SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROGRAM PLAN

Prepared by

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2 Overview

Norfolk State University (NSU) is required by the Virginia Pollutant Discharge Elimination System (VPDES) Regulations to design and implement a program consistent with the Virginia Stormwater Management Program (VSMP) General Permit for Stormwater Discharges. The University is considered a small Municipal Separate Storm Sewer System (MS4) and applied for a permit renewal on 6 November 2007. The permit became effective 9 July 2008 through 8 July 2013. Since then. The permit has been renewed several times, the most recent permit term being October 1, 2023 through October 1, 2028.

The Department of Environmental Quality (DEQ) is responsible for the issuance, denial, revocation, termination, and enforcement of VPDES permits for the control of stormwater discharges from MS4s and land disturbing activities under the VSMP. DEQ, formerly Department of Conservation and Recreation (DCR) has conducted on-site audits on several occasions, the most recent being January 22, 2025. The results of each audit have been documented and are available upon request.

With the intent of continuous improvement, this more comprehensive program has been developed and is updated with each permit cycle. This document has been updated to address changes in the regulations from DEQ since the last Program Plan was submitted.

NSU is located near the intersection of Park Avenue and Brambleton Avenue, within the City of Norfolk. The focus of this study will be the 138-acre campus. This acreage represents all the NSU State owned property to date. Although offsite properties drain through the campus via a closed stormwater system, properties not owned by the State will not be accounted for in this program. These other properties are addressed under the City's permit. Physically, the MS4 includes a closed pipe stormwater system and twenty-two stormwater BMPs that flow into eleven outfalls. A summary of the basins and outfalls are listed in Tables 1 and 2, respectively.

The goals and objectives included in this program are intended to prevent the degradation of the University's stormwater system and other downstream waters.

Table 2.1 Current Campus Stormwater BMPs

BMP No.	Type of BMP	Location of BMP
BMP 1	Bioretention Level 1	Student Center/ Godwin Hall
BMP 2	Underground Infiltration	Student Center
BMP 3	Bioretention Level 1	Student Center
BMP 4	Infiltration Level 1	Baseball Field
BMP 5	Infiltration Level 1	Softball Field
BMP 6	Infiltration Level 1	Stadium
BMP 7	Crystal Stream Separator	Stadium
BMP 8	Bioretention	Brown Hall North
BMP 9	Bioretention	Brown Hall East
BMP 10	Filterra Bio-Filtration	Bowser Bldg. Parking
BMP 11	Micro Bioretention	Residential Facility 1
BMP 12	Micro Bioretention	Residential Facility 1
BMP 13	Micro Bioretention	Residential Facility 1
BMP 14	Previously Detention Basin, now Infiltration Basin	Gate 3/ Lot 30
BMP 15	Previously Vegetated Open Channel, now Grass Channel	Hamm Fine Arts N Bldg.
BMP 16	Previously Vegetated Open Channel, now Infiltration Basin	PE/ Sports Med Building
BMP 17	Infiltration	Wilson Admin/ Lot 2
BMP 18	Infiltration	Spartan Suites
BMP 19	Previously Vegetated Open Channel, now Grass Channel	Hamm Fine Arts South

BMP 20	Infiltration	Wilson Admin
BMP 21	Wet Pond	Outfall 1/ Lot 10
BMP 22	Infiltration	Lot 17

Table 2.2 Current Campus Outfalls

Norfolk State University Stormwater Outfall Informational Table								
Outfall Unique Identifier	**MS4 Acres Served**	**Receiving Waters**	**HUC**	**Receiving Waters Impaired**	**Applicable TMDL**	**Land Use**	**Latitude**	**Longitude**
Outfall 1	3.25	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River	Mixed Use	36.504715	-76.151059
Outfall 2	1.87	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River	Mixed Use	36.504686	-76.151928
Outfall 3	3.9	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River	Mixed Use	36.50466	-76.152415
Outfall 4	4.3	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River	Mixed Use	36.504643	-76.152835
Outfall 5	0.56	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River	Mixed Use	36.504643	-76.153011
Outfall 6	2.6	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River	Mixed Use	36.504638	-76.153168
Outfall 7	2.55	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River	Mixed Use	36.504628	-76.154035
Outfall 8	2.26	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River	Mixed Use	36.504609	-76.154171
Outfall 9	100.32	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River	Mixed Use	36.504598	-76.155244
Outfall 10	3.3	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River	Mixed Use	36.504624	-76.16094
Outfall 11	0.72	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River	Mixed Use	36.504808	-76.161304

NORFOLK STATE UNIVERSITY

2 Signed Certification

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

4-30-25
Date

Signature

Terry Woodhouse, Associate Vice President Facilities Management

BURNS McDONNELL

4 Oversight Team

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See Appendix E for Nutrient Management Plan developed by Soil Horizons, LLC

These offices support the Program by providing direct communication to senior administrators, tradesmen, architectural/engineering consultants, faculty, and student organizations. It is important the program be accessible to all major components of the campus community as all have an interest in the health of the natural environment.

5 Permit Background/Regulatory Considerations

In 1972, Congress passed the Clean Water Act (CWA), to restore and maintain the quality of the nation's waterways. The ultimate goal was to make sure that the river and streams were fishable, swimmable, and drinkable. In 1987, the Water Quality Act (WQA) added provisions to the CWA that allowed the EPA to govern stormwater discharges from MS4s. In 1990, the EPA promulgated rules establishing Phase I of the National Pollutant Discharge Elimination System (NPDES) stormwater program.

Under the Phase 1 regulations, permits for stormwater discharges from municipal separate storm sewer systems were required for eleven "large" and "medium" municipalities in Virginia. The "large" municipalities (250,000+ populations) are Fairfax County, Virginia Beach, and Norfolk. The "medium" municipalities (from 100,000 to 250,000 populations) are Arlington County, Prince William County, Henrico County, Chesterfield County, Hampton, Newport News, Portsmouth, and Chesapeake. The Phase 2 stormwater regulations froze the population thresholds for "large" and "medium" municipal separate storm sewer systems at the 1990 Census level, so no additional municipalities will be designated into these categories.

Phase 1 municipal separate storm sewer systems permit applications required the municipalities to propose a comprehensive Stormwater Management Program (SWMP) of structural and non-structural measures to control the discharge of pollutants from the storm sewer system to the Maximum Extent Practicable (MEP), and to effectively prohibit non-stormwater discharges to the separate storm sewer system. The Phase 1 permits required the implementation of the SWMP, required storm event monitoring to be conducted by the municipality, and required the municipality to regularly assess the effectiveness of the various stormwater controls employed by the municipality.

Phase 2 regulations required permits to be issued to Small Municipal Separate Storm Sewer Systems (MS4s) located in "urbanized areas" (as defined by the U.S. Census Bureau's 2000 Census). Small MS4s include systems owned by municipalities, federal facilities, State facilities (including VDOT), and public universities. In addition, any Small MS4 located in a Phase 1 "large" or "medium" municipality is required to be permitted under the Phase 2 regulations.

Permits for regulated small municipal separate storm sewer systems require the development, implementation, and enforcement of a SWMP that includes the following "six *minimum control measures*":

1. Public education and outreach
2. Public involvement and participation
3. Illicit discharge detection and elimination
4. Construction site stormwater runoff and erosion and sediment control
5. Post-construction stormwater management for new development and development on prior developed lands
6. Pollution prevention and good housekeeping for facilities owned or operated by the permittee within the MS4 service area

For each minimum control measure, the applicant is required to identify:

1. Proposed best management practices and measurable goals for each of the "six minimum control measures"
2. The timing of the implementation of each control measure
3. The person or persons responsible for implementing the Stormwater Management Program (SWMP).

In accordance with the MS4 Program Plan the University has developed MS4 Annual reports for 2018-2024, a Stormwater Pollution Protection Plan, an Annual Standards and Specifications, an Illicit Discharge Detection and Elimination Program, a Nutrient Management Plan, an Chesapeake Bay TMDL Action Plan, and an Elizabeth River TMDL Action Plan among other documentation, which include operating procedures, written protocols and policies that will further help NSU in their goal for keeping their campus and environment clean and pollutant free. All these documents and more information can be found on the University's website or given upon request.

6 Minimum Control Measures

6.1 Minimum Control Measure # 1: Public Education and Outreach on Stormwater Impacts.

This measure requires the University to educate the public about the potential impact of stormwater discharges on natural bodies of water, and the precautions to be taken to reduce pollutants in stormwater runoff. The public is considered to be all members of the campus community along with contractors and visitors to academic and athletic events. The means of communication may vary relative to the intended recipients.

Multiple best management practices (BMP)s are associated with this Minimum Control Measure. Throughout the year NSU will evaluate the areas of concern around the campus to make appropriate changes to the high priority stormwater issues that are to be highlighted for the following year. NSU utilizes at least three of the strategies for public outreach and education delineated in Table 1 of Part I E 1.d. of the general permit shown below as required.

Table 1
Strategies for Public Education and Outreach

Strategies	Examples (provided as examples and are not meant to be all inclusive or limiting)
Traditional written materials	Informational brochures, newsletters, fact sheets, utility bill inserts, or recreational guides for targeted groups of citizens
Alternative materials	Bumper stickers, refrigerator magnets, t-shirts, or drink koozies
Signage	Temporary or permanent signage in public places or facilities, vehicle signage, billboards, or storm drain stenciling
Media materials	Information disseminated through electronic media, radio, televisions, movie theater, newspaper, or GIS story maps
Speaking engagements	Presentations to school, church, industry, trade, special interest, or community groups
Curriculum materials	Materials developed for school-aged children, students at local colleges or universities, or extension classes offered to local citizens
Training materials	Materials developed to disseminate during workshops offered to local citizens, trade organization, or industrial officials
Public education activities	Booth at community fair, demonstration of stormwater control projects, presentation of stormwater materials to schools to meet applicable education Standards of Learning or curriculum requirements, or watershed walks
Public meetings	Public meetings on proposed community stormwater management retrofits, green infrastructure redevelopment, ecosystem restoration projects, TMDL development, climate change's effects on stormwater management, voluntary residential low impact development, or other stormwater issues

1. High Priority Issue: Fluids from vehicles can contribute contaminants to the runoff.
   Rationale: This is a priority to NSU because it is an active campus and has a lot of daily traffic. The University owns and maintains several fleet vehicles and maintenance equipment that are stored in campus along with several employee and student parking lots. Targeting vehicle fluids as a high priority issue will help University's students, faculty, and staff to become aware of the threat that automotive fluids pose to the health of the waterways.
   Target Audience: The University students.

Strategies: University students will be encouraged to inspect parking areas and report any spills to University staff that they may find. Seminars are and continue to be developed to educate the students on the actions to take. NSU has created brochures that have been posted locally and on the University's website to help educate the students and employees on the importance of keeping the surroundings free of chemicals that can adversely affect the environment. Speaking engagements with the students take place at the start of each semester to ensure that campus rules are followed.
Goal: To keep the ground surfaces clean of pollutants and clean up spills before they can reach the stormwater systems. Making students responsible for their surroundings and keeping the campus clean. The number of students and faculty that attend the speech can be recorded for the annual report, along with the number of brochures that have been passed out.
Schedule: Students will be educated at the start of every semester. University faculty need to attend seminars annually. An email newsletter will be sent out bi-annually.

2. High Priority Issue: Trash and debris collection and recycling. Any litter has the potential to find its way into the surrounding and can adversely affect the environment. Specifically, from the NSU campus, trash and debris can collect in the stormwater BMPs, the stormwater system and eventually make its way into the Chesapeake Bay and have an impact on seagrasses and fish wildlife.
   Rationale: This is a high priority issue because litter can have an adverse effect on the environment and needs to be stopped at its source. Providing the students with the information about proper disposal of litter, debris and other items will help keep the campus clean and debris from reaching the stormwater system and ultimately the environment.
   Target Audience: The University students.
   Strategies: Engage the students with emails and flyers. Speaking engagements for the students and faculty are held at the start of each semester to ensure that campus rules are followed.
   Goal: In addition to good housekeeping, this goal will set an example to the campus community and making the students responsible for keeping the campus clean will give the students ownership and campus pride. The number of students and faculty that attend the speaking can be recorded for the annual report, along with the number of flyers that have been posted or passed out.
   Schedule: Email newsletter will be sent out bi-annually. Flyers will be posted at the start of every semester.

3. High Priority Issue: Stormwater Pollution Prevention Education is necessary to prevent future pollution from students.
   Rationale: Informing students on how stormwater pollution occurs and how to prevent it is an essential part of pollution prevention.
   Target Audience: The University students.
   Strategies: At least twice per semester, a Stormwater Pollution Prevention Information Table/ Booth will be staffed during Student High Profile events.
   Goal: To keep students from contributing to stormwater pollution by keeping them informed of how it occurs.
   Schedule: Twice per semester at the minimum.

6.2 Minimum Control Measure # 2: Public Involvement /Participation

The minimum control measure for public involvement and participation requires the permittee to establish and implement procedures that facilitate community engagement in stormwater management. These procedures must enable the public to report potential illicit discharges, improper disposal, spills, complaints about land-disturbing activities, or other stormwater pollution concerns to the MS4. Additionally, the public should be able to provide comments on the permittee's MS4 program plan. The permittee is also responsible for responding to these public comments and maintaining documentation of all comments received, along with the responses provided. This ensures transparency and active public participation in the MS4 program.

Furthermore, no later than three months after this permit's effective date, the existing permittee must update and maintain a webpage dedicated to the MS4 program and stormwater pollution prevention. This webpage should include the effective MS4 permit and coverage letter, the most current MS4 program plan or its location, the annual report for each year of the permit term, and the most current Chesapeake Bay TMDL action plan or its location for permittees in the Chesapeake Bay watershed. Additionally, it should provide the Chesapeake Bay TMDL implementation annual status reports, a mechanism for the public to report potential stormwater pollution concerns, and methods for public comments on the MS4 program plan and Chesapeake Bay TMDL action plan. The University has adhered to these requirements, and all relevant information is available on their official website at Stormwater Pollution Prevention - MS4 Program | Norfolk State University - Norfolk State University.

NSU utilizes at least four of the strategies for public involvement opportunities delineated in Table 2 of Part I E 1.d. of the general permit shown below as required.

Table 2
Public Involvement Opportunities

Public involvement opportunities	Examples (provided as example and are not meant to be all inclusive or limiting)
Monitoring	Establish or support citizen monitoring group
Restoration	Stream, watershed, shoreline, beach, or park clean-up day, adopt-a-waterway program, tree plantings, and riparian buffer plantings
Public education activities	Booth at community fair, demonstration of stormwater control projects, climate change's effects on stormwater management, presentation of stormwater materials to schools to meet applicable education Standards of Learning or curriculum requirements, or watershed walks
Public meetings	Public meetings on proposed community stormwater management retrofits, green infrastructure redevelopment, ecosystem restoration projects, TMDL development, voluntary residential low impact development, climate change's effects on stormwater management, or other stormwater issues
Disposal or collection events	Household hazardous chemicals collection, vehicle fluids collection
Pollution prevention	Adopt-a-storm drain program, implement a storm drain marking program, promote use of residential stormwater BMPs, implement pet waste stations in public areas, adopt-a-street program.

Public Involvement Activities to be Implemented in 2025:

1. Students have been advised not to change any of the fluids used in their motor vehicles while on campus. These include motor oil, transmission fluid, anti-freeze, gasoline or diesel and windshield washer fluids.
   Goal: To minimize the accumulations of drippings and stains in parking lots and campus streets that can become part of stormwater runoff. A street and parking lot inspection day can be set up to have volunteers inspect the parking area for fluids and report them to the University staff for proper cleanup.
   Schedule: The parking lots and fleet facilities will be visually inspected once per semester and logged for cleanliness.
   Responsible Party: Roderick Allmond, Director, Office of Environmental Health, Safety, and Risk Management

2. Students have been advised to utilize good housekeeping practices while on campus. This includes not littering, throwing away cigarette butts and keeping trash disposal areas clean. The University will organize a trash pickup event and equip students and employees with large impervious trash bags, gloves, and other tools to aid in the retrieval of trash, discarded food items, papers, etc. A move out day disposal can be organized with the local waste company to dispose of debris that has been accumulated each semester.
   Goal: To minimize the accumulations of debris that can become part of stormwater runoff. The number of trash bags that are collected will be tracked and reported in the annual report.
   Schedule: Once per semester.
   Responsible Party: Roderick Allmond, Director, Office of Environmental Health, Safety, and Risk Management

3. The University has continuously evaluated means to educate the students and employees on stormwater pollution prevention. They work closely with Spartan E-daily, Campus Announcements and utilize their closed-circuit TV channel to disseminate information.
   Goal: To provide a safe environment to disseminate information about improving the local water quality and how to create a cleaner campus.
   Schedule: Continuously, the TV screen in the Student Center runs 24/7 and is updated periodically.
   Responsible Party: Roderick Allmond, Director, Office of Environmental Health, Safety, and Risk Management

Norfolk State University is also in the process of creating a method for the public to report potential illicit discharges, improper disposal or spills to the MS4 or complaints regarding land disturbing activities or other stormwater concerns in which the public could easily submit a request and be put in contact with someone who will provide status updates on the request to keep the person informed.

Currently, any reports or complaints about the MS4 can be sent to ehs@nsu.edu or (757) 823-9000 or (757) 823-9142 as listed on the University's Stormwater Pollution Prevention site at Stormwater Pollution Prevention - MS4 Program | Norfolk State University - Norfolk State University.

6.3 Minimum Control Measure # 3: Illicit Discharge Detection and Elimination

6.3.1 POLICY STATEMENT

The minimum control measure for illicit discharge detection and elimination requires the permittee to develop and maintain an accurate MS4 map and information table. This map must be updated within 24 months of the permit's effective date and include MS4 outfalls discharging to surface waters, unique identifiers for each mapped item, names, and locations of receiving waters, the MS4 regulated service area, and stormwater management facilities owned or operated by the permittee. The permittee must also maintain an outfall information table with details such as latitude and longitude, regulated acreage, receiving water names, hydrologic unit codes, impairment status, and any EPA-approved TMDLs. Additionally, the permittee must submit geodatabase or shapefiles to DEQ within 24 months, update the MS4 map and outfall information table annually, and notify downstream adjacent MS4s of any known physical interconnections. Unauthorized non-stormwater discharges into the MS4 must be prohibited through legal mechanisms, except for the minimis discharges identified by the department.

The permittee shall also maintain, implement, and enforce illicit discharge detection and elimination (IDDE) written procedures designed to detect, identify, and address unauthorized non-stormwater discharges, including illegal dumping, to the MS4. These written procedures must include a description of the legal authorities and mechanisms available to eliminate identified sources of ongoing illicit discharges, dry weather field screening protocols, and a prioritized schedule of field screening activities. The protocols should detail the criteria for prioritization, the schedule for screening outfalls, and the adoption of a risk-based approach to dry weather screening. Additionally, the procedures must outline the methodologies for conducting investigations, determining the source of illicit discharges, and conducting follow-up investigations. The permittee must also track all illicit discharge investigations, documenting key details such as the dates of observation, investigation results, follow-up actions, and resolution of the investigation.

Norfolk State University is the owner and operator of an MS4 conveyance system which encompasses 138 acres. The map of the MS4 service area and outfall information table can be found in Appendix A. The University adheres to the guidelines for illicit discharge detection and elimination as outlined in the permit requirements. It has established and maintains the necessary standards and procedures to comply with these regulations, including developing and updating an accurate MS4 map and information table, implementing dry weather field screening protocols, and conducting thorough investigations of unauthorized non-stormwater discharges. The University also ensures that all relevant information is documented and accessible, demonstrating its commitment to effective stormwater management and compliance with environmental standards.

Norfolk State University also has a written notification of physical interconnections given by the permittee to other MS4s, in this case, the City of Norfolk MS4, as required by the general permit regulations. The notification can be found in Appendix G.

The Illicit Discharge Detection and Elimination Policy is given below.

6.3.1.1 Illicit Discharge Detection and Elimination Procedures

Norfolk State University (NSU) is committed to the environmental safety and protection of the campus community. The purpose of this policy is to provide for the protection of the environment at NSU, and the surrounding areas, through the regulation of non-stormwater discharges to the storm drainage system to the maximum extent practicable as required by federal, state, and local law. This policy establishes MS4 in order to comply with requirements of the National Pollutant Discharge Elimination System (NPDES) permit process, as implemented through the Virginia Stormwater Management Program (VSMP) permit for NSU. This policy contains detailed information regarding requirements for MS4 storm system maintenance.

Norfolk State University (NSU) is the owner and operator of registered small municipal separate storm sewer system (MS4) conveyance system which encompasses approximately 138 acres (Appendix A, Existing Conditions

Map). A Stormwater Quality and Quantity Management Study was developed for the University by Vanasse, Hangen, Brustlin, Inc. in 2009 and revised in 2018 by Burns and McDonnell. This policy contains detailed information regarding requirements for MS4 storm system maintenance. Annual Standards and Specifications for ESC and SWM were developed to provide information regarding NSU's implementation related to the MS4 and regulated construction activities (Appendix C). The Annual Standards and Specifications will be updated in the 2025 fiscal year. The Stormwater Standard Operating Procedures were developed to describe the management practice selected to address the areas of concern and the stormwater management controls required by the permit (Appendix B).

6.3.1.1.1 DEFINITIONS

Best Management Practices (BMPs): means schedules of activities, prohibitions of practices, general housekeeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to stormwater, receiving waters, or stormwater conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

Construction Activity - Activities subject to NPDES Construction Permits. Currently these include construction projects resulting in land disturbance of 5 acres or more. Beginning in March 2003, NPDES Storm Water Phase II permits will be required for construction projects resulting in land disturbance of 1 acre or more. Such activities include but are not limited to clearing and grubbing, grading, excavating, and demolition.

Contractor: means any individual or company, including a subcontractor, hired to perform services on university property.

EHS&RM: Environmental Health Safety and Risk Management Department (EHS&RM)

Hazardous substance: means any substance designated under the Code of Virginia or 40 CFR Part 116 pursuant to § 311 of the CWA.

Illicit discharge: means any discharge to a municipal separate storm sewer that is not composed entirely of stormwater, except discharges pursuant to a VPDES or VSMP permit (other than the VSMP permit for discharges from the municipal separate storm sewer), discharges resulting from firefighting activities, and discharges identified by and in compliance with 9VAC25-870-400 D 2 c (3). Storm drains that have measurable flow during dry weather periods, which contain pollutants or pathogens that could pose a significant threat to the community are illicit discharges. A storm drain with measurable flow that does not contain any pollutants is simply considered a discharge.

Municipal separate storm sewer (MS4): means a conveyance or system of conveyances otherwise known as a municipal separate storm sewer system, including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains:

1) Owned or operated by a federal, state, city, town, county, district, association, or other public body, created by or pursuant to state law, having jurisdiction or delegated authority for erosion and sediment control and stormwater management, or a designated and approved management agency under § 208 of the CWA that discharges to surface waters;
2) Designed or used for collecting or conveying stormwater;
3) Not a combined sewer; and
4) Not part of a publicly owned treatment works.

Municipal Separate Storm Sewer System (MS4): means all separate storm sewers that are defined as "large" or "medium" or "small" municipal separate storm sewer systems or designated under 9VAC-25-890-30.

Municipal Separate Storm Sewer System Management Program or MS4 Program: means a management program covering the duration of a permit for a municipal separate storm sewer system that includes a comprehensive planning process that involves public participation and intergovernmental coordination, to reduce the discharge of pollutants to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act (CWA) and regulations and the Virginia Stormwater Management Act and attendant regulations, using management practices, control techniques, and system, design and engineering methods, and such other provisions that are appropriate.

National Pollutant Discharge Elimination System (NPDES) Stormwater Discharge Permit: means a permit issued by EPA (or by a State under authority delegated pursuant to 33 USC §1342(b)) that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis.

Non-stormwater discharge: means any discharge to the storm drain system that is not composed entirely of stormwater.

Outfall: means, when used in reference to municipal separate storm sewers, a point source at the point where a municipal separate storm sewer discharges to surface waters and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels or other conveyances which connect segments of the same stream or other surface waters and are used to convey surface waters.

Point source: means any discernible, confined, and discrete conveyance including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

Pollutant: means anything which causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; non- hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects, ordinances, and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure; and noxious or offensive matter of any kind.

Source: means any building, structure, facility, installation, or activity from which there is or may be a discharge of pollutants.

State waters: means all water, on the surface and under the ground, wholly or partially within or bordering the Commonwealth or within its jurisdiction, including wetlands (Virginia Code § 62.1-44.3).

Stormwater: means any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation and resulting from such precipitation.

Stormwater Management Plan: A document which describes the Best Management Practices and activities to be implemented by a business to identify sources of pollution or contamination at a site and the actions to eliminate or reduce pollutant discharges to Stormwater, Stormwater Conveyance Systems, and/or Receiving Waters to the Maximum Extent Practicable.

Wastewater: Any water or other liquid, other than uncontaminated storm water, discharged from a facility.

Wetlands: means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted

for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (Virginia Code § 62.1-44.3)

Visitor: means a person who is not enrolled at, compensated by, or an affiliate of the University.

6.3.1.1.2 CONTACTS AND LEGAL AUTHORITIES

University staff shall administer, implement, and enforce the provisions of this policy.
In the event of an illicit leak or spill of prohibited substances, the Police Department (757) 823-9000), EHS & Risk Management Department (757) 823-9142 or the University Architect shall be contacted at (757) 823-2625.

6.3.1.1.3 STAKEHOLDERS

This policy is applicable to all students, faculty, staff, contractors, vendors, and visitors of the University. This policy shall apply to all water entering the storm drain system generated on any land owned or operated by the University.

6.3.1.1.4 POLICY CONTENTS

Management Program (VSMP) permit for NSU.
The objectives of this policy are as follows:

- Prevent or minimize to the maximum extent practicable, the discharge of pollutants from University properties and operations into the storm drainage system (see Procedures Section of this policy).
- Develop, implement and enforce a program to detect and eliminate illicit discharges, as defined by 9VAC25-89-40 and 9VAC25-870-10, into the regulated small MS4 (see Enforcement and Penalties Section of this policy)...
- Comply with the requirements of NSU's stormwater permit posted on MS4 webpage.

Permits for regulated small municipal separate storm sewer systems require the development, implementation, and enforcement of a SWMP that includes the following "three minimum control measures":

- Public education and outreach on stormwater impacts
- Illicit discharge detection and elimination
- Renovation/upgrades to BMP's

Regulated Small MS4 permit applications require the applicant to identify:

- Proposed best management practices and measurable goals for each of the "three minimum control measures."
- Timing of the implementation of each control measure
- Persons responsible for implementing the Stormwater Management Program (SWMP).

6.3.1.1.5 COMPATIBILITY WITH OTHER REGULATIONS

This policy is not intended to modify or repeal any other policy, ordinance, rule, regulation, or other provision of law. The requirements of this policy are in addition to the requirements of any other policy, ordinance, rule, regulation, or other provision of law, and where any provision of this policy imposes restrictions different from those imposed by any other policy, ordinance, rule, regulation, or other provision of law, whichever provision is more restrictive or imposes higher protective standards for human health or the environment shall control.

6.3.1.1.6 SEVERABILITY

The provisions of this policy are declared to be severable. If any provision of this policy is held invalid, this determination will not affect the other provisions or application of this policy.

6.3.1.1.7 ILLICIT DISCHARGES

No NSU employee, student, visitor, contractor, or department shall cause or allow discharges into the University's storm drainage system which are not composed entirely of stormwater, except for the allowed discharges provided in the Virginia Stormwater Management Program (VSMP) Permit Regulations (9VAC25-870). The spilling, dumping, or disposal of materials other than stormwater to the storm drainage system are strictly prohibited.

Prohibited discharges include, but are not limited to:

- Oil
- Anti-freeze
- Grease
- Chemicals
- Wash water
- Paint
- Animal waste
- Garbage
- Litter
- Landscaping debris

Materials used by the equipment maintenance staff, vegetative nutrients, housekeeping cleansers, chemicals used in academic and research laboratories have been identified as potential pollutants. Separate procedures have been established for each of these exposures. Multiple BMPs are associated with this Minimum Control Measure. All BMPs defined under this measure shall be implemented beginning in the first permit year, unless specifically stated otherwise. These BMPs are as follows:

1. Equipment maintenance: As much as possible, motorized unlicensed equipment shall be stored under a shed roof to help minimize the amount of stormwater runoff from the equipment. This equipment can develop lubricant and fuel stains which could produce sheen on waters entering stormwater drains. Accumulations of grass clippings, leaves, dirt, and loose debris are to be removed from the equipment and swept up to prevent their inadvertent entry into stormwater inlets.
   Goal: To make equipment operators more accountable for the cleanliness of the equipment and reduce the possibility of petrochemical residue and debris entering the stormwater sewer system.
   Schedule: Continuously
   Responsible Party: Carlos Spruill, Director, Facilities Management

2. Motor vehicle refueling: The University has an underground gasoline storage tank for use in state vehicles. Refueling of most of those vehicles is performed by the vehicle maintenance staff who has been instructed not to "top-off" the vehicle tank for fear of overflow and spilling onto the pavement. To help prevent incidents, the nozzle has been replaced with one that will close automatically; access to the hose is restricted by locking the nozzle in place, turning off the gasoline pump and restricting refueling to a few hours in the morning when the mechanic is available to oversee the procedure.
   Goal: To prevent gasoline from entering the stormwater drains, staining the pavement, and reducing the risk of fire.
   Schedule: Continuously
   Responsible Party: Carlos Spruill, Director, Facilities Management

3. Vegetative nutrients: The University has a contract with a consultant, Soil Horizons, LLC, to assist with a nutrient management program. The program is already in place and was updated last year. The program includes soil tests, assessments of vegetation and specified application amounts.
   Goal: To maintain healthy lawns and plantings while reducing spillage on pavements that can enter stormwater inlets and adversely affect marine life.
   Schedule: Continuously
   Responsible Party: Carlos Spruill, Director, Facilities Management

4. Dumping: The University has established procedures to identify and address non-stormwater discharges, including illegal dumping. This involves campus patrols by University Police and vigilance from facilities groundskeepers, tradesmen, and shuttle bus drivers, all of whom can detect such discharges. These individuals are responsible for reporting any observations or incidents that could lead to illicit discharges or non-stormwater contamination. Additionally, the main outfall from campus is equipped with a large screen to prevent solids from entering the connecting sewers. The University will collaborate with the city to ensure this structure remains operational.
   Goal: To prevent illegal dumping from entering the stormwater drains, this could impair water quality.
   Schedule: Continuously
   Responsible Party: Carlos Spruill, Director, Facilities Management and University Police

5. Penalties: A formal proposal shall be drafted advising the campus community that discharge of any materials, solid or liquid, other than water, into stormwater inlets is prohibited and infractions shall be subject to appropriate fines and/or penalties. Proposals of this nature shall be reviewed by University senior administrators and legal counsel. Enforcement shall include University Police, and if student(s) are involved, summons may be issued to appear before a committee.
   Goal: To inform the public of penalties for illegal dumping. Dumping could impair water quality.
   Schedule: First Year, no reoccurrence
   Responsible Party: Carlos Spruill, Director, Facilities Management

6. Removal of grease and oil accumulations from parking lots will require the use of pressure-washing, deployment of petrochemical absorbents around the cleanup site and in front of any affected stormwater inlets
   Goal: To prevent illicit discharges from entering the University's stormwater system.
   Schedule: Continuously
   Responsible Party: Carlos Spruill, Director, Facilities Management

7. In the event that an illicit discharge is identified, it will be reported to DEQ in the Annual Report.
   Goal: To prevent illicit discharges from entering the University's stormwater system
   Schedule: Annually
   Responsible Party: Carlos Spruill, Director, Facilities Management

8. Stormwater Outfall inspection: This section includes details on how to find an illicit discharge in the field and the appropriate laboratory strategies to identify particular pollutants. The Outfall Reconnaissance Inventory (ORI) is the most proven method for screening campus stormwater outfalls. The ORI consists of walking all campus outfalls to document where they are and what condition they are in. The field team should be able to find where continuous and intermittent stream flows exist. Take note of any outfalls with discharges of exceedingly high turbidity, strong odors, unnatural colors, or an extreme case of pH on a field litmus test strip. When obvious discharges are found, the field crew should take note and start working upstream to find where the source is and eliminate it. While traveling on campus, field crews should be looking for other more common illicit discharges like oil spills, un-permitted car washing or other harmful liquid spills. If these are encountered the appropriate abatement agency should be notified. The following table provides a step-by-step process for conducting an ORI.
   Goal: To identify potential illicit discharges that could impair water quality.
   Schedule: All campus outfalls shall be initially inspected by the end of the third permit year and annually thereafter
   Responsible Party: Carlos Spruill, Director, Facilities Management

Table 6.3.1.1.7.3 Field Screening and Data Analysis

Field Screening and Data Analysis	
Step	**Strategies/Considerations**
1. Acquire necessary mapping, equipment, and staff	▪ Use campus mapping available and documents. ▪ Obtain spectrophotometer, basic camera, litmus paper, etc. ▪ One person field crew with specialized training at a minimum or two-person crew with basic field training (ideal for screening)
2. Determine appropriate screening times	▪ During dry season ▪ During times when trees are not shedding their leaves ▪ At a minimum of 48 hours after a rain event ▪ Times of low groundwater levels, generally in the middle of summer through fall for the Hampton Roads area
3. Identify where to begin screening	▪ Low Risk (Low IDP) Areas – integrate field screening with broader watershed assessments. ▪ Medium Risk (Medium IDP) Areas – Screen drainage areas within first permit cycle. ▪ High Risk (High IDP) Areas – Screen these outfalls in the beginning of the first permit cycle.
4. Conduct field screening	▪ Mark, document, and photograph all campus outfalls. ▪ Document outfall characteristics ▪ Monitor outfalls that have flows ▪ Sample all outfalls with potential problems ▪ Track major problems back to the source immediately

5. Compile screening data	▪ Develop database for documented field research. ▪ Enter data into the system as it is gathered ▪ Start lab analysis of samples taken
6. Designate screened outfalls	▪ Designate outfalls screened as having a "definite, probable, potential or unlikely" illicit discharge potential
7. Document the extent of discharge problems	▪ Compile data from field screening, laboratory testing and initial assessment of problem areas. Update initial assessment of outfalls as High, Medium or Low Illicit Discharge Potential (IDP).
8. Develop a monitoring strategy	▪ Set a goal of monitoring 10% of flowing outfalls per calendar year until the entire campus has been inventoried in the first permit cycle. ▪ Repeat this screening for each permit cycle.

The University's stormwater system receives runoff from the City of Norfolk streets, which is conveyed through lines installed by the City. Numerous contacts with City maintenance crews have occurred in response to construction planning meetings. For communication and regulatory compliance purposes, a specific contact will be found within the City administration.

6.3.1.1.8 ALLOWED DISCHARGES

The following discharges to the storm drainage system are allowed, as per 9VAC25-870-400 (D)(2)(c)(3), as they are considered to be not significant contributors of pollutants to the MS4:

· Discharges that are covered under a separate individual or general VPDES or VSMP permit for non-stormwater discharges.
· Discharges or flows which are not significant contributors of pollutants to the municipal separate storm sewer system:
· Water line flushing;
· Landscape irrigation;
· Diverted stream flows;
· Uncontaminated groundwater infiltration;
· Uncontaminated pumped groundwater;
· Discharges from potable water sources;
· Foundation drains;
· Air conditioning condensation;
· Irrigation water;
· Springs;
· Water from crawl space pumps; · Footing drains;
· Lawn watering;
· Individual residential car washing;
· Flows from riparian habitats and wetlands;
· De-chlorinated swimming pool discharges;
· Street wash water;
· Discharges or flows from firefighting activities;
· Flows that have been named in writing by the Department of Environmental Quality as de minimis discharges that are not significant sources of pollutants to state waters and not requiring a VPDES permit.

6.3.1.1.9 ***PROCEDURES****:*

6.3.1.1.10 INSPECTIONS

NSU shall, at a minimum, visually inspect all outfalls once per year during wet and dry weather conditions to evaluate the physical condition of the outfalls and to ensure that there are no flows present from potential illicit discharges. In the event a flow is seen, or evidence suggests that illicit discharges may exist, further investigation shall be administered by any of the following methods:

1. Tracing discharge up the storm sewer system;
2. Sampling of a discharge for analysis in order to determine if a pollutant is present and to identify the pollutant;
3. Implement BMPs to eliminate illicit discharges;
4. Scheduling of follow up observations;
5. Any other appropriate measures deemed necessary.

Flows suspected of containing illicit discharges due to the presence of odors, colors or sheens shall be tested. Test parameters may include but are not limited to ammonia, detergent, chlorine, phosphorus, nitrogen, pH, conductivity, turbidity, temperature, and dissolved oxygen. The results of the inspections and testing shall be maintained in a format to allow tracking of outfall locations, inspection dates, chemical tests conducted, and follow-up procedures implemented to correct any detected illicit discharge. The physical condition of the outfall shall also be noted during the inspections. Once the source of the discharge has been identified, immediate action shall be taken to minimize or remove the discharge. Illicit discharge data will be used in the preparation of the annual report to the Virginia Department of Environmental Quality. The following table summarizes visual and olfactory tests performed during dry weather screening.

Dry Weather Field Screening Tests	
Test for:	**Use of Test**
1. Odor	▪ Indicates presence of sanitary wastewater, industrial flows, or biological chemicals.
2. Color	▪ Depending on color, indicates presence of sanitary wastewater, petroleum, detergents, or other pollutants.
3. Turbidity	▪ Indicates presence of suspended solids, petroleum, or detergents.
4. Floatables	▪ Indicates presence of suspended solids, litter and debris, detergents, or petroleum.
5. Deposits or Stains	▪ Indicates presence of pollutants over a prolonged period of time
6. Vegetation	▪ Health of adjacent vegetation indicates severity or duration of pollution event
7. Structural Condition	▪ Indicates age and status of outfall.
8. Biology	▪ Indicates presence of sanitary wastewater, industrial flows, or biological chemicals.

Wet weather inspection evaluates the first flush of stormwater discharged from an outfall during a storm, which represents the maximum pollutant load managed by receiving water. This storm event is greater than 0.1 inch of rain falls and occurs at least 72 hours after the greater than 0.1 inch of rainfall storm event. The evaluation and any samples collected should occur within the first 30 minutes of discharge. Wet weather inspection should be planned when weather forecasts show a 40% chance of rain or greater.

6.3.1.1.11 NOTIFICATION OF SPILLS AND ILLICIT DISCHARGES

Once a spill or illicit discharge has been observed, the incident shall be immediately reported to the Police Department (757)823-9000 and Environmental Health and Safety Department (EHS&RM) (757) 803-5988. These numbers may be used to report other potential stormwater violations. In the event the EHS & RM is unavailable, Facilities team members may be notified to control spill and commence cleanup. Failure to provide notification of the incident shall be a violation of this policy. The EHS & RM shall conduct an initial investigation within one business day of receiving notification. The EHS & RM department shall immediately determine appropriate measures to be taken in order to prevent further discharge(s) and to begin remediation of pollution. A follow-up inspection shall be conducted within 7 days of the reported incident to confirm the cleanup process has started or been completed, unless the discharge is a risk to human health and spublic safety, in which case the inspection will be conducted within 24 hours. Spills and Illicit discharges shall be removed or minimized within 90 days of the incident report.

6.3.1.1.12 TRACKING

Field surveys and instances of illicit discharges or spills shall be tracked in the WebTMA database. Data fields to be included shall be:

1. Date discharge observed/reported;
2. Location of discharge;
3. Summary;
    a. Results of investigation;
    b. Any follow-up to investigation;
    c. Resolution of investigation;
4. Date investigation closed.

6.3.1.1.13 ENFORCEMENT AND PENALTIES

Whenever the University finds that a violation of this policy has occurred, NSU may order compliance by written notice to the responsible party. Such notice may require without limitation:

1. The performance of monitoring, analyses, and reporting;
2. The elimination of prohibited discharges or connections;
3. Cessation of any violating discharges, practices, or operations;
4. The abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property;
5. Payment of any fee, penalty, or fine assessed against Norfolk State University to cover remediation cost;
6. The implementation of new stormwater management practices;
7. Disciplinary action up to and including dismissal, where appropriate.

The listed requirements will be at the expense of the responsible party. In the event that adequate measures are not initiated, the University may issue work orders to correct the violation and bill the responsible party for expenses incurred.

6.3.1.1.14 RECORDS

All data records, reports and response resulting from spills or leaks will be maintained on file in the EHS&RM Office for five (5) years.

6.3.1.1.15 EDUCATION AND COMPLIANCE

A training program for Stormwater Pollution Prevention/Good Housekeeping and IDDE is presented to applicable employees upon hire and on an annual basis. The employee training program educates vehicle maintenance shop employees and bus drivers regarding the requirements of the Stormwater Standard Operating Procedures and the Stormwater Pollution Prevention Plan (SWPPP). This education program includes background on the components

and goals of the Stormwater Standard Operating Procedures and the SWPPP and hands-on training in spill prevention and response, good housekeeping, proper material handling, disposal and control of waste, container filling and transfer, and proper storage, washing, and inspection procedures. Shop employees are required to receive the training annually. A record of employee sign-in sheets for the refresher course is maintained for five years. The program will be reviewed annually to determine its effectiveness and to make any necessary changes. New bus drivers also receive spill response and stormwater pollution prevention during their initial training.

Educational materials for Stormwater Pollution Prevention and IDDE are distributed through various forms of media to the members of the University.

Conformity to the requirements of this policy will be monitored by the Environmental, Health, Safety and Risk Management Office. Violations of this policy will be reported to the Vice President for Finance and Administration.

Currently the only high-priority facility that requires a SWPPP on the University's website is the Facilities Management Building and Maintenance Yard located at 700 Park Avenue, Norfolk, Virginia 23504.

6.4 Minimum Control Measure # 4: Construction Site Stormwater Runoff Control

The minimum control measure for construction site stormwater runoff and erosion and sediment control requires the permittee to use its legal authority to manage discharges entering the MS4 from regulated construction sites. This includes implementing a Virginia Erosion and Stormwater Management Program (VESMP) if applicable, or entering agreements with counties or towns to comply with the county's VESMP, and notifying the county of any runoff issues. The permittee must also implement appropriate controls to prevent non-stormwater discharges, such as wastewater, concrete washout, fuels, and oils, during land-disturbing activity inspections. Additionally, employees and contractors involved in plan review, inspection, program administration, and construction site operations must obtain the necessary certifications as required by the Virginia Erosion and Stormwater Management Act and its regulations.

The University has adopted state mandated procedures to reduce pollutants in stormwater runoff from entering the stormwater inlets on campus during construction projects. Since July 1, 2009, Virginia Stormwater Management Laws have changed. Higher education institutions will continue to have stormwater management plans reviewed by DEQ; however, DEQ will no longer review Erosion and Sediment Control but can be viewed by DEQ upon request.

The two options for Erosion and Sediment Control review are: implementation of an internal Erosion and Sediment Control review process, or review by the locality. NSU elected to implement an internal review process. Annual Standard and Specifications (AS&S) for ESC and SWM were developed to provide information regarding NSU's implementation related to the MS4 and regulated construction activities that are carried out by NSU, either internal workforce or contracted to external entities. The most recently Approved Standards and Specifications and the approval letter can be found in Appendices C and D.

The BMPs defined under this measure shall be implemented beginning in the first permit year, and continuously. The BMPs include:

1. Compliance with Virginia Erosion and Sediment Control and Stormwater Laws for Construction projects
2. Included in affected projects with a general contractor, is a section dedicated to Slope Protection and Erosion Control.
3. The University holds the general contractor responsible for maintaining the job site to the satisfaction of the University and all applicable regulations.
4. The contractor is required to schedule work in a manner that best provides slope protection and erosion controls by installing grass, ditches, or other means to prevent runoff into stormwater drains.
5. The contractor must also clean out any drains that become contaminated with construction site runoff.
6. The contractor shall be responsible for any damage to streams or other natural areas or wetlands by the addition of soil, rock, or topsoil, whether deposited by poor construction practice, sedimentation, or wind, and vegetation matter such as whole trees or any part thereof, or remnants from burning or other clearing processes, and waste construction materials such as concrete, broken pipe, equipment parts and any other additions which could be detrimental to said areas.
7. Any damages shall be assessed by the University based on site inspections. The contractor shall act as soon as possible to prevent further damage and correct existing damage at no cost to the University. Should the University choose to do so, a remediation contractor shall correct the damage and their fees deducted from the contractor's payments.
8. The contractor is to expect periodic site inspections by the erosion and sediment control reviewing authority
9. The inspector for the erosion and sediment control reviewing authority shall be allowed access to all areas of the construction site.
10. All conditions or practices noted by the inspector, that could result in deteriorated slope protection or erosion control, shall be immediately corrected.

11. If the inspector for the erosion and sediment control reviewing authority submits a report to the University or contractor, all infractions or penalties shall be addressed by the contractor at no expense to the University.
12. At the agreed conclusion of a project, all temporary erosion control systems shall be removed, and inspection of adjacent stormwater inlets and drains conducted. The contractor shall remove all materials, sediment or vegetation that has entered due to activities related to the construction project.
13. For sites in excess of one acre, the contractor shall ensure compliance with all the requirements of VR 680-14-19 (VPDES).
14. The University reserves the right to require all architects, engineers, and related consultants to obtain appropriate certifications as specified under the Erosion and Sediment Control law.
15. Contractor shall provide the University with legible copies of all correspondence, reports, meeting minutes, etc. that involve stormwater issues.

Goal: To prevent pollution of stormwater and maintain healthy waterways.
Schedule: Continuously
Responsible Party: Carlos Spruill, Director, Facilities Management and any contractors utilized in construction projects

6.5 Minimum Control Measure # 5: Post-Construction Stormwater Management in New Development and Redevelopment

The University shall develop, implement, and enforce procedures to address stormwater runoff from completed construction sites. Multiple BMPs are associated with this Minimum Control Measure. All BMPs defined under this measure were implemented in the first permit year and continue to be developed each year. The Annual Standards and Specifications (AS&S) will help to guide NSU's internal workforce or contracted external entities (Appendix C). These BMPs are as follows:

1. Compliance with Virginia Erosion and Sediment Control and Stormwater Laws:
    - The location, size and routing of stormwater shall be designed, approved, and constructed in accordance with existing regulations. Tie-ins to existing structures shall be permitted if engineering studies can prove that such configurations are within current capacities and do not inhibit severe stormwater flows.
    - The University shall implement strategies that include structural and nonstructural best management practices appropriate for the campus and surrounding environments. In contracts with consultants, emphasis shall be placed on replicating pre-construction runoff characteristics and site hydrology. Among the prominent concerns are the runoff from local city streets and the outfalls from the campus.
    - Any additional maintenance requirements of the new structure shall be assigned to the respective tradesmen. If warranted, formal preventive maintenance procedures shall be scheduled and modified as warranted by experience, efficiency, and employee safety.
    - Work orders and inspections of stormwater structures shall be documented, and copies sent to the Office of Environmental Health. Discrepancies shall be recorded, and corrective measures identified, performed, and documented. Timely completion of these functions shall be a factor in the tradesmen's performance appraisals.

    Goal: To prevent pollution of stormwater and maintain healthy waterways.
    Schedule: Continuously
    Responsible Party: Carlos Spruill, Director, Facilities Management

2. Groundskeepers from Brightview Landscaping Services have been scheduled to conduct inspections of campus stormwater basins. Inspections are documented and include clearing of soil/sand, removal of debris, checks for erosion, reporting of sheen in standing water, and the removal of leaves and floating debris.
    Goal: To verify basins are clean and capable of retaining and draining.
    Schedule: Monthly
    Responsible Party: Carlos Spruill, Director, Facilities Management-and Brightview Landscaping Senior Branch Manager, Joe Johnson

6.6 Minimum Control Measure # 6: Pollution Prevention/Good Housekeeping for Municipal Operations

List of good housekeeping procedures:

The good housekeeping practices described below shall be followed during maintenance and daily activities.

1. All materials stored on-site will be stored in a neat and orderly fashion. Materials that have potential for contaminating stormwater runoff shall be protected from coming in contact with precipitation and stormwater runoff.

2. Liquid materials will be stored within approved or manufacturer recommended watertight containers.

3. Any empty container that holds any potentially harmful substances shall be disposed of immediately after its contents are depleted in accordance with Federal, State, and local laws and regulations.

4. Where possible, substances shall be kept in their original containers with the manufacturer's labels.

5. All substances shall be used up before disposing of empty containers. Any surplus substances to be used elsewhere shall be transported off-site in their original container according to Federal, State, and local laws and regulations. All unused substances scheduled for disposal shall be done so in accordance with Federal, State, and local laws and regulations.

6. All staff working on the site shall follow the manufacturer's recommendations for use of all substances on the maintenance site.

7. Materials shall be stored and handled in such a way to prevent spills. All storage containers shall be tightly sealed and shall be clearly labeled.

8. All on-site equipment shall be checked for leaks on a regular basis. Any spills or leaks encountered at the site shall be cleaned up immediately. Vehicle or equipment maintenance should be conducted off-site.

9. Sediment transported onto a road surface shall be removed by sweeping, shoveling, or other non-invasive method and then hauled to an approved disposal site. The following actions are continuously implemented to minimize storm water quality concerns:

10. Periodic staff training – Housekeeping and grounds personnel are trained annually on the requirements of the University Storm Water permit highlighting, preventive action, identification, reporting and response to illicit discharges.

11. Grounds personnel receive additional training on the management of chemicals, debris, and equipment operation and maintenance, disposal of organic materials (branches, grass clippings, leaves, sediment), nutrient and pesticide use.

12. Faculty and student training – EHS & RM staff make presentations at organization meetings including the police Department, residence life, student orientations and Student Government Association. Informational brochures are distributed through the parking department, residence halls and the Student Center.

13. Daily inspection and cleaning (if necessary) of storm drains and other potential risk areas.

14. Vehicle maintenance is conducted indoors. The drain in this area is plugged to ensure oil or lubricants do not reach storm system.

15. Secondary containment beneath chemical storage containers, cooking grease, oil tank and product dispensing areas. All such containers will be adequately labelled to describe content and hazards of use. Units monitored daily for leaks, cracks, rust, or other sign of structural degradation. Spill response equipment is staged in the fuel pumping area, the vehicle storage areas and is available in the Stockroom.

16. Off-site disposal of batteries, oil, and other lubricants

17. Silt fencing is positioned around entrances to mulch and sand piles. Bags of salt for de-icing must be stored inside buildings or containers.

18. Use of energy efficient vehicles (natural gas) to minimize gasoline fueling and spill potential. This practice also reduces hydrocarbon emissions.

19. Installation of permeable pavement where practical.

20. The application of anti-icing and deicing agents containing urea or other forms of nitrogen and phosphorous are prohibited.

21. Employees working in and around high-priority facilities with stormwater pollution prevention plans receive training in SWPPP procedures annually. Currently the only high-priority facility that requires a SWPPP on the University's website is the Facilities Management Building and Maintenance Yard located at 700 Park Avenue, Norfolk, Virginia 23504.

The University has been performing functions that contribute to the prevention of pollutants from entering stormwater inlets and adversely affecting the natural environment. Potential sources of stormwater pollution include oil/grease stains in parking lots, fuel spills, lawn & garden nutrients on pavement, exposed bulk storage piles and common floatable trash. It is recognized that greater documentation, training, and expansion in some areas will contribute to an increase in the efficiency of the overall program. The University has developed a Stormwater Pollution Prevention Plan (SWPPP) that highlights the high priority facilities that have a high potential to discharge pollutants into the stormwater system and the Stormwater Standard Operating Procedures (Appendix B) to control stormwater management required by the permit and describe the management practices selected to address the areas of concern. The electronic copy of the SWPPP can be found on the University's website at Stormwater Pollution Prevention - MS4 Program | Norfolk State University - Norfolk State University.

Currently, NSU's Facilities Management Building and Transportation Yard has been identified as a high potential area, the SWPPP was developed around the need to mitigate these potential pollutants. NSU's SWPPP is scheduled to be updated this year.

Multiple BMPs are associated with this Minimum Control Measure. All BMPs defined under this measure shall be implemented beginning in the first permit year. These BMPs are as follows:

1. Tradesmen have been instructed to immediately clean up releases of any materials they are using and report any quantity that may have entered a stormwater drain.
   Goal: To increase awareness for stormwater runoff and eliminate sources of illicit materials polluting surface waters.
   Schedule: Continuously with reminder during annual training
   Responsible Party: Carlos Spruill, Director, Facilities Management

2. Groundskeepers have been instructed to pick up debris to prevent shredding by lawn mowers and entering stormwater drains.
   Goal: To reduce the amount of pollutants in the stormwater, and promote the free flowing of stormwater in the sewer lines.
   Schedule: Continuously with reminder during annual training
   Responsible Party: Carlos Spruill, Director, Facilities Management

3. Absorbent materials are kept available, and a fully enclosed hazardous materials storage shed is used for the staging of hazardous wastes, including contaminated absorbents and personal protective equipment.
   Goal: To cause tradesmen and faculty to store hazardous wastes isolated from the weather and unauthorized personnel.
   Schedule: Continuously
   Responsible Party: Roderick Allmond, Director, Office of Environmental Health, Safety, and Risk Management

4. Creation of a Hazardous Substance Policy: The discharge of hazardous substances or oil into the stormwater sewers have been prevented through the creation of a hazardous materials policy. The policy includes the periodic removal of hazardous wastes from the academic chemistry, biology, and medical laboratories, along with chemical wastes from the research facilities. Hazardous substances and wastes from facility maintenance operations are controlled by storing the materials in flammable storage cabinets, keeping a limited amount on campus, and using an approved hazardous waste hauler to overpack stale or contaminated cans, bottles, etc. Temporary storage on campus is within a specially manufactured hazardous material shed until transport to a recycler, incinerator or approved landfill can be arranged by the hazardous waste transporter. Reporting, response, and disposal requirements have been explained to staff as part of the Hazard Communication Training required by OSHA Standard 29 CFR 1910.1200.
   Goal: To prevent hazardous materials from entering the University's stormwater sewer system and other downstream waters.
   Schedule: Continuously with reminders during annual trainings
   Responsible Party: Roderick Allmond, Director, Office of Environmental Health, Safety, and Risk Management

5. A company with expertise in hazardous materials has been contracted to provide emergency response to incidents requiring additional resources and equipment. They have the added responsibility of overpacking primary containers and arranging for transportation to approved disposal sites, recyclers, or incinerators.
   Goal: To assure a release is adequately remediated, storm drains are protected, staff personnel do not become contaminated and disposal protocols are strictly followed.
   Schedule: Continuously with annual contracts
   Responsible Party: Roderick Allmond, Director, Office of Environmental Health, Safety, and Risk Management

6. All trash receptacles shall be emptied and refilled with new trash bags when they become full, after the event ends and after the crowds leave. All stormwater inlets in the general area of the events shall be checked and trash of all types removed from the inlet. An estimate of the amount of trash collected shall be recorded and sites of the greatest accumulations noted.
   Goal: To reduce the amount of pollutants in the stormwater.
   Schedule: Monthly or bi-weekly as needed
   Responsible Party: Carlos Spruill, Director, Department of Facilities Management

7. Exterior storage: Certain material storage practices include bulk piles of mulch, topsoil, sand and salt. It was recognized that heavy rains can cause the loose materials to flow into street gutters and eventually into stormwater inlets. Currently salt (for icing conditions) and fertilizer are received in bags and stored in a grounded storage container. If other lawn and garden supplies cannot be purchased in bags, then provisions shall be considered to store such materials under an impervious cover.
   Goal: To reduce the amount of pollutants in the stormwater.
   Schedule: When purchased
   Responsible Party: Carlos Spruill, Director, Department of Facilities Management

8. Obsolete Maintenance Items: remove any unnecessary and obsolete items from the Maintenance Facility. Including but not limited to old vehicles, barrels, scrap metal, non-functioning equipment, light bulbs, etc. Place items like light bulbs awaiting disposal under cover until the time of disposal to prevent contact with stormwater.
   Goal: To reduce the amount of unintentional pollutants in the stormwater.
   Schedule: As needed
   Responsible Party: Carlos Spruill, Director, Department of Facilities Management

9. Education of Staff: Conduct a presentation on stormwater pollution prevention to Facilities Management Staff.
   Goal: To increase staff awareness of stormwater and pollution prevention measures. This includes understanding of the differences between stormwater and sanitary sewer systems and allowable discharges.
   Schedule: Annually to Bi-Annually (based on hiring)
   Responsible Party: Roderick Allmond, Director, Office of Environmental Health, Safety, and Risk Management

Development of a Nutrient Management Plan: The University selected a consultant from a list provided by the DEQ to develop a Nutrient Management Plan to comply with all requirements set forth in the Nutrient Management Training and Certification Regulations and to follow recommendations for turf fertilization and management as described in the Virginia Nutrient Management Standard and Criteria. The Division of Soil and Water Conservation (DCR) approval date for the Nutrient Management Plan was March 27, 2023, and the permit effective dates are from April 8, 2023 until April 8, 2026. The total acreage covered by the Nutrient Management Plan is 51.41 acres. See Appendix E for the Approval letter from the DCR.

After soil conditions were sampled and tested, specific fertilizer mixes were administered by the University to maintain the lawns and flower beds. The application of fertilizers and herbicides strictly follows the recommendations provided by the consultant. Those employees assigned to apply the fertilizers and herbicides are certified to perform those tasks.

The table below identifies the areas where nutrients would need to be applied and provides recommendations for the fertilizers that could be used for the best fit to the program, weather conditions and budget levels.

A. Fertilizer Recommendations Summary: NSU Turf

Site	Management Acres	Annual Lime Needs (lbs/1000ft^2)	Max. Annual N App. (lbs/1000ft^2)[a, b]	Max. Total N Rate per application (lbs/1000ft^2)[b, c, d]	Annual P_2O_5 Needs (lbs/1000ft^2)	Annual K_2O Needs (lbs/1000ft^2)
Grounds	45.49	45 (Area 3)	4.0	0.7 (min. 30 days)	1.0	1.0
Football Practice Field (overseeded)	2.0	--	4.5	0.35 (min. 15 days)	1.0	2.0
Baseball Field (overseeded)	3.03	45	4.5	0.35 (min. 15 days)	0.75	1.5
Softball Field (overseeded)	0.89	--	4.5	0.35 (min. 15 days)	1.0	1.0

See the Nutrient Management Plan, Appendix E, for more information about this table. The Nutrient Management Plan can also be found on the University website at Stormwater Pollution Prevention - MS4 Program | Norfolk State University - Norfolk State University.

Below references are located on the University website or available upon request.

1. Stormwater Pollution Prevention Plan, dated May 2021

   Stormwater-Pollution-Prevention-Plan.aspx

2. Current Annual Report, 2024

   Pending Upload

3. Past Annual Reports

   NSU-2017-MS4-Annual-Report.aspx

   NSU-2018-MS4-Annual-Report-10-01-2018.aspx

   NSU-2019-MS4-Annual-Report-12-19-2019.aspx

   NSU-2020-MS4-Annual-Report-10-01-2020.aspx

   2021- Pending Upload

   2022- Pending Upload

   2023- Pending Upload

4. Chesapeake Bay TMDL Action Plan, dated November 2024

   Chesapeake-Bay-TMDL-Action-Plan-11-7-2024-Phase-3.aspx

5. Elizabeth River TMDL Action Plan, dated May 2021

   NSU-Elizabeth-River-TMDL-Action-Plan.aspx

6. Illicit Discharges or Improper Disposal Policy, revised version dated 2018

   NSU-Illicit-Discharge-Detection-and-Elimination-Po.aspx

7 APPENDICES

A. Existing Conditions Map

B. Stormwater Standard Operating Procedures

C. Annual Standards and Specifications

D. DEQ Approval Letter for Annual Standards and Specifications

E. Nutrient Management Plan and Approval Letter

F. Norfolk State University Contract with Brightview Landscaping

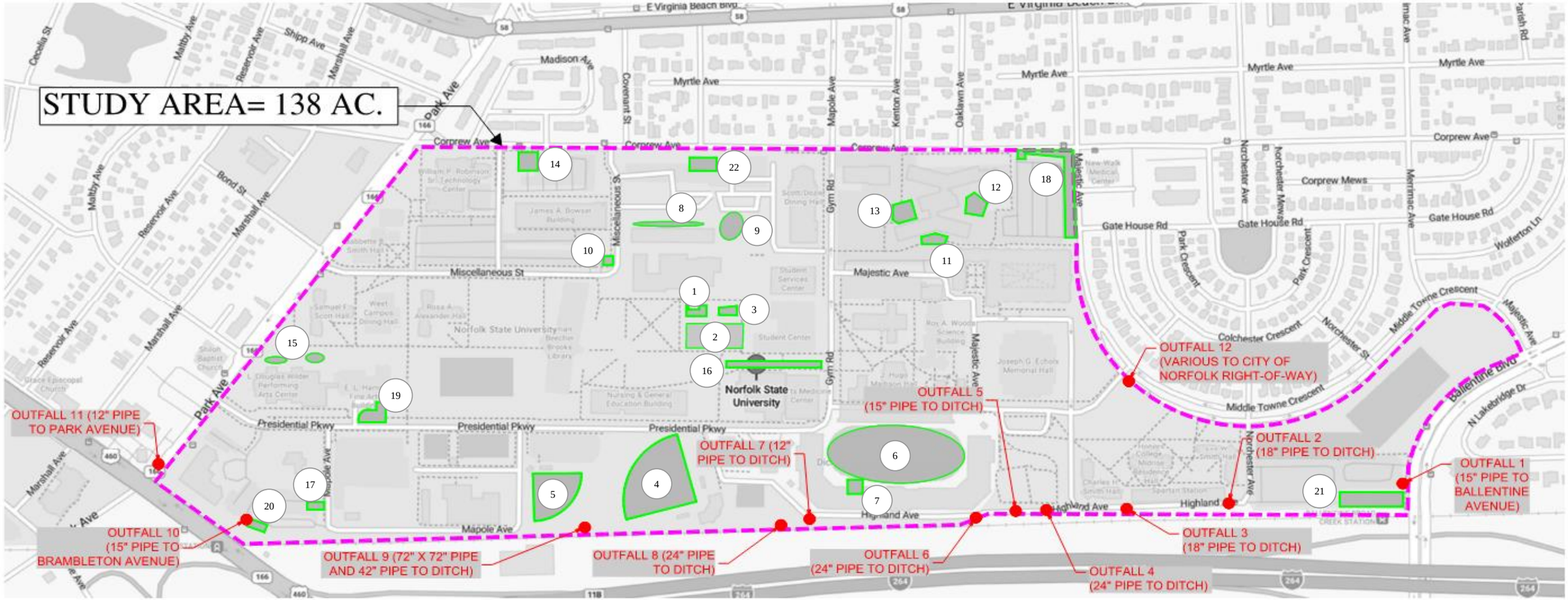
G. Notice of MS4 Interconnection

NORFOLK STATE UNIVERSITY

APPENDIX A

Existing Conditions Map

BURNS McDONNELL



OUTFALLS TIE TO CITY OF NORFOLK STORM NETWORK THAT DISCHARGE TO THE ELIZABETH RIVER TO THE SOUTH.

MAP 1:
NORFOLK STATE UNIVERSITY OUTFALL AND BMP MAP

GRAPHIC SCALE

SCALE: 1" = 200' 0 200' 400'

LEGEND

- LIMITS OF STUDY AREA
- EXISTING BMPs
- (X) BMP NUMBER ID

NORFOLK STATE UNIVERSITY

APPENDIX B

Stormwater Standard Operating Procedures

BURNS McDONNELL

NORFOLK STATE UNIVERSITY

Stormwater Standard Operating Procedures

NORFOLK STATE UNIVERSITY

Stormwater Standard Operating Procedures

STRUCTURAL STORMWATER MANAGEMENT CONTROLS

This procedure discusses stormwater management controls required by the permit and describes the management practices selected to address the areas of concern. There is no runoff of stormwater from other sites that must be managed on site.

Stormwater Management Practices

Review of the potential pollutants at the facility and the facility operations, prepared a list of planned Best Management Practices (BMPs). Now implemented, these BMPs manage the discharge of potential pollutants in stormwater runoff for each area of concern. The passive treatment BMPs were developed with a goal to remove 80% of all stormwater pollutants. The list of BMPs was reviewed by operations managers for applicability and feasibility.

BMP ID	Installed	BMP Name	Acre	Latitude	Longitude
Outfall 1	06.30.05	Wet pond	3.25	36.84642800	-76.25303300
Spartan Suites	06.30.05	Infiltration trench	1.71	36.85015800	-7625753100
Lot 17	06.30.05	Dry detention pond	1.08	36.85035300	-76.26237800
Lot 30	06.30.05	Dry detention pond	1.54	36.85031900	-76.26523900
Hamm Fine Arts North	06.30.05	Vegetated open channel	1.23	36.84803600	-76.26815800
Hamm Fine Arts South	06.30.05	Dry detention pond	0.84	36.84741900	-76.2674200
Lot 2&3	06.30.05	Dry detention pond	0.59	36.84633300	-76.26815300
Student Services Center	04.01.10	Bioretentions	1.23	36.84860000	-76.26254400
Student Services Center	01.01.14	Dry detention pond	1.36	36.8486000	-76.26254000
Nursing Education	01.01.14	Vegetated open channels	1.06	36.84783100	-76.26433900
Brown Hall East	08.10.19	Bioretention	0.69	36.84999600	-76.26239200
Brown Hall North	08.10.19	Bioretention	1.17	36.84697300	-76.26337600
Bowser Bldg. Parking	10.16.18	Proprietary Stormwater treatment device	0.129	36.84930000	-76.26413000
Stadium Infiltration	08.25.18	Infiltration Practices	2.04	36.84699000	-76.26008000
Stadium - CST	08.25.18	Proprietary Stormwater treatment device	1.64	36.84624000	-76.26088000
Baseball field	08.01.17	Infiltration Practices	2.25	36.84675000	-76.26356000
Softball field	08.01.17	Infiltration Practices	0.6	36.84640000	-76.26473000

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Structural BMP's include:

- Oil-Water Separator below bus parking area
- Outdoor vehicle washing area with drain to the sanitary sewer

Outfall Table

Outfall Unique Identifier	MS4 Acres Served	Receiving Waters	HUC	Receiving Waters Impaired	Applicable TMDL	Land Use	Latitude	Longitude
Outfall 1	3.25	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River	Mixed Use	36.504715	-76.151059
Outfall 2	1.87	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River	Mixed Use	36.504686	-76.151928
Outfall 3	3.9	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River	Mixed Use	36.504660	-76.152415
Outfall 4	4.3	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River	Mixed Use	36.504643	-76.152835
Outfall 5	0.56	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River	Mixed Use	36.504643	-76.153011
Outfall 6	2.6	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River	Mixed Use	36.504638	-76.153168
Outfall 7	2.55	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River	Mixed Use	36.504628	-76.154035
Outfall 8	2.26	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River	Mixed Use	36.504609	-76.154171
Outfall 9	100.32	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River	Mixed Use	36.504598	-76.155244
Outfall 10	3.3	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River	Mixed Use	36.504624	-76.160940
Outfall 11	0.72	Eastern Branch Elizabeth River	JL54	Yes	Chesapeake Bay / Elizabeth River	Mixed Use	36.504808	-76.161304

Pollution Prevention

The following potential source areas of stormwater contamination were identified and evaluated:

- Bus and vehicle storage/parking: Buses and vehicles awaiting maintenance or simply not in use are stored in the parking area. Fluids leaking on to the paved surface from the buses and vehicles parked here can potentially contaminate stormwater from this area. These contaminants may contain oil and grease, heavy metals, mineral oil, ethylene glycol, propylene glycol, benzene, MTBE, ethyl benzene, naphthalene, xylenes, and petroleum distillates.
- Bus and vehicle fueling: Buses and vehicles are fueled and receive light maintenance in this

area. This area where bus washing, fueling, parking and other activities occur, is the most likely area for a spill to occur. Spill response typically involves the remediation of liquids such as hazardous chemicals or petroleum fuels. No reportable spills or leaks have occurred in the past 3 years in the fueling and maintenance area.

Stormwater from these areas can be potentially contaminated by fluids leaking on the paved surfaces from cleaning operations, maintenance activities performed in these areas, and by spills and leaks while fueling. These contaminants may include oil and grease, mineral oil, benzene, ethyl benzene, toluene,
xylene, MTBE, sulfuric acid, heavy metals, naphthalene, and petroleum distillates. Canopies are being ordered to cover fueling areas preventing rainwater from falling on spills or leaks before they can be cleaned up.

Non-structural Stormwater Management BMP's

In addition to the constructed BMPs, the facility has implemented management BMP's that will control and reduce the release of contaminants to stormwater from the facility. These BMPs include:

- Storing of oils, used motor oils and other chemicals in doors out of the weather;
- Proper disposal of all wastes according to appropriate State and Federal regulation;
- Parts cleaning conducted only indoors in an approved parts washing station;
- Spills will be cleaned up promptly
- Except for minor activities such as checking fluid levels, all vehicle maintenance will be conducted in the shop
- Vehicles will be repaired to the maximum extent possible to eliminate leakage of fluids;
- Vehicles awaiting service will be checked to insure that leakage is not occurring;
- UST spill and overflow devices will be maintained;
- Safe fueling practices will be adhered to;
- Good Housekeeping Practices;
- Employee Training program;
- Monthly visual monitoring of outfalls;
- Semi-annual dry weather inspection of outfalls
- Monthly facility inspections
- Annual comprehensive facility inspection

Sediment Deposition

The NSU campus falls within the boundaries of the Chesapeake Bay Watershed, and is therefore subject to permit requirements regarding the Chesapeake Bay Total Maximum Daily Loads (TMDLs) for pollutants such as nitrogen, phosphorus, and sediments. Erosion and sediment control is maintained by contractors who perform work involving land disturbing activities. Inspections of permitted sites are performed, as required by our Annual Standards and Specifications, by DEQ certified third party contractors. ODU's Department of Design and Construction has two full time site inspectors who visit active sites daily and report any findings of transgression to the site superintendents for immediate action. Preventing sediment from entering the storm sewer system allows for clean channels and normal flow of water in our neighboring water systems.

Good Housekeeping

Good housekeeping practices are to be observed at all times. Work, storage, and vehicle parking areas are to be kept clean and orderly. Routine maintenance and cleaning of these areas that are exposed to stormwater runoff will be performed to minimize pollutants that contribute to stormwater. The Vehicle Compound lot shall be swept every two weeks by Grounds personnel. Chemicals are not used for parking lot sweeping.

Stormdrain Marking

All NSU storm drain inlets are marked with manufactured markers that display the NSU logo and the phrase "No Dumping. Drains to River". These markers have been put in place by employees. An annual sweep of campus is performed to replace damaged or missing markers, and to place markers in any areas where construction has created new inlets.

Education

The employee training program educates vehicle maintenance shop employees about the requirements of the SWPPP. This program includes background on the components and goals of the SWPPP and hands-on training in spill prevention and response, good housekeeping, proper material handling, disposal and control of waste, container filling and transfer, and proper storage, washing, and inspection procedures. Shop employees are required to receive the training annually. A record of employee sign-in sheets for the refresher course can be found in Appendix 1 of this document. The training program will be reviewed annually by EHS&RM personnel to determine its effectiveness and to make any necessary changes to the program. In addition to the maintenance shop employees, the bus drivers will be trained on safe fueling practices for the busses. This will be done at least annually during the driver meetings. New bus drivers also receive spill response and stormwater pollution prevention during their initial training.

NORFOLK STATE UNIVERSITY

Outreach Efforts

Norfolk State University's population is approximately 7000 people. Various methods of outreach will be employed to inform the campus community about the importance of preventing and reporting illicit discharges. Communications will promote awareness and general understanding of the impact that stormwater has on our surrounding navigable waters and the Chesapeake Bay.

- ### Pamphlets

  Educational pamphlets have been developed to educate the campus community. Each new employee receives one which informs community members how to identify, prevent, and report illicit discharges. These pamphlets will also be distributed at various university events.

- ### Public Service Announcements

  Public Service announcements are made through a variety of outlets in an effort to reach the broadest numbers of community members possible. These outlets include announcements that run on the informational screens of the Student center), door hangers/refrigerator magnets delivered to dorm rooms that include a number for reporting illicit discharges, and information posted to the University Announcements/Student Announcements posting system to remind the community about the importance of reducing the amount of runoff that every day activities contribute to stormwater pollution - such as car washing. The system is mainly used for general announcements to the community regarding university events and educational points that are pertinent to a broad base of the university community.

NORFOLK STATE UNIVERSITY

Storage of Chemicals and Petroleum Products

Double-walled tanks store oil and diesel fuel in the maintenance area. Canopies are on order to cover fueling areas including the unleaded gasoline pump.

Floor drains in the repair shop drain to the sanitary sewer via an oil/water separator.

Mulch and Soil Storage

Surplus bulk mulch is stored by placing the landscape material on a tarp and covering the pile with a second tarp to keep the supply dry. Leave some of the edges free so that air can easily flow underneath the tarp and through the mulch.

Extra bulk garden, is stored using the same two-tarp technique for storing bulk mulch – but in this case, compact the top layer of the pile when you place the second tarp.

Storage of Salt and Sand Piles

Loose or bagged salt or sand kept outside may harm the environment, destroy natural habitats and pollute waterways. Salt contains chloride which is toxic to aquatic and plant life. It corrodes equipment and damages infrastructure. Salt also contains sodium which, once it enters our waterways, is not removed by wastewater treatment or even drinking water treatment processes. Salinization of the nation's waters is a growing concern and regulatory efforts are currently underway to reduce salt inputs to the environment.

Sand-laden runoff from developed areas clogs storm drains, degrades aquatic environments, and harms aquatic life.

These steps will be taken to avoid illegal discharge of these products:

- Salt or sand storage should be located on a designated pad away from storm drains.
- Salt or sand storage should not:
  - interfere with fire lanes or required parking spaces
  - block roadways or loading areas
  - contaminate soil, stormwater or local waterways
- All salt or sand bags must be covered and contained. Store materials inside or under cover. Salt storage outside requires walls and a roof.
- Avoid storage areas within 100 feet of storm drains and ditches.
- Salt must be stored, mixed and loaded on an impervious pad to prevent salt from infiltrating into the subsurface. Pads should be bermed, sloped or walled to prevent runoff. No floor drains should be in the area.

- After each use, ensure the material is fully contained within roof or tarp. I f stored outdoors, materials must be stored in clean, sturdy leak tight containers that are designed to be stored outside (e.g. drums).

Education

Train employees and contractors on proper storage practices for each type material stored on campus. Employees and contractors must also be trained regarding proper spill containment and cleanup procedures.

NORFOLK STATE UNIVERSITY

Stormwater Standard Operating Procedures

Waste Management

Description

All solid and liquid wastes must be disposed of properly. Some of the most common sources of pollution at municipal facilities are a result of littering, improper collection of debris, and improper disposal of solid or liquid waste. When services are contracted, this written procedure should be provided to the contractor so they have the proper operational procedures. In addition, the contract should specify that the contractor is responsible for abiding by all applicable city, state, and federal codes, laws, and regulations.

General

- Provide cover, if feasible, for all waste storage areas including keeping dumpster lids closed.
- Provide a low containment berm, if feasible, around waste storage areas.
- Conduct periodic inspections of solid and liquid waste storage areas to check for leaks and spills.
- Conduct periodic inspections of work areas to ensure that all wastes are being disposed of properly.
- Follow the Spill Prevention and Response procedure to respond to and clean up any spills or leaks.
- Clean storage areas when necessary using dry cleanup methods (except in areas where the wash water will enter the sanitary sewer and is an approved discharge).
- Return dumpsters to the supplier when cleaning is necessary or if the dumpster is leaking.
- Properly handle and dispose of all hazardous wastes

Possible Pollutants

- Construction debris
- Organics
- Oil and grease
- Trash
- Metals
- Paint
- Toxins

Landscape waste
Salt storage, topsoil stockpiles
Fertilizers and pesticides

Good Housekeeping

- Dumpster/waste management
- Employee/Contractor training
- Cleanup and disposal procedures
- Stormwater retrofits

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Related Procedures

- Outdoor materials storage
- Spill prevention and response
- Street sweeper cleaning and waste

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Standard Operating Procedure Waste

Solid Waste

- Solid waste that cannot be recycled should be disposed of in the trash dumpster.
- Recycle solid wastes when possible, including the following:
    - o Glass
    - o Plastic containers
    - o Cardboard and Paper
    - o Organic material (grass clippings, etc.)
    - o Scrap metal
    - o Wood debris
    - o Used batteries
    - o Used oil filters
    - o Light bulbs
- Follow the Street Sweeper Cleaning and Waste procedure for proper disposal of street sweepings.

Liquid Waste

- Never place liquids in a dumpster.
- If unable to recycle, old latex paints should be mixed with floor dry or other absorbent material to solidify prior to disposal in the trash.
- If unable to recycle, enamels and other oil-based paints should be applied to cardboard, newspaper, or similar materials and allowed to dry prior to disposal in the trash.
- Recycle liquid wastes, including the following:
    - o Used oil
    - o Used antifreeze
    - o Used solvents

Employee Training

- Train employees who dispose of wastes on this procedure annually. Information concerning spill avoidance, spill reporting and spill response is presented.

Records

- Records of employee training with sign-in sheets will be used to document activities performed.

NORFOLK STATE UNIVERSITY

Standard Operating Procedure

Fueling

Preparation

- Train employees regarding proper fueling methods and spill cleanup techniques
- Install a canopy or roof over aboveground storage tanks and fuel transfer area.
- Absorbent spill cleanup materials and spill kit are provided in the fueling area. Materials shall be properly disposed of after use.

Process

- Shut off the engine.
- Ensure that the fuel is the proper type for the vehicle.
- Nozzles used in vehicle and equipment fueling shall be equipped with an automatic shut off to prevent overfill.
- Fuel vehicle carefully to minimize drips to the ground.
- Fuel tanks shall not be “topped’ off.
- When fueling small equipment from portable containers, fuel in an area away from storm drains and water bodies.

Clean Up

- Immediately clean spills using dry absorbent (e.g. kitty litter, sawdust, etc.); sweep up absorbent material and properly dispose of contaminated clean up materials.
- Large spills shall be contained as much as possible and a HazMat contractor (Veolia, Potomac Environmental, etc.) shall be notified ASAP.

Documentation

- Comply with underground storage tank records and monitoring requirements.
- Document training of employees

NORFOLK STATE UNIVERSITY

Standard Operating Procedure
Material Storage

Description
The responsible management of automotive products, fertilizers, pesticides, paints, chemicals, and other materials at a city facility can significantly reduce polluted stormwater runoff. All materials should be handled properly including unloading, use, storage, and disposal. Proper management of materials can also reduce the likelihood of accidental spills or releases.

General Procedures
- Establish material storage and inventory controls to minimize the amount of materials used and stored.
- Periodically inspect material storage areas to ensure that all materials are being stored properly when not in use.
- Clean the material storage area when necessary using dry cleanup methods.
- Properly dispose of unused materials.
- Store materials in a manner that reduces the potential for transport in stormwater flows.

Materials Stored in Containers
- Whenever possible, containerize and cover stored materials to prevent stormwater from coming in contact with materials. Secondary containment may be required.
- Store containers in a location where they will not be accidentally damaged by equipment or vehicles.
- Provide tight-fitting lids for all containers.

<u>Possible Pollutants</u>

Sediment
Organics
Metals
Oil and Grease
Trash
Toxins

<u>Good Housekeeping</u>

Employee/Contractor Training
Proper cleanup and disposal procedures

<u>Related Procedures</u>

Salt and Sand Storage
Spill Prevention and Response
Waste Management

NORFOLK STATE UNIVERSITY

Loose Materials

- Consolidate loose material (gravel, mulch, etc.) and berm where needed to prevent run-off of stormwater.
- Follow the Mulch and Sand Storage procedure for piles of mulch and sand.
- Large inert materials such as piping and road signs can be stored outside without a protective covering. These materials do not impact stormwater quality.
- Rusting iron is a potential source for stormwater pollution and should not come in contact with stormwater. Efforts are underway to remove surplus equipment from vehicle compound and outside maintenance area.
- Dumping of collected yard waste and grass clippings into the MS4 shall be prohibited.

Hazardous Materials

- Identify all hazardous materials stored at the facility.
- Maintain a Material Safety Data Sheet (MSDS) for each hazardous chemical.
- Clearly label all containers with the name, chemical, unit number, expiration date, handling instructions, and health and environmental standards.
- Provide special handling, storage (e.g., metal lockers), and disposal for all hazardous materials.

Employee Training

- Applicable employees will be trained annually on this procedure. Information on how to respond to spills will be presented during the training.
- Refresher training on this SOP is periodically conducted for applicable employees who perform outdoor material storage activities (e.g. Mechanics, Grounds).

Records

The following records could be used to document activities performed:

- Records of employee training with sign-in sheet.
- Safety Data Sheets
- Packing lists, purchasing records, inventory records.
- EHS& RM personnel and Laboratory Managers attend Hazwoper training each year. Training includes chemical classification, PPE donning and doffing, cleaning materials, and spill response procedures. Copies of certificates are on file in the EHS&RM Office.

NORFOLK STATE UNIVERSITY

Standard Operating Procedure
Vehicle and Equipment Washing

Preparation
This procedure describes the proper means for washing university vehicles and other items such as landscaping equipment and recycling containers. Vehicle and equipment washing can generate runoff contaminated with detergents, oils, litter, grease and heavy metals. Discharge of these contaminants into a storm drain is considered an "Illicit Discharge." Illicit discharges can result in significant fines from regulatory agencies.

This washing procedure is applicable to departments that have fleet vehicles, mechanized equipment and other motorized apparatus which require periodic or routine washing. Non-motorized equipment such as nutrient spreaders, sprayers, bulk containers, carts, wheelbarrows, and other items which are washed outside is also covered. At no time will these items be washed where it is possible for wash water to enter storm drains. An area is marked off outside the garage area for vehicle washing. This area drains directly into the sanitary sewer. All wash water discharge must be directed to the sanitary sewer. ***Vehicle washing is not permitted anywhere else on campus.***

Washing Procedure
- All chemicals or detergents used must be suitable for disposal in the sanitary sewer. Even if detergents or solvents will not be used, the resulting waste water run-off may contain pollutants which must not enter the storm system. Personnel washing vehicles should notify either mechanics or Transportation personnel of their intention. All necessary precautionary equipment (absorbent mats or pads, plastic berms or tarps, or drain covers) should be located and put in place prior to starting washing operation.

- Clear tap water – Primary Option
  When clear water will be used and the resulting waste water is not expected to contain a substance other than water and dirt generated from the item being cleaned, the employee can proceed with washing the item taking the required environmental precautions. An example of this would be washing landscaping carts with leaf debris in them. The resulting waste water cannot be allowed to enter any storm drain inlet.

There are two choices for the proper disposal for the waste water:

- The water can be directed onto a grass or vegetated area where it can be absorbed into the soil. No runoff from the area should occur and no runoff should at any time enter a storm drain inlet.
- Contain the resulting waste water on a containment pad or inside a berm where it can be pumped for proper disposal into a sanitary sewer. Wet-dry vacuums may be used for this or smaller jobs.

- Cleaning Chemicals – Secondary Option

  Use of cleaning chemicals is strongly discouraged. When chemicals/detergents must be used, a containment area must be set up that fully encloses the work site and keeps 100% of the waste water within the site for retrieval and proper disposal in the sanitary sewer. These effluents cannot be allowed to drain into stormwater systems or into adjacent soils. An example of this type of job would be the removal of grease from the undercarriage of a vehicle with detergents resulting in waste water containing solvents and greases.

Landscape Equipment

- Brush off mowers (reels and decks) and tractors over grassy areas. Leave clippings on grassy areas or dispose of in trash or by composting. Do not hose off mowers over paved areas that drain to the storm drain system.
- Fuel all equipment following the Vehicle Fueling procedure.
- Maintain all equipment inside or outside where secondary containment is provided.
- Wash equipment on outside wash pad that drains into the sanitary sewer system.

Inspections

Mechanics and/or EHS or Transportation personnel may conduct spot inspections for compliance with the washing procedure. All managers who perform and/or request that washing operations be performed are responsible for reviewing this procedure with all employees who have these job duties frequently, particularly during mild weather.

NORFOLK STATE UNIVERSITY

Standard Operating Procedure
Illicit Discharge

Reasons for Procedure

Norfolk State University (NSU) has a permit to operate a Municipal Separate Storm Sewer System (MS4) issued by the Virginia Department of Environmental Quality. This permit authorizes NSU to discharge stormwater pursuant to the Virginia Stormwater Management Program and the Virginia Stormwater Management Act. Since storm drain systems are not connected to a sanitary sewer treatment plant, water traveling through the storm drain system flows directly to local streams, rivers and lakes untreated. An illicit discharge to the storm system is generally defined as any discharge that is not composed entirely of stormwater. NSU's MS4 Program "shall include all procedures developed by the operator to detect, identify, and address non-stormwater discharges to the MS4."

Purpose

The purpose of this procedure is to describe the proper means for cleaning up outdoor spills of any material which could pollute the state's waterways if they are allowed to enter the University's storm sewer system. Examples of spills include petroleum products, paint, chemicals, liquids other than water, and erodible materials which, if exposed to rainwater, could become a pollutant. Spills should be cleaned up immediately upon discovery in order to prevent them from entering the storm sewer system and becoming an illicit discharge.

Scope

This procedure applies to any spills that could potentially enter the University storm sewer system or local waterways.

Responsibility

- Police Department, Facilities Management Environmental, Health, Safety and Risk Management (EHS&RM) personnel; external contract company
    - Upon receipt of information regarding a spill, Police and Environmental Health, Safety and Risk Management (EHS&RM) personnel will visit the scene of the spill in order to document and oversee clean-up efforts, determine reporting efforts, and conduct follow up efforts to prevent re-occurrence of the spill. EHS&RM shall have oversight of all cleanup and remediation efforts.

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Detection

Personnel must follow spill response procedures, including stopping or containing the release, whenever a spill is observed. If personnel are unsure of spill response procedures, they should call Police Dispatch 757-823-8102 or Environmental Health, Safety and Risk Management (EHS&RM) at 757-803-5988 to report the spill. At a minimum, personnel should contact their supervisor to alert them to the spill and begin efforts to prevent the spill from entering a storm sewer inlet or reaching state waters.

General instructions for Spill containment

- Observe all applicable safety considerations.
- If possible to do safely, stop the release. This includes shutting appropriate valves, securing pumps, and attempting to plug or cover punctures or gashes in pipes. It may be impossible to stop the spill if the situation creates a high degree of personal danger to the immediate responders.
- Contain the spill. Use available materials including spill kits supplies, mulch, dirt, sand, etc. to dam up the spill and prevent further flow of the material from the spill area.
- Warn other employees and onsite personnel of the spill by voice or using equipment such as two-way radios or telephones, if available.
- Should spillage reach the drainage ditches or stormwater drop inlets, use available means to minimize amount of substance flowing into the ditch or drain and contain the substance at the discharge point.
- For oil or other floating materials, use hay, straw, or any boom arrangement to confine the spillage.
- For soluble materials, use chemical absorbent, makeshift dams, or other means of confinement to prevent waterway contamination or the spread of further contamination.
- The person discovering the spill should not undertake burning or chemical treatment of the spill.
- Remain at the scene until Police or EHS respond.
- If the spill is small enough to be contained on site using available spill kit materials without additional outside resources, EHS should be notified upon completion of cleanup efforts. EHS will pick up the soiled material and re-stock the spill kit.

NORFOLK STATE UNIVERSITY

Managers and Supervisors

- Managers and supervisors must ensure all personnel reporting to them have received appropriate spill response training. Basic spill response training should be conducted at least once every 24 months for all FM personnel performing work outside. Managers are expected to convey the spill response requirements of this procedure to contractors if non-NSU personnel are performing jobs on NSU property that may result in a spill of liquids or erodible material. Managers and supervisors are responsible for ensuring training is conducted with the most recent version of the SOP.

Notifications

- EHS&RM staff are responsible for making the following reports as appropriate:
    - Spills that may impact the City of Norfolk should be reported to the Stormwater Management Office at (757) 823-4000.
    - Spills resulting from the operation of a contractor working on behalf of NSU should be reported to NSU Police and EHS&RM at (757) 803-5988.
- Information to provide includes:
    - Spill Location
    - Type of material
    - Estimated quantity and extent of spill
    - A brief description of measures that have been taken to confine the spilled material and prevent further spillage

Spills that enter NSU's MS4 or state waters should be reported to DEQ within 24 hours of discovery as follows:

- During normal work hours call the number listed for the Pollution Response Program (PREP) for the PREP Regional Office (757) 518-2000 that covers the area where the incident occurred. DEQ prefers that all initial reports be made over the phone when possible. Follow up report should be e-mailed to troprep@deq.virginia.gov which includes distribution to DEQ VRO and VDH staff.
    - Alternatively, the on-line Pollution Reporting Form allows citizens and permittees to report pollution events on-line (https://portal.deq.virginia.gov/prep/Report/Create). Once you complete the form, a unique reference number is provided. IMPORTANT – citizens and permittees should make note of this number. The number will be required for follow-up on any pollution report.

- Additional, illicit discharges that discharge from the NSU MS4 into surface waters or are expected to enter surface water should have a 5-day written follow up report, in accordance with the requirements described in Part III.G of the permit.

Nights, holidays and weekends call the Virginia Emergency Operations Center 24-hour reporting number, 1-800-468-8892

Procedure Review

- Managers and supervisors whose employees have job duties that could result in spills or the discovery of spills are responsible for reviewing this procedure with all employees at least once every 24 months or ensuring employees attend EHS&RM provided training at least once every 24 months. Any project managers who hire contractors to perform such work are required to convey the requirements of this procedure to the contractors.

Illicit Discharge Violations

Illicit discharges, including spills that reach a storm drain are prohibited by the University's MS4 permit. Illicit discharges may be punishable by civil and criminal penalties as illicit discharges constitute a threat to the public health, safety, and welfare, and are deemed public nuisances. Illicit discharges that reach state waters must be responded to as required in the Illicit Discharge Detection SOP.

NSU's Employee and Student Codes of Conduct provide for disciplinary and or enforcement actions for persons found in violation of this procedure.

NORFOLK STATE UNIVERSITY

Stormwater Training
Standard Operating Procedure

Purpose

Stormwater training is conducted to educate staff and students regarding the regulatory requirements of the University's MS4 (Municipal Separate Storm Sewer System) permit.

Responsibility

EHS&RM conducts education and training for students and staff regularly.

Frequency

- During employee orientation for all new employees (twice monthly)
- Meetings with students and resident assistants in residence hall (twice annually)
- In depth annual training with Grounds and Housekeeping personnel

Curriculum

Training will cover MS4 permit requirements and everyday actions pollution prevention actions personnel can utilize to eliminate pollution.
Field personnel are trained to recognize and report illicit discharges
Grounds personnel are trained annually to implement good housekeeping practices to be employed during road, street and parking lot maintenance.

Managers and supervisor shall require contractors who apply herbicides and pesticides are trained and certified per the Virginia Pesticide Control Act (§3.2-3900 et seq. of the Code of Virginia).
EHS&RM personnel shall receive annual training in Hazwoper/spill response

Records

Training records will be maintained by EHS&RM personnel. Records include training date, number of employees attending and the objective of training. Records will be maintained for a minimum of three years. Training events will be included in the Annual report due October 1, of each year.

Additional public awareness and outreach training will be conducted utilizing "Campus Announcements", closed circuit television postings, bulletin boards and volunteer activities with the Elizabeth River Project and campus clean-ups.

NORFOLK STATE UNIVERSITY

Stormwater Standard Operating Procedures

Routine Facility Inspections

Dry Weather Inspections

Visual inspections of all storm system outfalls will be made monthly during dry weather conditions for evidence of non-stormwater discharges. Dry weather inspections will verify the site is not discharging sanitary or process water to storm system. The semi-annual dry discharge inspections will serve as the annual evaluations for illicit discharges from the site. Issues discovered during inspection will be reported through the TMA system. The TMA system will be used to track minor improvements and stages of more involved corrections. Information recorded on the monthly inspection sheet and areas to pay particular attention to include:

- Date of evaluation
- Evaluation criteria and results
- Outfall Identifier
- Time since last rainfall event
- Estimated quantity of most recent precipitation
- Potential significant sources of non-stormwater discovered through testing.
- Condition of inflow and outflow pipes
    - Cracks or blockages
- Condition of plants
    - Health of plants in bioretention and mitigating overgrowth in dry basins
- Condition of side slopes
    - Evidence of soil eroding or falling away
- Any actions taken to prevent unauthorized discharges.
- Inspection forms are found in Appendix 5

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Wet Weather Inspections

A quarterly visual inspection of the storm system discharge point will be made during rain events to look for evidence of stormwater contamination. Inspections will be conducted within the first thirty minutes of discharge or soon thereafter, but not exceeding 60 minutes. Visual discharge inspections will be conducted by using a sampling cup attached to a telescoping pole to collect stormwater from the storm sewer, bringing it to the surface where it can be visually inspected. The visual inspection will include any observations of color, odor, turbidity, floating solids, suds, oil sheen, or other obvious indicators of stormwater pollution including odor. Issues discovered during inspection will be reported through the TMA system. The TMA system will be used to track minor improvements and stages of more involved corrections. Information recorded during the quarterly inspection shall include:

- Date of inspection
- Storm system location
- Inspection results
- Potential significant sources of stormwater contaminants if discovered.
- Inspection forms are found in Appendix 5

Annual Maintenance Inspections

Visual inspection of each stormwater facility shall be completed annually to ensure the feature is operating properly and to discover potential issues. The visual inspection will include key features pertinent to the specific type of facility. Issues discovered during inspection will be reported through the TMA system. The TMA system will be used to track minor improvements and stages of more involved corrections.

Information recorded during the annual inspection shall include:

- Date of inspection
- Facility Type and Location
- Inspection results
- Inspection forms are found in Appendix 6

Daily Visual Inspections

Routine maintenance facility inspections are conducted each day by the mechanics. During these inspections, each vehicle is examined and started. Fluid leaks on the ground are identified and controlled.

Grounds personnel will examine maintenance equipment (blowers, lawn mowers, street sweeper, etc. for leaks and control them if found. The storm drain in the equipment shed should be checked daily as part of the inspection to ensure no illicit discharges have occurred.

NORFOLK STATE UNIVERSITY

Personnel will inspect the stormwater management facilities in accordance with DEQ regulation. During these inspections BMPs will be examined for trash and debris and general functionality. Any weeds or plants that may be blocking or hindering the functionality of the BMP will be dealt with accordingly. Staff conduct daily visual checks of stormwater management facilities, in addition to monthly documented inspections and an annual inspection performed by a professional engineer.

Minor maintenance such as weeding and debris removal will be handled by NSU staff. Major maintenance or repairs that are found will be handled through a work order and outside contractor.

Standard Operating Procedure

CHEMICAL APPLICATION PESTICIDES, HERBICIDES, FERTILIZERS

Preparation

- Make sure the contractor has a state Chemical Handling Certification which is complete and up-to-date before handling bringing or using any chemicals on campus.
- Ensure contractor has calibrated fertilizer and pesticide application equipment to avoid excessive application.
- Use pesticides only if there is an actual pest problem.
- Time and apply the application of fertilizers, herbicides or pesticides to coincide with the manufacturer's recommendation for best results ("Read the Label").
    - Know the weather conditions. Do not use pesticides if rain is expected within a 24- hour period.
    - Apply pesticides only when wind speeds are low (less than 5 mph).

Process

- Ensure the manufacturer's recommendations for mixing, application and disposal are followed. ("Read the Label").
- Pesticides shall not be mixed or prepared for application near storm drains. Mix inside a protected area with impervious secondary containment (preferably indoors) so that spills or leaks will not contact soils.
- Contractors must employ techniques to minimize off-target application (e.g. spray drift, over broadcasting.) of pesticides and fertilizers.

Clean-up

- Sweep or blow pavements or sidewalks where fertilizers or other solid chemicals have fallen, back onto grassy areas before applying irrigation water.

- Triple rinse pesticide and herbicide containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste.
- Always follow all federal and state regulations governing use, storage and disposal of fertilizers, herbicides or pesticides and their containers. (“Read the Label”)

Documentation

- Maintain copies of Safety Data sheets (SDS) for all pesticides, fertilizers and other hazardous products used.
- Record fertilizing and pesticide application activities, including date, individual who did the application, amount of product used and approximate area covered.
- “Xylem” is the company most often used for fertilizer and herbicide application at NSU.
- Tidewater Pest Control provides pesticide application on campus.
- One employee, Antoine Staton, was recently certified for fertilizer and herbicide application.
- Certification records are maintained in the Housekeeping and Grounds Office.

NORFOLK STATE UNIVERSITY

Standard Operating Procedures

Mowing and Trimming

Preparation

- Review the overall process with all employees.
- Check the oil and fuel levels of the mowers and other equipment; fill if needed.

Process

- Protect catch basins where applicable.
- Put on eye and hearing protection.
- Mow and trim the lawn.
- Sweep or blow clippings to grass areas.
- Remove inlet protection.

Clean-up

- Mowers are to be scraped and brushed at shop – dry spoils are dry swept and disposed of.
- Wash equipment in approved wash area.

NORFOLK STATE UNIVERSITY

List of Appendices

NORFOLK STATE UNIVERSITY

Standard Operating Procedure

Minor Construction Activities

Description

The responsible management of construction activities and debris and sediment run-off from the construction area can reduce polluted stormwater runoff. All materials, construction activities and machinery should be handled properly and safely. Proper management of materials can also reduce the likelihood of accidental spills or releases. Minor construction activities include but no limited to minor street and parking lot remain and maintenance, sidewalk and curb and gutter repairs, concrete repairs, and roadway resurfacing.

General Procedures

- Establish material storage and inventory controls to minimize the amount of materials used and stored.
- Use inlet protections to block sediment and debris from entering stormwater systems.
- Periodically inspect material storage areas to ensure that all materials are being stored properly when not in use.
- Clean the material storage area when necessary using dry cleanup methods.
- Properly dispose of unused materials.
- Dewatering efforts for minor utility installation shall be disposed of properly.
- Periodically clean inlet protections and within 48hrs after a major rain event.
- Store materials in a manner that reduces the potential for transport in stormwater flows.
- Clean construction equipment using proper procedures.
- dispose of any sediment build up properly.

Materials Stored in Containers

- Whenever possible, containerize and cover stored materials to prevent stormwater from coming in contact with materials. Secondary containment may be required.
- Store containers in a location where they will not be accidentally damaged by equipment or vehicles.
- Provide tight-fitting lids for all containers.

<u>Possible Pollutants</u>

Sediment
Organics
Metals
Oil and Grease
Trash
Toxins

<u>Good Housekeeping</u>

Employee/Contractor Training

Proper cleanup and disposal procedures

Loose Materials

- Consolidate loose material (gravel, mulch, etc.) and berm where needed to prevent run-off of stormwater.
- Follow the Mulch and Sand Storage procedure for piles of mulch and sand.
- Large inert materials such as piping and road signs can be stored outside without a protective covering. These materials do not impact stormwater quality.
- Rusting iron is a potential source for stormwater pollution and should not come in contact with stormwater. Efforts are underway to remove surplus equipment from vehicle compound and outside maintenance area.
- Dumping of collected yard waste and grass clippings into the MS4 shall be prohibited.

Employee Training

- Applicable employees will be trained annually on this procedure. Information on how to respond to spills will be presented during the training.
- Refresher training on this SOP is periodically conducted for applicable employees who perform outdoor material storage activities (e.g. Mechanics, Grounds).

Records

The following records could be used to document activities performed:

- Records of employee training with sign-in sheet.
- Safety Data Sheets
- Packing lists, purchasing records, inventory records.
- EHS& RM personnel and Laboratory Managers attend Hazwoper training each year. Training includes chemical classification, PPE donning and doffing, cleaning materials, and spill response procedures. Copies of certificates are on file in the EHS&RM Office.

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Appendix 1

NORFOLK STATE UNIVERSITY

Training Topic (Circle): Environmental Awareness, SPCC, UST, Operator, Stormwater PP, SWPPP

Trainer:_____ Date:_____ Time:_____
Location:_____

EMPLOYEE SWPPP TRAINING SIGN-IN SHEET

FIRST NAME	LAST NAME	DEPARTMENT	EMAIL

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Appendix 2

NORFOLK STATE UNIVERSITY

Stormwater
Construction Site Inspection Report

General Information			
Project Name			
NPDES Tracking No.		**Location**	
Date of Inspection		**Start/End Time**	
Inspector's Name(s)			
Inspector's Title(s)			
Inspector's Contact Information			
Inspector's Qualifications			
Describe present phase of construction			
Type of Inspection: ❑ Regular ❑ Pre-storm event ❑ During storm event ❑ Post-storm event			
Weather Information			
Has there been a storm event since the last inspection? ❑Yes ❑No **If yes, provide:** Storm Start Date & Time: Storm Duration (hrs): Approximate Amount of Precipitation (in):			
Weather at time of this inspection? ❑ Clear ❑Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snowing ❑ High Winds ❑ Other: Temperature:			
Have any discharges occurred since the last inspection? ❑Yes ❑No **If yes, describe:**			
Are there any discharges at the time of inspection? ❑Yes ❑No **If yes, describe:**			

Site-specific BMPs

- *Number the structural and non-structural BMPs identified in your SWPPP on your site map and list them below (add as many BMPs as necessary). Carry a copy of the numbered site map with you during your inspections. This list will ensure that you are inspecting all required BMPs at your site.*

Describe corrective actions initiated, date completed, and note the person that completed the work on the inspection form and in the TMA Work Order System.

NORFOLK STATE UNIVERSITY

Stormwater
Construction Site Inspection Report

	BMP	BMP Installed?	BMP Maintenance Required?	Corrective Action Needed and Notes
1		❑Yes ❑No	❑Yes ❑No	
2		❑Yes ❑No	❑Yes ❑No	
3		❑Yes ❑No	❑Yes ❑No	
4		❑Yes ❑No	❑Yes ❑No	
5		❑Yes ❑No	❑Yes ❑No	
6		❑Yes ❑No	❑Yes ❑No	
7		❑Yes ❑No	❑Yes ❑No	
8		❑Yes ❑No	❑Yes ❑No	
9		❑Yes ❑No	❑Yes ❑No	
10		❑Yes ❑No	❑Yes ❑No	
11		❑Yes ❑No	❑Yes ❑No	
12		❑Yes ❑No	❑Yes ❑No	
13		❑Yes ❑No	❑Yes ❑No	
14		❑Yes ❑No	❑Yes ❑No	
15		❑Yes ❑No	❑Yes ❑No	
16		❑Yes ❑No	❑Yes ❑No	
17		❑Yes ❑No	❑Yes ❑No	
18		❑Yes ❑No	❑Yes ❑No	
19		❑Yes ❑No	❑Yes ❑No	
20		❑Yes ❑No	❑Yes ❑No	

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UNIVERSITY

Appendix 3

NORFOLK STATE UNIVERSITY

Overall Site Issues

Below are some general site issues that should be assessed during inspections. Customize this list as needed for conditions at your site.

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
1	Are all slopes and disturbed areas not actively being worked properly stabilized?	❑Yes ❑No	❑Yes ❑No	
2	Are natural resource areas (e.g., streams, wetlands, mature trees, etc.) protected with barriers or similar BMPs?	❑Yes ❑No	❑Yes ❑No	
3	Are perimeter controls and sediment barriers adequately installed (keyed into substrate) and maintained?	❑Yes ❑No	❑Yes ❑No	
4	Are discharge points and receiving waters free of any sediment deposits?	❑Yes ❑No	❑Yes ❑No	
5	Are storm drain inlets properly protected?	❑Yes ❑No	❑Yes ❑No	
6	Is trash/litter from work areas collected and placed in covered dumpsters?	❑Yes ❑No	❑Yes ❑No	
8	Are washout facilities (e.g., paint, stucco, concrete) available, clearly marked, and maintained?	❑Yes ❑No	❑Yes ❑No	

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
9	Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?	❑Yes ❑No	❑Yes ❑No	
10	Are materials that are potential stormwater contaminants stored inside or under cover?	❑Yes ❑No	❑Yes ❑No	
11	(Other)	❑Yes ❑No	❑Yes ❑No	

Non-Compliance

Describe any incidents of non-compliance not described above:

CERTIFICATION STATEMENT

"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."

Print name and title: _____

Signature: _____ **Date:** _____

NORFOLK STATE UNIVERSITY

Appendix 4

NORFOLK STATE UNIVERSITY

GRASS CHANNELS: O&M CHECKLIST

Inspection Date
Project Site Plan/Permit Number
Location Date BMP Placed in Service
Date of Last Inspection Inspector
Owner/Owner's Representative
As-Built Plans available: Y / N

Type of pretreatment facility:

☐ Sediment Forebay
☐ Check Dam
☐ Grass Filter Strip
☐ Stone Diaphragm
☐ Other: _____
☐ None

Ideally, these BMP areas should be inspected annually, with the inspection conducted spring when the health of the grass channel lining should be evident. Once established, Grass Channels have minimal maintenance needs outside of the Spring clean up: regular mowing, repair of check dams and other measures to maintain the hydraulic efficiency of the channel and a dense, healthy grass cover.

BMP Element	Potential Problem	Problem? Y/N	Investigation? Y/N	Repaired ?/Y/N	Corrective Action	Addressed by	Comments
Drainage	Trash & debris				Remove		
Inlets	Flow blocked				Remove trash and sediment		
	Erosion				Repair damage		
	Grass height				Mow. Keep grass at 4-9". Remove clippings		
Vegetation	Fertilizer needed				Use organic fertilizer. Minimize herbicide/pesticide use		
	Invasive species/weeds				Remove		
	Dead vegetation/exposed soil				Replace or re-seed		
Side slopes	Erosion/sediment in swale				Repair erosion; stabilize slopes		
Channel Bottom	Invasive species/weeds				Remove woody vegetation/weeds,		
	Trash debris				Remove trash & debris		
	Erosion or ponding				Repair erosion; plant grass		

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BMP Element	Potential Problem	Problem? Y/N	Investigation? Y/N	Repaired ?/Y/N	Corrective Action	Addressed by	Comments
Pest control	Standing water/mosquito or rodent						
Channel Outlet	Trash, debris, dead vegetation, exposed soil						
Overall	Access to grass channel adequate?						
	Public complaints						

NORFOLK STATE UNIVERSITY

APPENDIX C

Annual Standards and Specifications

BURNS McDONNELL

NORFOLK STATE UNIVERSITY

Annual Standards and Specifications for

Erosion and Sediment Control and Stormwater Management

June 1, 2017

Revised: June 1, 2020

Burns & McDonnell
1317 Executive Blvd
3rd Floor
Chesapeake, VA
23320

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

CERTIFICATION

"I certify under penalty of law that this document and all attachments related to the submission and updating of the Norfolk State University Annual Standard and Specifications for Erosion and Sediment Control and Stormwater Management were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations."

[redacted]	Associate Vice President	6/18/20
Name	Title	Date

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

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Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

ACRONYMS AND ABBREVIATIONS

Bay	Chesapeake Bay
BMP	Best Management Practice
BSWCB	Board State Water Control Board
CWA	Clean Water Act
CGP	Construction General Permit
CSS	Combined Sewer System
DCR	Department of Conservation and Recreation
DEQ	Department of Environmental Quality
EPA	Environmental Protection Agency
ERP	Enforcement Response Plan
ESC	Erosion & Sediment Control
FM	Facilities Management
GIS	Geographic Information Systems
GPS	Global Positioning System
HUC	Hydrologic Unit Code
IDDE	Illicit Discharge Detection & Elimination
NSU	Norfolk State University
LID	Low Impact Development
MEP	Maximum Extent Practicable
MCM	Minimum Control Measure
MS	Minimum Standard
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollution Discharge Elimination System
NOI	Notice of Intent
NOV	Notice of Violation
POC	Pollutants of Concern
RLD	Responsible Land Disturber
SOP	Standard Operating Procedures
SWM	Stormwater Management
SWPPP	Stormwater Pollution Protection Plan
TMDL	Total Maximum Daily Load
UA	Urbanized Area
VESCL&R	Virginia Erosion & Sediment Control Law & Regulations
VESCH	Virginia Erosion & Sediment Control Handbook
VESCP	Virginia Erosion and Sediment Control Program
VPDES	Virginia Pollution Discharge Elimination System
VRRM	Virginia Runoff Reduction Method
VSMP	Virginia Stormwater Management Program
WLA	Waste Load Allocation

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

INTRODUCTION

Norfolk State University (NSU) has incorporated Annual Standards and Specifications for Erosion and Sediment Control (ESC) and Stormwater Management (SWM) that are integral components of Norfolk State University's design, construction, maintenance, and management of the university's stormwater program. The Norfolk State University Annual Standards and Specifications for ESC and SWM submittal has been developed to provide information regarding NSU's implementation in accordance with the Virginia Erosion and Sediment Control Law (§62.1-44 et. seq.), the Virginia Erosion and Sediment Control Regulations (9VAC25-840 et. seq.), the Virginia Erosion and Sediment Control Certification Regulations (9VAC25-850 et. seq.), the Virginia Stormwater Management Act (§62.1-44 et. seq.), and the Virginia Stormwater Management Program (VSMP) Permit Regulations (9VAC25-870 et. seq.) as related to municipal separate storm sewer systems (MS4) and regulated construction activities.

Facilities Management (the AS&S Holder) shall administer the Norfolk State University Annual Standards and Specifications for ESC and SWM. Where design, plan review and approval, construction and maintenance activities are regulated by the Virginia ESC Law and Regulations or the Virginia SWM Act and VSMP Permit Regulations, these Annual Standards and Specifications shall apply to such activities carried out by Norfolk State University, either by its internal workforce or contracted to external entities. Compliance with the NSU Annual Standards and Specifications (and all parts thereof), the Virginia ESC Law and Regulations, the Virginia SWM Act and the VSMP Permit Regulations will be expected during any inspections of Norfolk State University's land disturbing activities by DEQ, EPA, or other such environmental agencies.

Norfolk State University Annual Standards and Specifications for ESC and SWM are submitted to the Virginia Department of Environmental Quality (DEQ) for review and approval on an annual basis per 9VAC25-870-170 and §62.1-44.15:55D, or as determined by the DEQ. The development and implementation of project specific plans that are in accordance with these Annual Standards and Specifications shall be ensured by Norfolk State University. While the Department of Environmental Quality or Board will remain the ESC and AS&S holder, NSU shall be able to act as the authority in order to implement all aspects of the program except for the following items:

- Construction General Permit registration statement review and acceptance. (9VAC25-880-50)
- Construction General Permit issuance.
- Construction General Permit enforcement.
- Construction General Permit Notice of Termination
- Acceptance of variances and exceptions.

Where applicable, the Department and the Board shall be the administrative authorities for the enforcement of SWM and ESC codes. These entities shall provide necessary project oversight along with comprehensive program compliance review and regulation. In addition, enforcement actions shall be taken in accordance to this article and related regulations.

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

The Department shall perform random site inspections or inspections in response to a complaint. This is to assure compliance with this article, the Erosion and Sediment Control Law, and regulations adopted thereunder.

With regards to fees for SWM, an administrative charge to cover the costs of services performed associated with its responsibilities to the applicable section shall be assessed by the Department. For ESC fees, either $1,000 or a sufficient amount which covers the associated costs with review and approval, project inspections, and compliance, whichever is lower, shall be charged by the Board.

This submittal constitutes Norfolk State University's commitment to execute all provisions contained herein on regulated land disturbing activities and land development projects. As such, this submittal will be made available and utilized as an operational guidance document for Norfolk State University projects. This submittal will be included with the MS4 Annual report and is available for download as a PDF file at: https://www.nsu.edu/ehsrm

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

9VAC25-850-10. DEFINITIONS.

The following words and terms, when used in this chapter, shall have the following meanings, unless the context clearly indicates otherwise.

Applicant - means any person submitting a request to be considered for certification.

Board - means the State Water Control Board.

Certification - means the process whereby the board, on behalf of the Commonwealth, issues a certificate to persons who have completed board-approved training programs and met any additional eligibility requirements of 9VAC25-850-50 related to the specified classifications (9VAC25-850-40) within the areas of ESC or SWM or in other ways demonstrated adequate knowledge and experience in accordance with the eligibility requirements of 9VAC25-850-50 in the specified classifications within the areas of ESC or SWM.

Certified combined administrator for ESC - means an employee or agent of a the AS&S Holder who holds a certificate of competence from the board in the combined ESC classifications of program administrator, plan reviewer, and project inspector in the area of ESC.

Certified combined administrator for SWM - means an employee or agent of a the AS&S Holder who holds a certificate of competence from the board in the combined classifications of program administrator, plan reviewer, and project inspector in the area of SWM.

Certified plan reviewer for ESC - means an employee or agent of a the AS&S Holder who:

(i) holds a certificate of competence from the board in the classification of plan reviewer in the area of ESC;

(ii) is licensed as a professional engineer, architect, certified landscape architect, or land surveyor pursuant to Article 1 (§ 54.1-400 et seq.) of Chapter 4 of Title 54.1 of the Code of Virginia; or

(iii) is a professional soil scientist as defined in Chapter 22 (§ 54.1-2200 et seq.) of Title 54.1 of the Code of Virginia.

Certified plan reviewer for SWM - means an employee or agent of a the AS&S Holder who holds a certificate of competence from the board in the classification of plan reviewer in the area of SWM.

Certified program administrator for ESC - means an employee or agent of a the AS&S Holder who holds a certificate of competence from the board in the classification of program administrator in the area of ESC.

Certified program administrator for SWM - means an employee or agent of a the AS&S Holder who holds a certificate of competence from the board in the classification of program administrator in the area of SWM.

Certified project inspector for ESC - means an employee or agent of the AS&S Holder who holds a certificate of competence from the board in the classification of project inspector in the area of ESC.

Certified project inspector for SWM - means an employee or agent of the AS&S Holder who holds a certificate of competence from the board in the classification of project inspector in the area of SWM.

Classification - means the four-specific certificate of competence classifications within the areas of ESC or SWM that make up activities being performed (program administrator, plan reviewer, project inspector, and combined administrator).

Combined administrator for ESC - means anyone who is responsible for performing the combined duties of a program administrator, plan reviewer and project inspector of the AS&S holder.

Combined administrator for SWM - means anyone who is responsible for performing the combined duties of a program administrator, plan reviewer and project inspector of the AS&S holder.

Department - means the Department of Environmental Quality.

Erosion and sediment control plan or ESC plan - means a document containing material for the conservation of soil and water resources of a unit or group of units of land. It may include appropriate maps, an appropriate soil and water plan inventory and management information with needed interpretations, and a record of all decisions contributing to conservation treatment. The plan shall contain all major conservation decisions to ensure that the entire unit or units of land will be so treated to achieve the conservation objective.

ESC - means erosion and sediment control.

ESC Act - means the Erosion and Sediment Control Law, Article 2.4 (§ 62.144.15:51 ets eq.) of Chapter 3.1 of Title 62.1 of the Code of Virginia.

Plan reviewer - means anyone who is responsible for determining the accuracy of ESC plans and supporting documents or SWM plans and supporting documents for approval by a The AS&S Holder or a The AS&S Holder as may be applicable in the areas of ESC or SWM.

Program administrator - means the person or persons responsible for administering and enforcing the VESCP or VSMP of an AS&S Holder or an AS&S Holder as may be applicable in the areas of ESC or SWM.

Project inspector - means anyone who, as a representative of the AS&S Holder or an AS&S holder, is responsible for periodically examining the ESC or SWM activities and premises of a land-disturbing activity for compliance with the ESC Act and Regulations or the SWM Act and Regulations as may be applicable.

Responsible land disturber or RLD - means an individual holding a certificate issued by the department who is responsible for carrying out the land-disturbing activity in accordance with the approved ESC plan. The RLD may be the owner, applicant, permittee, designer, superintendent, project manager, contractor, or any other project or development team member. The RLD must be designated on the ESC plan or permit as a prerequisite for engaging in land disturbance.

Stormwater management plan or SWM plan - means a document containing material describing methods for complying with the requirements of a VSMP and the SWM Act and its attendant regulations.

SWM - means stormwater management.

SWM Act - means the Virginia Stormwater Management Act, Article 2.3 (§ 62.144.15:24 et seq.) of Chapter 3.1 of Title 62.1 of the Code of Virginia.

Virginia Erosion and Sediment Control Program or VESCP - means a program approved by the board that has been established by a the AS&S Holder for the effective control of soil erosion, sediment deposition, and nonagricultural runoff associated with a land-disturbing activity to prevent the unreasonable degradation of properties, stream channels, waters, and other natural resources and shall include such items where applicable as local ordinances, rules, permit requirements, annual standards and specifications, policies and guidelines, technical materials, and requirements for plan review, inspection, enforcement where authorized in the ESC Act and this chapter, and evaluation consistent with the requirements of the ESC Act and this chapter.

Virginia Erosion and Sediment Control Program authority or the AS&S Holder - means an authority approved by the board to operate a Virginia erosion and sediment control program. An authority may include a state entity, including the department; a federal entity; a district, county, city, or town; or for linear projects subject to annual standards and specifications, electric, natural gas and telephone utility companies, interstate and intrastate natural gas pipeline companies, railroad companies, or authorities created pursuant to § 15.2-5102 of the Code of Virginia.

Virginia Stormwater Management Program or VSMP - means a program approved by the board after September 13, 2011, that has been established by a the AS&S Holder to manage the quality and quantity of runoff resulting from land-disturbing activities and shall include such items as local ordinances, rules, permit requirements, annual standards and specifications, policies and guidelines, technical materials, and requirements for plan review, inspection, enforcement, where authorized in the SWM Act and associated regulations, and evaluation consistent with the requirements of the SWM Act and associated regulations.

Virginia Stormwater Management Program authority or the AS&S Holder - means an authority approved by the board after September 13, 2011, to operate a Virginia Stormwater Management Program or, until such approval is given, the department. An authority may include a locality; state entity, including the department; federal entity; or, for linear projects subject to annual standards and specifications in accordance with subsection B of § 62.1-44.15:31 of the Code of Virginia, electric, natural gas, and telephone utility companies, interstate and intrastate natural gas pipeline companies, railroad companies, or authorities created pursuant to § 15.2-5102 of the Code of Virginia.

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

1. ANNUAL STANDARDS AND SPECIFICATIONS ADMINISTRATION

1.1 Norfolk State University follows the policies and procedures described in the Virginia Erosion and Sediment Control Handbook and the Virginia Stormwater BMP Clearinghouse. Norfolk State University Annual Standards and Specifications for ESC and SWM approved by DEQ are composed of general specifications. The general specifications for erosion and sediment control and stormwater management are included by referencing the following:

1.1.1 Virginia Erosion and Sediment Control Law (§62.1-44.15:51. et seq. as amended, “Land Disturbing Activity”);
1.1.2 Virginia Erosion and Sediment Control Regulations (9VAC25-840 et seq. as amended);
1.1.3 Virginia Erosion and Sediment Control and Stormwater Management Certification Regulations (9VAC25- 850 et seq. as amended);
1.1.4 Virginia Erosion and Sediment Control Handbook, 1992, as amended;
1.1.5 Virginia Stormwater Management Act (§62.1-44 et seq. as amended);
1.1.6 Virginia Stormwater Management Permit Regulations (9VAC25-870 et seq. as amended. “Land-disturbing activity”, “Small construction activity”, “Construction activity” and “Large construction activity”);
1.1.7 Virginia Stormwater Management Handbook, 1999, as amended;
1.1.8 Virginia Stormwater Construction General Permit Regulations (9VAC25-880 et seq. as amended);
1.1.9 Virginia Stormwater BMP Clearinghouse, www.vwrrc.vt.edu/swc/StandardsSpecs.html
1.1.10 Technical Bulletins, as amended, on the Virginia DEQ website at www.deq.virginia.gov;
1.1.11 Stormwater, and Erosion and Sediment Control Guidance Memos, as amended, on the Virginia DEQ website at www.deq.virginia.gov.
1.1.12 If utilized, Off-Site Nutrient Credit requirements will be coordinated through DEQ’s Central Office NPS Water Quality Trading Coordinator.
1.1.13 Reports and Recordkeeping (9VAC25-870-126);

A. On a fiscal year basis (July 1 to June 30), the Annual Standards and Specification holder shall report to the department by October 1 of each year in a format provided by the department. The information to be provided shall include the following:
    1. Information on each permanent stormwater management facility completed during the fiscal year to include type of stormwater management facility, geographic coordinates, acres treated, and the surface waters or karst features into which the stormwater management facility will discharge;
    2. Number and type of enforcement actions during the fiscal year; and
    3. Number of exceptions granted during the fiscal year.

B. The AS&S Holder shall keep records in accordance with the following:

1. Project records - The AS&S Holder shall maintain, either on-site or in AS&S files, a copy of the approved plan, including approved stormwater management plans, contract documents (construction drawings), amendments to the plans based on field conditions or changes in facility requirements documented in a “redline markup” provided by the Contractor of Record, and a record of inspections for each active land disturbing activity shall be kept for three years after state permit termination or project completion.
2. Stormwater management facility inspection records shall be documented and retained for at least five years from the date of inspection.
3. Construction record drawings shall be maintained in perpetuity or until a stormwater management facility is removed.
4. All registration statements submitted in accordance with 9VAC25-870-59 shall be documented and retained for at least three years from the date of project completion or state permit termination.
5. All revisions to the Registration Statements shall be resubmitted to DEQ with applicable fees (based on level of disturbance) for review, acceptance, and reissuance of Permit.

1.1.14 General Permit for Discharges of Stormwater from Construction Activities (9VAC25-880, amending 9VAC25-880-30, 9VAC25-880-40, 9VAC25-880-50, 9VAC25-880-70); and

1.1.15 Criteria for determining status of land-disturbing activity (9VAC25-840-80).

1.1.16 Virginia Department of Conservation and Recreations Native vs. Invasive FAQ https://www.deq.virginia.gov/portals/0/deq/water/publications/nativeinvasivefaq.pdf

1.1.17 NSU Draft Stormwater Master Plan (SWMP) – To be utilized in concert as applicable with the proposed land disturbing projects for all stormwater impacts within the MS4 boundary. In addition, the SWMP shall be updated with as-built construction data.

1.2 Any land-disturbing activity, as defined in:

1.2.1 SWM Act (§62.1-44.15:24) - "Land disturbance" or "land-disturbing activity" means a man-made change to the land surface that potentially changes its runoff characteristics including clearing, grading, or excavation, except that the term shall not include those exemptions specified in § 62.1-44.15:34.

1.2.2 ESC Law (§62.1-44.15:51), "Land-disturbing activity" means any man-made change to the land surface that may result in soil erosion from water or wind and the movement of sediments into state waters or onto lands in the Commonwealth, including, but not limited to, clearing, grading, excavating, transporting, and filling of land, except that the term shall not include:

1.2.2.1 Minor land-disturbing activities such as home gardens and individual home landscaping, repairs, and maintenance work;

1.2.2.2 Individual service connections;

1.2.2.3 Installation, maintenance, or repair of any underground public utility lines when such activity occurs on an existing hard surfaced road, street, or sidewalk, provided the land-disturbing activity is confined to the area of the road, street, or sidewalk that is hard surfaced;

1.2.2.4 Septic tank lines or drainage fields unless included in an overall plan for land-disturbing activity relating to construction of the building to be served by the septic tank system;

1.2.2.5 Permitted surface or deep mining operations and projects, or oil and gas operations and projects conducted pursuant to Title 45.1;

1.2.2.6 Tilling, planting, or harvesting of agricultural, horticultural, or forest crops, livestock feedlot operations, or as additionally set forth by the Board in regulation, including engineering operations as follows: construction of terraces, terrace outlets, check dams, desilting basins, dikes, ponds, ditches, strip cropping, lister furrowing, contour cultivating, contour furrowing, land drainage, and land irrigation; however, this exception shall not apply to harvesting of forest crops unless the area on which harvesting occurs is reforested artificially or naturally in accordance with the provisions of Chapter 11 (§ 10.1-1100 et seq.) of Title 10.1 or is converted to bona fide agricultural or improved pasture use as described in subsection B of § 10.1-1163;

1.2.2.7 Repair or rebuilding of the tracks, rights-of-way, bridges, communication facilities, and other related structures and facilities of a railroad company;

1.2.2.8 Agricultural engineering operations, including but not limited to the construction of terraces, terrace outlets, check dams, desilting basins, dikes, ponds not required to comply with the provisions of the Dam Safety Act (§ 10.1-604 et seq.), ditches, strip cropping, lister furrowing, contour cultivating, contour furrowing, land drainage, and land irrigation;

1.2.2.9 Disturbed land areas of less than 10,000 square feet in size or 2,500 square feet in all areas of the jurisdictions designated as subject to the Chesapeake Bay Preservation Area Designation and Management Regulations; however, the governing body of the program authority may reduce this exception to a smaller area of disturbed land or qualify the conditions under which this exception shall apply;

1.2.2.10 Installation of fence and sign posts or telephone and electric poles and other kinds of posts or poles;

1.2.2.11 Shoreline erosion control projects on tidal waters when all of the land-disturbing activities are within the regulatory authority of and approved by local wetlands boards, the Marine Resources Commission, or the United States Army Corps of Engineers; however, any associated land that is disturbed outside of this

exempted area shall remain subject to this article and the regulations adopted pursuant thereto; and

1.2.2.12 Emergency work to protect life, limb, or property, and emergency repairs; however, if the land-disturbing activity would have required an approved erosion and sediment control plan, if the activity were not an emergency, then the land area disturbed shall be shaped and stabilized in accordance with the requirements of the VESCP authority..

1.3 Any land-disturbing activity must be inspected through AS&S Holder. Prior to starting a regulated land-disturbing project, the project must have plans stamped approved by AS&S HOLDER.

1.4 Site specific ESC plans shall be prepared for all projects involving a regulated land-disturbing activity as defined in §62.1-44 or when deemed necessary by the AS&S Holder if development is outside the scope of the VESCL&R and poses potential environmental implications. Site specific ESC plans shall be submitted to the AS&S Holder for review. Prior to starting a land-disturbing project, the project must have plans stamped approved by the AS&S Holder. Projects requiring CGP coverage shall not begin land-disturbance until permit coverage letter has been received from DEQ.

1.5 Site specific SWM plans shall be prepared for all projects involving a regulated land-disturbing activity, as defined in the SWM Act (§62.1-44.15:24) and ESC Law (§62.1-44.15:51), that requires:

1.5.1 A Virginia Stormwater Management Program (VSMP) General Permit for Discharges from Construction Activities;

1.5.2 Land-disturbing activity contained within a watershed of a regional water quality stormwater management facility;

1.5.3 Incorporates the use of an LID and/or BMP; and/or

1.5.4 Changes in the University MS4.

Site specific SWM plans shall be submitted to the AS&S Holder for review. Prior to starting a land-disturbing project requiring a SWM plan, the project must have an approval issued by the AS&S Holder and proof of state permit coverage.

1.6 The design engineer may make requests for project specific variance and/or exceptions, in terms of ESC and SWM, to the AS&S Holder. For final approval, requests will be forwarded to the DEQ Central Office. Unless written approval from DEQ has been received, all requested variances and exceptions are considered unapproved. For more information, refer to Section 6, Variances and Exceptions.

1.7 The use of offsite options for stormwater quality compliance may be approved by NSU as long as conditions satisfy requirements stated in § 62.1-44.15:35 and 9VAC25-870-69.

1.8 Modifications to checklists, inspection reports, and worksheets provided in the appendix may be made as needed to provide additional information, clarify requested information, or to create more efficient workflows.

2. ANNUAL STANDARDS AND SPECIFICATIONS PERSONNEL

Richard A. Law, the University Architect and DEQ certified Combined Administrator, ESC/SWM Inspector and ESC/SWM Plans Examiner of the NSU Annual Standards and Specifications, shall be the plan approving authority for Norfolk State University projects. To guarantee compliance with erosion and sediment control and stormwater management regulations on all NSU projects. An the AS&S Holder may enter into agreements or contracts with soil and water conservation districts, adjacent localities, or other public or private entities to assist with carrying out the provisions of this article, including the review and determination of adequacy of erosion and sediment control plans submitted for land-disturbing activities on a unit or units of land as well as for monitoring, reports, inspections, and enforcement where authorized in this article, of such land-disturbing activities. A breakdown in responsibilities and titles regarding the Norfolk State University Annual Standards and Specifications for ESC and SWM are as listed below:

2.1 “DEQ-Certified ESC Inspector” means an individual who: (i) holds a certificate of competence from the Board in the area of project inspection; or, (ii) is enrolled in the Board’s training program for project inspection and successfully completes such program within one year after enrollment; and (iii) shall be responsible to inspect as mandated by the VESCL&R erosion and sediment control measures to ensure proper installation in accordance with the approved plan and record the state and effectiveness of such measures in an effort to minimize site erosion and sediment control.

2.2 “DEQ-Certified SWM Inspector” means an individual who: (i) holds a certificate of competence from the Board in the classification of project inspector in the area of SWM; or, (ii) is enrolled in the Board’s training program for project inspector and successfully completes such program within one year after enrollment; and, (iii) shall be responsible to inspect construction sites for SWPPP compliance.

2.3 “DEQ-Certified ESC Plan Reviewer” means an individual who: (i) holds a certificate of competence from the Board in the area of plan review; (ii) is enrolled in the Board’s training program for plan review and successfully completes such program within one year after enrollment; or (iii) is licensed as a professional engineer, architect, registered landscape architect, or land surveyor pursuant to Article 1 (§ 54.1-400 et seq.) of Chapter 4 of Title 54.1 of the Code of Virginia; or (iv) is a professional soil scientist as defined in Chapter 22 (§ 54.1-2200 et seq.) of Title 54.1 of the Code of Virginia.

2.4 “DEQ-Certified SWM Plan Reviewer” means an individual who: (i) holds a certificate of competence from the Board in the classification of plan reviewer in the area of SWM; or, (ii) is enrolled in the Board’s training program for plan reviewer and successfully

completes such program within one year after enrollment.

2.5 "DEQ-Certified ESC Program Administrator" means an individual who: (i) holds a certificate of competence from the Board in the area of program administration; or, (ii) is enrolled in the Board's training program for program administration and successfully completes such program within one year after enrollment.

2.6 "DEQ-Certified SWM Program Administrator" means an individual who: (i) holds a certificate of competence from the Board in the classification of program administration in the area of SWM; or, (ii) is enrolled in the Board's training program for program administration and successfully completes such program within one year after enrollment.

2.7 "DEQ-Certified ESC Combined Administrator" means an individual who: (i) holds a certificate of competence from the Board in the area of program administration, plan review and project inspection; or, (ii) is enrolled in the Board's training program for program administration, plan review and project inspection and successfully completes such program within one year after enrollment.

2.8 "DEQ-Certified SWM Combined Administrator" means an individual who: (i) holds a certificate of competence from the Board in the classification of program administration, plan reviewer and project inspector in the area of SWM; or, (ii) is enrolled in the Board's training program for program administration, plan reviewer, and project inspector and successfully completes such program within one year after enrollment.

Please note that any person who holds a valid and unexpired Certificate of Competence issued by the Board in the classification of ESC or SWM, or who obtains such a certificate, and who later successfully obtains an additional certificate may surrender both certificates of competence to the board and request in writing issuance of a dual certificate showing certification in both classifications. Such a request must be made while both the ESC and SWM certificates of competence obtained are valid and unexpired.

3. ANNUAL STANDARDS AND SPECIFICATIONS IMPLEMENTATION

ESC and SWM Plans shall comply with the NSU Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management, the Virginia Erosion and Sediment Control Law (§62.1-44. et seq. as amended), the Virginia Erosion and Sediment Control Regulations (9VAC25- 840 et seq. as amended), the Virginia Stormwater Management Act (§62.1-44 et seq. as amended), and the Virginia Stormwater Management Permit (VSMP) Regulations (9VAC25-870 et seq. as amended). NSU shall be considered the plan approving authority for ESC and SWM. Refer to Section 1.1 for more information on general specifications.

3.1 Submittals: Project Manager will ensure that a professional engineer licensed in the

Commonwealth submits a site plan for review to the AS&S Holder that is designed to incorporate required stormwater management facilities and will meet current water quality and water quantity standards and specifications. Two complete printed sets of ESC/SWM plans, narratives, and necessary attachments along with digital copies shall be submitted to the NSU the AS&S Holder for review and approval prior to any land-disturbing activities. NSU the AS&S Holder shall have 30 days to review the plan and provide written comments.

3.2 Re-submittals: Re-submittals shall include revision notes referenced to written comments. For all second and subsequent submittals, a cover letter must be included by the submitting professional. This cover letter shall include accounts as to how each review comment is addressed with references to the relevant drawing sheet or narrative location and a list of any significant changes in the Plan. Depending upon the previous review comments or changes in the Plan, additional comments/discussion may be warranted by the cover letter.

3.3 Final Report: A final report shall be submitted to the NSU the AS&S Holder for review and approval prior to close-out of the project for any and all permanent Best Management Practices (BMPs) associated with the project. Construction inspections and surveys, performed by a licensed professional, shall be required at each stage of installation (construction) as necessary for a licensed professional(s) to certify that the stormwater management facility and associated conveyance systems have been built in accordance with the approved Plan and design specifications. The final report shall be signed and sealed by licensed professional(s) and include incremental surveys (drawings), a final survey (drawing), photographs, construction logs, inspection reports, geotechnical testing reports, soil reports, certification of materials, and all other applicable inspections, reports, and documents necessary to support and ensure the stormwater management and conveyance systems have been built in accordance with the approved Plan. The final report shall include the appropriate checklists provided in Stormwater Management Handbook. It shall be the licensed professional's responsibility to certify that the as-built condition of the system meets the quantitative and qualitative controls of the approved Plan.

3.4 Plan Reviews: NSU’s Stormwater Coordinator shall oversee the review of plans to ensure compliance with stormwater regulations. Certified personnel shall conduct plan reviews as defined in Section 2. When approved, additional copies may be requested to be stamped approved by NSU for ESC/SWM. One set shall be kept on file with the Stormwater Coordinator. Digital copies in pdf format are acceptable. Other copies of stamped approvals will be distributed to the Project Manager as needed. An ESW/SWM Plan Preparer/Reviewer Checklist is provided in the appendices of this document. Many items listed on the checklists may not apply to any given design and it is therefore up to the designer to indicate items as “not applicable" or “NA" as appropriate.

3.5 Pre-Construction Conference: In order to clarify ESC/SWM roles, responsibilities and obligation of all parties involved with a land-disturbing activity, a pre-construction conference shall be held prior to commencement of the land disturbance. At a minimum, the pre-construction conference will be attended by the NSU Project Manager, NSU Construction Inspector, NSU Stormwater Coordinator, General Construction Permit Operator (if applicable) and the project RLD.

3.6 Inspections: Certified licensed personnel shall conduct site inspections as defined in Section 2. See Section 5 for more information.

3.7 Enforcement: NSU the AS&S Holder Project Manager shall guarantee that corrective action is taken in response to comments and violations listed on inspection reports. If the AS&S Holder is unable to get the contractor to comply with requests, documentation will be forwarded to the AS&S Holder Director of Capital Planning Improvements or designated representative of the AS&S Holder for further enforcement actions as deemed appropriate. This could include notifying the DEQ of project non-compliance for further enforcement and possible fines.

3.8 Changes and Amendments to Approved Plans: Amendments to approved ESC and / or SWM plans based on change in design scope must be reviewed and approved by the AS&S Holder DEQ Certified plans reviewer. Field red line changes shall not be considered approved until written notice is provided by the DEQ certified inspector. In addition, red line field changes and subsequent ESC/SWM design calculations shall be reviewed and reapproved by the applicable DEQ Certified plans reviewer. Project SWPPP will need to be updated with approved changes and amendments. If a change would increase the land disturbance to a higher permit fee, the difference in fees will need to be paid to the DEQ.

3.9 At DEQ's discretion, NSU may be required to provide inspection reports, complaint logs and complaint responses, along with weekly e-reporting to the Tidewater regional office.

4. PLAN REVIEW AND APPROVAL

The Project Manager will need a professional engineer, licensed in the Commonwealth, to prepare and submit a site plan with supporting documentation to the AS&S Holder for review once it is determined that project will require an approved site plan. Detailed requirements of specific items to be included in the ESC and SWM plans are located in the ESC/SWM Plan Submitter's Checklist (Appendix A) and General Erosion and Sediment Control Notes (Appendix B).

Certified individuals will review site plans to ensure compliance is met with these Annual Standards and Specifications, Virginia Erosion and Sediment Control Law, Virginia Erosion and Sediment Control Regulations, Virginia Stormwater Management Act, Virginia Stormwater

Management Permit Regulations, and any other applicable stormwater requirements.

A plan approval letter will be sent to the project engineer after the Plan and supporting documentation is deemed sufficient. If a state construction general permit is required, a construction general permit registration statement must be submitted to the DEQ and a SWPPP will need to be developed.

5. INSPECTIONS

Periodic inspections shall be conducted as required by state law § 62.1-44.15:37 and administrative code 9VAC25-840-60 for ESC and SWM. The intent of this section is that the AS&S holders conduct the required periodic inspections, although it worded as “DEQ-Certified ESC or SWM Inspectors”. Inspectors shall be notified 24 hours prior to installation of BMPs. Completion of the project will only be considered after establishment of permanent stabilization, not completion of construction.

5.1 Erosion and Sediment Control Inspections: Construction sites shall be inspected by DEQ-Certified ESC Inspector during or immediately following initial installation of erosion and sediment controls, at least once in every two-week period and within 48 hours following any runoff producing storm event, and at the completion of the project prior to the release of any performance bonds. In the event an inspection would fall on a weekend, or another day when the University is closed, the inspection will be performed on the next business day. The ESC Inspection Report form provided in Appendix C shall be used on each required site inspection visit. All control measures shown on the plan shall be inspected. Critical areas that require continuous inspections shall also be identified on the site plan. Any issues and violations shall be photographed and documented in the report. The inspection report shall specify the required corrective action for each issue or violation noted and a date by which all corrective actions must be completed. A copy of the ESC Inspection Report will be emailed to the project manager and any other persons identified during the pre-construction meeting.

5.2 Stormwater Management Inspections: Annual Standards and Specification holders shall have periodic inspections of the installation of the SWM measures by DEQ-certified inspector. The SWM Inspection Report form provided in Appendix C will also be used to record SWM inspections and any construction general permit deficiencies will be noted. If the Annual Standards and Specification holders elect to have a third-party inspector perform required inspections, the appropriate Delegation of Authority found in Appendix I shall be completed. The third-party inspector shall have a current DEQ Certification for the respective (ESC and/or) SWM Inspection. All stormwater BMPs must be identified on the site plan. Critical areas that require continuous inspections shall also be identified on the site plan. All issues and violations shall be photographed and documented in the report. The inspection report shall specify the required corrective action for each issue or violation noted and a date by which all corrective actions must be completed. A copy of the SWM Inspection Report will be

emailed to the project manager and any other persons identified during the pre-construction meeting. The projects SWPPP will be inspected for compliance at the beginning of the project and periodically throughout; including the development, updating, and implementation of a pollution prevention plan (≥ 1 acre). The AS&S Holder shall inspect the SWPPP at a minimum monthly frequency or shorter frequency as deemed necessary.

5.3 Project Close-Out: Project completion is defined as the achievement of one of the following:

a) Necessary permanent control measures included in the SWPPP for the site are in place and functioning effectively and final stabilization has been achieved on all portions of the site for which the operator is responsible. When applicable, long-term responsibility and maintenance requirements for permanent control measures shall be recorded in the local land records prior to the submission of a notice of termination;

b) Another operator has assumed control over all areas of the site that have not been finally stabilized and obtained coverage for the ongoing discharge; or

c) Coverage under an alternative VPDES or state permit has been obtained.

5.4 Post-Construction Inspections: Post-construction (maintenance) inspections for permanent SWM BMPs shall be made on an annual basis per the maintenance sections found within DEQ Clearing House Stormwater Design Specifications, made part of these standards by reference. Permanent BMPs (stormwater management facilities) shall be inspected, photographed, and surveyed throughout the construction process and at the completion of the project such that a licensed professional(s) shall lawfully certify the BMPs are constructed in accordance with the approved Plan. In the case where maintenance or repair is required, fund requests and/or work orders shall be made to have items corrected. The DEQ Maintenance Inspection Checklist provided in Appendix D shall be used during inspections. If proprietary structural BMPs are approved for use and utilized, the corresponding manufacturer's maintenance recommendations shall be followed and made part of the Annual Standards and Specifications (and included in the following year's updated AS&S document).

5.5 Violations and Documentation: Violations shall be documented in the respective ESC and / or SWM Inspection Reports, including photographs, descriptions, and necessary corrective actions. If a violation continues to be repeated, then a Notice to Comply will be issued and DEQ will be notified. At the discretion of the NSU AS&S Holder, the land disturbance approval may be suspended and/or revoked; at which time, all land disturbing activity must cease until corrective actions have been completed. Alternatively, the NSU AS&S Holder has the option to contract with a 3rd party to install and maintain ESC and/or SWM measures in accordance with the approved Plan, complete any necessary corrective actions, and/or abate any related damages. Site work may resume once the site is deemed compliant by NSU AS&S Holder. All

associated costs will be back-charged to the contractor.

6. VARIANCES AND EXCEPTIONS

6.1 Variances and exceptions to regulations must guarantee protection of off-site properties and resources from damage. Economic hardship is not sufficient reason to request a variance or an exception from VESCL&R or Norfolk State University Annual Standards and Specifications for ESC and SWM. Variances and exceptions are project specific. The following information needs to be included in variance requests:

a) Introduction
b) Project Description
c) Minimum Standards Variance Requests
d) Existing Conditions and Adjacent Areas
e) Soil Characterization
f) Critical and Sensitive Areas (Karst, wetland, etc.)
g) Mitigation
   I. ESC Measures
   II. Permanent Stabilization
   III. Vegetative Restoration
   IV. Maintenance
   V. Critical and Sensitive Areas
   VI. Self-Inspection, Reporting and DEQ-Certified Personnel

For a variance or exception to become part of the project ESC and SWM plans, a written request must be submitted to the NSU Stormwater Coordinator for a cursory review. If acceptable, the request will then be forwarded to the DEQ Central Office for final review and approval. This request must include an explanation and description of the specific condition necessitating the request. A detailed description of the alternative practice and justification that the practice meets the intent of the SWM Act and regulations for which the variance or exception is sought must also be included in the request. (Ref. 9VAC25-840-50). A Variance Request form is included in Appendix G.

6.2 Variance or Exception Request Policy and Procedure:

6.2.1 The design professional shall draft a letter of request to NSU the AS&S Holder and shall be accompanied by complete details and documentation, including justification and impacts associated with the request.

6.2.2 A cursory review will be completed by NSU AS&S Holder to ensure the request is complete and then will forward to the DEQ Central Office.

6.2.3 All requests shall be considered unapproved until written approval from DEQ is received. NSU may, at DEQ's discretion, be required to produce documentation to demonstrate the applicability of variance requests.

6.2.4 All approved variances or exceptions shall be included as part of the site plan.

6.2.5 NSU has included a list of non-VESCH specifications that are acceptable to be used for ESC measures on construction projects in Appendix F. Non-VESCH

specifications will require that the manufacturer's planning, construction, installation, and maintenance requirements be include with the approved Plan. Should Non-VESCH control measures fail to effectively control soil erosion, sediment deposition, and non-agricultural runoff, then VESCH control measures shall be utilized.

The use of Virginia Erosion and Sediment Control Handbook (VESCH) control measures is strongly preferred, along with accompanying technical documents and guidance. Non-VESCH control measures, BMPs, and specifications may be included in the Annual Standards and Specifications submission but their use may be further reviewed and approved by the applicable DEQ Regional Office on a project-specific basis.

7. LAND-DISTURBING ACTIVITIES

7.1 A list of regulated land-disturbing activities currently under construction and expected to be under construction during this period are included in Appendix E.

a) An annual report shall be sent to DEQ Central Office for all ESC and SWM regulated land-disturbing activities prior to October 1st of each reporting year. These reports shall include items 7.2.a through 7.2.j as listed below and may be in excel spreadsheet format.

7.2 Norfolk State University the AS&S Holder will notify the DEQ Central Office two weeks prior to initiating a regulated LDA with project information. E-notification shall be sent to Standardsandspecs@deq.virginia.gov and shall include:

a) Project name or project number.
b) Any associated Construction General Permit Number
c) Project location (address, nearest intersection, lat/long, or nearest access point);
d) On-site project manager name and contact information;
e) Responsible Land Disturber (RLD) name and contact information;
f) Project description;
g) Acreage of disturbance of project (if Construction General Permit is required, the completion of Appendix Item H - Annual Standards & Specification (AS&S) Entity Information);
h) How off-site / borrow / laydown areas will be taken into account per sections 9VAC25-840-80.D and 9VAC-880-30.C.
i) Estimated project start and completion date; and
j) Any variances/exemption associated with project (except those listed in Appendix F).

7.3 Norfolk State University the AS&S Holder will notify the DEQ Central Office of any additional projects involving regulated land disturbing activities unknown at the time of the Annual Standards & Specifications submission.

8. LONG-TERM MAINTENANCE

Project-specific plans (plan sheets and narrative) shall contain information on long-term maintenance of BMPs. Permanent stormwater facilities will be inspected as required within stormwater regulations and campus policy and procedures.

8.1 The following information shall be printed on approved stormwater management plans:

a) The following description of the requirements for maintenance and maintenance inspection of the stormwater management facilities and a recommended schedule of maintenance inspection and maintenance.

I. Responsibility for the operation and maintenance of stormwater management facilities shall remain with the state agency and shall pass to any successor or owner. If portions of the land are to be sold, legally binding arrangements shall be made to pass the basic responsibility to successors in title. These arrangements shall designate for each state project the property owner, governmental agency, or other legally established entity to be permanently responsible for maintenance.

II. At a minimum, a stormwater management facility shall be inspected by the responsible state agency on an annual basis and after any storm which causes the capacity of the facility principal spillway to be exceeded.

III. During construction of the stormwater management facilities, the department shall make inspections on a random basis.

IV. The department shall require inspections and reports from the state agency responsible for ensuring compliance with the state permit and to determine if the measures required in the state permit provide effective stormwater management.

V. Inspection reports shall be maintained as part of the land disturbance project file.

b) The identification of a person or persons who will be responsible for inspections and maintenance.

c) The maintenance inspection schedule and maintenance requirements should be in accordance with the Virginia BMP Clearinghouse, the Virginia SWM Handbook, the MS4 permit (if applicable) and/or the manufacturer's specifications.

d) Please clearly depict the types of land cover on the site (i.e. different type of hatching for each land cover), including the acreage for each cover type. The acreage should be labeled in all of the subareas and please also provide a table that adds the land cover up by type on the sheet.

e) Please draw metes and bounds all the way around any conserved open space.

f) Please label any conserved open space as "Runoff Reduction Compliance Forest / Open Space"

g) Please include the following note on the sheet: "The Runoff Reduction Compliance Forest/Open Space area shown here shall be maintained in a forest/open space manner until such time that an amended storm water management plan is approved

by the SWM plan approving authority." NSU shall track stormwater management facilities and associated watersheds.

8.2 The NSU BMP will be updated quarterly with information as related to the BMP.

8.3 Stormwater Pollution Prevent Plans (SWPPPs) shall be made available over the internet.

8.4 NSU shall inspect BMPs per the schedules included in the narratives or on the plans or both.

8.5 NSU shall perform maintenance of BMPs per the schedules included in the narratives or on the plans or both and as necessary to maintain the BMP's necessary function.

9. DEQ OVER-SITE INFORMATION

9.1 Enforcement

9.1.1 SWM - § 62.1-44.15:27. F. Enforcement shall be administered by the Department and the Board where applicable in accordance with the provisions of this article.

9.1.2 ESC - § 62.1-44.15:54. E., § 62.1-44.15:56.G. The Department and the Board, where applicable, shall provide project oversight and enforcement as necessary and comprehensive program compliance review and evaluation. The Department may take enforcement actions in accordance with this article and related regulations.

9.2 Complaints and Inspections

9.2.1 SWM - § 62.1-44.15:31.C. The Department shall perform random site inspections or inspections in response to a complaint to assure compliance with this article, the Erosion and Sediment Control Law, and regulations adopted thereunder.

9.3 Fees

9.3.1 SWM - § 62.1-44.15:31.D. The Department shall assess an administrative charge to cover the costs of services rendered associated with its responsibilities pursuant to this section.

9.3.2 ESC - § 62.1-44.15:55.D. The Board shall have the authority to enforce approved specifications and charge fees equal to the lower of (i) $1,000 or (ii) an amount sufficient to cover the costs associated with standard and specification review and approval, project inspections, and compliance.

9.4 Please note that DEQ is the authority and issuance and termination of Construction General Permits shall go through the Department.

9.4.1 Registration Statement - 9VAC25-880-50

9.4.2 Notice of Termination - CGP Part I.F.

9.5 Discretionary Requirements:

9.5.1 Inspection reports conducted by NSU as well as complaint logs and complaint responses may be required to be submitted to DEQ.

9.5.2 NSU may be required to provide weekly e-reporting to the Tidewater regional office:

9.5.2.1 Inspection reports;

9.5.2.2 Pictures;

9.5.2.3 Complaint logs and complaint responses; and

9.5.2.4 Other compliance documents.

10. CONSTRUCTION REQUIREMENTS

All contractors performing land disturbing activities on campus property are required through contract documents to follow existing ESC requirements and obtain all applicable permits before construction activity commences. The CO-7 General Conditions of the Construction Contract requires that the contractor have a DEQ-certified Responsible Land Disturber on-site. In addition to contract language, all work performed on University property is required to comply with the Construction and Professional Services Manual (CPSM) published by the Bureau of Capital Outlay Management and City of Norfolk Regulations. Any land-disturbing activity carried out in a locality outside of the City of Norfolk with a local ESC program with more stringent regulations than those of the state program shall be consistent with the requirements of the local program.

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

Appendix A

ESC/SWM Plan Submitter's Checklist

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

SECTION 1: GENERAL INFORMATION

Plan Submission Date: _____ Total Disturbed Acreage: _____

Project Name: _____

Project Address or Location: _____

Principal Designer Name and Company: _____

Principal Designer Phone Number: _____ Email: _____

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

SECTION 2: ESC/SWM PLAN PREPARER/REVIEWER CHECKLIST

The Erosion and Sediment Control (ESC) and Stormwater Management (SWM) Plan consists of the Narrative (including any supporting calculations) and the construction sheets (site plan), as noted below. Please fill in all blanks and reference where the information may be found, where appropriate, or write N/A by items that are not applicable.

_____ 2.1 Complete set of plans and supporting documentation - Include all sheets pertaining to the site grading and stormwater and any activities impacting erosion and sediment control and drainage:

- o Existing conditions
- o Demolition
- o Site grading
- o Erosion and sediment control
- o Storm sewer systems
- o Stormwater management facilities
- o Utility layout
- o Landscaping
- o On-site and off-site borrow and disposal areas
- o Hydrologic and hydraulic computations, including runoff characteristics
- o Documentation and calculations verifying compliance with water quality and quantity requirements

_____ 2.2 Professional's seal - The designer's original seal, signature, and date are required on the cover sheet of each Narrative and each set of Plan Sheets. A facsimile is acceptable for subsequent Plan Sheets.

_____ 2.3 Number of plan sets - Three hard copy sets of ESC and SWM (if applicable) plans and engineering report are to be submitted initially and with each re-submission. With each submission, also submit a digital copy of the plan set and engineering report in pdf format, and a digital copy of the VRRM spreadsheet.

_____ 2.4 Variances & Exceptions – Provide a letter requesting a variance or exception with details and documentation including justification and associated impacts. Variances are governed by Section 9VAC25- 840-50 of the Virginia Erosion and Sediment Control Regulations. Exceptions are governed by Section 9VAC25-870-57 of the Virginia Stormwater Management Regulations.

_____ 2.5 Off-site Compliance – For off-site stormwater quality compliance, provide a letter of availability from the off-site provider as governed by Section 9VAC-

25-870-69 of the Virginia Stormwater Management Regulations.

_____ 2.6 Completed Plan Submitter's Checklist - Include a completed and signed ESC/SWM Plan Submitter's Checklist.

SECTION 3: ESC MINIMUM STANDARDS

Yes	No	NA		
[ ]	[ ]	[ ]	MS-1	Have temporary and permanent stabilization been addressed in the narrative?
[ ]	[ ]	[ ]		Are practices shown on the plan?
[ ]	[ ]	[ ]		Temporary and permanent seed specifications?
[ ]	[ ]	[ ]		Lime and fertilizer?
[ ]	[ ]	[ ]		Blankets/Matting?
[ ]	[ ]	[ ]		Pavement/Construction Road Stabilization?
[ ]	[ ]	[ ]	MS-2	Has stabilization of soil stockpiles, borrow areas, and disposal areas been addressed in the narrative and on the plan?
[ ]	[ ]	[ ]		Have sediment trapping measures been provided?
[ ]	[ ]	[ ]	MS-3	Has the establishment and maintenance of permanent vegetative stabilization been addressed?
[ ]	[ ]	[ ]	MS-4	Does the plan specifically state that sediment-trapping facilities shall be constructed as a first step in land-disturbing activities?
[ ]	[ ]	[ ]	MS-5	Does the plan specifically state that stabilization of earthen structures is required immediately after installation? Is this noted for each measure on the plan?
[ ]	[ ]	[ ]	MS-6	Are sediment traps and sediment basins specified where needed and designed to the standard and specification?
[ ]	[ ]	[ ]	MS-7	Have the design and temporary/permanent stabilization of cut and fill slopes been adequately addressed? Is Surface Roughening provided for slopes steeper than 3:1?
[ ]	[ ]	[ ]	MS-8	Have adequate temporary or permanent conveyances (paved flumes, channels, slope drains) been provided for concentrated stormwater runoff on cut and fill slopes?
[ ]	[ ]	[ ]	MS-9	Has water seeping from a slope face been addressed (e.g., subsurface drains)?
[ ]	[ ]	[ ]	MS-10	Is adequate inlet protection provided for all operational storm drain and culvert inlets?
[ ]	[ ]	[ ]	MS-11	Are adequate outlet protection and/or channel linings provided for all stormwater conveyance channels and receiving channels? Is there a schedule indicating:
[ ]	[ ]	[ ]		Dimensions of the outlet protection? Lining? Size of riprap?
[ ]	[ ]	[ ]		Cross section and slope of the channels? Type of lining? Size of riprap, if used?

Yes	No	NA		
[ ]	[ ]	[ ]	MS-12	Are in-stream protection measures required so that channel impacts are minimized?
[ ]	[ ]	[ ]	MS-13	Are temporary stream crossings of non-erodible material required where applicable?
[ ]	[ ]	[ ]	MS-14	Are all applicable federal, state and local regulations pertaining to working in or crossing live watercourses being followed?
[ ]	[ ]	[ ]	MS-15	Has immediate restabilization of areas subject to in-stream construction (bed and banks) been adequately addressed?
[ ]	[ ]	[ ]	MS-16	Have disturbances from underground utility line installations been addressed?
[ ]	[ ]	[ ]		No more than 500 linear feet of trench open at one time?
[ ]	[ ]	[ ]		Effluent from dewatering filtered or passed through a sediment-trapping device?
[ ]	[ ]	[ ]		Proper backfill, compaction, and restabilization?
[ ]	[ ]	[ ]	MS-17	Is the transport of soil and mud onto public roadways properly controlled? (i.e., Construction Entrances, wash racks, transport of sediment to a trapping facility, cleaning of roadways at the end of each day, no washing before sweeping and shoveling)
[ ]	[ ]	[ ]	MS-18	Has the removal of temporary practices been addressed?
[ ]	[ ]	[ ]		Have the removal of accumulated sediment and the final stabilization of the resulting disturbed areas been addressed?
[ ]	[ ]	[ ]	MS-19	Are properties and waterways downstream from development adequately protected from sediment deposition, erosion, and damage due to increases in volume, velocity and peak flow rate of stormwater runoff?
[ ]	[ ]	[ ]		Is concentrated stormwater runoff leaving the development site discharged to an adequate natural or man-made receiving channel, pipe or storm sewer system?
[ ]	[ ]	[ ]		Are calculations provided to verify the adequacy of all channels and pipes?
[ ]	[ ]	[ ]		If existing natural receiving channels or previously constructed man-made channels or pipes are not adequate, have provisions been made to prevent downstream erosion?
[ ]	[ ]	[ ]		Have increased volumes of sheet flows that may cause erosion or sedimentation on adjacent property been diverted to a stable outlet, adequate channel, pipe or pipe system, or to a detention facility?
[ ]	[ ]	[ ]		Have water quantity requirements under 9VAC25-870-66 been satisfied? Provide documentation.

SECTION 4: NARRATIVE AND ENGINEERING REPORT

Reference the plan sheet or engineering report page where the information can be found in the blanks below.

_____ 4.1 Project description - Briefly describe the nature and purpose of the land-

disturbing activity. Provide project specific information. Also include the following:

- o Provide the area (acres) to be disturbed. This disturbed area shall include laydown, access and any other areas that may be disturbed during the course of the project.
- o Provide the existing impervious area and the increase, or decrease, in impervious area (acres).
- o Estimated schedule for project.
- o Ultimate developed condition of the site.

_____ 4.2 Existing site conditions - A description of the existing topography (% slopes), ground cover, and drainage (on-site and receiving channels).

- o Discuss any existing drainage or erosion problems and how they are to be corrected.

_____ 4.3 Adjacent areas - A description of all neighboring areas such as residential developments, agricultural areas, streams, lakes, roads, etc., that may be affected by the land disturbance. Discuss any environmentally sensitive areas, including any on-site or adjacent water bodies included in the Virginia 303(d) list of impaired waters, and any possible problems during and after construction (traffic issues, dust control, increases in runoff, etc.).

_____ 4.4 Off-site areas - Describe any off-site land-disturbing activities that may occur (borrow sites, disposal areas, easements, etc.).

- o Provide information on whether the proposed site is balanced, estimated cubic yards needed, or to be removed from the site.
- o If borrow/disposal site is known, provide documentation showing that site has an approved and current ESC plan (locality land-disturbance permit, construction general permit coverage letter, etc.). If borrow/disposal site does not have an approved ESC plan, this plan will need to incorporate that area as part of the proposed disturbance.
- o If borrow/disposal site will not be known until after a contractor has been hired, provide a narrative explaining that the contractor will need to provide documentation showing that their borrow/disposal site has an approved and current ESC plan, or will need to work with the engineer to have their borrow/disposal site included into the proposed plan.

_____ 4.5 Soils - Provide a description of the soils on the site, giving such information as soil name, mapping unit, erodibility, permeability, surface runoff, and a brief description of depth, texture and soil structure.

- o Indicate references for soil information.

- Provide a copy of soil survey map.

_____ 4.6 Critical areas - A description of areas on the site that may have potentially serious erosion problems or that are sensitive to sediment impacts (e.g., steep slopes, watercourses, wet weather / underground springs, etc.). Discuss any area(s) of the project which may become critical during the project.

_____ 4.7 Erosion and sediment control measures - A description of the structural and vegetative methods that will be used to control erosion and sedimentation on the site. Controls should satisfy applicable minimum standards and specifications in Chapter 3 of the latest edition of the Virginia Erosion and Sediment Control Handbook (VESCH).

_____ 4.8 Management strategies / Sequence of construction - Address management strategies, the sequence of construction, and any phasing of installation of ESC measures.

_____ 4.9 Permanent stabilization - A brief description, including specifications, of how the site will be stabilized after construction is completed. List any soil testing requirements. A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized. Permanent vegetation shall not be considered established until a ground cover is achieved that is uniform, mature enough to survive and will inhibit erosion.

_____ 4.10 Maintenance of ESC measures - A schedule of regular inspections, maintenance, and repair of erosion and sediment control structures should be set forth. List who will be responsible for ESC maintenance during the course of the project. VESCH control measures shall be maintained in accordance with the VESCH maintenance schedules, and non-VESCH control measures shall be maintained in accordance with the manufacturer's recommendations.

_____ 4.11 Calculations for temporary erosion and sediment control measures - For each temporary ESC measure, provide the calculations and worksheets included in the standards and specifications (e.g. traps, basins, channels, outlet protection etc).

_____ 4.12 Stormwater management considerations - Will the development of the site cause an increase in peak runoff rates? Will the increase in runoff cause flooding or channel degradation downstream? All calculations showing pre-development and post-development runoff should be provided including any worksheets, assumptions and engineering decisions. Describe the strategy to control stormwater runoff.

4.13 Water quality and quantity compliance – Provide a summary description of the water quantity and quality compliance strategy along with adequate documentation, including required limits of analysis, to show compliance with the criteria.

- o Water quality compliance: 9VAC25-870-65
  - • VRRM compliance spreadsheet (digital and printed format)
- o Water quantity, channel protection: 9VAC25-870-66 B
- o Water quantity, flood protection: 9VAC25-870-66 C

4.14 Adequate conveyances – Ensure that stormwater conveyances with adequate capacity and adequate erosion resistance have been provided for all on-site concentrated stormwater runoff. Off-site channels that runoff from the site, including those receiving runoff from stormwater management facilities, must be adequate. Increased volumes of sheet flows must be diverted to a stable outlet, adequate channel, pipe or pipe system, or a stormwater management facility.

- o Provide exhibits showing draining divides, direction of flow, and size (acreage) of each of the site drainage areas that discharge runoff off-site, both existing and proposed.
- o Provide calculations for pre- and post-development runoff from these drainage areas.
- o Ensure that quantity requirements are satisfied for each off-site receiving channel, including those that receive runoff from stormwater management facilities.
- o Provide calculations for the design of each permanent stormwater management facility.
- o Provide adequacy calculations for all on-site stormwater conveyances.

4.15 Documentation and Calculations - Provide the following design calculations, as applicable:

- o Drainage area map with time of concentration (TC) path shown and points of analysis with worksheets
- o TC calculation/nomograph
- o Locality IDF curve
- o Composite runoff coefficient or RCN calculation
- o Peak runoff calculations
- o Imperviousness of the entire site and each drainage area
- o NRCS runo· curve numbers or volumetric runo· coe·cients
- o Hydrologic analysis for the existing (pre-development) conditions,

including runoff rates, volumes, and velocities, showing the methodologies used and supporting calculations.

- o Hydrologic analysis for the proposed (post-development) conditions including runoff rates, volumes, and velocities, showing the methodologies used and supporting calculations.
- o Hydrologic and hydraulic analysis of the stormwater management system for all applicable design storms.
- o Stormwater conveyance channel design calculations
- o Storm drain and storm sewer system design calculations
- o Hydraulic Grade Line on profiles of pipe systems
- o Culvert design calculations

_____ 4.16 BMP Information - Provide a table or summary for all stormwater quantity and quality BMP facilities including the following information: BMP Name, Impervious Acres Treated, Total Acres Treated, Amount of runoff treated by practice in acre-feet, geographic coordinates (Lat/Long), and Lifespan.

_____ 4.17 State Maintenance Agreement Information – The following information shall be printed on the approved stormwater management plan for state projects:

- o A description of the requirements for maintenance and maintenance inspection of the stormwater facilities and a recommended schedule of maintenance inspection and maintenance. The maintenance inspection schedule and maintenance requirements should be in accordance with the Virginia BMP Clearinghouse, the Virginia SWM Handbook, the MS4 permit (if applicable) and/or the manufacturer's specifications.
- o The identification of the person(s) who will be responsible for maintenance inspection and maintenance.
- o Inspections:
  - Facilities Management Building
    700 Park Avenue
    Norfolk, VA 23504
    Phone: (757) 823-2625
  - Or licensed qualified professional consultant
- o Maintenance:
  - Facilities Management Building
    700 Park Avenue
    Norfolk, VA 23504
    Phone: (757) 823-2625
- o Clearly depict the types of land cover on the site (i.e. different type of

hatching for each land cover), including the acreage for each cover type. The acreage should be labeled in all of the subareas. Also provide a table that adds the land cover up by type on the sheet.

- o Provide metes and bounds all the way around any conserved forest/open space.
- o Label any conserved forest/open space as "Runo· Reduction Compliance Forest/Open Space".
- o Include the following note on the sheet: "The Runo· Reduction Compliance Forest/Open Space area shown shall be maintained in a forest/open space manner until such time that an amended stormwater management plan is approved by the VSMP Authority or entity with DEQ approved standards and specifications for stormwater plan approval."

_____ 4.18 Page numbers – Number the pages of the Narrative and the Calculations.

_____ 4.19 Supporting documentation – Provide applicable supporting documents and studies (e.g. infiltration tests, geotechnical investigations, TMDLs, flood studies, etc.).

_____ 4.20 Other required permits – Provide a copy of other required permits as necessary (e.g. USACE).

SECTION 5: SITE PLAN

Reference the plan sheet or engineering report page where the information can be found in the blanks below.

_____ 5.1 Owner Contact Information – Provide name, address, telephone number and email of the owner representative.

_____ 5.2 Vicinity map - A small map locating the site in relation to the surrounding area. Include any landmarks that might assist in locating the site.

_____ 5.3 Indicate north - The direction of north in relation to the site.

_____ 5.4 Limits of disturbance – Areas which are to be cleared and graded and areas to be protected during construction. This disturbed area shall include laydown, access and any other areas that may be disturbed during the course of the project. Provide notes on how areas will be marked for areas NOT to be disturbed.

_____ 5.5 Existing contours - The existing contours of the site shall be shown as dashed light lines and elevation labeled adequately.

_____ 5.6 Final contours and elevations - Changes to the existing contours, including

final drainage patterns. Note the finished floor elevation (FFE) of all buildings on site, including basements. Proposed contour lines shall be solid and bolder than existing contour lines and the elevation labeled adequately.

_____ 5.7 Plan view of storm drainage system – Existing and proposed storm drainage components shall be provided in a plan view. Pipe diameter, material, inverts, stationing, and direction of flow shall be included as part of the plan view.

_____ 5.8 Profile of storm drainage system – Existing and proposed storm drainage components shall be provided in a profile. Pipe diameter, material, inverts, stationing, percent slope, proposed and existing grade, and hydraulic grade lines shall be included as part of the profile.

_____ 5.9 Existing vegetation - The existing tree lines, grassed areas, or unique vegetation.

_____ 5.10 Soils map – The boundaries of different soil types, K factor and soil survey classifications.

_____ 5.11 Existing drainage patterns – The dividing lines and the direction of flow for the different drainage areas. Include the size (acres) of each drainage area and size of impervious area.

_____ 5.12 Proposed drainage patterns – The dividing lines and the direction of flow for the different drainage areas. Include the size (acres) of each drainage and size of impervious area.

_____ 5.13 Critical areas – Note all areas with potentially serious erosion problems. Identify any on-site or adjacent water bodies included in the Virginia 303(d) list of impaired waters.

_____ 5.14 Site development – Show all improvements such as buildings, parking lots, access roads, utility construction, etc. Show all physical items that could affect or be affected by erosion, sediment, and drainage.

_____ 5.15 Landscape plan – Include a plan showing location and plant selection for landscaped areas.

_____ 5.16 Location of practices – Show locations of ESC and SWM practices to be used on the site. Use standard symbols and abbreviations from ESC and SWM handbooks. A legend denoting symbols, line uses and other special characters shall be provided.

_____ 5.17 Off-site areas - Include any off-site land-disturbing activities (e.g., borrow

sites, disposal areas, etc.) not covered by a separate approved ESC Plan.

_____ 5.18 Specifications / Detail Drawings for erosion and sediment control measures – For each VESCH and accepted non-VESCH erosion and sediment control measure employed in the plan, include, at a minimum, the applicable standard detail, narrative, maintenance requirements and associated legend symbol. Include any approved variances or revisions to the standards and specifications. Details should be provided which are clearly dimensioned and reflect the ability to be "built" in the field according to proper design criteria.

_____ 5.19 Specifications / Detail Drawings for stormwater management structures – Provide specifications for stormwater management structures such as pipe materials, pipe bedding, structures, etc. Details should be provided which are clearly dimensioned and reflect the ability to be "built" in the field according to proper design criteria. VDOT IS-1 storm drain shaping will be required for storm drain structures.

_____ 5.20 Erosion and sediment control notes – At a minimum, include the erosion and sediment control notes found on appendix B. Ensure that all applicable Minimum Standards not covered elsewhere in the plan have been addressed.

_____ 5.21 Minimum Standards – Minimum Standard 1 through Minimum Standard 19 shall be included in the plan set.

_____ 5.22 Legend - Provide a complete listing of all ESC and SWM measures to be used, including the VESCH uniform code symbol and the standard and specification number. Include any other items necessary to identify pertinent features in the plan.

_____ 5.23 Property lines and easements - Show all property lines and known easements.

SECTION 6: CHECKLIST PREPARER CERTIFICATION STATEMENT

I certify that I am a professional in adherence to all minimum standards and requirements pertaining to the practice of that profession in accordance with Chapter 4 (§ 54.1-400 et seq.) of Title 54.1 of the Code of Virginia and attendant regulations. By signing this checklist, I am certifying that this document and all attachments are, to the best of my knowledge and belief, true, accurate, and complete.

Signature: _____

Printed Name: _____

Date: _____

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

Appendix B

General Erosion and Sediment Control Notes

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

GENERAL EROSION AND SEDIMENT CONTROL NOTES

ES-1: Unless otherwise indicated, all vegetative and structural erosion and sediment control practices shall be constructed and maintained according to minimum standards and specifications of the Virginia Erosion and Sediment Control Handbook and Virginia Regulations 9VAC25-840 Erosion and Sediment Control Regulations.

ES-2: The plan approving authority (NSU Stormwater Coordinator) must be notified at least one week prior to the pre-construction conference, one week prior to commencement of land disturbing activity and one week prior to final inspection. The name of the certified responsible land disturber, including their certification number and contact information must be provided to the plan approving authority prior to actual engagement in land disturbing activity.

ES-3: All erosion and sediment control measures shall be placed prior to or as a first step in clearing.

ES-4: A copy of the approved erosion and sediment control plan and access to the Virginia Erosion and Sediment Control Handbook shall be maintained on the site at all times.

ES-5: Prior to commencing land disturbing activities in areas other than indicated on these plans (including, but not limited to, off-site borrow or waste areas), the contractor shall submit a supplementary erosion control plan to the NSU Stormwater Coordinator for review and approval, or submit documentation that the other area is currently covered under a separate approved erosion and sediment control plan.

ES-6: The contractor is responsible for installation of any additional erosion control measures necessary to prevent erosion and sedimentation as determined by the plan approving authority.

ES-7: All disturbed areas are to drain to approved sediment control measures at all times during land disturbing activities and during site development until final stabilization is achieved, after which, upon approval of the plan approving authority, the controls shall be removed. Disturbed soil areas resulting from the removal of temporary measures shall be permanently stabilized.

ES-8: During dewatering operations, water shall be pumped into an approved filtering device.

ES-9: The contractor shall inspect all erosion control measures at least once in every two-week period and within 48 hours following any runoff producing storm event. The operator shall inspect in accordance with the Construction General Permit requirements when applicable. Any necessary repairs or cleanup to maintain the effectiveness of the erosion control devices shall be made immediately. Contractor shall submit evidentiary of inspection reports to the

owner or within the Stormwater Pollution Prevention Plan (SWPPP).

ES-10: The contractor is responsible for the removal of sediment that has been transported onto paved or public roads. At a minimum, tracking shall be cleaned by the end of each work day.

ES-11: Temporary/Permanent stabilization operations shall be initiated within 7 days after reaching final grade or upon suspension of grading operations for anticipated duration of greater than 14 days or upon completion of grading operations for a specific area.

ES-12: The contractor shall be responsible for preventing surface and air movement of dust from exposed soils.

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

Appendix C

ESC/SWM Inspection Report

NORFOLK STATE UNIVERSITY

EROSION AND SEDIMENT CONTROL INSPECTION REPORT

Click Here to Clear Form

PROJECT: _____ **STATE PROJECT NO:** _____

CERTIFIED DEQ INSPECTOR: _____ **DATE:** _____ **TIME:** _____

An erosion and sediment control inspection was conducted at the above referenced project, and the following deficiencies were found. Work must begin to correct these deficiencies immediately.

- ☐ Safety Fence (3.01)
- ☐ Construction Entrance (3.02)
- ☐ Straw Bale Barrier (3.04)
- ☐ Silt Fence (3.05)
- ☐ Storm Drain Inlet Protection (3.07)
- ☐ Sediment Trap (3.13)
- ☐ Sediment Basin (3.14)
- ☐ Outlet Protection (3.18)
- ☐ Temporary Seeding (3.31)
- ☐ Permanent Seeding (3.32)
- ☐ Sodding (3.33)
- ☐ Tree Protection (3.38)
- ☐ Dust Control (3.39)
- ☐ _____
- ☐ _____

Comments:

☐ An erosion and sediment control inspection was conducted at the above referenced project and no deficiencies were found.

Trash/Debris on site: ☐ YES ☐ NO _____

Sediment Leaving site: ☐ YES ☐ NO _____

Targeted Re-inspection Date / Compliance Time: _____ **calender days from receipt of this notice.**

Inspected by: (*print*) _____ (*signature*) _____

NORFOLK STATE UNIVERSITY

Stormwater Construction Site Inspection Report

General Information			
Project Name			
Location			
Date of Inspection		**Start/End Time**	
Certified DEQ Inspector:			
Inspector's Title(s)			
Inspector's Contact Information			

Phase of Construction

❑ Pre-construction conference ❑ Clearing and grubbing ❑ Rough grading ❑ Finish Grading
❑ Final stabilization ❑ Const. of SWM Facilities ❑ Maint. of SWM Facilities ❑ Other _____

Type of Inspection:

❑ Regular ❑ Pre-storm event ❑ During storm event ❑ Post-storm event

Weather Information

Has there been a storm event since the last inspection? ❑Yes ❑No
If yes, provide:
Storm Start Date & Time: Storm Duration (hrs): Approximate Amount of Precipitation (in):

Weather at time of this inspection?

❑ Clear ❑Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snowing ❑ High Winds
❑ Other: Temperature:

Have any discharges occurred since the last inspection? ❑Yes ❑No
If yes, describe:

Are there any discharges at the time of inspection? ❑Yes ❑No
If yes, describe:

Site-specific BMPs

- *Number the structural and non-structural BMPs identified in your SWPPP on your site map and list them below (add as many BMPs as necessary). Carry a copy of the numbered site map with you during your inspections. This list will ensure that you are inspecting all required BMPs at your site.*
- *Describe corrective actions initiated, date completed, and note the person that completed the work in the Corrective Action Log.*

	BMP	BMP Installed?	BMP Maintenance Required?	Corrective Action Needed and Notes
1		❑Yes ❑No	❑Yes ❑No	
2		❑Yes ❑No	❑Yes ❑No	
3		❑Yes ❑No	❑Yes ❑No	
4		❑Yes ❑No	❑Yes ❑No	
5		❑Yes ❑No	❑Yes ❑No	
6		❑Yes ❑No	❑Yes ❑No	
7		❑Yes ❑No	❑Yes ❑No	
8		❑Yes ❑No	❑Yes ❑No	
9		❑Yes ❑No	❑Yes ❑No	
10		❑Yes ❑No	❑Yes ❑No	
11		❑Yes ❑No	❑Yes ❑No	
12		❑Yes ❑No	❑Yes ❑No	
13		❑Yes ❑No	❑Yes ❑No	
14		❑Yes ❑No	❑Yes ❑No	

	BMP	BMP Installed?	BMP Maintenance Required?	Corrective Action Needed and Notes
15		❑Yes ❑No	❑Yes ❑No	
16		❑Yes ❑No	❑Yes ❑No	
17		❑Yes ❑No	❑Yes ❑No	
18		❑Yes ❑No	❑Yes ❑No	
19		❑Yes ❑No	❑Yes ❑No	
20		❑Yes ❑No	❑Yes ❑No	
21		❑Yes ❑No	❑Yes ❑No	
22		❑Yes ❑No	❑Yes ❑No	
23		❑Yes ❑No	❑Yes ❑No	
24		❑Yes ❑No	❑Yes ❑No	
25		❑Yes ❑No	❑Yes ❑No	
26		❑Yes ❑No	❑Yes ❑No	
27		❑Yes ❑No	❑Yes ❑No	
28		❑Yes ❑No	❑Yes ❑No	
29		❑Yes ❑No	❑Yes ❑No	
30		❑Yes ❑No	❑Yes ❑No	
31		❑Yes ❑No	❑Yes ❑No	
32		❑Yes ❑No	❑Yes ❑No	
33		❑Yes ❑No	❑Yes ❑No	
34		❑Yes ❑No	❑Yes ❑No	
35		❑Yes ❑No	❑Yes ❑No	
36		❑Yes ❑No	❑Yes ❑No	
37		❑Yes ❑No	❑Yes ❑No	
38		❑Yes ❑No	❑Yes ❑No	
39		❑Yes ❑No	❑Yes ❑No	
40		❑Yes ❑No	❑Yes ❑No	
41		❑Yes ❑No	❑Yes ❑No	
42		❑Yes ❑No	❑Yes ❑No	
43		❑Yes ❑No	❑Yes ❑No	
44		❑Yes ❑No	❑Yes ❑No	
45		❑Yes ❑No	❑Yes ❑No	

Overall Site Issues

Below are some general site issues that should be assessed during inspections. Customize this list as needed for conditions at your site.

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
1	Are all slopes and disturbed areas not actively bewing worked properly stabilized?	❑Yes ❑No	❑Yes ❑No	
2	Are natural resource areas (e.g., streams, wetlands, mature trees, etc.) protected with barriers or similar BMPs?	❑Yes ❑No	❑Yes ❑No	
3	Are perimeter controls and sediment barriers adequately installed (keyed into substrate) and maintained?	❑Yes ❑No	❑Yes ❑No	

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
4	Are discharge points and receiving waters free of any sediment deposits?	❑Yes ❑No	❑Yes ❑No	
5	Are storm drain inlets properly protected?	❑Yes ❑No	❑Yes ❑No	
6	Is the construction exit preventing sediment from being tracked into the street?	❑Yes ❑No	❑Yes ❑No	
7	Is trash/litter from work areas collected and placed in covered dumpsters?	❑Yes ❑No	❑Yes ❑No	
8	Are washout facilities (e.g., paint, stucco, concrete) available, clearly marked, and maintained?	❑Yes ❑No	❑Yes ❑No	
9	Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?	❑Yes ❑No	❑Yes ❑No	
10	Are materials that are potential stormwater contaminants stored inside or under cover?	❑Yes ❑No	❑Yes ❑No	
11	Are non-stormwater discharges (e.g., wash water, dewatering) properly controlled?	❑Yes ❑No	❑Yes ❑No	
12	(Other)	❑Yes ❑No	❑Yes ❑No	

Non-Compliance

Describe any incidents of non-compliance not described above:

CERTIFICATION STATEMENT

"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."

Print name and title: _____

Signature: _____ **Date:** _____

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

Appendix D

BMP Field Assessment Worksheet

Maintenance Inspection Checklist:
Bioretention / Dry Swale

Inspection Date: _____
Project: _____ Site Plan/Permit Number_____
Location: _____ Date BMP Placed in Service: _____
Date of Last Inspection: _____ Inspector_____
DEQ Certified Inspector: _____
As-Built Plans available: Y / N

Facility Type: Level 1 _____ Level 2 _____

Facility Location:
- G Surface
- G Underground

Hydraulic Configuration:
- ☐ On-line facility
- ☐ Off-line facility

Filtration Media:
- ☐ No filtration (e.g., dry well, permeable pavement, infiltration facility, etc.
- ☐ Sand
- ☐ Bioretention Soil
- ☐ Peat
- ☐ Other: _____

Type of Pre-Treatment Facility:
- ☐ Sediment forebay (above ground)
- ☐ Sedimentation chamber
- ☐ Plunge pool
- ☐ Stone diaphragm
- ☐ Grass filter strip
- ☐ Grass channel
- ☐ Other: _____

Ideally, Bioretention facilities should be inspected and cleaned up annually, preferably during the spring. During the first 6 months following construction of a bioretention facility, the site should be inspected at least twice after storm events that exceed 1/2-inch of rainfall. Watering is needed once a week during the first 2 months following installation, and then as needed during the first growing season (April-October), depending upon rainfall. If vegetation needs to be replaced, one-time spot fertilization may be needed, preferably using an organic rather than a chemical fertilizer. Each facility should have a customized routine maintenance schedule addressing issues such as the following: grass mowing, weeding, trash removal, .mulch raking and maintenance, erosion repair, reinforcement plantings, tree and shrub pruning, and sediment removal.

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to fix problem	Who Will Address Problem	Comments
Contributing Drainage Area	Adequate vegetation				Supplement as necessary	Owner or professional	
	There is excessive trash and debris				Remove immediately	Owner or professional	
	There is evidence of erosion and / or bare or exposed soil				Stabilize immediately	Owner or professional	
	There are excessive landscape waste or yard clippings				Remove immediately and recycle or compost	Owner or professional	
	Oil, grease or other unauthorized substances are entering the facility				Identify and control the source of this pollution. It may be necessary to erect fences, signs, etc	Owner or professional	
Pre-Treatment	There is adequate access to the pre-treatment facility				Establish adequate access	Professional and, perhaps, the locality	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to fix problem	Who Will Address Problem	Comments
Pre-Treatment (continued)	Excessive trash, debris, or sediment.				Remove immediately	Owner or professional	
Pre-Treatment (continued)	There is evidence of clogging (standing water, noticeable odors, water stains, algae or floating aquatic vegetation, or oil/grease)				Identify and eliminate the source of the problem. If necessary, remove and clean or replace the clogged material.	Professional	
	There is evidence of erosion and / or exposed soil				Stabilize immediately	Owner or professional	
	There is dead vegetation or exposed soil in the grass filter				Restabilize and revegetate as necessary	Owner or professional	
Inlets	Check for sediment build-up at curb cuts, gravel diaphragms or pavement edges that prevent flow from getting into the bed, and check for bypassing.				Remove sediment and correct any other problems that block inflow.	Owner or professional	
	There is excessive trash, debris, or sediment.				Remove immediately	Owner or professional	
	There is evidence of erosion at or around the inlet				Repair erosion damage and reseed or otherwise restabilize with vegetation	Owner or professional	
	Inflow is hindered by trees and/or shrubs.				Remove woody vegetation from points of inflow and directly above underdrains. (Trees and shrubs may be located closer to the perimeter.)	Owner or professional	
Side Slopes (*Annually, after major storms*)	There is evidence of rill or gully erosion or bare soil				Identify the source of erosion damage and prevent it from recurring. Repair erosion damage and reseed or otherwise restabilize with vegetation	Owner or professional	
	There is excess sediment accumulation				Remove immediately	Owner or professional	
	Side slopes support nuisance animals.				Animal burrows must be backfilled and compacted. Burrowing animals should be humanely removed from the area.	Professional	
Vegetation (*monthly*)	Plant composition is consistent with the approved plans and any stakes or wires are in good condition.				Determine if existing plant materials are at least consistent with general Bioretention design criteria and replace inconsistent species.	Professional	
	There should be 75-90% cover (mulch plus vegetation), and the mulch cover should be 2-3 inches deep.				Supplement vegetation and mulch as needed.		

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to fix problem	Who Will Address Problem	Comments
Vegetation (*monthly*) **(continued)**	There is evidence of hydrocarbons or other deleterious materials, resulting in unsatisfactory plant growth or mortality,				Replace contaminated mulch. If problem persists, test soils for hydrocarbons and other toxic substances. If excess levels are found, the soils, plants and mulch may all need to be replaced in accordance with the approved construction plans.	Professional	
	Invasive species or weeds make up at least 10% of the facility's vegetation				Remove invasive species and excessive weeds immediately and replace vegetation as needed.	Owner or professional	
	The grass is too high				Mow within a week. Grass species should be selected that have dense cover, are relatively slow growing, and require the least mowing and chemical inputs. Grass should be from 6-10 inches high.	Owner or professional	
	Vegetation is diseased, dying or dead				Remove and replace. Increase watering, but avoid using chemical fertilizers, unless absolutely necessary.	Professional	
	Winter-killed or salt-killed vegetation is present.				Replace with hardier species.	Owner or professional	
Filter Media (*Annually*)	The filter media is too low, too compacted, or the composition is inconsistent with design specifications				Raise the level, loosen and amend or replace the media, as needed, to be consistent with the state design criteria for Bioretention (85-88% sand 8-12% soil fines 3-5% organic matter in form of leaf compost). Other remediation options are described in the maintenance section of the state design criteria for Bioretention	Professional	
	The mulch is older than 3 years or is otherwise in poor condition				The mulch must be replaced every 2-3 years	Professional	
	There is evidence that chemicals, fertilizers, and/or oil/grease are present				Remove undesirable chemicals from media and facility immediately, and replace mulch or media as needed	Professional	
	There is excessive trash, debris, or sediment.				Remove trash and debris immediately. Check plant health and, without damaging plants, manually remove the sediment, especially if the depth exceeds 20% of the facility's design depth.	Owner or professional	
	There is evidence of concentrated flows, erosion or exposed soil				Identify the source of erosion damage and prevent it from recurring. Repair the erosion damage and reseed or otherwise restabilize with vegetation.	Professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to fix problem	Who Will Address Problem	Comments
Filter Media (*Annually*) **(continued)**	The filter bed is clogged and/or filled inappropriately				Redistribute the soil substrate and remove sediment within 2 weeks.	Professional	
	The topsoil is in poor condition (e.g., the pH level is not 6-7, the composition is inappropriate, etc.)				Ensure a 3-inch surface depth of topsoil consistent with the state design criteria for Bioretention (loamy sand or sandy loam texture, with less than 5% clay content, and organic matter content of at least 2%). If the pH is less than 6.5, spread limestone.	Professional	
Underdrain/ Proper Drainage	The perforated pipe is not conveying water as designed				Determine if the pipe is clogged with debris or if woody roots have pierced the pipe. Immediately clean out or replace the pipe, as necessary.	Professional	
	The underlying soil interface is clogged (there is evidence on the surface of soil crusting, standing water, the facility does not dewater between storms, or water ponds on the surface of basin for more than 48 hours after an event).				Measure the draw-down rate of the observation well for three days following a storm event in excess of 1/2 inches in depth. .After three days, if there is standing water on top but not in the underdrain, this indicates a clogged soil layer. If standing water is both on the surface and in the underdrain, then the underdrain is probably clogged. This should be promptly investigated and remediated to restore proper filtration. Grading changes may be needed or underdrain repairs made. The filter media may need to be raked, excavated and cleaned or replaced to correct the problem. Holes that are not consistent with the design and allow water to flow directly through a planter to the ground must be plugged.	Professional	
Planters	The planter is unable to receive or detain stormwater prior to infiltration. Water does not drain from the reservoir within 3-4 hours of after a storm event.				Identify and correct sources of clogging. Topsoil and sand/peat layer may need to be amended with sand or replaced all together.	Owner or professional	
	The planter has structural deficiencies, including rot, cracks, and failure, or the planter is unable to contain the filter media or vegetation				Make needed repairs immediately.	Owner or professional	
Outlet/ Overflow Spillway	Outlets are obstructed or erosion and soil exposure is evident below the outlet.				Remove obstructions and stabilize eroded or exposed areas.	Owner or Professional	
	There is excessive trash, debris, or sediment at the outlet				Remove immediately, and keep the contributing area free of trash and debris.	Owner or professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to fix problem	Who Will Address Problem	Comments
Outlet/ Overflow Spillway (continued)	Any grates present are in good condition				Repair or replace as necessary	Owner or professional	
Observation Well	Is the observation well still capped?				Repair, as necessary.	Professional	
Overall	Access to the Infiltration facility or its components is adequate				Establish adequate access. Remove woody vegetation and debris that may block access. Ensure that hardware can be opened and operated.	Professional and, perhaps, the locality	
	There is evidence of standing water				Fill in low spots and stabilize; correct flow problems causing ponding.	Owner or professional	
	Mosquito proliferation				Eliminate stangant pools and establish vegetation; treat for mosquitoes as needed. If sprays are considered, then a mosquito larvicide, such as Bacillus thurendensis or Altoside formulations can be applied *only if absolutely necessary*.	Owner or professional	
	Complaints from local residents				Correct real problems	Owner or professional	
	Encroachment on the bioretention area or easement by buildings or other structures				Inform involved property owners of BMPs status ; clearly mark the boundaries of the receiving pervious area, as needed	Owner or professional (and perhaps the locality)	

Maintenance Inspection Checklist:
Extended Detention Pond

Inspection Date: _____
Project: _____ Site Plan/Permit Number_____
Location: _____
Date BMP Placed in Service: _____
Date of Last Inspection: _____
DEQ Certified Inspector:_____
Owner/Owner's Representative: _____
As-Built Plans available: Y / N

Facility Type: Level 1 _____ Level 2 _____

Pond characteristics and functions
(check all that apply)

- ☐ Water quality treatment
- ☐ Extended detention included
- ☐ Channel protection
- ☐ Ties into groundwater
- ☐ Single cell pond
- ☐ Multiple-cell pond system
- ☐ Pond with one or more wetland cells

Type of Pre-Treatment Facility:

- ☐ Sediment forebay (above ground)
- ☐ Vegetated buffer area
- ☐ Grass filter strip
- ☐ Grass channel
- ☐ Other: _____

Hydraulic Configuration:

- ☐ On-line facility
- ☐ Off-line facility

Ideally, Extended Detention Ponds should be inspected annually. ED Ponds are prone to a high clogging risk at the ED low-flow orifice. Ideally, the orifice should be inspected at least twice a year after initial construction. The constantly changing water levels in ED Ponds make it difficult to mow or manage vegetative growth. The bottom of ED Ponds often become soggy, and water-loving tees such as willows may invade and will need to be managed. Periodic mowing of the stormwater buffer is only required along maintenance rights-of-way and the embankment. The remaining buffer may be managed as a meadow (mowing every other year) or forest. Frequent removal of sediment from the forebay (every 5-7 years, or when 50% of the forebay capacity is filled) is essential to maintain the function and performance of the ED Pond. Sediments excavated from ED Ponds are usually not considered toxic or hazardous, so they can be safely disposed of either by land application of land filling.

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Contributing Drainage Area	Adequate vegetation				Supplement as needed.	Owner	
	There is excessive trash and debris				Remove immediately.	Owner or professional	
	There is evidence of erosino and/or bare or exposed soil				Stabilize immediately.	Owner or professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
	There is excessive landscape waste and yard clippings				Remove immediately.	Owner or professional	
Pre-Treatment	There is adequate access to the pre-treatment facility				Establish adequate access	Professional and, perhaps, the locality	
	There is excessive trash and debris				Remove immediately.	Owner or professional	
	There is evidence of erosion and/or exposed soil.				Immediately identify and correct the cause of the erosion and stabilize the eroded or bare area.	Owner or professional	
	Sediment deposits are 50% or more of forebay capacity.				Dredge the sediment to restore the design capacity; sediment should be dredged from forebays at least every 5-7 years, and earlier, as needed.	Professional	
	The sediment marker is not vertical.				Adjust the sediment depth marker to a vertical alignment	Professional	
	There is evidence of clogging				Clear blockages of the riser or orifice(s) and make other adjustments needed to meet the approved design specifications	Professional	
	There is dead vegetation				Revegetate, as needed	Owner or professional	
Inlet	The inlet provides a stable conveyance into the pond				Stabilize immediately, as needed, and clear blockages.	Owner or professional	
	There is excessive trash, debris, or sediment.				Remove immediately	Owner or professional	
	There is evidence of erosion/undercutting at or around the inlet				Repair erosion damage and restabilize	Owner or professional	
	There is cracking, bulging, erosion or sloughing of the forebay dam.				Repair and restabilize immediately.	Professional	
	There is woody growth on the forebay dam.				Remove within 2 weeks of discovery.	Professional	
	There is evidence of nuisance animals.				Animal burrows must be backfilled and compacted. Burrowing animals should be humanely removed from the area.	Professional	
	There is more than 1 inch of settlement.				Add fill material and compact the soil to the design grade	Owner or Professional	
	The inlet alignment is incorrect.				Correct immediately.	Owner or Professional	
Vegetation	Plant composition is consistent with the approved plans				Determine if existing plant materials are consistent with the general Wet Pond design criteria, and replace inconsistent species.	Professional	
	Invasive species are present.				Remove invasive species immediately and replace vegetation as needed.	Professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Vegetation (continued)	Trees planted in the buffer and on wetland islands and peninsulas need watering during the first growing season				Consider watering every 3 days for first month, and then weekly during first year (April – October), depending on rainfall.	Owner or professional	
	Grass around the facility is overgrown				Mow (at least twice a year) to a height of 4"-9" high and remove grass clippings.	Owner or professional	
	Vegetation is dead or reinforcement planting is needed.				Remove and replace dead or dying vegetation.	Professional	
Permanent Pool and Side Slopes	There is excessive trash and/or debris.				Remove immediately	Owner or professional	
	There is evidence of sparse vegetative cover, erosion or slumping side slopes.				Repair and stabilize physical damage, and reseed or plant additional vegetation.	Owner or professional	
	There is evidence of nuisance animals.				Animal burrows must be backfilled and compacted. Burrowing animals should be humanely removed frm area.	Owner or professional	
	There is significant sediment accumulation.				Conduct a bathymetric study to determine the impact to design volumes, and dredge if necessary.	Professional	
Riser/Principle Spillway and Low-Flow Orifice(s)	There is adequate access to the riser for maintenance.				Establish adequate access	Professional and, perhaps, the locality	
	Pieces of the riser are deteriorating, misaligned, broken or missing.				Repair immediately.	Professional	
	Adjustable control valves are accessible and operational.				Repair, as needed.	Professional	
	Reverse-slope pipes and flashboard risers are in good condition.				Repair, as needed.	Professional	
	Seepage into conduit				Seal conduit	Professional	
	There is evidence of clogging				Clear blockages of the riser or orifice(s) and make other adjustments needed to meet the approved design specs.	Professional	
	There is excessive trash, debris, or other obstructions in the trash rack.				Remove immediately.	Owner or professional	
Dam/ Embankment and Abutments	There is sparse veg. cover, settlement, cracking, bulging, misalignment, erosion rills deeper than 2 inches, or sloughing.				Repair and restabilize immediately, especially after major storms.	Professional	
	There are soft spots, seepage, boggy areas or sinkholes.				Reinforce, fill and stabilize immediately.		

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Dam/ Embankment and Abutments (continued)	There is evidence of nuisance animals.				Animal burrows must be backfilled and compacted. Burrowing animals should be humanely removed from the area.		
	There is woody vegetation on the embankment.				Removal of woody species near or on the embankment and maintenance access areas should be done when discovered, but at least every 2 years.		
Overflow/Emergency Spillway	There is woody growth on the spillway.				Removal of woody species near or on the emergency spillway should be done when discovered, but at least every 2 years.	Owner or professional	
	There is excessive trash, debris, or other obstructions.				Remove immediately.	Owner or professional	
	There is evidence of erosion/back cutting				Repair erosion damage and reseed	Owner or professional	
	There are soft spots, seepage or sinkholes.				Reinforce, fill and stabilize immediately.	Owner or professional	
	Only one layer of stone armoring exists above the native soil.				Reinforce rip-rap or other armoring materials.	Professional	
Outlet	The outlet provides a stable conveyance from the pond.				Stabilize immediately, as needed, and clear blockages.	Owner or professional	
	There is woody growth within 5 feet of the outlet pipe barrel.				Prune vegetation back to leave a clear discharge area.	Owner or Professional	
	There is excessive trash, debris, or other obstructions.				Remove immediately.	Owner or professional	
	There are excessive sediment deposits at the outlet.				Remove sediment.	Professional	
	Discharge is causing undercutting, erosion or displaced rip-rap at or around the outlet.				Repair, reinforce or replace rip rap as needed, and restabilize.	Professional	
Overall	Access to the facility or its components is adequate.				Establish adequate access. Remove woody vegetation and debris that may block access. Ensure that hardware can be opened and operated.	Professional and, perhaps, the locality	
	Fences are inadequate				Collapsed fences must be restored to an upright position. Jagged edges and damaged fences must be repaired or replaced.	Professional	
	Water levels in one or more cells are abnormally high or low.				Clear blockages of the riser or orifice(s) and make other adjustments needed to meet the approved design specifications.	Professional	
	Complaints from local residents				Correct real problems.	Owner or professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Overall (continued)	Mosquito proliferation				Eliminate stagnant pools and stock the basin with mosquito fish to provide natural mosquito & midge control. Treat for mosquitoes as needed. If spraying, then use mosquito larvicide, (e.g., Bacillus thurendensis or Altoside formulations) *only if absolutely necessary*.	Owner or professional	
	Encroachment on the pond or easement by buildings or other structures				Inform involved property owners of BMPs status ; clearly mark the boundaries of the receiving pervious area, as needed	Owner or professional (and perhaps the locality)	
	Safety signage is not adequate.				Provide sufficient, legible safety signage.	Owner or professional	

Maintenance Inspection Checklist:
Grass Channel

Inspection Date: _____
Project: _____ Site Plan/Permit Number_____
Location: _____ Date BMP Placed in Service: _____
Date of Last Inspection: _____ Inspector_____
DEQ Certified Inspector: _____
As-Built Plans available: Y / N

Type of pretreatment facility:

- ☐ Sediment Forebay
- ☐ Check Dam
- ☐ Grass Filter Strip
- ☐ Stone Diaphragm
- ☐ Other: _____
- ☐ None

Ideally, these BMP areas should be inspected annually, with the inspection conducted spring when the health of the grass channel lining should be evident. Once established, Grass Channels have minimal maintenance needs outside of the spring clean up: regular mowing, repair of check dams and other measures to maintain the hydraulic efficiency of the channel and a dense, healthy grass cover.

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Contributing Drainage Area	There is excessive trash and debris				Remove immediately	Owner or professional	
	There is evidence of erosion and / or bare or exposed soil				Stabilize immediately	Owner or professional	
Pre-treatment	There is adequate access to the pre-treatment facility				Establish adequate access	Professional and, perhaps, the locality	
	There is excessive trash / debris / sediment in the facility				Remove immediately	Owner or professional	
	There is evidence of erosion and / or exposed soil				Stabilize immediately	Owner or professional	
	There is evidence of diaphragm or other clogging				Identify and eliminate the source of the problem; . If necessary, remove and clean or replace the stone.	Professional	
	There is dead vegetation and evidence of erosion and / or exposed soil				Repair erosion damage, and reseed or otherwise restabilize with vegetation	Owner or professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Inlets	The inlet is not maintaining a calm flow of water entering the channel or the conveyance capacity is blocked				Remove trash and sediment accumulated at the inflow. Sources of sediment and debris must be identified and corrected. Stone splash pads must be replenished to prevent erosion.	Owner or professional	
	There is evidence of erosion at / around inlet				Repair erosion damage, and reseed or otherwise restabilize with vegetation.	Owner or professional	
Vegetation	Native soil is exposed or erosion channels are forming				If sediment deposits are thick enough to damage or kill vegetation, remove the sediment by hand, while protecting the vegetation.	Owner or Professional	
	Grass height does not reach standards				Grass channels must be mowed to keep grass at a height of 4" to 9". Remove grass clippings after mowing.	Owner or Professional	
	Vegetation requires fertilizer or pest control				Fertilize according to specifications. Use organic rather than chemical fertilizer. If feasible, use compost. Use integrated pest management (IPM) techniques to minimize the use of pesticides and herbicides.	Owner or Professional	
	The plant composition is consistent with the approved plans				Make a judgment regarding whether plants need to be replaced, and replace if necessary	Professional	
	Invasive species or weeds are present				Correctly destroy and/or remove the invasive species; make a judgment regarding whether other weeds need to be removed, and remove if necessary	Owner or professional	
	There is dead vegetation and/or exposed soil				Reseed or replace dead vegetation and exposed soil areas	Owner or professional	
Side Slopes	Evidence of erosion on side slopes, introducing sediment into the swale.				Repair erosion damage immediately. Stabilize slopes using appropriate erosion control measures and plant appropriate vegetation.	Owner or Professional	
Check Dams	Dam is not functioning properly.				Check upstream and downstream sides of check dams for evidence of undercutting, side cutting or erosion and repair immediately.	Professional	
	There is a large accumulation of sediment or trash/debris behind the check dam.				Remove sediment when the accumulation exceeds 25% of the original Tv. Remove trash/debris and clear blockages of weep holes.	Professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Channel Bottom	Undesirable plant species, accumulations of fallen leaves, and other debris from deciduous plant foliage are present.				Remove woody vegetation from the channel. Prune adjacent trees and shrubs to keep the channel clear. Remove/replace invasive veg. or weeds if they cover < 25% of the channel area. Remove accumulated organic matter and debris immediately.	Owner or Professional	
	Base soils are compacted. The practice does not draw down within 48 hours after a storm.				De-thatch and aerate the channel. Remove sediment when the accumulation exceeds 25% of channel volume. Restore the original cross section and revegetate the channel.	Owner or Professional	
	There is unhealthy or dead grass cover or evidence of erosion, braiding, or excessive ponding in the channel bottom				Fill in low spots, repair erosion, and add reinforcement planting to maintain 90% turf cover. Reseed any salt killed vegetation and stabilize immediately. Keep the grass in a healthy, vigorous condition at all times, since it is the primary erosion protection for the channel.	Owner or Professional	
Channel Outlet	The outlet does not maintain sheet flow of water exiting the channel (unless a collection drain is used).				The source of erosion damage must be identified and controlled when native soil is exposed or erosion channels are forming. Check the channel outlet and all road crossings for bank stability and evidence of piping or scour holes.	Owner or professional	
	The outlet provides stable conveyance out of the channel				Stabilize immediately, as needed.	Professional	
	There is excessive trash, debris or sediment accumulation at outlet				Check inflow points for cogging and remove any trash and sediment deposits	Owner or professional	
	There is dead vegetation and/or exposed soil				Reseed or replace dead vegetation and exposed soil areas	Owner or professional	
Pest Control	There is evidence of standing water and mosquito habitat or rodent damage				Pest control measures must be taken when mosquitoes and/or rodents are found to be present. If sprays are considered, then a mosquito larvicide, such as Bacillus thurendensis or Altoside formulations can be applied *only if absolutely necessary*. Holes in the ground located in and around the swale must be filled and stabilized with vegetation.	Professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Overall	Access to the Grass Channel is adequate				Establish adequate access	Professional and, perhaps, the locality	
	Complaints from local residents				Correct real problems	Owner or professional	
	Encroachment by buildings or other structures				Clearly mark BMP and inform those involved of the BMPs.	Owner, pro (and perhaps the locality)	

Sample VSMP Maintenance Inspection Checklist: Infiltration

Inspection Date: _____
Project: _____ Site Plan/Permit Number_____
Location: _____ Date BMP Placed in Service_____
Date of Last Inspection: _____
DEQ Certified Inspector: _____
Owner/Owner's Representative: _____
As-Built Plans available: Y / N

Facility Type: Level 1 _____ Level 2 _____

Facility Location:
- G Surface
- G Underground

Hydraulic Configuration:
- ☐ On-line facility
- ☐ Off-line facility

Filtration Media:
- ☐ No filtration (e.g., dry well, permeable pavement, infiltration facility, etc.
- ☐ Sand
- ☐ Bioretention Soil
- ☐ Peat
- ☐ Other: _____

Type of Pre-Treatment Facility:
- ☐ Sediment forebay (above ground)
- ☐ Sedimentation chamber
- ☐ Plunge pool
- ☐ Stone diaphragm
- ☐ Grass filter strip
- ☐ Grass channel
- ☐ Other: _____

Ideally, infiltration facilities should be inspected annually. Spill Prevention measures should be used around infiltration facilities when handling substances that contaminate stormwater. Releases of pollutants should be corrected as soon as identified.

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Contributing Drainage Area	There is excessive trash and debris				Remove immediately	Owner or professional	
	There is evidence of erosion and / or exposed soil				Stabilize immediately	Owner or professional	
	Vegetative cover is adequate				Supplement as needed	Owner or professional	
	There are excessive landscape waste or yard clippings				Remove immediately and recycle or compost	Owner or professional	
Pre-Treatment Facility	There is adequate access to the pre-treatment facility				Establish adequate access	Professional and, perhaps, the locality	
	There is excessive trash, debris, or sediment.				Remove immediately	Owner or professional	
	There is evidence of erosion and/or exposed soil				Stabilize immediately	Owner or professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Pre-Treatment Facility (continued)	There is evidence of clogging (standing water, noticeable odors, water stains, algae or floating aquatic vegetation)				Identify and eliminate the source of the problem. If necessary, remove and clean or replace the clogged material.	Professional	
	There is dead vegetation or exposed soil in the grass filter				Restabilize and revegetate as necessary	Owner or professional	
Inlets	Inlets provide a stable conveyance into facility				Stabilize immediately, as needed.	Owner or professional	
	There is excessive trash/debris/sediment.				Remove immediately	Owner or professional	
	There is evidence of erosion at or around the inlet				Repair erosion damage and reseed or otherwise restabilize with vegetation	Owner or professional	
Embankment, Flow Diversion Structures (e.g., Dikes, Berms, etc.) and Side Slopes	There is evidence of erosion or bare soil				Identify the source of erosion damage and prevent it from recurring. Repair erosion damage and reseed or otherwise restabilize with vegetation	Owner or professional	
	There is excess sediment accumulation				Remove immediately	Owner or professional	
	Water is not detained in the infiltration basin				Check for a breach in the containment structure and repair immediately.	Professional	
	Side slopes support nuisance animals.				Animal burrows must be backfilled and compacted. Burrowing animals should be humanely removed frm area.	Professional	
Maintaining Facility Capacity and Proper Drainage	Look for weedy growth on the stone surface indicating sediment accumulation and potential clogging				Identify and control sources of sediment and debris.Remove sediment and debris in excess of 4” in depth every 2-5 years (or sooner if performance is affected).	Professional	
	Measure the draw-down rate of the observation well for three days following a storm event in excess of 1/2 inches in depth. If standing water is still observed after three days, this is a clear sign that clogging is a problem.				Immediately clear debris from the underdrain. Replace the underdrain if necessary. If needed, regrade and till to restore infiltration capacity (the need for this can be prevented by preventing upstream erosion and subsequent sediment transport to the facility).	Professional	
	There is excessive trash/debris				Remove immediately	Owner or professional	
Vegetation	Grass within the practice is overgrown				Grass must be mowed to a height of 4”-9” and grass clippings removed (ideally recycled or composted).	Owner or professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Vegetation (continued)	Pioneer trees are sprouting in the base of the facility				Remove trees to prevent roots from puncturing the filter fabric, allowing sediment to enter		
	Vegetation forms an overhead canopy that may drop leaf litter, fruit and other vegetative materials that may cause clogging.				Prune or remove vegetation as necessary	Owner or professional	
Observation Well	Is each observation well still capped?				Repair, as necessary.	Professional	
Outlet	Outlets are obstructed or erosion and soil exposure is evident below the outlet.				Remove obstructions and stabilize eroded or exposed areas.	Owner or Professional	
	Evidence of flow bypassing facility				Repair immediately	Professional	
	There is excessive trash, debris, or sediment at the outlet				Remove immediately	Owner or professional	
Overflow or Emergency Spillway	The pipe or spillway is not effectively conveying excess water to an adequate receiving system				Clear sediment and debris whenever 25% or more of the conveyance capacity is blocked. When damaged pipe is discovered, it must be repaired or replaced immediately. Identify and control sources of erosion damage. Replace or reinforce stone armament whenever only one layer of stone remains.	Professional	
Structural Components	Evidence of structural deterioration				Repair as necessary	Professional	
	Evidence of spalling or cracking of structural components				Repair or replace, as necessary	Professional	
	Grates are in good condition				Repair or replace, as necessary	Owner or professional	
Overall	Access to the Infiltration facility or its components is adequate				Establish adequate access. Remove woody vegetation and debris that may block access. Ensure that manholes, valves and/or locks can be opened and operated.	Professional and, perhaps, the locality	
	There is evidence of standing water				Fill in low spots and stabilize; correct flow problems causing ponding	Owner or professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Overall (continued)	Mosquito proliferation				Eliminate standing water and establish vegetation; treat for mosquitoes as needed. If sprays are considered, then a mosquito larvicide, such as Bacillus thurendensis or Altoside formulations can be applied *only if absolutely necessary*.	Owner or professional	
	Complaints from local residents				Correct real problems	Owner or professional	
	Encroachment on the infiltration area or easement by buildings or other structures				Inform involved property owners of BMPs status ; clearly mark the boundaries of the receiving pervious area, as needed	Owner or professional (and perhaps the locality)	

Maintenance Inspection Checklist:
Wet Pond

Inspection Date: _____
Project: _____ Site Plan/Permit Number_____
Location: _____ Date BMP Placed in Service: _____
Date of Last Inspection: _____
DEQ Certified Inspector:_____
Owner/Owner's Representative: _____
As-Built Plans available: Y / N

Facility Type: Level 1 _____ Level 2 _____

Pond characteristics and functions
(check all that apply)

- ☐ Water quality treatment
- ☐ Extended detention included
- ☐ Channel protection
- ☐ Ties into groundwater
- ☐ Single cell pond
- ☐ Multiple-cell pond system
- ☐ Pond with one or more wetland cells

Hydraulic Configuration:

- ☐ On-line facility
- ☐ Off-line facility

Type of Pre-Treatment Facility:

- ☐ Sediment forebay (above ground)
- ☐ Vegetated buffer area
- ☐ Grass filter strip
- ☐ Grass channel
- ☐ Other: _____

During the first 6 months following construction, the pond should be inspected twice after storm events that exceed 1/2 inch of rainfall. The aquatic benches should be planted with emergent wetland species, consistent with the Wet Pond design specifications. Bare or eroding areas in the CDA or around the pond buffer should be stabilized immediately with grass cover. Trees planted in the buffer need to be watered every 3 days for the first month, and then weekly during the remainder of the first growing season (April-October), depending on rainfall. Due to typical vegetation survival problems, it is typical to plan and budget for a round of reinforcement planting during the second growing season after construction. Wet Ponds should be inspected and cleaned up annually.

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Contributing Drainage Area	Adequate vegetation				Supplement as needed	Owner	
	There is excessive trash and debris				Remove immediately.	Owner or professional	
	There is evidence of erosion and/or bare or exposed soil				Stabilize immediately.	Owner or professional	
	There are excessive landscape waste and yard clippings				Remove immediately and recycle or compost	Owner or professional	
Pre-Treatment	There is adequate access to the pre-treatment facility				Establish adequate access	Professional and, perhaps, the locality	
	There is excessive trash and debris				Remove immediately.	Owner or professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Pre-Treatment (continued)	There is evidence of erosion and/or exposed soil.				Immediately identify and correct the cause of the erosion and stabilize the eroded or bare area.	Owner or professional	
	Sediment deposits are 50% or more of forebay capacity.				Dredge the sediment to restore the design capacity; sediment should be dredged from forebays at least every 5-7 years, and earlier if performance is being affected.	Professional	
	The sediment marker is not vertical.				Adjust the sediment depth marker to a vertical alignment	Professional	
	There is evidence of clogging				Clear blockages of the riser or orifice(s) and make other adjustments needed to meet the approved design specifications	Professional	
Inlet	The inlet provides a stable conveyance into the pond				Stabilize immediately, as needed, and clear blockages.	Owner or professional	
	There is excessive trash, debris, or sediment.				Remove immediately	Owner or professional	
	There is evidence of erosion/undercutting at or around the inlet				Repair erosion damage and restabilize	Owner or professional	
	There is cracking, bulging, erosion or sloughing of the forebay dam.				Repair and restabilize immediately.	Professional	
	There is woody growth on the forebay dam.				Remove within 2 weeks of discovery.	Professional	
	There is evidence of nuisance animals.				Animal burrows must be backfilled and compacted. Burrowing animals should be humanely removed from the area.	Professional	
	There is more than 1 inch of settlement.				Add fill material and compact the soil to the design grade	Owner or Professional	
	The inlet alignment is incorrect.				Correct immediately.	Owner or Professional	
Vegetation	Plant composition is consistent with the approved plans				Determine if existing plant materials are consistent with the general Wet Pond design criteria, and replace inconsistent species.	Professional	
	Invasive species are present.				Remove invasive species immediately and replace vegetation as needed.	Professional	
	Trees planted in the buffer and on wetland islands and peninsulas need watering during the first growing season				Consider watering every 3 days for first month, and then weekly during first year (April – October), depending on rainfall.	Owner or professional	
	Grass around the facility is overgrown				Mow (at least twice a year) to a height of 4”-9” high and remove grass clippings	Owner or professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Vegetation (continued)	Vegetation is dead or reinforcement planting is needed.				Remove and replace dead or dying vegetation.	Professional	
Permanent Pool and Side Slopes	There is excessive trash and/or debris.				Remove immediately	Owner or professional	
	There is evidence of sparse vegetative cover, erosion or slumping side slopes.				Repair and stabilize physical damage, and reseed or plant additional vegetation.	Owner or professional	
	There is evidence of nuisance animals.				Animal burrows must be backfilled and compacted. Remove burrowing animals humanely from the area.		
	There is significant sediment accumulation.				Conduct a bathymetric study to determine the impact to design volumes, and dredge if necessary.	Professional	
Riser/Principle Spillway and Low-Flow Orifice(s)	There is adequate access to the riser for maintenance.				Establish adequate access	Professional and, perhaps, the locality	
	Pieces of the riser are deteriorating, misaligned, broken or missing.				Repair immediately.	Professional	
	Adjustable control valves are accessible and operational.				Repair, as needed.	Professional	
	Reverse-slope pipes and flashboard risers are in good condition.				Repair, as needed.	Professional	
	There is evidence of clogging				Clear blockages of the riser or orifice(s) and make other adjustments needed to meet the approved design specs.	Professional	
	Seepage into conduit				Seal the conduit	Professional	
	There is excessive trash, debris, or other obstructions in the trash rack.				Remove immediately.	Owner or professional	
Dam/ Embankment and Abutments	There is sparse veg. cover, settlement, cracking, bulging, misalignment, erosion rills deeper than 2 inches, or sloughing of the dam.				Repair and restabilize immediately, especially after major storms.	Professional	
	There are soft spots, seepage, boggy areas or sinkholes present.				Reinforce, fill and stabilize immediately.		
	There is evidence of nuisance animals.				Animal burrows must be backfilled and compacted. Burrowing animals should be humanely removed frm area.		
	There is woody vegetation on the embankment.				Removal of woody species near or on the embankment and maintenance access areas should be done when discovered, but at least every 2 years.		

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Overflow/ Emergency Spillway	There is woody growth on the spillway.				Removal of woody species near or on the emergency spillway should be done when discovered, but at least every 2 years.	Owner or professional	
	There is excessive trash, debris, or other obstructions.				Remove immediately.	Owner or professional	
	There is evidence of erosion/back cutting				Repair erosion damage and reseed	Owner or professional	
	There are soft spots, seepage or sinkholes.				Reinforce, fill and stabilize immediately.	Owner or professional	
	Only one layer of stone armoring exists above the native soil.				Reinforce rip-rap or other armoring materials.	Professional	
Outlet	The outlet provides a stable conveyance from the pond.				Stabilize immediately, as needed, and clear blockages.	Owner or professional	
	There is woody growth within 5 feet of the outlet pipe barrel.				Prune vegetation back to leave a clear discharge area.	Owner or Professional	
	There is excessive trash, debris, or other obstructions.				Remove immediately.	Owner or professional	
	There are excessive sediment deposits at the outlet.				Remove sediment.	Professional	
	Discharge is causing undercutting, erosion or displaced rip-rap at or around the outlet.				Repair, reinforce or replace rip rap as needed, and restabilize.	Professional	
Overall	Access to the facility or its components is adequate.				Establish adequate access. Remove woody vegetation and debris that may block access. Ensure that hardware can be opened and operated.	Professional and, perhaps, the locality	
	Fences are inadequate				Collapsed fences must be restored to an upright position. Jagged edges and damaged fences must be repaired or replaced.	Professional	
	Water levels in one or more cells are abnormally high or low.				Clear blockages of the riser or orifice(s) and make other adjustments needed to meet the approved design specifications.	Professional	
	Complaints from local residents				Correct real problems.	Owner or professional	
	Mosquito proliferation				Eliminate stagnant pools and stock the basin with mosquito fish to provide natural mosquito & midge control. Treat for mosquitoes as needed. If spraying, then use mosquito larvicide, (e.g., Bacillus thurendensis or Altoside formulations) *only if absolutely necessary*.	Owner or professional	

Element of BMP	Potential Problem	Problem? Y / N	Investigate? Y / N	Repaired? Y / N	How to Fix Problem	Who Will Address Problem	Comments
Overall (continued)	Encroachment on the pond or easement by buildings or other structures				Inform involved property owners of BMPs status ; clearly mark the boundaries of the receiving pervious area, as needed	Owner or professional (and perhaps the locality)	
	Safety signage is not adequate.				Provide sufficient, legible safety signage.	Owner or professional	

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

Appendix E

Land Disturbance and Project Tracking Sheet

Norfolk State University
Regulated Land-Disturbing Activities

Project Name	Location	Project Manager Contact Information	RLD Contact Information	Est Area (ac)	Est Start Date	Est Completion Date
Brown Hall	Corprew Avenue, Norfolk, Virginia, 23504	Terry Woodhouse	SD Ballard Construction Co., 2828 Shipps Corner Rd., Virginia Beach, VA RLD# 42410	10.79	12/01/2014	12/31/2018 Completed
Residential Facility	Corprew Avenue, Norfolk, Virginia, 23504	Terry Woodhouse	SD Ballard Construction Co., 2828 Shipps Corner Rd., Virginia Beach, VA RLD# 42410	6.55	8/01/2018	2/01/2019 Expected Completion
Synthetic Turf Football Field	Presidential Avenue Norfolk, Virginia, 23504	Terry Woodhouse	RAD Sports 171 VFW Drive Rockland, MA 02370 RLD# 05491	2.05	6/1/2018	9/01/2018 Completed

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

Appendix F

Non-VESCH Specifications

Norfolk State University, Virginia
Annual Standards and Specifications for ESC and SWM

CONSTRUCTION ENTRANCE / CONSTRUCTION ROAD STABILIZATION

ALTURNAMATS & VERSAMATS

Definition

Temporary protective mats placed at points of ingress and egress or for access to other construction activities on-site.

Purpose

To protect existing ground cover from damage and provide tracking for vehicular access.

Conditions Where Practice Applies

Wherever traffic will be entering or leaving a construction site, particularly for areas that only need access for a short amount of time (2 weeks or less) when installing a construction entrance or construction road stabilization is not practicable.

Planning Considerations

Minimum Standard #17 requires that provisions be made to minimize the transport of sediment by vehicular traffic onto a public or paved surface. Providing matting to prevent tires from coming into contact with grassed or denuded areas will minimize possible tracking and assist in keeping existing vegetation in good condition. This measure is not acceptable where vehicular traffic will be driving off

of matting onto denuded areas, but may be used to connect to existing construction entrances or construction road stabilization.

Construction Specifications

1. Lay down mats where vehicle/equipment tires/tracks may come into contact with the ground.
2. To keep mats joined together, links may be installed.


VersaMATS
Most Versatile Mats in the Industry
Reverse Side
LIFETIME
VersaMATS
Easy to Walk On - Safe to Work On - Great to Drive On
Featuring an Exclusive Slip-Resistant Tread Design
VersaMATS literally are the most versatile ground protection mats in the industry. The flat, slip-resistant tread permits pedestrians to walk safely on the mats, yet they are as rugged as the original AlturnaMATS. The reverse side has the same diamond plate tread as AlturnaMATS, providing great traction for vehicles.
VersaMATS are also available in white, making them ideal for safe use as long walkways even in darkened conditions. They are also available smooth on one side.
• Leaves turf smooth even in soft soil conditions
• Tough 1/2" thick polyethylene
• Two practical cleat designs… for walking and vehicle traffic
• Withstand 120-ton loads
• Build a temporary roadway or walkway in minutes
• Lock together with Turn-A-Links
• Limited Lifetime Warranty
Sizes to meet your needs
Black White Weight
4' x 8' 4' x 8' 86 lbs.
3' x 8' 3' x 8' 64.5 lbs.
2' x 8' 2' x 8' 43 lbs.
Utilities
Golf Courses
Cemeteries

Norfolk State University, Virginia
Annual Standards and Specifications for ESC and SWM

AlturnaMATS Accessories

Turn-A-Links

Single Turn-A-Link

Double Turn-A-Link

Galvanized Turn-A-Link: Single or Double

Steel links lock mats together to form a semi-permanent, yet portable, continuous roadway, walkway or working platform.

The same steel material, but with a galvanized coating: easier to locate & harder to rust.

		Item #	Ship Wt.
Round Links	Single	RTL-S-G	8 oz.
	Double	RTL-G-G	20 oz.
Flat Links	Single	FTL-S-G	8 oz.
	Double	FLT-D-G	20 oz.
EZ Links	Single	EZL-S	4 oz.
	Double	EZL-D	6 oz.

Handi-Hooks

*Alturna*MATS' Handi-Hooks make moving mats easier, even in wet areas. Made of steel rod, painted white.

Length	Weight
3' (91.44 cm)	2.5 lbs. (1.13 kg)

E-Z Link System

E-Z Links are a quick & convenient linking system for the *Alturna*MATS VersaMATS. The links are available in single or double, & are suitable for pedestrian applications as well as movement of light, compact equipment (less than 12,000 GVW) when on stable ground conditions.

Single E-Z Link

MAT-PAK

This complete package is the handy way to transport and store your *Alturna*MATS.

Consists of:

12 Mats (4' x 8' or 3' x 8')
1 Metal storage, skid rack
20 Single Turn-A-Links
2 Handi-Hooks
2 Ratchet Straps

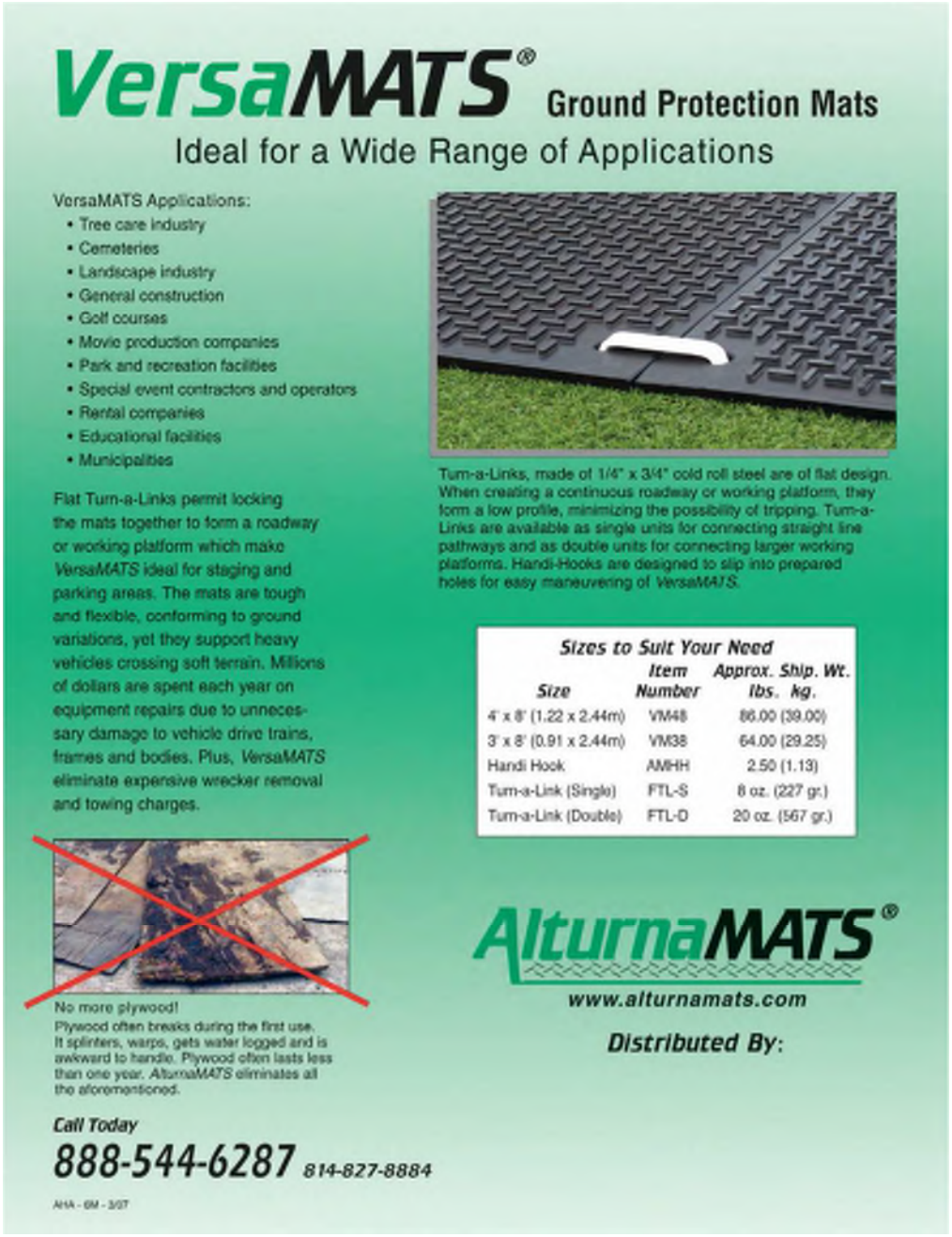
MAT-PAK	Item No.	Weight
Original Diamond Plate		
Black - 4' x 8' Package	AMCP4	1126 lbs.
Black - 3' x 8' Package	AMCP3	868 lbs.
White - 4' x 8' Package	WMCP4	1126 lbs.
White - 3' x 8' Package	WMCP3	868 lbs.
VersaMATS		
Black - 4' x 8' Package	VMCP4	1126 lbs.
Black - 3' x 8' Package	VMCP3	868 lbs.
White - 4' x 8' Package	WVCP4	1126 lbs.
White - 3' x 8' Package	WVCP3	868 lbs.

AlturnaMATS®

Phone: 888-544-6287 • Fax: 814-827-2903 • E-mail: sales@alturnamats.com

www.alturnamats.com

AHA - 408



VersaMATS® Ground Protection Mats

Ideal for a Wide Range of Applications

VersaMATS Applications:

- Tree care industry
- Cemeteries
- Landscape industry
- General construction
- Golf courses
- Movie production companies
- Park and recreation facilities
- Special event contractors and operators
- Rental companies
- Educational facilities
- Municipalities

Flat Turn-a-Links permit locking the mats together to form a roadway or working platform which make *VersaMATS* ideal for staging and parking areas. The mats are tough and flexible, conforming to ground variations, yet they support heavy vehicles crossing soft terrain. Millions of dollars are spent each year on equipment repairs due to unnecessary damage to vehicle drive trains, frames and bodies. Plus, *VersaMATS* eliminate expensive wrecker removal and towing charges.

Turn-a-Links, made of 1/4" x 3/4" cold roll steel are of flat design. When creating a continuous roadway or working platform, they form a low profile, minimizing the possibility of tripping. Turn-a-Links are available as single units for connecting straight line pathways and as double units for connecting larger working platforms. Handi-Hooks are designed to slip into prepared holes for easy maneuvering of *VersaMATS*.

Sizes to Suit Your Need

Size	Item Number	Approx. Ship. Wt. lbs. kg.
4' x 8' (1.22 x 2.44m)	VM48	86.00 (39.00)
3' x 8' (0.91 x 2.44m)	VM38	64.00 (29.25)
Handi Hook	AMHH	2.50 (1.13)
Turn-a-Link (Single)	FTL-S	8 oz. (227 gr.)
Turn-a-Link (Double)	FTL-D	20 oz. (567 gr.)

No more plywood!

Plywood often breaks during the first use. It splinters, warps, gets water logged and is awkward to handle. Plywood often lasts less than one year. *AlturnaMATS* eliminates all the aforementioned.

AlturnaMATS®

www.alturnamats.com

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AHA - 6M - 3/07

Maintenance/Inspections

The matting and access way shall be maintained in a condition which will prevent tracking or flow of mud onto public rights- of-way and paved surfaces. All materials spilled, dropped, or washed from vehicles onto roadways or into storm drains must be removed immediately. Where sediment is transported onto a paved or public road surface, the road surface shall be cleaned thoroughly at the end of the day as required my minimum standard #17.

If matting becomes separated from adjacent pieces, links will need to be installed to keep mats aligned as needed.

DEWATERING

DANDY DEWATERING BAG / DIRT BAG

Definition

A temporary settling and filtering device for water which is discharged from dewatering activities.

Purpose

To filter sediment-laden water prior to the water being discharged from the site.

Conditions Where Practice Applies

Wherever sediment-laden water must be removed from a construction site by means of pumping.

Planning Consideration

Minimum Standard #19 requires that properties and waterways downstream be protected from sediment deposition. Water which is pumped from a construction site usually contains a large amount of sediment. A dewatering structure is designed to remove the sediment before water is released off-site.

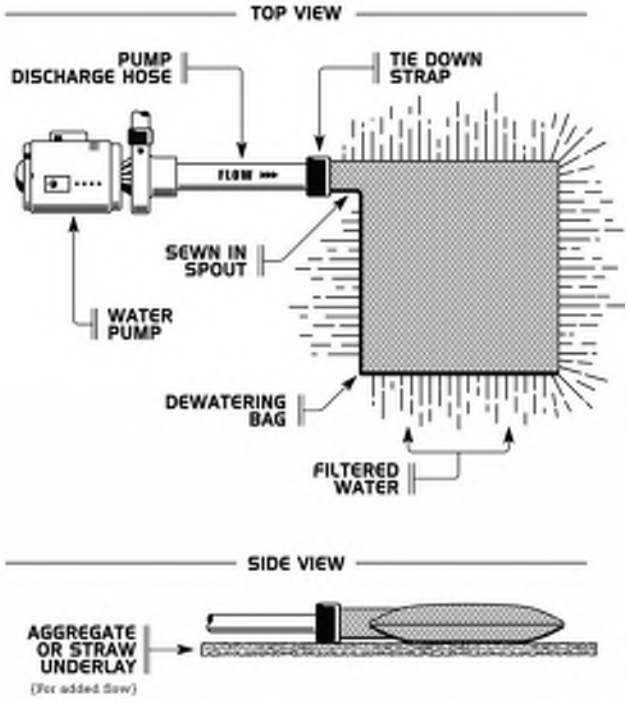
A dewatering structure may not be needed if there is a well stabilized, vegetated area on-site to which water may be discharged. The area must be stabilized so that it can filter sediment and at the same time withstand the velocity of the discharged water without eroding. A minimum filtering length of 75 feet must be available in order for such a method to be feasible.

Design Criteria

1. The Dewatering Bag used for each project must be sized appropriately for the pump used. DO NOT allow a pump to be used that discharges greater than the allowable rate allowed for the Dewatering Bag to be used.

Construction Specifications

1. Lifting straps (not included) should be placed under the unit to facilitate removal after use.
2. Unfold Dewatering Bag on a stabilized area over dense vegetation, straw, or gravel (if an increased drainage area is needed) or as detailed in plans.
3. Insert discharge hose from pump into Bag a minimum of six (6) inches and tightly secure with attached strap to prevent water from flowing out of the unit without being filtered.
4. Must be monitored during use.



Maintenance/Inspections

1. Ensure water is not discharging from the hose connection point. Stop pumping and re-secure if needed.
2. Replace the unit when ½ full of sediment or when sediment has reduced the flow rate of the pump discharge to an impractical rate.

DIVERSION DIKE

DIVERSION DIKE OF COMPACTED 21A OR #26 STONE

Definition

A temporary ridge of compacted stone constructed at the top or base of a sloped area of a proposed

construction site. Purpose

1. To divert stormwater runoff from upslope drainage areas away from construction activity.
2. To divert sediment-laden runoff from a disturbed area to a sediment-trapping facility such as a sediment trap or sediment basin.

Conditions Where Practice Applies

Wherever stormwater runoff must be temporarily diverted on an impervious surface (pavement, concrete, compacted gravel, etc.) where an earthen diversion dike is not practical to protect disturbed areas and slopes or retain sediment on site during construction. These structures generally have a life expectancy of 18 months or less, which can be prolonged with proper maintenance.

Planning Considerations

A temporary diversion dike of compacted 21A or #26 stone is intended to divert overland sheet flow to a stabilized outlet or a sediment-trapping facility. When used at the up-slope from construction activity, the structure prevents additional stormwater runoff from flowing through the construction site and the potential of greater erosion and sediment transportation. When used down-slope from construction activity, the structure protects adjacent and downstream areas by diverting sediment-laden runoff to a sediment trapping facility.

The dike itself must be adequately compacted to prevent erosion of the dike itself. The dike must have a positive grade to assure drainage, but if the gradient is too great, precautions must be taken to prevent erosion due to high velocity channel flow behind the dike. The cross-section of the channel which runs behind the dike should be of a parabolic or trapezoidal shape to help inhibit a high velocity of flow which could arise in a vee ditch.

Design Criteria

Drainage Area – The maximum allowable drainage area is 5 acres.

Height – The minimum allowable height measured from the upslope side of the dike is 18 inches.
Side Slopes – 1 1/2:1 or flatter, along with a minimum base width of 4.5 feet.

Grade – The channel behind the dike shall have a positive grade to a stabilized outlet.

Construction Specifications

1. Temporary diversion dikes of compacted 21A or #26 stone must be installed as a first step in the land-disturbing activity and must be functional prior to upslope land disturbance.
2. The dike shall be adequately compacted to prevent failure.
3. The dike should be located to minimize damages by construction operations and traffic.

Maintenance

The measure shall be inspected after every storm and repairs made to the dike, flow channel, outlet or sediment trapping facility as necessary. Once every two weeks, whether a storm event has occurred or not, the measure shall be inspected and repairs made as needed. Damages caused by construction traffic or other activity must be repaired before the end of the working day.

INLET PROTECTION

DANDY BAG / DANDY CURB / DANDY CURB BAG / DANDY CURB SACK / DANDY SACK

Definition

A temporary filter or a storm drain inlet or curb inlet.

Purpose

To prevent sediment from entering storm drainage systems prior to permanent stabilization of the

disturbed area. Conditions Where Practice Applies

Where existing or proposed grated storm drain inlets are to be made operational before project completion and permanent stabilization of the corresponding disturbed drainage area.

Planning Considerations

Minimum Standard #10 requires that all storm drain inlets that are made operational during construction shall be protected so that sediment-laden water cannot enter the conveyance system without first being filtered or otherwise treated to remove sediment.

This practice contains several types of inlet filters which have different applications dependent upon site conditions and the type of inlet. The following inlet protection devices are for drainage areas of one acre or less. Runoff from larger disturbed areas should be routed to a temporary sediment trap (VESCH Std. & Spec. 3.13) or a temporary sediment basin (VESCH Std. & Spec. 3.14).

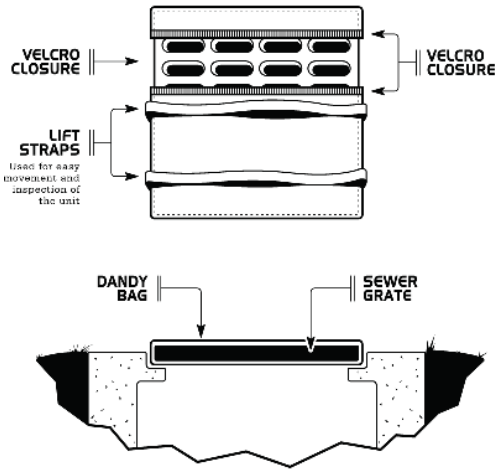
Design Criteria

1. The drainage area shall be no greater than 1 acre.
2. Dandy Bags, Curb Bags, and Curb Sacks are to be sized/ordered to fit the appropriately sized grate. (ie. A 3'x3' bag should not be used for a 2'x2' grate.)

Construction Specifications

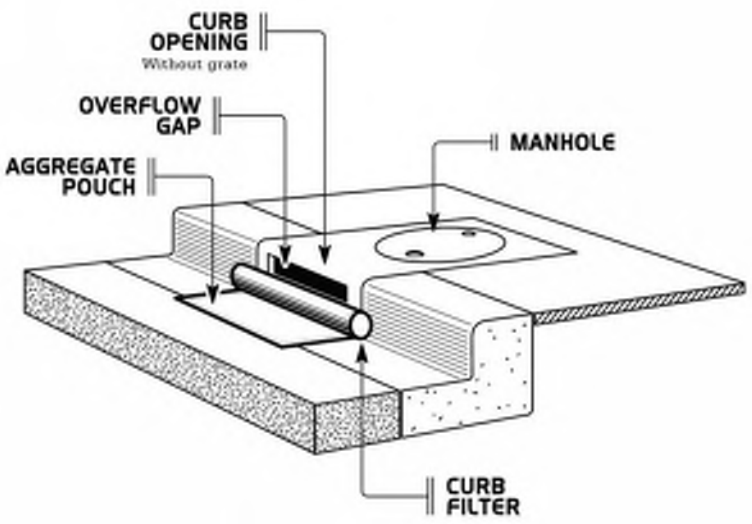
Dandy Bag

1. Place the empty Dandy Bag over the grate as the grate stands on end.
2. Tuck the enclosure flap inside to completely enclose the grate.
3. Holding the lifting devises, insert the grate into the inlet being careful not to damage the Dandy Bag unit.



Dandy Curb

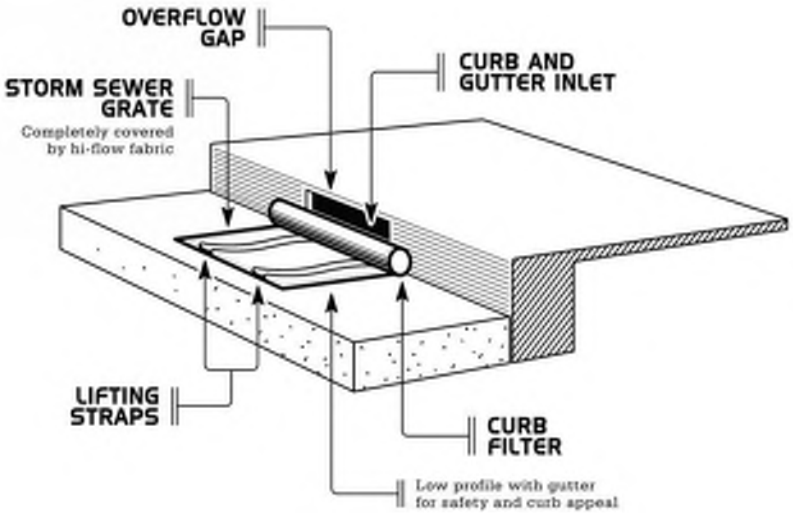
1. Place Dandy Curb inlet protection unit on ground with aggregate pouch on street side near inlet it will be installed on.
2. Fill pouch with aggregate such as #5-7, 8's or similar to a level (at least ½ full) that will keep unit in place during a rain event and create a seal between the Dandy Curb and the surface of the Street. Reseal Velcro access.
3. Center the unit against curb or median inlet opening so that the curb side of the unit creates a seal with the curb or median barrier and inlet structure. There will be approximately twelve (12) inches of the inlet protection unit overhanging on each side of the opening. If the unit is not installed in this manner, it will not function properly.



Dandy Curb Bag

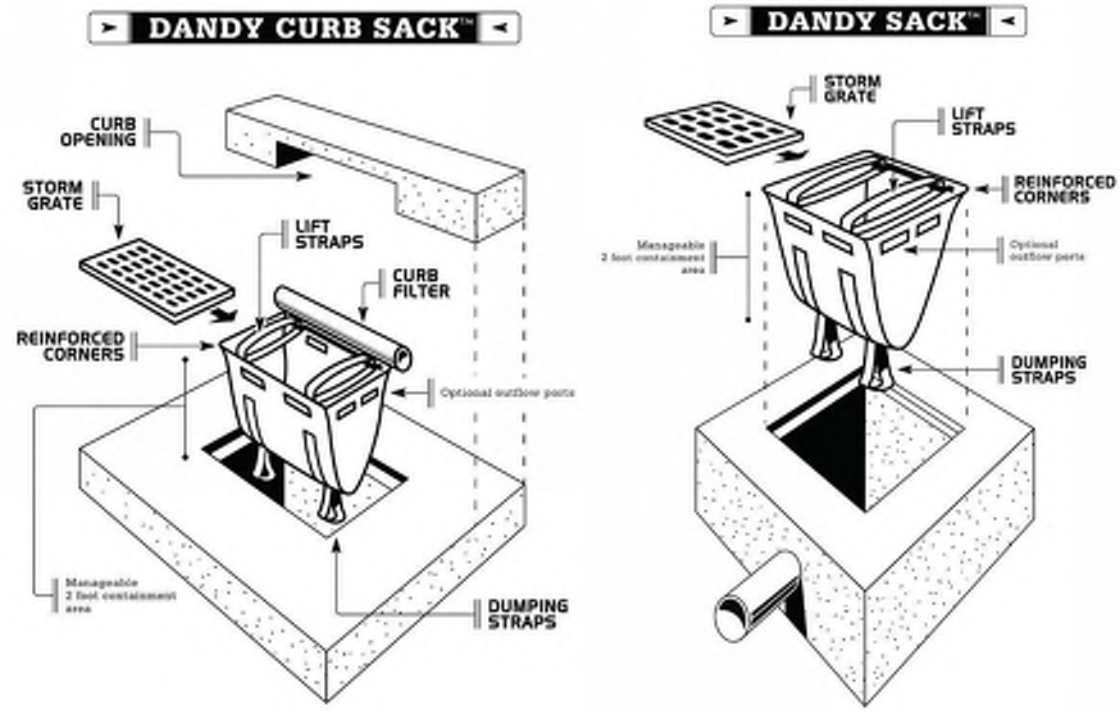
1. Place the empty Dandy Curb Bag unit over the grate as the grate stands on end.
2. Tuck the enclosure flap inside to completely enclose the grate.
3. Holding the lifting devices, being careful not to damage the sewn fabric unit, insert the grate into its frame, street side edge first, then lower back edge with cylindrical tube into place. The

cylindrical tube should be partially blocking the curb hold opening when installed properly.



Dandy Curb Sack

1. Remove the grate from the catch basin.
2. Stand the grate on end. Move the top lifting straps out of the way and place the grate into the Dandy Curb Sack unit so that the grate is below the top straps and above the lower straps. The grate should be cradled between the upper and lower straps.
3. Holding the lifting devices, insert the grate into the inlet, then lower back edge with cylindrical tube into place, being careful that the grate remains in place and being careful not to damage the Dandy Curb Sack unit. The cylindrical tube should partially block the curb hood opening when installed properly.



Dandy Sack

1. Remove the grate from the catch basin.
2. Stand the grate on end. Move the top lifting straps out of the way and place the grate into the Dandy Sack unit so that the grate is below the top straps and above the lower straps. The grate should be cradled between the upper and lower straps.
3. Holding the lifting devices, insert the grate into the inlet, being careful that the grate remains in place and being careful not to damage the Dandy Sack unit.

<u>Maintenance/Inspections</u>

1. Dandy products shall be inspected immediately after each measurable storm event (0.25” of rain or greater over a 24 hour period).
2. Accumulated sediment and debris from surface and vicinity of unit shall be removed.
3. If any rips/tears are noticed, unit will need to be replaced.

EROSION EEL / GUTTER BUDDY / GUTTER GATOR

Definition

A temporary sediment filter for a storm drain curb inlet.

Purpose

To prevent sediment from entering storm drainage systems prior to permanent stabilization of the disturbed area.

Conditions Where Practice Applies

Where existing or proposed storm drain curb inlets are to be made operational before project completion and permanent stabilization of the corresponding disturbed drainage area.

Planning Considerations

Minimum Standard #10 requires that all storm drain inlets that are made operational during construction shall be protected so that sediment-laden water cannot enter the conveyance system without first being filtered or otherwise treated to remove sediment.

This practice contains several types of filters by different manufacturers. The following inlet protection devices are for drainage areas of one acre or less. Runoff from larger disturbed areas should be routed to a temporary sediment trap (VESCH Std. & Spec. 3.13) or a temporary sediment basin (VESCH Std. & Spec. 3.14).

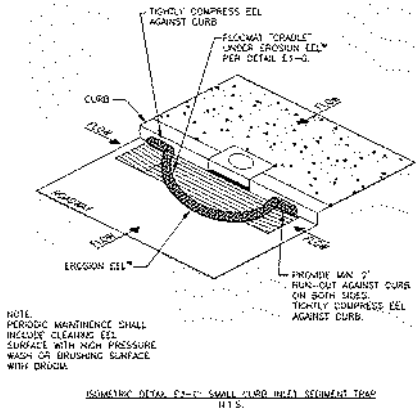
Design Criteria

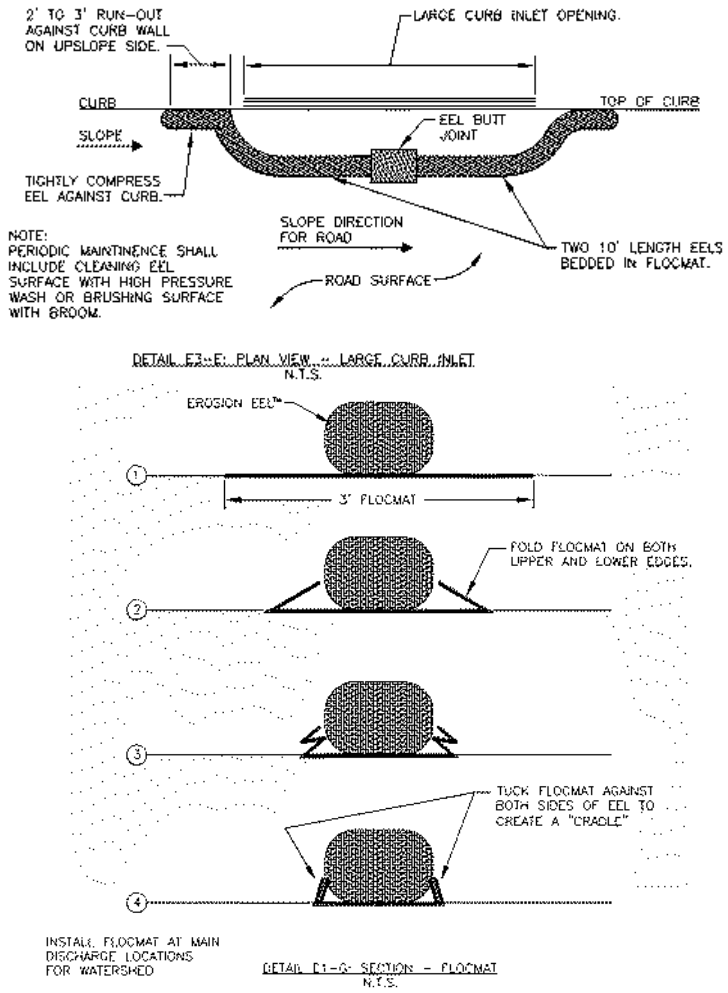
The drainage area shall be no greater than 1 acre.

Construction Specifications

Erosion Eel

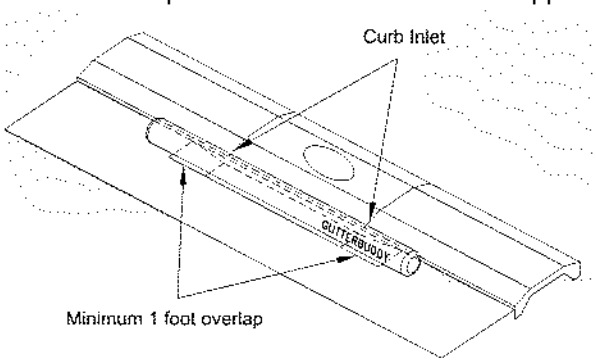
1. Center Erosion Eel at curb inlet. Install Flocmat “cradle” under Erosion Eel.
2. Ensure Erosion Eel does not completely cover inlet. Pull out from center to allow overflow as needed.
3. Tightly compress eel against curb on each end of inlet. There should be a minimum 2’ run-out against curb on both sides.





Gutter Buddy

1. Install the Gutterbuddy in front of the curb inlet opening. Each end of the Gutterbuddy should overlap the curb inlet a minimum of approximately 12”.



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GutterGator
Assembly Instructions:

1. Remove GutterGator grids and sleeves from box.

2. Slide grid sections to desired length.

3. Insert grid section into GutterGator sleeve.

4. Install stabilizer arms.

5. Seal velcro on GutterGator sleeve.

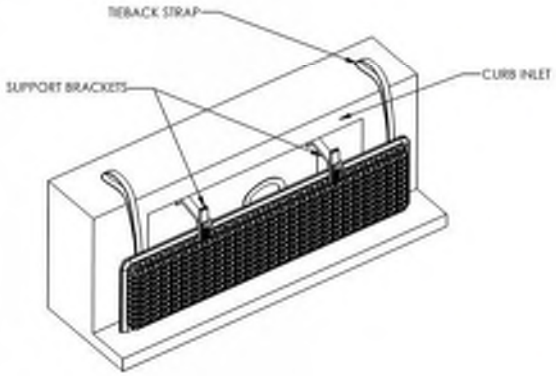
6. Remove Gatorweight from box.

7. Place 7lb minimum weight (Gatorweight recommended) into each weight pocket.

8. Slide weight pockets into curb throat, holding unit tight to curb face. (leave 12" overlap on each end of curb opening)

9. Use GutterGator tiebacks if applicable.

10. Clean unit after each wet weather event.



11. Replace GutterGator sleeves as needed.

Maintenance/Inspections

1. Inlet protection shall be inspected immediately after each measurable storm event (0.25" of rain or greater over a 24 hour period).
2. Accumulated sediment and debris from surface and vicinity of unit shall be removed to prevent ponding.
3. If any rips/tears are noticed, unit will need to be replaced.

GRATE PYRAMID

Definition

A temporary filter for a grated storm drain inlet.

Purpose

To prevent sediment from entering storm drainage systems prior to permanent stabilization of the disturbed area.

Conditions Where Practice Applies

Where existing or proposed grated storm drain inlets are to be made operational before project completion and permanent stabilization of the corresponding disturbed drainage area.

Planning Considerations

Minimum Standard #10 requires that all storm drain inlets that are made operational during construction shall be protected so that sediment-laden water cannot enter the conveyance system without first being filtered or otherwise treated to remove sediment.

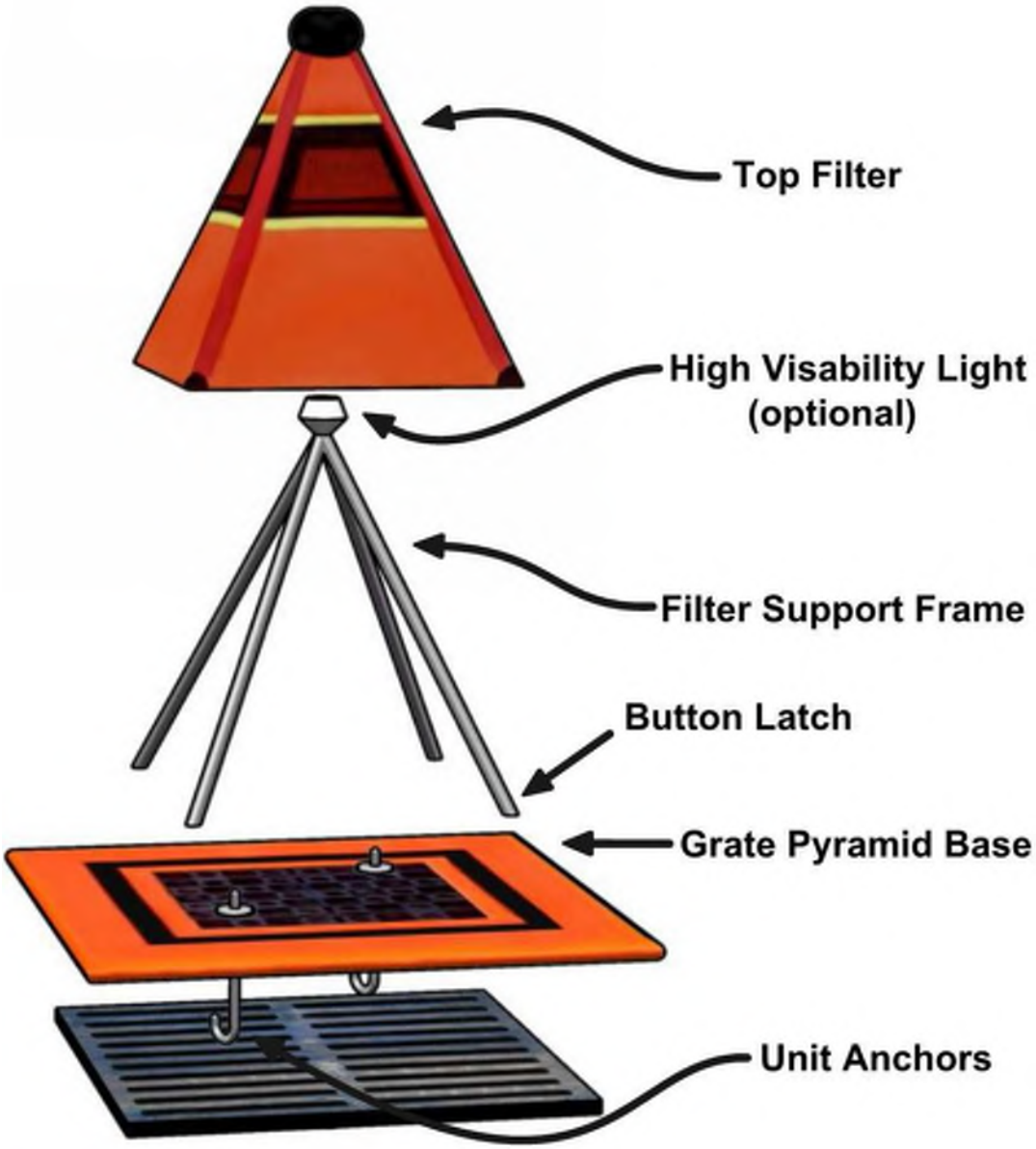
This practice contains several types of inlet filters which have different applications dependent upon site conditions and the type of inlet. The following inlet protection devices are for drainage areas of one acre or less. Runoff from larger disturbed areas should be routed to a temporary sediment trap (VESCH Std. & Spec. 3.13) or a temporary sediment basin (VESCH Std. & Spec. 3.14).

Design Criteria

1. The drainage area shall be no greater than 1 acre.

Construction Specifications

1. Install Grate Pyramid base over grate.
2. Install anchors.
3. Install base with 2 to 4 anchors, as needed.
4. Install safety caps on anchors.
5. Install tower frame.
6. Push button to lock tower into base.
7. Slide tower filter over frame.
8. Tightly secure base to tower.



Maintenance/Inspections

1. Inlet protection shall be inspected immediately after each measurable storm event (0.25" of rain or greater over a 24 hour period).
2. Accumulated sediment and debris from surface and vicinity of unit shall be removed to prevent ponding.
3. If any rips/tears are noticed, unit will need to be replaced.

SILTSACK

Definition

A temporary filter for a grated storm drain inlet.

Purpose

To prevent sediment from entering storm drainage systems prior to permanent stabilization of the disturbed area.

Conditions Where Practice Applies

Where existing or proposed grated storm drain inlets are to be made operational before project completion and permanent stabilization of the corresponding disturbed drainage area.

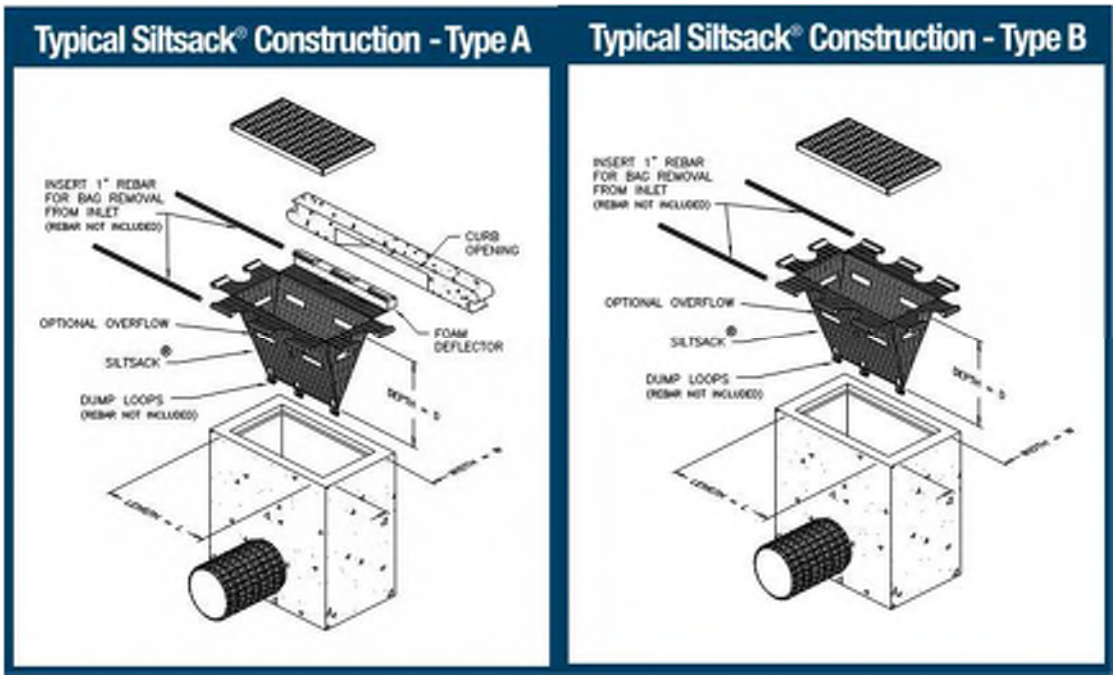
Planning Considerations

Minimum Standard #10 requires that all storm drain inlets that are made operational during construction shall be protected so that sediment-laden water cannot enter the conveyance system without first being filtered or otherwise treated to remove sediment.

This practice contains several types of inlet filters which have different applications dependent upon site conditions and the type of inlet. The following inlet protection devices are for drainage areas of one acre or less. Runoff from larger disturbed areas should be routed to a temporary sediment trap (VESCH Std. & Spec. 3.13) or a temporary sediment basin (VESCH Std. & Spec. 3.14).

Design Criteria

1. The drainage area shall be no greater than 1 acre.



Construction Specifications

1. Remove the grate and place the sack in the opening. Hold approximately six inches of the sack outside the frame. This is the area of the lifting straps.
2. Replace the grate to hold the sack in place.

Maintenance/Inspections

1. Inlet protection shall be inspected immediately after each measurable storm event (0.25” of rain or greater over a 24 hour period).
2. Check for tears/rips in sack. If noticed, have replaced immediately.
3. The SiltSack is full and should be emptied when the restraint cord is no longer visible.
    a. To remove, take two pieces of 1” diameter rebar and place through the lifting loops on each side of the sack to facilitate the lifting of the SiltSack.

PERIMETER CONTROL

EROSION EEL

Definition

A temporary sediment barrier for perimeter control.

Purpose

1. To intercept and detain small amounts of sediment from disturbed areas during construction operations in order to prevent sediment from leaving the site.
2. To decrease the velocity of sheet flows and low-to-moderate level channel flows.

Conditions Where Practice Applies

1. Below disturbed areas where erosion could occur in the form of sheet or rill erosion and the installation of silt fence is not practicable such as on paved, concrete or other similar surfaces.

Planning Considerations

1. Erosion Eels can be placed at the top, on the face, or at the toe of slopes to intercept runoff, reduce flow velocity, releasing the runoff as sheet flow, and provide

reduction/removal of suspended solids from the runoff.

2. No trenching is required for the installation of Erosion Eels.

Design Criteria

1. Where the size of the drainage area is no more than one quarter acre per 100 feet of Erosion Eels.
2. See spacing recommendations chart for slope percentages.

SPACING RECOMMENDATIONS FOR THE EROSION EEL™ FOR PERIMETER CONTROLS AND INTERCEPTING SHEET FLOW ON SLOPES

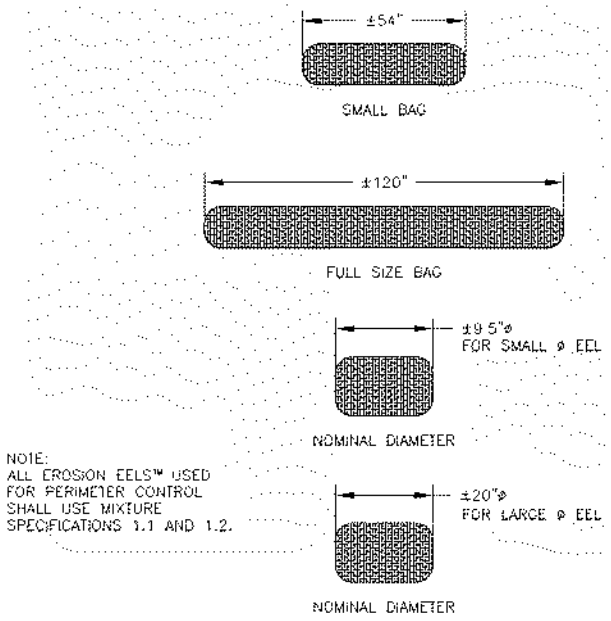
SLOPE(%)	SINGLE EEL SPACING(ft)	*STACKED DUAL EEL SPACING(ft)
0.5	300	N/A
1	200	N/A
2	160	N/A
3	80	N/A
4	50	N/A
5	40	N/A
6	35	N/A
8	30	N/A
10	25	N/A
15	+17	N/A
20	+12	+25
25	N/A	+15
33	N/A	+10
50	N/A	+6

* DUAL STACK REFERS TO TWO EELS STACKED ATOP ONE ANOTHER AND STABILIZED WITH T-POSTS. SEE DETAIL E2-E ON SHEET E-2.

+ PLACE STAKES BEHIND EELS @ 24" C/C SPACING. SEE SHEET E-2 FOR STAKING DETAILS.

Construction Specifications

1. Prepare bed for Eel installation by removing any large debris including rocks, soil clods, and woody vegetation (greater than 1 inch in size). Erosion eels can also be placed over paved surfaces including concrete and asphalt with no surface preparation required.
2. Rake bed area with a hand rake or by drag harrow.
3. All surfaces shall be uniformly and well-compacted for maximum seating and stability of the Eels in place.
4. Bed the Eels in a FlocMat (coir matting) cradle per the detailed drawings. (Detail E1-G)
5. As Eels are placed in a row, butt ends of Eels together tightly by firmly pressing the tied end of the Eel against the sewn edge of the adjacent Eel. (Detail E1-B1)

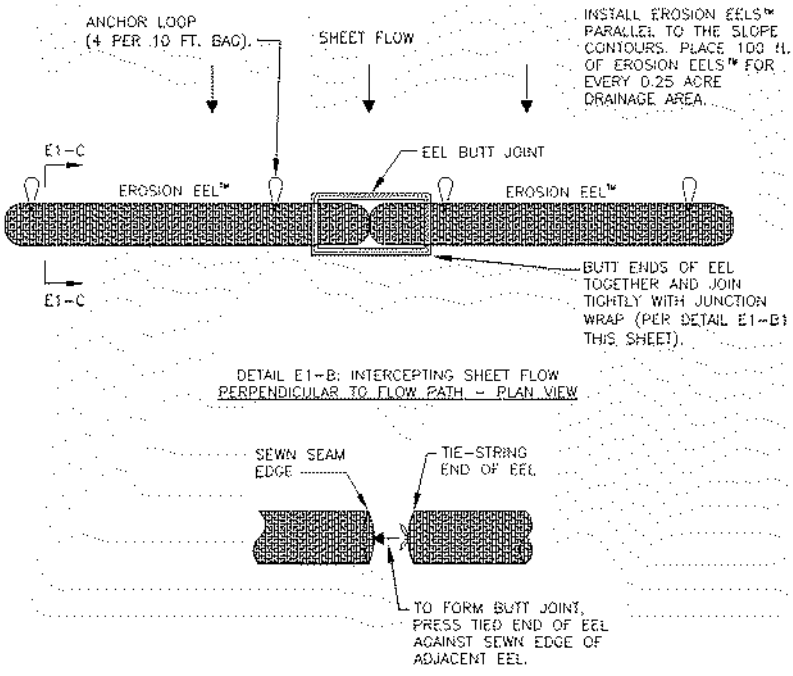


DETAIL E1-A: EROSION EELS™
N.T.S.

EROSION EELS® USED IN PERIMETER CONTROL APPLICATIONS SHALL HAVE A SPECIFICATION MIXTURE 1.1 OR 1.2.

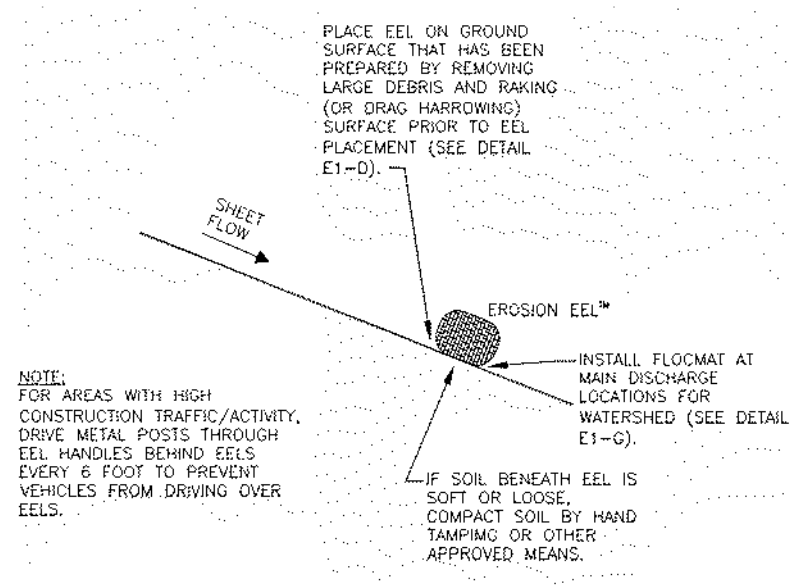
a. MIXTURE SPECIFICATION 1.1: A FILTER MIXTURE COMPRISED OF 50% SHREDDED RUBBER AND 50% WOOD CHIP PARTICLES BY VOLUME. THE SHREDDED RUBBER SHALL BE WASHED AND PROCESSED TO REMOVE MOST, IF NOT ALL, METAL COMPONENTS. THE RUBBER SHALL BE DERIVED FROM RECYCLED TIRES AND SHALL BE SHREDDED TO PRODUCE A MAXIMUM PARTICLE SIZE OF +/- 3/4 INCH. THE WOOD CHIPS SHALL BE PRODUCED FROM HARDWOOD TREES AND SHALL CONFORM TO AASHTO CERTIFICATION SPECIFICATION MP 9-03.

b. MIXTURE SPECIFICATION 1.2: A FILTER MIXTURE COMPRISED OF 1/3 SHREDDED RUBBER, 1/3 WOOD CHIPS, AND 1/3 RECYCLED SYNTHETIC FIBERS. THE SHREDDED RUBBER SHALL BE WASHED AND PROCESSED TO REMOVE MOST, IF NOT ALL, METAL COMPONENTS. THE RUBBER SHALL BE DERIVED FROM RECYCLED TIRES AND SHALL BE SHREDDED TO PRODUCE A MAXIMUM PARTICLE SIZE OF +/- 3/4 INCH. THE WOOD CHIPS SHALL BE PRODUCED FROM HARDWOOD TREES AND SHALL CONFORM TO AASHTO CERTIFICATION SPECIFICATION MP 9-03. THE SYNTHETIC FIBERS SHALL BE PRODUCED FROM RECYCLED, MANUFACTURED MATERIALS, SUCH AS, BUT NOT LIMITED TO, PRE-CONSUMER SCRAP CARPET, TIRE C-CORD, AND TIRE FIBER MATERIALS.

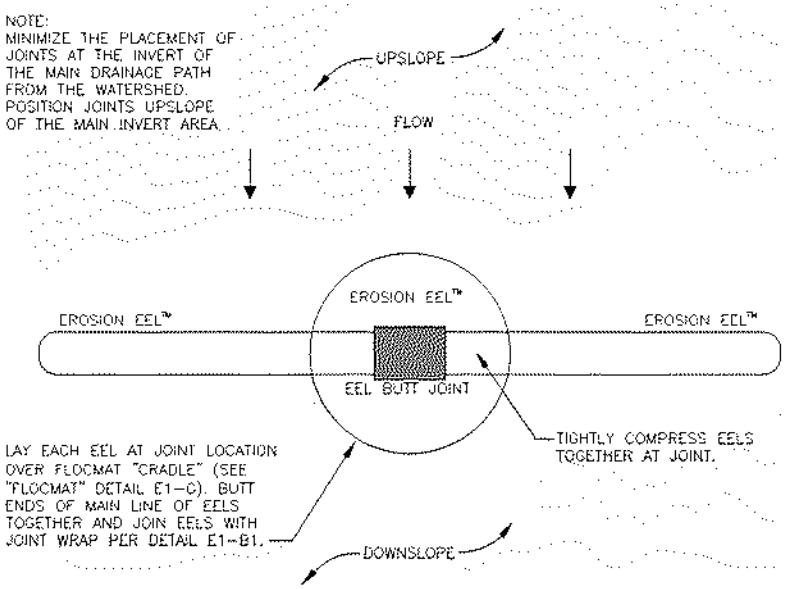


DETAIL E1-B: INTERCEPTING SHEET FLOW
PERPENDICULAR TO FLOW PATH - PLAN VIEW

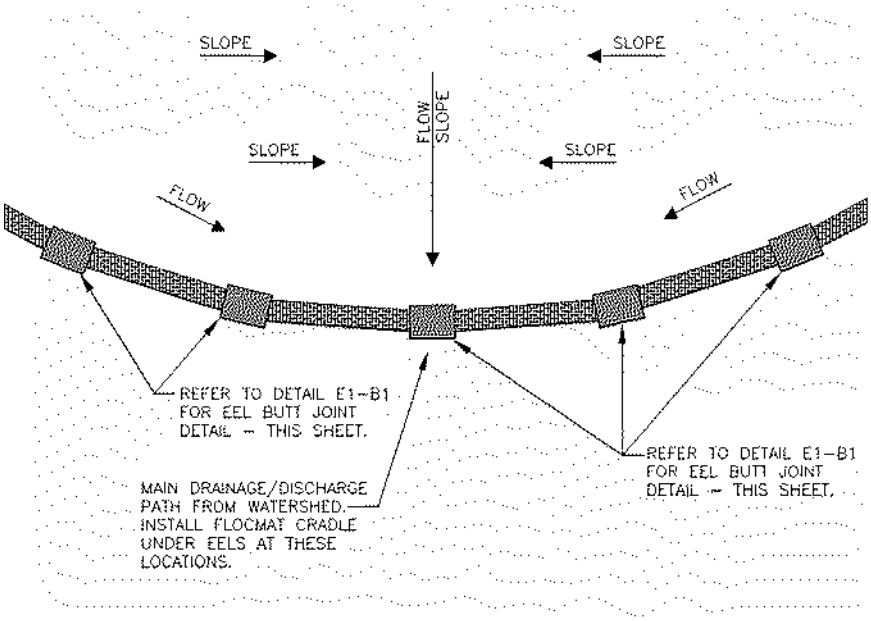
DETAIL E1-B1



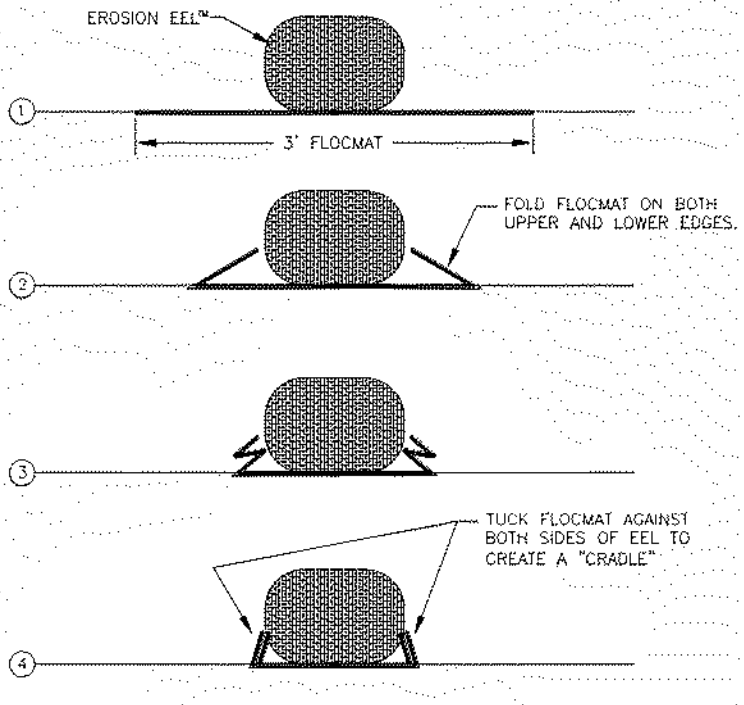
DETAIL E1-C: INTERCEPTING SHEET FLOW
PERPENDICULAR TO FLOW PATH - PLAN VIEW



DETAIL E1-E: PLAN VIEW -
OVERLAP/JOINT DETAIL NEAR DISCHARGE POINTS FROM WATERSHED
N.T.S.

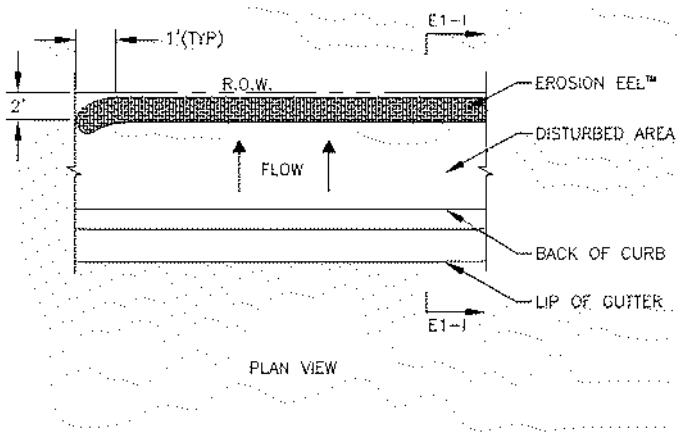


DETAIL E1-F: PLAN VIEW - TYPICAL ARRANGEMENT OF EELS USED FOR PERIMETER CONTROL
N.T.S.

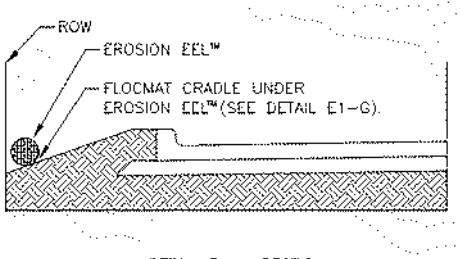


INSTALL FLOCMAT AT MAIN DISCHARGE LOCATIONS FOR WATERSHED.

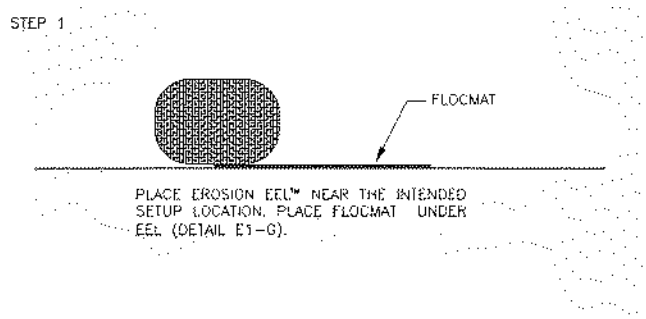
DETAIL E1-G: SECTION - FLOCMAT
N.T.S.

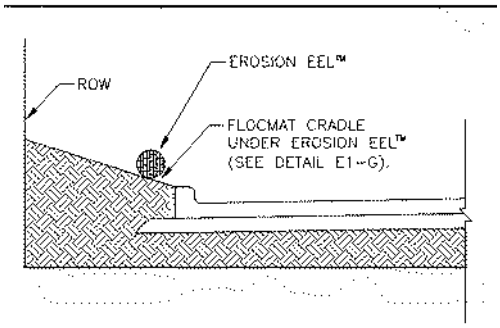


DETAIL E1-H: EROSION EEL™
PLACED AT EDGE OF ROADWAY RIGHT-OF-WAY
N.T.S.

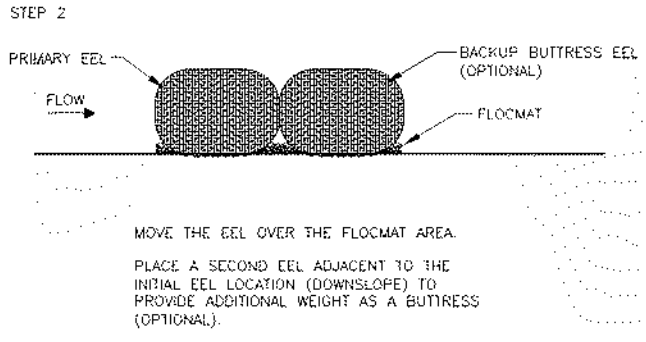


DETAIL E1-I: SECTION
N.T.S.





DETAIL E1-J: SECTION
N.T.S.



DETAIL E1-K: STABILIZING PROCEDURE FOR
EROSION EEL PLACED OVER HARD SURFACE (PAVED, ROCK, ETC.)
N.T.S.

Maintenance/Inspections

1. Inlet protection shall be inspected immediately after each measurable storm event (0.25" of rain or greater over a 24 hour period). Any required repairs shall be made immediately.
2. Sediment deposits should be removed after each storm event. They must be removed when deposits reach approximately one-half the height of the Eel.
3. If any rips/tears are noticed, section of Erosion Eel will need to be replaced.

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

Appendix G

Variance Request

NORFOLK STATE UNIVERSITY

VARIANCE REQUEST

Requested by: _____ **Date:** _____

Street Address: _____

City/Town/Zip: _____

Telephone #: _____ **Fax #:** _____ **E-mail address:** _____

Introduction: _____

Project Description: _____

_____

Minimum Standards Variance Requests: _____

_____

_____

Exiting Conditions and Adjacent Areas: _____

_____

_____

Soil Characterization: _____

Critical and Sensitive Areas (Karst, wetland, etc.): _____

_____

Mitigation (EPC Measures; Permanent Stabilization; Vegetative Restoration, Maintenance; Critical and Sensitive Areas; Self Inspection, Reporting and DEQ Certified Personnel): _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Designers Signature: _____ **Date:** _____

Signature of applicant: _____ **Date:** _____

Providing supporting documentation (sketches, calculations, etc…) as necessary to support request
(NOTE: All approved Variance Requests will be considered part of the Erosion and Sediment Control Plan.)

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

Appendix H

Annual Standards & Specification (AS&S) Entity Information

Annual Standards & Specification (AS&S) Entity Information Sheet

1. Annual Standards & Specifications Entity:		
2. AS&S Coverage Verification		
a. Operator:		
b. Project name:		
c. Estimated Area to be Disturbed (acres):		
3. Plan Approval Verification		
a. Erosion & Sediment Control (ESC) Plan:		
	i. ESC Plan Reviewer Name and Certification Number:	
	ii. ESC Plan Date:	
	iii. ESC Plan Approval Date:	
b. Stormwater Management (SWM) Plan:		
	i. Technical Criteria Used:	
	ii. SWM Plan Reviewer Name and Certification Number:	
	iii. SWM Plan Date:	
	iv. SWM Plan Approval Date:	
4. Comments:		

Printed Name:	**Title:**
Signature:	**Date:**

(Please sign in ink. This must be signed by an employee of the AS&S entity who has oversight of this project and is aware of its coverage under their AS&S.)

(Retain a copy of this form onsite and within project specific AS&S files.)

Instructions for completion:

1. AS&S Entity/Holder Name as it appears on the AS&S Approval Letter
2.a. Operator = Owner, operator, developer, person or general contractor that the AS&S holder is allowing to operate under their DEQ approved AS&S.
2.b. Project Name = Name of the construction activity as it appears on the Registration Statement.
2.c. Estimated Area to Be Disturbed = Provide the estimated area (to the nearest one-hundredth acre) to be disturbed by the construction activity. Include the estimated area of land disturbance that will occur at any off-site support activity to be covered under this general permit.
3.a. Erosion & Sediment Control (ESC) Plans **i.** = AS&S ESC plans are required to be reviewed and approved by DEQ-Certified ESC Plan Reviewers. Provide the name and certification number of the qualified individual. **ii.** = Provide the date of the ESC plan. **iii.** = Provide the date the ESC plan was approved.
3.b. Stormwater Management (SWM) Plans **i.** = The technical criteria used for this project will be either IIB or IIC per the SWM Regulations; 9VAC25-870. **ii.** = AS&S SWM plans are required to be reviewed and approved by DEQ-Certified SWM Plan Reviewers. Provide the name and certification number of the qualified individual. **iii.** = Provide the date of the SWM plan. **iv.** = Provide the date the SWM plan was approved.
4. Comments = Indicate whether the project package contains any requests (e.g. SWM plan waiver, Decline to Permit, Variance, Exception, Deviation…) DEQ is the VESCP and VSMP Authority for AS&S Entities. Approval for such requests must be issued by DEQ.

(Further questions can be directed to StandardsandSpecs@deq.virginia.gov**)**

Norfolk State University, Virginia

Annual Standards and Specifications for ESC and SWM

Appendix I

Delegation of Authority – ESC / SWM Inspector Designation

Norfolk State University, Virginia
Annual Standards and Specifications for ESC and SWM

DELEGATION OF AUTHORITY/ ESC INSPECTOR

I, _____ (name), hereby designate the person or specifically described position below to be a duly DEQ Certified ESC Inspector for the purpose of inspecting the construction of proposed erosion and sediment control measures to be in compliance with the approved Plan and any remediation work completed to maintain compliance with Virginia Erosion and Sediment Control Law. The designee is authorized to prepare and sign off on erosion and sediment control inspection reports.

_____ (name of person or position)
_____ (DEQ Certification)
_____ (company)
_____ (address)
_____ (city, state, zip)
_____ (phone)

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in the Annual Standards and Specifications and that the designee above meets the definition of a "DEQ Certified ESC Inspector" Representative as set forth in the Annual Standards and Specifications.

"I certify under penalty of law that I have read and understand this document and that this document and all attachments were prepared 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."

Signature: _____

Date: _____

Name: _____
Title: _____
Company: _____

Norfolk State University, Virginia
Annual Standards and Specifications for ESC and SWM

DELEGATION OF AUTHORITY/ SWM INSPECTOR

I, _____ (name), hereby designate the person or specifically described position below to be a duly DEQ Certified SWM Inspector for the purpose of inspecting the construction of proposed stormwater management measures to be in compliance with the approved Plan. The designee is authorized to prepare and sign off on erosion and sediment control inspection reports.

_____ (name of person or position)
_____ (DEQ Certification)
_____ (company)
_____ (address)
_____ (city, state, zip)
_____ (phone)

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in the Annual Standards and Specifications and that the designee above meets the definition of a "DEQ Certified SWM Inspector" Representative as set forth in the Annual Standards and Specifications.

"I certify under penalty of law that I have read and understand this document and that this document and all attachments were prepared 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."

Signature: _____

Date: _____

Name: _____
Title: _____
Company: _____

NORFOLK STATE UNIVERSITY

APPENDIX D

DEQ Approval Letter for Annual Standards and Specifications

BURNS McDONNELL

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

July 27, 2017

Anton Kashiri
Interim Associate Vice President for Facilities Management
Norfolk State University
700 Park Avenue
Norfolk, Virginia 23504

Transmitted electronically: avkashiri@nsu.edu

Subject: Norfolk State University –Annual Standards and Specifications for Erosion & Sediment Control and Stormwater Management (AS&S for ESC and SWM)

Dear Mr. Kashiri:

The Virginia Department of Environmental Quality ("DEQ" or "the Department") hereby approves the Annual Standards and Specifications for Erosion & Sediment Control and Stormwater Management for Norfolk State University revised July 26, 2017.

To ensure compliance with approved specifications, the Virginia Erosion and Sediment Control Law and the Virginia Stormwater Management Act, DEQ staff will conduct random site inspections, respond to complaints, and provide on-site technical assistance with specific erosion and sediment control and stormwater management measures and plan implementation.

Please note that your approved Annual Standards and Specifications include the following requirements:

1. Variance requests must be submitted separately from this Annual Standards and Specifications submission to DEQ. DEQ may require project-specific plans associated with variance requests to be submitted for review and approval.

2. The following information must be submitted to DEQ for each project at least two weeks in advance of the commencement of land-disturbing activities. Notifications shall be sent by email to: hannah.zegler@deq.virginia.gov
   - i: Project name or project number (including any associated CGP permit number);
   - ii: Project location (including nearest intersection, latitude and longitude, access point);
   - iii: On-site project manager name and contact info;
   - iv: Responsible Land Disturber (RLD) name and contact info;
   - v: Project description;

vi: Acreage of disturbance for project;
vii: Project start and finish date;
viii: Any variances/exemptions/waivers associated with this project;

3. Project tracking of all regulated land disturbing activities (LDA) must be submitted to the DEQ on a quarterly basis. Project tracking records shall contain the same information as required in the two week e-notifications for each regulated LDA.

Section 62.1-44.15:55.E of the Virginia Erosion and Sediment Control law and Section 62.1-44.15:31.D of the Virginia Stormwater Management Act authorizes the state to charge fees for costs incurred in implementing the standards and specifications program. Please see the enclosed invoice for Annual Standards and Specifications services.

To ensure an efficient information exchange and response to inquiries, the DEQ Central Office is your primary point of contact. Central Office staff will coordinate with our Regional Office staff as appropriate.

Thank you very much for your submission and continued efforts to conserve and protect Virginia's precious natural resources.

Sincerely,

Jaime L. Bauer, Manager
Office of Stormwater Management

Cc: Scott Chewning, Pennoni Associates, Inc. (SChewning@Pennoni.com)
Mikala Sargent, Pennoni Associates, Inc. (MSargent@Pennoni.com)
Ben Leach, DEQ-CO
Hannah Zegler, DEQ-CO

Case Decision Information:
As provided by Rule 2A:2 of the Supreme Court of Virginia, you have thirty days from the date of service (the date you actually received this decision or the date it was mailed to you, whichever occurred first) within which to appeal this decision by filing a notice of appeal in accordance with the Rules of the Supreme Court of Virginia with the Director, Department of Environmental Quality. In the event that this decision is served on you by mail, three days are added to that period.

NORFOLK STATE UNIVERSITY

APPENDIX E

Nutrient Management Plan and Approval Letter

BURNS McDONNELL

Nutrient Management Plan

Prepared For:

Norfolk State University
Towanda Colquiett
Building Services and Grounds
700 Park Avenue, Suite 101
Norfolk, VA 23504

Prepared By:
Angela C. Whitehead
Soil Horizons, LLC
Certification Code: # 386

Total Plan Acreage: 51.41

City/County: City of Norfolk

Hydrologic Unit Code	JL54

Plan Effective: 04/08/23

Plan Expires: 04/08/26

Planner Signature

The purpose of this Nutrient Management Plan is to ensure minimum movement of nitrogen and phosphorus from the specified area of application to surface and groundwater where they can potentially have a detrimental effect on water quality as well as ensuring that plants have optimum soil nutrient availability for good productivity and quality. By following this soil test based plan you are helping to protect local waters and the Chesapeake Bay.

If you have questions, please contact your plan writer, local Virginia Cooperative Extension Agent, or the Department of Conservation and Recreation Nutrient Management Program.

DCR
Virginia Department of Conservation & Recreation

Nutrient Management Plan for:	
Norfolk State University	
Owner Information	
Project Contact	*Towanda Colquiett*
	Building Services and Grounds Director
Mailing Address	*700 Park Avenue, Suite 101*
City State Zip	*Norfolk, VA 23690*
Phone	*757-823-9545*
Email	*trcolquiett@nsu.edu*
Planner Information	
Planner Name	*Angela C. Whitehead – Soil Horizons, LLC*
Mailing Address	*2 Whittakers Mill Rd*
City State Zip	*Williamsburg, VA 23195*
Phone	*804-892-6678*
Email	*soilmapper@yahoo.com*
Certification Code	*386*
Location Information	
Physical Address	*700 Park Avenue*
City State Zip	*Norfolk, VA 23504*
VAHU6 Watershed Code	*JL54*
City/County	*City of Norfolk*
Acreage	
Total	*51.41*
Plan Start Date	*04/08/23*
Plan End Date	*04/08/26*

Table of Contents

Norfolk State University (NSU) agrees to comply with all requirements set forth in the Nutrient Management Training and Certification Regulations, 4 VAC 50-85 et seq., and to follow recommendations for turf fertilization and management as described in the Virginia Nutrient Management Standards and Criteria, Revised July 2014. This includes implementing the Department of Conservation and Recreation's approved Nutrient Management Plan and maintaining fertilization records. All nutrient applications performed by NSU staff and contractors shall comply with the provisions of this Nutrient Management Plan upon receipt of the approved plan.

Updates and Revisions to Nutrient Management Plans

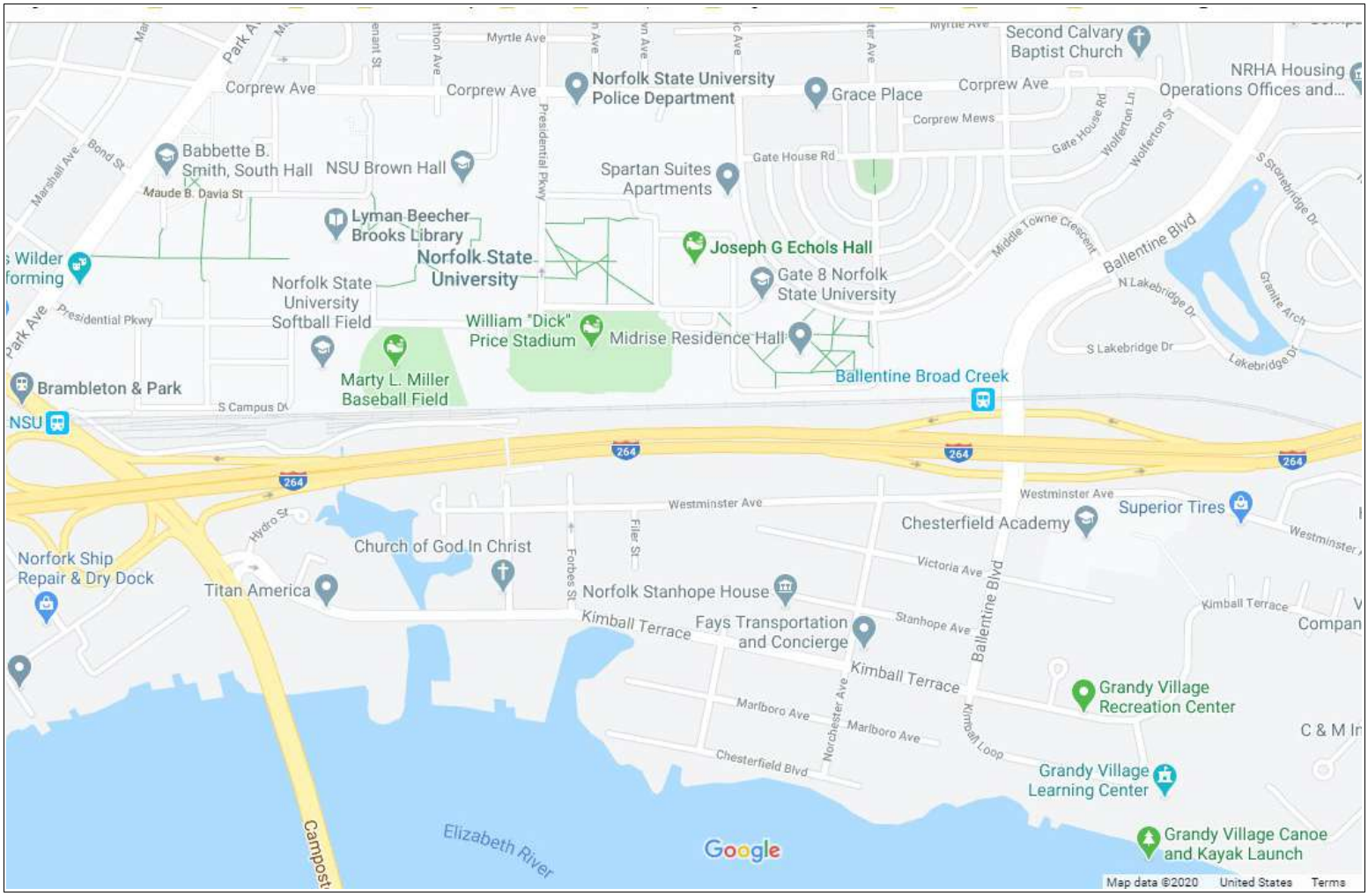
Nutrient Management Plans (NMP) for shall be valid for up to three years. Updated soil sampling and analysis shall be required at least once every three years to determine soil fertility and pH, and to update the NMP or upon a major renovation or redesign of the grounds, whichever occurs sooner. If Class B biosolids or raw manure is applied, the plan must be revised to meet the conditions of the Virginia Department of Environmental Quality permit.

1. Site Description and Supporting Information

Norfolk State University (NSU) is a public historically Black university in Norfolk, Virginia. The campus encompasses approximately 134 acres within the Eastern Branch Elizabeth River watershed. The university recognizes the importance of nutrient management as a fundamental way to protect water quality.

Fertilized grounds turf is predominantly non-overseeded bermudagrass. Areas comprised of a mix of warm season and cool season grasses are managed to encourage warm season growth. Athletic fields are naturally sandy or sand-based, irrigated, and managed for fall overseeded, bermudagrass. Managed fields include: Softball Field, Football Practice Field, and Baseball Field. The football game field was converted to synthetic turf prior to the 2018 season. Landscape beds are located within the common areas, but do not receive any additional nutrients aside from what is applied to the adjacent turf. The primary sources of irrigation water on campus originate from onsite wells and/or municipal water. NSU staff is responsible for the maintenance of all campus turf.

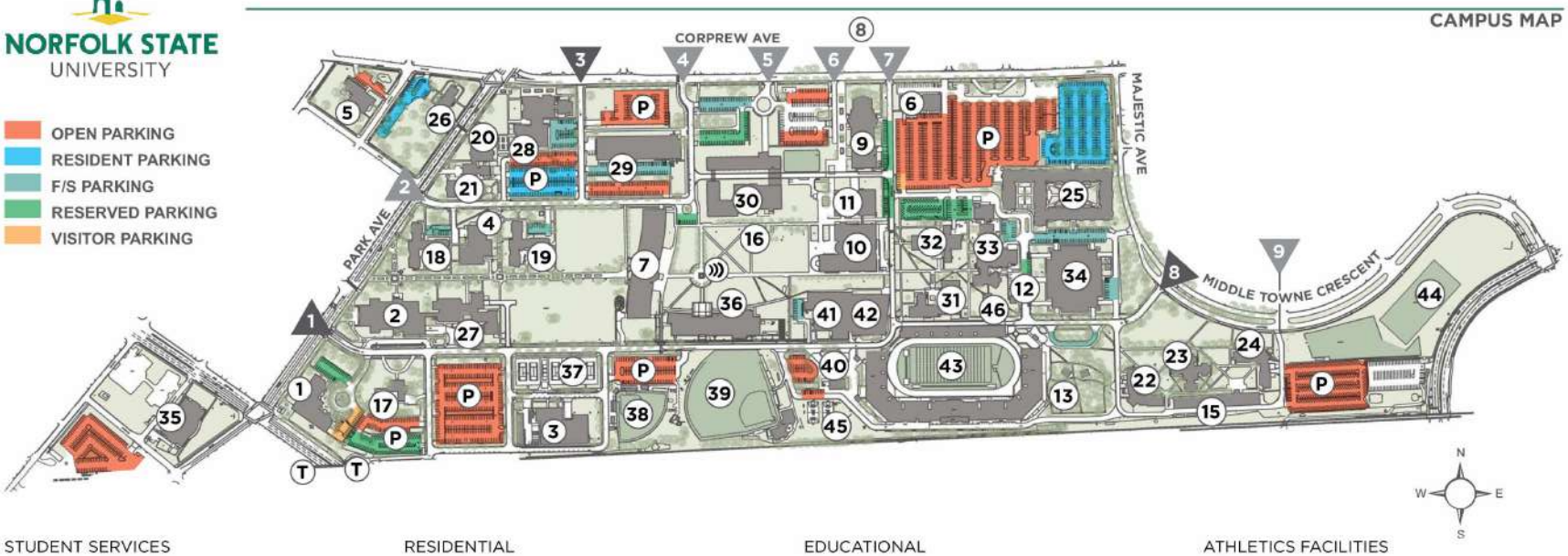
A. Site Location



B1. Campus Map

NORFOLK STATE UNIVERSITY

CAMPUS MAP



STUDENT SERVICES

1. Harrison B. Wilson Hall Administration Building
2. L. Douglas Wilder Performing Arts Center
3. Facilities Management Building
4. West Campus Dining Hall
5. Brambleton Community Outreach Center
6. University Police Building
7. Lyman Beecher Brooks Library
8. The Melvin and Patricia Stith Alumni House
9. Scott/Dozier Dining Hall
10. Student Center
11. Student Services Center
12. Ticket Office
13. Picnic Area
15. Spartan Station
16. White House Memorial Garden

RESIDENTIAL

17. President's House
18. Samuel F. Scott Hall
19. Rosa A. Alexander Hall
20. Babbette B. Smith, North Hall
21. Babbette B. Smith, South Hall
22. Charles H. Smith Hall
23. Honors College - Midrise Residence Hall
24. Lee W. Smith Hall
25. Spartan Suites
26. Phillis Wheatley Hall

EDUCATIONAL

27. E. L. Hamm Fine Arts Building
28. William P. Robinson, Sr. Technology Center
29. James A. Bowser Building
30. G.W.C. Brown Memorial Hall
31. J. Hugo Madison Hall
32. Herman H. Bozeman Hall
33. Roy A. Woods Science Building
34. Joseph G. Echols Memorial Hall
35. Marie V. McDemmond Center for Applied Research
36. Nursing & General Education Building
46. NSU Greenhouse

ATHLETICS FACILITIES

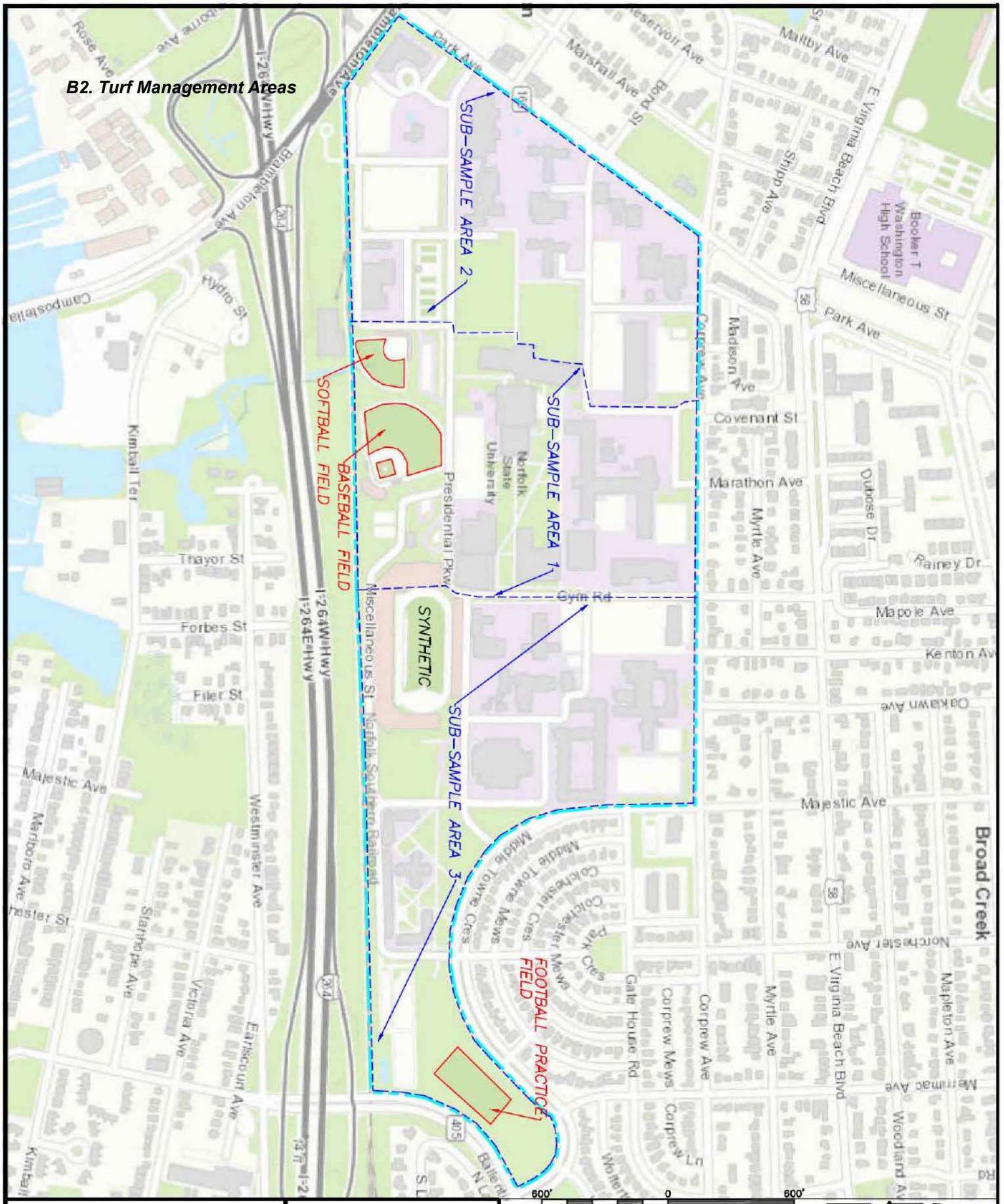
37. Tennis Complex
38. Softball Field
39. Marty Miller Baseball Field
40. Sports Annex
41. James D. Gill Health & Physical Education Bldg
42. Sports Medicine Center
43. William "Dick" Price Football Stadium/Track & Field complex
44. Football Practice Field
45. Basketball Courts

T - The Tide Light Rail Station
▲ - Gate
P - Parking
))) - Communications Tower

For NSU Parking information, please visit: www.nsu.edu/finance/parking or call 757.823.2211

All Visitors/Vendors should obtain a Visitor's Pass from the Parking Office located in the University Police Station (2501 Corprew Ave., Norfolk, VA 23504) prior to parking on campus

B2. Turf Management Areas



PROJECT NAME: NORFOLK STATE UNIVERSITY

CAMPUS MAP

DATE: 3/29/20

SCALE: 1 IN = 600 FT

BASE MAP PROVIDED BY: CITY OF NORFOLK GIS

- WARM SEASON ATHELTIC FIELDS
- WARM SEASON COMMON AREA TURF
- NMP MANAGEMENT BOUNDARY (IMPERVIOUS AREAS EXCLUDED FROM FERTILIZATION)

C. Fertilization Season

The recommended nutrient management application season for nitrogen fertilizers to cool season turfgrasses begins six weeks prior to the last spring average killing frost date and ends six weeks past the first fall average killing frost date. The acceptable nitrogen fertilizer application season for non-overseeded warm season turfgrass begins no earlier than the last spring average killing frost date and ends no later than one month prior to the first fall average killing frost date. **Do not apply nutrients when the ground is frozen/snow-covered. Do not apply nutrients during periods of drought.**

	Killing Frost Dates	**Cool Season Applications**	**Warm Season Applications**
Spring	April 4	February 21	April 4
Fall	November 6	December 18	October 9

D. Environmentally Sensitive Sites

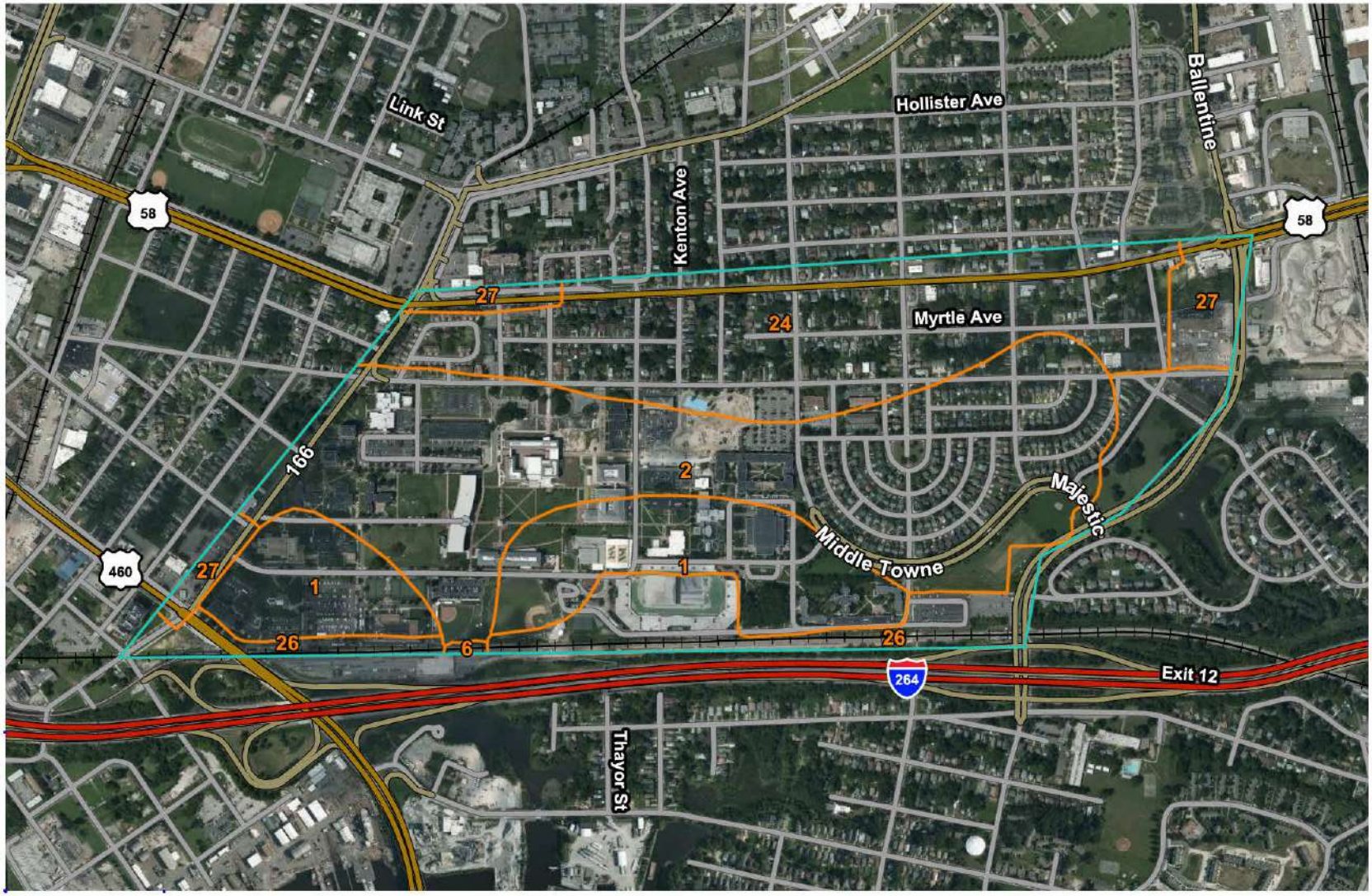
An environmentally sensitive site is any area which is particularly susceptible to nutrient loss to groundwater or surface water since it contains or drains to areas which contain sinkholes, or where at least 33% of the area in a specific management area contains one or any combination of the following features:

1. Soils with high potential for leaching based on soil texture or excessive drainage;
2. Shallow soils less than 41 inches deep likely to be located over fractured or limestone bedrock;
3. Subsurface tile drains; (none reported by NSU facilities management staff)
4. Soils with high potential for subsurface lateral flow based on soil texture and poor drainage;
5. Floodplains as identified by soils prone to frequent flooding in NRCS soil surveys; or
6. Lands with slopes greater than 15%

Soil survey information was obtained from the Tidewater Cities Area Soil Survey:
websoilsurvey.sc.egov.usda.gov

The majority of the management areas occur within disturbed urban soils where the soils have been altered or obscured by construction, excavation/fill and do not exhibit environmentally sensitive conditions. Bohicket (6) and Tomotley (24) are naturally poorly drained soils. Special attention should be given to the timing of fertilizer applications prior to heavy rainfall to avoid nutrient loss due to leaching.

#	**Soil Map Unit**
1	Altavista-Urban land complex
2	Augusta-Urban land complex
6	Bohicket muck very frequently flooded
24	Tomotley-Urban land complex
26	Udorthents-Dumps complex
27	Urban land



76° 16' 27" W

76° 14' 43" W

Map Scale: 1:11,900 if printed on A landscape (11" x 8.5") sheet.

N

0 150 300 600 900 Meters

0 500 1000 2000 3000 Feet

Map projection: Web Mercator Corner coordinates: WGS84

2. Soil Test Summary and Results

Soil samples were taken from fertilized turf areas at each field and/or location. Each composite sample consisted of several sub-samples from the upper four inches of soil. These sub-samples were taken in a random manner to minimize the variability that is present in the sampling area. Sub-samples were thoroughly mixed, breaking apart clumps and removing all foreign matter such as roots, stalks, rocks, etc.

Soil samples were analyzed by Waypoint Analytical. Standard soil test results provide values for pH, Calculated Cation Exchange Capacity, Phosphorous, Calcium, Magnesium, Potassium, Copper, Iron, Boron, Manganese, and Calculated Cation Saturation. The soil samples collected are valid for the life of this plan (three years) or upon a major renovation or redesign of the campus grounds, whichever occurs sooner.

Customer Name:	**Norfolk State University**
Testing Lab:	**Waypoint Analytical**
Sample Date:	**3/14/23**
Planner Name, Cert. #:	**Angela C. Whitehead, #386**

Area	Soil pH	Buffer pH	Lab P (ppm)	VT P (ppm)	VT (H/M/L)	P_2O_5 Needs (lbs/1000ft^2)	Lab K (ppm)	VT K (ppm)	VT (H/M/L)	K_2O Needs (lbs/1000ft^2)
G1	6.7		65	27	H-	1.0	131	93	H-	1.0
G2	6.5		51	20	H-	1.0	114	81	M+	1.0
G3	5.7	6.76	43	16	M+	1.0	102	72	M	1.5
Football Practice	6.3		49	19	H-	1.0	60	43	M-	2.0
Baseball	6.0	6.81	70	29	H	0.75	103	73	M	1.5
Softball	6.2		64	26	H-	1.0	113	80	M+	1.0

- Soil pH ranged from 5.7 – 6.7. Additions of limestone are recommended where pH measures below 6.2 (Grounds Area 3, Baseball). One limestone application is recommended at a rate of 45 lbs/1000 ft^2 during the plan cycle.
- Additional potassium may be added annually to aid in recovery of damaged turf during times of extreme use.
- Phosphorous may be applied at the specified rate, however a plant response is not expected.
- Water soluble nitrogen (WSN) applications may not exceed 3.5 lbs/1000 ft^2 annually to warm season athletic fields. Overseeded warm season turf may receive one additional pound of WSN. In the Fall, 0.5 lb/1000 ft^2 of nitrogen may be applied after perennial ryegrass overseeding is well established. In early Spring, an N application of 0.5 lb/1000 ft^2 may be made to overseeded perennial ryegrass if growth and color indicate need.
- Water soluble nitrogen applications may not exceed 4 lb/1000 ft^2 annually to warm season turf on non-athletic field common areas.

3. Summary of Recommended Annual Lime, Nitrogen, Phosphorous, and Potassium Application

The following tables provide nutrient recommendations that allow managers flexibility in selecting fertilizer products that best fit their management program, weather conditions, and budget levels. Fertilizer products and/or analysis are not specified and doing so may constrain the manager. Monthly fertilization programs are included to demonstrate the frequency and timing of nutrient applications that comply with Virginia Nutrient Management Standards and Criteria, Revised July 2014. Application rates below the rate recommended in the plan are permitted. If Class B biosolids or raw manure is applied, the plan must be revised to meet the conditions of the Virginia Department of Environmental Quality permit.

A. Fertilizer Recommendations Summary: NSU Turf

Site	Management Acres	Annual Lime Needs (lbs/1000ft^2)	Max. Annual N App. (lbs/1000ft^2)[a, b]	Max. Total N Rate per application (lbs/1000ft^2)[b, c, d]	Annual P_2O_5 Needs (lbs/1000ft^2)	Annual K_2O Needs (lbs/1000ft^2)
Grounds	45.49	45 (Area 3)	4.0	0.7 (min. 30 days)	1.0	1.0
Football Practice Field (overseeded)	2.0	--	4.5	0.35 (min. 15 days)	1.0	2.0
Baseball Field (overseeded)	3.03	45	4.5	0.35 (min. 15 days)	0.75	1.5
Softball Field (overseeded)	0.89	--	4.5	0.35 (min. 15 days)	1.0	1.0

[a] Cool Season: Do not apply N between December 19 and February 20 or when the ground is frozen. Warm Season: Do not apply N between October 10 and April 3 or during periods of drought.

[b] 100% Water Soluble N (WSN) Fertilizer.

[c] A maximum application rate of 0.9 lb/1000 ft^2 of total N (cool season) or 1.0 lb/1,000 ft^2 of total N (warm season) may be applied using slowly available forms of N with a minimum of 30 days between applications.

[d] On sand-based fields: WSN must be applied as two applications not to exceed 0.35 lb/1,000 ft^2 each with a minimum of 15 days between applications. Slowly Available N sources may be applied as a split application of 0.5 lb/1,000 ft^2 with a minimum of 15 days between applications.

B. Recommended Monthly Fertilizer Application: NSU Turf

	$N^{a,b,c,e} – P_2O_5 – K_2O$ (lbs/1000ft^2) 2023-2026											
Area	**Mar 4**	**April**	**May**	**June**	**July**	**August**	**Sept**	**Oct**	**Nov**	**Annual Need[d]**		
										$N^{a,b}$	P	K
Grounds (non-irrigated)			0.7 – 0.5 – 0.5				0.7 – 0.5 – 0.5			1.4	1.0	1.0
Football Practice overseeded	0.5 – 0 – 0 (overseeding)		0.7 – 0.2 – 0.4	0.7 – 0.2 – 0.4	0.7 – 0.2 – 0.4	0.7 – 0.2 – 0.4	0.7 – 0.2 – 0.4	0.5 – 0 – 0 (overseeding)		4.5	1.0	2.0
Baseball overseeded	0.5 – 0 – 0 (overseeding)		0.7 – 0.15 – 0.3	0.7 – 0.15 – 0.3	0.7– 0.15 – 0.3	0.7 – 0.15 – 0.3	0.7 – 0.15 – 0.3	0.5 – 0 – 0 (overseeding)		4.5	0.75	1.5
Softball overseeded	0.5 – 0 – 0 (overseeding)		0.7 – 0.2 – 0.2	0.7 – 0.2 – 0.2	0.7– 0.2 – 0.2	0.7 – 0.2 – 0.2	0.7 – 0.2 – 0.2	0.5 – 0 – 0 (overseeding)		4.5	1.0	1.0

[a] See Table 3A and Section 5 for N Rate Guidelines. N applications may not exceed those specified in Table 4A.

[b] A maximum application rate of 0.9 lb/1000 ft^2 of total N (cool season) or 1.0 lb/1,000 ft^2 of total N (warm season) may be applied using slowly available forms of N with a minimum of 30 days between applications.

[c] **Do not apply more than 0.7 pounds of water soluble nitrogen per 1000 ft^2 within a 30 day period.**

[d] P_2O_5 applications may not exceed the Annual Need. Additional K_2O may be made annually to increase plant vigor and relieve traffic stress on damaged turf during times of extreme use.

[e] On sand-based fields: WSN must be applied as two applications not to exceed 0.35 lb/1,000 ft^2 each with a minimum of 15 days between applications. Slowly Available N sources may be applied as a split application of 0.5 lb/1,000 ft^2 with a minimum of 15 days between applications or as a single application up to 1.0 lb/1,000 ft^2 with a minimum of 30 days between applications.

4. Fertilizer Application Record

Customer Information		Management Area Information
Name:	Norfolk State University	Management Area ID:
Address:	700 Park Avenue	Management Area Size:
	Norfolk, VA 23504	Plant Species:
		Notes:
Phone #:	757-823-9545	

Date (M/D/Y)	Supervisor/Applicator	Weather Conditions: Temp/Wind/Precip			Fertilizer Analysis	Rate	Amount Fertilizer Used	Application Equipment Used

5. Virginia Nutrient Management Standards and Criteria, Revised July 2014

VI. Turfgrass Nutrient Recommendations

Definitions

For the purposes of this section, the following definitions, as presented by the Association of American Plant Food Control Officials (AAPFCO), apply:

"Enhanced efficiency fertilizer" describes fertilizer products with characteristics that allow increased plant nutrient availability and reduce the potential of nutrient losses to the environment when compared to an appropriate reference product.

"Slow or controlled release fertilizer" means a fertilizer containing a plant nutrient in a form which delays its availability for plant uptake and use after application, or which extends its availability to the plant significantly longer than a reference "rapidly available nutrient fertilizer" such as ammonium nitrate, urea, ammonium phosphate or potassium chloride. A slow or controlled release fertilizer must contain a minimum of 15 percent slowly available forms of nitrogen.

"Water soluble nitrogen", "WSN", or "readily available nitrogen" means: Water soluble nitrogen in either ammonical, urea, or nitrate form that does not have a controlled release or slow response.

Nitrogen Application Guidelines

A nitrogen fertilization schedule weighted toward fall application is recommended and preferred for agronomic quality and persistence of cool season turfgrass; however, the acceptable window of applications is much wider than this for nutrient management. ***The nutrient management recommended application season for nitrogen fertilizers to cool season turfgrasses begins six weeks prior to the last spring average killing frost date and ends six weeks past the first fall average killing frost date.*** Applications of nitrogen during the intervening late fall and winter period should be avoided due to higher potential leaching or runoff risk, but where necessary, apply no more than 0.5 pounds per 1,000 ft^2 of water soluble nitrogen within a 30 day period. Higher application rates may be used during this late fall and winter period by using materials containing slowly available sources of nitrogen, if the water soluble nitrogen contained in the fertilizer does not exceed the recommended maximum of 0.5 pounds per 1,000 ft^2 rate. Do not apply nitrogen or phosphorus fertilizers when the ground is frozen.

The acceptable nitrogen fertilizer application season for non-overseeded warm season turfgrass begins no earlier than the last spring average killing frost date and ends no later than one month prior to the first fall average killing frost date.

Per Application Rates

Do not apply more than 0.7 pounds of water soluble nitrogen per 1,000 ft^2 within a 30 day period. For cool season grasses, do not apply more than 0.9 pounds of total nitrogen per 1,000 ft^2 within a 30-day period. For warm season grasses, do not apply more than 1.0 pounds of total nitrogen per 1,000 ft^2 within a 30-day period. Lower per application rates of water soluble nitrogen sources or use of slowly available nitrogen sources should be utilized on very permeable sandy soils, shallow soils over fractured bedrock, or areas near water wells.

Annual Application Rates for Home Lawns and Commercial Turf

Up to 3.5 pounds per 1,000 ft^2 of nitrogen may be applied annually to cool season grass species or up to 4 pounds per 1,000 ft^2 may be applied annually to warm season grass species using 100 percent water soluble nitrogen sources. Lower rates of nitrogen application may be desirable on those mature stands of grasses that require less nitrogen for long-term quality. As a result, lower application rates will probably be more suited to the fine leaf fescues (hard fescue, chewings fescue, creeping red fescue, and sheep fescue) and non-overseeded zoysiagrass. Lower rates should also be used on less intensively managed areas.

For warm season grasses, up to 0.7 lb/1,000 ft^2 of nitrogen may be applied in the Fall after perennial ryegrass overseeding is well established. An additional N application of 0.5 lb/1,000ft^2 may be made in February-March to overseeded perennial ryegrass if growth and color indicate need. Applications using WSN many not exceed 0.7 lb/1,000ft^2 within a 30 day period.

Use of Slowly Available Forms of Nitrogen
For slow or controlled release fertilizer sources, or enhanced efficiency fertilizer sources, no more than 0.9 pounds of nitrogen per 1,000 ft^2 may; be applied to cool season grasses within a 30-day period and no more than 1.0 pounds of nitrogen per 1,000 ft^2 may be applied to warm season grasses within a 30-day period.

Provided the fertilizer label guarantees that the product can be used in such a way that it will not release more than 0.7 pounds of nitrogen per 1,000 ft^2 in a 30-day period, no more than 2.5 pounds of nitrogen per 1,000 ft^2 may be applied in a single application. Additionally, total annual applications shall not exceed 80 percent of the annual nitrogen rates for cool or warm season grasses.

Nitrogen Timing
The beginning and ending dates for application of nitrogen shall be determined using guidance and frost date contained on page 4 of this Nutrient Management Plan.

If the full rate or the highest rate of the recommendation range for a monthly application is applied in a single application, then the interval of application for nitrogen shall be at least 30 days to allow turf to utilize previous nitrogen applications. If several applications are to be made for the monthly nitrogen rate, then the timing of the applications shall be at approximately even intervals, with the rate per application to be evenly divided between each application with the total nitrogen applied not to exceed the maximum monthly rate. Use of Water Insoluble Nitrogen forms of nitrogen is encouraged.

Nitrogen Management on Athletic Fields - Cool Season Grasses

- This program is intended for those fields which are under heavy use.

- Nitrogen recommendations are based on the assumption that there is adequate soil moisture to promote good turf growth at the time of application. If no rainfall has occurred since the last application, further applications should be delayed until significant soil moisture is available.

Cool-Season Grasses Maintenance Program [a]		
	Normal	**Intensive**
Application Timing [b]	**N lb/1000 ft^2**	
After August 15	------	0.5
September	0.7 [c]	0.7 [c]
October	0.7 [c]	0.7 [c]
November	0.5	0.7 [c]
April 15 - May 15	0.5	0.5
June 1 - June 15	----	0.5 [d]

Notes:

- Soluble nitrogen rates of 0.25 pounds per 1,000 ft^2 or less which may be a component of a pesticide or minor element application may be applied any time the turf is actively growing, but must be considered with the total annual nitrogen application rate.
- WSN = water soluble nitrogen; WIN = water insoluble nitrogen

a) Intensive managed areas must be irrigated.
b) The beginning and ending dates for application of nitrogen shall be determined using guidance and frost date contained on page 13 of this Nutrient Management Plan.
c) Rates up to 0.9 pounds per 1,000 ft^2 of total nitrogen can be applied using a material containing slowly available forms of nitrogen, with a minimum of 30 days between applications.
d) Make this application only if turf use warrants additional nitrogen for sustaining desirable growth and /or color.

Nitrogen Management on Athletic Fields - Warm Season Grasses

The following comments apply to both Naturally Occurring or Modified Sand based Fields and Predominantly Silt/Clay Soil Fields:

- Annual nitrogen rates for warm season grasses shall not exceed **4 pounds** in areas which have the average first killing frost on or before October 20, and shall not exceed **5 pounds** in areas which have the average first killing frost after October 20. Nitrogen rates and timings for overseeding warm season grasses are not included in these rates.

- April 15 - May 15 applications should not be made until after complete green-up of turf.

- Nitrogen applications June through August should be coordinated with anticipated rainfall if irrigation is not available.

- Use the lower end of the ranges for non-irrigated fields and the higher end of the ranges should be used on fields with irrigation.

- Nitrogen rates towards the higher end of the ranges may be applied on heavily used fields to accelerate recovery, however per application and annual rates cannot be exceeded.

Warm-Season Grasses Maintenance Program (Silt/Clay based)[a]		
	N lb/1000 ft^2	**First Killing Frost Date [b]**
Application Timing [b]	0.5 – 0.7 [c]	Before October 20
April 15 – May 15	0.7	
June	0.5 – 0.7 [d]	
July	0.5 – 0.7 [d]	
August	0.5 – 0.7 [d]	
September 1 - 15	0.5 – 0.7 [c]	After October 20
If overseeded with perennial ryegrass		
October - November	0.5 [e]	
February - March	0.5 [e]	

Warm-Season Grasses Maintenance Program (Sand based)[a]		
	N lb/1000 ft^2	**First Killing Frost Date [b]**
Application Timing [b]	0.5 – 0.7 [c]	Before October 20
April 15 – May 15	0.7 [c]	
June	0.7 [c]	
July	0.7 [c]	
August	0.7 [c]	
September 1 - 15	0.5 – 0.7 [c]	After October 20
If overseeded with perennial ryegrass		
October - November	0.5 [e]	
February - March	0.5 [e]	

The following notes apply to both of the Warm-Season tables above:

(a) In the Piedmont and the Ridge and Valley areas of Virginia, the existing native soil will normally be comprised predominantly of clay and/or silt and these soils have inherently lower water infiltration and percolation rates and greater nutrient holding capacity. However, most areas of the Coastal Plain have existing native soils that are predominantly sandy textured soils and other facilities throughout the state may choose to install modified soil root zones that are predominantly sand (>50%) in order to maximize drainage and reduce compaction tendency. **If subsurface drain tile surrounded by sand and/or gravel has been installed under the playing surface of any of these fields, their nitrogen programs should be managed as predominantly sand-based systems to minimize nutrient leaching.**

(b) The beginning and ending dates for application of nitrogen shall be determined using guidance contained on page 4 of this Nutrient Management Plan.

(c) WSN must be applied as two applications not to exceed 0.35 pounds per 1,000 ft^2 each with a minimum of 15 days between applications. Alternatively, using a material that contains slowly available nitrogen sources, split applications of 0.5 pounds per 1,000 ft^2 may be applied with a minimum of 15 days between applications.

(d) If a material containing slowly available forms of nitrogen is used, rates up to 1.0 pounds of nitrogen per 1,000 ft^2 may be applied in a single application with a minimum of 30 days between applications.

(e) For overseeded warm season grasses, an additional 0.7 pounds per 1,000ft^2 of WSN may be applied in the Fall after the perennial ryegrass overseeding is well established. The WSN must be applied as two applications not to exceed 0.35 pounds per 1,000 ft^2 of nitrogen each, with a minimum of 15 days between applications. Additional WSN application of 0.5 pounds per 1,000 ft^2 may be made in February-March to overseeded perennial ryegrass if growth and color indicate need. Alternatively, split applications of 0.5 pounds of nitrogen per 1,000 ft^2 each with a minimum of 15 days between applications may be applied using a material containing slowly available nitrogen sources.

Phosphorus and Potassium Recommendations for <u>Established</u> Turf and <u>Athletic Fields</u>

Apply phosphorus (P_2O_5) and potassium (K_2O) fertilizers as indicated by a soil test using the following guidelines:

Soil Test (VT) Rating	P_2O_5 lb/1000 ft^2	K_2O lb/1000 ft^2
L-	3	3
L	2.5	2.5
L+	2	2
M-	2	2
M	1.5	1.5
M+	1	1
H-	1	1
H	0.75	0.75
H+	0.5	0.5
VH	0	0

Avoid the general use of high phosphorus ratio fertilizers such as 10-10-10 or 5-10-10, unless soil tests indicate phosphorus availability below the M+ level.

For irrigated Athletic Fields grown on Naturally Occurring and Modified Sand Based soils only, up to 0.5 pounds of P_2O_5 per 1,000 ft^2 may be applied, if needed, to aid in recovery of damaged turf during times of extreme use. No phosphorus applications shall be made when the soil phosphorus test level is above 65% saturation, based on the soil test phosphorus values and region.

Establishment/Grow-In Recommendations for Golf Courses, Athletic Fields, and Sod Production

(These rates replace normal maintenance fertilizer applications that would have occurred during these time periods.)

Warm Season Grasses:

Predominantly Silt/Clay Soils

♦ Plant Date - late May -June for sprigs, plugs, sod, or seeding.

♦ Apply P_2O_5 and K_2O as needed based on soil test recommendations, incorporate into the top 2 inches if possible.

♦ At Planting - Up to 1.0 pounds of nitrogen per 1,000 ft^2 using a material containing slowly available forms of nitrogen may be applied as one application or lesser amounts applied at regular intervals, through the first 4 weeks, not to exceed a total of 1.0 pounds of nitrogen per 1,000ft^2.

♦ Four weeks after planting - 0.25 pounds.of WSN per 1,000 ft^2 per week for the next 4 weeks.

Naturally Occurring or Modified Sand Based Soils

♦ Plant Date - late May -June for sprigs, plugs, sod, or seeding.

♦ Apply P_2O_5 and K_2O as needed based on soil test recommendations, incorporate into the top 2 inches if possible.

♦ At Planting - Up to 1.0 pounds of nitrogen per 1,000 ft^2 using a material containing slowly available forms of nitrogen may be applied as one application or lesser amounts at regular intervals through the first 4 weeks, not to exceed a total of 1.0 pounds of nitrogen per 1,000 ft^2.

♦ Four weeks after planting - 0.25 pounds per 1,000 ft^2 using a material containing slowly available forms of nitrogen per week for the next 4 weeks.

Cool Season Grasses:

Predominantly Silt/Clay Soils

♦ Plant Date - August - September (preferred)

♦ Apply P_2O_5 and K_2O as needed based on soil test recommendations, incorporate into the top 2 inches if possible.

♦ At Planting - up to 0.9 pounds of nitrogen per 1,000 ft^2 using a material containing slowly available forms of nitrogen may be applied; 30 days after planting, apply up to 0.5 pounds of nitrogen per 1,000 ft^2 every week for the next 4 weeks.

Naturally Occurring or Modified Sand Based Soils

♦ Plant Date - August -September (preferred)

♦ Apply P_2O_5 and K_2O as needed based on soil test recommendations, incorporate into the top 2 inches if possible.

♦ At Planting - up to 0.9 pounds of nitrogen per 1,000 ft^2 using a material containing slowly available forms of nitrogen may be applied.

♦ Apply up to 0.25 pounds of nitrogen per 1,000 ft^2 per week after germination is complete, for the next 8 weeks. If using a material that contains slowly available forms of nitrogen, up to 0.5 pounds of nitrogen per 1,000 ft^2 every two weeks may be applied after germination is complete for the next 8 weeks.

Recommendations for Establishment of Turf

These recommendations are for timely planted turfgrass, that is, the seed or vegetative material (sod, plugs, and /or sprigs), are planted at a time of the year when temperatures and moisture are adequate to maximize turfgrass establishment. These recommended establishment periods would be late summer to early fall for cool-season turfgrasses and late spring through mid-summer for warm-season turfgrasses.

Phosphorus and Potassium Recommendations for Establishment of Turf

Soil Test (VT) Rating	P_2O_5 lb/1000 ft^2	K_2O lb/1000 ft^2
L-	4	3
L	3.5	2.5
L+	3	2
M-	3	2
M	2.5	1.5
M+	2	1
H-	2	1
H	1.5	0.75
H+	1	0.5
VH	0	0

Nitrogen Application for Establishment of Turf

At the time of establishment, apply no more than 0.9 pounds per 1,000 ft^2 of total nitrogen for cool season grasses or 1.0 pounds per 1,000 ft^2 of total nitrogen for warm season grasses, using a material containing slowly available forms of nitrogen, followed by one or two applications beginning 30 days after planting, not to exceed a total of 1.8 pounds per 1,000 ft^2 total for cool season grasses and 2.0 pounds per 1,000 ft^2 for warm season grasses for the establishment period. Applications of WSN cannot exceed more than 0.7 pounds per 1,000 ft^2 within a 30-day period.

Sod Installations:

Site preparation should include a soil test, which can be done several months before the project begins in order to have time to get test results back. Phosphorus, potassium and lime applications should be based on soil test analysis to increase the likelihood of a successful installation. Shallow incorporation of material into the top 2 inches of the soil is preferred prior to sod installation, especially if lime is required.

No more than 0.7 lb of WSN/1,000 ft^2 should be applied before sod is installed. Alternatively, using a slowly available forms of nitrogen, 0.9 lb N/1000 ft^2 for cool season grasses or 1 lb of N/1000 ft^2 for warm season grasses may be applied before sod installation.

After installation apply adequate amounts of water to maintain sufficient soil moisture (i.e. to prevent visible wilt

symptoms). Excessive water will limit initial root development. After roots begin to establish (as verified by lightly tugging on the sod pieces), shift irrigation strategy to a deep and infrequent program in order to encourage deep root growth. Apply approximately 1 inch of water per week (either by rainfall or irrigation), making sure that the water is being accepted by the soil profile without running off. This will insure thorough wetting of the soil profile.

After sod has completed rooting and is well established, initiate the normal nitrogen management program as described for the appropriate use shall be recommended.

Other Turf Management Considerations

Lime Recommendations
Lime should be recommended based on a soil test to maintain soil pH within an agronomic range for turfgrass.

For new seedings where lime is recommended, incorporate the lime into the topsoil for best results.

Returning Grass Clippings
Recycling of clippings on turf should be encouraged as an effective means of recycling nitrogen, phosphorus, and potassium. Proper mowing practices that ensure no more than 1/3 of the leaf blade is removed in any cutting event will enhance turf appearance and performance when clippings are returned. Return all leaf clippings from mowing events to the turf rather than discharging them onto sidewalks or streets. Rotary mulching mowers can further enhance clipping recycling by reducing the size of clippings being returned to the turfgrass canopy.

Management of Collected Clippings
If clippings are collected they should be disposed of properly. They may be composted or spread uniformly as a thin layer over other turf areas or areas where the nutrient content of the clippings can be recycled through actively growing plants. They should not be blown onto impervious surfaces or surface waters, dumped down stormwater drains, or piled outside where rainwater will leach out the nutrients creating the potential for nutrient loss to the environment.

Use of Iron
Foliar iron supplements may be used to stimulate a greening effect on the turfgrass as an alternative to additional applications of nitrogen. These applications are most beneficial if applied in late spring through summer for cool season grasses and in late summer through fall for warm-season grasses.

Impervious Surfaces
Do not apply fertilizers containing nitrogen or phosphorus to impervious surfaces (sidewalks, streets, etc.). DO NOT use urea as an ice melting substance in cold weather. Remove any granular materials that land on impervious surfaces by sweeping and collecting, and either put the collected material back in the bag, or spread it onto the turf and/or use a leaf blower etc., to return the fertilizer back to the turfgrass canopy.

Environmentally Sensitive Areas
Avoid fertilizer applications within 15 feet of waterways. This setback is reduced to 10 feet if a drop spreader, rotary spreader with deflector or targeted spray liquid is used to apply the fertilizer. The use of fertilizers with slow release nitrogen is greatly encouraged, especially where there is any reason to suspect environmental concerns.

Recordkeeping requirements and reporting for the application of fertilizer (2VAC5-405-100)
State-owned lands subject to this regulation shall maintain records of each application of fertilizer to non-agricultural land for at least three years following the application. These records shall be available for inspection. Each record shall contain the:

1. Name, mailing address of the application site;
2. Name of the person making or supervising the application;
3. Day, month, and year of application;
4. Weather conditions at the start of the application;
5. Acreage, area, square footage, or plants treated;
6. Analysis of fertilizer applied;
7. Amount of fertilizer used, by weight or volume; and
8. Type of application equipment used.

Spreader Calibration
Spreaders and boom sprayers must be properly calibrated if they are to deliver fertilizers and pesticides to turf at correct rates. If calibration is done incorrectly, the product may be misapplied and either too much or too little of the product will reach the turf. Sprayers and spreaders should be calibrated at first use and every fourth application. Spreaders and sprayers be calibrated in several ways. Refer to the following publication for detailed instructions:

www.turfgrass.ncsu.edu/Articles/admin/2008/Calibration_of_Turfgrass_Boom_Sprayers_and_Spreaders_(AG-628).pdf

6. Soil Reports

Report Number: 23-069-1103
Account Number: 06736

Send To: SOIL HORIZONS
2 Whitakers Mill
WILLIAMSBURG VA 23185

Waypoint ANALYTICAL
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Main 804-743-9401 ° Fax 804-271-6446
www.waypointanalytical.com

Grower: Norfolk State University

SOIL ANALYSIS REPORT

Analytical Method(s): SMP Buffer pH Mehlich 3 Loss On Ignition Water pH

Date Received: 03/10/2023 **Date Of Analysis:** 03/13/2023 **Date Of Report:** 03/13/2023

Sample ID / Field ID	Lab Number	OM	W/V	ENR	Phosphorus			Potassium	Magnesium	Calcium	Sodium	pH		Acidity	C.E.C
		% Rate	Soil Class	lbs/A	M3 ppm Rate	ppm Rate	ppm Rate	K ppm Rate	Mg ppm Rate	Ca ppm Rate	Na ppm Rate	Soil pH	Buffer Index	H meq/100g	meq/100g
SUB1	08808	4.3 M		120	65 H			131 M	111 L	1826 H		6.7		0.5	10.9
SUB2	08809	3.9 M		116	51 H			114 M	107 M	1318 H		6.5		0.6	8.4
SUB3	08810	3.9 M		116	43 M			102 M	116 M	1029 M		5.7	6.76	1.7	8.1
Football	08811	3.4 M		108	49 M			60 L	79 L	1086 H		6.3		0.7	6.9
Baseball	08813	3.6 M		111	70 H			103 M	117 M	1057 M		6.0	6.81	1.2	7.7

Sample ID / Field ID	Percent Base Saturation					Nitrate	Sulfur	Zinc	Manganese	Iron	Copper	Boron	Soluble Salts		
	K %	Mg %	Ca %	Na %	H %	NO_3 N ppm Rate	S ppm Rate	Zn ppm Rate	Mn ppm Rate	Fe ppm Rate	Cu ppm Rate	B ppm Rate	SS ms/cm Rate		
SUB1	3.1	8.5	83.8		4.6										
SUB2	3.5	10.6	78.5		7.1										
SUB3	3.2	11.9	63.5		21.0										
Football	2.2	9.5	78.7		10.1										
Baseball	3.4	12.7	68.6		15.6										

Values on this report represent the plant available nutrients in the soil. Rating after each value: VL (Very Low), L (Low), M (Medium), H (High), VH (Very High). ENR - Estimated Nitrogen Release. C.E.C. - Cation Exchange Capacity.

Explanation of symbols: % (percent), ppm (parts per million), lbs/A (pounds per acre), ms/cm (milli-mhos per centimeter), meq/100g (milli-equivalent per 100 grams). Conversions: ppm x 2 = lbs/A, Soluble Salts ms/cm x 640 = ppm.

This report applies to sample(s) tested. Samples are retained a maximum of thirty days after testing.

Analysis prepared by: Waypoint Analytical Virginia, Inc.

by: Brandi Watson

Brandi Watson

Report Number: 23-069-1103
Account Number: 06736

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Grower: Norfolk State University

SOIL ANALYSIS REPORT

Analytical Method(s): SMP Buffer pH Mehlich 3 Loss On Ignition Water pH

Date Received: 03/10/2023 **Date Of Analysis:** 03/13/2023 **Date Of Report:** 03/13/2023

Sample ID / Field ID	Lab Number	OM	W/V	ENR	Phosphorus			Potassium	Magnesium	Calcium	Sodium	pH		Acidity	C.E.C
		% Rate	Soil Class	lbs/A	M3 ppm Rate	ppm Rate	ppm Rate	K ppm Rate	Mg ppm Rate	Ca ppm Rate	Na ppm Rate	Soil pH	Buffer Index	H meq/100g	meq/100g
Softball	08814	4.0 M		119	64 H			113 M	127 M	1119 H		6.2		1.0	7.9

Sample ID / Field ID	Percent Base Saturation					Nitrate	Sulfur	Zinc	Manganese	Iron	Copper	Boron	Soluble Salts		
	K %	Mg %	Ca %	Na %	H %	NO_3 N ppm Rate	S ppm Rate	Zn ppm Rate	Mn ppm Rate	Fe ppm Rate	Cu ppm Rate	B ppm Rate	SS ms/cm Rate		
Softball	3.7	13.4	70.8		12.7										

Values on this report represent the plant available nutrients in the soil. Rating after each value: VL (Very Low), L (Low), M (Medium), H (High), VH (Very High). ENR - Estimated Nitrogen Release. C.E.C. - Cation Exchange Capacity.

Explanation of symbols: % (percent), ppm (parts per million), lbs/A (pounds per acre), ms/cm (milli-mhos per centimeter), meq/100g (milli-equivalent per 100 grams). Conversions: ppm x 2 = lbs/A, Soluble Salts ms/cm x 640 = ppm.

This report applies to sample(s) tested. Samples are retained a maximum of thirty days after testing.

Analysis prepared by: Waypoint Analytical Virginia, Inc.

by: Brandi Watson

Brandi Watson

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

March 27, 2023

Towanda Colquiett
Norfolk State University
700 Park Avenue
Norfolk VA 23690

Your nutrient management plan (NMP) dated 4/8/2023 located in the City of Norfolk has been approved by the Virginia Department of Conservation and Recreation (DCR). The approved plan is for 51.41 acres. Only nutrient recommendations for applications to be made after the date of this letter are approved by this letter. Your NMP was written by Angela Whitehead, a nutrient management planner certified by DCR.

This site has not been inspected by DCR and this approval is contingent upon site conditions being as stated in the NMP. Any revisions to this plan must be approved by DCR. Any change in personnel resulting in a change to the plan manager should be reported to the Certified Nutrient Management Planner who will then make DCR aware. Please note that this letter should be kept with the NMP and supporting documentation including nutrient application records. This plan expires on 4/8/2026. Please feel free to contact me with any questions or concerns regarding this approval.

Best regards,

Anita Tuttle
Urban Nutrient Management Coordinator
Division of Soil and Water Conservation
600 East Main Street, 24th Floor
Richmond VA 23219
(804) 513-5958

NORFOLK STATE UNIVERSITY

APPENDIX F

Norfolk State University Contract with Brightview Landscaping

BURNS McDONNELL

NORFOLK STATE UNIVERSITY

We see the future in you.

Procurement Services
700 Park Ave., HBW Suite 150, Norfolk, Virginia 23504
P: 757-823-8053 | F: 757-823-8975 | nsu.edu

COMMONWEALTH OF VIRGINIA

STANDARD CONTRACT

Contract Number: RFP No., R66804-RMS

This contract entered into this 16th day of June 2021, by BrightView Landscape Services, Inc hereinafter call the "Contractor" and Commonwealth of Virginia, Norfolk State University, called the "University."

WITNESSETH that the Contractor and the University, in consideration of the mutual covenants, promises and agreements herein contained, agree as follows:

SCOPE OF CONTRACT: The Contractor shall provide lawn and ground maintenance services to the University as set forth in the Contract Documents.

PERIOD OF PERFORMANCE: From Date of Award through June 1, 2023.

The contract documents shall consist of:

(1) This signed form.

(2) The following portions of the Request for Proposal dated May 6, 2021:

(a) The Statement of Needs,

(b) The General Terms and Conditions,

(c) The Special Terms and Conditions together with any negotiated modifications of those Special Conditions.

Attachment (1) Addendum No.1, Dated: May 12, 2021 & Attachment: (2) Addendum No. 2, Dated: May 26, 2021

(3) The Contractor's Proposal dated June 2, 2021, and the following negotiated modifications to the Proposal, dated June 14, 2021, all of which documents are incorporated herein.

NORFOLK STATE UNIVERSITY

We see the future in you.

The Contractor agrees to subcontract 3% of the contract to DSBSD-certified small businesses.

IN WITNESS WHEREOF, the parties have caused this Contract to be duly executed intending to be bound thereby.

CONTRACTOR:

By: Chris Greene

Title: VPGM

PURCHASING AGENCY:

By: _____

Title: Director, Procurement Services

Note: This public body does not discriminate against faith-based organizations in accordance with the *Code of Virginia*, § 2.2-4343.1 or against a bidder or offeror because of race, religion, color, sex, sexual orientation, gender identity, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment.

NORFOLK STATE UNIVERSITY

We see the future in you.

COMMONWEALTH OF VIRGININA
NORFOLK STATE UNIVERSITY

DATE:	May 31, 2024
CONTRACT NUMBER:	R66804-RMS
RENEWAL NUMBER:	Renewal No.002
ISSUED BY:	Norfolk State University Procurement Services 700 Park Avenue H.B. Wilson Hall, Suite 150 Norfolk, Virginia 23504
CONTRACTOR:	BrightView Landscape Services, Inc. 1030 Ruritan Blvd Chesapeake, VA 23324
Title:	Contract Renewal – Lawn & Ground Maintenance

This Supplemental Agreement is entered into pursuant to the provisions of the basic contract.

Description of Renewal:

The purpose of this letter is to renew your contract with Norfolk State University for twelve (12) additional months with a (1) one-year renewal period remaining on the contract. The new contract period will begin on June 16, 2024, through June 15, 2025.

Except as provided herein conditions of Contract, all other terms and No. R66804-RMS remains unchanged and in full force and effect.

BrightView Landscape Services, Inc.

Chris Greene
Signature

Chris Greene
Type or Print Name

VPGM
Title

6/6/24 240-876-6055
Date Telephone No.

Norfolk State University

Signature

Erika Allen
Type or Print Name

Asst. Director
Title

6-11-24 757-823-8053
Date Telephone No.

NORFOLK STATE UNIVERSITY

APPENDIX G

Notice of MS4 Interconnection

BURNS McDONNELL

Pennoni
PENNONI ASSOCIATES INC.
CONSULTING ENGINEERS

September 28, 2015

Ms. June Whitehurst
Environmental Programs Manager
Environmental Management
City of Norfolk
2233 McKann Avenue
Norfolk, VA 23502

RE: NSU MS4 2015 Annual Report & Program Plan Requirements – Notification of Interconnected MS4
Norfolk, Virginia

Dear Ms. Whitehurst,

Pennoni Associates Inc., on behalf of Norfolk State University, has been tasked with preparing the University's 2015 Annual MS4 Report and Program updates. As part of the latest permit requirements for MS4 authorities, it is the University's responsibility to provide written notification regarding its MS4 physical interconnection with the City of Norfolk MS4. This letter of notification shall serve as such notice and be included in the University's MS4 Program and Annual Report.

Sincerely,

PENNONI ASSOCIATES INC.

Scott Chewning, PE, LEED AP
Associate Vice President