

Municipality/Organization: Hanscom Air Force Base

EPA NPDES Permit Number: MAR042029

MaDEP Transmittal Number: W-041288

Annual Report Number

& Reporting Period: No. 11: 1 May 15 – 30 April 16

NPDES PII Small MS4 General Permit Annual Report

Part I. General Information

Contact Person: CHRISTOPHER S. SIMPSON

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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

Title: Base Civil Engineer

Date: 01 May 2016

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 13 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 14
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. Hanscom Stormwater Project partnering discussions on new MSGP and pending MS4 2-9 Jul 2015.	Complete similar effort.
3.1b Revised	Partnering w/Base Organizations	66 ABG/CEIE	1 partnering event per year	Multiple undocumented meetings with all levels of Roads & Grounds Dept. Documented review of all base projects at weekly pre-work order review boards. All projects under design by Air Force Civil Engineering are documented for stormwater review using AF Form 813 and during multiple phases of design review.	Complete similar effort.
3.1c Revised	Educational Materials, Base	66 ABG/CEIE	Pamphlets, flyers, electronic messages	Shawsheen River cleanup flyer, poster boards and e-mail 27 April 2016. Article in Base newspaper pending post-cleanup. There were 15± volunteers plus the Hanscom Middle School 5 th and 6 th grade classes at the event. Earth Week events included a tour of the new Hanscom Middle School sustainable infrastructure which includes pervious pavement, green roof, and bio retention ponds/rain gardens.	Complete similar effort.

3.1d Revised	Educational Displays, Notices	66 ABG/CEIE	1 display event per year	27 April 2016 river cleanup displays in five high visibility buildings on base. Handouts on "Here's the Scoop" discussing clean-up of pet-waste to prevent run-off distributed to housing residents through housing monthly newsletter.	Complete similar effort.
3.1e Revised	Pollution Prevention Events	66 ABG/CEIE	1 P2 event per week	Hazardous Waste (office, commercial, industrial) and Materials Drop-off Day were expanded from one day per week for a two-and-a-half-hour window in 2015 to the current operation of 5 days per week during a 9-hour window (0700 to 1500). Privatized housing company collects household hazardous waste and cathode ray tubes.	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 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 13
3.2a Revised	Public Stakeholder Meeting	66 ABG/CEIE	1 stakeholder meeting per year	The public was informed about storm water improvements at Hanscom AFB during the 27 October 2015 Restoration Advisory Board public hearing at the Bedford Town Offices.	Complete similar effort.
3.2b	Annual MS4 Public Notice	66 ABG/CEIE	1 notice per year and document responses	The Hanscom AFB Restoration Advisory Board meeting which covers	Complete similar effort.

Revised				MS4 stormwater/groundwater, public notice advertisement was placed in the local and base newspapers on 9 October 2015. Minutes of the meeting produced.	
3.2c Revised	Oil, Vehicle Fluid Disposal Info	66 ABG/CEIE	Document distributed info & waste turn-ins	Info posted on base web site, housing info packets and at auto hobby shop. Drop-ins who have personal vehicle fluids for disposal are provided with information on local city collection sites and events.	Complete similar effort.

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 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 13
3.3a Revised	Update Storm Water & Sewer Maps on CAD	66 ABG/CE	Update as changes occur.	GIS (GEOBASE) includes storm water infrastructure data and is updated as changes occur. Comprehensive GIS capabilities review was last conducted on 20-24 April 15 and deemed sufficient. University of Colorado was contracted in late 2015 to add additional layers to the GIS which include detailed information on the storm water BMPs installed across the installation over the preceding ten years. Deliverables from this effort are anticipated in October 2016.	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 inspected and cleaned in November. All separators were performing properly. 4,000 lbs of waste sludge collected and disposed.	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. Storm water analysis (item 3.3e) identified no anomalies that would imply sewer cross-connect.	Complete similar effort.
3.3e Revised	Sample, Analyze Storm Water	66 ABG/CEIE	Sample 2 events per year	Visual inspection for pollutants is routinely performed at the USGS Stream Gauge. Stormwater sampling was performed 20 November 2015 at multiple locations on the installation, in accordance with the Hanscom AFB storm water sampling plan. Analysis report was completed 24 December 2015.	Complete similar effort.

3a. Additions

	NONE				
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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 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 13
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3.4a Revised	Stabilize Drainage, Exposed Soil	66 ABG/CEIE	Approve construction P2 plans, inspect sites	Opening of new Hanscom Middle School building on 26 April 2016 within significant new stormwater controls compared to previous facility. Pervious pavement parking, stormwater capture, retention, and bio-treatment pods put into operation 25 Apr 2016. Creation of new "Hanscom AFB Contractor Environmental Guide" completed 22 Jun 2015 which included specific obligations with respect to stormwater management and permitting for all contractors working on base; now incorporated into all contracts.	Complete similar effort.
3.4b Revised	Sediment Control	66 ABG/CEIE	Inspect before, during and after	Runoff controls installed as part of the Hanscom Middle School Project, including super silt fence and sediment basins at site of temporary middle school mobile classroom units. Inspected daily. Base Natural Resources Manager visually inspects and documents via photograph, all outfalls (except for the outfall on the MassPORT FAA property) after each significant storm event.	Complete similar effort.
3.4c Revised	Protect Wetlands, Buffer Zones	66 ABG/CEIE	Approve staging, storage, access	Material staging area for base construction projects located at upper AFRL Parking area, away from storm drains, which minimizes potential impacts to base wetlands. Snow storage areas located on pervious surfaces to provide sediment separation and groundwater recharge.	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.	Complete similar effort.
3.4e	Implement Good Housekeeping	66 ABG/CEIE	No-notice site inspections	No-notice inspections at Middle School, Privatized Housing, project	Complete similar effort.

Revised				sites, and material storage yard confirmed effective active controls.	
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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 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 13
3.5a Revised	Structural Controls	66 ABG/CE	Design to 5 year watershed action plan	Construction of stormwater management facilities including sediment and detention basins and pervious pavement at both temporary middle school site as well as new replacement school construction in full and successful operation. New catch basins and outfall forebays installed in engineering complex along riverfront of Shawsheen River in March and April 2016 to eliminating large storm event erosion of river bank. New rip-rap infiltration trench installed at base of dirt road to capture and retain potential sediment during significant rain events.	Complete similar effort.
3.5b	Non-Structural Controls	66 ABG/CEIE	Link Watershed goals to planning	Planning process includes storm water element maximizing progress toward	Complete similar effort.

Revised				reducing flow & increasing recharge. Ongoing partnering with Fuss & O'Neill, Inc. updating draft Storm water Management Plan via their contract with MassPort. Final Plan due after modeling is completed. Design underway for new dorm, and primary school.	
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.

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 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 13
3.6a Revised	Catch Basin Cleaning	66 ABG/CE	Sweep streets, clean catch basins	Weekly street sweeping except during winter months. Annual catch basin cleaning basewide - 406 CB's were cleaned in July 2015. Sand organics collected and provided to Battis Road Landfill in Merrimack, MA for landfill cover.	Sustain sweeping and catch basin cleaning.
3.6b	Vehicle Wash Controls	66 ABG/CEIE	Inspect wash facilities, discharges to sewer	Inspections performed, oil water separators cleaned.	Complete similar effort.

Revised					
3.6c Revised	Organic Runoff Controls	66 ABG/CE	Inspect hydro-seeding, composting areas	Compost Management Plan is updated annually. Base regraded material storage yard and processed stockpiles into usable loam, stone and mulch and improved water quality from runoff. One hydro-seeding application occurred during reporting period and was visually inspected 25 April 2016 (Hanscom Middle School).	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 27 January 2016. On-call spill response support contract implemented in 2015 and under contract with 5 option years.	Complete similar effort.
3.6e Revised	Conduct Environmental Audits	66 ABG/CEIE	Annual audit & report	The Unit Self-Assessment Program (USAP) is a continuous process that is evaluated on a recurring basis. Water Quality checklist completed September 2014. Comprehensive base wide ECAMP inspections completed annually, by 30 September.	Complete similar effort annually.

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. A status update meeting with MassPort, MassDEP and Fuss & O'Neill occurred on 27 Feb 15. The NPDES General Permit renewal is anticipated in CY2017 which will drive requirements for HAFB to provide an updated stormwater management program.

<<if applicable>> NOT APPLICABLE

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 13
	SEE ABOVE			NO APPROVED TMDL	
Revised					

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 streamgage by the U.S. Geological Survey (USGS). The cost for 2015 was \$26,000. The streamgage 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 12 years.

Part V. Program Outputs & Accomplishments (OPTIONAL)

Upon issuance of the new NPDES general permit Hanscom AFB will program a project to develop an updated stormwater management plan to meet the new permit requirements. This will be included in the Defense Department budget submittals to Congress for FY17 and/or FY18.

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 management of the Hanscom middle School project 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	(\$)	\$34,511
Total program expenditures since beginning of permit coverage	(\$)	~\$1,435.5 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/ Merrimack
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	(#)	260
▪ community participation	(%)	35%
▪ material collected	(tons or gal)	4.4 tons

School curricula implemented	(y/n)	N
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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	(%)	100
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)	(#)	0
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	(#)	406
Qty of storm drain cleaned	(LF or mi.)	0
Qty. of screenings/debris removed from storm sewer infrastructure	(lbs. or tons)	18.24 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 ₂	0
	% MgCl ₂	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 %)	-29%
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 %)	-29%
Storage shed(s) in design or under construction	(y/n)	N