



The College of William & Mary

CY 2010

Annual Standards and Specifications

for

Erosion and Sediment Control

December 2009

INTRODUCTION

The College of William and Mary (College) Erosion and Sediment Control Program is an integral component of the design, construction, maintenance, and management of the College's facilities. The College's Annual Standards and Specifications for Erosion and Sediment Control submittal has been developed to provide information regarding the implementation of this program in accordance with Virginia's Erosion and Sediment Control Law (COV 10.1-560 et. seq.), and regulations as related to municipal separate storm sewer systems (MS4) and construction activities. The Annual Standards and Specifications apply to the College at Williamsburg and campuses at the Virginia Institute of Marine Science at Gloucester Point, Richard Bland College at Petersburg and Ash Lawn-Highlands in Albemarle County.

These Annual Standards and Specifications for Erosion and Sediment Control shall apply to all planning, design, construction and maintenance activities undertaken by the College, either by its internal workforce or if contracted to external entities, where such activities are regulated by the Virginia Erosion and Sediment Control Law. As such, this submittal should be made available and utilized as an operational guidance by all appropriate College and Department of Conservation and Recreation personnel. During any inspections of the College's land disturbing activities by Department of Conservation and Recreation, Environmental Protection Agency and other such environmental agencies, compliance with the approved College of William and Mary Annual Standards and Specifications for Erosion and Sediment Control (and all parts thereof) will be expected.

The College's Annual Standards and Specifications for Erosion and Sediment Control will be submitted to the DCR for review and approval on an annual basis. This submittal constitutes the College's commitment to execute all provisions contained herein on our regulated land disturbing activities and land development projects.

ABBREVIATIONS / ACRONYMS

ASESC	Annual Standards and Specifications for Erosion and Sediment Control
CWM	The College of William and Mary
DCR	Virginia Department of Conservation and Recreation
ESC	Erosion and Sediment Control
EPA	United States Environmental Protection Agency
GIS	Geographic Information System
RLD	Registered Land Disturber

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REFERENCE DOCUMENTS

- Virginia Erosion and Sediment Control Handbook, (Third Edition 1992), Department of Conservation and Recreation, Division of Soil and Water Conservation
- College of William and Mary, Stormwater Master Plan (July 2004) by Clough Harbor Associates, L.L.P.
- College of William and Mary, Operation, Maintenance and Inspection Manual for Stormwater Best Management Practices, (January 29, 2007) by Clough Harbor Associates, L.L.P.

The College of William and Mary

Annual Standard and Specifications for Erosion and Sediment Control

1.0 PROGRAM ADMINISTRATION

All projects involving land-disturbing activity subject to the Virginia Erosion and Sediment Control law (§10.1-560 et seq. as amended) and the Virginia Erosion and Sediment Control Regulations (4VAC50-30 et seq. as amended) shall be bound by CWM Annual Standards and Specifications for Erosion and Sediment Control.

1.1 The general specifications for ESC that apply to all land-disturbing activities include the following by reference:

1.1.1 Virginia Erosion and Sediment Control Law (§10.1-560 et seq. as amended);

1.1.2 Virginia Erosion and Sediment Control Regulations (4VAC50-30 et seq. as amended);

1.1.3 Virginia Erosion and Sediment Control Certification Regulations (4VAC5050 et seq. as amended);

1.1.4 Virginia Erosion and Sediment Control Handbook, 1992;

1.1.5 ESC Technical Bulletins, as amended, on DCR web site at http://www.dcr.virginia.gov/soilLand_water/e&s.shtml#pubs).

1.2 Any land-disturbing activity carried out in a locality with a local ESC program with more stringent regulations than the those of the state program shall be consistent with the requirements of the local program.

1.3 Any revisions to the approved CWM ADESC shall be reviewed and approved by DCR prior to implementation by CWM. Such review and approval shall be coordinated by the CWM ESC Program Administrator.

1.4 Site-Specific ESC Plans shall be prepared for all projects involving a regulated land disturbing activity as defined in §10.1-560. Site-specific ESC plans shall be submitted to CWM Program Administrator for review. Checklists that summarize the required components of the ESC Plans are included in Appendix A. Prior to starting a land disturbing project, as defined in §10.1-560, the project must have written approval issued by CWM ESC Program Administrator.

1.5 A Responsible land Disturber (RLD) shall be designated by the contractor prior to initiating the land disturbing activity.

1.6 Where determined necessary to meet an individual project need, CWM may request DCR to grant a project specific variance to the approved CWM ADESC. All requested variances are to be considered unapproved until written approval from DCR is received. Refer to Section 6.0 for more information on variances.

2.0 PROGRAM PERSONNEL

CWM Facilities Management Department shall be the plan approving authority for CWM Projects. The following is a breakdown in responsibilities and titles related to the program. Responsibilities may be combined in terms of staffing resources only if the person responsible for the task(s) is qualified per Section 1.1.3. The following titles are designated to ensure compliance with erosion and sediment control regulations on all CWM projects.

2.1 ESC Program Administrator shall have overall program management and coordination responsibilities for The College of William and Mary's Erosion and Sediment Control Program. This position will be assigned at Director Level within CWM Facilities Management Department and be a DCR certified program administrator. The Director of Facilities Planning Design and Construction is currently assigned as the ESC Program Administrator.

2.2 ESC Plan Reviewer(s) shall be responsible for reviewing plans to insure compliance with CWM ASESC and applicable ESC laws. The Plan Reviewer must state in writing the reason(s) for disapproval of an ESC Plan and specifies the modification, terms, and conditions necessary for plan approval. This person shall be DCR certified as a plan reviewer. This position will reside within the CWM Code Review Team.

2.3 ESC Inspector(s) shall have the responsibility for inspecting erosion and sediment control practices to evaluate compliance with the approved ESC plan and associated laws, regulations, and CWM ASESC. This position shall be a DCR certified inspector from Facilities Management Planning, Design and Construction.

2.4 Certifications shall be in accordance with Virginia Erosion and Sediment Control Certification Regulations (4VAC50-50 et seq. as amended).

3.0 PROGRAM IMPLEMENTATION

ESC plans shall comply with CWM ASESC, Virginia's Erosion and Sediment Control Law (§10.1-560 et. seq.), and associated ESC regulations. Refer to Section 1.1 for more information on general specifications.

3.1 Submittals

ESC drawings and narratives (ESC plans) shall be submitted to CWM ESC Program Administrator for review and approval prior to any land-disturbing activities. The ESC Program Administrator will transmit the ESC plans to the appropriate plan reviewer. The plan reviewer shall have 30 days to review the plan and provide written comments to ESC Program Administrator. Prior to commencement of a land-disturbing project, the project must have received written approval for the plan(s) from CWM ECS Program Administrator.

3.2 Plan Reviews

Plan reviews shall be conducted by qualified personnel. Plan reviews shall ensure compliance with CWM ASECS. Plan reviewers shall use the Plan Review Checklist provided in Appendix A for ESC plans.

3.3 Inspections and Enforcement

The ESC Inspector(s) is responsible for ensuring that the implementation of the project is in accordance with the project specific erosion and sediment control plans and associated ESC laws and regulations. Refer to Section 5.0 for more information on inspections and enforcement procedures.

3.4 Changes and Amendments

An approved plan may be changed by the CWM Facilities Management Department in the following cases:

- Where inspection has revealed the plan is inadequate to satisfy applicable regulations; or
- Where the person responsible for carrying out the approved plan finds that because of changed circumstances or for other reasons the approved plan cannot be effectively carried out, and proposed amendments to the plan, consistent with the requirements of this article, are agreed to by the CWM Facilities Management Department and the person responsible for carrying out the plan.

Proposed revisions to an approved ESC plan will be submitted by the Project Manager to CWM Program Administrator for review. Revisions shall not be considered approved until written notice is provided. Revisions must comply with CWM ASESC.

4.0 CONSTRUCTION PLAN REQUIREMENTS

- Complete erosion and sediment control plans shall be provided in the construction plans.
- Minimum standards 1 through 19 (4VAC50-30-40) shall be listed in the construction plans.
- Construction sequence of operations shall be defined on the construction plans with staged implementation of erosion and sediment control measures for each phase. The area which may be disturbed in each phase shall be set forth in the construction plans.
- Construction plans shall provide information on the maintenance of the erosion and sediment control measures or reference the narrative section that contains the information.
- Construction plans shall contain a summary which (4VAC50-30-40) includes the amount of disturbed area per phase and proposed net change in impervious area.
- Land disturbing activity occurring at a separate location must be included in the project plan or a separate approved plan must be provided for the separate location.
- A copy of the completed plan checklist (see Appendix A) must be included in the construction documents indicating the location such as a specific plan sheet or narrative section where the requirement is addressed.

5.0 INSPECTIONS AND ENFORCEMENT

5.1 Erosion and Sediment Control Inspections

Periodic inspections shall be conducted, at a minimum, as follows:

- Every two weeks and within 48 hours of a rainfall event producing runoff
- During or immediately following initial installation of erosion and sediment controls
- At the completion of the project.

The inspection report provided in Appendix B is designed to be used on each site inspection visit. All measures shown on the plan shall be inspected. All problems and violations shall be documented on the inspection report. A copy of the inspection report will be provided to the contractor, the ESC Program Administrator and the Director, Facilities Planning Design and Construction.

5.2 Enforcement

When violations noted on written inspection reports remain during subsequent inspections, a Notice to Comply will be issued by the CWM Program Administrator. The Notice to Comply will contain specific measures or corrections that need to be made and specify deadlines for completion. Stop Work Orders will be issued by the CWM Program Administrator when:

- Land disturbing activities commenced without an approved plan; or
- The project has failed to meet the prescribed deadlines in a Notice to Comply; or
- Violations are causing or are in imminent danger or causing harmful erosion.

The stop work order will be lifted once the required ESC measures are in place and verified by the ESC Inspector.

5.3 Other Investigations

ESC Inspectors will also be responsible for responding in a timely manner to reports of alleged violations reported by College staff, students, adjacent property owners, or others (§10.1-569.1). Corrective measures if warranted will follow standard procedures as outlined for ESC inspections.

6.0 VARIANCES

Variations to regulations must ensure off-site properties and resources are protected from damage. Economic hardship is not sufficient reason to grant a variance or an exception from the requirements of the CWM ADESC.

For a variance to become part of the approved project specific ESC plans, a written variance request must be submitted for approval by DCR. This request should include a detailed description of the alternative ESC practice and justification that the practice meets the intent of the Minimum Standard for which a variance is sought. (Ref. 4VAC50-30-50)

Project Variance:

- All requests for project specific variations to CWM ADESC shall be sent by the design professional by way of the Project Manager to the CWM ESC Program Administrator and shall be accompanied by complete details and documentation, including justification for the requested variance and impacts associated with the variance request. The design professional shall complete the form included in Appendix C.
- If determined to be appropriate by CWM Program Administrator and the Plan Reviewer, then CWM ESC Program Administrator shall coordinate the review and approval of the requested variance with DCR's Tappahannock Regional Office and Virginia Erosion and Sediment Control Program Manager
- All requested variations to be considered unapproved until written approval from the CWM ADESC Program Administrator is received.
- All approved variations shall be listed in the General Notes section of the ESC plans for land disturbing activities and included in the Narrative.

7.0 LAND-DISTURBING ACTIVITIES

7.1 Current Land-disturbing activities:

A list of completed and on-going regulated land-disturbing activities either under contract or terminated during the previously referenced time period are included in Appendix D. The list includes project location, project start and completion date, and actual disturbed area.

7.2 Proposed Land-disturbing activities:

A list of regulated land-disturbing activities expected to be under contract during the referenced time period are included in Appendix D. The list includes project location, estimated disturbed acreage by watershed, and Biennium for each project.

7.3 Project Tracking and Notification

- CWM shall use GIS to track regulated land-disturbing activities.
- CWM land-disturbing GIS will be updated as necessary to keep current with existing projects as related to ESC.

- The GIS will be accessible through Microsoft Windows Explorer to DCR.

8.0 PROGRAM REVIEW and EVALUATION

8.1 DCR'S RESPONSIBILITIES

- DCR shall have sixty days in which to comment on any erosion and sediment control specifications submitted to it for review, and its comments shall be binding on CWM and any private business hired by CWM (§10.1-564.D).
- DCR shall perform random site inspections to assure compliance with the Erosion and Sediment Control Law.

8.2 CWM's RESPONSIBILITIES

- CWM shall ensure compliance with the approved plan and annual standards and specifications (§10.1-564.F).
- Upon request by the DCR, CWM shall provide a copy of the approved plan sheets and narrative for each regulated land-disturbing activity as outlined in Section 1.1.



Appendix A
ESC Checklists

EROSION AND SEDIMENT CONTROL - PLAN REVIEW CHECKLIST

PROJECT: _____

PLAN PREPARER AND

DATE: _____

REVIEWER AND

DATE: _____

- _____ 1. Vicinity map.
- _____ 2. Soils map and table of data (additions as needed).
- _____ 3. Narrative describing the project.
- _____ 4. Narrative describing existing site conditions.
- _____ 5. Narrative describes adjacent areas and impacts on them.
- _____ 6. Proposed erosion and sediment controls shown on a base map which provides topographic data.

Map scale is such that the entire site is shown on as few sheets as possible.

The plan:

- a) _____. Shows the limits of clearing and grading.
- b) _____. Shows the locations and dimensions of proposed control measures, including stormwater conveyance channels.
- c) _____. Provides all design data (drainage areas, Qs, velocities, etc.)
- d) _____. Provides details of structural and non-structural controls.
- e) _____. Narrative emphasizes phasing (minimize area of land in disturbed condition at any one- time), sequence of work, short times of exposure.
- f) _____. Cost estimates include quantities, unit costs, total costs, etc. Area of seeding must be based on total area to be disturbed, regardless of proposed use.
- _____ 7. Chesapeake Bay Preservation Act--Narrative statement. Delineate where applicable.
- _____ 8. Wetlands--Narrative on presence, need for permits.
- _____ 9. Streams--Narrative specifies whether any work will directly affect perennial streams and/or streams with drainage areas of 3200 acres or more and whether any permits are needed.
- _____ 10. Shows appropriate flood data, including panel #, zones and, if applicable, locations. For approximate (zone A, no numbers) zones, use of Regional Overbank Flow formula, HEC-2, etc. will be decided on a case by case basis.
- _____ 11. Work within flood zones other than Zone C will be in accordance with all flood related regulations.

EROSION AND SEDIMENT CONTROL - PLAN REVIEW CHECKLIST

_____ 12. Complies with the following MINIMUM STANDARDS (4VAC50-30-40, 1-19.):

- _____ MS-1. Soil stabilization within 7 days.
- _____ MS-2. Soil stock piles, stabilization and protection.
- _____ MS-3. Permanent stabilization.
- _____ MS-4. Structural controls to be first.
- _____ MS-5. Immediate stabilization of earthen controls.
- _____ MS-6. Sediment basins where runoff is from 3 or more disturbed acres.
- _____ MS-7. Minimize erosion of cut and fill slopes.
- _____ MS-8. Slopes, conveyance of concentrated flows.
- _____ MS-9. Seepage areas on slopes, drained or protected.
- _____ MS-10. Inlet protection.
- _____ MS-11. New channels, adequate lining and outlet.
- _____ MS-12. Adequate measurers for work in live watercourses.
- _____ MS-13. Live watercourses, temporary stream crossings.
- _____ MS-14. Live watercourses, work complies with all regulations.
- _____ MS-15. Watercourses stabilized immediately after work.
- _____ MS-16. Underground utility lines, items a, b, c, d, e.
- _____ MS-17. Minimize transport of sediment to paved surfaces
- _____ MS-18. Erosion and sediment controls removed within 30 days after final stabilization.
- _____ MS-19. Adequacy of off-site receiving channels.
 - a) _____ Documents adequate channels (capacity and velocity) based on storm duration of 24 hours. If development plans have been approved for off-site drainage areas, calculations should assume the planned land use is the predevelopment condition.
 - b) _____ Documents proposals if channels are inadequate.
 - c) _____ Narrative summary.
 - d) _____ Shows all relevant calculations.
 - e) _____ Drawings which clearly show design features of proposed structures.
 - f) _____ Maintenance plan for detention structures.
 - g) _____ Maintenance agreement for detention structures.
 - h) _____ Copies of applicable easements, deed restrictions and covenants.
 - i) _____ Ponds - see additional checklist.

_____ 13. Total area (in square feet) to be disturbed is:

_____ < 2,500 _____ < 10,000 _____ 10,000 or >



Appendix B
ESC Inspection Forms

Reply To:
 Facilities Management
 115 Grigsby Drive
 Williamsburg, VA 23185



INSPECTION REPORT

Project Name: _____ Project Authority: _____
 RLD Name: _____ RLD No. _____
 Project Location: _____ Project No. _____
 Inspector Name: _____ Inspection Date: _____ Time: _____

STAGE OF CONSTRUCTION

- Pre-Construction Conference Building Construction Construction of SWM Facilities
 Clearing & Grubbing Finish Grading Maintenance of SWM Facilities
 Rough Grading Final Stabilization Other _____

Item #	State/Local Regulation ⁽¹⁾	Violation		Description and Location of Problem/Violation ⁽²⁾ , Required or Recommended Corrective Actions, and Other Comments/Notes
		Initial	Repeat	

(1) Refers to applicable regulation found in the most recent publication of the Virginia Erosion and Sediment Control Regulations (4VAC50-30), Virginia Stormwater Management Permit Regulations (4VAC50-60)), or local ESC/SWM ordinance.

(2) Note whether or not off-site damage resulting from the problem/violation was evident during the inspection.

REQUIRED CORRECTIVE ACTION DEADLINE DATE: _____ **Re-inspection Date:** _____
 (DD/MM/YY) (DD/MM/YY)

The required corrective action deadline date applies to all violations noted on this report. If listed violation(s) currently constitute non-compliance and/or required corrective actions are not completed by the deadline, a **NOTICE TO COMPLY, STOP WORK ORDER**, and/or other enforcement actions may be issued to the entity responsible for ensuring compliance on the above project.

Inspector: _____

Reply To:
Facilities Management
115 Grigsby Drive
Williamsburg, VA 23185



Acknowledgement of on-site report receipt

:

Print Name

Signature

Date

This report will be provided to the following parties via mail, fax, or e-mail within 24 hours of inspection:

Signature

Date



Appendix C
Variance Request Form

VARIANCE REQUEST

Requested by: _____ Date: _____

Street Address: _____

City/Town/Zip: _____

Telephone #: _____ Fax #: _____

E-mail address: _____

Project Name/Location: _____

Project Description: _____

Variance requested for (state appropriate minimum standard & requirement): _____

Reasons and Justification for Variance Request: _____

Signature of applicant: _____ Date: _____



Appendix D

Current and Proposed

Land-Disturbing Activities

Appendix D - Current and Future Projects with Land Disturbing Activity (CY 2009 2010)

College of William & Mary (CWM)		CY 2009		CY 2010		Remarks
		In-Progress	Planned	Planned		
Capital Projects						
2008 - 10						
Construct: Cooling Plant & Util Impr, Ph 2 (Umbrella)		X				
- Cooling Plant Addition			X			Linear utility installation/replacement
- Historic Utilities Improvements						Two additions (22,000 gsf)
Construct: New School of Education		X				
Renovate/Expand: Small Hall		X				
Construct: Career Services Center		X				
2010 - 2012						
Construct: Cooling Plant & Util Impr, Ph 3 (Umbrella)					X	Linear utility installation/replacement
- Historic Utilities Improvements					X	Clear abutments/armor down stream face.
Improve: Lake Matoaka Dam Spillway					X	
Renovate: Tucker Hall					X	
Construct: Monticello/Compton Pedestrian Pathways					X	
Improve: Campus Storm Water Infrastructure					X	
Renovate: Brafferton and Brafferton Kitchen					X	Lay back soil to waterproof foundation
Improve: Athletic Facilities					X	New 1500 seat intercollegiate grandstand.
Construct: New Dormitory					X	Site TBD
Maintenance Reserve Projects (2008 - 2010)						
Swem West Patio Repair		X				
Maintenance Shop Drive Repairs			X			
Project Permit Projects						
Ash Lawn Barn Construction		X				
Child Care Storm Water Repairs			X			

Richard Bland College (RBC)		CY 2009		CY 2010	
		In-Progress	Planned	Planned	Remarks
Capital Projects					
2008 - 10					
Construct: New Science Building		X			
Renovate: Statesman Hall		X			
Replace: Waterline		X			
2010 - 2012					
Maintenance Reserve Projects (2008 - 2010)					
Project Permit Projects					