

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

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**EPA NPDES Permit Number: MAR042029**

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**MaDEP Transmittal Number: W-041288**

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**Annual Report Number**

**& Reporting Period: No. 10: 1 May 12 – 30 April 13**

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## NPDES PII Small MS4 General Permit Annual Report

### Part I. General Information

Contact Person: DONALD C. MORRIS, PE

Title: Installation Manager

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Email: Donald.morris@hanscom.af.mil

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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: 

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Printed Name: THOMAS J. SCHLUCKEBIER, PE

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Title: Base Civil Engineer,

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Date: 30 April 2013

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**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**

<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 10</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities – Permit Year 11</b>
3.1a Revised	Partnering w/Massport, Towns	66 ABG/CEV	1 partnering event per year	Telcons and meetings with Massport and meetings with Lincoln and Bedford Conservation Commission Agent.	Complete similar effort.
3.1b Revised	Partnering w/Base Organizations	66 ABG/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. 28 January meeting with National Guard regarding retention/detention basin. Several telecons to follow-up.	Complete similar effort and continue to document formal meeting with managers, foremen.
3.1c Revised	Educational Materials, Base	66 ABG/CEV	Pamphlets, flyers, electronic messages	Shawsheen River cleanup flyer, poster boards and e-mail 22 April 13. Article in Base newspaper on 19 April 13. Electronic message board on 22 April 13. Tree planting near river 26 Apr 13. Quarterly building manager's meetings include stormwater information.	Complete similar effort.
3.1d Revised	Educational Displays, Notices	66 ABG/CEV	1 display event per year	22 April 13 river cleanup displays in two high visibility buildings on base.	Complete similar effort.
3.1e	Pollution Prevention Events	66 ABG/CEV	1 P2 event per week	Hazardous Waste (office, commercial, industrial) and Materials Drop-off Day	Complete similar effort

Revised					are held each week, on Tuesday at 8-10:30 AM. Privatized housing contractor has sponsored separate collection events on Sundays. New collection booms installed in Shawsheen River. Shawsheen River cleanup (15 volunteers) 22 Apr 13.	
Revised						

**1a. Additions**


**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
3.2a Revised	Public Stakeholder Meeting	ABG/CEV	1 stakeholder meeting per year	The public was informed about storm water improvements at Hanscom AFB during the 18 September 12 Restoration Advisory Board public hearing at the Bedford Town Hall.	Complete similar effort.
3.2b Revised	Annual MS4 Public Notice	ABG/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 18 September 12 and by e-mail on 18 September 12.	Complete similar effort.
3.2c	Oil, Vehicle Fluid Disposal Info	ABG/CEV	Document distributed info & waste turn-ins	Info posted on base web site, housing info packets and at auto hobby shop.	Complete similar effort.

Revised								
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 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 11
3.3a Revised	Update Storm Water & Sewer Maps on CAD	66 ABG/CE	Update as changes occur.	Weekly meetings 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 ABG/CE	Sewer valves operate, zero sewer discharge.	Training is performed continuously. Sewer force main sampling ports installed, flume grates opened for use by MWRA. Hanscom AFB Lower Lift Station project replaced pumps, controls, power supply and ancillary equipment.	Complete similar effort.



3.3c Revised	Inspect, Clean Oil/Water Separators	66ABG/CE	Document conditions, verify connections	All base oil/water separators were cleaned the week of 15-19 April 2013, and documented in a report.	Complete similar effort.
3.3d Revised	Inspect for Non-Storm Water Connections	66 ABG/CE	Document findings, eliminate connections	Inspections are performed continuously by maintenance personnel and no corrective action was identified.	Complete similar effort.
3.3e Revised	Sample, Analyze Storm Water	66 ABG/CEV	Sample 2 events per year	Visual inspection for pollutants was conducted on 6 Sept 12 and is routinely performed at the USGS Stream Gauge. Stormwater sampling was performed 24/7 at the Air Force funded USGS Stream Gauge in the Shawsheen River during October 2012.	Complete similar effort.
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 10</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities – Permit Year 11</b>
3.4a Revised	Stabilize Drainage, Exposed Soil	66 ABG/CEV	Approve construction P2 plans, inspect sites	Construction of new Phase II National Guard HQ building required hay bales and silt fence to comply with approved P2 plan. Base material storage yard continues to process old material piles, regrading for runoff control and segregating materials for recycling. Other: steam line project at Bestic, Clinic addition, and demolition of Buildings 1817 and 1830.	Complete similar effort.
3.4b Revised	Sediment Control	66 ABG/CEV	Inspect before, during and after	Runoff controls continued at National Guard Phase II site and installation of rip rap at B1718 by MIT/LL. Inspected daily.	Complete similar effort.
3.4c Revised	Protect Wetlands, Buffer Zones	66 ABG/CEV	Approve staging, storage, access	No-cut zones expanded and frequency of grass cutting reduced. Material staging area at AFRL Parking area minimized potential impacts to base wetlands.	Complete similar effort.
3.4d Revised	Sequence Construction Activity	66 ABG/CEV	Approve job sequence, minimize impact	Steam and condensate projects phased over construction season and limited work to small manageable areas to assure effective controls and minimal negative impact.	Complete similar effort.
3.4e Revised	Implement Good Housekeeping	66 ABG/CEV	No-notice site inspections	No-notice inspections at Clinic addition, National Guard, MIT/LL project sites, material storage yard confirmed effective active controls.	Complete similar effort.
Revised					

**4a. Additions**

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### 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 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 11
3.5a Revised	Structural Controls	66 ABG/CE	Design to 5 year watershed action plan	AFRL demolition of three buildings decreased impervious area; site redeveloped into green space. Clinic addition roof drains repiped to new detention, recharge and water quality swale.	Complete similar effort.
3.5b Revised	Non-Structural Controls	66 ABG/CEV	Link Watershed goals to planning	Planning process includes storm water element maximizing progress toward flow & recharge targets. Contract with Fuss & O'Neill, Inc. produced draft Stormwater Management Plan. Final Plan due after modeling is completed in 2014. Design underway for new dorm, middle school and primary school.	Complete similar effort.
3.5c Revised	Natural Controls	66 ABG/CEV	Maintain vegetation buffers	Existing buffers were improved by expanding adjacent no-cut zones base wide.	Complete similar effort.
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 10</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities – Permit Year 11</b>
3.6a Revised	Catch Basin Cleaning	66 ABG/CE	Sweep streets, clean catch basins	Regular street sweeping, approximately 2 x/week except during winter months. Catch basin cleaning was not accomplished due to mild winter and funding reductions.	Sustain sweeping and catch basin cleaning.
3.6b Revised	Vehicle Wash Controls	66 ABG/CEV	Inspect wash facilities, discharges to sewer	Inspections performed, oil water separator cleaned twice.	Complete similar effort.
3.6c Revised	Organic Runoff Controls	66 ABG/CE	Inspect hydro-seeding, composting areas	Compost Management Plan is updated annually. The current report was completed in February 2013. Base regraded material storage yard and processed stockpiles into usable loam, stone and mulch and improved water quality from runoff.	Complete similar effort.
3.6d Revised	Spill Response Procedure, Plan	66 ABG/CEV	Inspect, train, assure on-call spill response	Spill Response Plan update completed in April 2013.	Complete similar effort.
3.6e	Conduct Environmental Audits	66 ABG/CEV	Annual audit & report	An internal ESOHCAMP was conducted 18-22 June 2012.	Complete similar effort annually.

Revised				Additional self-inspections conducted during April 2013.	
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. Teleconferences with Massport and consultants were held on 7 May, 28 June, 6 and 24 August and 6 October 2010 and meetings with the same parties were held on 1 July and 8 November 2010 and 5 January 2011 to develop a comprehensive and coordinated Storm Water Management Plan. A stormwater model was approved by the MassDEP and baseline data were run in 2012. The Air Force and Massport in full coordination with MassDEP plan to formally submit the re-designation request to the EPA. This new direction in achieving water quality goals stresses management by schedule and a mutually agreeable enforcement mechanism which may include the MS4 Permit. Modeling will be completed in early 2014 followed by a final fully coordinated Stormwater Management Plan.

<< *if applicable* >> NOT 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
Revised				NO APPROVED TMDL	
Revised					
Revised					
Revised					
Revised					
Revised					
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 cost for 2012 was \$25,950.00. 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 10 years.

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

Hanscom AFB has programmed for \$85,000.00 to install additional structural BMPs in 2015 to address the need to reduce peak flows and increase groundwater recharge to improve base flows. An additional \$30,000.00 is programmed for FY14 for technical support to assure compliance with the new MS4 regulations expected to be promulgated in 2013. These will be included in the Defense Department budget submittals to Congress for FY14 and FY15.

In September 2010 the Base awarded a contract to a stormwater consultant, Fuss & O'Neill Inc. in the amount of \$98,458.00 to perform a stormwater model and develop a Stormwater Management Plan to comply with the Clean Water Act, Section 4b requirements as they relate to the impaired segment of the Shawsheen River at Hanscom Air Force Base and Hanscom Field.

Hanscom AFB through the US Army Corps of Engineers constructed non-mission essential improvements to roof runoff system by diverting flow from stormwater system to one new water quality/detention swale at the Base Clinic, Building 1900.



**Programmatic**

Storm water management position created/staffed	(y/n)	Y
Annual program budget/expenditures	(\$)	\$16.6 K
Total program expenditures since beginning of permit coverage	(\$)	~\$1,377.0 K
Funding mechanism		Congress

**Education, Involvement, and Training**

Estimated number of residents reached by education program(s)	(# or %)	2,500
Storm water management committee established	(y/n)	N
Stream teams established or supported	(# or y/n)	Y, 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	(#)	52
▪ community participation	(%)	35%
▪ material collected	(tons or gal)	1.6 tons
School curricula implemented	(y/n)	N

**Legal/Regulatory**

In Place  
Prior to      Under

	Phase II	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	(%)	95
Outfalls inspected/screened	(# or %)	100
Illicit discharges identified	(#)	0
Illicit connections removed	(#)	0
	(est. gpd)	
% of population on sewer	(%)	100
% of population on septic systems	(%)	0

### Construction

Number of construction starts (>1-acre)	(#)	2
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)	7 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)	6 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 %)	0%
▪ Herbicides	(lbs. or %)	0%
▪ Pesticides	(lbs. or %)	0%

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