

**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. 13: 1 May 17 – 30 April 18**

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

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

Contact Person: RENATA N. WELCH

Title: Chief, Environmental Section

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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: 01 May 2018

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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

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 16
3.1a Revised	Partnering w/MassPORT, Towns	66 ABG/CEIE	1 partnering event per year	Telcons and meetings with MassPORT and meetings with Conservation Commission Agents of the respective towns of Lincoln, Bedford, Hamilton, and Scituate. Hanscom Stormwater Project partnering discussions on new MSGP and pending MS4.	N/A – New Massachusetts Small MS4 General Permit goes into effect 1 Jul 2018
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. 24-hour stormwater hotline established in September 2017 and publicized to employees and residents through base paper and email.	N/A – New Massachusetts Small MS4 General Permit goes into effect 1 Jul 2018
3.1c Revised	Educational Materials, Base	66 ABG/CEIE	Pamphlets, flyers, electronic messages	Shawsheen River cleanup held on 10 May 2017. Attendance: 45 personnel including 12 volunteers plus the Hanscom Middle School 6 <sup>th</sup> grade classes. Article in Base newspaper post-cleanup and promotional video produced and publicized on base website. Outreach materials included flyer, poster boards and e-mail notifications. Event included tour of the new school sustainable infrastructure which includes pervious pavement, green roof, and bio retention ponds/rain gardens. Next event is scheduled for 2 May 2018.	N/A – New Massachusetts Small MS4 General Permit goes into effect 1 Jul 2018

3.1d Revised	Educational Displays, Notices	66 ABG/CEIE	1 display event per year	During the reporting period, poster-boards related to Earth Day events and the annual Shawsheen River Clean-up were put on display in 5 base facilities from 1-12 May 2017. Beginning 1 May 2018, an exhibit which includes 22 drawings submitted by Hanscom Middle School students for this year's Earth Day theme design contest will be put on displays in the Base HQ building. (NOTE: due to the timing of spring-break for local schools, Hanscom AFB observes Earth Day each year in early May instead of late April).	N/A – New Massachusetts Small MS4 General Permit goes into effect 1 Jul 2018
3.1e Revised	Pollution Prevention Events	66 ABG/CEIE	1 P2 event per week	Hazardous Waste (office, commercial, industrial) and Materials Drop-off Day continued to operate 5 days per week during a 9-hour window (0700 to 1500). Privatized housing is serviced by company that provides information of household hazardous waste events and collects cathode ray tubes.	N/A – New Massachusetts Small MS4 General Permit goes into effect 1 Jul 2018

**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 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 16
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 25 October 2017 Restoration Advisory Board public hearing at the Bedford Town Offices.	N/A – New Massachusetts Small MS4 General Permit goes into effect 1 Jul 2018
3.2b Revised	Annual MS4 Public Notice	66 ABG/CEIE	1 notice per year and document responses	Public notice advertisement of the Hanscom AFB Restoration Advisory Board meeting, which covers MS4 stormwater/groundwater, was placed in the local and base newspapers on 13, 19, and 25 October 2017. No responses from the public were received.	N/A – New Massachusetts Small MS4 General Permit goes into effect 1 Jul 2018
3.2c Revised	Oil, Vehicle Fluid Disposal Info	66 ABG/CEIE	Document distributed info & waste turn-ins	Information posted on base web site, internal EMS repository “eDASH”, housing information 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.	N/A – New Massachusetts Small MS4 General Permit goes into effect 1 Jul 2018.

### 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 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 16
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. University of Colorado remains under contract 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 2018 (delayed one year due to delay in EPA’s reissuance of the new small MS4 general permit).	N/A – New Massachusetts Small MS4 General Permit goes into effect 1 Jul 2018
3.3b Revised	Inspect Sewer By-pass Valve, Train Personnel	66 ABG/CE	Sewer valves operate, zero sewer discharge.	Training is performed continuously. Valves are exercised and maintained regularly as required.	N/A – New Massachusetts Small MS4 General Permit goes into effect 1 Jul 2018
3.3c Revised	Inspect, Clean Oil/Water Separators	66 ABG/CE	Document conditions, verify connections	All base oil/water separators were inspected and last cleaned in October 2016. In 2017, all oil water separators were individually sampled to investigate and identify any potential problem areas. Cleaning is scheduled for summer 2018.	N/A – New Massachusetts Small MS4 General Permit goes into effect 1 Jul 2018
3.3d Revised	Inspect for Non-Storm Water Connections	66 ABG/CE	Document findings, eliminate connections	Inspections are performed continuously by maintenance personnel. No issue was identified in 2017 to warrant corrective action. Storm water analysis (item 3.3e) identified no anomalies that would imply sewer cross-connection.	N/A – New Massachusetts Small MS4 General Permit goes into effect 1 Jul 2018

3.3e Revised	Sample, Analyze Storm Water	66 ABG/CEIE	Sample events per year	Visual inspection for pollutants is routinely performed at the USGS Stream Gauge. Stormwater sampling was performed 6 December 2017 at multiple locations on the installation, in accordance with the Hanscom AFB storm water sampling plan. Analysis report was completed 26 December 2017.	N/A – New Massachusetts Small MS4 General Permit goes into effect 1 Jul 2018
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**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 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 16
3.4a Revised	Stabilize Drainage, Exposed Soil	66 ABG/CEIE	Approve construction P2 plans, inspect sites	The environmental section reviews all project design and construction plans for projects that have the potential to impact stormwater. Between 1 May 2017 and 30 April 2018, this included review of 34 project design submittals. Environmental section inspects all construction sites twice per year. In addition, contractors are required to submit erosion control inspection reports to the base environmental office within 48 hours of a storm event were applicable.	N/A – New Massachusetts Small MS4 General Permit goes into effect 1 Jul 2018
3.4b Revised	Sediment Control	66 ABG/CEIE	Inspect before, during and after	Runoff controls installed as part of the Natural Gas pipeline installation project and the Building 1217 demolition project. This included silt fencing and catch basin filters at construction sites. Inspected per contract requirements. Base Natural Resources Manager visually inspects construction sites and outfalls (except for the outfall on the MassPORT FAA property) on a recurring basis and/or after significant storm events.	N/A – New Massachusetts Small MS4 General Permit goes into effect 1 Jul 2018

3.4c Revised	Protect Wetlands, Buffer Zones	66 ABG/CEIE	Approve staging, storage, access	Material staging area for base construction projects relocated from upper AFRL Parking area to CE operations yard, away from wetlands and buffer zones. Storm drains protected with silt sacks, which minimizes potential impacts to base wetlands. Snow storage areas located on pervious surfaces to provide sediment separation and groundwater recharge. All work encroaching upon wetlands or their buffer zones is coordinated with and permitted through local Conservation Commissions.	N/A – New Massachusetts Small MS4 General Permit goes into effect 1 Jul 2018
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.	N/A – New Massachusetts Small MS4 General Permit goes into effect 1 Jul 2018
3.4e Revised	Implement Good Housekeeping	66 ABG/CEIE	No-notice site inspections	No-notice inspections at Hanscom Dormitory Construction project, Building 1217 demolition project, and New School Construction Site, and material storage yard confirmed effective active controls. No notice inspection at Central Heat Plant project identified erosion control gaps that were immediately corrected.	N/A – New Massachusetts Small MS4 General Permit goes into effect 1 Jul 2018

**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 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 16
3.5a Revised	Structural Controls	66 ABG/CE	Design to 5 year watershed action plan	No additional structural controls were necessary or constructed in the reporting year.	N/A – New Massachusetts Small MS4 General Permit goes into effect 1 Jul 2018
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. Cape Environmental hired under contract to update installations Storm Water Management Draft plan. Draft received September 2017 and tabled until reissuance of the new MS4 general permit.	N/A – New Massachusetts Small MS4 General Permit goes into effect 1 Jul 2018
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. Undertakings that encroach into wetlands and/or their buffer zones, or within 200 feet of a perineal stream, are required to be permitted by the local Conservation Commission.	N/A – New Massachusetts Small MS4 General Permit goes into effect 1 Jul 2018

### 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 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 16
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 – 660 CB's were cleaned during the reporting period (approximately half in June 2017 and half in November 2017). A total of 42.3 tons of sand/organics was collected and shipped to WMI-Turnkey Landfill in Rochester, NH.	N/A – New Massachusetts Small MS4 General Permit goes into effect 1 Jul 2018
3.6b Revised	Vehicle Wash Controls	66 ABG/CEIE	Inspect wash facilities, discharges to sewer	Inspections performed, oil water separators individually sampled, and cleaning scheduled for summer 2018.	N/A – New Massachusetts Small MS4 General Permit goes into effect 1 Jul 2018
3.6c Revised	Organic Runoff Controls	66 ABG/CE	Inspect hydro-seeding, composting areas	The stand-alone Compost Management Plan has been eliminated and its provisions incorporated into the Hanscom Integrated Solid Waste Management Plan which is updated annually. Composting area was visually inspected during 2017 major storm events and no concerns were noted. There were no hydro-seeded areas established during the reporting period which would have required inspecting.	N/A – New Massachusetts Small MS4 General Permit goes into effect 1 Jul 2018

3.6d Revised	Spill Response Procedure, Plan	66 ABG/CEIE	Inspect, train, assure on-call spill response	Spill Response Plan update completed 21 January 2017. Annual update for CY2018 is underway, soon to be finalized. On-call emergency spill response support contract accessible through GSA. Inspections of Air Force and contractor hazardous material storage areas were conducted regularly to ensure adequate storage practices and proper set-backs from resource areas and storm water structures were being implemented.	N/A – New Massachusetts Small MS4 General Permit goes into effect 1 Jul 2018
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 annually; last assessed 28 Jul 2017.	N/A – New Massachusetts Small MS4 General Permit goes into effect 1 Jul 2018

**6a. Additions**

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

Part I.B.2 (l) A TMDL with WLAs has been drafted 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 Small MS4 General Permit renewal has been released by EPA and HAFB intends to file a notice of intent by 30 September 2018 for coverage under the permit.

**TMDL-required BMPs (not applicable)**

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 16
	SEE ABOVE			N/A	N/A
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 U.S. Geological Survey (USGS) stream gauge located on the Shawsheen River between Hanscom AFB and Hanscom Field. The cost for 2017 was \$26,000. The gauge continuously monitors and records flow data. This information can be used to assess the effectiveness of flow control structural BMPs installed over the past 15 years.

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

Hanscom AFB has awarded a contract to Cape Environmental to develop an updated stormwater management plan to meet the new MS4 permit requirements. Prior to this, in September 2010 the Base awarded a contract to a stormwater consultant, Fuss & O'Neill Inc. 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 AFB and Hanscom Field.

#### Programmatic

Storm water management position created/staffed	(y/n)	Y
Annual program budget/expenditures	(\$)	\$83,400
Total program expenditures since beginning of permit coverage	(\$)	~\$1,608 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 (see note in 3.1c on delay)	(y/n or mi.)	Y (0.5 mi)
Household Hazardous Waste Collection Days		
▪ days sponsored	(#)	260
▪ community participation	(%)	35%
▪ material collected	(tons or gal)	5 tons

## 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)	(#)	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	(#)	660
Qty of storm drain cleaned	(LF or mi.)	0
Qty. of screenings/debris removed from storm sewer infrastructure	(lbs. or tons)	42.3 tons
Disposal or use of sweepings (landfill, POTW, compost, recycle for sand, beneficial use, etc.)		Landfill
Basin Cleaning Costs		
Annual budget/expenditure (labor & equipment)	(\$)	18.1 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)	5 tons (est)

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 <b>(note: data incomplete; ECD 30 May 2017)</b>	(lbs. or %)	0%
Salt pile(s) covered in storage shed(s) <b>(note: privately-owned housing area salt pile roof blew off in storm this year; currently covered by tarp until facility can be repaired.)</b>	(y/n)	Y, 100%
Estimated net reduction or increase in typical year sand application rate <b>(note: data incomplete; ECD 30 May 2017)</b>	(+/-lbs/ln mi or %)	0%
Storage shed(s) in design or under construction	(y/n)	N