STORMWATER MANAGEMENT PROGRAM PLAN

FORT DRUM, NEW YORK

FEBRUARY 2023

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Contents

REVISION SCHEDULE

This Stormwater Management Plan (SWMP) should be revised annually to assess the appropriateness of designated best management practices (BMPs), compliance with the Municipal Separate Storm Sewer System (MS4) Permit, and progress towards measurable goals identified within this SWMP.

All revisions to the SWMP must be documented on a SWMP Revision Documentation Form, which will include the revision number, revision date, and revision description and page reference. The authorized facility representative will approve the SWMP (an individual at or near the top of the facility's management organization) by providing his or her signature next to each revision.

SWMP REVISION DOCUMENTATION FORM			
Revision Number	Date	Description of Revisions and Page Reference	Authorized Representative Signature
0	2/16/2018	Benchmark Sampling locations changed to 42-Page 10	Chris Whitman
1	2/16/2018	Updated Construction Permit number-Page 10	Chris Whitman
2	2/16/2018	Updated Construction Permit number-Page 12	Chris Whitman
3	2/16/2018	Updated Industrial Permit number-Page 13	Chris Whitman
4	2/20/2019		Chris Whitman
5	2/4/2020	Updated Construction Permit number- page 10	Carrie Ball
6	2/4/2020	Updated Construction Permit number- page 12	Carrie Ball
7	2/4/2020	Updated Environmental Compliance branch manager information- page 13	Carrie Ball
8	2/26/2021	Updated MCM 4/5/6- pgs 6, 15, 17	Justin Casey
9	2/26/2021	Updated number of outfalls pg 15	Justin Casey
10	2/10/2022	Updated DPW staff emails- page 13	Carrie Ball
11	2/10/2022	Benchmark sampling locations updated to 41- page 10	Carrie Ball
12	2/10/2022	Stormwater inspections site updated to 48	Carrie Ball
13	2/10/2022	Updated MS4 permit number and effective date- page 1	Carrie Ball
14	2/27/2023	Updated new office building number	Carrie Ball

PHASE II STORMWATER MANAGEMENT PLAN CERTIFICATION

I certify that 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 gather 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. In accordance with the State Pollutant Discharge Elimination System, this Stormwater Management Plan will be implemented herein.

Kurt Hawk **Date**
Public Works Director
Fort Drum, NY

Definitions

BMPs: Best Management Practices
CAV- Compliance Assistance Visit
CWA: Clean Water Act
DPW: Department of Public Works
ECS: Equipment Concentration Site
EMD: Environmental Management Division
EPA: Environmental Protection Agency
HUC: Hydraulic Unit Code
IDDE: Illicit Discharge Detection and Elimination
MCMs- Minimum Control Measures
MEDDAC- Medical Department Activity
MEP- Maximum Extent Practicable
MS4- Municipal Separate Storm Sewer System
MSGP- Multi Sector General Permit
NEPA- National Environmental Protection Act
NOI- Notice of Intent
NOT- Notice of Termination
NPDES- National Pollutant Discharge Elimination System
NYS- New York State
NYSDEC- New York State Department of Environmental Conservation
NYSOPRHP- New York State Office of Parks, Recreation and Historical Preservation
POCs- Pollutants of Concern
RCI- Residential Communities Initiative
SPCC- Spill Prevention Control and Countermeasures
SPDES- State Pollution Discharge Elimination System
SWMP- Stormwater Management Plan
SWPPP- Stormwater Pollution Prevention Plan
TMDL- Total Maximum Daily Load
UA- Urbanized Area
USEPA- United States Environmental Protection Agency
WSAAF- Wheeler Sacks Army Airfield

1.0 INTRODUCTION

This Stormwater Management Program Plan (SWMP) has been prepared as part of the Municipal Separate Storm Sewer System (MS4) program for the United States Military Base in Fort Drum, New York. The SWMP was prepared in general compliance with the requirements of the United States Environmental Protection Agency (USEPA), the New York State Department of Environmental Conservation (NYSDEC), and "SPDES General Permit for Stormwater Discharges from MS4s, Permit NO. GP-0-15-003", which provides coverage for the period from April, 2022 to April 30, 2027. This permit authorizes stormwater discharges from small MS4s. Fort Drum is considered a non-traditional small MS4.

1.1 REGULATORY INFORMATION

Phase I of the U.S. Environmental Protection Agency's (EPA) stormwater program was promulgated in 1990 under the Clean Water Act (CWA). The Clean Water Act requires facilities to reduce, minimize, or eliminate sources of pollution exposed to stormwater runoff. The goals of the CWA are to restore and maintain the chemical, physical, and biological integrity of the nation's waters. The CWA provides the statutory basis from the State Pollutant Discharge Elimination System (SPDES) permit program and the basic structure for regulating the discharge of pollutants from non-point sources to the water of the United States. Section 402 of the CWA specifically requires USEPA to develop and implement the SPDES program.
USEPA implemented SPDES Phase I stormwater regulation which relies on the National Pollutant Discharge Elimination System (NPDES) permit coverage to address stormwater runoff from: (1) "medium" and "large" MS4s generally serving populations of 100,000 or greater; (2) construction activity disturbing five acres of land or greater; and (3) ten categories of industrial activity.

In 1999, USEPA initiated the Phase II Stormwater Regulation. The Stormwater Phase II requires NPDES permit coverage for all "small" MS4s, serving less than 100,000 people and located within a Bureau of Census-delineated urbanized area. An urbanized area is a central place (or places) and the adjacent densely settled surrounding territory, that together have a minimum residential population of 50,000 people and minimum average density of 1,000 people per square mile. The purpose of Phase II Stormwater Regulation is to reduce adverse impacts to water quality and aquatic habitats by instituting the use of controls on non-point sources of stormwater discharges that have the greatest likelihood of causing continued environmental degradation. Small construction activities, for example, that disturb greater than or equal to one acre of land, are required to apply for SPDES permit coverage under a general or individual permit and to implement stormwater discharge controls. In another example, Army Air Fields, which are responsible for a number of industrial type activities (i.e. rotary wing aircraft maintenance, fueling operations, fuel storage, etc...) that are performed outdoors are no longer eligible for the "No Exposure Exclusion" found under Phase I (Industrial Permit).

Military installations that have separate storm sewer systems within an urbanized area are defined by USEPA as small MS4s and must meet the requirements of Phase II Stormwater

Rules. Coverage is initiated by filing a Notice of Intent (NOI) with the New York State Department of Environmental Conservation. Fort Drum's permit ID number is NYR20A556.

Requirements include development and implementation of best management practices that reduce pollutants to the maximum extent practicable, protect water quality, and satisfy EPA water quality criteria using six minimum control measures (MCMs). For each of the MCM's the SWMP includes how each will be implemented and measured. The six MCM are listed below:

1. Public Education and Outreach,
2. Public Participation and Involvement,
3. Illicit Discharge Detection and Elimination
4. Construction Site Runoff Control
5. Post-Construction Runoff Control, and
6. Pollution Prevention and Good Housekeeping.

Progress of the SWMP implementation will be tracked in the annual report, which is due to the NYS DEC on 1 June of each year. Fort Drum must conduct an annual review of the SWMP in conjunction with preparation of the annual report.

AVALIABLE STAFF AND EQUIPTMENT

Staff will include two full time members, including one government employee and one contractor. Equipment will be either purchased by the government or thru the contractor. Available funding will dictate what can be done with the MS4 marketing campaign. Money has been set aside to maintain a stormwater website which will contain stormwater reports, documents and other pertinent stormwater information.

1. 2 SITE INFORMATION

1.2.1 GENERAL

Fort Drum is an active military post used for both weapons qualification and field training. Its primary mission is the training and preparation of all assigned and attached troops to ensure combat-readiness. Principal industrial operations include maintenance of vehicles and aircrafts, hazardous material and salt storage, refuse/garbage transfer, and sand and gravel mining.
Fort Drum is located approximately 13 miles northeast of Watertown, New York. Its approximate borders are NYS Route 26 to the northeast, the Black River to the southeast, NYS Route 342 to the southwest, and US Route 11 to the northwest. While the majority of the Fort Drum military installation is located within Jefferson County, some of its outer training areas in the northeast are located in Lewis County.

Fort Drum is the largest U.S. Army installation in the northeast United States. Its total area is approximately 109,000 acres. The installation is divided into geographic areas, the Cantonment Area which is approximately 9,000 acres, the 3,000 acre Wheeler Sacks Army Airfield

(WSAAF) and 97,000 acre outlying training areas. Figure 1.2.1.1 depicts the boundaries of the Fort Drum Cantonment area and WSAAF. Figure 1.2.1.2 depicts the area covered under the MS4 permit. For the purpose of MS4 compliance and permitting, the Cantonment Area and WSAAF are considered the "urbanized area" (UA). The outlying training area which is part of the installation is not covered under the MS4 permit, as the majority of this land is undeveloped and primarily used for military training.

1.2.2 TERRAIN AND SOILS

Fort Drum is the largest Army installation in the northeast, encompassing more than 109,000 acres of gently rolling, wooded terrain. Elevations range from 410 to 911 feet. Fort Drum can be characterized by five distinct ecoregions: Eastern Ontario Plains, St. Lawrence Valley, Western Adirondack Transition, Indian River Transition, and Black River Valley

The Eastern Ontario Plains ecoregion is approximately 30,174 acres (12,211 hectares) situated in roughly the southern third of the installation. The Eastern Ontario Plains has an average elevation of 682 feet (208 meters) with a range of 492 to- 862 feet (150 to 263 meters); the average slope is 3.5 percent. The Eastern Ontario Plains ecoregion is characterized by hillocks formed from recessional moraines and drumlins, and small plains dominated by sandy soils including some areas with sand over 100 feet (30 meters) deep.

The St. Lawrence Valley ecoregion is approximately 32,378 acres (13,103 hectares) and is located along the western edge of the installation. This ecoregion has an average elevation of 580 feet (177 meters) with a range of 410 to 747 feet (125 to 228 meters); the average slope is 2.9 percent. The St. Lawrence Valley is distinguishable based on its relatively unique silt composition and poor drainage. The silty-clayey soils were developed from glacio-lacustrine sediments. The ecoregion is defined by shifts from bedrock to the north and sand to the east.

The Western Adirondack Transition ecoregion is approximately 43,512 acres (17,609 hectares) and is located in the northeast quarter of the installation. This ecoregion has an average elevation of 678 feet (207 meters) with a range of 485 to 911 feet (125 to 278 meters); the average slope is 7.0 percent. This ecoregion is unique to Fort Drum due to its higher elevations, mixed and conifer forests, and extensive outcroppings of bedrock and steep drop-offs. The bedrock is a conglomeration of dominant minerals including biotite, garnet, gneiss, quartz, and granite. Due to the shallow bedrock and physical formations caused from the last glacial retreat, many open water kettle lakes were formed in this region. In fact, all of the named natural lakes and ponds found on Fort Drum are in this ecoregion. The soil is relatively thin and loamy with a general transition from a sandier loam in the east to a clayey loam in the west.

The Indian River Transition ecoregion is approximately 2,120 acres (858 hectares) located in the northwest corner of the installation. This ecoregion has an average elevation of 526 feet (160 meters) with a range of 481 to 585 feet (195 to 237 meters); the average slope is 4.7 percent. This is a small yet distinct ecoregion different from the Western Adirondack Transition ecoregion because of its soil composition. The dominant soil is composed of clay or a clay-based complex. These soils have their origin from glaciolacustrine or glaciomarine deposits. The

ecoregion boundaries are at the beginnings of the bedrock outcroppings that are prominent in the Western Adirondack Transition to the east and the silt-dominated soils of the St. Lawrence Valley ecoregion to the south.

The Black River Valley ecoregion is approximately 840 acres (340 hectares) located on the southern edge of the installation. This is the only portion of the installation on the southern side of the Black River. This ecoregion has an average elevation of 637 feet (194 meters) with a range of 597 to 681 feet (182 to 208 meters); the average slope is 3.5 percent. The Black River Valley ecoregion is unique due to the types of soils and the geo-processes responsible for their existence relative to the surrounding Eastern Ontario Plains ecoregion. The soils are classified as Galen and Arkport soils which are fine to very fine sandy soils. These soils are formed from the deltaic deposits of the Black River rather than the coarser sands formed from ancient Lake Iroquois.

According to the Jefferson County Soil Conservatory Survey the soil types found on Fort Drum have four types of hydrologic group ratings, which consist of soil group rationings "A", "B", "C", and "D". Hydrologic group "A" ratings have low runoff potential, high infiltration rates when thoroughly wetted and consist of deep, well-to excessively-drained sands and gravels, similar to that found on the Eastern Ontario Ecoregion. Hydrologic group "B" rated soils have moderate infiltration rates when thoroughly wetted, and consist of moderately deep to deep, well-drained soils with moderately fine to coarse texture. Hydrologic group "B" soils are typical in the Black River Valley ecoregion. Hydrologic group "C" ratings have low infiltration rates when thoroughly wetted and consist mainly of soils with a layer that impedes downward movement of water with moderately fine to fine textures similar to soils found in the Ontario Plains ecoregion and parts of the Western Adirondack Transition ecoregion. And hydrologic group "D" rated soils have high runoff potential, have very low infiltration rates when thoroughly wetted and consist mostly of clay soils with a high swelling potential. Group "D" rated soils are soils with a claypan or clay layer at or near the surface, and shallow soils over nearly impervious material. This type of soil is consistent with that found in the St. Lawrence Valley ecoregion.

1.2.3 VEGETATION

Forests are the dominant land cover across the installation. However, Fort Drum also contains a significant amount of wetlands, shrublands, and grasslands. Forests comprise of approximately 62,186 acres or 57 percent of Fort Drum's land cover. Wetlands (both forested and shrub/grassland) are the second most prevalent land cover throughout the installation and comprise approximately 20 percent of the land area on Fort Drum. Shrublands comprise 13,382 acres or approximately 12 percent of Fort Drum's land cover. Grasslands comprise of about 15,447 acres or 14 percent of Fort Drum's land cover.

1.2.3.1. VEGETATION BY ECOREGION

The vegetative communities in the Eastern Ontario Plains are generally sandplain grasslands and oak savannah. The sandplain grasslands are characterized by low growing sedges and grasses

less than 12 inches tall with widely scattered trees. Native grasses and forbs found in the grasslands consist of common hairgrass, Blue Ridge sedge, parachute sedge, and stiff-leaf aster. White oak and northern red oak dominate the savannah areas. Associated with the oaks are white pine, lowbush blueberry, bush honeysuckle, and whorled loosestrife. Herbaceous vegetation in the savannas is similar to that found in the grasslands. Invasive plants such as spotted knapweed have established colonies in the sandplains where disturbances have occurred from bivouac activities and along roadsides.

Vegetative communities found in the St. Lawrence Valley ecoregion include grasslands on clay-loam soils, shrub thickets, and successional and mature northern hardwood forests. Grassland communities are dominated by grasses and forbs such as timothy, orchard grass, Kentucky bluegrass, goldenrods, and vetch. Common species found in grassland areas reverting to shrub thickets include dogwoods, cherry, and meadowsweet. The areas that are wooded due to natural succession support red maple, striped maple, yellow birch, gray birch, American beech, northern white cedar, and eastern hemlock.

Many areas in the Western Adirondack Transition support flora which are dependent on rich mineotrophic soils. Predominant tree species found in these areas include eastern white pine, eastern hemlock, quaking aspen, big-tooth aspen, red maple, sugar maple, American beech, black cherry, and gray birch.

Although the geology is different, the vegetative communities of the Indian River Transition ecoregion resemble those of the Western Adirondack Transition ecoregion and the vegetative communities of the Black River Valley ecoregion resemble those of the Eastern Ontario Plains ecoregion.

1.2.4 CLIMATE

Fort Drum's climate is characterized as humid with warm summers and no dry season. The warm season occurs between late-May through mid-September during which temperatures reach the highest in the month of July. The average temperature during the warm season is 69 degrees Fahrenheit. The cold season occurs between early-December through mid-March during which temperatures are the coldest in the month of January. The average low temperature during the cold season is 11 degrees Fahrenheit.

The probability of precipitation varies throughout the year. Precipitation is most likely to occur during the cold season at a 77percent average chance; however, it is also common during the warm season with an average chance of 55 percent. Fort Drum's driest month is August and its wettest month is November. Precipitation generally occurs in the form of light to moderate rain, light to moderate snow, and thunderstorms. Fort Drum receives an average 121 inches of annual precipitation per year based on a 30-year average.

Fort Drum is very humid. The relative humidity ranges from 42 percent to 97 percent. Humidity rarely drops below 23 percent and can reach as high as 100 percent during the summer months. The air is driest in April and the most humid in September.

1.2.5 SURFACE WATER DRAINAGE

The area within Fort Drum consists of 16 distinct watersheds within three major basins, designated by a USEPA Hydraulic Unit Code (HUC): the Black River Basin, the Oswegatchie River Basin, and the Indian River Basin. Among these are 59 sub-watershed areas, in which the MS4 discharges stormwater runoff to tributaries of, or directly to, three main water bodies: Pleasant Creek, West Creek, and Black River. Each stream has numerous tributaries that also receive discharges from various areas within the urbanized area of the base. Each stream ultimately discharges to the Black River. Fort Drum's urban area consists of the Black River Basin and drains primarily into the Pleasant Creek and West Creek Watersheds. There are 58 drainage outfalls on Fort Drum Cantonment and WSAAF that discharge stormwater runoff to tributaries associated with three main water bodies. Figure 1.2.5.1 illustrates Fort Drum's watersheds.

1.2.6 SURFACE WATER QUALITY

The Water Pollution Control Act requires states to design a Total Maximum Daily Load (TMDL) process to meet the goals of the CWA. The TMDL process is a method of analyzing pollution sources and allocating responsibility among those sources. The CWA requires that states submit to the USEPA a list of known impaired waters not meeting water quality standards and therefore in need of a TMDL. The list of impaired waterways is called the state's Section 303(d) list. In New York, this list is updated every two years by the NYS DEC and can either be fully or partially approved or fully or partially disapproved by USEPA. The most recent NY Section 303(d) List of Impaired/TMDL Waters was published in 2016 and can be found in the NYS DEC web page.

The water bodies in the urbanized areas do not currently have TMDLs. Fort Drum currently does not have any water body segments listed on the NYS DEC 303(d) list.

2.0 MS4 PHASE II MINIMUM CONTROL MEASURES

In compliance with the provisions USEPA SPDES and NYS DEC MS4 Phase II requirements, Fort Drum received a SPDES permit for its small MS4. This SWMP describes management practices; control techniques, system design, engineering methods, and other provisions that Fort Drum, NYS DEC, or the USEPA determined appropriate for the control of pollutants in discharges from the MS4 to the maximum extent practicable. This SWMP details six minimum control measures that will be implemented and measured. The following sections describe the components to execute each MCM. The typical MS4 users are the residents, garrison employees, contractors, and personnel working for tenant activities.

2.1 MCM 1: PUBLIC EDUCATION AND OUTREACH

Fort Drum's Stormwater Program will implement an education and outreach program that targets garrison employees, contractors, tenants, and environmental staff in an effort to provide education and outreach about the impacts of stormwater discharges on local water bodies and the steps that can be taken to reduce pollutants in stormwater runoff.

- Targeted areas are those which may generate pollutants of concern (POCs) based on the activities performed and materials found on site (e.g. heavy loads of POL or other chemicals). Fort Drum's targeted areas have been designated below:
- Autocraft
- Department of Public Works (DPW) Land Maintenance Branch
- RCI
- Unit Motor Pools
- ECS
- Wheeler Sacks Army Airfield

These targeted areas will be among designated areas to post educational materials and handouts. Other identified areas include company orderly rooms, employee break rooms, and housing offices.

The POCs in Fort Drum's UA currently include:

- Petroleum oil and grease – usually from vehicle leaks, vehicle repair, and vehicle maintenance
- Hydrocarbons – from spilled gasoline, fuel oil, or diesel fuel
- Construction debris (e.g. soils, waste materials, etc.) – usually from sediment-laden stormwater runoff from construction sites.
- Municipal waste (e.g. bottles, wrappers, paints, etc.) – usually discarded by people or spilled at waste receptacles.
- Sewage – usually from cross-connections with sanitary sewers, illicit connections from homes to the storm sewer system, or leaks/breaks in sanitary sewer system lines.
- Soaps/wash water – usually from community car washes or other vehicle/equipment washing.
- Vegetation (lawn clippings, etc) – usually generated during grounds maintenance and blown or swept into the storm sewer system.
- Any other non-stormwater discharges.

Fort Drum will produce and disseminate informational materials to inform the public of the effects of erosion and runoff on water quality. Informational materials shall be updated and distributed as necessary throughout the duration of this MS4 permit. Fort Drum will implement the following activities to satisfy the requirements for this MCM:

- Produce and distribute educational materials regarding stormwater runoff and water quality,

- Produce and distribute educational materials regarding POCs, sources of POCs, and measures to mitigate POCs entering the environment,
- Conduct one annual environmental awareness day/event
- Publish quarterly stormwater articles in Fort Drum's Environmental Update Newsletter.
- Maintain a stormwater web page accessible to the public

To facilitate this effort, a share point drive on Fort Drum's stormwater web page will maintain copies of the public outreach materials, education materials, and presentations presented throughout the year.

To measure the effectiveness of the public education and outreach program, notations will be made of frequency of events and personnel attending, the number of brochures and news articles published, and the number of brochures and posters provided to targeted areas (listed above) which may generate POCs.

Throughout the year the stormwater staff will participate in a variety of outreach events. Some events may include Maple Days, Earth Day, Adventure Day and others that may occur. The goal of public outreach at these events will be to raise awareness about stormwater and how people can improve their watersheds and help maintain good water quality in our lakes and streams for the future.

2.2 MCM 2: PUBLIC PARTICIPATION AND INVOLVEMENT

The stormwater program is actively engaging residents and personnel in the understanding of water resources and how their activities can affect water quality. Fort Drum will develop an effective public participation and involvement program through the following BMPs.

- Solicit help from the community to report any improper use of water, pesticides/herbicides and/or erosion and sediment transport from residential areas and new construction sites through a forum located on Fort Drum's stormwater web page,
- Post annual report and SWMP on stormwater web page,
- Develop a partnership with local scouts/clubs to conduct stormwater outreach

In addition to utilizing a public forum, Fort Drum's stormwater program will request comments from the public by posting contact phone numbers, email addresses, and website information in brochures and articles.

A record of public participation events with the number of attendees, copies of the public comments, and a public question log will be maintained at the stormwater program manager's office. A summary of comments and responses will be submitted with the MS4 report annually.

2.3 MCM 3: ILLICIT DISCHARGE DETECTION AND ELIMINATION

Fort Drum's approach to illicit discharge detection and elimination (IDDE) is based on prevention and detection. An illicit discharge is any discharge to a municipal separate storm sewer that is not composed entirely of stormwater. The non stormwater discharges listed below are expected to occur at Fort Drum and are permissible by SPDES permit coverage. The General Permit includes non stormwater discharges in addition to those listed below.

- Water line flushing
- Landscape irrigation
- Rising groundwaters
- Uncontaminated ground water infiltration (40CFR 35.2005(20))
- Uncontaminated groundwater
- Foundation drains
- Springs
- Water from crawl space and basement sump pumps
- Flows from riparian habitats and wetlands
- De-chlorinated swimming pool discharge
- Diverted stream flows
- Discharges from potable water sources
- Air conditioning condensate
- Irrigation water
- Footing drains
- Lawn and landscape watering runoff provided that all pesticides and fertilizers have been applied in accordance with the manufacturer's product label,
- Water from individual residential car washing,
- Flows from riparian habitats and wetlands,
- Residual street wash water,
- Discharges of flows from firefighting activities,
- De-chlorinated water reservoir discharges, and
- Any SPDES permitted discharge.

If any of these non stormwater discharges (either listed above or in the General Permit) is determined to be a substantial pollutant contributor, then it is considered an illicit discharge, and is subject to the control measures identified in this SWMP for MCM 3: Illicit Discharge Detection and Elimination.

Investigative measures for both non stormwater illicit discharges and stormwater illicit discharges will be performed upon receipt of information from anyone reporting an observation or suspicion. Notification of all spills are handled through a "911" call. Issues related to the storm system and stormwater runoff must also be directed to the stormwater program manager.

An illicit discharge database is maintained in the Fort Drum Stormwater Office. The reports dealing with spills are collected and analyzed by the storm program manager, to asses trends or identify potentially deliberate activities.

In the event of an illicit discharge/spill discovery, the environmental procedure for Spill Response and the Spill Prevention Control and Countermeasure (SPCC) Plan is followed. All entities working on Fort Drum are responsible for ensuring that their personnel are appropriately trained and compliant with requirements listed in the SPCC Plan. Installation staff, tenants, contracting officials, and contractors working on Fort Drum shall be trained to recognize significant spills based on the relative toxicity of the material. Deliberate dumping into the stormwater system is illegal under the Federal CWA and punishable by law (33 U.S.C. §1251 et seq. 1972).

Fort Drum conducts annual and quarterly stormwater site inspections. There are currently 48 stormwater inspection locations, 41 of which require benchmark sampling. Fort Drum is required to conduct quarterly wet visual monitoring, annual dry weather flow monitoring (72 hours dry weather), and annual comprehensive site evaluations for all 48 locations. Benchmarking monitoring (water samples) are taken annually from designated locations during a qualifying storm event (greater than 0.1 inches of rainfall) in order to test benchmark parameters per industry sector. Site inspections and sampling are completed by qualified personnel walking the designated outfall drainage and looking for illegal discharge, seeps, and other flow drainage that should be dry due to current weather conditions.

For Drum will maintain an updated storm sewer system map. This map will be maintained within a GIS database showing jurisdictional boundaries, the location of all inlets and outfalls and names and locations of all waters that receive discharges from those outfalls.

Some storm drains within the Cantonment Area have been stenciled through the use of community outreach programs developed in MCM 2.

The stormwater and solid waste programs monitor illegal dumping monthly across the installation. Illegal dumping includes dumping waste to include recyclables in areas not designed to receive waste. Any areas of illegal dumping are reported to the military police for investigation. If a perpetrator is found guilty of illegal dumping, they are responsible for cleaning up the area. Trash should be brought to the dump and recyclables should be sorted and deposited at the recycling center. Based on an investigation conducted by the military police department, punitive actions may also be enforced on these individuals. Areas of illegal dumping where no party can be found liable are cleaned up by DPW Refuse. DPW Refuse will recycle all products that can be recycled and dispose of other trash in the appropriate manner. A database of areas of illegal dumping will be maintained by the stormwater program.

2.4 MCM 4: CONSTRUCTION SITE RUNNOFF CONTROL

The intent of this MCM is to ensure that all construction projects at the installation are managed in a manner that will minimize contamination of stormwater runoff from the site and thereby prevent degradation of water quality in water bodies that receive such discharges. In addition to these added MS4 regulatory requirements, all conditions of the General Permit for Stormwater Discharges for Construction Activity (GP-0-20-001) which Fort Drum maintains must be

followed during any construction activity that disturbs one acre or greater of land or that disturb less than one acre that are part of a project larger than one acre.

A construction site comment log will also be available on the stormwater web page for the public to ask questions or report construction site concerns. The stormwater program manager's contact information will be made available on the web page to receive questions or concerns through other means such as phone, email or in person. The stormwater program manager will maintain a running log of comments received.

The owner/operator, of the construction site, shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the Stormwater Pollution Prevention Plan (SWPPP). This person shall be known as the trained contractor. The trained contractor must file with the Fort Drum Stormwater Program Manager their certificate of completion of other such proof of training in Erosion and Sediment Control. The certificate of completion in Erosion and Sediment Control must be produced before the contractors begin work within the covered entity's jurisdiction. The owner/operator, of the construction site, shall ensure that at least one trained contractor is on site on a daily basis when soil disturbance activities are being performed.

As part of the MS4 program, the Stormwater Program Manager will maintain an inventory list of every construction project on post that is one acre or greater. The inventory list will contain project name, permit number, NOI Date, NOT date, and location. Fort Drum will maintain a list of active construction project that is a regulated soil disturbance.

To ensure compliance with state regulations and project SWPPPs, a designated qualified representative of the construction company will conduct regular site inspections. Construction sites where soil disturbance activities are on-going, that are one acre or more require one site inspection every seven calendar days. The construction site requires two site inspections every seven calendar days for sites larger than five acres. The two inspections shall be separated by a minimum of two full calendar days.

Fort Drum stormwater personnel will also conduct regular construction site inspections to ensure all state and federal regulations are followed. Each active construction site over one acre in size will be inspected on a monthly basis. Any issues of noncompliance will be recorded on the construction site inspection checklist, Appendix A. All practices not meeting stormwater compliance standards must be fixed within two (2) business days. After the issue or issues have been resolved, an additional inspection will be performed to check that the proper corrections have been made.

Each construction activity that disturbs greater than five acre of land or more requires a NYSDEC construction permit. Approval is obtained by submitting a SWPPP outlining how the construction activity will affect water quality and best management practices that will take place to mitigate any negative effects. The Stormwater Program Manager reviews all SWPPPs and submits an NOI to the state who then approves or disapproves the permit.

2.5 MCM 5: POST-CONSTRUCTION RUNOFF CONTROL

All conditions of the General Permit for Stormwater Discharges for Construction Permit GP-0-20-001 which Fort Drum maintains, must be followed during any construction activity that disturbs one acre or greater of land or that disturbs less than one acre but is part of a larger common plan of development. Construction sites that cover one acre or greater of land or that disturbs less than one acre but is part of a larger common plan of development must have a SWPPP that meet the most current New York State Stormwater Design Manual.

Fort Drum will establish and maintain an inventory of post-construction stormwater management practices to include at a minimum, practices discharging to the small MS4 that have been installed since March 10, 2003, those owned by the small MS4, and those found to cause water quality standard violations. The inventory shall include location of practice, street address or coordinates, type of practice, maintenance needed per the NYS Stormwater Management Design Manual, SWPPP, or other provided documentation, and dates and type of maintenance performed.

Fort Dum will ensure Post-Construction Stormwater management programs are in place so there is a reduction of all POC's in stormwater discharges. Watershed plans have been developed for Construction Projects in the Main Pleasant Creek Drainage Area at Fort Drum. Fort Drum also has a Natural Resource Protection Plan to reduce POC in stormwater discharges. The Natural Resource Protection Plan is updated every five years.

A post construction database has been established to track projects that have been completed on post. One year after the government has received the construction projects Notice of Termination (NOT), an inspections will be conducted on the site. The post construction inspection checklist can be found in Appendix B.

2.6 MCM 6: POLLUTION PREVENTION AND GOOD HOUSEKEEPING

Fort Drum will develop a pollution prevention and good housekeeping plan that addresses operations and facilities that contribute POCs to the MS4 on Fort Drum. The pollution prevention and good housekeeping program will be done by compliance assistance visit (CAV) inspections.

Fort Drum will perform and document a self-assessment of municipal operations that relate to street and bridge maintenance, winter road maintenance, stormwater system maintenance, solid waste management at a minimum frequency of every five years. The self-assessment will ensure the municipal operations aren't contributing POCs to the MS4 system.

Fort Drum will conduct stormwater management training for employees as part of the pollution prevention and good housekeeping training program. This program will ensure that staff receive and utilize training effectively and reduce maintenance to the MS4.

Third party entities performing contracted services, that include street and bridge maintenance, winter road maintenance, stormwater system maintenance, solid waste, etc. must comply through a signed certification statement as outlined in the NYS DEC MS4 Permit, Part IV. G.

2.6.1 INSPECTIONS

To assure stormwater infrastructure is maintained and in compliance, a Stormwater Infrastructure Maintenance Plan has been developed which outlines when and how infrastructure should be assessed. 20 percent of Fort Drum's stormwater infrastructure will be inspected yearly; this includes all culverts, ditch lines/swales, catch basins, and outfalls. Inspecting and maintaining stormwater infrastructure yearly will help avoid costly repairs and replacements. All stormwater infrastructure that requires repair or maintenance will be submitted to the Department of Public Works for internal maintenance or work may be contracted out. A copy of the stormwater infrastructure inspection checklist can be found in Appendix C.

Retention and detention ponds will be inspected on rotating basis and each will be inspected once per 5 years. Ponds should be checked for water level, trash and debris, sediment accumulation in inlet and outlet pipes as well as other factors. A copy of the retention/detention inspection sheet can be found in Appendix D.

Fort Drum is required to follow SPDES Multi-Sector General Permit (MSGP) for Stormwater Discharges Associated with Industrial Activity (GP-0-17-004). Operations and facilities on Fort Drum must comply with PARTS III.A, C, D, E, F and Part IV of the MSGP (GP-0-17-004).

3.0 STORMWATER COORDINATION AND IMPLEMENTATION

Coordination between the Phase II MS4 Program Manager and installation support is essential to ensure MCM goals are met. The following individuals are key members of the MS4 programs.

The Directorate of Public Works (DPW): The DPW is responsible for the overall facility infrastructure planning, construction, maintenance, and operation. The Environmental Management Division (EMD) of the DPW will provide the technical support for the SWMP as well as implement and enforce the standards set forth. The following representatives are authorized contacts.

Public Works Director
Kurt Hawk
T-4896
Directorate of Public Works
Telephone: 315-772-4948
Email: Kurt.w.hauk.civ@army.mil

Environmental Division, Chief
James M. Miller
T-4000
Directorate of Public Works, Environmental Division
Fort Drum, NY 13602
Telephone: 315-772-5269
Email: James.m.miller352.civ@army.mil

Environmental Compliance Branch Manager
Ian Crawford
T 4000
Directorate of Public Works, Environmental Division
Fort Drum, NY 13602
Telephone: (315) 772-5063
Email: ian.g.crawford2.civ@army.mil

Stormwater Program Manager
Michael P. Reome
T 4000
Directorate of Public Works, Environmental Division
For Drum, NY 13602
Telephone: 315-772-4971
Email: Michael.p.reome.civ@army.mil

The Stormwater Program Manager is responsible for implementing BMPs and the Phase II MS4 stormwater program. He will administer and oversee team member activities, coordinate and conduct inspections, maintain all records, and submit the MS4 NOI and annual reports to permit authority.

The Director of Public Works, Operations and Maintenance Manager, will coordinate all stages of BMP implementation relating to installation infrastructure, conduct maintenance of stormwater lines, inlets, and structural BMPs, inform MS4 Program Manager of noncompliance and provide training to shop level workers.

4.0 REPORTS

Annual reports must be submitted to the permitting authority and must contain the permit compliance status, a BMP effectiveness and measurable goal assessment; progress towards achieving the identified measurable goals for each of the MCMs, results of information collected and analyzed, if any, a summary of the stormwater activities planned for the next reporting cycles, and changes in BMPs or MCM goals.

Fort Drum will utilize the USEPA MS4 Annual Report Template to complete its annual report. Approximately one month prior to submitting the annual report, Fort Drum will post its Draft Annual Report onto the Fort Drum stormwater webpage to allow for public input. A public forum will be left open for approximately three weeks for comments and questions. The stormwater program manager will include comments and questions received from emails in the annual report up until three days before he mails the document.

Fort Drum will submit an annual report by June 1st each year of the permit term to the NYS DEC. Reports will be submitted to NYS DEC at the following address:

NYS DEC "MS4 Coordinator"
Bureau of Water Permits
625 Broadway, 4th Floor
Albany, NY 12233-3505

5.0 RECORD KEEPING

Fort Drum will retain records of all monitoring information, including copies of reports required by this permit, for a period of at least three years from the date of the sample, measurement, report or application, or for the term of this permit, whichever is longer. The records are available to the USEPA or the public upon request.

6.0 ENFORCEMENT

Covered entities must implement and enforce a SWMP designed to reduce the discharge of pollutants from small MS4s to the maximum extent practicable (MEP) in order to protect water quality and to satisfy the appropriate water quality requirements of the NYS DEC Environmental Conservation law and the Clean Water Act. The objective of the permit is for MS4s to assure achievement of the applicable water quality standards.

Any tenant or contracted activity in the UA must comply with this SWMP. This includes Residential Communities, Medical Department Activity (MEDDAC), and any contractors performing work in the UA that may contribute Pollutants of Concern (POCs) to the stormwater system.

The tenant or contracted activity must report data requested by the MS4 program manager for the annual report, and also coordinate stormwater system upgrades or renovations with the MS4 Program Manager.

All work performed at Fort Drum is subject to stoppage by Fort Drum environmental officials and the Garrison Commanders for failure to comply with project SWPPP, Federal, State, County, or Fort Drum stormwater requirements. Work will not be allowed to resume until violations are corrected or satisfactory plans for compliance are provided. In the case of contractors, the

required completion time will not be extended nor shall the contractor be entitled to any addition compensation as a result of any such work stoppage.

Fort Drum projects and their permit holders are obligated to follow the MS4 permit and this SWMP, which do not allow abnormal sediment loads (above natural conditions) to leave the site at any time. Sediment leaving the site originating from construction constitutes a permit violation and will not be tolerated. Follow-up will include corrective action measures and coordination with the Stormwater Program. Erosion and sediment control BMPs shall be used to minimize the amount of sediment to receiving waters and wetlands from areas disturbed as a result of construction activities.

6.1 LIMITATIONS ON COVERAGE

Stormwater discharges that may impact endangered or threatened species or adversely modify designated critical habitat are not covered by the General Permit or this SWMP. The Indiana Bat is the only protected species located on Fort Drum. Stormwater discharges within the Bat Containment Area are not covered by this SWMP or the General Permit.

The SWMP and the General Permit do not apply to properties listed on the State or National Register of Historic Places, administrated by the New York State Office of Parks, Recreation, and Historic Preservation (NYS OPRHP). If an OPRHP-listed property may be affected by the stormwater discharge, a written agreement must be established with the OPRHP to mitigate the effects of the discharge. Numerous OPRHP-listed properties exist on Fort Drum, and projects must be reviewed by the Cultural Resources Manager in the Master Planning Division, following the requirements of the National Environmental Protection Act (NEPA).

Measurable Goals

MCM 1: Fort Drum will attend at least one public outreach event per year

MCM 2: Fort Drum will keep the stormwater website active and answer any questions on the website or those sent to Mike Reome within a week.

MCM 3: Fort Drum will take water samples from at least 30 outfalls per year to inspect water quality.

MCM 4: Fort Drum will inspect each construction site over 1 acre in size at least once per year.

MCM 5: Fort Drum will inspect each construction project that is over an acre in size one year after the receipt of an NOT.

MCM 6: Fort Drum will inspection at least 20% of the stormwater infrastructure within the MS4 per year.

FIGURE 1.2.1.1 Fort Drum's Cantonment area and Airfield

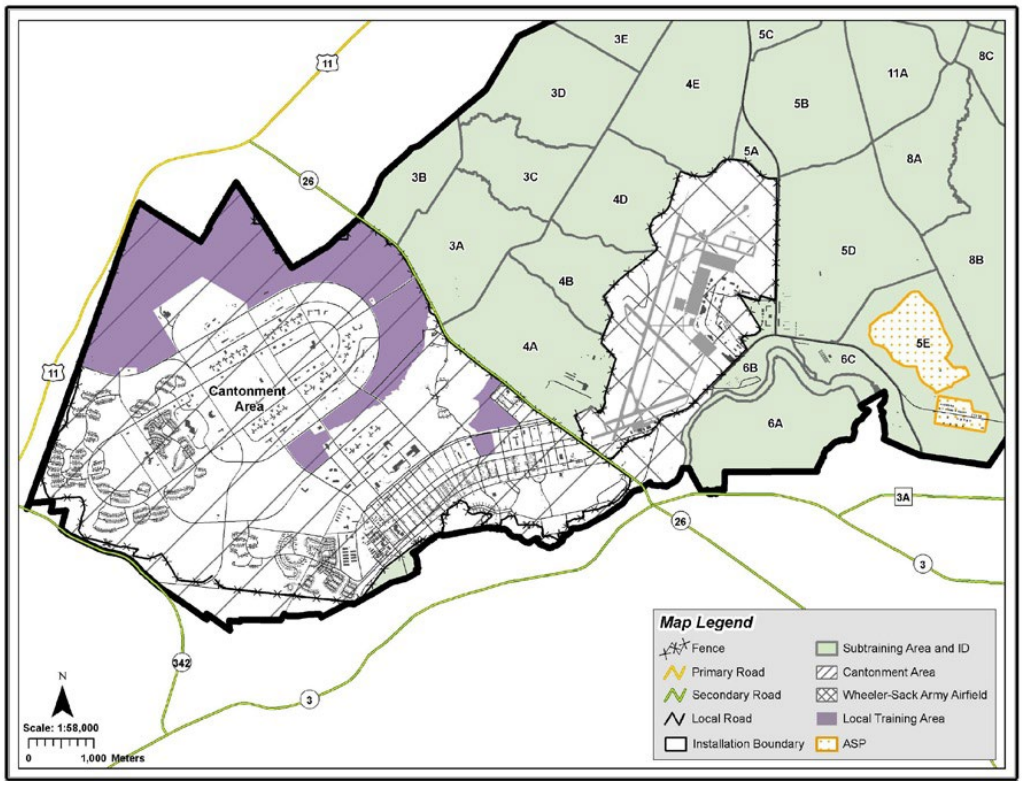
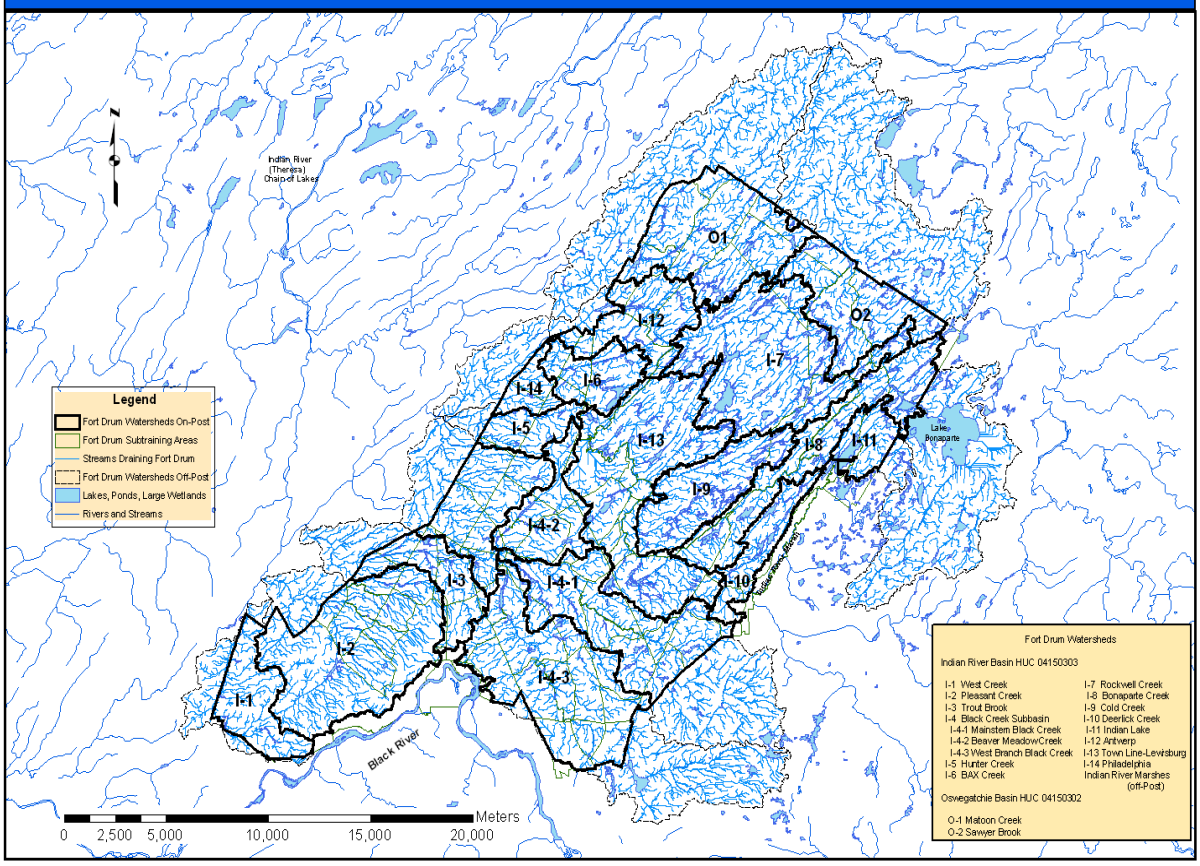


FIGURE 1.2.1.2 Fort Drum's Designated MS4 Areas

MS4 AREA

FIGURE 1.2.5.1 Fort Drum's Watersheds

Map WR-1. Wetlands, Lakes, and Streams in Fort Drum Watersheds



7.0 APPENDIX

7.1 APPENDIX A- CONSTRUCTION SITE INSPECTION CHECKLIST

Fort Drum			
MS4 Permit Construction Inspection Checklist			
Evaluation Date		**Permit #**	
Project Name			
Address			
Findings			
SPDES AUTHORITY	**YES**	**NO**	**Comments**
Is there a signed NOI?			
Is there an up-todate signed SWPPP?			
Has a permit been issued for site?			
VISUAL OBSERVATIONS	**YES**	**NO**	**Comments**
Are all erosion and sediment control measures installed/constructed?			
Are all erosion and sediment control measures maintained properly?			
Have all disturbances of 5 acreas or more been approved prior to the disturbance?			
Are stabilization measures initiated in inactive areas?			
Are permanent stormwater control measures implemented?			
Was there a discharge into the receiving water on the day of inspection?			
Are receiving waters free of evidence of turbidity, sedimentation, or oil?			
Water Quality Observations:			
Describe discharge(s) source(s) impact on receiving waters:			
Describe the quality of the receiving water(s) both upstream and downstream of the discharge:			
Describe any other water quality standards or permit violations:			
Additional Comments:			
Overall Inspection Rating:		**Notes:**	
Satisfactory			
Unsatisfactory			
Evaluation By:			

7.2 APPENDIX B- POST CONSTRCTION INSPECTION CHECKLIST

FORT DRUM, NEW YORK
Stormwater Post Construction Inspection Checklist

Installation (Circle one): Housing / Cantonment / Range / Wheeler Sack Army Airfield

Associated Road: _____ **Associated Bldg. #:** _____ **GRID ID:** _____ **BMP ID#:** _____

GPS Location: _____

POC: Public Works Environmental Division / Compliance Branch / Stormwater Program 772-9471

Evaluation Date: _____

Evaluation Completed by: Print & Sign _____

Construction Site and Permit #: _____

Findings	Yes	No	Check if maintenance is required	Comments
Have temporary erosion control measures including silt fence been removed?				
Have permanent stormwater control measures been implemented?				
Are receiving waters free of evidence of turbidity, sedimentation and oil?				
Are Stormwater infrastructures clean and working correctly?				
Is the site still stabilized?				
Little or no trash present				
No evidence of erosion				
Site Description / Additional Comments:				
Sketch Facility (If Required)				

*Revision control of this document is maintained electronically. If printed, individuals are responsible for ensuring use of

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7.3 APPENDIX C- STORMWATER INFRASTRUCTURE INSPECTION CHECKLIST

Fort Drum / Wheeler Sack Army Airfield
Stormwater Infrastructure Maintenance-Inspection Checklist

Installation: (Circle one) Cantonment Area / Range / Wheeler Sack Army Airfield

Collection System: _____ Associated Bldg. #: _____ BMP ID#: _____

GPS Location: Latitude: _____° _____' _____" N Longitude: _____° _____' _____" W

Maintenance to be Performed by: Public Works Municiple Service Branch / Roads & Grounds 772-2061

POC: Public Works Environmental Division / Compliance Branch / Stormwater Program 772-9471

Evaluation Date: _____

Evaluation Completed by: Print & Sign_____

Circle Type of System: Detention Pond Wet Pond Infiltration Trench Oil & Water Seperator Outfall
Infiltration Trench Type: Stream, Ditch, Swale, Catch Basin, Open Pipe or Culvert Pipe

Work Order #: _____

Findings	Yes	No	Maintenance Required	Comments
Contributing Drainage Area				
Excessive trash / debris				
Bare / exposed soil				
Evidence of erosion				
Inlets and Outlets				
(Headwalls, open pipes, outfall				
weirs, catch basins, etc.)				
Excessive sediment/debris				
Structural defects				
Evidence of clogging				
Evidence of erosion				
Facility Condition				
Evidence of erosion				
Excessive sediment				
Exposed or bare soils				
Evidence of pollutants				
Presence of woody vegetation				
Evidence of dead vegetation				
Excessive trash / debris				
Evidence of standing water				

7.4 APPENDIX D- RETENTION/DETENTION POND INSPECTION SHEET

Fort Drum / Wheeler Sack Army Airfield
Stormwater Retention/Detention Pond Inspection Sheet

Installation: (Circle one) Cantonment Area / Range / Wheeler Sack Army Airfield

Collection System: _____ Associated Map #: _____ BMP ID#: _____

GPS Location: Latitude: _____° _____' _____" N Longitude: _____° _____' _____" W

Evaluation Date: _____

Evaluation Completed by: Print & Sign_____

Circle Type of System: Detention Pond, Retention Pond or Wet Pond

Findings	Yes	No	Maintenance Required	Comments
Pond				
Excessive trash / debris				
Sediment less than 12" deep				
Evidence of erosion				
Vegetation buffer zone atleast 15 feet from pond edge				
Berms in good condition?				
Excessive algae?				
Water level acceptable?				
Oil or sheen on water?				
Fenced Damaged?				
Invasives present?				
Inlets				
Excessive sediment/debris				
Structural defects				
Vegetation/Trees clogging inlet				
Evidence of erosion				
Rip rap with excessive sediment				
Outlets				
Excessive sediment/debris				
Structural defects				
Vegetation/Trees clogging outlet				
Evidence of erosion				
Rip rap with excessive sediment				