Westover Air Reserve Base
MS4 (Municipal Separate Storm Sewer System) Stormwater Management Program (SWMP)

For coverage under the

NPDES
EPA-Massachusetts General Permit for Stormwater Discharges from a Small MS4

Prepared for

U.S. Army Corp of Engineers (Contract Management Agency)
Mobile District
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LIST OF ACRONYMS AND ABBREVIATIONS

AF	Air Force
AFI	Air Force Instruction
AFRC	Air Force Reserve Command
ARB	Air Reserve Base
AW	Airlift Wing
BCE	Base Civil Engineer
BMP	Best management practice
BOS	Base Operations Support
CGP	Construction General Permit
CFR	Code of Federal Regulations
CMR	Code of Massachusetts Regulations3
CSWPPP	Construction Stormwater Pollution Prevention Plan
EA	EA Engineering, Science, and Technology, Inc., PBC
EPA	U.S. Environmental Protection Agency
ETL	Engineering Technical Letter
FRP	Facility Response Plan
IDDE	Illicit Discharge Detection and Elimination
LID	Low Impact Development
MassDEP	Massachusetts Department of Environmental Protection
MCM	Minimum Control Measure
MS4	Municipal Separate Storm Sewer System
MSGP	Multi-Section General Permit
MSH	Massachusetts Stormwater Handbook
NLEB	Northern Long-Eared Bat
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
SPCC	Spill Prevention, Control, and Countermeasure
SSO	Sanitary Sewer Overflow
SVF	System Vulnerability Factor
SWMP	Stormwater Management Program
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Maximum Daily Load
TSS	Total Suspended Solids
UFS	Unified Facility Criteria
USAF	U.S. Air Force
USFWS	U.S. Fish and Wildlife Service
WOTUS	Waters of the United States

1. CERTIFICATION AND RECORD OF UPDATES

1.1 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 gathered and evaluated 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.

/JBMoriarty 6/28/19

John B. Moriarty
Chief, Environmental Engineering

Date

1.2 AUTHORIZED REPRESENTATIVE

All reports, including Stormwater Pollution Prevention Plans (SWPPPs), inspection reports, annual reports, monitoring reports, reports on training and other information required by this permit must be signed by a person described in the Appendix B, Subsection 11.A of the 2016 Final Permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described in Appendix B, Subsection 11.A of the 2016 Final Permit;
2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
3. The signed and dated written authorization is included in the Stormwater Management Program (SWMP). A copy must be submitted to Environmental Protection Agency (EPA), if requested.

Written authorizations can be found in Appendix A of this SWMP.

1.3 RECORD OF UPDATES

The Stormwater Management Program (SWMP) will be updated and/or modified during the permit term as activities are modified, changed, or updated to meet permit conditions. Table 1-1 contains a record of the updates.

Table 1-1 Record of Updates

Revision No.	Date	Description/Revised Sections	Reviewers/Approval
Original	June 2019	Full program development; All Sections	John B. Moriarty – Environmental Engineering Chief Champanine Saviengvong – Water Quality Program Manager
Revision 1			
Revision 2			
Revision 3			
Revision 4			
Revision 5			
Revision 6			
Revision 7			
Revision 8			
Revision 9			
Revision 10			

2. INTRODUCTION

Westover Air Reserve Base (Westover ARB) operates and maintains a municipal separate storm sewer system (MS4) which collects stormwater from across the base and routes it to multiple outfalls. Under the Federal Clean Water Act, Westover ARB was required to obtain coverage for discharges under the General Permit for Stormwater Discharges from Small MS4s in Massachusetts (2016 Final Permit) within 90 days of the effective permit date (1 July 2018). A complete copy of the 2016 Final Permit is included in Appendix B. Westover ARB submitted a Notice of Intent (NOI) for coverage under the 2016 Final Permit on 26 September 2018. Authorization to discharge was granted by EPA on 14 February 2019. A copy of the NOI and Authorization Letter is included as Appendix C.

This Stormwater Management Program (SWMP) was authored to fulfil the requirements of Part 1.10 of the 2016 Final Permit and outlines many existing and proposed best management practices (BMPs) to achieve full compliance with the permit. This plan will be updated during the permit term as BMPs are updated or completed. The main elements of the SWMP include the following minimum control measures (MCMs):

1) Public Education and Outreach
2) Public Involvement and Participation
3) Illicit Discharge Detection and Elimination (IDDE) Program
4) Construction Site Stormwater Runoff Control
5) Stormwater Management in New Development and Redevelopment (Post Construction Stormwater Management)
6) Good Housekeeping and Pollution Prevention.

A checklist has been developed with recurring tasks and discrete tasks that have deadlines during the permit term and beyond. The checklist is included in Appendix D.

2.1 STORMWATER MANAGEMENT PROGRAM ORGANIZATION

The SWMP is generally organized to follow the sequence of the 2016 Final Permit.

The following portions of Section 1 provides a regulatory background, physical description of Westover ARB, identification of the individuals responsible for SWMP implementation, and documentation of the endangered species and historic properties screening. Section 2 identifies outfalls, watersheds, receiving water bodies, impaired receiving water bodies, and any additional permit requirements due to impairments. Section 2 also discusses new or increased discharges and addresses public drinking water sources. Section 3 outlines each MCM and the BMPs that are or will be implemented at Westover ARB to achieve compliance. Finally, Section 4 describes the annual program evaluation and compliance reports.

2.2 REGULATORY BACKGROUND

The Clean Water Act Amendments (Water Quality Act) of 1987 required the Environmental Protection Agency (EPA) to implement a two-phase comprehensive national program to address stormwater discharges. EPA promulgated the Phase I Stormwater Program in 1990 which required permit coverage under the National Pollution Discharge Elimination System (NPDES) from medium and large MS4s generally serving populations of 100,000 or more, certain construction activities, and certain industrial activities. The Phase II Stormwater Program (40 Code of Federal Regulations [CFR] Parts 9, 122, 123, and 124) was promulgated in 1999 and expanded permit requirements to small MS4s and other construction activities. The Phase II program applies to MS4s that serve less than 100,000 population and are located within Census designated urbanized areas.

On 1 May 2003, EPA Region 1 and the Massachusetts Department of Environmental Protection (MassDEP) issued their joint Final General Permit for Stormwater Discharges from Small MS4s (2003 Final Permit). Based on the 2000 Census, Westover ARB was not included in an urbanized area by the 2000 Census (U.S. Department of Commerce 2000) and therefore was not required to obtain coverage under the 2003 Final Permit. However, the 2010 Census included Westover ARB within the Springfield, MA – CT urbanized area (U.S. Environmental Protection Agency 2012). EPA and MassDEP issued the revised General Permits for Stormwater Discharges from Small MS4s in Massachusetts in 2016 (2016 Final Permit). Since Westover ARB was now located within a Census designated urbanized area, the base was subject to the 2016 Final Permit. Westover ARB was required to obtain authorization for discharge within 90 days of the permit's effective date. The original effective date was 1 July 2017, however this date was extended to 1 July 2018. Westover ARB initially requested a wavier for permit coverage, however this was denied. An NOI for coverage under the 2016 Final Permit was submitted on 26 September 2018. A letter of authorization dated 14 February 2019 was received from the EPA. Both documents are included in Appendix C.

Westover ARB is considered a non-traditional MS4 because it is a federal facility. Certain requirements are modified in Part 5.0 of the 2016 Final Permit for non-traditional MS4s. Additionally, as a new permittee under the 2016 Final Permit, certain deadlines are modified by Part 1.10.3 of the permit. Modifications to standard requirements are discussed throughout this plan.

2.3 LOCATION AND AREA

Westover ARB is composed of approximately 2,511 acres of land within the communities of Chicopee and Ludlow in the northern portion of Hampden County, Massachusetts. The installation is in proximity to the Cities of Holyoke and Springfield, and the Towns of West Springfield, Granby, and South Hadley. Westover ARB is located 35 miles north of Hartford, Connecticut and 90 miles west of Boston, Massachusetts. The installation is situated approximately two miles east of the Connecticut River, and is traversed and/or bound by Cooley, Stony, and Willimansett Brooks.

State Route 33, the main thoroughfare providing access to Westover ARB, is located less than one mile west of the installation. Approximately two miles southwest of the installation, State Route 33 intersects with Interstate 90 (the Massachusetts Turnpike), an east-west route between Boston and New York State.

Westover ARB has two active runways, Runway 05-23, which is 300 feet wide by 11,600 feet long, and Runway 15-33, which is 150 feet wide by 7,082 feet long. Runway 05-23 is oriented approximately southwest to northeast, while Runway 15-33 is oriented approximately northwest to southeast. A series of taxiways extending from the flightline parking apron provide access to the runways.

The activities and operations at Westover ARB are grouped by functional areas and land use categories, including aviation support, residential, commercial, industrial, medical, administrative, public facilities/recreation, and open space. The two primary land use categories are aviation support and industrial activities, which account for more than 50 percent of all facilities and square footage.

Although the predominant land use surrounding Westover ARB is residential, a large percentage of land is devoted to commercial and industrial uses. Areas to the north and east of the installation consist mostly of rural communities with large agricultural and recreational uses; bordering Westover ARB to the south and west is the town of Chicopee. Westover ARB employs about 4,000 people.

Westover ARB is home to the 439 Airlift Wing (AW) of the Air Force Reserve Command (AFRC). The primary mission of the 439 AW is to provide worldwide air movement of troops, supplies, equipment, and medical patients. The 337th Airlift Squadron is the wing's flying unit, and operates 8 C-5 Galaxy aircraft. Because of the size of the C-5 aircraft, the 439 AW specializes in missions involving outsized and oversized cargo. The 439 AW also maintains all the aircraft assigned Air Force real property, equipment, and supplies.

The 439 AW is also host to tenant organizations. The largest tenant organizations at Westover ARB are the U.S. Marine Corps Reserves and Army Reserves. In addition, the Westover Metropolitan Development Corporation is a long-term tenant at the installation, which operates an airport terminal and several hangars south of the main active aircraft flight line. These tenant organizations are covered within the scope of the storm water program operated by the 439 AW.

2.4 STORMWATER MANAGEMENT PROGRAM TEAM

Table 1-1 includes the stormwater management program team members.

Table 1-1 Stormwater Management Program Team

Name	Title	Department	Phone	Email
Champanine Saviengvong (Team Coordinator)	Water Quality Program Manager	Base Environmental Office (439 MS/CEV)	413-557-3951	champanine.saviengvong@us.af.mil
John B. Moriarty	Flight Chief	Base Environmental Office (439 MS/CEV)	413-557-2434	john.moriarty.1@us.af.mil
John Cody	Environmental Engineer	Base Environmental Office (439 MS/CEV)	413-557-3036	john.cody.9@us.af.mil

2.5 ENDANGERED SPECIES DOCUMENTATION

There are no federally-listed threatened or endangered species at Westover ARB. The U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation system reveals the following information for species potentially affected by activities: Endangered Northern Long-eared Bat (NLEB); no critical habitat has been designed for this species.

A bat acoustic study which included the NLEB was conducted by the University of Montana at various Air Force bases nationwide. Specifically, the study was conducted at Westover ARB in June 2017. The study found no presence of NLEB at Westover ARB. Subsequently, Westover processed a NLEB Streamlined Consultation form with the U.S. Fish and Wildlife Service (Appendix E). Therefore, Westover ARB falls under Criterion A for Endangered Species eligibility. The bat acoustic study is available for public review in the Base Environmental Office.

Westover also consults with the USFWS and the Massachusetts Division of Fisheries and Wildlife on our Integrated Natural Resources Management Plan which covers both wetland protection and the management of threatened and endangered species and habitats.

2.6 HISTORIC PROPERTIES DOCUMENTATION

The 2016 Final Permit requires Westover ARB to certify eligibility under this permit by ensuring that the storm water discharges, allowable non-storm water discharges, and discharge-related activities are not likely to affect a property that is either listed or eligible for listing on the National Register of Historic Places. A written certification statement is required, and is included below.

No facilities at Westover ARB are listed on the National Register Information System. According to Environmental Engineering personnel at Westover ARB, no facilities on Westover ARB are listed in the National Register of Historic Places and no prior surveys or disturbances revealed the existing of historic property or artifacts. Therefore, Criterion B of 2016 Final Permit has been satisfied.

3. DISCHARGES AND RECEIVING WATER BODIES

Table 3-1 lists all outfalls, their receiving waters, and indicates any pollutants causing impairments.

Table 3-1 Outfalls and Receiving Waters

Outfall ID	Receiving Water	Impairments
001	Cooley Brook (MA36-38) Long Island Sound	Total nitrogen
002	Cooley Brook (MA36-38) Long Island Sound	Total nitrogen
003	Cooley Brook (MA36-38) Long Island Sound	Total nitrogen
004	Willimansett Brook (MA34-60) Long Island Sound	Total nitrogen
006	Cooley Brook (MA36-38) Long Island Sound	Total nitrogen
007	Cooley Brook (MA36-38) Long Island Sound	Total nitrogen
009	Cooley Brook (MA36-38) Long Island Sound	Total nitrogen
011	Stoney Brook (MA34-19) Long Island Sound	Non-native aquatic plants, E. coli, turbidity, and total nitrogen

Stoney Brook is listed in the Massachusetts 2014 Integrated List of Waters, commonly referred to as the 303(d) list. All receiving waters discharge to the Long Island Sound, which has an approved Total Maximum Daily Load (TMDL) for nitrogen and is listed on the 2016 New York State 303(d) List of Impaired Waters.

3.1 WATER QUALITY BASED EFFLUENT LIMITATION

This section outlines the permit conditions which constitute appropriate water quality based effluent limits of the 2016 Final Permit.

3.1.1 Requirement to Meet Water Quality Standards

Part 2.1.1 of the 2016 Final Permit requires that the permittee reduce the discharge of all pollutants such that the discharges from the MS4 do not cause or contribute to an exceedance of water quality standards.

If the MS4 discharges to a waterbody that is subject to an approved TMDL identified in Part 2.2.1 of the 2016 Final Permit, the permittee is subject to the requirements of Part 2.2.1 and Appendix F. Compliance with Appendix F constitutes compliance with Part 2.1.1.a of the 2016 Final Permit. **The Westover MS4 discharges to waters within the watershed of the Long Island Sound which has an approved TMDL for Total Nitrogen. Therefore, the additional requirements to achieve compliance with Appendix F are described in Section 5.1.**

If the MS4 discharges to a waterbody that is water quality limited due to nutrients, metals, solids, bacteria/pathogens, chloride, or oil/grease, but is not subject to an approved TMDL, or if the MS4 is located within a municipality listed in the 2016 Final Permit Part 2.2.2.a to b, the permittee is subject to the requirements of Part 2.2.2 and Appendix H. Compliance with Appendix H constitutes compliance with Part 2.1.1.a of the 2016 Final Permit. **Outfall 011 discharges to Stoney Brook (MA34-19) which is impaired for bacteria and solids** (MA Integrated List of Waters is the document that declares which waterbody is impaired.). **Therefore, the additional requirements to achieve compliance with Appendix H are described in Section 5.2 and 5.3.**

If a discharge from the MS4 causes or contributes to a violation of the applicable water quality criteria for a water body, the permittee is required to reduce or eliminate the pollutant in its discharge such that the discharge meets the applicable water quality criteria as expeditiously as possible but no later than 60 days of becoming aware of the situation (2016 Final Permit Part 2.1.1.d). An exceedance of an applicable water quality criteria would be discovered as a result of routine sampling or notification from EPA or MassDEP.

3.1.2 Increased Discharges

Any increased discharge, including increased pollutant loadings through the MS4 to receiving waters are subject to the Massachusetts antidegradation regulations at 314 Code of Massachusetts Regulations (CMR) 4.04. Increased discharges, where appropriate, must comply with these regulations including information submittal requirement and obtaining authorization from MassDEP. These increased discharges must be documented in the SWMP.

There shall be no increased discharges, including increased pollutant loadings through the MS4 to impaired waters listed as Category 5 or 4b on the most recent Massachusetts Integrated Report of water listed pursuant to Clean Water Act section 303(d) and 305(b) unless the permittee demonstrates that there is no net increased in loading from the MS4 to the impaired water of the pollutant for which the water is impaired.

4. MINIMUM CONTROL MEASURES

The following sections summarize the BMPs that Westover ARB employs to meet the requirements of each of the MCMs as identified by the 2016 Final Permit Part 2.3.

4.1 MCM 1 – PUBLIC EDUCATION AND OUTREACH (PERMIT PART 2.3.2)

4.1.1 Permit Excerpt and Requirement Description

The permittee shall implement an education program that includes educational goals based on stormwater issues of significance within the MS4 area. The ultimate objective of a public education program is to increase knowledge and change behavior of the public so that the pollutants in stormwater are reduced.

This MCM shall define educational goals, express specific messages, define the targeted audience for each message, and identify the responsible parties for implementation. At a minimum, this MCM shall provide information concerning the impact of stormwater discharges on water bodies within the community, especially waters that are impaired or identified as priority waters. The following topics are considered important to the audiences at Westover ARB:

- Effects of outdoor activities such as lawn care, use of pesticides, herbicides, and fertilizers.
- Benefits of on-site infiltration of stormwater.
- Effects of automotive work on water quality.
- Maintenance of septic systems.
- Building maintenance and the use detergents.
- Use of salt or other de-icing/anti-icing materials.
- Proper storage of materials and pollution prevention.
- Proper management of waste materials and dumpsters.
- Proper management of parking lot surfaces.
- Proper sediment and erosion control management practices.
- Information about low impact development (LID) principles and technologies.
- Information about EPA's Construction General Permit (CGP).
- Proper storage of industrial materials and pollution prevention.

Documentation of messages and their reach will be included in the Annual Reports. Ineffective messages will be identified by requesting feedback from the targeted audiences. Ineffective messages or their distribution technique will be modified prior to the next message delivery.

BMP 1 has been designed to fulfil MCM 1 and the special conditions outlined in the following section. Public education outreach endeavors may be fulfilled by email, Westover's EMS (Environmental Management System) operational control posters, or other means. A separate

educational effort is BMP 3 Employee Training described in Section 4.3.4 as required for the IDDE Program.

4.1.2 Special Conditions

Permit Part 5.1.1 Non-traditional MS4s
Non-traditional MS4s are required by Part 5.1.1 of the 2016 Final Permit to target the following audiences as part of this MCM: "employees, clients and customers, visitors, tenants, long-term contractors, and other contractors". Westover ARB is a limited access facility and many of these audiences are not applicable as they do not enter the base. Westover ARB has determined that the applicable target audiences for Westover **include: employees, tenants, and contractors**. BMP 1 addresses the educational efforts to target these audiences.

Permit Part 2.3.2 Public Education and Part 1.10.3 Timelines for New Permittees
Part 2.3.2 sets the requirement of issuing (2) two messages, but is superceded by Part 1.10.3 which modifies the requirement to only (1) message. This part states: *Timelines for public education requirements in part 2.3.2.c shall be extended by one (1) year and need to include one (1) message to each audience over the permit term.*
Accordingly, BMP 1 will be distributed at least once over the permit term.

Appendix F
Two additional public education requirements are incorporated as part of this MCM because the MS4 discharges into waterbodies with an approved TMDL or to waterbodies with impairments listed on the Massachusetts or a neighboring state's 303(d) list. First, receiving waters that are part of the Connecticut River watershed fall under the Total Nitrogen TMDL for the **Long Island Sound**. Accordingly, the requirements of Appendix F Part B.I of the 2016 Final Permit apply. The additional public education requirement includes three components:

1. *The permittee shall distribute an annual message in the spring (April/May) timeframe that encourages the proper use and disposal of grass clippings and encourages the use of slow-release fertilizers.*
   Base Determination: Westover ARB has determined that additional messages are not needed. Refer to summary block labeled "Appendix F Message on Lawn Care, Pet Waste, & Fertilizers" later in this section for details.
2. *The permittee shall distribute an annual message in the summer (June/July) timeframe encourage the proper management of pet waste, including noting any existing ordnances where appropriate.*
   Base Determination: Westover ARB has determined that pet waste messaging is not applicable since there are no permanent residents on the base and therefore no permanent pets.
3. *The permittee shall distribute an annual message in the fall (August/September/October) timeframe encouraging the proper disposal of leaf litter.*
   Base Determination: Westover ARB has determined that additional messages are not needed. Refer to summary block labeled "Appendix F Message on Lawn Care, Pet Waste, & Fertilizers" later in this section for details.

Appendix H
Second, the MS4 discharges into the Stoney Brook (MA34-19) which is **impaired** for E. coli and is therefore subject to the requirements of Appendix H Part III of the 2016 Final Permit. The additional public education requirement includes two components:

1. *The permittee shall supplement its residential program with an annual message encouraging the proper management of pet waste, including noting any existing ordinances where appropriate.*
   Base Determination: Westover ARB has determined that pet waste messaging is not applicable since there are no permanent residents on the base and therefore no permanent pets.
2. *The permittee shall also provide information to owners of septic systems about proper maintenance in any catches that discharges to a water body impaired for bacteria or pathogens.*
   Base Determination: Westover ARB has determined that additional messages are not needed. Refer to summary block labeled "Appendix H Message on Septic System Maintenance" later in this section for details.

4.1.3 Best Management Practices

BMP 1: Industrial Users (including Employees & Tenants & Contractors)	**MCM: Public Education Message**
Permit Citation: 2016 Final Permit Part 2.3.2 as modified by Part 1.10.3 for new permittees and Part 5.1.1 for non-traditional MS4s.	
Description: The Base Environmental Office (439 MS/CEV) will distribute a message via email or other means to any Base organization (including employees, tenants, and contractors) to discuss the following TOPICS based upon ongoing industrial activities at Westover: • auto repair, auto washing • salt or other de-icing and anti-icing materials (minimize their use) and the storage thereof (cover/prevent runoff to storm system and contamination to ground water) • storage of potential pollution-generating materials (emphasize pollution prevention) • management of waste materials and dumpsters (cover and pollution prevention) • management of parking lot surfaces (sweeping) Existing training already takes place under the Multi Sector General Permit, whereby Environmental Staff gives an annual presentation on stormwater pollution prevention to users who might affect stormwater.	

In the future additional stormwater pollution prevention topics can be incorporated into the education program.
Targeted Audience: Base organizations that engage in the Industrial activities as listed in MS4 Permit Section 2.3.2.d
Responsible Department: Base Environmental Office (439 MS/CEV)
Measurable Goal and Deadline: ☐ Distribute one message within the 6-yr term of 2017-2023.
Documentation: The message will be attached to this plan (Appendix F) and to the Annual Report for the reporting year in which it occurred.

Education Message **NOT NEEDED Developers**	**MCM: Public Education**
Permit Citation: 2016 Final Permit Part 2.3.2 as modified by Part 1.10.3.a for new permittees and Part 5.1.1 for non-traditional MS4s.	
Description: In a typical MS4, developers may be contracted by anyone all across the town, however Westover is a non-traditional MS4 and the Base Civil Engineer, through the procurement mechanisms of the Contracting Office, is the only entity who can enter into agreements with architects, engineers, and construction developers. The Base Civil Engineer can only direct developers by way of contracts. Contracts are the administrative vehicle to provide directives to developers on the topics of: proper sediment and erosion control management practices; information about LID principles and technologies; information about EPA's construction general permit (CGP); and information about the EPA Construction General Permit. Since education and instruction is carried out by way of contracts, design meetings, pre-construction meetings, and construction meetings, the Base will not need to issue additional messages to Developers. Education can also be a part of BMP 4 Written Procedures for Reviewing Design & Site Plans and BMP 5 Develop Policy to Enact Design Requirements for Runoff Management in New Development/ Redevelopment Project.	
Status: As explained above, issuance of additional education messages to Developers is not needed. .	

Education Message **NOT NEEDED**	**MCM: Public Education**

Appendix F Message on Lawn Care, Pet Waste, & Fertilizers	
Permit Citation: 2016 Final Permit Appendix **F** Part B.I.1.a.i.1. Part 1.10.3.b extends the deadline by 2 years.	
Description: Appendix F requires additional public education, namely the distribution of two (2) annual messages regarding pet waste, disposal of grass clippings, use of slow-release fertilizers, and disposal of leaf litter. The Permit states that the requirement kicks in in 2020, however Westover's handling of grass clippings and leaf litter does not warrant additional education. At Westover, the Base Civil Engineer is the single authority for making decisions on disposal methods and fertilizer selection, and the BOS Contractor is the single workforce. The BOS Contractor is allowed to carry out lawn care and fertilizer application only under specific terms of the contract. Westover does not dispose of grass clippings or leaf litter. Cut grass is left in place and leaf litter is collected, piled, and physically turned by the BOS Contractor. Any changes to lawn care and land management is manifested through contract modifications. The contractor's lawn care performance is monitored through government officials called QAEs (quality assurance evaluator). Instructions for the contractor can only be communicated through the QAEs and Base Contracting Officer. Base Policy prevents the allowance of pets into the workplace during business hours. Westover does not have on-Base Family Housing, thereby also making the population of pets on base negligible. Westover is a secure Federal facility where the public (and their pets) without authorization can not enter.	
Status: As explained above, additional education regarding grass clippings/pet waste/leaf litter is not needed.	

Education Message **NOT NEEDED** **Appendix H Message on Septic System Maintenance**	**MCM: Public Education**
Permit Citation: 2016 Final Permit Appendix **H** Part III.2.a.i. Part 1.10.3.a extends the deadline by 2 years. "All deadlines for discharges to water quality limited waters without a TMDL under part 2.2.2 shall be extended by two (2) years."	
Description: Appendix H requires additional public education, namely the distribution of one (1) annual message regarding septic system maintenance. This requirement commences in 2020, however Westover's operation and maintenance of septic systems does not warrant additional education. At Westover, the Federal Government is the sole owner of a known quantity of septic systems on Base. The Base Civil Engineer implements the requirements of State septic system regulations called "Title V" by incorporating the directive in our long-term BOS	

contract. Any changes to septic tank operation and maintenance is manifested through contract modifications. The contractor's lawn care performance is monitored through government officials called QAEs (quality assurance evaluator). Instructions for the contractor can only be communicated through the QAEs and Base Contracting Officer.
Status: As explained above, additional education regarding septic system maintenance is not needed.

4.2 MCM 2 – PUBLIC INVOVEMENT AND PARTICIPATION (PERMIT PART 2.3.3)

4.2.1 Permit Excerpt and Requirement Description

The permittee shall provide opportunities to engage the public to participate in the review and implementation of the permittee's SWMP.

Part 2.3.3 of the 2016 Final Permit requires that the SWMP and all annual reports be available to the public and to provide the public an opportunity to participate in the implementation of the SWMP.

4.2.2 Best Management Practices

BMP 2a: Public Review of SWMP and Annual Reports
Permit Citation: 2016 Final Permit Part 2.3.3.
Description: The Base Environmental Office (439 MS/CEV) will post the SWMP and Annual Reports to the Westover ARB's Environmental and Noise webpage.
Responsible Department: Base Environmental Office (439 MS/CEV)
Measurable Goal and Deadline: ☐ Post SWMP and each Annual Report once they are finalized each year.
Documentation/Location: The SWMP and Annual Reports will be posted at https://www.westover.afrc.af.mil/About-Us/Resources/Environmental-and-Noise/

BMP 2b: Public Participation in SWMP Development
Permit Citation: 2016 Final Permit Part 2.3.3.
Description: The Base Environmental Office (439 MS/CEV) will solicit comments from the public on the SWMP for a designated period of time before it is finalize each year. The office will notify public of the opportunity via email, flyers, or other methods.
Responsible Department: Base Environmental Office (439 MS/CEV)
Measurable Goal and Deadline: ☐ Solicit comments from the public on the SWMP for 60 days each year.
Documentation/Location: The SWMP will be posted at the following address and will include a contact email or phone number for delivering comments. https://www.westover.afrc.af.mil/About-Us/Resources/Environmental-and-Noise/

4.3 MCM 3 - ILLICIT DISCHARGE DETECTION AND ELMINATION PROGRAM (PERMIT PART 2.3.4)

4.3.1 Permit Excerpt and Requirement Description

The permittee shall implement an IDDE program to systematically find and eliminate illicit sources of non-stormwater discharges to its municipal separate storm sewer system and implement procedures to prevent such discharges.

Part 2.3.4 of the 2016 Final Permit requires that the permittee complete several tasks in accordance with MCM 3 to prevent illicit discharges to Waters of the United States (WOTUS). Examples of these requirements include developing written procedures for the IDDE program, performing rankings of all outfalls considering potential for illicit discharges and public health concerns, and performing catchment investigations to locate and eliminate illicit discharges. The 2016 Final Permit prohibits illicit discharges and sanitary sewer overflows (SSOs). An SSO is defined as a discharge of untreated sanitary wastewater from a sanitary sewer. An illicit discharge is defined as any discharge to a MS4 that is not composed entirely of stormwater, except discharges pursuant to a NPDES permit and discharges resulting from firefighting activities.

This MCM will be executed via BMPs #3a to 3e, which are described in 4.3.3.

Non-stormwater discharges permitted under the 2016 Final Permit include the following discharges. These non-stormwater discharges are allowed unless the permittee, EPA, or MassDEP determined that the discharge is a significant contributor of pollutants to the MS4. Certain discharges of industrial stormwater to the MS4 is authorized under the EPA NPDES MSGP for Stormwater Discharges Associated with Industrial Activity (Permit No. MAR050000). Refer to Westover ARB's SWPPP and the MSGP for information regarding these authorized discharges and BMPs used to prevent stormwater pollution.

> •Water line flushing •Landscape irrigation •Diverted stream flows •Rising ground water •Uncontaminated groundwater infiltration •Uncontaminated pumped groundwater •Discharge from potable water sources •Foundation drains •Air conditioning condensation •Irrigation water •Springs •Water from crawl space pumps •Footing drains •Lawn watering •Individual resident car washing •Flows from riparian habitats and wetlands •De-chlorinated swimming pool discharges •Street wash waters •Residential building wash waters without detergents.

Under the 2016 Final Permit, Westover ARB is also required to:

1. Eliminate illicit discharges as expeditiously as possible upon discovery (see Part 2.3.4.2.a),
2. Eliminate SSOs as expeditiously as possible upon discovery and undertake interim mitigation measures to minimize the discharge of pollutants (see Part 2.3.4.4.a),

3. Verbally notify the EPA of all SSOs within 24 hours (see Part 2.3.4.4.c), and
4. Provide written notification of all SSOs to the EPA and MassDEP within 5 days (see Part 2.3.4.4.c).

4.3.2 Special Conditions

Per **Part 5.1.2** of the 2016 Final Permit, the required ordinances, by-laws, or other regulatory mechanisms can be replaced by written policies or procedures for non-traditional permittees. Air Force Instructions (AFIs) represent the written policies that fulfill this role at Air Force installations such as Westover ARB. See BMP #3a

> "Some Non-traditional MS4s may not have authority to enact an ordinance, by-law, or other regulatory mechanisms. MS4s without the authority to enact an ordinance shall ensure that written policies or procedures are in place…"

In addition, deadlines related to all other requirements within this MCM are extended by three years per **Part 1.10.3.a** of the 2016 Final Permit. The updated timelines are integrated into the BMP descriptions.

4.3.3 Best Management Practices

BMP 3a: Authority	**MCM: IDDE**
Permit Citation: 2016 Final Permit Part 2.3.4.a as modified by Part 1.10.3.a for new permittees and Part 5.1.2 for non-traditional MS4s.	
Description: The Base Civil Engineer (BCE) has institutional control over all components of the MS4 system and all facilities at Westover ARB. This institutional control allows the BCE to investigate and enforce an IDDE program. An IDDE program is required by AFI32-1067 Water and Fuel Systems Chapter 4.3.1.4., "Air Force installations shall conduct cross-connections and illicit discharge inspections/elimination/construction/repair." This AFI applies to all Air Force Reserve Command (AFRC) installations such as Westover ARB. The AFI specifically requires the BCE to operate and maintain the wastewater and stormwater system across the facility in accordance with applicable permits, standards, laws, and regulations. Therefore, BCE has the legal authority to investigate and eliminate illicit discharges under AFI32-1067.	
Responsible Department: Base Civil Engineer	
Measurable Goal and Deadline: ☑ As a non-traditional MS4, *AFI32-1067 serves as the written authority and is in effect at Westover ARB. This requirement is fully satisfied.*	
Documentation/Location: The latest version of AFI32-1067 is located at the following web address: https://static.e-publishing.af.mil/production/1/af_a4/publication/afi32-1067/afi32-1067.pdf	

BMP 3b: IDDE Program & Written Plan	**MCM: IDDE**
Permit Citation: 2016 Final Permit Part 2.3.4.6, 2.3.4.7, 2.3.4.8, and 2.3.4.10 as modified by Part 1.10.3.a for new permittees and Appendix H Part III.2.a.ii for discharges to bacteria impaired waters.	
Description: The IDDE Program consists of multiple phases with varying deadlines. The first phase includes developing the IDDE Program written procedures (including dry weather screening and sampling procedures and catchment investigation procedures), completing an outfall inventory, and compiling an initial priority ranking of the outfalls. The second phase includes performing dry weather screening and sampling. The third phase includes performing catchment investigations on all problem, high-priority, and low-priority outfalls.	

Manhole inspection methodology should include an investigation of each key junction manhole within the MS4, even where no evidence of an illicit discharge is observed at the outfall. Conduct investigations on all catchments even if flow direction is known. Note that this is for KEY junction manholes and that definition is left up to the permit holder as long as the design of the program does not limit the ability to locate illicit connections. If Permittees have a good understanding of their assets, then should be able to identify the required manholes for inspection and will not need to open everything.

Responsible Department: Base Environmental Office (439 MS/CEV)

Measurable Goals and Deadlines:

☐ Develop IDDE Program written procedures by 30 June **2022 (within 4 years of permit effective date)**.

☑ Complete Initial Outfall Rankings by 30 June 2022. *This has been completed. Rankings will be updated upon completion of dry weather screening and sampling. The current ranking results are: seven high priority outfalls and one low priority outfalls.*

☐ Conduct Dry Weather Screening and Sampling by 30 June 2024. *Continue performing Dry Weather Screening and, if applicable, Sampling every 5 years.*

☒ Begin Catchment Investigations of all problem outfalls by 30 June 2023.

☐ Complete Catchment Investigations of Problem Outfalls by 30 June 2028. *Not currently applicable to Westover ARB because no "problem" outfall has been identified during the initial ranking. MS4 Permit Part 2.3.4.7.b.iii requires screening records to include: receiving water, date of most recent inspection, dimensions, shape, material (concrete, PVC), spatial location, physical condition. We already have those physical characteristics for most of our stormwater conveyance system.*

☐ Begin Catchment Investigations on High and Low Priority Outfalls after rankings are updated based on Dry Weather Screening and Sampling.

☐ Complete Catchment Investigations of High and Low Priority Outfalls by 30 June 2031.

☐ Perform Wet Weather Sampling on any catchments identified with System Vulnerability Factors (SVFs) during the Catchment Investigations. Continue performing Wet Weather Sampling on catchments with SVFs every 5 years.

Documentation/Location: The IDDE Program written procedures, initial rankings, updated rankings, dry weather screening and sampling results, catchment investigation results, and wet weather sampling results (if required) will be attached to this plan as Appendix I and will be attached to the appropriate annual reports.

BMP 3c: Sanitary Sewer Overflow Inventory	**MCM: IDDE**
Permit Citation: 2016 Final Permit Part 2.3.4.4.b and Part 2.3.4.4.d as modified by Part 1.10.3.a for new permittees	
Description: Annually track and report the following SSO information: the location; a clear statement of whether the discharge entered a surface water directly or entered the MS4; date(s) and time(s) of each known SSO occurrence; estimated volume(s) of the occurrence; description of the occurrence indicating known or suspected cause(s); mitigation and corrective measures completed with dates implemented; and mitigation and corrective measures planned with implementation schedules. Update inventory as needed. Perform notifications upon discovery of SSOs to EPA and MassDEP (see Part 2.3.4.4.c).	
Responsible Department: Base Environmental Office (439 MS/CEV)	
Measurable Goal and Deadline: **Measurable Goals and Deadlines:** ☑ Complete a written inventory of SSOs within the past 5 years by 30 June 2022. *This has been completed. Westover has had zero incidences of sanitary sewer overflows. Westover does not have any sanitary sewer appurtenances allowing flow into stormwater outfalls or stormwater appurtenances. The only illicit connection the Base has is rainwater possibly entering the sanitary sewer system at some of the Hangars; other than some Hangar roof drains potentially discharging to the sanitary system, Westover does not have any connections between our sanitary and storm lines.* ☐ Update the inventory annually.	
Documentation/Location: The latest inventory is attached to this plan as Appendix G and will be attached to each annual report.	

BMP 3d: Mapping of MS4 System (Phase I and Phase II)	**MCM: IDDE**
Permit Citation: 2016 Final Permit Part 2.3.4.5.a for Phase I and Part 2.3.4.5.b for Phase II as modified by Part 1.10.3.a for new permittees.	
Phase I Description: Map 100% of outfalls and receiving waters, open channel conveyances, interconnections with other MS4s and other storm sewer systems, municipally-owned stormwater treatment structures, waterbodies identified by name and indication of all use impairments, and catchment delineations. **Phase II Description:** Map 100% of outfall spatial locations, pipes, manholes, catch basins, refined catchment delineations, municipal sanitary sewer system (if available), and municipal combined sewer system (if applicable). Phase II mapping will include results of any catchment investigations performed as part of BMP 3d.	
Responsible Department: Base Environmental Office (439 MS/CEV)	
Measurable Goals and Deadlines: ☑ Complete Phase I Mapping by 30 June 2023. *This has been completed.* ☐ Update Phase II Mapping upon completion of any catchment investigations and complete by 30 June 2031.	
Documentation/Location: The latest map is attached to this plan as Appendix H and will be attached to each annual report.	

BMP 3e: Employee Training	**MCM: IDDE**
Permit Citation: 2016 Final Permit Part 2.3.4.11	
Description: The Base Environmental Office (439 MS/CEV) will perform IDDE program training, including how to recognize illicit discharges and SSOs.	
Targeted Audience: Employees with IDDE Program responsibilities.	
Responsible Department: Base Environmental Office (439 MS/CEV)	
Measurable Goal and Deadline: ☐ Perform annual training to all applicable employees. The Part 1.10.3 deadline extension pertains to training as well. Develop IDDE Program written procedures (and training) by 30 June 2022 (within 4 years of permit effective date).	
Documentation: The training will be attached to this plan (Appendix J) and to the Annual Reports.	

4.4 MCM 4 - CONSTRUCTION SITE STORMWATER RUNOFF CONTROL (PERMIT PART 2.3.5)

4.4.1 Permit Excerpt and Requirement Description

The objective of an effective construction stormwater runoff control program is to minimize or eliminate erosion and maintain sediment on site so that it is not transported in stormwater and allowed to discharge to a water of the U.S. through the permittee's MS4.

Part 2.3.5 of the 2016 Final Permit requires that the permittee implements and enforces a program to reduce pollutants in any stormwater runoff from construction activities. Permit requirements include an ordinance or regulatory mechanism requiring erosion and sediment control, written procedures for site inspections and enforcement, requirements for construction site operators performing land disturbances to implement a sediment and erosion control program and to control wastes, and written procedures for pre-construction site plan reviews.

Appropriate erosion and sediment controls implemented as part of this MCM include:

- Minimize the amount of disturbed area and protection natural resources
- Stabilize sites when projects are complete or operations have temporarily ceased
- Protect slopes on the construction site
- Protect all storm drains inlets and armor all newly constructed outlets
- Use perimeter controls at the site
- Stabilize construction site entrances and exits to prevent off-site tracking
- Inspection stormwater controls at consistent intervals.

BMPs 4a to 4c have been designed to fulfil the requirements of this MCM and the special conditions outlined below.

4.4.2 Special Conditions

For non-traditional permittees, the required ordinances, by-laws, or other regulatory mechanisms are replaced by written policies or procedures by Part 5.1.2 of the 2016 Final Permit. AFIs represent the Air Force's written policies that fulfill this role at Air Force installations. These written policies are already in place in Westover ARB. In addition, deadlines related to all other requirements within this MCM are extended by two years by Part 1.10.3.a of the 2016 Final Permit. The updated timelines are integrated into the BMP descriptions.

4.4.3 Best Management Practices

BMP 4a: Authority (of Inspection & Enforcement of Erosion Controls)	**MCM: Construction Sites**
Permit Citation: 2016 Final Permit Part 2.3.5.a. and 2.3.5.c.i, as modified by Part 1.10.3.a for new permittees and Part 5.1.2 for non-traditional MS4s.	
Description: The BCE has institutional control over all construction projects at Westover ARB. This institutional control allows the BCE to investigate and enforce a sediment/erosion control and pollution prevention program. The BCE organization gains its authority from the following: Compliance with the NPDES CGP and development of a **Construction Stormwater Pollution Prevention Plan** is required by AFI32-1067 Water and Fuel Systems Chapter 5.3. AFI32-1067 also requires that the facility follow Engineering Technical Letter (ETL) 14-1 Construction and Operation and Maintenance Guidance for Storm Water Systems. ETL 14-1 Chapters 6.2 and 6.3 requires runoff control from all construction sites regardless of size.	
Responsible Department: Base Civil Engineer	
Measurable Goal and Deadline: ☑ As a non-traditional MS4, *AFI32-1067 and ETL 14-1 serve as the written authority and is in effect at Westover ARB. This requirement is fully satisfied.*	
Documentation/Location: The latest version of AFI32-1067 is located at the following web address: https://static.e-publishing.af.mil/production/1/af_a4/publication/afi32-1067/afi32-1067.pdf The latest version of ETL 14-1 is located at the following web address: https://www.wbdg.org/ffc/af-afcec/engineering-technical-letters-afetl/etl-14-1	

BMP 4b: Written Procedures for Inspections by Government Officials – For Land Disturbance 1 acre or greater	**MCM: Construction Sites**
Permit Citation: - Permit Part 2.3.5.c.ii as modified by Part 1.10.3.a for new permittees. -Permit Part Permit Part 2.3.5.c.v stipulates that the inspection procedures shall include forms, if appropriate, and procedure for **tracking the number of** site reviews, inspections, and enforcement actions. This **tracking information shall be included as part of each annual**	

report required by part 4.4.
Description: ETL 14-1 Construction and Operation and Maintenance Guidance for Storm Water Systems provides procedures and checklists for all construction sediment and erosion control inspections.
Responsible Department: Base Civil Engineer
Measurable Goals and Deadlines: ☑ Develop written procedures for site inspections and enforcement of sediment and erosion control measures by 30 June 2021 (within 3 years of permit effective date). *ETL 14-1 is in effect at Westover ARB and this requirement is fully satisfied.*
Documentation/Location: The latest version of ETL 14-1 is located at the following web address: https://www.wbdg.org/ffc/af-afcec/engineering-technical-letters-afetl/etl-14-1

BMP 4c: Written Procedures for Reviewing Design & Site Plans – For Land Disturbance 1 acre or greater	**MCM: Construction Sites**
Permit Citation: 2016 Final Permit Part 2.3.5 as modified by Part 1.10.3.a for new permittees. Per Permit Part 2.3.5.c.iii, the Design shall include E&S control measures. Some examples are: 1. Minimize the amount of disturbed area and protect natural resources; 2. Stabilize sites when projects are complete or operations have temporarily ceased; 3. Protect slopes on the construction site; 4. Protect all storm drain inlets and armor all newly constructed outlets; 5. Use perimeter controls at the site; 6. Stabilize construction site entrances and exits to prevent off-site tracking; Per Permit Part 2.3.5.c.iv, the Design should include waste management. Per Permit Part 2.3.5.c.v, the Design should include EVALUATION of low impact design.	
Description: **AFI 32-1023 Designing and Constructing Military Construction Projects** Chapter 2.3.2 requires a comprehensive design and review process for all construction projects at Westover ARB. This process includes reviews by the designated Design Agent, Design Manager, Base Civil Engineer, and Major Command. The Base Civil Engineer ensures compliance with relevant environmental permits, including NPDES CGP and the 2016 Final Permit.	

ETL 14-1 provides design guidance for erosion and sediment controls.
Responsible Department: Base Civil Engineer
Measurable Goals and Deadlines: ☑ Develop Site Plan Review written procedures by 30 June 2021. *AFI32-1023 is in effect at Westover ARB and this requirement is fully satisfied.*
Documentation/Location: The latest version of AFI32-1023 is located at the following web address: https://static.e-publishing.af.mil/production/1/af_a4/publication/afi32-1023/afi32-1023.pdf

4.5 MCM 5 – POST CONSTRUCTION (LOW IMPACT DESIGN, MASSDEP STORMWATER HANDBOOK DESIGN CRITERIA, REQUIRE AS-BUILT DRAWINGS) STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT (PERMIT PART 2.3.6)

4.5.1 Permit Excerpt and Requirement Description

The objective of an effective post construction stormwater management program is to reduce the discharge of pollutants found in stormwater to the MS4 through the retention or treatment of stormwater after construction on new or redeveloped sites and to ensure proper maintenance of installed stormwater controls.

The first part of MCM 5 requires the permittee to develop a written policy for post-construction stormwater management (Permit Part 2.3.6.a). The policy must address, at a minimum:

1. Using LID site planning and design strategies to the greatest feasible extent.
2. Using Volume 2 of the Massachusetts Stormwater Handbook (MSH), or other federal or state approved BMP design guidance, for design guidance of stormwater runoff treatment and infiltration measures.
3. Requiring *stormwater management systems* on new development and redevelopment construction projects.
4. All projects shall be required to submit as-built drawings no later than two years after completion of the project.

The second part of MCM 5 requires the permittee to compile a report evaluating current street design and parking lot guidelines to determine if changes to these guidelines can be made to support LID options (Permit Part 2.3.6.b).

The third part of MCM 5 requires the permittee to compile a report assessing the feasibility of making green roofs, infiltration practices, and water harvesting devices and the use of non-

potable water allowable (Permit Part 2.3.6.c). This report is not applicable to non-traditional permittees (Permit Part 5.1.3).

The fourth part of MCM 5 requires the permittee to identify a minimum of five permittee-owned properties that could be potentially modified to reduce the frequency, volume, and pollutant loads of stormwater discharges to and from the MS4 (Permit Part 2.3.6.d). Property identification and project priority ranking shall consider BMPs that would reduce nitrogen discharges (Permit Appendix F, Part B.I.1.a.i.2)

4.5.1.1 *Stormwater Management Systems* for New Developments

A **new development (or new construction)** is defined as any construction activities or land disturbance resulting in total earth disturbances equal or greater than 1 acre, or part of a greater plan of development disturbing greater than 1 acre, on an area that has not previously been developed to include impervious cover. The *stormwater management system* requirements for new construction include:

1. Not allow new stormwater conveyances to discharge untreated stormwater in accordance with MSH Standard 1.
2. Control peak runoff rates in accordance with MSH Standard 2.
3. Recharge groundwater in accordance with MSH Standard 3.
4. Eliminate or reduce the discharge of pollutants from land uses with higher pollutant loads as defined in the MSH in accordance with Standard 5.
5. Protect Zone II and Interim Wellhead Protection Areas of public water supplies in accordance with MSH Standard 6.
6. Implement long term maintenance practices in accordance with MSH Standard 9.
7. Require that all stormwater management systems be designed to:
    a. Retain the volume of runoff equivalent to, or greater than, one inch multiplied by the total post-construction impervious surface area on the site and/or;
    b. Remove 90% of the average annual load of Total Suspended Solids (TSS) generated from the total post-construction impervious area on the site and 60% of the average annual load of Total Phosphorus generated from the total post-construction impervious area on the site. Pollutant removal shall be calculated consistent with EPA Region 1's BMP Performance Extrapolation Tool or other approved tool.
8. Require that all BMPs be optimized for nitrogen removal. (Permit Appendix F, Part B.I.1.a.i.2)

4.5.1.2 *Stormwater Management Systems* for Redevelopments

A **redevelopment** project is defined as any construction, land alteration, or improvement of impervious surfaces resulting in total earth disturbance equal or greater than 1 acre, or part of a greater plan of development disturbing greater than one acre, that does not meet the definition of new development above. A redevelopment project is also defined in the MSH. The *stormwater management system* requirements for redevelopment projects include:

1. Not allow new stormwater conveyances to discharge untreated stormwater in accordance with MSH Standard 1 to the maximum extent feasible.
2. Control peak runoff rates in accordance with MSH Standard 2 to the maximum extent feasible.
3. Recharge groundwater in accordance with MSH Standard 3 to the maximum extent feasible.
4. Meet the pretreatment and structural best management practices requirements of Standard 5 to eliminate or reduce discharge of pollutants from land uses with higher pollutant loads to the maximum extent feasible.
5. Meet the pretreatment and structural best management practices of MSH Standard 6 to protect Zone II and Interim Wellhead Protection Areas of public water supplies to the maximum extent feasible.
6. Require that all stormwater management systems be designed to:
    a. Retain the volume of runoff equivalent to, or greater than, 0.80 inch multiplied by the total post-construction impervious surface area on the site, and/or;
    b. Remove 80% of the average annual load of TSS generated from the total post-construction impervious area on the site and 50% of the average annual load of Total Phosphorus generated from the total post-construction impervious area on the site. Pollutant removal shall be calculated consistent with EPA Region 1's BMP Performance Extrapolation Tool or other approved tool.
    c. These requirements may be met using offsite mitigation within the same United State Geologic Service Hydrologic Unit Code 10 hydrologic unit.
7. Require that all BMPs be optimized for nitrogen removal. (Permit Appendix F, Part B.I.1.a.i.2)

For projects that are restricted to maintenance and improvements of **existing roadways** (such as widening less than a single lane, adding shoulders, correcting substandard intersections, improving existing drainage systems, and repaving), the projects are required only to improve conditions where feasible (i.e. lower peak discharge rates and runoff volume). Projects that widen roadways or other improvements that add impervious area greater than or equal to a single lane width shall meet the requirements for redevelopments fully.

4.5.2 Special Conditions

For non-traditional permittees, the required ordinances, by-laws, or other regulatory mechanisms are replaced by written policies or procedures, per Part 5.1.2 of the 2016 Final Permit. Deadlines related to all requirements within this MCM are extended by two years by Part 1.10.3.a of the 2016 Final Permit. The updated timelines are integrated into the BMP descriptions.

Because all of the receiving waters are within the watershed of the Long Island Sound, which is impaired for total nitrogen, an additional permit condition is required by the 2016 Final Permit Appendix F Part B.I.1.a.i.2. The requirement is that the written policy shall include a requirement that stormwater management BMPs be optimized for nitrogen removal. The retrofit

opportunities required by Part 2.3.6.d also must include consideration of BMPs which reduce nitrogen discharges.

Additionally, because Stoney Brook is impaired for solids, additional permit conditions are required by the 2016 Final Permit Appendix H Part V. The requirement includes the incorporation of isolation valves into new or redevelopment stormwater management systems. Because the site is already covered by a Spill Prevention, Control, and Countermeasure (SPCC) Plan, and subject to the requirements of the Oil Pollution Act, this requirement is fulfilled.

4.5.3 Best Management Practices

BMP 5a: Existing Authority	**MCM: POST Construction Stormwater Management**
Permit Citation: 2016 Final Permit Part 2.3.6.a as modified by Part 1.10.3.a for new permittees, Part 5.1.2 for non-traditional MS4s, and Appendix F Part B.I.1.a.i.2 for Nitrogen TMDL Requirements.	
Description: The Base Civil Engineer has institutional control over the Base Environmental department and Base inspection and maintenance personnel who will carry out post construction stormwater management. The BCE organization gains its authority from the following: AFI 32-1067 Water and Fuel Systems requires that the facility follow Engineering Technical Letter (ETL) 14-1 Construction and Operation and Maintenance Guidance for Storm Water Systems. ETL 14-1 Chapter 8 states that post-construction storm water management in areas undergoing new development or redevelopment is necessary because runoff from these areas can significantly affect receiving water bodies. This ETL provides a Permanent Storm Water Controls O&M Guidance document including checklists for inspecting permanent stormwater treatment structures. EISA 438 is the written authority for federal development and redevelopment projects that include "buildings" to meet storm water runoff requirements. See the next BMP for further details.	
Responsible Department: Base Civil Engineer	
Measurable Goal and Deadline: ☑ Air Force Instructions and Engineering Technical Letters are already in place.	
Documentation/Location:	

BMP 5b: Develop Policy to Enact Design Requirements for Runoff Management in New Development/ Redevelopment Project – For sites that disturb 1 acre or more	**MCM: POST Construction Stormwater Management**
Permit Citation: 2016 Final Permit Part 2.3.6.a as modified by Part 1.10.3.a for new permittees, Part 5.1.2 for non-traditional MS4s, and Appendix F Part B.I.1.a.i.2 for Nitrogen TMDL Requirements.	

Description: The Base's design requirements must be **at least as stringent** as the MA Handbook Standards that are specifically called out in Permit Part 2.3.6.a.ii.

For applicable projects that are one acre or more, the Base will implement a program to:

☐Address nitrogen removal BMP requirements of Appendix F Part B.I.1.a.i.2

☑Use LID site planning and design strategies to the greatest feasible extent. Reference existing guidance - Unified Facility Criteria 3-210-10 Low Impact Development.

☐Address post construction runoff that meets the retention and treatment requirements of Part 2.3.6.a.ii.3 and Part 2.3.6.a.ii.4. SWMP will include comparison of MA Handbook Standards with EISA/UFC.) EISA 438 is the written authority for federal development and redevelopment projects that include both aspects of being a "building" development and also has a footprint that exceeds 5,000 square feet. EISA 438 requires the design to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow. However EISA differs from the MS4, in that MS4 runoff management requirement applies to a broader category of any land disturbance greater than one acre resulting from development/redevelopments, whereas EISA applies to only "buildings".

ETL 14 – 1 Chapter 5.2.2 provides limited guidance on EISA 438.

EPA has developed a guidance document that is appropriate for Westover to adhere to, namely the Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act (PDF).

Responsible Department: Base Civil Engineer

Measurable Goal and Deadline:

☐ Develop a written policy by 30 June 2021.

Documentation/Location:

Reference to the written policy will be included here once the policy is developed.

EISA 438 can be found at the following web address:

https://www.epa.gov/nps/stormwater-management-federal-facilities-under-section-438-energy-independence-and-security-act

EPA's EISA guidance document can be found at the following website:

https://www.epa.gov/sites/production/files/2015-09/documents/eisa-438.pdf

BMP 5c: Written Procedures for As-built Drawing Submittals & Long Term O&M **(For sites that disturb 1 acre or more)**	**MCM: POST Construction Stormwater Management**

Permit Citation:

2016 Final Permit Part 2.3.6.a as modified by Part 1.10.3.a for new permittees,
Part 5.1.2 for non-traditional MS4s, and
Appendix F Part B.I.1.a.i.2 for Nitrogen TMDL Requirements.

Description:

The Base will implement a program for:

☑ Submission of as-built drawings no later than two (2) years after completion of construction projects

- AFI 32-1023 Designing and Constructing Military Construction Projects Chapter 2.3.2 requires a comprehensive design and review process for all construction projects at Westover ARB. This process includes reviews by the designated Design Agent, Design Manager, Base Civil Engineer, and Major Command.

☑ Long-term operation and maintenance of stormwater management structures

- Written procedures for long-term O&M of stormwater management structures already exist and take the form of the existing scope of work of the BOS contract. Refer to Tab F of the Base Operating Service (BOS) contract.
- ETL 14-1 Construction and Operation and Maintenance Guidance for Storm Water Systems.

Responsible Department: Base Civil Engineer

Measurable Goal and Deadline:

☑ Develop a written procedure by 30 June 2021. BOS contract execution of stormwater treatment structure O&M and AFI 32-1023 are both already in effect.

Documentation/Location:

The latest version of AFI32-1023 is located at the following web address:
https://static.e-publishing.af.mil/production/1/af_a4/publication/afi32-1023/afi32-1023.pdf

The latest version of ETL 14-1 is located at the following web address:
https://www.wbdg.org/ffc/af-afcec/engineering-technical-letters-afetl/etl-14-1

Due to "For Official Use Only" concerns, a copy of the BOS contract will not be posted on the internet, rather, a copy will be provided to EPA via email and/or mail.

BMP 5d: Report Assessing Street Design and Parking Lot Guidelines	**MCM: Post Construction Stormwater Management**
Permit Citation: 2016 Final Permit Part 2.3.6.b as modified by Part 1.10.3.a for new permittees.	
Description: A brief evaluation of current street and parking lot design guidelines is presented below to evaluate the potential of changing these guidelines to support the use of LID technologies.	
Responsible Department: Base Environmental Office (439 MS/CEV)	
Measurable Goals and Deadlines: ☑ Write report assessing current street and parking lot design guidelines by 30 June 2024. *This has been completed, see documentation section below.*	
Documentation/Location: Street and parking lot designs on Air Force facilities are required to follow Unified Facilities Criteria (UFC) 3-250-01 Pavement Design for Roads and Parking Areas and UFC 3-210-10 Low Impact Development. These UFCs aim to maintain pre-development hydrology through the use of LID techniques where feasible. For instance, UFC 3-210-10 specifically requires consideration of bioretention areas, permeable pavements, cisterns, and green roofs. LID technologies are evaluated based on their cost effectiveness and ability to keep post-construction discharges and volumes lower than pre-construction discharges and volumes. Therefore, Westover ARB determines that no changes to these regulations are required. The latest versions of UFC 3-250-01 and UFC 3-210-10 are available at the following web addresses: https://www.wbdg.org/ffc/dod/unified-facilities-criteria-ufc/ufc-3-250-01 https://www.wbdg.org/ffc/dod/unified-facilities-criteria-ufc/ufc-3-210-10	

BMP 5c: List of Retrofit Opportunities	**MCM: Post Construction Stormwater Management**
Permit Citation: 2016 Final Permit Part 2.3.6.d as modified by Part 1.10.3.a for new permittees and Appendix F Part I.1.a.i.2 for Nitrogen TMDL Requirements.	
Description: A list of five permittee-owned properties that could potentially be modified with BMPs designed to reduce the frequency, volume, or pollutant loads of stormwater discharges to the MS4. Properties and infrastructure for consideration shall include those with the potential for impervious area reduction and nitrogen runoff reduction.	
Responsible Department: Base Environmental Office (439 MS/CEV)	
Measurable Goal and Deadline: ☐ Compile a list of five potential retrofit opportunities by 30 June 2024.	
Documentation/Location: The list will be attached to this plan (Appendix K) and to the appropriate Annual Reports.	

4.6 MCM 6 - GOOD HOUSEKEEPING AND POLLUTION PREVENTION (PERMIT PART 2.3.7)

4.6.1 Permit Excerpt and Requirement Description

The permittee shall implement an operations and maintenance program for permittee-owned operations that has a goal of preventing or reducing pollutant runoff and protecting water quality from all permittee-owned operations.

The intent of this MCM is to require operation and maintenance of permittee-owned properties in a manner that reduces pollutant discharges to and from the MS4. Because Westover ARB is a wholly controlled institution, all properties throughout the facility are operated and maintained by the Air Force or other tenants in strict compliance with Department of Defense and Air Force requirements which require compliance with federal, state, and local permits. Accordingly, this MCM is fulfilled by existing plans and guidelines generated for Westover ARB in compliance with Air Force requirements or other permits.

4.6.2 Special Conditions

Deadlines related to requirements within this MCM are extended by two years by Part 1.10.3.a of the 2016 Final Permit. The updated timelines are integrated into the BMP descriptions. Additionally, because all of the receiving waters are within the watershed of the Long Island Sound, which is impaired for total nitrogen, additional requirements are imposed by Appendix F Part B.I.1.a.3. These requirements include:

1. *Establish requirement for use of **slow release fertilizers**.*
2. *Establish procedures to properly manage grass cuttings and leaf litter.*
3. *Increased street sweeping frequency to a minimum of two times per year, once in the spring (following winter sanding) and once in the fall (following leaf fall).*

Additionally, because Stoney Brook is impaired for solids additional permit conditions are required by the 2016 Final Permit Appendix H Part V. The Good Housekeeping BMPs must have higher frequency inspections of catch basins and street sweepings. Because Westover ARB already employs increased frequencies for these activities, this requirement is fulfilled.

4.6.3 Best Management Practices

BMP 6a: Parks and Open Spaces	**MCM: Written Procedures for O&M of Parks/Open Spaces to Achieve Good Housekeeping / P2**
Permit Citation: 2016 Final Permit Part 2.3.7.**a.i** as modified by Part 1.10.3.a for new permittees and Appendix F Part B.I.1.a.3 for Nitrogen TMDL Requirements. Written O&M procedures for parks and open spaces originally due within 2 yrs of permit effective date, then Part 1.10.3 extends deadline by 2 years, thus ultimately due 2022; nonetheless written procedures for open spaces has already by satisfied.	
Description: Operation and maintenance procedures for parks and open spaces, including an inventory of these areas, are already established at Westover ARB. These procedures are outlined by the Integrated Natural Resources Management Plan (Air Force Reserve Command 2016) and the Vegetation Management Plan (US Forest Service 2015). These plans require the protection of natural resources, including stormwater discharge, through the implementation of several good housekeeping BMPs. For instance, the Integrated Natural Resources Management Plan indicates that fertilizer use on Westover ARB is minimized to the maximum extent possible to protect water resources.	
Responsible Department: Monitored by the Base Civil Engineer and implemented by the Base Operations Support (BOS) contractor.	
Measurable Goal and Deadline: ☑ Develop written operation and maintenance procedures for parks and open spaces and an inventory of these areas by 30 June 2022 . *These procedures are contained in the reports referenced above and are enforced at Westover ARB. This requirement is satisfied.* ☐ Within this BMP block, include the location of the written/digital inventory.	
Documentation/Location: The latest version of the Integrated Natural Resources Management Plan and the Vegetation Management Plan are maintained by the Base Environmental Office and are available for public review upon request.	

BMP 6b: Buildings and Facilities	**MCM: Written Procedures for O&M of Buildings to Achieve Good Housekeeping / P2**
Permit Citation: 2016 Final Permit Part 2.3.7.**a.i** as modified by Part 1.10.3.a for new permittees.	
Description: Operation and maintenance procedures for buildings and facilities where pollutants are exposed to stormwater, including an inventory of these areas, are already established at Westover ARB. Because Westover ARB is subject to the EPA MSGP, a site-wide SWPPP has been developed, is constantly updated, and includes good housekeeping and operation and maintenance requirements for areas where pollutants are exposed to stormwater. The SWPPP involves frequent inspections of these areas and requires compliance by facility operators. Westover ARB is also subject to the Oil Pollution Prevention Act which includes specific operation and maintenance requirements, the development of a Spill Prevention, Control, and Countermeasures (SPCC) Plan, and the development of a Facility Response Plan (FRP). These documents are enforced across Westover ARB.	
Responsible Department: Base Civil Engineer	
Measurable Goal and Deadline: ☑ Develop a written operation and maintenance procedures and an inventory of buildings and facilities where pollutants are exposed to stormwater by 30 June 2022. *These procedures are contained in the reports referenced above and are enforced at Westover ARB. This requirement is satisfied.* ☐ Within this BMP block, include the location of the written/digital inventory.	
Documentation/Location: The latest version of the SWPPP, SPCC, and FRP are maintained by the Base Environmental Office and are available for public review upon request.	

BMP 6c: Vehicle and Equipment Storage	**MCM: Written Procedures for O&M of Vehicle Storage Areas to Achieve Good Housekeeping / P2**

Permit Citation: 2016 Final Permit Part 2.3.7.a as modified by Part 1.10.3.a for new permittees.

Description: Procedures for storage of vehicles and equipment, including an inventory of these areas, are already established at Westover ARB. Because Westover ARB is subject to the EPA MSGP, a site-wide SWPPP has been developed, is constantly updated, and includes good housekeeping and operation and maintenance requirements for areas where equipment is stored. The SWPPP involves frequent inspections of these areas and requires compliance by facility operators. Westover ARB is also subject to the Oil Pollution Prevention Act which includes specific operation and maintenance requirements, the development of a Spill Prevention, Control, and Countermeasures (SPCC) Plan, and the development of a Facility Response Plan (FRP). These documents are enforced across Westover ARB and fulfill all the SWPPP requirements in the MS4 Permit.

Responsible Department: Base Civil Engineer

Measurable Goal and Deadline:

☑ Develop a written operation and maintenance procedures and an inventory of buildings and facilities where pollutants are exposed to stormwater by 30 June 2022 . *These procedures are contained in the reports referenced above and are enforced at Westover ARB. This requirement is satisfied.*

☐ Within this BMP block, include the location of the written/digital inventory.

Documentation/Location:

The latest version of the SWPPP, SPCC, and FRP are maintained by the Base Environmental Office and are available for public review upon request.

BMPs 6d through 6g comprise the Infrastructure O&M Program for the stormwater conveyance system.

BMP 6d: Catch Basin Cleaning Program	**MCM: Written Procedures for O&M of Catch Basins to Minimize Sediment Discharge and Achieve Good Housekeeping / P2**

Permit Citation: 2016 Final Permit Part 2.3.7.a.iii.2 as modified by Appendix H Part V.2.ii for solids impaired receiving waters.

Part 2.3.7.a.iii.2 states: The permittee shall keep a log of catch basins cleaned or inspected. The permittee shall report in each annual report the total number of catch basins, number inspected, number cleaned, and the total volume or mass of material removed from all catch basins.

Description: Procedures for operation and maintenance of stormwater infrastructure are already established at Westover ARB. This program is documented by ETL 14-1 Construction and Operation and Maintenance Guidance for Storm Water Systems and enforced by AFI32-1067. Westover ARB has a catch basin cleaning program authorized by AFI32-1067 and ETL 14-1 and implemented under the BOS contract, Tab F, Real Property Maintenance (F5.25.3). All manholes and catch basins are inspected and evaluated for structural integrity and the presence of debris. All debris, including dirt, leaves, and sediment, are removed at the time of inspection, which occurs on each catch basin and manhole annually. The BOS contractor's reporting of catch basin cleaning and inspection results will serve as the permit-required "log" stipulated in 2.3.7.a.iii.2.

A requirement of the MS4 Permit is the optimization of inspections and cleanings in order to:

- ☑ Prioritize attention on Catch Basin structures in construction zones. At Westover, the construction contractor as overseen by the construction management agency (e.g. Army Corps of Engineers, etc.) is responsible for protecting storm drains from potential pollutants stemming from construction activities. Storm drain protection and any needed corrective action is part of the construction contract specs or scope of work. The MS4-required optimization effort within construction zones is achieved through our project design and construction procedures, which are discussed in further detail earlier in this SWMP in the construction BMP chapter and post-construction BMP chapter.
- ☑ Ensure no catch basin is 50% full of sediments. At Westover, the BOS contractor is tasked with cleaning the catch basins. BOS Contract, Tab F5.25 Storm Drainage states "Annually the KTR shall inspect and document all storm drain catch basins for structural integrity (e.g. loose brick), concrete or catch basin inlets, presence of debris. The KTR shall remove all debris such as leaves, dirt or other sediment at time of inspection. The KTR shall prepare and submit a report of the inspection findings to the BCE. "

Responsible Department: Monitored by the Base Civil Engineer and implemented by the BOS contractor.
Measurable Goal and Deadline: ☑ Develop a catch basin cleaning program. *This program is in effect at Westover ARB and this requirement is fully satisfied.* (Written O&M procedures originally due within 2 yrs of permit effective date, then Part 1.10.3 extended the deadline by 2 years, thus changing due date to 2022; nonetheless written procedure has been completed as mentioned above.)
Documentation/Location: The latest version of AFI32-1067 is located at the following web address: https://static.e-publishing.af.mil/production/1/af_a4/publication/afi32-1067/afi32-1067.pdf The latest version of ETL 14-1 is located at the following web address: https://www.wbdg.org/ffc/af-afcec/engineering-technical-letters-afetl/etl-14-1' The specific contract mechanism for catch basin cleaning is contained in the BOS Contract, Tab F, Section F5.25.

BMP 6e: Swales, Detention Basins, Infiltration (treatment) Structures	**MCM: Written Procedures for O&M of Treatment Structures to Minimize Sediment Discharge and Achieve Good Housekeeping / P2**
Permit Citation: 2016 Final Permit Part 2.3.7.a.iii.6.	
Description: Westover ARB maintains stormwater infrastructure in accordance with AFI32-1067 and ETL 14-1. Attachments 3 to 12 of ETL 14-1 provide maintenance procedures and inspection checklists for stormwater infrastructure. These procedures are implemented under the BOS contract Tab F, Real Property Maintenance (F5.25) which states: F5.25.6 Storm Water Detention Ponds and Spill Containment Ponds: The KTR shall inspect and maintain all storm water detention ponds and spill containment ponds monthly to include the following: clean trash from debris catchers and weirs, ensure inlet and outlet weirs are in good repair with water not leaking under concrete, exercise both inlet and outlet valves and leave fully open, clean openings and outlets free of debris, clean trash from all surface weirs and outlet structure overflows, and inspect ponds for silt buildup, erosion, woody vegetation and adequate drive access. Inspections for each pond shall be documented. A written report of findings and description of the O&M service performed shall be provided to Contractor's Officer Representative and Westover Environmental Office within 5 days after the service is completed. All repairs will be ordered under the Labor for Service Call CLIN of the contract. (See F-TE-3, F39)	
Responsible Department: Monitored by the Base Civil Engineer and implemented by the BOS contractor.	

Measurable Goal and Deadline:

☑ Develop a stormwater infrastructure inspection and maintenance program. *This program is in effect at Westover ARB and this requirement is fully satisfied.*

Documentation/Location:

The latest version of AFI32-1067 is located at the following web address:

https://static.e-publishing.af.mil/production/1/af_a4/publication/afi32-1067/afi32-1067.pdf

The latest version of ETL 14-1 is located at the following web address:

https://www.wbdg.org/ffc/af-afcec/engineering-technical-letters-afetl/etl-14-1'

The specific contract mechanism for catch basin cleaning is contained in the BOS Contract, Tab F, Section F5.25.

BMP 6f: Street and Parking Lot Sweeping Program	**MCM: Written Procedures for Street Sweeping to Minimize Sediment Discharge and Achieve Good Housekeeping / P2**

Permit Citation: 2016 Final Permit Part 2.3.7.a.iii.3 as modified by Appendix H Part V.2.a.ii for solids impaired receiving waters.

Part 2.3.7.a.iii.3 states: The procedures shall also include more frequent sweeping of targeted areas determined by the permittee on the basis of **pollutant load** reduction potential.

Appendix H Part V.2.a.ii states: For sweeping, target areas with potential for **high pollutant loads**. This may include, but is not limited to, increased street sweeping frequency in commercial areas and high density residential areas, or drainage areas with a large amount of impervious area. Prioritize inspection and maintenance for catch basins to ensure that no sump shall be more than 50 percent full. Clean catch basins more frequently if inspection and maintenance activities indicate excessive sediment or debris loadings. Each annual report shall include the street sweeping schedule determined by the permittee to target high pollutant loads.

Description: Westover ARB has a street and parking lot cleaning program as required by AFI32-1067 and ETL 14-1 and implemented through the BOS contract, Tab F, Real Property Maintenance (F6.3.7). Under the BOS contract, the BOS contractor is required to sweep all roads and parking lots once per month. The contractor is required to document areas swept daily throughout the month. Sweeping is required to clean pavement of all dirt, debris, and foreign matter. The BOS contractor prepares a report summarizing these activities and includes inspection results to Westover ARB staff.

For reference, the following are excerpts from the BOS contract:

F6.3 Pavement Maintenance. This subsection includes the maintenance or repairs of all pavements (airfield, roads, parking lots, sidewalks and dikes), and airfield pavement sweeping. The contractor (KTR) shall check all Air Force-owned airfield pavements (runway, taxiways, ramps and aprons) daily for FOD and shall sweep 20% of the airfield pavement each day. The KTR shall arrange his daily sweeping so that all airfield pavements are swept no less than once

a month. All aircraft parking mooring points and static ground points shall be clean and free of FOD. The KTR shall document each area swept daily throughout the month. Additional airfield pavement sweeping requirements, above the 20% each day, will be ordered under the Labor for Service Call CLIN of the contract. (See contract section F-TE-1, SDSF27 and reference F-TE-7 for maps)

F6.3.7 Roads and Parking Lots Sweeping: The KTR shall sweep all roads and parking lots a minimum of one time per month. The KTR shall document each area swept daily throughout the month. After sweeping, pavements and curbs shall be free of dirt, debris, and foreign matter. (See contract section F-TE-1, SDSF28)

As Stoney Brook is impaired for solids, additional permit conditions are required, namely Good Housekeeping BMPs must have higher frequency of street sweepings at high pollutant load areas. Because Westover ARB already employs higher frequencies than what is required by Part 2.3.7, this requirement to increase sweeping at higher pollutant load areas is fulfilled.

Responsible Department: Monitored by the Base Civil Engineer and implemented by the BOS contractor.

Measurable Goal and Deadline:

☑ Develop a street and parking lot sweeping program. *This program is in effect at Westover ARB and this requirement is fully satisfied.*

Documentation/Location:

The latest version of AFI32-1067 is located at the following web address:

https://static.e-publishing.af.mil/production/1/af_a4/publication/afi32-1067/afi32-1067.pdf

The latest version of ETL 14-1 is located at the following web address:

https://www.wbdg.org/ffc/af-afcec/engineering-technical-letters-afetl/etl-14-1'

The specific contract mechanism for catch basin cleaning is contained in the BOS Contract, Tab F, Section F6.3.7.

BMP 6g: Snow Plan / Winter Road Maintenance	**MCM: Written Procedures for Winter Road Maintenance to Minimize Pollutant Discharge and Achieve Good Housekeeping / P2**
Permit Citation: 2016 Final Permit Part 2.3.7.a.iii.5.	
Description: Westover ARB has a winter road maintenance program as required by AFI32-1002 Snow and Ice Control, documented by the Westover ARB Snow Plan, and **implemented under BOS contract, Tab F, Real Property Maintenance (F6.3.5)**. The specific policies, procedures, and responsibilities for the Winter Road Maintenance Program are contained in the Snow Plan.	
Responsible Department: Monitored by the Base Civil Engineer and implemented by the BOS contractor.	
Measurable Goal and Deadline: ☑ Develop a winter road maintenance program. *This program is in effect at Westover ARB and this requirement is fully satisfied.*	
Documentation/Location: The latest version of AFI32-1002 is located at the following web address: https://static.e-publishing.af.mil/production/1/af_a4/publication/afi32-1002/afi32-1002.pdf The specific contract mechanism for catch basin cleaning is contained in the BOS Contract, Tab F, Section F6.3.5. The Westover ARB Snow Plan is maintained by the Base Civil Engineer and is available for public review upon request.	

BMP 6h: Stormwater Pollution Prevention Plan	**MCM: Good Housekeeping & Pollution Prevention**
Permit Citation: 2016 Final Permit Part 2.3.7.b stipulates the following: "The SWPPP is a separate and different document from the SWMP required in part 1.10. A SWPPP does not need to be developed for a facility if the permittee has either developed a SWPPP or received a no exposure certification for the discharge under the Multi-Sector General Permit or the discharge is authorized under another NPDES permit."	
Description: Westover ARB as a whole is subject to the EPA MSGP and therefore maintains and annually updates a SWPPP.	
Responsible Department: Base Environmental Office (439 MS/CEV)	
Measurable Goal and Deadline: ☑ Develop a SWPPP by 30 June 2022. *A SWPPP has been completed as required by the MSGP and is in full effect site-wide.*	

Documentation/Location:

The latest version of the SWPPP is maintained by the Base Environmental Office and is available for public review upon request.

5. ADDITIONAL REQUIREMENTS

5.1 NITROGEN TMDL REQUIREMENTS – PER APPENDIX F

Westover ARB has eight stormwater outfalls all discharge into tributaries of the Connecticut River which discharges to the Long Island Sound. Therefore, the MS4 discharges are subject to the Long Island Sound TMDL for Total Nitrogen. Requirements imposed on Westover ARB by the TMDL are listed in the 2016 Final Permit Appendix **F** Part B.I. This section describes these requirements and how they are addressed at Westover ARB.

Enhanced Public Education and Outreach BMP (Permit Appendix F Part B.I.1.a.i.1) – The permit stipulates a requirement to craft specific annual messages regarding grass clippings, slow release fertilizer, pet waste, and leaf litter to certain audiences, however additional messages are not warranted for Westover - See BMP 5 for details.

Enhanced Stormwater Management in New Development BMP (Permit Appendix F Part B.I.1.a.i.2) – The permittee is required to implement BMPs optimized for nitrogen removal and the retrofit opportunities and priority ranking under Part 2.3.6.1.b shall include consider of BMPs to reduce nitrogen discharges. These requirements are discussed in more detail in Section 4.5.3 and 4.5.4. BMP #5 Post Construction Stormwater Management and BMP #5 List of Retrofit Opportunities are used to fulfill these requirements.

Enhanced Good House Keeping and Pollution Prevention BMP (Permit Appendix F Part B.I.1.a.i.3) – The permittee is required to establish requirements regarding the use of slow release fertilizer, management of grass cuttings and leaf litter, and increased street sweeping frequencies. These requirements are discussed in more detail in Section 4.6.3 and 4.6.4. BMP #6 Parks and Open Spaces Operation and Maintenance Procedures and BMP #6 Street and Parking Lot Sweeping Program are used to fulfill these requirements.

Nitrogen Source Identification Report (Permit Appendix F Part B.I.1.b) – Within four years of the permit effective date, the permittee shall complete a Nitrogen Source Identification Report – BMP 7a. The report shall include a calculation of total urbanized area; screening and monitoring results; identification, delineation, and prioritization of potential catchments with high nitrogen loading; and identification of potential retrofit opportunities for the installation of structural BMPs during re-development. The main sources of nitrogen include atmospheric precipitation, geological sources, fertilizer application, agricultural land, livestock, poultry, and urban waste (Ghaley and Ramakrishnan 2015). No agricultural, livestock, or poultry operations are conducted at Westover ARB. **Fertilizer use** is generally discouraged by the Integrated Natural Resources Management Plan, therefore **should not be a major source** at Westover ARB. Generally, it is unlikely that Westover ARB is a large contributor of nitrogen to its receiving waters. However, in accordance with the 2016 Final Permit, BMP **7a** is the development of the Nitrogen Source Identification Report. The information gathered as part of this report will be used to locate and design BMP 7 Demonstration Structural BMP Installation .

(Appendix F) BMP 7a: Nitrogen Source Identification Report
Permit Citation: 2016 Final Permit Appendix F Part B.I.1.b for Nitrogen TMDL Requirements.
Description: The report will include a calculation of total urbanized area; screening and monitoring results; identification, delineation, and prioritization of potential catchments with high nitrogen loading; and identification of potential retrofit opportunities for the installation of structural BMPs during re-development.
Responsible Department: Base Environmental Office (439 MS/CEV)
Measurable Goal and Deadline: ☐ Develop the Nitrogen Source Identification Report by 30 June 2022 and submit with the 4th Annual Report.
Documentation/Location: The list will be attached to this plan (Appendix L) and to the 4th Annual Report.

Structural BMP Evaluation (Permit Appendix F Part B.I.1.c.i) – The permittee shall evaluate all properties identified by the retrofit opportunities (See Section 4.5.4; BMP 5c) for structural BMP installation. The evaluation shall include planned redevelopment activity and date planned for the property; the estimate cost for redevelopment or retrofit BMPs; and the engineering and regulatory feasibility of redevelopment or retrofit BMPs. BMP 7b is the development of the Structural BMP Evaluation.

(Appendix F) BMP 7b: Structural BMPs Evaluation
Permit Citation: 2016 Final Permit Appendix F Part B.I.1.c.i for Nitrogen TMDL Requirements.
Description: The properties identified by BMP 5c (retrofit opportunities) will be evaluated for the feasibility of the installation of structural BMPs. The evaluation will include planned redevelopment activity and date planned for the property; the estimate cost for redevelopment or retrofit structural BMPs; and the engineering and regulatory feasibility of redevelopment or retrofit structural BMPs.
Responsible Department: Base Environmental Office (439 MS/CEV)
Measurable Goal and Deadline: ☐ Develop the Structural BMPs Evaluation by 30 June 2023 and submit with the 5th Annual Report.
Documentation/Location: The list will be attached to this plan (Appendix M) and to the 5th Annual Report.

Planned Structural BMPs (Permit Appendix F Part B.I.1.c.ii) – The permittee shall provide a listing of planned structural BMPs and a plan and schedule for implementation in the 5th Annual Report. One of these structural BMPs shall be installed as a demonstration project within six years of the effective permit, targeting a catchment with high nitrogen load potential. The demonstration project will be located and designed using the nitrogen sampling and other information collected as part of the Nitrogen Source Identification Report (BMP 7a). If the Nitrogen Source Identification Report fails to find a significant source of Nitrogen at Westover ARB, it is proposed that the required demonstration project be eliminated. The remaining structural BMPs shall be installed in accordance with the plan and schedule. BMPs 7c and 7d are used to fulfil these requirements.

(Appendix F) BMP 7c: Planned Structural BMPs
Permit Citation: 2016 Final Permit Appendix F Part B.I.1.c.ii for Nitrogen TMDL Requirements.
Description: Develop a listing of planned structural BMPs and a plan and schedule for implementation in the 5th Annual Report.
Responsible Department: Base Environmental Office (439 MS/CEV)
Measurable Goal and Deadline: ☐ Develop the listing of Planned Structural BMPs by 30 June 2023 and submit with the 5th Annual Report.
Documentation/Location: The list will be attached to this plan (Appendix N) and to the 5th Annual Report.

(Appendix F) BMP 7d: Demonstration Structural BMP Installation
Permit Citation: 2016 Final Permit Appendix F Part B.I.1.c.ii for Nitrogen TMDL Requirements.
Description: Installation of a structural BMP as a demonstration project targeting a high nitrogen load potential watershed. The BMP will be located and designed using the information collected as part of the Nitrogen Source Identification Report (BMP 7a). If the Nitrogen Source Identification Report fails to find a significant source of Nitrogen at Westover ARB, it is proposed that the required demonstration project be eliminated.
Responsible Department: Base Environmental Office (439 MS/CEV)
Measurable Goal and Deadline: ☐ Install the demonstration project by 30 June 2024.
Documentation/Location:

The project will be summarized in this report and the 6th Annual Report.

Structural BMP Tracking (Permit Appendix F Part B.I.1.c.iii) – The permittee shall track any structural BMPs listed in Appendix H Attachment 1 of the 2016 Final Permit. These BMPs include infiltration trenches, infiltration basins or other surface infiltration practices, bioretention practices, gravel wetland systems, porous pavement, wet ponds or wet detention basins, dry ponds or detention basins, and water quality swales. The nitrogen removal of each BMP shall be estimated consistent with Appendix H Attachment 1. The permittee shall also document the BMP type, total area treated by the BMP, the design storage volume of the BMP, and the estimate nitrogen removal in mass per year in each annual report. BMPs 7e is used to fulfil these requirements.

(Appendix H) BMP 7e: Structural BMP Tracking
Permit Citation: 2016 Final Permit Appendix F Part B.I.1.c.iii for Nitrogen TMDL Requirements **and** Appendix H Attachment 1.
Description: Westover ARB will track infiltration trenches, infiltration basins or other surface infiltration practices, bioretention practices, gravel wetland systems, porous pavement, wet ponds or wet detention basins, dry ponds or detention basins, and water quality swales installed within the MS4 watershed. Documentation will include the following information at a minimum: BMP type, total area treated by the BMP, the design storage volume of the BMP, and the estimated nitrogen removal in **mass per year**.
Responsible Department: Base Environmental Office (439 MS/CEV)
Measurable Goal and Deadline: ☐ Track the listed BMPs in each Annual Report. Per Permit Part 1.10.3, deadlines in Appendix H are extended by two (2) years. The tracking must be completed in 2020 and then updated annually thereafter.
Documentation/Location: The BMP tracking will be documented in each Annual Report.

5.2 BACTERIA IMPAIRMENT REQUIREMENTS – PER APPENDIX H

Westover ARB's Outfall 011 discharges into Stoney Brook (MA34-19) which is impaired for bacteria. Therefore, Outfall 011 is subject to the requirements listed in Appendix H Part III of the 2016 Final Permit. This section describes these requirements and how they are addressed at Westover ARB.

Enhanced Public Education and Outreach BMP (Permit Appendix H Part III.2.a.i) – The permittee is required to craft specific annual messages regarding pet wastes (not applicable) and septic system maintenance and operations. These messages are discussed in more detail in Section 4.1.3 and 4.1.4 of this SWMP. BMP 1 is used to fulfill this requirement.

Enhanced IDDE Program (Permit Appendix H Part III.2.a.ii) – The permittee shall designate any outfall discharging to bacteria impaired waters as problem or high-priority outfalls under the IDDE Program. This is discussed in more detail in Section 4.3.4 of this SWMP. This requirement is fulfilled by BMP 3 (IDDE Program).

5.3 SOLIDS IMPAIRMENT REQUIREMENTS - PER APPENDIX H

Westover ARB's Outfall 011 discharges into Stoney Brook (MA34-19) which is impaired for solids. Therefore, Outfall 011 is subject to the requirements listed in Appendix H Part V of the 2016 Final Permit. This section describes these requirements and how they are addressed at Westover ARB.

Enhanced Stormwater Management in New Development BMP (Permit Appendix H Part V.2.a.i) – The permittee must require new or redeveloped stormwater management systems to incorporate designs that allow for shutdown and containment to isolate the system in the event of an emergency or unexpected event. This requirement is met at Westover ARB under the Oil Pollution Control Act compliance and SPCC Plan. Additionally, infiltration is also encouraged by the 2016 Final Permit.

Enhanced Good House Keeping and Pollution Prevention BMP (Permit Appendix H Part V.2.a.ii) – The permittee is required to increase the street sweeping frequency and enhanced catch basin inspections in areas with potential for high pollutant loads. Because Westover ARB already employs increased frequencies for these activities, this requirement is fulfilled. This is discussed in more detail in Section 4.6.3 and 4.6.4 of this SWMP. These requirements are fulfilled by BMP 6 (Catch Basin Cleaning Program and Street & Parking Lot Sweeping Program).

5.4 DISCHARGES TO SURFACE DRINKING WATER SUPPLIES AND THEIR TRIBUTARIES

All Westover ARB outfalls discharge to tributaries of the Connecticut River which is a Class B surface water under 314 CMR 4.06. Accordingly, the permittee is required to provide pretreatment and spill control measures to stormwater discharges to the extent feasible. Pretreatment requirements for new development and redevelopments are built into the stormwater management standards required by BMP 5a. Existing treatment structures are managed in accordance with AFIs and the site's SWPPP. Additionally, spill control is provided across the site in accordance with the Oil Pollution Act and Westover ARB's SPCC Plan.

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6. EVALUATION AND ASSESSMENT

This section describes the procedures for evaluation and assessment of the SWMP implementation and effectiveness against measurable goals.

6.1 PROGRAM EVALUATION AND ANNUAL REPORT

Westover ARB will self-evaluate its compliance with the terms and conditions of the 2016 Final Permit. These self-evaluations will be submitted with the Annual Reports. The Annual Reports will also be attached to the SWMP.

If, upon self-evaluation, BMPs discussed in the SWMP are found to be ineffective in achieving the objectives of each control measure and the defined measurable goals, the BMPs will be updated as necessary. All BMP modifications will be explained in the Annual Reports.

Westover ARB will submit an Annual Report for each permit year summarizing the reporting year commencing on the permit effective date. The first Annual Report will commence 1 May of the year prior to end of the first year of permit coverage. The Annual Reports will be submitted within 90 days of the close of each reporting period.

Each annual report will include the following, at a minimum:

- Self-assessment review of compliance with permit terms and conditions.
- Assessment of appropriateness of selected BMPs.
- Status of any plans or activities required due to discharges to receiving waters with an approved TMDL or water quality limited waters.
- Assessment of progress towards measureable goals and objectives of each MCM.
- Outfall screening and monitoring data.
- Activities for next reporting cycle.
- Changes to BMPs or measurable goals.
- Activities undertaking to achieve any measure goal or implementing any MCM.

Annual Reports will be submitted to the following addresses:

United States Environmental Protection Agency
Stormwater and Construction Permits Section (OEP06-1)
Five Post Office Square, Suite 100
Boston, Massachusetts 02109

And

Massachusetts Department of Environmental Protection
One Winter Street – 5th Floor
Boston, Massachusetts 02108
Attn: Frederick Civian

Or may be submitted electronically to: stormwater.reports@epa.gov

After December 21, 2020 all Annual Reports must be submitted electronically.

6.2 RECORD KEEPING

All records required by this permit will be retained for at least five years. Examples of required records include information used in the development of any written program required by the permit, monitoring results, copies of reports, records of screenings, follow-up and elimination of illicit discharges, maintenance records, inspection records, SWMP, SWPPP, and annual reports. This list is not all inclusive. All records will be made available to the public by the Base Environmental Office upon request.

7. REFERENCES

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Department of the Air Force. 2015. *Air Force Instruction 32-1067 Water and Fuel Systems*. 4 February.

Ghaley, A.E. and V.V Ramakrishnan. 2015. *Nitrogen Sources and Cycling in the Ecosystem and its Role in Air, Water and Soil Pollution: A Critical Review.* Dalhousie University, Halifax, Nova Scotia, Canada. 27 February.

Naval Facility Engineering Command. 2015. *UFC 3-210-10 Low Impact Development*. 1 June.

Naval Facility Engineering Command. 2016. *UFC 3-250-01 Pavement Design for Roads and Parking Areas*. 14 November.

U.S. Department of Commerce. 2000. *Urbanized Area Outline Map (Census 2000) Springfield, MA--CT.*

U.S. Environmental Protection Agency. 2012. *NPDES Phase II Stormwater Program Automatically Designated MS4 Areas*. 19 November.

U.S. Forest Service. 2015. Vegetation Management Plan, Westover Air Reserve Base, Massachusetts. February.

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Appendix A

Authorized Representative

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DEPARTMENT OF THE AIR FORCE
AIR FORCE RESERVE COMMAND

19 June 2019

MEMORANDUM FOR 439 MSG/CEV

FROM: 439 AW/CC

SUBJECT: Appointment of Duly Authorized Representative for the General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts for the Westover Air Reserve Base

1. AFI 32-1067, *Water and Fuel Systems*, dated February 4, 2015, provides applicable agency guidance for storm water discharge permits. Paragraph 5.2.1 includes storm water permits under the definition of national pollutant discharge elimination system (NPDES) permits. IAW para. 5.2.1, installations that have a storm water permit "should strive to operate under a General Storm Water permit." Westover is required to seek coverage under the General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts because Westover ARB is in an Urbanized Area designated by the Bureau of the Census. IAW para. 4.3.8.1, "reports required by permits and other information must be signed and/or certified by the installation commander except to the extent delegations are authorized under applicable Federal or state regulations."

2. The United States Environmental Protection Agency (EPA) NPDES General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts (MA MS4 General Permit), Appendix B, effective through June 30, 2022, identifies authorized signers of this permit. IAW subsection 11.A.3, signers on behalf of federal agencies must be "a principal executive officer. . . . For purposes of this subsection, a principal executive officer of a federal agency includes . . . (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency."

3. IAW subsection 11.B of the permit, the senior executive officer of a federal agency may designate a Duly Authorized Representative to sign Permit-related reports if: 1) the authorization is made in writing by a person described above; 2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of manager, owner or operator, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company (A duly authorized representative may be either a named individual or any individual occupying a named position); and 3) the signed and dated written authorization is included in the storm water pollution prevention plan, a copy of which must be submitted to the EPA, if requested.

4. IAW subsection 11.D, any person signing documents required under the terms of this permit must include the following 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 gathered and evaluated 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."

5. The Environmental Engineering Flight (439 MSG/CEV) has overall responsibility for environmental permit compliance. 439 MSG/CEV is hereby appointed as a Duly Authorized Representative for the Westover Air Reserve Base for the MA MS4 General Permit. This appointment supercedes all previous appointments previously made.

CRAIG C. PETERS, Colonel, USAF
Commander

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESERVE COMMAND

19 June 2019

MEMORANDUM FOR 439 MSG/CE

FROM: 439 AW/CC

SUBJECT: Appointment of Duly Authorized Representative for the General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts for the Westover Air Reserve Base

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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."

5. The Base Civil Engineer (439 MSG/CE) has overall responsibility for facility maintenance and environmental permit compliance. 439 MSG/CE is hereby appointed as a Duly Authorized Representative for the Westover Air Reserve Base for the MA MS4 General Permit. This appointment supercedes all previous appointments previously made.

CRAIG C. PETERS, Colonel, USAF
Commander

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESERVE COMMAND

19 June 2019

MEMORANDUM FOR 439 MSG/CC

FROM: 439 AW/CC

SUBJECT: Appointment of Duly Authorized Representative for the General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts for the Westover Air Reserve Base

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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."

5. The Mission Support Group Commander (439 MSG/CC) has overall responsibility for facility maintenance and environmental permit compliance. 439 MSG/CC is hereby appointed as a Duly Authorized Representative for the Westover Air Reserve Base for the MA MS4 General Permit. This appointment supercedes all previous appointments previously made.

CRAIG C. PETERS, Colonel, USAF
Commander

Appendix B

2016 Final MS4 Permit

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Appendix C

Notice of Intent and Authorization to Discharge Letter

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MA 02109-3912

VIA EMAIL

February 14, 2019

DERIN S. DURHAM, Colonel, USAF
COMMANDER

And;

Champanine Saviengvong
Environmental Engineer
250 Patriot Avenue
Chicopee, MA. 01022
champanine.saviengvong@us.af.mil

Re: National Pollutant Discharge Elimination System Permit ID #: MAR042051, Westover Air Reserve Base

Dear Champanine Saviengvong:

The 2016 NPDES General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts (MS4 General Permit) is a jointly issued EPA-MassDEP permit. Your Notice of Intent (NOI) for coverage under this MS4 General Permit has been reviewed by EPA and appears to be complete. You are hereby granted authorization by EPA and MassDEP to discharge stormwater from your MS4 in accordance with the applicable terms and conditions of the MS4 General Permit, including all relevant and applicable Appendices. This authorization to discharge expires at midnight on **June 30, 2022.**

For those permittees that certified Endangered Species Act eligibility under Criterion C in their NOI, this authorization letter also serves as EPA's concurrence with your determination that your discharges will have no effect on the listed species present in your action area, based on the information provided in your NOI.

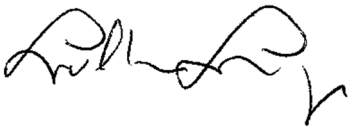
As a reminder, your first annual report is due by **September 30, 2019** for the reporting period from May 1, 2018 through June 30, 2019.

Information about the permit and available resources can be found on our website: https://www.epa.gov/npdes-permits/massachusetts-small-ms4-general-permit. Should you have any questions regarding this permit please contact Newton Tedder at tedder.newton@epa.gov or (617) 918-1038.

Sincerely,

Thelma Murphy, Chief
Stormwater and Construction Permits Section
Office of Ecosystem Protection
United States Environmental Protection Agency, Region 1

and;



Lealdon Langley, Director
Wetlands and Wastewater Program
Bureau of Water Resources
Massachusetts Department of Environmental Protection

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part I: General Conditions

General Information

Name of Municipality or Organization: Westover Air Reserve Base

State: MA

EPA NPDES Permit Number (if applicable):

Primary MS4 Program Manager Contact Information

Name: Champanine Saviengvong

Title: Environmental Engineer

Street Address Line 1: 250 Patriot Avenue

Street Address Line 2:

City: Chicopee

State: MA

Zip Code: 01022

Email: champanine.saviengvong@us.af.mil

Phone Number: (413) 557-3951

Fax Number:

Other Information

Stormwater Management Program (SWMP) Location
(web address or physical location, if already completed):

Eligibility Determination

Endangered Species Act (ESA) Determination Complete? Yes

Eligibility Criteria (check all that apply): ☒ A ☐ B ☐ C

National Historic Preservation Act (NHPA) Determination Complete? Yes

Eligibility Criteria (check all that apply): ☐ A ☒ B ☐ C

☐ Check the box if your municipality or organization was covered under the 2003 MS4 General Permit

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part II: Summary of Receiving Waters

Please list the waterbody segments to which your MS4 discharges. For each waterbody segment, please report the number of outfalls discharging into it and, if applicable, any impairments.

Massachusetts list of impaired waters: Massachusetts 2014 List of Impaired Waters- http://www.mass.gov/eea/docs/dep/water/resources/07v5/14list2.pdf

Check off relevant pollutants for discharges to impaired waterbodies (see above 303(d) lists) without an approved TMDL in accordance with part 2.2.2.a of the permit. List any other pollutants in the last column, if applicable.

Waterbody segment that receives flow from the MS4	Number of outfalls into receiving water segment	Chloride	Chlorophyll-a	Dissolved Oxygen/ DO Saturation	Nitrogen	Oil & Grease/ PAH	Phosphorus	Solids/ TSS/ Turbidity	E. coli	Enterococcus	Other pollutant(s) causing impairments
Willamansett Brook	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Cooley Brook	6	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Stony Brook (Segment ID: MA34-19)	1	☐	☐	☐	☐	☐	☐	☒	☒	☐	Non-native aquatic plants
Long Island Sound Watershed	8	☐	☐	☐	☒	☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	☐	☐	☐	☐	
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Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary

Identify the Best Management Practices (BMPs) that will be employed to address each of the six Minimum Control Measures (MCMs). For municipalities/organizations whose MS4 discharges into a receiving water with an approved Total Maximum Daily Load (TMDL) and an applicable waste load allocation (WLA), identify any additional BMPs employed to specifically support the achievement of the WLA in the TMDL section at the end of part III.

For each MCM, list each existing or proposed BMP by category and provide a brief description, responsible parties/departments, measurable goals, and the year the BMP will be employed (public education and outreach BMPs also requires a target audience). **Use the drop-down menus in each table or enter your own text to override the drop down menu.**

MCM 1: Public Education and Outreach

BMP Media/Category (enter your own text to override the drop down menu)	**BMP Description**	**Targeted Audience**	**Responsible Department/Parties** (enter your own text to override the drop down menu)	**Measurable Goal**	**Beginning Year of BMP Imple-mentation**
Training session	Training	Industrial Shops	Environmental Office, Shop Supervisors	Conduct annual training	2019
Design & Construction Meetings	Outreach	Design & Construction Contractors	Contracting Office, Civil Engineering	No discharge of contaminated stormwater	2020

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 2: Public Involvement and Participation

BMP Categorization	Brief BMP Description (enter your own text to override the drop down menu)	Responsible Department/Parties (enter your own text to override the drop down menu)	Additional Description/ Measurable Goal	Beginning Year of BMP Implementation
Public Review	Stormwater Management Plan Review	Environmental-Safety-Occupational Health Cross Functional Team	Allow annual review of stormwater management plan and posting of stormwater management plan on server or sharepoint	2019
Public Participation	Hazardous Material & Hazardous Waste storage & disposal	Industrial Shops	Allow Base employees to practice pollution prevention	2019

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 3: Illicit Discharge Detection and Elimination (IDDE)

BMP Categorization (enter your own text to override the drop down menu)	**BMP Description**	**Responsible Department/Parties** (enter your own text to override the drop down menu)	**Measurable Goal** (all text can be overwritten)	**Beginning Year of BMP Imple-mentation**
Storm Sewer Overflow (SSO) Inventory	Develop inventory in accordance of permit conditions	Environmental Office	Complete within 1 year of permit effective date	2019
Storm and Sewer System Map	Create Map and update	Environmental Office	Phase 1 Map within 3 years of effective date of permit and complete full system map 10 years after permit effective date	2021
Written Illicit Discharge Detection & Elimination (IDDE) Program	Create written IDDE program	Environmental Office	Complete within 3 years of the permit effective date	2021
Catchment Investigation Procedure	Create written Catchment Investigation Procedure	Environmental Office	Written investigation procedure within 3 years and execute investigation within10 yrs of permit effective date	2021
Dry Weather Screening	Conduct in accordance with outfall Screening procedure and permit conditions	Environmental Office	Complete 3 years after permit effective date	2021
Ongoing Screening	Required to conduct Screening/Monitoring of "decommissioned" illicit connections	Environmental Office	Complete ongoing Screening once every 5 years per 2.3.4.10	2024

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 4: Construction Site Stormwater Runoff Control

BMP Categorization (enter your own text to override the drop down menu or entered text)	**BMP Description**	**Responsible Department/Parties** (enter your own text to override the drop down menu)	**Measurable Goal** (all text can be overwritten)	**Beginning Year of BMP Imple-mentation**
Establish the Requirement for Contractors to use Erosion and Sediment Control (ESC)		Environmental Office	Complete within 3 years of the permit effective date	2021
Establish the Requirement for Contractors to control waste	Wastes include discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes	Environmental Office	Complete within 3 years of the permit effective date	2021
CE Inspection Program	Create written procedures for inspecting contractor's site plans and inspecting the construction site	Environmental Office	Complete within 2 years of the permit effective date	2020

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 5: Post-Construction Stormwater Management in New Development and Redevelopment

BMP Categorization (enter your own text to override the drop down menu or entered text)	**BMP Description**	**Responsible Department/Parties** (enter your own text to override the drop down menu)	**Measurable Goal** (all text can be overwritten)	**Beginning Year of BMP Imple-mentation**
As-built plans for on-site stormwater control	The procedures to require submission of as-built drawings and ensure long term operation and maintenance will be a part of the SWMP	Contracting Office; Civil Engineering; Construction Contractor	Require submission of as-built plans for completed projects within 3 years of project completion	2021
Target properties to reduce impervious areas	Identify at least 5 permittee-owned properties that could be modified or retrofitted with BMPs to reduce impervious areas and update annually	Environmental Office	Complete 4 years after effective date of permit and report annually on retrofitted properties	2022
Allow green infrastructure	Develop a report assessing existing local regulations to determine the feasibility of making green infrastructure practices allowable when appropriate site conditions exist	Environmental Office	Complete 4 years after effective date of permit and implement recommendations of report	2022
Street design and parking lot guidelines	Develop a report assessing requirements that affect the creation of impervious cover. The assessment will help determine if changes to design standards for streets and parking lots can be modified to support low impact design options.	Environmental Office	Complete 4 years after effective date of permit and implement recommendations of report	2022

Ensure stormwater management design for applicable projects meet the retention or treatment requirements of the permit and applicable requirements of the Massachusetts Stormwater Handbook.	Adoption, amendment, or modification of a regulatory mechanism to meet permit requirements	Environmental Office	Complete 3 years after effective date of permit	2021

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 6: Municipal Good Housekeeping and Pollution Prevention

BMP Categorization (enter your own text to override the drop down menu or entered text)	**BMP Description**	**Responsible Department/Parties** (enter your own text to override the drop down menu)	**Measurable Goal** (all text can be overwritten)	**Beginning Year of BMP Imple-mentation**
O&M procedures including an Inventory for: parks and open spaces; facilities that are subject to stormwater pollution, and vehicles and equipment fueling and storage areas	Create written O&M procedures and Inventory	Environmental Office	Complete and implement 2 years after effective date of permit	2020
Stormwater Pollution Prevention Plan (SWPPP) or maintenance garages, transfer stations, and other waste-handling facilities (separate and different document from the Stormwater Management Plan - SWMP)	Create SWPPPs for maintenance garages, transfer stations, and other waste-handling facilities	Environmental Office	Complete and implement 2 years after effective date of permit	2020
Infrastructure O & M: Catch basins	Establish schedule for catch basin cleaning such that each catch basin is no more than 50% full and clean catch basins on that schedule	BOS Contractor, Civil Engineering	Clean catch basins on established schedule and report number of catch basins cleaned and volume of material moved annually	2020
Infrastructure O & M: Street Sweeping	Sweep all streets and permitee-owned parking lots in accordance with permit conditions	BOS Contractor, Civil Engineering	Sweep all streets and permitee-owned parking lots once per year in the spring	2020
Infrastructure O & M: Use and storage of salt and sand	Establish and implement a program to minimize the use of road salt	BOS Contractor, Civil Engineering	Implement salt use optimization during deicing season	2020
Infrastructure O & M: Stormwater treatment structures such as swales, detention basins, and infiltration structures.	Establish and implement inspection and maintenance procedures and frequencies	BOS Contractor, Civil Engineering	Inspect and maintain treatment structures at least annually	2020

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

Actions for Meeting Total Maximum Daily Load (TMDL) Requirements

Use the drop-down menus to select the applicable TMDL, action description to meet the TMDL requirements, and the responsible department/parties. If no options are applicable, or more than one, **enter your own text to override drop-down menus.**

Applicable TMDL	**Action Description**	**Responsible Department/Parties** (enter your own text to override the drop down menu)
Long Island Sound TMDL (Nitrogen)	Adhere to requirements in part B.I of Appendix F	Environmental Office

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

Actions for Meeting Requirements Related to Water Quality Limited Waters

Use the drop-down menus to select the pollutant causing the water quality limitation and enter the waterbody ID(s) experiencing excursions above water quality standards for that pollutant. Choose the action description from the dropdown menu and indicate the responsible party. If no options are applicable, or more than one, **enter your own text to override drop-down menus.**

Pollutant	Waterbody ID(s)	Action Description	Responsible Department/Parties (enter your own text to override the drop down menu)
E. Coli	MA34-19 (Stony Brook)	Adhere to requirements in part III of Appendix H	Environmental Office
Turbidity	MA34-19 (Stony Brook)	Adhere to requirements in part V of Appendix H	Environmental Office

Part IV: Notes and additional information

Use the space below to indicate the part(s) of 2.2.1and 2.2.2 that you have identified as not applicable to your MS4 because you do not discharge to the impaired water body or a tributary to an impaired water body due to nitrogen or phosphorus. Provide all supporting documentation below or attach additional documents if necessary.
Also, provide any additional information about your MS4 program below.

Westover Air Reserve Base is currently covered under an additional stormwater permit called Multi Sector General Permit (Permit Number MAR052002) and implements that associated Stormwater Pollution Prevention Plan.

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part V: 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, I certify that 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.

Name:	DERIN S. DURHAM, Colonel, USAF	Title:	COMMANDER
Signature:	DURHAM.DERIN.S.1058193743 Digitally signed by DURHAM.DERIN.S.1058193743 Date: 2018.09.26 11:31:56 -04'00'	Date:	09/26/18

[To be signed according to Appendix B, Subparagraph B.11, Standard Conditions]

Note: When prompted during signing, save the document under a new file name

Appendix D

SWMP Checklist

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SWMP Checklist

Activities during **Year 1** – Complete by **30 June 2019**

☐ Send Spring (April/May) Road and Grounds Public Education Message (BMP 1c; Section 4.1)
☐ Send Septic System Operators Public Education Message (BMP 1d; Section 4.1)
☑ Complete SSO Inventory (BMP 3b; Section 4.3)
☑ Complete Phase I Mapping (BMP 3c; Section 4.3)
☐ After IDDE Plan is complete (per EPA Region 1 staff), Complete IDDE Training to Responsible Employees (BMP 3e; Section 4.3)
☑ Complete and Document Catch Basin Cleanings (BMP 6e; Section 4.6)
☑ Complete and Document Street and Parking Lot Sweepings (BMP 6f; Section 4.6)
☑ Complete and Document Stormwater Structure Inspections and Maintenance (BMP 6h; Section 4.6)

(Due as part of Annual Report 90 days after 30 June 2019)☐ Complete Structural BMP Tracking (BMP 7e; Section 5.1)
(Due 90 days after 30 June 2019)☐ Complete and Submit 1st Annual Report

Activities during **Year 2** – Complete by **30 June 2020**

☐ Send Fall (Aug/Sept/Oct) Road and Grounds Public Education Message (BMP 1d; Section 4.1)
☐ Send Spring (April/May) Road and Grounds Public Education Message (BMP 1d; Section 4.1)
☐ Send Septic System Operators Public Education Message (BMP 1e; Section 4.1)
☐ Post SWMP Online for Public Access (BMP 2a; Section 4.2)
☐ Solicit Comments from Public for 60 Days (BMP 2b; Section 4.2)
☐ Post Annual Report Online for Public Access (BMP 2a; Section 4.2)
☐ Update SSO Inventory (BMP 3b; Section 4.3)
☐ Complete IDDE Training to Responsible Employees (BMP 3e; Section 4.3)
☐ Complete and Document Catch Basin Cleanings (BMP 6e; Section 4.6)
☐ Complete and Document Street and Parking Lot Sweepings (BMP 6f; Section 4.6)
☐ Complete and Document Stormwater Structure Inspections and Maintenance (BMP 6h; Section 4.6)
☐ Complete Structural BMP Tracking (BMP 7e; Section 5.1)
☐ Complete and Submit 2st Annual Report (Due 90 days after 30 June 2020)

Activities during **Year 3** – Complete by **30 June 2021**

☐ Send Fall (Aug/Sept/Oct) Road and Grounds Public Education Message (BMP 1d; Section 4.1)
☐ Send Spring (April/May) Road and Grounds Public Education Message (BMP 1d; Section 4.1)
☐ Send Septic System Operators Public Education Message (BMP 1e; Section 4.1)
☐ Post updated SWMP Online for Public Access (BMP 2a; Section 4.2)
☐ Solicit Comments from Public for 60 Days (BMP 2b; Section 4.2)
☐ Post Annual Report Online for Public Access (BMP 2a; Section 4.2)
☐ Update SSO Inventory (BMP 3b; Section 4.3).
☑ Implement IDDE Legal Authority (BMP 3a; Section 4.3)
☐ Complete IDDE Training to Responsible Employees (BMP 3e; Section 4.3)
☑ Implement Sediment and Erosion Control Legal Authority (BMP 4a; Section 4.4)
☑ Implement Site Plan Review Procedures (BMP 4b; Section 4.4)
☑ Implement Inspections and Enforcement of ESC Measures (BMP 4c; Section 4.4)
☐ Implement Post Construction Stormwater Management Legal Authority (BMP 5a; Section 4.5)
☐ Complete and Document Catch Basin Cleanings (BMP 6e; Section 4.6)
☐ Complete and Document Street and Parking Lot Sweepings (BMP 6f; Section 4.6)
☐ Complete and Document Stormwater Structure Inspections and Maintenance (BMP 6h; Section 4.6)
☐ Complete Structural BMP Tracking (BMP 7e; Section 5.1)

☐ Complete and Submit 3rd Annual Report (Due 90 days after 30 June 2021)

Activities during **Year 4** – Complete by **30 June 2022**

☐ Send Fall (Aug/Sept/Oct) Road and Grounds Public Education Message (BMP 1d; Section 4.1)
☐ Send Spring (April/May) Road and Grounds Public Education Message (BMP 1d; Section 4.1)
☐ Send Septic System Operators Public Education Message (BMP 1e; Section 4.1)
☐ Post updated SWMP Online for Public Access (BMP 2a; Section 4.2)
☐ Solicit Comments from Public for 60 Days (BMP 2b; Section 4.2)
☐ Post Annual Report Online for Public Access (BMP 2a; Section 4.2)
☐ Update SSO Inventory (BMP 3b; Section 4.3)
☐ Develop IDDE Written Procedures (BMP 3d; Section 4.2)
☑ Complete Initial Outfall Rankings (BMP 3d; Section 4.2)
☐ Complete IDDE Training to Responsible Employees (BMP 3e; Section 4.3)
☑ Develop Written O&M Procedures for Parks and Open Spaces (BMP 6a; Section 4.6)
☑ Develop Written O&M Procedures for Buildings and Facilities (BMP 6b; Section 4.6)
☑ Develop Written Vehicle and Equipment Storage Procedures (BMP 6c; Section 4.6)
☑ Develop Written O&M Procedures for Stormwater Infrastructure (BMP 6d; Section 4.6)
☐ Complete and Document Catch Basin Cleanings (BMP 6e; Section 4.6)
☐ Complete and Document Street and Parking Lot Sweepings (BMP 6f; Section 4.6)
☐ Complete and Document Stormwater Structure Inspections and Maintenance (BMP 6h; Section 4.6)
☑ Develop SWPPP (BMP 6i; Section 4.6)
☐ Complete Nitrogen Source Identification Report (BMP 7a; Section 5.1)
☐ Complete Structural BMP Tracking (BMP 7e; Section 5.1)
☐ Complete and Submit 4th Annual Report (Due 90 days after 30 June 2022)

Activities during **Year 5** – Complete by **30 June 2023**

☐ Send Fall (Aug/Sept/Oct) Road and Grounds Public Education Message (BMP 1d; Section 4.1)
☐ Send Spring (April/May) Road and Grounds Public Education Message (BMP 1d; Section 4.1)
☐ Send Employees Public Education Message (BMP 1a; Section 4.1)
☐ Send Tenants Public Education Message (BMP 1b; Section 4.1)
☐ Send Contractors Public Education Message (BMP 1c; Section 4.1)
☐ Send Septic System Operators Public Education Message (BMP 1e; Section 4.1)
☐ Post updated SWMP Online for Public Access (BMP 2a; Section 4.2)
☐ Solicit Comments from Public for 60 Days (BMP 2b; Section 4.2)
☐ Post Annual Report Online for Public Access (BMP 2a; Section 4.2)
☐ Update SSO Inventory (BMP 3b; Section 4.3)
☐ Begin Catchment Investigations on Problem Outfalls (BMP 3d; Section 4.3)
☐ Complete IDDE Training to Responsible Employees (BMP 3e; Section 4.3)
☐ Complete and Document Catch Basin Cleanings (BMP 6e; Section 4.6)
☐ Complete and Document Street and Parking Lot Sweepings (BMP 6f; Section 4.6)
☐ Complete and Document Stormwater Structure Inspections and Maintenance (BMP 6h; Section 4.6)
☐ Complete Structural BMP Evaluation (BMP 7b; Section 5.1)
☐ Complete Planned Structural BMPs List (BMP 7c; Section 5.1)
☐ Complete Structural BMP Tracking (BMP 7e; Section 5.1)
☐ Complete and Submit 5th Annual Report (Due 90 days after 30 June 2023)

Activities during **Year 6** – Complete by **30 June 2024**

☐ Send Fall (Aug/Sept/Oct) Road and Grounds Public Education Message (BMP 1d; Section 4.1)
☐ Send Spring (April/May) Road and Grounds Public Education Message (BMP 1d; Section 4.1)
☐ Send Septic System Operators Public Education Message (BMP 1e; Section 4.1)
☐ Post updated SWMP Online for Public Access (BMP 2a; Section 4.2)
☐ Solicit Comments from Public for 60 Days (BMP 2b; Section 4.2)
☐ Post Annual Report Online for Public Access (BMP 2a; Section 4.2)
☐ Update SSO Inventory (BMP 3b; Section 4.3)
☐ Complete Dry Weather Screening and Sampling (BMP 3d; Section 4.3)
☐ Complete IDDE Training to Responsible Employees (BMP 3e; Section 4.3)
☑ Compile Street Design and Parking Lot Guidelines Reports (BMP 5b; Section 4.5)
☐ Compile List of Five Retrofit Opportunities (BMP 5c; Section 4.5)
☐ Complete and Document Catch Basin Cleanings (BMP 6e; Section 4.6)
☐ Complete and Document Street and Parking Lot Sweepings (BMP 6f; Section 4.6)
☐ Complete and Document Stormwater Structure Inspections and Maintenance (BMP 6h; Section 4.6)
☐ Complete Installation of Structural BMP Demonstration Project (BMP 7d; Section 5.1)
☐ Complete Structural BMP Tracking (BMP 7e; Section 5.1)
☐ Complete and Submit 6th Annual Report (Due 90 days after 30 June 2024)

Activities during **Year 7** – Complete by **30 June 2025**

☐ Send Fall (Aug/Sept/Oct) Road and Grounds Public Education Message (BMP 1d; Section 4.1)
☐ Send Spring (April/May) Road and Grounds Public Education Message (BMP 1d; Section 4.1)
☐ Send Septic System Operators Public Education Message (BMP 1e; Section 4.1)
☐ Post updated SWMP Online for Public Access (BMP 2a; Section 4.2)
☐ Solicit Comments from Public for 60 Days (BMP 2b; Section 4.2)
☐ Post Annual Report Online for Public Access (BMP 2a; Section 4.2)
☐ Update SSO Inventory (BMP 3b; Section 4.3)
☐ Begin Catchment Investigations on High-Priority and Low-Priority Outfalls (BMP 3d; Section 4.3)
☐ Complete IDDE Training to Responsible Employees (BMP 3e; Section 4.3)
☐ Complete and Document Catch Basin Cleanings (BMP 6e; Section 4.6)
☐ Complete and Document Street and Parking Lot Sweepings (BMP 6f; Section 4.6)
☐ Complete and Document Stormwater Structure Inspections and Maintenance (BMP 6h; Section 4.6)
☐ Complete Structural BMP Tracking (BMP 7e; Section 5.1)
☐ Complete and Submit 7th Annual Report (Due 90 days after 30 June 2025)

Activities during **Year 8** – Complete by **30 June 2026**

☐ Send Fall (Aug/Sept/Oct) Road and Grounds Public Education Message (BMP 1d; Section 4.1)
☐ Send Spring (April/May) Road and Grounds Public Education Message (BMP 1d; Section 4.1)
☐ Send Septic System Operators Public Education Message (BMP 1e; Section 4.1)
☐ Post updated SWMP Online for Public Access (BMP 2a; Section 4.2)
☐ Solicit Comments from Public for 60 Days (BMP 2b; Section 4.2)
☐ Post Annual Report Online for Public Access (BMP 2a; Section 4.2)
☐ Update SSO Inventory (BMP 3b; Section 4.3)
☐ Complete IDDE Training to Responsible Employees (BMP 3e; Section 4.3)
☐ Complete and Document Catch Basin Cleanings (BMP 6e; Section 4.6)

☐ Complete and Document Street and Parking Lot Sweepings (BMP 6f; Section 4.6)
☐ Complete and Document Stormwater Structure Inspections and Maintenance (BMP 6h; Section 4.6)
☐ Complete Structural BMP Tracking (BMP 7e; Section 5.1)
☐ Complete and Submit 8th Annual Report (Due 90 days after 30 June 2026)

Activities during **Year 9** – Complete by **30 June 2027**

☐ Send Fall (Aug/Sept/Oct) Road and Grounds Public Education Message (BMP 1d; Section 4.1)
☐ Send Spring (April/May) Road and Grounds Public Education Message (BMP 1d; Section 4.1)
☐ Send Septic System Operators Public Education Message (BMP 1e; Section 4.1)
☐ Post updated SWMP Online for Public Access (BMP 2a; Section 4.2)
☐ Solicit Comments from Public for 60 Days (BMP 2b; Section 4.2)
☐ Post Annual Report Online for Public Access (BMP 2a; Section 4.2)
☐ Update SSO Inventory (BMP 3b; Section 4.3)
☐ Complete IDDE Training to Responsible Employees (BMP 3e; Section 4.3)
☐ Complete and Document Catch Basin Cleanings (BMP 6e; Section 4.6)
☐ Complete and Document Street and Parking Lot Sweepings (BMP 6f; Section 4.6)
☐ Complete and Document Stormwater Structure Inspections and Maintenance (BMP 6h; Section 4.6)
☐ Complete Structural BMP Tracking (BMP 7e; Section 5.1)
☐ Complete and Submit 9th Annual Report (Due 90 days after 30 June 2027)

Activities during **Year 10** – Complete by **30 June 2028**

☐ Send Fall (Aug/Sept/Oct) Road and Grounds Public Education Message (BMP 1d; Section 4.1)
☐ Send Spring (April/May) Road and Grounds Public Education Message (BMP 1d; Section 4.1)
☐ Send Septic System Operators Public Education Message (BMP 1e; Section 4.1)
☐ Post updated SWMP Online for Public Access (BMP 2a; Section 4.2)
☐ Solicit Comments from Public for 60 Days (BMP 2b; Section 4.2)
☐ Post Annual Report Online for Public Access (BMP 2a; Section 4.2)
☐ Update SSO Inventory (BMP 3b; Section 4.3)
☐ Complete Catchment Investigations on Problem Outfalls (BMP 3d; Section 4.3)
☐ Complete IDDE Training to Responsible Employees (BMP 3e; Section 4.3)
☐ Complete and Document Catch Basin Cleanings (BMP 6e; Section 4.6)
☐ Complete and Document Street and Parking Lot Sweepings (BMP 6f; Section 4.6)
☐ Complete and Document Stormwater Structure Inspections and Maintenance (BMP 6h; Section 4.6)
☐ Complete Structural BMP Tracking (BMP 7e; Section 5.1)
☐ Complete and Submit 10th Annual Report (Due 90 days after 30 June 2028)

Activities during **Year 11** – Complete by **30 June 2029**

☐ Send Fall (Aug/Sept/Oct) Road and Grounds Public Education Message (BMP 1d; Section 4.1)
☐ Send Spring (April/May) Road and Grounds Public Education Message (BMP 1d; Section 4.1)
☐ Send Septic System Operators Public Education Message (BMP 1e; Section 4.1)
☐ Post updated SWMP Online for Public Access (BMP 2a; Section 4.2)
☐ Solicit Comments from Public for 60 Days (BMP 2b; Section 4.2)
☐ Post Annual Report Online for Public Access (BMP 2a; Section 4.2)
☐ Update SSO Inventory (BMP 3b; Section 4.3)
☐ Conduct 2nd Round Dry Weather Screening and Sampling (BMP 3d; Section 4.3)
☐ Complete IDDE Training to Responsible Employees (BMP 3e; Section 4.3)
☐ Complete and Document Catch Basin Cleanings (BMP 6e; Section 4.6)
☐ Complete and Document Street and Parking Lot Sweepings (BMP 6f; Section 4.6)
☐ Complete and Document Stormwater Structure Inspections and Maintenance (BMP 6h; Section 4.6)
☐ Complete Structural BMP Tracking (BMP 7e; Section 5.1)

☐ Complete and Submit 11th Annual Report (Due 90 days after 30 June 2029)

Activities during **Year 12** – Complete by **30 June 2030**

☐ Send Fall (Aug/Sept/Oct) Road and Grounds Public Education Message (BMP 1d; Section 4.1)
☐ Send Spring (April/May) Road and Grounds Public Education Message (BMP 1d; Section 4.1)
☐ Send Septic System Operators Public Education Message (BMP 1e; Section 4.1)
☐ Post updated SWMP Online for Public Access (BMP 2a; Section 4.2)
☐ Solicit Comments from Public for 60 Days (BMP 2b; Section 4.2)
☐ Post Annual Report Online for Public Access (BMP 2a; Section 4.2)
☐ Update SSO Inventory (BMP 3b; Section 4.3)
☐ Complete IDDE Training to Responsible Employees (BMP 3e; Section 4.3)
☐ Complete and Document Catch Basin Cleanings (BMP 6e; Section 4.6)
☐ Complete and Document Street and Parking Lot Sweepings (BMP 6f; Section 4.6)
☐ Complete and Document Stormwater Structure Inspections and Maintenance (BMP 6h; Section 4.6)
☐ Complete Structural BMP Tracking (BMP 7e; Section 5.1)
☐ Complete and Submit 12th Annual Report (Due 90 days after 30 June 2030)

Activities during **Year 13** – Complete by **30 June 2031**

☐ Send Fall (Aug/Sept/Oct) Road and Grounds Public Education Message (BMP 1d; Section 4.1)
☐ Send Spring (April/May) Road and Grounds Public Education Message (BMP 1d; Section 4.1)
☐ Send Septic System Operators Public Education Message (BMP 1e; Section 4.1)
☐ Post updated SWMP Online for Public Access (BMP 2a; Section 4.2)
☐ Solicit Comments from Public for 60 Days (BMP 2b; Section 4.2)
☐ Post Annual Report Online for Public Access (BMP 2a; Section 4.2)
☐ Update SSO Inventory (BMP 3b; Section 4.3)
☐ Complete Phase II Mapping (BMP 3c; Section 4.3)
☐ Complete Catchment Investigations on High-Priority and Low-Priority Outfalls (BMP 3d; Section 4.3)
☐ Complete IDDE Training to Responsible Employees (BMP 3e; Section 4.3)
☐ Complete and Document Catch Basin Cleanings (BMP 6e; Section 4.6)
☐ Complete and Document Street and Parking Lot Sweepings (BMP 6f; Section 4.6)
☐ Complete and Document Stormwater Structure Inspections and Maintenance (BMP 6h; Section 4.6)
☐ Complete Structural BMP Tracking (BMP 7e; Section 5.1)
☐ Complete and Submit 13th Annual Report (Due 90 days after 30 June 2031)

Appendix E

Endangered Species Documentation

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ZAHARIAS, ANTHONY M GS-11 USAF AFRC 439 MSG/CEV

From: Tur, Maria <maria_tur@fws.gov>
Sent: Wednesday, March 01, 2017 5:28 PM
To: ZAHARIAS, ANTHONY M GS-11 USAF AFRC 439 MSG/CEV
Subject: Re: NLEB Streamlined Consultation Form_Westover ARB

Hello Tony,

I did review the form and everything looks fine. For future reference, we don't reply to these forms unless there's an issue. If you don't hear from us within 30 days of submitting the form, you are set to go.

Thank you for checking in. Please contact me if you need further assistance.

Maria E. Tur
U.S. Fish and Wildlife Service
New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301
Phone (603) 223-2541 x6419
FAX (603) 223-0104

http://www.fws.gov/newengland/

On Wed, Mar 1, 2017 at 4:22 PM, ZAHARIAS, ANTHONY M GS-11 USAF AFRC 439 MSG/CEV <anthony.zaharias@us.af.mil <mailto:anthony.zaharias@us.af.mil> > wrote:

> Maria,
>
> Have you had a chance to review our NLEB 4d Consultation Form that we submitted on January 13th? I'm hoping you can give us a timeframe as to when we might hear back from you. Thank you.
>
> Tony Zaharias
> 439 MSG/CEV
> Westover ARB
> 413.557.2436
>
> -----Original Message-----
> From: ZAHARIAS, ANTHONY M GS-11 USAF AFRC 439 MSG/CEV
> Sent: Friday, January 13, 2017 11:53 AM
> To: 'Maria_Tur@fws.gov <mailto:Maria_Tur@fws.gov> ' <Maria_Tur@fws.gov <mailto:Maria_Tur@fws.gov> >
> Cc: MORIARTY, JOHN B GS-12 USAF AFRC 439 CE/CEV <john.moriarty.1@us.af.mil <mailto:john.moriarty.1@us.af.mil> >
> Subject: NLEB Streamlined Consultation Form_Westover ARB
>
> Maria,
>
> Attached is a NLEB Streamlined Consultation form. We are hoping to remove

trees in the near future that constitute airfield obstructions in accordance with FAA regulations. My understanding is that we need to submit this form prior to commencing any work. Please let me know if you need any additional information.

Thank you,

Tony Zaharias
439 MSG/CEV
Westover ARB
413.557.2436

Appendix F

Public Education Messages

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Appendix G

Sanitary Sewer Overflow Inventory

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Sanitary Sewer Overflow (SSO) Inventory
Westover Air Reserve Base

Briefly summarize SSO incidents within previous 5 years and attach associated documentation of the incident to maintain with the SWMP and submit with each Annual Report.

LAST UPDATED: 29 January 2019

Date/Time	Location Include Receiving Water/Address	SSO Description				Corrective Measures Implemented with Date/Time	Corrective Measures Planned with Schedule	Name of Recorder
		Cause	Volume	Source	Impacts to Receiving Water or MS4?			
There have been zero (0) SSO incidents within the previous 5 years								

Appendix H

Mapping of MS4 System

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Stony Brook is an Impaired Waterway with No Established TMDL

Outfall 11 is a sampling point for periodic monitoring

Stony Brook

OUTFALL 011

Soil Stockpile Area

OUTFALL 005

Wade Lake

Stoney Brook

OUTFALL 011A

005

011

3405

3505

8005

3507

3506

3101

North Ramp

007

009

OUTFALL 09A

004

Cooley Brook

1530

7084

7075

006

OUTFALL 009

1301

7073

2506

7072

East Ramp

11/6/2013 20 Gallons Hydraulic Fluid

2500

8/20/2013 25 Gallons Jet-A

7071

7046

9/22/2013 10 Gallons Jet-A

2450

5425

7045

9/26/2013 25 Gallons Jet-A

001

OUTFALL 006

OUTFALL 007

7000

5375

7040

5/27/2016 25 Gallons Jet-A

OUTFALL 001

OUTFALL 004

Willamansett Brook

7714

7713

7705

7711

2/12/2014 10 Gallons Jet A

7026

7025

7027

002

OUTFALL 002

WMDC OUTFALL (Permitted by Others)

003

OUTFALL 003

Cooley Brook

Cooley Brook Reservoir

Total Base Area = 2,511 Acres

Legend

- 001 Drainage Basin Number
- Outfall
- Non-Regulated Outfall
- Run-on
- Oil/Water Separator
- 7000 Regulated Industrial Activity Point
- Drainage Basin Boundary
- Flow Route
- Stormwater Open Channel
- Stormwater Pipe
- Water Feature
- Wetland
- Building
- Road, Runway, or other impervious surface
- Installation Boundary
- Signinficant Spills

1 inch = 1,250 feet

N W E S

Phase I Mapping Westover ARB

Updated July 2018

Wade Lake Pavilion

Perimeter Road

State Police Air Wing

See Inset "A"

CATCODE: 871183
Facility #: 11907
FAC: 8321
RPUID: 537472
Total Linear Ft: 248,127.41
(Total includes Navy Property)

Legend

- Storm Manhole
- Storm Drain Dspl
- Installation Area

Westover ARB

Chicopee, MA 01022

Storm Utility Map

0 350 700 Feet

Plot: C. Gusek
Date: 11 Dec 2018
Page: 1 of 1

DISCLAIMER: 439th MSG/CER - Geobase is not responsible for verifying or approving data included or produced on this map.

Appendix I

IDDE Program

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Appendix I
Initial Outfall Rankings
Westover Air Reserve Base
LAST UPDATED: 31 January 2019

Outfall ID	Receiving Water	Receiving Water Impairments[c]	Olfactory Indicators of Sewage	Sampling Results Indicators of Sewage[a]	Discharges to Recreational Facilities of Facilities with Impacts to Public Health[b]	Discharging to Impaired Waters	Score	Priority Ranking
Information Score & Scoring Criteria			Yes = 3 No = 0	Yes = 3 Sampling Not Yet Performed = 1 No = 0	**Yes = 3** **No = 0**	**Yes = 3** **No = 0**		**≥ 10 = Problem** **6 – 9 = High Priority** **≤ 5 = Low Priority**
001	Cooley Brook (MA36-38) Long Island Sound	Total nitrogen	0	1	3	3	7	High Priority
002	Cooley Brook (MA36-38) Long Island Sound	Total nitrogen	0	1	3	3	7	High Priority
003	Cooley Brook (MA36-38) Long Island Sound	Total nitrogen	0	1	3	3	7	High Priority
004	Willamanett Brook (MA34-60) Long Island Sound	Total nitrogen	0	1	0	3	4	Low Priority
006	Cooley Brook (MA36-38) Long Island Sound	Total nitrogen	0	1	3	3	7	High Priority
007	Cooley Brook (MA36-38) Long Island Sound	Total nitrogen	0	1	3	3	7	High Priority
009	Cooley Brook (MA36-38) Long Island Sound	Total nitrogen	0	1	3	3	7	High Priority
011	Stoney Brook (MA34-19) Long Island Sound	Non-native aquatic plants, E. coli, turbidity, and total nitrogen	0	1	0	3	4	High Priority[c]

[a] Previous screening results indicate likely sewer input if any of the following are true:

- Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and bacteria levels greater than the water quality criteria applicable to the receiving water, or
- Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and detectable levels of chlorine

[b] Outfalls/interconnections that discharge to or in the vicinity of any of the following areas: public beaches, recreational areas, drinking water supplies, or shellfish beds

[c] Outfalls discharging to waters impaired by bacteria (E. coli) must be classified as Problem or High-Priority (2016 Final Permit Appendix H Part III.2.ii).

Appendix J

IDDE Program Training

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Appendix K

List of Retrofit Opportunities

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Appendix L

Nitrogen Source Identification Report

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Appendix M

Structural BMP Evaluation

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Appendix N

Planned Structural BMPs

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