Virginia Department of Transportation Erosion and Sediment Control (ESC) & Stormwater Management (SWM) Standards & Specifications

2007 VDOT Annual Submittal to the Department of Conservation and Recreation

INTRODUCTION

The Virginia Department of Transportation (VDOT) Erosion and Sediment Control and Stormwater Management Programs are integral components of VDOT's design, construction, maintenance, and management of the Commonwealth's roadway system. The VDOT Erosion and Sediment Control and Stormwater Management (VDOT ESC & SWM) Standards and Specifications submittal has been developed to provide detailed information regarding VDOT's implementation of these programs in accordance with Virginia's Erosion and Sediment Control Law (VA Code 10.1-560 et. seq.), Stormwater Management Law (VA Code 10.1-603 et. seq.), and the Virginia Stormwater Management Program (VSMP) Permit Regulations as related to municipal separate storm sewer systems (MS-4) and regulated construction activities.

The VDOT ESC & SWM Standards and Specifications are submitted to the Department of Conservation and Recreation (DCR) for review and approval on an annual basis. Fulfillment of our obligation to ensure that project specific plans are developed and implemented in accordance with these Standards and Specifications is the basis of DCR's approval and satisfies the minimum requirements of the VSMP construction activity permits (if required), major components of VDOT's VSMP MS-4 programmatic permit requirements, and critical conditions of numerous other environmental related permits. DCR's final approval letter will be included in Appendix O of this submittal. This submittal constitutes VDOT's commitment to execute all provisions contained herein on our regulated land disturbing activities and land development projects. As such, this submittal should be made available and utilized as operational guidance by all appropriate VDOT and DCR personnel. This submittal and errata information is available for download as a PDF file at:

http://insidevdot/sites/Location_and_Design/Hydraulic_Design/default.aspx

The 2002 Drainage Manual and corresponding revisions and errata information are also critical, required components of VDOT's ESC & SWM Program and the corresponding Standards and Specifications submittal to DCR and is considered a supplemental manual relative to this submittal. This document is available for download as a PDF file at:

http://www.virginiadot.org/business/manuals-default.asp

Revisions (modifications and/or additions/deletions) to the VDOT ESC & SWM Standards and Specifications submittal will be posted to the web link as they are approved by DCR and identified in the errata document. The approval process for making revisions to the information contained within this manual is as follows: 1.) VDOT submits proposed pending revisions to the DCR Central Office for their consideration and approval 2.) DCR provides comments/approval to VDOT within 30 calendar days. VDOT will assist as necessary with this approval process by providing supporting documentation to DCR. 3.) Upon receipt of final written approval from DCR the proposed revisions to the manual will be posted on the web site. The web document, including approved revisions, will be considered the official document.

The DCR final approval letter, contained within Appendix O, should be reviewed in its entirety in order to gain a comprehensive understanding of the expectations and conditions set forth within their approval. A VDOT/DCR Standards and Specification Correlation Table is provided in Appendix P.

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APPENDICIES

SECTION I ADMINISTRATION

A) ORGANIZATION

The VDOT ESC & SWM Standards and Specification submittal is a compilation of all plan design/review processes, standards, specifications, and internal contract enforcement documents which are applied to all VDOT regulated land disturbing/development activities. The appendices of this manual provide a catalog of these documents.

The following table categorizes the appendices by resource type, which, as compiled, represent VDOT's ESC & SWM Programs.

Type of Resource	Appendix	Title
Regulatory	**A**	4 VAC 50-30 et seq., Virginia's Erosion and Sediment Control Regulations
	B	4 VAC 3-20 et seq., Virginia's Stormwater Management Regulations
	C	4 VAC 50-60 et seq., Virginia Stormwater Management Program (VSMP) Permit Regulations for Discharges of Stormwater from Construction Activities
	D	1) General Permit DCR01 2) MS14 Compliance Statement
ESC Personnel Certification Requirements	**E**	VDOT Training and Certification Guidance
Plan Design/ Review Guidance and Standards	**F**	1) Stormwater Program ESC, SWM, VSMP Construction Permit Requirements Flowchart 2) Instructional and Informational Memoranda 3) Hydraulic Design Advisory
	G	VDOT Road Design Manual Excerpts
Contract Standards and Specifications	**H**	VDOT Road and Bridge Standards Excerpts
	I	VDOT Road and Bridge Specifications Excerpts
Contract Enforcement and Evaluation Requirements	**J**	Erosion and Sediment Control Inspection Forms, Related Construction Forms and Memoranda
SWM Maintenance Program	**K**	VDOT Stormwater Management Maintenance Program
Environmental Advisory Process	**L**	Environmental Monitoring Program
Modifications to Contract Specifications	**M**	Special Provisions (Specification Modifications)
VDOT Contacts	**N**	Contact Lists
Approvals	**O**	DCR Approval and Conditional Approvals
VDOT/DCR Correlation Table	**P**	VDOT/DCR Standard and Specification Correlation Table

B) PERSONNEL

1. Training and Certification Requirements

VDOT has taken a very proactive approach to ensure that numerous individuals working on VDOT projects have a specified level of Erosion and Sediment Control Certification (in accordance with Virginia Erosion and Sediment Control Law (VESCL) §10.1-561 and §10.1-561) that best correlates with their current job responsibilities. VDOT Training and Certification Guidance define these internal certification requirements (see **Appendix E**).

VDOT's internal certification requirements provide that a minimum of one individual who meets the certification requirements of VESCL §10.1-561.F. to be 1) on-site during regulated land-disturbing activities and 2) in charge of and responsible for carrying out the conditions of site specific erosion and sediment control plans and specifications. This internal VDOT requirement exceeds the minimum requirements as defined in the VESCL §10.1-563.B.

2. Personnel Responsibilities

While VDOT's Commissioner, District Administrators, and Chief Engineer exercise executive authority on behalf of the agency, the following personnel are assigned and/or delegated authority related to ensuring compliance with erosion and sediment control and stormwater management regulations on all VDOT projects within their assigned regions.

a) Hydraulic Engineers

The Hydraulics personnel located in the District and Central Office Sections of the Location and Design Division have overall program management and coordination responsibilities for VDOT's Erosion and Sediment Control, Stormwater Management, and VSMP programs. Hydraulics personnel throughout the state have primary responsibilities for designing/managing and reviewing erosion and sediment control and stormwater management elements of VDOT project plans. VDOT Hydraulic Engineers are the lead design contact for any necessary and/or required plan changes related to hydraulic/hydrologic functions of project sites.

b) Residency Administrator, Program Managers, Project Engineers, Area Construction Engineers, and Project Inspectors

The Residency Administrator is the principle contract enforcement authority and permittee (when applicable) within their assigned regions related to all VDOT land disturbing maintenance activities. The Area Construction Engineer is the principle contract enforcement authority and permittee (when applicable) within their assigned regions related to all VDOT land disturbing construction activities. The Residency Administrator (RA) or the Area Construction Engineer (ACE) may designate Project/Maintenance Engineers, Maintenance Supervisors, Construction Inspectors, and/or Maintenance Superintendents certain levels of contract and/or operational authority. For all environmental compliance issues, the Residency Administrator and the Area Construction Engineers are the principle points of contact. Appendices A

through D provide the regulatory framework for all of VDOT's ESC & SWM Programs. VDOT plans (as developed utilizing **Appendix F** through **K**, and all required environmental permits become part of every project's contract documents. The RA and ACE have full authority and responsibility for executing these contract documents and ensuring the contractor's adherence to contract provisions. VDOT Road and Bridge Specifications (**Appendix I**) sections 105, 107 and 108 provide the clearest documentation regarding the responsibilities and authority of the Residency Administrator and the Area Construction Engineers.

c) Contractors

VDOT projects are constructed by numerous employees of both private firms and VDOT who are certified ESC Contractors by either VDOT or DCR as Erosion and Sediment Control Certified Contractors (certified by either VDOT or DCR) and who meet the certification definitions within VESCL §10.1-561.F. or VDOT specifications. Under VDOT specification 107.14(a), one certified individual is required to be onsite at all times during land disturbing activities. This exceeds the minimum requirements for plan approval as defined in §10.1-563.B of the code of Virginia.

Our Contractors and state forces fulfill our SWM & ESC Programs inspection documentation and frequency requirements through adherence to VDOT Road and Bridge Specification 107.14(a) (see **Appendix I** and **J**) and all other related specifications. These provisions provide the surety of the execution of these requirements and clarify the roles of our Contractors and Inspectors in ensuring that such documented inspections are performed (see S107F and S107G in **Appendix I** and C107 in **Appendix J**).

d) VDOT Points of Contact

The following table represents the key program area contacts:

VDOT Personnel	Area of Responsibility
Residency Administrator	Residency wide project authority • ESC/SWM/VSMP compliance of maintenance activities • ESC, SWM, VSMP agency liaison
Area Construction Engineer	Residency wide project authority • ESC/SWM/VSMP compliance of construction activities • ESC, SWM, VSMP agency liaison

Contact list for Residency Administrators and Area Construction Engineers are included as **Appendix N**.

SECTION II PLAN DESIGN AND REVIEW

The **VDOT Stormwater Program ESC, SWM, VSMP Construction Permit Requirements** Flowchart (11/05**)** provides an overview of our program fulfillment processes. This flowchart is presented within Appendix F. **Appendices F**, **G**, **H**, and **I** provide all guidance, standards, and specifications related to VDOT design and review of erosion and sediment control and stormwater management measures on all regulated land disturbing/development project plans.

SECTION III PROJECT IMPLEMENTATION AND QUALITY ASSURANCE

A. Implementation

The flowchart identified in the previous section provides an overview of our implementation, inspection, and project completion fulfillment processes. Numerous personnel with specific responsibilities relevant to the implementation of adequate ESC & SWM plans during construction were identified within the previous Section 2.B.2. The tools and required documentation to be used by these personnel provide the proof of contract and ESC & SWM plan performance. These tools include the contract documents and plans identified above are collectively provided within **Appendices H, I, J,** and **L.**

B. Quality Control & Quality Assurance

1. The Inspector – Daily Quality Control Duties

The Residency Administrator and Area Construction Engineer are responsible for ensuring the contractor's and/or state forces' implementation of the project is in accordance with contract documents and/or project specific erosion and sediment control plans and other environmental commitments. Individuals assigned as project inspectors are the lead VDOT representatives who are onsite and responsible for day-to-day oversight of the contractor.

As related to erosion and sediment control inspection duties, the Inspector provides oversight, or daily quality control, of the performance of the Contractor's prescribed inspection duties. An Inspector is a representative of the Department who may be a Construction Inspector, Area Superintendent, Transportation Operations Manager, Consultant Inspector or other assigned personnel to carry out inspection oversight related duties. For additional information on the inspectors' authority, please refer to Road and Bridge Specification Section 105.11.

Our corporate exercise of contract administration/enforcement processes to ensure the Contractor's fulfillment of the inspection requirements described in the previous section is the method by which we satisfy the Erosion and Sediment Control Law & Regulations (ESCLR) and the Annual Standards and Specifications as approved by the Department of Conservation and Recreation, and numerous other environmental permits which require compliance with the ESCLR as a principal permit condition.

2. Construction Quality Improvement Program – Quality Assurance

The Construction Quality Improvement Program (CQIP) is the VDOT quality assurance program for our construction activities. One major area of evaluation includes erosion and sediment control and stormwater management related contract requirements. Here are a few bullets relative to the overview of CQIP:

Projects are randomly selected

- Reviews follow a formal process
- Reviews reinforces what is working well
- Improvement recommendations are made to VDOT Management
- Construction quality is measured by level of compliance with VDOT Contract Documents
- CQIP Scoring System is 1 thru 4
    1. Unacceptable --Requires an immediate corrective action
    2. Does Not Meet Specification Requirements-- Corrective action is necessary
    3. Meets Specification Requirements-- Complies with project requirements
    4. Exceeds Specification Requirements-- Surpasses project requirements
- Reviews are presented/discussed with project staff and VDOT management
- Project and contractor staff is included in review process
- Follow-ups reports identify corrective actions taken
- Provides VDOT managers with semi-annual, annual and on-demand reports

3. VDOT Environmental Monitors – Advisory Duties

As briefly stated earlier, the District Environmental Monitor and Residency Environmental Specialists are typically assigned to provide technical assistance and an element of quality control (monitoring via field review) for VDOT land-disturbing activities including related support activities which may be off of the right-of-way. The duties and responsibilities of the Environmental Monitors are further defined in **Appendix L**.