

Erosion & Sediment Control Plan Review Checklist

Project Name _____

Land Owner _____

Address _____

Contact Info. _____

Date Submitted _____ Date Approved _____

Narrative

Project Description

- Y N NA Does the narrative briefly describe the nature and purpose of the land-disturbing activity?
- Y N NA Does the narrative tell the total amount of disturbance associated with the project?
- Y N NA Does the narrative tell of the total amount of impervious area expected in post-construction?
- Y N NA Does the narrative tell what the ultimate developed condition of the site will be?

Existing Site Conditions

- Y N NA Does the narrative give a brief description of the existing topography, vegetation and drainage?
- Y N NA Does the narrative tell of any existing drainage problems or concerns?
- Y N NA If so does it tell how they will be corrected?
- Y N NA Does the narrative give the percentages of slopes and their orientation? (north or south facing)
- Y N NA Does the narrative list the sizes of drainage areas in pre-development and post development conditions?

Adjacent Areas

- Y N NA Does the narrative give a brief description of neighboring areas such as streams, lakes, residential areas, roads, etc., which might be affected by the land-disturbance?
- Y N NA Does the narrative explain what erosion and sediment control measures might be taken to prevent possible off-site damages?

Off-site Land-disturbing Areas

- Y N NA Does the narrative tell of any off-site land-disturbing activities associated with the project? (borrow areas, waste or surplus areas, etc.)
- Any off-site borrow or spoil areas must be included in the erosion and sediment control plan or a separate plan must first be submitted and approved before borrow or spoil areas are utilized.
 - If off-site areas are under other permits, proof of permits must first be provided.

Soils

- Y N NA Does the narrative briefly describe the soils on the site explaining if they are low, moderate or highly erosive giving the soil name, mapping unit and k factor?

Soils (continued)

- Y N NA Does the narrative indicate the references for the soils information?
- Y N NA Does the narrative provide a copy of the soil's survey map?
- Y N NA Does the narrative indicate what sheet of the site plan shows soil's delineation?

Critical Areas

- Y N NA Does the narrative tell of any existing critical areas associated with the project? (steep slopes, channels, wet areas, streams, underground springs, etc.)
- Y N NA If so does the narrative explain how these areas are to be protected?
- Y N NA Does the narrative tell of any areas of the project that may become critical during construction? (steep cut or fill slopes, channels, etc.)
- Y N NA If so does the narrative explain how these areas are to be stabilized?

Erosion & Sediment Control Measures

- Y N NA Does the narrative list all of the erosion and sediment control measures that will be used through the duration of the project, giving each measures standard and specification numbers listed in Chapter 3 of the Virginia Erosion & Sediment Control Handbook?
- Y N NA Does the narrative give the location of each erosion and sediment control measure associated with the project?
- Y N NA Does the narrative explain why each measure was selected giving the Minimum Standard it addresses?
- Y N NA Does the narrative explain the sequence of installation, maintenance and removal for each control?

Permanent Stabilization

- Y N NA Does the narrative explain how each area of the project will be permanently stabilized after construction is complete? (vegetative, stone, paved, etc.)
- Y N NA If vegetative stabilization is to be used, does the narrative provide the seeding specifications and rates, fertilizer rates and liming specifications?
- Y N NA Does the narrative provide temporary seeding, fertilizer and liming specifications and rates to be used during winter months until permanent seeding may take place?

Stormwater Runoff Considerations

- Y N NA Does the narrative explain if the developed site will cause an increase in peak runoff rates?
- Y N NA Does the narrative explain how or what measures will be implemented to reduce any increase in peak runoff rates back to existing peak runoff rates?
- Y N NA Does the narrative explain how any temporary sediment trapping measure will also be used as a permanent stormwater management measure?

Calculations

- Y N NA Does the narrative show detailed calculations for proper design criteria set forth in the Virginia Erosion & Sediment Control Handbook (1992 version) for temporary sediment basins, temporary sediment traps, channels, culverts, outlet protection, etc.?
- Y N NA Does the narrative include calculations for pre- and post-developed runoff?
- Y N NA Are all calculation methods, calculations, and engineering decisions clearly presented and organized?

Calculations (continued)

Y N NA Do calculation methods clearly show that adequate protection of downstream properties and waterways are protected?

Variances

Y N NA Are there any requests for variances?

- If so it must be explained in detail as to why a variance is being requested.
- If any structural practice which is not referenced in the Virginia Erosion & Sediment Control Handbook is requested, it must be explained in detail why the structure was chosen. Detail drawings and calculations as to proper design criteria showing how and where it is to be designed must be clearly presented.

Maintenance

Y N NA Does the narrative explain clean-out and maintenance specifications for all erosion and sediment control measures and major structures such as basins, traps, silt fence, etc.?

Y N NA Does the narrative explain maintenance specifications for all permanent stormwater detention facilities?

Y N NA Does the narrative tell who will be responsible for clean-out and maintenance of all erosion and sediment control measures and major structures? (landowner, contractor, RLD, etc.)

Y N NA Does the narrative tell who will be responsible for maintenance of all stormwater detention facilities? (landowner, contractor, homeowners association, etc.)

Proof of Other Required Permits

Y N NA Does the narrative tell of any other permits required by any other local, state or federal agencies?

- If so the permit numbers and the agency in which the permit was required must be included.

Minimum Standards

Y N NA Have all applicable 19 Minimum Standards set forth by the Commonwealth State of Virginia been adequately addressed?

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

Minimum Standards (continued)

1. 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.
 2. 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.
- MS 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.
 - MS 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.
 - MS 9 - Whenever water seeps from a slope face, adequate drainage or other protection shall be provided.
 - MS 10 - All storm sewer inlets that are made operable during construction shall be protected so sediment-laden water can not enter the conveyance system without first being filtered or other wise treated to remove sediment.
 - MS 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.
 - MS 12 - When work in a live watercourse is performed, cautions 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 in the construction of causeways and cofferdams. Earthen fill may be used for these structures if armored by non-erodible cover materials.
 - MS 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.
 - MS 14 - All applicable federal, state and local regulations pertaining to working in or crossing live watercourses shall be met.
 - MS 15 - The bed and banks of a watercourse shall be stabilized immediately after work in the watercourse is completed.
 - MS 16 - Underground utility lines shall be installed in accordance with the following standards in addition to other applicable criteria.
1. No more than 500 linear feet of trench shall be opened at one time.
 2. Excavated material shall be placed on the uphill side of trenches.
 3. Effluent from dewatering devices 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 offsite properties.
 4. Material used for backfilling trenches shall be properly compacted in order to minimize erosion and promote stabilization.
 5. Restabilization shall be accomplished in accordance with these regulations.

Minimum Standards (continued)

- MS 17 - Where construction vehicle access routes intersect paved or public roads, provisions shall be made to minimize the transport of sediment by vehicular traffic 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 has been removed in this manner. This provision shall apply to individual development lots as well as to larger land-disturbing activities.
- MS 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.
- MS 19 - Properties and waterways downstream from development sites shall be protected from sediment disposition, 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.
 1. 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.
 2. 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 analyses within the channel is one hundred times greater than the contributing drainage area of the project in question; or
 - 2 (a). Natural channels shall be analyzed by the use of a 2-year storm to verify that stormwater will not overtop channel banks nor cause erosion of channel bed or banks.
 - (b). All previously constructed man-made channels shall be analyzed by the use of a 10-year storm to verify that stormwater will not overtop its banks and by the use of a 2-year storm to demonstrate that stormwater will not cause erosion of channel bed or banks; and
 - (c). Pipes and storm sewer systems shall be analyzed by the use of a 10-year storm to verify that stormwater will be contained within the pipe or system. If existing natural receiving channels or previously constructed man-made channels or pipes are not adequate, the applicant shall:
 - © 1. Improve the channels to a condition where a 10-year storm will not overtop the banks and a 2-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 10-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 2-year storm to increase when runoff outfalls into a natural channel or will not cause the pre-development peak runoff rate from a 10-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.
 - The applicant shall provide evidence of permission to make the improvements.

Minimum Standards (continued)

- All hydrologic analyses shall be based on the existing watershed characteristics and the ultimate development of the subject project.
- 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.
- All on-site channels must be verified to be adequate.
- 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 management 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.
- All measures used to protect properties and waterways shall be employed in a manner which minimizes impacts on the physical, chemical and biological integrity of rivers, streams and other waters of the state.

Site Plan

Vicinity Map

Y N NA Does the site plan have a map showing the location of the project site in relation to the surrounding area?

North Arrow

Y N NA Does the site plan have a north arrow which indicates the north direction in relation to the project site?

Legend

Y N NA Does the site plan have a legend denoting symbols, line uses, and any other special characters?

Limits of Clearing and Grading

Y N NA Are the limits of clearing and grading clearly marked for the entire project site?

Existing Vegetation

Y N NA Does the site plan show the existing vegetation on the project site?

Water

Y N NA Are all streams, springs, ponds, rivers, lakes, etc. that are relevant to the project site clearly shown?

Existing Topographical Contours

Y N NA Does the site plan have a map showing the existing contours by dashed lines in intervals of 1 to 5 feet?

Y N NA Does the site plan show all the pre-developed drainage areas relevant to the project site?

Y N NA Does the site plan show the size of all pre-developed drainage areas in acres?

Y N NA Does the site plan show the direction of flow for all pre-developed drainage areas?

Proposed Changes to Contours

Y N NA Does the site plan have a map showing all changes to contours by solid lines of intervals of 1 to 5 feet?

Y N NA Does the site plan show all the post-developed drainage areas relevant to the project site?

Y N NA Does the site plan show the size of all post-developed drainage areas in acres?

Y N NA Does the site plan show the direction of flow for all post-developed drainage areas?

Site Development

Y N NA Does the site plan show all improvements, existing or proposed, on and off-site that are relevant to the project site? (buildings, parking lots, access roads, right-of-ways, easements, utility, etc.)

Soils

Y N NA Does the site plan show the boundaries of the different soil types relevant to the project site?

Y N NA Does the site plan show the k factor and soil survey classifications for all soil types relevant to the project site?

Y N NA Does the site plan show the k factor and soil survey classifications for all soils that will be transported to the project site from any borrow areas?

Critical Areas

- Y N NA Does the site plan clearly show any existing critical areas? (streams, steep slopes, wet lands, etc.)
- Y N NA Does the site plan clearly show any areas that may become critical during construction? (cut and fill slopes, soils with high k factor, etc.)
- Y N NA Does the site plan clearly show how all critical areas are to be protected during pre– and post-construction?

Location of all Erosion and Sediment Control Measures and Stormwater Management Practices

- Y N NA Does the site plan show the exact location of all erosion and sediment control measures to be utilized?
- Y N NA Does the site plan show the exact location of all stormwater management practices?
- Y N NA Does the site plan have all erosion and sediment control measures marked with the standard symbols and abbreviations in Chapter 3 of the Virginia Erosion and Sediment Control Handbook?
- Y N NA Does the site plan show the exact location of any structural practices that are not referenced in the Virginia Erosion and Sediment Control Handbook?

Standards and Specifications

- Y N NA Does the site plan show the standards and specifications for all erosion and sediment control measures and stormwater management facilities from the Virginia Erosion and Sediment Control Handbook or the Virginia Stormwater Management Handbook?

Maintenance

- Y N NA Does the site plan give the information as to the maintenance of each erosion and sediment control measure or stormwater management facility?
- Y N NA Does the site plan tell who will be responsible for the maintenance of each erosion and sediment control measure or stormwater management facility?

General Notes

Two sets of plans are required to be submitted once final approval has been determined by the Carroll County Plan Approving Authority.

These plans are to be submitted to the Erosion & Sediment Control Office located at the Carroll County Governmental Complex at 605-1 Pine Street, Suite C 113, Hillsville, VA 24343.

Once an E&S plan has been submitted, the Plan Approving Authority has 45 days to either approve, disapprove or request revisions in writing. If the plan is disapproved or revisions requested the Plan Approving Authority must put in writing why the plan was disapproved or what revisions were requested. Each time plans are resubmitted the Plan Approving Authority has 45 days to approve, disapprove or request revisions in writing.