

COMNAVREG MIDLANT INSTRUCTION \_\_\_\_\_

From: Commander, Navy Region, Mid-Atlantic

Subj: EROSION AND SEDIMENT CONTROL INSTRUCTION

Ref: (a) 4 VAC 50-60 - Virginia Stormwater Management Program  
(VSMP) Permit Regulations For Small Municipal Separate  
Storm Sewer Systems (effective 1 Jan 05)  
(b) 4 VAC 50-30 - Virginia Erosion and Sediment Control  
Regulations  
(c) Virginia Erosion and Sediment Control Handbook  
(d) COMNAVREG MIDLANT Virginia Stormwater Management  
Program Construction Permit Instruction

Encl: (1) Minimum Criteria, Techniques, and Methods

1. Purpose. To establish minimum standards for the effective control of soil erosion, sediment deposition and non-agricultural runoff from land disturbing activities at installations and annexes under the purview of Commander, Navy Region, Mid-Atlantic (COMNAVREG MIDLANT) and located in the Hampton Roads area, including Norfolk Naval Shipyard (NAVSHIPYD Norfolk). This instruction applies to all land disturbing activities greater than or equal to 10,000 square feet in size. This instruction seeks to maintain compliance with references (a) and (b) through the following objectives:

a. Establish the criteria, procedures, and responsibilities for preparing and complying with Erosion and Sediment Control Plans for land disturbing activities.

b. Establish a procedure for inspecting land disturbing activities and their associated erosion and sediment controls.

2. Definitions

a. Erosion and Sediment Control Plan - A document that describes the minimum measures required to minimize the erosion and sediment runoff at a site during land disturbing activities.

b. Final Stabilization - Final Stabilization is reached when all soil disturbing activities at the site have been completed and permanent vegetative cover has been established on denuded areas not otherwise permanently stabilized. Permanent vegetation is not be considered established until a ground cover is achieved that is uniform, mature enough to survive, and will inhibit erosion.

c. Land-Disturbing Activity - A manmade change to the land surface that potentially changes its runoff characteristics including but not limited to clearing, grading, excavating, transporting, and filling of land.

d. Operator - Any person associated with a construction project that meets either of the following two criteria:

(1) The person who has direct operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or

(2) The person who has day-to-day operational control of those activities at a project which are necessary to ensure compliance with a Stormwater Pollution Prevention Plan (SWPPP) for the site or other permit conditions.

3. Policy. References (a) and (b) require the establishment of an enforceable policy that requires erosion and sediment control for land-disturbing activities greater than or equal to 10,000 square feet. Reference (c) provides guidance and lists the 19 minimum control measures that must be considered when providing erosion and sediment control. Reference (d) describes the requirements for erosion and sediment control when a Virginia Stormwater Management Program (VSMP) General Permit for Stormwater Discharges from Construction Activities is required.

a. An Erosion and Sediment Control Plan must be prepared for all land disturbing activities covered by this instruction. The plan must contain sufficient information to ensure that problems of erosion and sedimentation have been adequately addressed. The length and complexity of the plan will correspond with the size of the project, the severity of site conditions, and the potential for off-site damage. Reference (c) will be used to the maximum extent practicable in the preparation of an Erosion and Sediment Control Plan. This will ensure for the effective control of soil erosion and sediment deposition to prevent the unreasonable degradation of properties, stream channels, waters and other natural resources.

b. The Erosion and Sediment Control Plan shall be consistent with the criteria, techniques and methods specified in enclosure (1) and include the following:

(1) A map identifying the natural resources, disturbed areas and erosion and sediment control measures at the site.

(2) A sequence of construction, including stripping and clearing; rough grading; construction of utilities, infrastructure, and buildings; and final grading and landscaping. Sequencing shall identify the expected date on which clearing will begin, the estimated duration of exposure of cleared areas, areas of clearing, installation of temporary erosion and sediment control measures, and establishment of permanent vegetation.

(3) All erosion and sediment control measures necessary to control soil movement to the point where there is only minimal loss throughout all phases of construction and after completion of construction and final stabilization.

(4) The minimum inspection requirements for all erosion and sediment control measures.

(5) Seeding mixtures and rates, types of sod, method of seedbed preparation, expected seeding dates, type and rate of lime and fertilizer application, and kind and quantity of mulching for both temporary and permanent vegetative control measures.

c. Erosion and sediment controls may be included as part of SWPPP for projects with land-disturbing activity equal to or greater than one (1) acre, as specified in reference (d).

d. All Erosion and Sediment Control Plans shall be submitted to the authority designated by Regional Environmental for review and approval at least 30 days prior to the start of any construction.

#### 4. Inspections

a. The Operator shall conduct inspections of all erosion and sediment control measures to determine the overall effectiveness of the plan and the need for additional control measures. Inspections shall be conducted as specified in the contract, but at a minimum frequency of: immediately after the initial installation of erosion and sediment controls; at least once

every 14 calendar days; within 48 hours following any runoff producing storm event; and at the completion of the project. All inspections shall be documented in writing and kept on-site.

b. Upon determination of a violation of the requirements of this instruction or non-compliance with the Erosion and Sediment Control Plan, the installation ROICC office may issue an order requiring that all or part of the land disturbing activities be stopped until appropriate corrective actions have been taken. This includes activities where non-compliance is causing, or is in imminent danger of causing, harmful erosion of lands or sediment deposition in waters within the watersheds of the installation, or where the land-disturbing activities have commenced without any required permits.

5. Enforcement. Any activity that violates this instruction may be subject to enforcement actions under the Clean Water Act; including Warning Letters, Notices of Violation, fines, and penalties from the Environmental Protection Agency, the Virginia Department of Conservation and Recreation, and the Virginia Department of Environmental Quality. The party that causes the violation will be responsible for all required corrective actions and will have to provide a written description of why the violation occurred to the Regional Environmental Group.

## 6. Responsibilities

### a. Regional Environmental Group Water Program Manager

(1) The Regional Environmental Group Water Program Manager will oversee the Erosion and Sediment Control program to verify that Erosion and Sediment Control Plans are prepared, submitted, and approved in accordance with this instruction.

(2) The Regional Environmental Group Water Program Manager will determine when erosion and sediment controls are required for projects that are less than 10,000 square feet.

(3) The Regional Environmental Group Water Program Manager will designate appropriate groups to review E&S Control Plans and conduct over site inspections.

### b. NAVSHIPYARD Norfolk Code 106

(1) Code 106 will oversee the Erosion and Sediment Control program to verify that Erosion and Sediment Control Plans

are prepared, submitted and approved in accordance with this instruction, for Norfolk Naval Shipyard.

(2) Code 106 will determine when erosion and sediment controls are required for projects that are less than 10,000 square feet at NAVSHIPYD Norfolk.

c. Naval Facilities Engineering Command, Mid-Atlantic (NAVFAC MIDLANT). NAVFAC MIDLANT will determine the amount of disturbed area for a project and ensure that the appropriate language is included in the contract to ensure that erosion and sediment controls are included and followed in accordance with this instruction.

d. Operator. The Operator is responsible for preparing and complying with the Erosion and Sediment Control Plan, maintaining the control devices, and conducting inspections.

7. Review Authority. The Regional Environmental Group Water Program Manager is responsible for reviewing and updating this instruction.

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MINIMUM CRITERIA, TECHNIQUES, AND METHODS  
FOR EROSION AND SEDIMENT CONTROL PLANS

All erosion and sediment control plans must be consistent with the following criteria, techniques, and methods:

1. Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is reached on any portion of the site. Temporary soil stabilization shall be applied within seven days to denuded areas that may not be at final grade but will remain dormant for longer than 30 days. Permanent stabilization shall be applied to areas that are to be left dormant for more than one year.

2. During construction of the project, soil stockpiles and borrow areas shall be stabilized or protected with sediment trapping measures. The applicant is responsible for the temporary protection and permanent stabilization of all soil stockpiles on site as well as borrow areas and soil intentionally transported from the project site.

3. 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. Sediment basins and traps, perimeter dikes, sediment barriers and other measures intended to trap sediment shall be constructed as a first step in any land-disturbing activity and shall be made functional before upslope land disturbance takes place.

5. Stabilization measures shall be applied to earthen structures such as dams, dikes, and diversions immediately after installation.

6. Sediment traps and sediment basins shall be designed and constructed based upon the total drainage area to be served by the trap or basin.

a. The minimum storage capacity of a sediment trap shall be 134 cubic yards per acre of drainage area and the trap shall only control drainage areas less than three acres.

b. Surface runoff from disturbed areas that is comprised of flow from drainage areas greater than or equal to three acres shall be controlled by a sediment basin. The minimum storage

capacity of a sediment basin shall be 134 cubic yards per acre of drainage area. The outfall system shall, at a minimum, maintain the structural integrity of the basin during a 25-year storm of 24-hour duration. Runoff coefficients used in runoff calculations shall correspond to a bare earth condition or those conditions expected to exist while the sediment basin is utilized.

7. Cut and fill slopes shall be designed and constructed in a manner that will minimize erosion. Slopes that are found to be eroding excessively within one year of permanent stabilization shall be provided with additional slope stabilizing measures until the problem is corrected.

8. Concentrated runoff shall not flow down cut or fill slopes unless contained within an adequate temporary or permanent channel, flume, or slope drain structure.

9. Whenever water seeps from a slope face, adequate drainage or other protection shall be provided.

10. All storm sewer inlets that are made operable 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.

11. Before newly constructed stormwater conveyance channels or pipes are made operational, adequate outlet protection and any required temporary or permanent channel lining shall be installed in both the conveyance channel and receiving channel.

12. When work in a live watercourse is performed, precautions shall be taken to minimize encroachment, control sediment transport, and stabilize the work area to the greatest extent possible during construction. Non-erodible material shall be used for the construction of causeways and cofferdams. Earthen fill may be used for these structures if armored by non-erodible cover materials.

13. When a live watercourse must be crossed by construction vehicles more than twice in any six-month period, a temporary vehicular stream crossing constructed of non-erodible material shall be provided.

14. All applicable federal, state, and local regulations pertaining to working in or crossing live watercourses shall be met.

15. The bed and banks of a watercourse shall be stabilized immediately after work in the watercourse is completed.

16. Underground utility lines shall be installed in accordance with the following standards in addition to other applicable criteria:

a. No more than 500 linear feet of trench may be opened at one time.

b. Excavated material shall be placed on the uphill side of trenches.

c. Effluent from dewatering operations shall be filtered or passed through an approved sediment trapping device, or both, and discharged in a manner that does not adversely affect flowing streams or off-site property.

d. Material used for backfilling trenches shall be properly compacted in order to minimize erosion and promote stabilization.

e. Restabilization shall be accomplished in accordance with these regulations.

f. Applicable safety regulations shall be complied with.

17. Where construction vehicle access routes intersect paved or public roads, provisions shall be made to minimize the transport of sediment by vehicular tracking onto the paved surface. Where sediment is transported onto a paved or public road surface, the road surface shall be cleaned thoroughly at the end of each day. Sediment shall be removed from the roads by shoveling or sweeping and transported to a sediment control disposal area. Street washing shall be allowed only after sediment is removed in this manner. This provision shall apply to individual development lots as well as to larger land-disturbing activities.

18. All temporary erosion and sediment control measures shall be removed within 30 days after final site stabilization or after the temporary measures are no longer needed, unless otherwise authorized by the local program authority. Trapped sediment and the disturbed soil areas resulting from the disposition of temporary measures shall be permanently stabilized to prevent further erosion and sedimentation.

19. Properties and waterways downstream from development sites shall be protected from sediment deposition, erosion and damage due to increases in volume, velocity and peak flow rate of

stormwater runoff for the stated frequency storm of 24-hour duration in accordance with the following standards and criteria:

a. Concentrated stormwater runoff leaving a development site shall be discharged directly into an adequate natural or man-made receiving channel, pipe, or storm sewer system. For those sites where runoff is discharged into a pipe or pipe system, downstream stability analyses at the outfall of the pipe or pipe system shall be performed.

b. Adequacy of all channels and pipes shall be verified in the following manner:

(1) The applicant shall demonstrate that the total drainage area to the point of analysis within the channel is one hundred times greater than the contributing drainage area of the project in question; or

(2) Natural channels shall be analyzed by the use of a two-year storm to verify that stormwater will not overtop channel banks nor cause erosion of channel bed or banks; and

(3) All previously constructed man-made channels shall be analyzed by the use of a ten-year storm to verify that stormwater will not overtop its banks and by the use of a two-year storm to demonstrate that stormwater will not cause erosion of channel bed or banks; and

(4) Pipes and storm sewer systems shall be analyzed by the use of a ten-year storm to verify that stormwater will be contained within the pipe or system.

c. If existing natural receiving channels or previously constructed man-made channels or pipes are not adequate, the applicant shall:

(1) Improve the channel to a condition where a ten-year storm will not overtop the banks and a two-year storm will not cause erosion to the channel bed or banks; or

(2) Improve the pipe or pipe system to a condition where the ten-year storm is contained within the appurtenances; or

(3) Develop a site design that will not cause the pre-development peak runoff rate from a two-year storm to increase when runoff outfalls into a natural channel or will not cause the

pre-development peak runoff rate from a ten-year storm to increase when runoff outfalls into a man-made channel; or

(4) Provide a combination of channel improvement, stormwater detention, or other measures which is satisfactory to the plan-approving authority to prevent downstream erosion.

d. The applicant shall provide evidence of permission to make the improvements.

e. All hydrologic analyses shall be based on the existing watershed characteristics and the ultimate development of the subject project.

f. If the applicant chooses an option that includes stormwater detention, he shall obtain approval from the locality of a plan for maintenance of the detention facilities. The plan shall set forth the maintenance requirements of the facility and the person responsible for performing the maintenance.

g. Outfall from a detention facility shall be discharged to a receiving channel, and energy dissipators shall be placed at the outfall of all detention facilities as necessary to provide a stabilized transition from the facility to the receiving channel.

h. All on-site channels must be verified to be adequate.

i. Increased volumes of sheet flows that may cause erosion or sedimentation on adjacent property shall be diverted to a stable outlet, adequate channel, pipe or pipe system, or to a detention facility.

j. In applying these stormwater runoff criteria, individual lots or parcels in a residential, commercial, or industrial development shall not be considered to be separate development projects. Instead, the development, as a whole, shall be considered to be a single development project. Hydrologic parameters that reflect the ultimate development condition shall be used in all engineering calculations.

k. All measures used to protect properties and waterways shall be employed in a manner that minimizes impacts on the physical, chemical, and biological integrity of rivers, streams, and other waters of the state.

COMNAVREG MIDLANT INSTRUCTION \_\_\_\_\_

From: Commander, Navy Region, Mid-Atlantic

Subj: POST CONSTRUCTION STORMWATER RUNOFF MANAGEMENT INSTRUCTION

Ref: (a) 4 VAC 50-60 - Virginia Stormwater Management Program  
(VSMP) Permit Regulations For Small Municipal Separate  
Storm Sewer Systems (Effective 1 Jan 05)  
(b) Virginia Stormwater Management Handbook  
(c) COMNAVREG MIDLANT Erosion and Sediment Control  
Instruction  
(d) Unified Facilities Criteria; Low Impact Development  
Manual

1. Purpose. To require minimum post-construction stormwater best management practices at installations and annexes under the purview of Commander, Navy Region, Mid-Atlantic (COMNAVREG MIDLANT) and located in the Hampton Roads area. This instruction applies to all development and redevelopment activities greater than or equal to one acre in size. The instruction also applies to land development activities that are smaller than one acre if the activities are part of a larger common plan of development. In cases where the Regional Environmental Water Program Manager determines that a project less than one acre in size will have a significant water quality impact, the instruction may also apply. This instruction seeks to maintain compliance with state and federal environmental regulations through the following objectives:

a. Require that the after-development runoff from land development and redevelopment activities is maintained as nearly as practicable to the pre-development runoff characteristics in order to reduce flooding, siltation, stream bank erosion, and property damage;

b. Establish minimum design criteria for the protection of properties and aquatic resources downstream from land development and redevelopment activities to prevent damages due to increases in volume, velocity, frequency, duration, and peak flow rate of stormwater runoff;

c. Establish minimum design criteria for measures to minimize non-point source pollution from stormwater runoff, which would otherwise degrade water quality;

d. Establish provisions for the long-term maintenance of stormwater management control devices and other techniques specified to manage the quality and quantity of runoff; and

e. Establish administrative procedures for the submission, review, approval, and disapproval of stormwater plans, and the inspection of approved projects.

## 2. Definitions

a. Average Land Cover Condition - A measure of the average amount of impervious surfaces within a facility.

FACILITY	AVERAGE LAND COVER
Naval Station, Norfolk (including NSA and SDA)	42.2%
Naval Amphibious Base, Little Creek	34.1%
Saint Juliens Creek Annex	37.7%
Scott Center Annex	41.3%
Saint Helena Annex	78.7%
Southgate Annex	74.3%
Naval Weapons Station, Yorktown	20.4%
Cheatham Annex	24%
Yorktown Fuels	16%
Craney Island	28.5%
Naval Air Station, Oceana	28.8%
Dam Neck Annex	24.6%
Naval Auxiliary Landing Field, Fentress	18.7%
Northwest Annex	16.6%
Lafayette River Annex	42%

b. Best Management Practice (BMP) - The use of structural or non-structural practices that are designed to reduce stormwater runoff pollutant loads, discharge volumes, and/or peak flow discharge rates.

c. Erosion and Sediment Control Plan - A document that is designed to minimize the erosion and sediment runoff at a site during land disturbing activities.

d. Flooding - A volume of water that is too great to be confined within the banks or walls of the stream, water body or conveyance system, and that overflows onto adjacent lands, causing or threatening damage.

e. Hotspot - An area where land use or activities generate highly contaminated runoff, with concentrations of pollutants in excess of those typically found in stormwater.

f. Hydrologic Soil Group (HSG) - A Natural Resource Conservation Service classification system in which soils are categorized into four runoff potential groups. The groups range from A soils, with high permeability and little runoff production, to D soils, which have low permeability rates and produce higher runoff.

g. Impervious Cover - A surface composed of any material that significantly impedes or prevents natural infiltration of water into soil. Impervious surfaces include, but are not limited to, roofs, buildings, streets, parking areas, and any concrete, asphalt, or compacted gravel surface.

h. Infiltration - The process of stormwater percolating into the subsoil.

i. Jurisdictional Wetland - An area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation, these wetlands receive regulatory review by the U. S. Army Corps of Engineers (ACOE), the Virginia Department of Environmental Quality (VDEQ), and local wetland boards.

j. Larger Common Plan of Development - Multiple separate and distinct construction activities that are planned to occur under one plan that can be linked together through documentation. For example, projects listed on the same 1391, NEPA documentation, design, contract, or Coastal Consistency Determination.

k. Linear Development Project - A land development project that is linear in nature such as, but not limited to, (i) the construction of electric and telephone utility lines, and natural gas pipelines; (ii) construction of tracks, rights-of-way, bridges, communication facilities and other related structures of a railroad company; and (iii) highway construction projects.

l. Non-point Source (NPS) Pollution - Pollution from any source other than from any discernible, confined, and discrete conveyances, and shall include, but not be limited to, pollutants from agricultural, silvicultural, mining, construction, subsurface disposal, and urban runoff sources.

m. Non-point Source Pollutant Runoff Load or Pollutant Discharge - The average amount of a particular pollutant measured in pounds per year, delivered in a diffuse manner by stormwater runoff.

n. Percent Impervious - The impervious area within the site divided by the total area of the site multiplied by 100.

o. Post-development - Conditions that reasonably may be expected or anticipated to exist after completion of the land development activity on a specific site or tract of land.

p. Pre-development - Conditions that exist at the time that plans for the land development of a tract of land are approved by the plan approving authority. Where phased development or plan approval occurs (preliminary grading, roads, utilities, etc.), the existing conditions at the time *prior to* the first item being approved or permitted shall establish pre-development conditions.

q. Redevelopment - The process of developing land that is or has been previously developed.

r. Runoff or Stormwater Runoff - That portion of precipitation that is discharged across the land surface or through conveyances to one or more waterways.

s. Site - The parcel of land being developed, or a designated planning area in which the land development project is located.

t. State Waters - All waters on the surface and under the ground wholly or partially within or bordering the Commonwealth or within its jurisdiction.

u. Stormwater Management Facility - A device that controls stormwater runoff and changes the characteristics of that runoff including, but not limited to, the quantity and quality, the period of release, and the velocity of flow.

v. Stormwater Management Plan or Plan - A document containing material for describing how existing runoff characteristics will be affected by a land development project

and methods for complying with the requirements of the Stormwater Management Program.

w. Water Quality Volume (WQV) - The volume equal to the first one-half inch of runoff multiplied by the impervious surface of the land development project.

x. Watershed - A defined land area drained by a river, stream, drainage ways or system of connecting rivers, streams, or drainage ways such that all surface water within the area flows through a single outlet.

3. Guidance. The criteria and information, including specifications and standards, of the Virginia Stormwater Handbook will be used for the proper implementation of this instruction. The Handbook includes a list of acceptable stormwater treatment practices, including the specific design criteria for each. All references to the Virginia Stormwater Management Handbook are presumed to be the "latest edition" as defined on the Virginia Department of Conservation and Recreation website ([www.dcr.state.va.us](http://www.dcr.state.va.us)). The Low Impact Development Techniques identified in the Unified Facilities Criteria; Low Impact Development Manual may also be used as a source of alternative BMPs to manage and treat stormwater runoff.

4. Policy. The following criteria must be addressed for stormwater management:

a. Land development and redevelopment projects greater than or equal to one acre in size or projects that are part of a larger common plan of development; must be evaluated in accordance with the water quality Performance-based or Technology-based criteria listed below. If a stormwater management BMP is required for a project, then the appropriate Stormwater Management Plans must be prepared and submitted in accordance with Section 5.

(1) Performance-Based Criteria. For land development, the calculated post-development non-point source pollutant runoff load must be compared to the calculated pre-development load based upon the average land cover condition (see average land cover definition). A BMP must be designed, constructed and maintained to achieve the target pollutant removal efficiencies specified in Table 1 to effectively reduce the pollutant load to the required level based upon the following four applicable land development situations for which the performance criteria apply:

(a) Situation 1 consists of land development where the existing percent impervious cover is less than or equal to the average land cover condition (see definition 2.a) and the proposed improvements will create a total percent impervious cover which is less than the average land cover condition (see definition 2.a).

Requirement: No reduction in the after-development pollutant discharge is required.

(b) Situation 2 consists of land development where the existing percent impervious cover is less than or equal to the average land cover condition (see definition 2.a) and the proposed improvements will create a total percent impervious cover which is greater than the average land cover condition (see definition 2.a).

Requirement: The pollutant discharge after development must not exceed the existing pollutant discharge based on the average land cover condition.

(c) Situation 3 consists of land development where the existing percent impervious cover is greater than the average land cover condition (see definition 2.a).

Requirement: The pollutant discharge after development must not exceed (i) the pollutant discharge based on existing conditions less 10 percent or (ii) the pollutant discharge based on the average land cover condition (see definition 2.a), whichever is greater.

(d) Situation 4 consists of land development where the existing percent impervious cover is served by an existing stormwater management BMP that addresses water quality.

Requirement: The pollutant discharge after development must not exceed the existing pollutant discharge based on the existing percent impervious cover while served by the existing BMP. The existing BMP must be shown to have been designed and constructed in accordance with proper design standards and specifications, and to be in proper functioning condition.

(2) Technology-Based Criteria. For land development, the post-development stormwater runoff from the impervious cover must be treated by an appropriate BMP as required by the post-developed condition percent impervious cover as specified in

Table 1. The selected BMP must be designed, constructed, and maintained to perform at the target pollutant removal efficiency specified in Table 1. Design standards and specifications for the BMPs in Table 1, which meet the required target pollutant removal efficiency, must be consistent with those provided in the Virginia Stormwater Management Handbook.

TABLE 1\*

WATER QUALITY BMP	TARGET PHOSPHORUS REMOVAL EFFICIENCY	PERCENT IMPERVIOUS COVER
Vegetated filter strip	10%	16-21%
Grassed swale	15%	
Constructed wetlands	30%	22-37%
Extended detention (2 x WQ Vol)	35%	
Retention basin I (3 x WQ Vol)	40%	
Bioretention basin	50%	38-66%
Bioretention filter	50%	
Extended detention-enhanced	50%	
Retention basin II (4 x WQ Vol)	50%	
Infiltration (1x WQ Vol)	50%	
Sand filter	65%	67-100%
Infiltration (2 x WQ Vol)	65%	
Retention basin III (4 x WQ Vol with aquatic bench)	65%	
	65%	

\*Innovative or alternative BMPs not included in this table may be allowed at the discretion of the Regional Environmental Water Program Manager. Innovative or alternate BMPs not included in this table which target appropriate non-point source pollution other than phosphorous (such as petroleum, hydrocarbons, sediment, etc.) may be allowed at the discretion of the Regional Environmental Water Program Manager. BMPs that have the potential to cause Bird Air Strike Hazards (BASH) will not be allowed in the vicinity of runways or taxiways. If a decision must be made between two BMPs, preference will be given to the BMP that is less costly and maintenance intensive.

#### b. General Requirements

(1) Stormwater runoff generated from regulated land development and redevelopment projects must not be discharged into a jurisdictional wetland or local water body without adequate treatment. Where such discharges are proposed, the

impact of the proposal on wetland functions must be assessed using an acceptable method. In no case shall the impact on functions be any less than allowed by the ACOE or the VDEQ.

(2) Stormwater discharges to critical areas with sensitive resources (i.e., shellfish beds, swimming beaches, water supply reservoirs) may be subject to additional criteria, or may need to utilize or restrict certain stormwater management practices.

(3) Stormwater discharges from land uses or activities with higher potential pollutant loadings, known as "hotspots," may require the use of specific structural BMPs and pollution prevention practices.

(4) All stormwater management practices must be designed for a 24-hour duration; a 2-year design storm is required for a discharge to a natural channel and a 10-year design storm is required for a discharge to a manmade channel. Pre-development and post-development runoff rates must be verified by calculations that are consistent with good engineering practices.

(5) For purposes of computing runoff, all pervious lands at the site must be assumed to be in good condition (if the lands are pastures, lawns, or parks) prior to development, with good cover (if the lands are woods), or with conservation treatment (if the lands are cultivated), regardless of conditions existing at the time of computation.

(6) Construction of stormwater management facilities or modifications to channels must comply with all applicable laws and regulations, including all necessary permits, such as ACOE and VDEQ Wetland Permits, Virginia Department of Conservation and Recreation Virginia Stormwater Management Program Permits, etc.

(7) Impounding structures that are not covered by the Impounding Structure Regulations (4VAC 50-20) must be engineered for structural integrity and designed according to the 100-year storm event.

(8) Pre-development and post-development runoff rates must be verified by calculations that are consistent with good engineering practices.

(9) Outflows from a stormwater management facility must be discharged to an adequate channel.

(10) Natural channel characteristics must be preserved to the maximum extent practicable.

(11) Use of Non-Structural BMPs are encouraged to reduce the amount of stormwater runoff that must be managed. This will help to minimize the reliance on structural practices, which require ongoing maintenance in order to be effective.

(12) Runoff from parking lots must be treated to remove oil, grease, and sediment before it enters receiving waters.

(13) The use of natural drainage systems and vegetated buffer zones as open space and conservation areas shall be encouraged.

(14) Stormwater management BMPs for a site must be chosen based on the physical conditions of the site. Designers must consult the Virginia Stormwater Management Handbook for guidance on the factors that determine site design feasibility when selecting a stormwater management BMP.

(15) All stormwater management practices must be designed to allow for the maximum removal of pollutants and reduction in flow velocities. The Virginia Stormwater Management Handbook provides detailed guidance on the requirements for conveyance for each of the approved stormwater management practices.

(16) Stormwater infiltration practices, or practices having an infiltration component, as specified in the Virginia Stormwater Management Handbook, are prohibited, even with pretreatment, in the following circumstances:

(a) Where stormwater is generated from highly contaminated source areas known as "hotspots".

(b) Where stormwater is carried in a conveyance system that also carries contaminated, non-stormwater discharges.

(17) Prior to design, the Regional Environmental Group should be consulted to determine if the project will be subject to additional stormwater design requirements.

c. Stream Channel Erosion. To protect stream channels from degradation, specific channel protection criteria must be provided as prescribed in the Virginia Stormwater Management Handbook and Virginia Erosion and Sediment Control Handbook.

(1) Properties and receiving waterways downstream of any land development project must be protected from erosion and damage due to increases in volume, velocity and frequency of peak flow rate of stormwater runoff in accordance with Standard 19 of the Erosion and Sediment Control Instruction.

d. Flooding. The calculations for determining peak flows as found in the Virginia Stormwater Management Handbook must be used for sizing all stormwater management practices.

(1) Downstream properties and waterways must be protected from damages from localized flooding due to increases in volume, velocity, and peak flow rate of stormwater runoff in accordance with the minimum design standards set out in this subsection.

(2) The 10-year post-developed peak rate of runoff from the development site must not exceed the 10-year pre-developed peak rate of runoff.

(3) Linear development projects shall not be required to control post-developed stormwater runoff for flooding.

5. Stormwater Management Plans. A stormwater management plan must be developed for each project to ensure adequate planning for the management of stormwater runoff. The plan must be written in accordance with the criteria established in this section.

Work cannot commence until the plan has been reviewed and approved by the appropriate Regional Environmental Group Water Program Manager.

a. Stormwater Management Plan. The stormwater management plan must be submitted for approval at or before the time of the 90 percent design submittal. For design-build projects, Regional Water Program Manager must approve the plan prior to construction. The stormwater management plan must include the following information:

(1) Contact Information. The name, address, and telephone number of the Assistant Resident Officer in Charge of Construction (AROICC) and Project Manager.

(2) A map (or maps) indicating the location of existing and proposed buildings, roads, parking areas, utilities, structural stormwater management and sediment control facilities.

The map(s) will also clearly show pre-construction and post-construction land cover (pervious and impervious) with a tabulation of the percentage of surface area to be changed; drainage patterns; locations of utilities, roads and easements; the limits of clearing and grading; a written description of the site plan; and justification of proposed changes in natural conditions may also be required.

(3) A written or graphic inventory of the natural resources environmentally sensitive features at the site and surrounding area that provide particular opportunities or constraints for development.

(4) A description of proposed, post-construction stormwater management measures including sufficient engineering analysis to show that the proposed stormwater management measures control runoff from the site in compliance with this instruction and the specifications of the Virginia Stormwater Management Handbook.

(5) Calculations. Hydrologic and hydraulic design calculations for the pre-development and post-development conditions for the design storms specified in this instruction (24-hour duration, 2-year or 10-year). Such calculations must include (i) description of the design storm frequency, intensity and duration, (ii) time of concentration, (iii) Soil Curve Numbers or runoff coefficients, (iv) peak runoff rates and total runoff volumes for each watershed area, (v) infiltration rates, where applicable, (vi) culvert capacities, (vii) flow velocities, (viii) data on the increase in rate and volume of runoff for the specified design storms, and (ix) documentation of sources for all computation methods and field test results.

(6) Maintenance Plan. The design and planning of all stormwater management facilities must include detailed maintenance procedures to ensure their continued function. These plans will identify the parts or components of a stormwater management BMP that need to be maintained and the equipment and skills or training necessary to maintain them. Estimates for annual maintenance costs and frequency must also be included.

(7) Landscaping Plan. The plan must include a detailed landscaping plan describing the woody and herbaceous vegetative stabilization and management techniques to be used within and adjacent to the stormwater BMP. The landscaping plan must also describe how vegetation should be maintained. This plan must be prepared by a qualified individual familiar with the selection of emergent and upland vegetation appropriate for the selected BMP.

6. Maintenance Inspection and Repair of Stormwater Facilities.

All stormwater management facilities must undergo inspections to document maintenance and repair needs and ensure compliance with the requirements of this instruction and accomplishment of its purposes. These needs may include: removal of silt, litter, and other debris from all catch basins, inlets, and drainage pipes; grass cutting and vegetation removal; necessary replacement of landscape vegetation; and any repair or replacement of structural features.

At a minimum, a stormwater management facility must be inspected on an annual basis by the Regional Environmental Group Water Program Manager. In the event that the stormwater management facility has not been maintained and/or becomes a danger to public safety or public health, the Regional Environmental Group Water Program Manager shall notify the Public Works Office, Facilities Maintenance Specialist responsible for the site maintenance. The notice will specify the measures needed to comply with the plan and must specify the time within which such measures must be completed.

7. Waivers. Every applicant must provide for stormwater management as required by this instruction, unless a written request is filed to waive this requirement. Requests to waive the stormwater management requirements must be submitted to the Regional Environmental Group Water Program Manager for approval.

The minimum requirements for stormwater management may be waived in whole or in part, provided that at least one of the following conditions applies:

a. It can be demonstrated that the proposed development is not likely to impair attainment of the objectives of this instruction.

b. The Regional Environmental Group Water Program Manager agrees that meeting the minimum on-site management requirements is not feasible due to the natural or existing physical characteristics of a site and no other feasible site location is available.

c. Non-structural practices will be used on the site that reduce:

(1) The generation of stormwater from the site;

(2) The size and cost of stormwater storage; and

(3) The pollutants generated at the site.

In instances where one of the conditions above applies, the Regional Environmental Group may grant a waiver from strict compliance with the stormwater management provisions.

8. Enforcement. Any activity that violates this instruction may be subject to enforcement actions under the Clean Water Act and Virginia Stormwater Management Law; including Warning Letters, Notices of Violation, fines, and penalties from the Virginia Department of Conservation and Recreation. The party that causes the violation will be responsible for all required corrective actions and will have to provide a written description of why the violation occurred to the Regional Environmental Group.

9. Responsibilities

a. Regional Environmental Group

(1) Water Program Manager. The Water Program Managers are responsible for reviewing and approving Stormwater Management Plans; ensuring the required stormwater management BMPs are installed and maintained as required by all applicable environmental laws and regulations; and granting waivers where appropriate. The Water Program Managers will perform annual inspections of all BMPs in their area of responsibilities (AORs) to determine maintenance requirements and costs for the next year. Inspections will be completed during the third quarter of the fiscal year.

(2) Natural Resources Manager. The Natural Resources Managers are responsible for reviewing the suitability of proposed BMPs; including landscaping plans, wetlands issues, as well as any other issues deemed appropriate by the Water Program Manager.

b. Public Works Office. Public Works Office (Facilities Maintenance Group) will be responsible for funding and maintaining all installed stormwater management BMPs.

c. Designers. Designers, both in-house and A&E firms, will be responsible for developing and submitting Stormwater Management Plans in accordance with this instruction.

10. Review Authority. The Regional Environmental Group Water Program Manager is responsible for reviewing and updating this instruction.

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COMNAVREG MIDLANT INSTRUCTION \_\_\_\_\_

From: Commander, Navy Region, Mid-Atlantic

Subj: VIRGINIA STORMWATER MANAGEMENT PROGRAM CONSTRUCTION  
PERMIT INSTRUCTION

Ref: (a) 4 VAC 50-60 - Virginia Stormwater Management Program  
(VSMP) Permit Regulations For Small Municipal  
Separate Storm Sewer Systems (Effective 1 Jan 05)  
(b) 40 CFR 122.26 - Stormwater Discharges (NPDES)

Encl: (1) Registration Statement  
(2) Permit Application Fee Form  
(3) SWPPP Template  
(4) SWPPP Checklists  
(5) SWPPP Amendment Template  
(6) Inspection Report Template  
(7) Notice of Termination Form

1. Purpose. To establish a procedure for obtaining coverage under the Virginia Stormwater Management Program (VSMP) General Permit for Stormwater Discharges from Construction Activities at installations and annexes under the purview of Commander, Navy Region, Mid-Atlantic (COMNAVREG MIDLANT) and located in the Hampton Roads area including the Norfolk Naval Shipyard (NAVSHIPYD Norfolk). The instruction applies to all construction activities that disturb greater than or equal to one acre of land, and construction activities that disturb less than one acre if the activities are part of a larger common plan of development. This instruction seeks to maintain compliance with state and federal environmental regulations (references (a) and (b)) through the following objectives:

a. Establish the criteria, procedures, and responsibilities for obtaining and terminating coverage under the VSMP General Permit from the Virginia Department of Conservation and Recreation (VDCR).

b. Establish a procedure for inspecting construction projects to verify compliance with the requirements of the VSMP permit, including Stormwater Pollution Prevention Plans (SWPPPs).

c. Establish a procedure for the receipt and consideration of comments and information submitted by the public regarding environmental concerns at construction projects.

## 2. Definitions

a. Best Management Practice (BMP) - Schedules of activities, prohibitions of structural or non-structural practices, maintenance procedures, and other management practices to prevent or reduce the pollution of surface waters and groundwater systems from the impacts of land-disturbing activities.

b. Final Stabilization - When all soil disturbing activities at the site have been completed and permanent vegetative cover has been established on denuded areas not otherwise permanently stabilized. Permanent vegetation is not be considered established until a ground cover is achieved that is uniform, mature enough to survive, and will inhibit erosion.

c. Land Disturbance - Means a manmade change to the land surface that potentially changes its runoff characteristics including but not limited to clearing, grading, excavating, transporting and filling of land.

d. Larger Common Plan of Development - Multiple separate and distinct construction activities that are planned to occur under one plan that can be linked together through documentation. For example, projects listed on the same 1391, NEPA documentation, design, contract, or Coastal Consistency Determination.

e. Operator - Any person associated with a construction project that meets either of the following two criteria: (i) the person who has direct operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or (ii) the person who has day-to-day operational control of those

activities at a project which are necessary to ensure compliance with a SWPPP for the site or other permit conditions.

f. Runoff or Stormwater Runoff - That portion of precipitation that is discharged across the land surface or through conveyances to one or more waterways.

g. Site - The parcel of land being developed, or a designated planning area in which the land development project is located.

h. Stormwater Discharge from Construction Activity - A discharge of pollutants in storm water runoff from construction activities where land disturbing activities, construction materials or equipment storage or maintenance, or other industrial stormwater discharges directly related to the construction process are located.

3. Policy. All construction activities that disturb greater than or equal to one acre of land, or less than one acre if the activities are part of a larger common plan of development, are required to obtain coverage under the VSMP General Permit for Discharges of Stormwater from Construction Activities. This policy does not apply to routine maintenance activity that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the facility. For a construction activity that requires a permit, the following documents must be prepared and submitted for review and approval as follows.

a. Registration Statement and Fee. A Registration Statement must be completed by the prime construction contractor in accordance with reference (a), and submitted to VDCR prior to the commencement of construction activities. For stormwater discharges where the prime construction contractor changes after a Registration Statement has been submitted, the new prime contractor must submit a Registration Statement prior to commencing work on-site or assuming operational control over site specifications. The Registration Statement and instructions are provided as enclosure (1).

(1) The Registration Statement must be signed by both the Assistant Resident Officer in Charge of Construction (AROICC) and the prime construction contractor.

(2) If the ROICC office is not providing project oversight, then the Registration Statement must be signed by a responsible official of the command and the prime construction contractor.

(3) A fee form and check must be submitted to VDCR with the Registration Statement. The fee form is provided as enclosure (2).

(4) A copy of the Registration Statement must be forwarded to the Regional Environmental Water Program Manager or to Code 106 for NAVSHIPYD Norfolk projects. VDCR will review the Registration Statement and send a copy of the general permit to those who qualify. As long as the Registration Statement and fee are submitted to VDCR (postmarked) before construction begins, the project can commence before the general permit is received from VDCR. An advance copy of the permit can be obtained from the following website  
<http://www.dcr.virginia.gov/sw/vsmp.htm#geninfo>.

**NOTE:** Item No. 6 on the Registration Statement should be completed for all projects. "Norfolk Naval Shipyard" should be entered as the MS4 operator for NAVSHIPYD Norfolk, and "Regional Environmental Group" entered for all other bases.

b. Stormwater Pollution Prevention Plan (SWPPP). The prime construction contractor is required to develop a site-specific SWPPP. The SWPPP must be prepared in accordance with good engineering practices.

(1) The SWPPP must be reviewed and approved by the review authority designated by the Regional Environmental Group. SWPPP approval must take place before the Registration Statement can be submitted.

(2) The SWPPP must contain all information required by reference (a). A SWPPP template is provided as enclosure (3), and SWPPP Implementation and Final Stabilization Checklists are provided in enclosure (4). The SWPPP certification must be signed by the prime contractor's project manager and an approving official designated by the Regional Environmental Group. The contractor's certification must be signed by all contractors identified in the SWPPP. The signed SWPPP and permit must be kept at the construction site that generates the stormwater discharge.

(3) The SWPPP must be amended whenever there is a change in design, construction, operation, or maintenance which has a significant effect on the potential for the discharge of pollutants to surface water bodies, or if the SWPPP proves to be ineffective in eliminating or minimizing pollutants. SWPPP amendment forms must be completed, signed and certified by the prime construction contractor, and added to the SWPPP. An amendment form template is provided as enclosure (5)

c. Inspections. A representative of the prime construction contractor who is familiar with the construction activity, the BMPs, and the SWPPP must inspect disturbed areas of the construction site that have not been finally stabilized. Inspections must include areas used for materials storage that are exposed to precipitation, erosion and sediment control measures, and locations where vehicles enter and exit the site. These inspections must be conducted at least once every 14 calendar days and within 48 hours of any runoff producing storm event. For areas that have been finally or temporarily stabilized, or where runoff is unlikely due to winter conditions, inspections must be conducted at least once a month until the project is completed.

(1) Following each site inspection, the site description and pollution prevention measures in the SWPPP must be amended within 7 calendar days, if necessary. If BMPs are found to be ineffective, or additional BMPs are needed, maintenance must be scheduled and performed before the next anticipated storm event.

(2) Reports must be prepared for each inspection and kept with the SWPPP. An inspection report template is provided as enclosure (6). All incidences of non-compliance and corrective actions must be documented on the inspection report. If a site is found to be in compliance during an inspection, the report must be signed and certified by the prime construction contractor.

(3) The group designated by the Regional Environmental Group must conduct and document monthly oversight inspections for the duration of construction projects to ensure contractors are complying with the SWPPP.

d. Notice of Termination (NOT). The prime construction contractor must submit a NOT when one or more of the following conditions exist:

(1) When a site has reached final stabilization and all stormwater discharges from construction activities that are authorized by the permit are eliminated.

(2) When the prime construction contractor of the site has changed.

(3) When coverage under another Virginia Pollutant Discharge Elimination System (VPDES) or VSMP permit is obtained.

The prime construction contractor must submit a NOT in accordance with reference (a) to VDCR within 30 days of one of the above conditions being met. The NOT must be signed by both a prime contractor principal and the AROICC or other responsible official. The review authority designated by the Regional Environmental Group must forward a copy of the NOT to the Regional Environmental Water Program Manager or Code 106 for NAVSHIPYD Norfolk projects. Coverage under the permit will be deemed terminated seven days after the contractor submits the NOT to VDCR. The NOT form is provided as enclosure (7).

Upon completion of a project, the AROICC or responsible official must submit the SWPPP, inspection reports, and all other stormwater paperwork kept on site to Naval Facilities Engineering Command, Mid-Atlantic (NAVFAC MIDLANT) EV or to Code 106 for NAVSHIPYD Norfolk projects.

e. Public Comments. All comments and information submitted by the public regarding environmental concerns at construction projects must be directed to the AROICC. If no AROICC is involved in the project, comments must be directed to the responsible official. The AROICC or responsible official must document any comments, implement corrective actions if warranted, and forward this information to the Regional Environmental Water Program Manager, or Code 106 for NAVSHIPYD Norfolk projects.

4. Enforcement. Any activity that violates this instruction may be subject to enforcement actions under the Clean Water Act and VSMP Permit Regulations (4 VAC 50-60); including Warning Letters, Notices of Violation, fines, and penalties from the Environmental Protection Agency, the VDCR, and the Virginia Department of Environmental Quality (VDEQ). The party that causes the violation will be responsible for all required

corrective actions and will have to provide a written description of why the violation occurred to the Regional Environmental Group.

## 5. Responsibilities

a. Regional Environmental Group Water Program Manager. The Regional Environmental Group Water Program Manager has the authority to determine which construction projects require coverage under the VSMP General Permit. The Water Program Manager acts as liaison between the Navy and all regulatory agencies, and must be notified about and present at all regulatory inspections. The Water Program Manager is the main point of contact within the Navy for any issues involving water permits, and must be informed of any permit violations. Since the Water Program Manager must ensure compliance with the installations' VPDES permits, they reserve the right to implement stricter controls if water quality concerns at a particular construction project are not being adequately addressed.

The Regional Environmental Group will designate appropriate groups to review SWPPPS and conduct over-site inspections.

b. Norfolk Naval Shipyard (NAVSHIPYD Norfolk) Code 106. Code 106 has the authority to determine which construction projects require coverage under the VSMP General Permit for projects at NAVSHIPYD Norfolk. Code 106 acts as the liaison between the Navy and all regulatory agencies, and must be notified about and present at all regulatory inspections. Code 106 is the main point of contact for NAVSHIPYD Norfolk for any issues involving water permits, and must be informed of any permit violations. Since Code 106 must ensure compliance with the installation's VPDES permit, they reserve the right to implement stricter controls if water quality concerns at a particular construction project are not being adequately addressed.

c. Naval Facilities Engineering Command, Mid-Atlantic (NAVFAC MIDLANT)

(1) NAVFAC MIDLANT Contracts Department or Other Contracting Official. Contracts Department will ensure that appropriate language is included in the contract so that the Registration Statement, fee form and check, SWPPP, and NOT are prepared, submitted, and approved in accordance with this instruction.

(2) AROICC or Responsible Official. The AROICC or other responsible official must ensure that contractors obtain permits when required, and comply with all contract requirements, the SWPPP, and the permit. The AROICC or responsible official must sign the Registration Statement and NOT, and send copies to the Regional Environmental Group. Upon completion of a project, the AROICC or responsible official must submit the SWPPP, inspection reports, and all other storm water paperwork kept on site to Code 106 for NAVSHIPYD Norfolk projects, and the Regional Environmental Group for all other bases. The AROICC or responsible official must forward all information regarding public comments and follow-up actions to the Regional Environmental Water Program Manager or Code 106.

For NAVSHIPYD Norfolk, the Portsmouth ROICC Office is responsible for reviewing and approving SWPPPs, signing the SWPPP certification, conducting oversight inspections for permitted projects to ensure contractors are in compliance with their VSMP permits, and forwarding copies of Registration Statements and NOTs to Code 106.

d. Prime Construction Contractor. The prime construction contractor is responsible for completing, signing, and submitting the Registration Statement, fee form and check, and NOT to VDCR. The prime contractor must also prepare and sign the SWPPP. The prime contractor is responsible for conducting inspections, complying with the SWPPP, construction permit and the VSMP permit, and will be held accountable for any violations.

6. Review Authority. The Regional Environmental Group Water Program Manager is responsible for reviewing and updating this instruction.

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