\$)	Y\$1,210.0 K
Funding mechanism		Congress

**Education, Involvement, and Training**

Estimated number of residents reached by education program(s)	(# or %)	
Storm water management committee established	(y/n)	2,500
Stream teams established or supported	(# or y/n)	<del>N</del> , Shawsheen
Shoreline clean-up participation or quantity of shoreline miles cleaned	(y/n or mi.)	Y, 0.5 mi.
Household Hazardous Waste Collection Days		
▪ days sponsored	(#)	
▪ community participation	(%)	52
▪ material collected	(tons or gal)	350 tons
School curricula implemented	(y/n)	1.5
		N

**Legal/Regulatory**

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

▪ Illicit Discharge Detection & Elimination				X
▪ Erosion & Sediment Control				X
▪ Post-Development Storm water Management				X

### Mapping and Illicit Discharges

Outfall mapping complete	(%)	100
Estimated or actual number of outfalls	(#)	12
System-Wide mapping complete	(%)	100
Mapping method(s)		
▪ Paper/Mylar	(%)	100
▪ CADD	(%)	100
▪ GIS	(%)	70
Outfalls inspected/screened	(# or %)	100
Illicit discharges identified	(#)	0
Illicit connections removed	(# ) (est. gpd)	0
% of population on sewer	(%)	100
% of population on septic systems	(%)	0

### Construction

Number of construction starts (>1-acre)	(#)	1
Estimated percentage of construction starts adequately regulated for erosion and sediment control	(%)	100%
Site inspections completed	(# or %)	100%
Tickets/Stop work orders issued	(# or %)	0
Fines collected	(# and \$)	0
Complaints/concerns received from public	(#)	0

## Post-Development Storm Water Management

Estimated percentage of development/redevelopment projects adequately regulated for post-construction storm water control	(%)	100
Site inspections (for proper BMP installation & operation) completed	(# or %)	100
BMP maintenance required through covenants, escrow, deed restrictions, etc.	(y/n)	N
Low impact development (LID) practices permitted and encouraged	(y/n)	Y

## Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets)	(times/yr)	1
Average frequency of catch basin cleaning (commercial/arterial or other critical streets)	(times/yr)	1
Qty of structures cleaned	(#)	600
Qty of storm drain cleaned	(LF or mi.)	0
Qty. of screenings/debris removed from storm sewer infrastructure	(lbs. or tons)	16 tons
Disposal or use of sweepings (landfill, POTW, compost, recycle for sand, beneficial use, etc.)		recycle
Basin Cleaning Costs		
Annual budget/expenditure (labor & equipment)	(\$)	8.0 K
Disposal cost	(\$)	0

Average frequency of street sweeping (non-commercial/non-arterial streets)	(times/yr)	26
Average frequency of street sweeping (commercial/arterial or other critical streets)	(times/yr)	26
Qty. of sand/debris collected by sweeping	(lbs. or tons)	30 tons
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.)	(location)	Compost
Cost of sweepings disposal	(\$)	0
Vacuum street sweepers purchased/leased	(#)	1
Vacuum street sweepers specified in contracts	(y/n)	Y

Reduction in application on public land of: (“N/A” = never used; “100%” = elimination)		
▪ Fertilizers	(lbs. or %)	decreased

▪ Herbicides	(lbs. or %)	decreased
▪ Pesticides	(lbs. or %)	decreased

Anti-/De-Icing products and ratios	% NaCl % CaCl <sub>2</sub> % MgCl <sub>2</sub> % CMA % Kac % KCl % Sand	25% 0 0 0 0 0 75%
Pre-wetting techniques utilized	(y/n)	Y
Manual control spreaders used	(y/n)	Y
Automatic or Zero-velocity spreaders used	(y/n)	N
Estimated net reduction in typical year salt application	(lbs. or %)	-2%
Salt pile(s) covered in storage shed(s)	(y/n)	Y, 100%
Estimated net reduction or increase in typical year sand application rate	(+/-lbs/ln mi or %)	-2%
Storage shed(s) in design or under construction	(y/n)	N