

Erosion & Sediment Control and Storm Water Management Plan Review Cover Sheet

Southampton County

The Narrative, ESC & SWM Notes and 19 Minimum Standards must be on the Site Plan. Simple calculations on things like existing and post-development flow, and storm water run-off must be on the Site Plan. Not attached to the plan but written on the Site Plan.

The 19 Minimum Standards, Narrative, and 13 General ESC & SWM Notes must be on the Site Plan (drawing), calculations may accompany the Site Plan in the Application Package.

Project Name _____ Project ID _____

The 19 Minimum Standards, Narrative, and 13 General ESC & SWM Notes must be on the Site Plan (drawing), calculations may accompany the Site Plan in the Application Package.

CHECKLIST
FOR EROSION AND SEDIMENT CONTROL PLANS

NARRATIVE

_____ Project description:

- Briefly describes the nature and purpose of the land-disturbing activity.
- How many acres will be disturbed?
- How much impervious area will the project have in the post-development conditions?
- What are the ultimate developed conditions of the site?

_____ Existing site conditions:

- Provide a description of the existing topography (list percentage of slopes on-site).
- Provide drainage area maps of the site in pre-development and post-development conditions.
- Discuss types of existing vegetation that can be used as erosion control, or areas that are to be left undisturbed and how they will be marked.
- Discuss any existing drainage or erosion problems and how they are to be corrected.

_____ Adjacent areas:

- Provide a description of neighboring areas such as streams, lakes, CBPA Resource Protection Area (RPA), residential areas, roads, etc., which might be affected by the land disturbance.
- Streams that will receive runoff from the site should be surveyed to determine their carrying capacity.

_____ Off-site areas:

- Describe any off-site land-disturbing activities that will occur (including borrow sites, waste or surplus areas, etc.).
- Will any other areas be disturbed?

_____ Soils:

- Provide a brief description of the soils on the site giving such information as soil name, mapping unit, erodibility (K factor), pH, permeability, depth, texture and soil structure.
- Indicate references for soil information.
- Provide copy of soil survey map.

_____ Critical areas:

- Provide a description of areas on the site which have potentially serious erosion problems (e.g., steep slopes, channels, RPA, wet weather/ underground springs, etc.).
- Discuss any area of the project which may become critical during the project.

_____ Erosion and sediment control measures:

- Describe the methods which will be used to control erosion and sedimentation on the site.
- List all controls used, list specification numbers in Chapter 3 of the Virginia Erosion and Sediment Control Handbook.
- Discuss why control was selected and how it satisfies the applicable minimum standard(s).
- Discuss sequence of installation, maintenance requirements and removal for each control selected.
- Discuss Temporary Seeding as a means of erosion control, and list the types to be used.

Reviewed By _____ Date _____

- _____ Permanent stabilization:
- Provide a brief description, including specifications, of how the site will be stabilized after construction is completed. Seed specifications are to include type, and rate and time of application.
 - Include specifications for topsoil and seedbed preparation.
 - List soil testing requirements.
 - Fertilizer and Lime applications are to be in accordance with the attached ESC technical Bulletin #4. Visit the DCR web page at <http://www.dcr.state.va.us/sw/docs/esnutan.pdf> for more information.

- _____ Stormwater runoff considerations:
- Will the development site cause an increase in peak runoff rates?
 - Will the increase in runoff cause flooding or channel degradation downstream? Discuss how downstream properties and waterways will be protected (basins, channel improvements, easements, etc.).
 - Describe the strategy to control stormwater runoff.
 - List or discuss all references for the design of permanent stormwater management facilities.

- _____ Calculations:
- Provide detailed calculations for the design of temporary sediment traps and basins, diversions, on-site and off-site channels, permanent stormwater facilities, etc.
 - Provide all calculations showing pre- and post-development runoff. Worksheets, assumptions and engineering decisions should be clearly presented.
 - Calculations must show that downstream properties and waterways are adequately protected.

SITE PLAN

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

- _____ Indicate north:
- Provide an arrow showing the direction of north in relation to the site.

- _____ Limits of clearing and grading:
- Show all areas that will be cleared and graded.
 - Provide notes on how these areas will be marked.
 - Provide notes and illustrations that clearly indicate areas NOT to be disturbed.

- _____ Existing contours:
- Provide a small-scale topographic map of the site showing the existing contours elevations at intervals of 1 to 5 feet depending on the slope of the terrain.
 - Should be shown as dashed light lines.

- _____ Final contours:
- Show changes to the existing contours, including final drainage patterns.
 - Should be shown as heavy solid lines.

- _____ Existing vegetation:
- Show the existing tree lines, grassed areas, or other unique vegetation.

Project Name _____ Project ID _____

_____ Soils:

- Show the boundaries of different soil types.

_____ Existing drainage patterns:

- Show the dividing lines for each drainage area and use arrows to show the direction of flow for the different drainage areas.
- Include the size (acreage) of each drainage area.
- All existing drainage swales and patterns on the site should be located and clearly marked on the topographic map.
- Live or intermittent streams should be shown on the map.

_____ Critical erosion areas:

- All critical, environmentally sensitive, or prohibited areas are to be clearly shown on the plan with notes provided to state the critical nature.

_____ Site Development:

- Show all improvements such as buildings, parking lots, access roads, easements, utility construction, etc.

_____ Location of practices:

- Show the locations of erosion and sediment control and stormwater management practices used on the site.
- Symbols showing vegetation are also to be shown.
- Use the standard symbols and abbreviations in Chapter 3 of the ESC Handbook.
- A legend denoting symbols, line uses, and other special characters is to be provided.

_____ Off-site areas:

- Identify any off-site land-disturbing activities (e.g., borrow sites, waste areas, etc.). Show location of erosion controls.

_____ Detail drawings:

- All structural practices used should be explained and illustrated with detail drawings.
- All details should list the specification number from the VESCH.
- Alternative ESC measures must have proper drawings to indicate how and where they will be constructed.
- All plan drawings, elevations, and cross-section drawings are to show the scales used to prepare the drawings.
- A schedule of regular inspections and repair of each erosion and sediment control structure should be set forth including the maintenance items to check and perform as well as precautions for large storm events.
- Outlet protection schedules are to be provided.

_____ Maintenance:

- List the person who is responsible during construction and who will be responsible once the project is complete.

The 19 Minimum Standards, Narrative, and 13 General ESC Notes must be on the Site Plan (drawing), calculations may accompany the Site Plan in the Application Package.

Reviewed By _____ Date _____

Erosion and Sediment Control - 19 Minimum Standards

All land-disturbing activities undertaken on private and public lands in the Commonwealth of Virginia must meet the 19 “minimum standards” for erosion and sediment control (ESC) in Section 4VAC50-30-40 of the Virginia Erosion and Sediment Control Regulations. The applicant who submits the ESC plan to the program authority for approval is responsible for ensuring compliance with the minimum standards that apply to his/her activities. A condensed version of the minimum standards is provided below. Please refer to the Regulations for a complete, unedited copy of the minimum standards.

The 19 Minimum Standards, Narrative, and 13 General ESC Notes must be on the Site Plan (drawing), calculations may accompany the Site Plan in the application package.

(1) Soil Stabilization.

- 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, but less than one year.
- Permanent stabilization shall be applied to areas that are to be left dormant for more than one year.

(2) Soil Stockpile Stabilization.

During construction, soil stockpiles and borrow areas shall be stabilized or protected with sediment trapping measures. Temporary protection and permanent stabilization shall be applied to all soil stockpiles on site and borrow areas or soil intentionally transferred off site

(3) Permanent Stabilization.

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
- Will inhibit erosion

(4) Sediment Basins & Traps.

Sediment basins, sediment traps, perimeter dikes, sediment barriers (bush / straw barriers or silt fence), 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 of Earthen Structures.

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

(6) Sediment Traps & Sediment Basins.

Sediment traps and basins shall be designed and constructed based upon the total drainage area to be served by the trap or basin as follows:

Sediment Traps

- Only control drainage areas less than three acres
- Minimum storage capacity of 134 cubic yards per acre of drainage area

Sediment Basins

- Control drainage areas greater than or equal to three acres
- Minimum storage capacity of 134 cubic yards per acre of drainage area
- The outfall system shall, at a minimum, maintain the structural integrity of the basin during a twenty-five year storm of 24-hour duration

(7) Cut and Fill Slopes Design & Construction.

Cut and fill slopes shall be designed and constructed in a manner that will minimize erosion. Slopes 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 Down Slopes.

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) Slope Maintenance.

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

(10) Storm Sewer Inlet Protection.

All storm sewer inlets made operable during construction shall be protected so that sediment-laden water cannot enter the stormwater conveyance system without first being filtered/treated to remove sediment.

(11) Stormwater Conveyance Protection.

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 the receiving channel.

(12) Work in Live Watercourse.

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 q 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) Crossing Live Watercourse.

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) Regulation of Watercourse Crossing.

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

(15) Stabilization of Watercourse.

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

(16) Underground Utility Line Installation.

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

- No more than 500 linear feet of trench may be opened at one time
- Excavated material shall be placed on the uphill side of trenches
- 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
- Material used for backfilling trenches shall be properly compacted in order to minimize erosion and promote stabilization q Re-stabilization shall be accomplished in accordance with these regulations
- Comply with applicable safety regulations

(17) Vehicular Sediment Tracking.

Where construction vehicle access routes intersect paved 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

(18) Removal of Temporary Measures.

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 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) Stormwater Management.

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:

- 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.
- Adequacy of all channels and pipes shall be verified:
 - Natural Channels – use 2-year storm event
 - Manmade Channels – use 2- and 10-year storm event
 - Pipe and Pipe Systems – use 10-year storm event
 - If existing natural receiving channels or previously constructed man-made channels or pipes are not adequate, the applicant shall provide channel, pipe, or pipe system improvement or provide a combination of channel improvement, site design, stormwater detention, or other measures that is satisfactory to the program authority to prevent downstream erosion.
 - Provide evidence of permission to make the improvements
 - 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.
 - Outfall from a detention facility shall be discharged to a receiving channel, and energy dissipaters shall be placed at the outfall of all detention facilities as necessary to provide a stabilized transition from the facility to the receiving channel.
 - 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
 - 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.
 - 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

GENERAL EROSION AND SEDIMENT CONTROL NOTES

ES-1: Unless otherwise indicated, all vegetative and structural erosion and sediment control practices will be constructed and maintained according to minimum standards and specifications of the Virginia Erosion and Sediment Control Handbook and the *Virginia Erosion and Sediment Control Regulations* (4VAC50-30).

ES-2: The plan-approving authority must be notified one week prior to the pre-construction conference, one week prior to the commencement of land disturbing activity, and one week prior to the final inspection. The name of the Responsible Land Disturber must be provided to the plan-approving authority prior to actual engagement in the land-disturbing activity shown on the approved plan. If the name is not provided prior to engaging in the land-disturbing activity, the plan's approval will be revoked.

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

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

ES-5: Prior to commencing land disturbing activities in areas other than indicated on these plans (including, but not limited to, off-site borrow or waste areas), the contractor shall submit a supplementary erosion control plan to the owner for review and approval by the plan-approving authority.

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

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

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

ES-9: The contractor shall inspect all erosion control measures at least every 2 weeks and immediately after each runoff-producing rainfall event. Any necessary repairs or cleanup to maintain the effectiveness of the erosion control devices shall be made immediately.

ES-10: The contractor is responsible for the daily removal of sediment that has been transported onto a paved or public road surface.

ES-11: Seeding operations shall be initiated within 7 days after reaching final grade or upon suspension of grading operations for anticipated duration of greater than 30 days or upon completion of grading operations for a specific area.

ES-12: The contractor shall be responsible for preventing surface and air movement of dust from exposed soils which may present health hazards, traffic safety problems, or harm animal or plant life.

ES-13: A Virginia Stormwater Management Program Permit (VSMPP) for the discharge of stormwater from construction activities is required for projects disturbing 1 acre or greater. A VSMPP is also required for projects disturbing 2,500 square feet or greater in a designated Chesapeake Bay Preservation Area. Visit the Virginia Stormwater Management Program Permitting web page at <http://www.dcr.state.va.us/sw/vsmp.htm> for more information.

The 19 Minimum Standards, Narrative, and 13 General ESC Notes must be on the Site Plan (drawing), calculations may accompany the Site Plan in the Application Package.

Project Name _____ Project ID _____

Southampton County

Maintenance Agreement for Stormwater Management System

This Agreement is entered into this _____ day of _____, _____, by and between _____, hereinafter referred to as the "Landowner" and the Board of Supervisors of Southampton County, Virginia, hereinafter referred to as "County".

WITNESSETH:

WHEREAS, the Landowner has submitted a development plan for a project known as _____, which includes, among other features, a system that regulates peak rates of discharge and/or quality of runoff water (the term "system" includes any and all components designed to regulate flow, provide storage for runoff water, remove pollutants from runoff water and increase infiltration of runoff water into the soil); and

WHEREAS, the Landowner will install the system in order to comply with one or more of the following laws, regulations and codes:

Act	Regulations	Title
§10.1-603	4 VAC 3-20-10, et seq.	Stormwater Management
§10.1-2100	9 VAC 10-20, et seq.	Chesapeake Bay Preservation Act
§10.1-560	4 VAC 50-30, et seq.	Erosion and Sediment Control

Southampton County Code	Title of Ordinance
§13.5	Stormwater Management
Chapter 6	Erosion and Sediment Control; and

WHEREAS, this system includes _____

WHEREAS, it is in the best interests of both parties and the general public to ensure proper maintenance of the system; and

WHEREAS, a maintenance plan (Attachment _____) for the system has been submitted by the Landowner and approved by the County in conjunction with this Agreement; and

T ax Map/Parcel(s) Number _____

WHEREAS, both parties desire to ensure sufficient maintenance to maintain the integrity and the proper functioning of the system;

NOW, THEREFORE, for and in consideration of the mutual covenants stated below, the parties agree as follows:

Reviewed By _____ Date _____

1. The County shall:

- A. Release construction security after as-built plans and other appropriate certifications, showing adequate completion of the system, have been submitted and approved by the County and after an inspection report prepared by County staff recommends approval of the system. The certification shall be made by a Professional Engineer (or a qualified Class B surveyor or certified Landscape Architect) and shall certify that the as-built plan represents the actual condition of the structure(s) and shows that all aspects of the structure(s) conform substantially with the approved design plans and Southampton County stormwater management design requirements. Where the as-built condition varies significantly from the approved design, appropriately revised calculations shall also be provided by the professional certifying the system.
- B. Perform maintenance inspections and provide copies of the maintenance inspection reports to the Landowner. These inspections will be performed at reasonable times (between 8:30 A.M. and 5:00 P.M., Monday through Friday) and with the Landowner or agent(s) of the Landowner, if available. Periodic inspections may be conducted after storms producing high rates of runoff. Whenever possible, the County shall notify the Landowner prior to entering the property.

2. The Landowner shall:

- A. Construct the system in accordance with approved designs. Provide as-built data and drawings, soil/geotechnical reports, and other certifications requested by the County in order to document compliance with the approved designs and the requirements set forth in the Virginia Stormwater Management Handbook.
- B. Provide maintenance, which keeps the system in good working order acceptable to the County. Such maintenance shall be provided in perpetuity unless and until both parties formally enter into a revised agreement. Maintenance inspections will be performed within twenty-four (24) hours after each rainfall of one (1) inch or more.
- C. Provide a right of ingress and egress for the County and agents of the County for maintenance inspections and, if deemed by the County to be needed and not adequately done by the Landowner within a reasonable time after due notice, maintenance and repair of the system. Thirty (30) days shall normally be regarded as a reasonable time. The Landowner will reimburse the County for maintenance and repair costs within ten (10) working days after receiving a request for reimbursement. It is expressly understood and agreed that the County is under no obligation to maintain or repair said system, and in no event shall this Agreement be construed to impose any such obligation on the County. However, if the County performs or otherwise provides maintenance and/or repair, the Landowner will hold harmless and indemnify the County with regard to damage to or destruction of personal or real property.
- D. Keep written records of inspections and repairs and provide access to those records to the County upon request.

Project Name _____ Project ID _____

Page 4 of 4

BOARD OF SUPERVISORS OF SOUTHAMPTON
COUNTY, VIRGINIA

By: _____

Robert Barnett
Director of Community Development

COMMONWEALTH OF VIRGINIA
SOUTHAMPTON COUNTY, to-wit:

The foregoing Agreement was acknowledged before me this _____ day of _____
by, Robert Barnett, Director of Community Development on behalf of the Board of Supervisors of
Southampton County, Virginia.

My commission expires: _____

Notary Public

Approved as to form:

Southampton County Attorney's Office

Reviewed By _____ Date _____