

**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. 11: 1 May 13 – 30 April 14**

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## NPDES PII Small MS4 General Permit Annual Report

### Part I. General Information

Contact Person: CHARLES N STRICKLAND III, PE Title: Chief, Environmental Section

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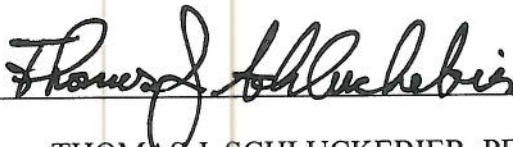
Email: charles.strickland.4@us.af.mil

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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: \_\_\_\_\_



Printed Name: THOMAS J. SCHLUCKEBIER, PE, CFM, LEED AP

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Title: Base Civil Engineer

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Date: 30 April 2014

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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.

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**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 11</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities – Permit Year 12</b>
3.1a Revised	Partnering w/Massport, Towns	66 ABG/CEIE	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/CEIE	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. Over 117 environmental impact reviews were performed for storm water impacts. 19 December meeting with Fuss & O'Neill regarding update to base wide stormwater modeling and Draft Stormwater Management Plan including Massport land still in progress.	Complete similar effort and continue to document formal meeting with managers, foremen.
3.1c Revised	Educational Materials, Base	66 ABG/CEIE	Pamphlets, flyers, electronic messages	Shawsheen River cleanup flyer, poster boards and e-mail 10 April 14. Article in Base newspaper on 11 April 14. Electronic message board on 15 April 14. There were 20 volunteers plus a middle school class at the event. Quarterly building manager's meetings include storm water information.	Complete similar effort.

3.1d Revised	Educational Displays, Notices	66 ABG/CE/E	1 display event per year	17 April 14 river cleanup displays in two high visibility buildings on base.	Complete similar effort.
3.1e Revised	Pollution Prevention Events	66 ABG/CE/E	1 P2 event per week	Hazardous Waste (office, commercial, industrial) and Materials Drop-off Day are held each week, on Tuesday at 8- 10:30 AM. Privatized housing contractor collected 1.5 tons of household hazardous waste and an additional 3.5 tons of cathode ray tubes were collected. New collection booms installed in Shawsheen River. Shawsheen River cleanup (20 volunteers) 17 Apr 14.	Complete similar effort

### 1a. Additions

	NONE				
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### 2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 11 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 12
3.2a Revised	Public Stakeholder Meeting	66 ABG/CE/E	1 stakeholder meeting per year	The public was informed about storm water improvements at Hanscom AFB during the 13 November 13 Restoration Advisory Board public hearing at the Bedford Town Offices.	Complete similar effort.
3.2b Revised	Annual MS4 Public Notice	66 ABG/CE/E	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 8 November 13 and by e-mail on 8 November 13.	Complete similar effort.



3.2c Revised	Oil, Vehicle Fluid Disposal Info	66 ABG/CE/EI	Document distributed info & waste turn-ins	Info posted on base web site, housing info packets and at auto hobby shop.	Complete similar effort.
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**2a. Additions**

	NONE				
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**3. Illicit Discharge Detection and Elimination**

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 11 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 12
3.3a Revised	Update Storm Water & Sewer Maps on CAD	66 ABG/CE	Update as changes occur.	Weekly meetings document updating as changes occur. GIS (GEOBASE) includes storm water infrastructure data and is updated as changes occur.	Complete similar effort.
3.3b Revised	Inspect Sewer By-pass Valve, Train Personnel	66 ABG/CE	Sewer valves operate, zero sewer discharge.	Training and is performed continuously. Sewer force main sampling ports installed, flume grates opened for use by MWRA. Valves are exercised and maintained regularly as required.	Complete similar effort.
3.3c Revised	Inspect, Clean Oil/Water Separators	66 ABG/CE	Document conditions, verify connections	All base oil/water separators were cleaned 21-23 October 2013 (3000 gallons were collected).	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	Sample, Analyze Storm Water	66 ABG/CE/EI	Sample 2 events per year	Visual inspection for pollutants was conducted on 27 August 13 and is	Complete similar effort.

Revised					routinely performed at the USGS Stream Gauge. Stormwater sampling was performed 8/27/13 at the Air Force funded USGS Stream Gauge in the Shawsheen River
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### 3a. Additions

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### 4. Construction Site Storm water Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 11 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 12
3.4a Revised	Stabilize Drainage, Exposed Soil	66 ABG/CEIE	Approve construction P2 plans, inspect sites	Construction of new Hanscom Middle School building requires erosion control 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 MIT/LL, Mental Health Clinic addition, and repaving parking lots at B1548, B1603 & B1605 as well as Arnold Street.	Complete similar effort.
3.4b Revised	Sediment Control	66 ABG/CEIE	Inspect before, during and after	Runoff controls continued at National Guard Phase II site and installation of rip rap at B1718 by MIT/LL. Super Silt fence installed at site of temporary middle school mobile classroom units. Inspected daily.	Complete similar effort.
3.4c Revised	Protect Wetlands, Buffer Zones	66 ABG/CEIE	Approve staging, storage, access	Material staging area at AFRL. Parking area minimized potential impacts to base wetlands. Snow storage areas located on pervious surfaces to provide sediment separation.	Complete similar effort.

3.4d Revised	Sequence Construction Activity	66 ABG/CEIE	Approve job sequence, minimize impact	Projects phased over construction season and limited work to small manageable areas to assure effective controls and minimal negative impact. New Middle School construction project phased to minimize area disturbed at any time. Work limited to site prep for temporary classrooms	Complete similar effort.
3.4e Revised	Implement Good Housekeeping	66 ABG/CEIE	No-notice site inspections	No-notice inspections at Middle School, Privatized Housing, project sites, and material storage yard confirmed effective active controls.	Complete similar effort.

#### 4a. Additions

	NONE				
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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 11 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 12
3.5a Revised	Structural Controls	66 ABG/CE	Design to 5 year watershed action plan	Redevelopment/repair of JFHQ parking lots added landscaped islands within parking lot to disconnect flow paths. Mental Health Clinic addition roof drains to new structural BMPs.	Complete similar effort.
3.5b Revised	Non-Structural Controls	66 ABG/CEIE	Link Watershed goals to planning	Planning process includes storm water element maximizing progress toward reducing flow & increasing recharge. Ongoing contract with Fuss & O'Neill, Inc. updating draft Storm water Management Plan. Final Plan due after modeling is completed in 2014. Design underway for new dorm, and primary school.	Complete similar effort.



3.5c Revised	Natural Controls	66 ABG/CEIE	Maintain vegetation buffers	Existing buffers protected by maintaining adjacent no-cut zones base wide. All projects are reviewed relative to natural resource impacts and designs are instructed to maintain vegetation buffers.	Complete similar effort.
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**5a. Additions**

	NONE				
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**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 11 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 12
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 base-wide (15 yards in 2013)	Sustain sweeping and catch basin cleaning.
3.6b Revised	Vehicle Wash Controls	66 ABG/CEIE	Inspect wash facilities, discharges to sewer	Inspections performed, oil water separators 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/CEIE	Inspect, train, assure on-call spill response	Spill Response Plan update completed in August 2013.	Complete similar effort.



3.6e Revised	Conduct Environmental Audits	66 ABG/CEIE	Annual audit & report	The Unified Self-Assessment Program (USAP) was completed in May 2014.	Complete similar effort annually.
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**6a. Additions**

	NONE				
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**7. BMPs for Meeting Total Maximum Daily Load (TMDL) Waste Load Allocations (WLA)**

Part I.B.2 (1) 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 mid 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 11 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 12
	SEE ABOVE			NO APPROVED TMDL	

Revised					
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**7a. Additions**

	NONE				
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**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 2013 was \$25,000.00. 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 11 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. 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	(\$)	\$26.4 K
Total program expenditures since beginning of permit coverage	(\$)	~\$1,403.0 K
Funding mechanism		Congress

**Education, Involvement, and Training**

Estimated number of residents reached by education program(s)	(# or %)	5,000
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		
<ul style="list-style-type: none"> <li>▪ days sponsored</li> <li>▪ community participation</li> <li>▪ material collected</li> </ul>	(#) (%) (tons or gal)	52 35% 5 tons
School curricula implemented	(y/n)	N

**Legal/Regulatory**

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

**Mapping and Illicit Discharges**

Outfall mapping complete	(%)	100
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Estimated or actual number of outfalls	(#)	12
System-Wide mapping complete	(%)	100
Mapping method(s)		
▪ Paper/Mylar	(%)	100
▪ CADD	(%)	100
▪ GIS	(%)	100
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
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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)	20.25 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	25%
	% CaCl <sub>2</sub>	0
	% MgCl <sub>2</sub>	0
	% CMA	0
	% Kac	0
	% KCl	0
	% Sand	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 %)	+35%
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 %)	+35%

Storage shed(s) in design or under construction

(y/m)

N