S.C. Department of Health and Environmental Control

Stormwater Management and Sediment and Erosion Control Plan Review Checklist For Design Professionals

This Plan Review Checklist for Design Professionals has been developed to aid those who prepare Stormwater Pollution Prevention Plans (SWPPPs). Adjacent to the heading for most sections are references from the corresponding portion of the NPDES General Permit for Stormwater Discharges from Construction Activities (SCR100000), which was issued on October 15, 2012. SWPPP Preparers should not utilize this checklist as a substitute for the language in the permit and should review the permit itself for more information on each specific requirement. The permit may be found at:

http://www.scdhec.gov/Environment/docs/CGP-permit.pdf

In the space provided please indicate the location and page number(s) where each item below can be found in your SWPPP or supporting calculations. If an item is not applicable, put N/A. The Department reserves the right to modify this checklist at any time. The Coastal Zone consists of the following counties: Beaufort, Berkeley, Charleston, Colleton, Dorchester, Georgetown, Horry, and Jasper.

Project Information:
Project Name: _____ County: _____

Checklist Completed by:
Printed name: _____ Signature: _____ Date: _____

PLANS AND MAPS

1. CURRENT COMPLETED APPLICATION FORM/NOTICE OF INTENT
   - Original Signature of individual with signatory authority for the applicant according to requirements set forth in R.61-9.122.22 (see Appendix C)
   - All items completed and answered
   - Fee Schedule

2. COPIES OF PLANS AND CALCULATIONS
   - Plans stapled together!
   - ONE set of plans and supporting documentation (report, calculations, maps, etc.)
   - Supporting documentation tabbed (e.g., Maps, Pre-Development calculations) and pages numbered [no loose pages]

3. LOCATION MAP (3.2.7.A.IV) Location in C-SWPPP: _____
   - North arrow and scale
   - Outlined project location
   - Labeled road names

4. PROJECT NARRATIVE (3.2.1) Location in C-SWPPP: _____
   - Scope of project outlined, including a brief description of pre- and post-development conditions

4. PROJECT NARRATIVE (cont'd)
   - Summary table of pre- and post-development flows (at least 2- and 10-year, 24-hour storm events)
   - Existing flooding problems in the surrounding area described
   - Disturbed area calculations included for subdivision projects or LCP disturbing 1 or more acres
     - For subdivisions if the site is not to be mass-graded, the following formula should be used to determine the amount of disturbance:

       Amount of Disturbance = 2[Max Restricted Building Size][Number of Lots] + Right of Way (ROW) areas {ROW areas include clearing for roads, utilities, easements etc.}

     - If this equation is used, include a note on the plans stating: "The site is not to be mass-graded. Only 2 times the footprint is to be cleared as the lots are developed. The assumed disturbance on each lot is _____ sq. ft."

5. TOPOGRAPHIC MAP (3.2.7.A.I) Location in C-SWPPP: _____
   - Project boundary outlined
   - Route of runoff from site to nearest waterbody shown
   - Road names adjacent to site labeled

6. SOILS INFORMATION (3.2.7.A.II) Location in C-SWPPP: _____
   - Project boundary outlined
   - Predominate soil types found at the site identified on the plans or on a separate map
   - *Note: Soils information is available from the Natural Resource Conservation Service through their website:* http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm

7. FLOODWAY/ FLOODPLAINS(3.2.7.A.III) Location in C-SWPPP: _____
   - Project boundary outlined, if in close proximity to floodplain/ floodway
   - *Note: The Department does not regulate the placement of fill in floodplains. Please see your local city or county official.*

8. SITE PLANS CHECKLIST:
   - Location map with site outlined on first plan sheet (map should have enough detail to identify Surface Waters of the State within 1 mile of the site)
   - North arrow and scale
   - Property lines and adjacent landowners' names
   - Legend
   - Registered engineer's signed and dated seal
   - Engineering Firm's Certificate of Authorization seal
   - If the SWPPP has been developed by a Registered Professional Engineer, Registered Landscape Architect or Tier B Land Surveyor, the following statement must be included on the site plans:

     "I have placed my signature and seal on the design documents submitted signifying that I accept responsibility for the design of the system. Further, I certify to the best of my knowledge and belief that the design is consistent with the requirements of Title 48, Chapter 14 of the Code of Laws of SC, 1976 as amended, pursuant to Regulation 72-300 et seq. (if applicable), and in accordance with the terms and conditions of SCR100000."

   - Existing and proposed contours for entire disturbed area
   - Limits of disturbed area
   - Locations of off-site material, waste, borrow, or construction equipment storage areas, excluding roll-off containers (Note: Some off-site disturbed areas may require a separate application for NPDES coverage)
   - Location and identification of any stormwater discharges associated with industrial activity (not construction)
   - Location of Concrete Washout and other Pollution Prevention Measures
   - Easements
   - Road profiles with existing and proposed ground elevations (if no contours are shown on the plans)
   - Grassing and stabilization specifications (temporary and permanent)

8. SITE PLANS CHECKLIST: (cont'd)
   - Standard notes
   - Temporary and permanent control measures (provide details of all sediment and erosion control measures used; make sure the label or legend on the plans matches the name on the detail)
     Note: Maintenance requirements for each BMP should be listed on the detail.
     Note: If details from the BMP Handbook are used, then the inspection frequency must be changed to be in accordance with the new CGP (see Standard note 3).

9. WATERS OF THE STATE, INCLUDING WETLANDS (3.2.4.C) Location in C-SWPPP: _____
   - Delineation of all waters of the State (WoS), including wetlands, shown and labeled on plans (delineation not required if a 100-ft undisturbed buffer can be maintained between the WoS and all land-disturbing activities)
   - Additional, separate plan sheet that shows all WoS on the site and the impacted areas with a description of the activity(s), whether it is permanent or temporary, and any other relevant information.
   - If impacts to WoS, outlined areas of impacts and labeled that no work can begin in this area until all necessary USACOE permits, SCDHEC 401 Certifications, and Critical Area Permits (Coastal Zone only) have been obtained and are effective.
   - *Note: If there are proposed impacts to WoS, then it is advised that you contact USACOE (866-329-8187) and/ or S.C. DHEC Water Quality Certification, Standards & Wetlands Programs Section (803-898-4300) to determine additional requirements before submitting the Notice of Intent (NOI).*
   - *Note: If WoS are to be impacted, work cannot be performed in these designated areas until all necessary permits have been acquired*
   - *Note: If a USACOE permit is required for construction of or access to a temporary or permanent stormwater management structure, NPDES permit coverage cannot be granted until the USACOE permits and S.C. DHEC 401 Section certifications are obtained.*
   - *Note: Coastal Counties Only - If there are proposed wetland impacts and your project is located within one of the eight coastal counties, then it is advised you contact S.C. DHEC Office of Ocean and Coastal Resource Management (843-953-0200) to determine additional requirements before submitting the Notice of Intent (NOI).*

10. NAVIGABLE WATERS (3.2.4) Location in C-SWPPP: _____
    - Extra plan sheet showing impacts to navigable water and description of activity included if S.C. Navigable Waters (SCNW) crossing and separate SCNW permit has not been obtained for all activities
    - *Note: For NOIs initially submitted to MS4s /delegated entities, if project has SCNW crossing and if separate SCNW permit has not been obtained for this crossing, then this item will be reviewed by S.C. DHEC before NPDES coverage will be granted.*

11. TMDL/ 303d IMPAIRED WATERBODIES (3.2.12) Location in C-SWPPP: _____
    - List the nearest S.C.DHEC Water Quality Monitoring Station (WQMS) that the site's stormwater discharges drain to and the waterbody on which it is located: _____
      _____
      Coastal Zone Only: List the nearest upstream and downstream WQMS(s) and corresponding waterbody(ies) above. This requirement only applies when the receiving water body for your site is tidally influenced. Note, shellfish stations only monitor for Fecal coliform bacteria. Include both the nearest shellfish monitoring station(s) and full WQMS(s) for both upstream and downstream locations when shellfish monitoring stations are present. If a shellfish monitoring station is not present, then only list the full WQMS(s). When a shellfish monitoring station is present, everything but Fecal coliform bacteria needs to be assessed at the full WQMS(s). Shellfish monitoring stations begin with numbers and full WQMS(s) begin with letters
    - Link to Water Quality Information Tool and Instructions:
      http://gisweb01.dhec.sc.gov/water/Stormwater.html?mode=1/
    - Qualitative and quantitative assessment (described in Section 3.4C of SCR100000), if nearest WQMS listed on the current 303(d) List of Impaired Waters and if site's stormwater construction discharges contain the pollutant of impairment and if site disturbs 25 or more acres
    - Evaluation of selected BMPs if nearest WQMS listed on the current 303(d) List of Impaired Waters and if site's stormwater construction discharges contain the pollutant of impairment and if site disturbs less than 25 acres

11. TMDL/ 303d IMPAIRED WATERBODIES (con't)
    - Pollutants of concern include TURBIDITY, BIO(Macroinvertebrate), TP(Total Phosphorus), TN(Total Nitrogen), and Chlorophyll-A. Coastal Counties Only: Fecal Coliform (FC) in shellfish harvesting waters
    - If Approved TMDL developed for nearest WQMS and if site's stormwater construction discharges contain the pollutant of impairment, show that measures and controls on SWPPP meet assumptions and requirements of TMDL (may need to contact 303(d)/TMDL Program for assistance)
    - For TURBIDITY, BIO(Macroinvertebrate) consider inclusion of BMPs to reduce sediment load such as: sediment traps and basin designed to meet 80% sediment removal efficiency (regardless of size), additional measures to stabilize site, limited clearing and grading
    - For TP(Total Phosphorus), TN(Total Nitrogen), and Chlorophyll-A consider inclusion of BMPs to reduce nutrient load. This could include limited clearing and grading, soil samples for to determine nutrient requirements during grassing
    - For Fecal Coliform (FC) in shellfish harvesting waters, this may include location of porta-johns and waste receptacles
    - *Note: To ensure sufficient Water Quality Monitoring Stations are selected to assess all of the identified parameters for construction stormwater, include monitoring stations that contain assessments for the first twelve parameters. Some stations only assess one parameter and should not be relied upon for the entire 303(d)/TMDL assessment for construction stormwater discharges. In addition, fecal coliform (for Shellfish Harvesting waters) must be assessed within the coastal critical area and nutrients and/or chlorophyll must be assessed in lakes/reservoirs*

Construction

12. CONSTRUCTION SEQUENCE (3.2.3) Location in C-SWPPP: _____
    - Construction Sequence should accurately reflect the nature and timing of construction activities for the site
    - Sequence should begin with the installation of perimeter controls and end with the removal of sediment and erosion control measures once the site has been finally stabilized
    - Address conversion of any temporary sediment control structures to permanent measures (i.e., conversion of a sediment basin to a permanent detention basin)
    - Sequence should reflect implementation and transition between each phased plan (see Item 13 below)

13. PHASED SEDIMENT & EROSION CONTROL PLANS (3.2.9) Location in C-SWPPP: _____
    - Phased Sediment and Erosion Control Plans are not required when land-disturbance is 5 acres or less
    - For land-disturbance between 5 and 10 acres, a two-phased stormwater management and sediment and erosion control plan is required for all non-linear projects. Each phase must be shown on a separate plan sheet. Plans should address the transition between phases.
        - Phase 1 – Initial Land Disturbance – Must include perimeter sediment and erosion control BMPs required prior to initial/ mass clearing and other appropriate BMPs needed to maintain compliance with the permit. On some sites, this may include appropriate BMPs for demolition of existing structures
        - Phase 2 – Stabilization - Sediment and erosion control BMPs required during the remainder of grading and construction. Must also include appropriate BMPs for stabilization – grassing, inlet protection, etc.
    - For land-disturbance greater than 10 acres, a three-phased stormwater management and sediment and erosion control plan is required for all non-linear projects. Each phase must be shown on a separate plan sheet. Plans should address the transition between phases.
        - Phase 1 – Initial Land Disturbance – Must include perimeter sediment and erosion control BMPs required prior to initial/ mass clearing and other appropriate BMPs needed to maintain compliance with the permit. On some sites, this may include appropriate BMPs for demolition of existing structures
        - Phase 2 – Construction - Sediment and erosion control BMPs required during the majority of grading and construction activities.
        - Phase 3 – Stabilization - Sediment and erosion control BMPs required near the completion of the construction project. Must also include appropriate BMPs for stabilization – grassing, inlet protection, etc

14. UTILITY LINES Location in C-SWPPP: _____

- Limits of disturbance include areas necessary for installation of all utilities (cable, electrical, natural gas, water and sewer), as appropriate
- For instances where the location of cable, electric, and natural gas has not been determined at the time the SWPPP is developed, SWPPP preparer may include a note that the installation of these is to be within the permitted limits of disturbance and that installation outside of these areas will require a modification to the permit
- Inlet protection provided at all existing inlets that receive flows from the disturbed areas; also add this as a note on the plans
- For all utility lines crossing WoS, narrative and detail showing sediment and erosion control measures provided on plans
- Note for construction entrances to be provided at all locations where construction traffic accesses a paved roadway

15. BUFFERS – SEE GUIDANCE DOCUMENT (3.2.4.C) Location in C-SWPPP: _____

- Select Compliance Option A, B, or C and provide appropriate documentation
    - Double row of silt fence provided in all areas where a 50' undisturbed buffer cannot be maintained between the disturbed area and the WoS
    - Minimum 10' maintenance buffer provided between last row of silt fence and WoS; or, if buffer not provided, then statement from P.E. on plans indicating how silt fence will be installed and maintained without impacts to WoS
- Ensure discharges into a buffer zone are non-channelized and non-concentrated to prevent erosion, and first treated by the construction site's sediment and erosion controls
- Ensure any velocity dissipation measures implemented within a buffer zone comply with 3.2.4.C.III. (d)
- Additional Local Requirements may apply

16. FLOW CONTROL (3.2.10) Location in C-SWPPP: _____

- Control stormwater volume and velocity within the site during construction to minimize erosion within the site
- Control stormwater rates and volume at outlets during construction to minimize erosion to downstream channels and streambanks

17. CONSTRUCTION SITE HYDROLOGY (3.2.8.V AND 3.2.6.A.II) Location in C-SWPPP: _____

- *Note: MS4s may have additional requirements for the management of stormwater, sediment, and/or erosion.*
- Pre-development drainage area map and during construction drainage area map outlining the area contributing to sediment basins, traps, and rock sediment dikes. Include all site drainage outlet points on each drainage area map.
- During construction hydrologic analysis calculations for the 10-year, 24-hour storm event at each outfall point for sediment trapping efficiency calculations and/or skimmer sizing
- Analysis performed using SCS 24-hour storm for routed structures (Rational method is not acceptable)
- Rainfall data from South Carolina DHEC Storm Water Management BMP Handbook (BMP Handbook) or other appropriate source used in all calculations
- Additional construction site hydrology information and hydrologic analysis calculations may be provided as a means of addressing non-numeric effluent limits during construction
- Curve Number for construction hydrologic analysis needs to reflect construction/ disturbed conditions. Curve Numbers for newly-graded areas are:
    - Hydrologic Soil Group "A": 77
    - Hydrologic Soil Group "B": 86
    - Hydrologic Soil Group "C": 91
    - Hydrologic Soil Group "D": 94

18. SEDIMENTOLOGY & SEDIMENT BASIN/TRAP DESIGN (3.2.8.V AND 3.2.6.A.II)
Location in C-SWPPP: _____

- Trapping efficiency calculations showing that all sediment basins/ traps are capable of achieving a sediment trapping efficiency of at least 80% for the 10-year, 24-hour storm event, if 10 or more disturbed acres drain to a common point (stream, lake, etc.)
- Additional trapping efficiency calculations may be necessary to satisfy construction buffer requirements or may be provided as a means of addressing non-numeric effluent limits
- Sediment basins provide storage for the 10-year, 24-hour storm event for disturbed conditions or 3600 ft^3/ acre draining to the basin, if 10 or more disturbed acres drain to a common point (stream, lake, property line, etc.)
- Sediment basins and traps designed for total area draining to them. Sediment traps only used for drainage areas of less than 5 acres
- Sediment trap storage calculations, showing that 1800 ft^3/ total acre draining to each trap is provided below the spillway
- If trapping efficiency calculations are required for sediment traps, then provide peak outflow, q_{po}, calculations; the 10-year, 24-hour storm event for construction conditions cannot overtop the trap's spillway
- Drainage area map outlining the area draining to each basin/trap. Copies of figures used to determine V_{15} (SV-1) and trapping efficiency (ST-1, SB-1, SB-2), if Design Aids from BMP manual are used to determine trapping efficiencies. When the soil type is A/D, B/D or C/D, the chart for high water tables must be used to calculate sediment trapping efficiency for sediment ponds in the Coastal Zone.
- When multiple soil types exist within a drainage area, use the soil type with the smallest D15 or particle size for the appropriate depth to determine the settling velocity, V15. Do not use an average D15.
- Sediment basins must dewater via an outlet structure that pulls water from the surface, unless infeasible. Options for this include skimmers and flashboard risers. Surface dewatering is not required for traps.
- Porous baffles must be provided in sediment basins, unless infeasible
- Forebays must be installed, unless infeasible
- Public Safety should be taken into consideration as a factor in design of sediment basins. Alternative BMPs must be utilized where a construction site limitations would preclude a safe design
- Silt fence only used in areas with drainage areas of less than ¼ acre per 100 LF of fence and not used in areas with concentrated flows
- Clean-out stake, marked at ½ the designed sediment storage depth, provided in all sediment basins/ sediment traps
- *Note: Consult the BMP Handbook for information on the design of these and other devices.*
- *Note: The Design Aids in the BMP Handbook cannot be used to determine trapping efficiencies for structures in series. Modeling is required in those instances. If the flow for the10-year, 24-hour storm for construction conditions overtops the structure or the structure's spillway, then the Design Aids cannot be used.*

19. CONVEYANCE MEASURES AND STABLE CHANNELS (3.2.6.A.III) Location in C-SWPPP: _____

- All channels and diversion ditches able to handle the 10-year storm event with non-erosive velocities of less than 5 feet per second during construction (use appropriate CN for disturbed areas) and post-construction (if velocity exceeds 5 ft/s, then permanent measures to reduce the velocity to a non-erosive rate must be provided)
- Stabilization of conveyance channels is to be completed within 7 days of channel construction
- Rock check dams provided in temporary diversions
- Installation detail for erosion control blanket (ECB) or turf reinforcement matting (TRM) if ECBs or TRMs to be used
- Stabilized temporary conveyance channels should be utilized to divert concentrated stormwater flows from running onto and within the disturbed area

20. INLET PROTECTION (3.2.6.A.II(a) and (b)) Location in C-SWPPP: _____

- Provided at all inlets (existing and proposed)
- Inlet protection details provided for pre-paving and after roadways have been paved
- Hay bales are not acceptable
- Steel posts and buried fabric shown for filter fabric inlet protection

20. INLET PROTECTION (cont'd)
- Filter fabric under the grate is not acceptable unless it is part of a manfactured best management practice made for inlet protection that is specifically designed to hang underneath the grate
- *Note: The Department recommends that an inlet not have more than one (1) acre draining to it.*

21. ENERGY DISSIPATORS/ OUTLET PROTECTION (3.2.10)
- All outlets stabilized with appropriately sized riprap apron or other structure
- Riprap detail shows apron dimensions and stone sizes for each pad or each pipe diameter
- Filter fabric installed beneath all riprap
- Note that appropriate outlet protection and energy dissipation is also required for post-construction

22. SLOPES AND/ OR EMBANKMENTS (3.2.6.A.III(e) and 3.2.10) Location in C-SWPPP: _____
- All slopes stabilized
- Minimize Disturbance to Steep Slopes (3H:1V) or greater
- Divert concentrated flows around steep slopes using slope drains or temporary diversions
- Utilize appropriate measures to prevent erosion (erosion control blankets, surface roughening, terracing, etc.)
- Slope drains designed in accordance with the BMP Handbook
- Slope drains provided where concentrated flows discharge onto a fill slope
- *Note: Measures, in addition to grassing or hydroseeding, include synthetic or vegetative matting, diversion berms, temporary slope drains, etc.*
- *Note: If retaining walls or fill slopes are to be constructed at the downstream property line, the Department recommends a 10' buffer to allow for construction and maintenance. If a 10' buffer is not provided, then provide permission from the adjacent property owner for possible land-disturbing activities on his property.*

Post-Construction

23. POST CONSTRUCTION HYDROLOGIC ANALYIS (3.2.8.A.II) Location in C-SWPPP: _____
- *Note: MS4s may have additional requirements for post construction hydrologic analysis.*
- Pre- and post-developed hydrologic analysis calculations for the 2- and 10-year, 24-hour storm events at each outfall point
- Drainage area maps that clearly correspond to the calculations (pre- and post-development)
- Analysis points for comparing runoff rates and the total drainage area analyzed do not change from pre- to post-development, although the immediate drainage areas contributing to each analysis point might shift.
- Post-development discharges less than or equal to pre-development discharges for each outfall point (if not, then see "Detention Waiver" section below)
- Analysis performed using SCS 24-hour storm (Rational method is not acceptable)
- Rainfall data from South Carolina DHEC Storm Water Management BMP Handbook (BMP Handbook) or other appropriate source used in all calculations
- *Note: The curve number for open water, marshes, etc. should be 98.*

24. DISCHARGE POINTS (3.2.6.A.III) Location in C-SWPPP: _____
- Storm drainage or pond outfalls carried to an existing drainage outfall such as a pipe, ditch, etc.
- No new point discharges onto adjacent property where there was not a point discharge previously, unless written permission from the adjacent property owner is provided
- Level spreaders, plunge pools, etc. provided when the proposed outlet is near the property line and not directed to an existing outfall, such as a creek or ditch
- Twenty (20)-foot minimum buffer is provided between the property line and the discharge point
- Outlets shall not discharge on fill slopes
- *Note: This requirement also applies during construction.*

25. DETENTION ANALYSIS AND BASIN DESIGN (3.2.8.A.III) Location in C-SWPPP: _____

- Analysis
  - *Note: MS4s may have additional requirements for detention analysis and basin design.*
  - Pond routing using a volume-based hydrograph for the 2- and 10-year, SCS 24-hour storm event (Drain:Edge, ICPR, HEC-1, SedCAD, HYDRAFLOW, etc. perform full pond routings; TR55 does not perform a full pond routing; rational method cannot be used)
  - Hydrologic and hydraulic calculations necessary to determine the impact of hydrograph timing modifications of the proposed land-disturbing activity, with and without the detention structure (results of analysis will determine the need to modify the detention design or eliminate the detention requirement—see note 2 below)
  - Inputs and outputs from analysis program
  - Summary table of the peak inflows, peak outflows, discharge velocities, and maximum water surface elevations (WSE) for the 2- and 10-year, 24-hour storm events for each detention structure
  - Stage-storage-discharge relationship for the outlet structure of each detention structure
  - If a rating curve for the outlet structure must be generated externally from the analysis program (Drain:Edge, HEC-1, etc.), data and equations used to rate the outlet structure
  - As-built of existing detention pond if the site drains to an existing detention pond (see below)
  - *Note: The Department recommends using the 10% rule in performing analysis. The hydrologic analysis should be conducted for the larger drainage area, where the site in question encompasses 10% of the total drainage area. For example, if your site is 10 acres, then the hydrologic analysis should be performed at the point downstream where the contributing drainage area, including your 10-acre site, is approximately 100 acres.*

- Design
  - Detail of outlet structure and cross-section of the dam/ berm or pond bank, including elevations and dimensions that correspond to the calculations
  - Orifice constructability should be considered (do not specify orifice diameters with increments of less than ¼")
  - Small orifices (those less than 3") are prone to clogging
  - Maximum WSE for the 10-year storm event below the emergency spillway with 0.5-ft of freeboard between maximum WSE for the 10-year storm and the emergency spillway
  - Maximum WSE for the 100-year storm event below the embankment with 0.5-ft of freeboard between maximum WSE for the 100-year storm and the embankment
  - Dewatering time calculations for the 10-year storm event (dry ponds must drain completely within 72 hours)
  - Bottom of all detention and retention ponds graded to have a slope of not less than 0.5%
  - If the pond is to be used for sediment control during construction, temporary horseshoe-shaped riprap berm in front of any low level outlets provided during construction and shown on the pond detail for dry ponds
  - Permanent maintenance access to all permanent detention structures (easements may be needed for structures surrounded by lots)
  - Infiltration systems designed in accordance with S.C. Reg. 72-307.C(11) [specify how items a-j have been addressed]
  - Low Impact Development measure, bioretention cells, infiltration, and other post-construction practices should be installed only <u>after</u> the drainage area to these practices has been stabilized
  - *Note: Emergency spillways should not be built on fill slopes.*
  - *Note: The Department recommends installation of a trash rack or other debris-screening device on all pond risers.*
  - *Note: The Department recommends a maximum slope of 3:1 on pond embankments to allow for ease of maintenance.*
  - *Note: The Department recommends installation of sediment forebay at each outfall into the detention/ sediment basin. This is a requirement during construction.*

26. DETENTION WAIVER Location in C-SWPPP: _____

- *Note: If the 2- and 10-year, 24-hour post-developed flow rates exceed the pre-developed rates,* waivers *from detention may be granted in accordance with regulation 72-302(B) on a case-by-case basis*
- Justification and a written request, including the following statement: *"the increased flows will not have a significant <u>adverse impact</u> on the downstream/adjacent properties"*

26. DETENTION WAIVER (cont'd)
- A project may be eligible for a waiver or variance of stormwater management for water quantity control if the applicant can demonstrate that:
  - The proposed project will have no significant adverse impact on the receiving natural waterway or downstream properties; or
  - The imposition of peak control requirements for rates of stormwater runoff would aggravate downstream flooding
- Waiver signed by the project's Professional Engineer
- *Note: See note in checklist item 25 regarding the 10% rule.*

27. USE OF EXISTING STORMWATER MANAGEMENT STRUCTURES (3.2.8.A.VI) Location in C-SWPPP: _____
- An as-built survey must be provided for all previously approved detention ponds that will receive flows from new construction
- Prepared by a South Carolina Licensed Land Surveyor
- Grades/ contours/ depths for pond
- Elevations and dimensions of all outlet structures, including:
  - Pipe and orifice inverts and diameters
  - Weir elevations and dimensions
  - Riser dimensions and elevations
  - Emergency spillway dimensions and elevations
  - Locations and inverts for all pipes discharging into the pond

28. PERMANENT WATER QUALITY REQUIREMENTS (3.2.8.A.IV) Location in C-SWPPP: _____
- Permanent water quality addressed (all projects or LCP that disturb 5 or more acres)
  - Wet ponds designed to catch the first ½" of runoff from the entire area draining to the pond and release it over at least a 24-hour period
  - Dry ponds designed to catch the first 1" of runoff from the entire area draining to the pond and release it over at least a 24-hour period
  - Infiltration Practices designed to accept, at a minimum, the first 1" of runoff from all impervious areas and designed in accordance with S.C. Reg. 72-307.C(11) [specify how items a-j have been addressed]
  - For areas not draining to a pond or infiltration practice, show how permanent water quality requirements were addressed
- Water quality orifices should be a size that is conducive to proper operation and maintenance. Orifices less than 3" in diameter are prone to clogging
- Projects located within one-half (1/2) mile of a receiving water body in the Coastal Zone must meet Section III.C.3.XIII.A of the Coastal Zone Management Program Refinements (CZMP). Designs must show that the first ½ inch of runoff from the entire site or the first one (1) inch of runoff from the built upon area, whichever is greater, can be stored onsite when permanent water quality ponds having a permanent pool are proposed for the project. Projects with stormwater outlets draining within 1000 feet of shellfish beds need to retain the first 1.5 inches of runoff on site.
  - *"Receiving Water Body" as it relates to additional Coastal Zone stormwater management requirements is also known as a "Coastal Receiving Water" and means all regularly tidally influenced salt and fresh water marsh areas, all lakes or ponds which are used primarily for public recreation or a public drinking water supply, and other water bodies within the coastal zone, excluding wetlands, swamps, ditches and stormwater management ponds which are not contiguous via an outfall or similar structure with a tidal water body.*
- Bridges and golf courses proposed in the Coastal Zone are subject to the additional water quality requirements contained in section III.C.3.XIII.C and D of the CZMP.
- Waters of the U.S./State are not used for permanent water quality control (alternative means of treatment must be used if an existing pond is to be used for water quantity control).
- *Note: Other non-traditional stormwater controls such as Bioretention areas, constructed wetlands, etc. may be used. Consult the BMP Handbook for information on the design of these devices.*
- *Note: Pre-fabricated or proprietary treatment devices are approved on a case-by-case basis if adequate removal efficiency can be demonstrated. Provide pollutant removal efficiency data, preferably from a third-party testing company. Type of system selected should be based on the ability to remove the pollutants of concern in that area/situation (bacteria, hydrocarbons, etc.).*

29. PERMANENT STORMWATER MANAGEMENT STRUCTURE MAINTENANCE (4.3.B)
Location in C-SWPPP: _____

- Signed agreement from the responsible party accepting ownership and maintenance of the structure
- If maintenance responsibility is transferred after NPDES coverage is granted, an updated agreement should be submitted with the Notice of Termination
- Description of maintenance plan to be used
- Schedule of maintenance procedures (e.g., every 6 months)
- Detailed or manufacturer-specific maintenance items for proprietary control devices (oil-water separators, etc.), underground detention structures, exfiltration systems and non-traditional stormwater controls (constructed wetlands, bioretention, etc.)
- Typical maintenance items to be addressed
  - Grass to be mowed
  - Trees to be removed from within the pond and on the embankment
  - Trash and sediment to be removed from inside of and around the pond outlet structure
  - Orifices to be cleaned and unclogged
  - Outlet pipe to be cleaned, inspected, and repaired
  - Sediment accumulation to be removed from pond
  - Pond bottom to be regraded to provide proper drainage towards the outlet discharge point
  - Energy dissipator to be cleaned and repaired
  - Emergency spillway, if applicable, to be inspected and repaired
  - Erosion on side slopes, if present, to be addressed
  - The Department must be notified in writing of any changes in maintenance responsibility for the stormwater devices at the site (include this statement in agreement).
- *Note: The Department recommends that the county, city, or other governing utility, which has the authority to accept the ownership and maintenance of a storm drainage system also accept the permanent stormwater management structure.*
- *Note: If the entity or person with maintenance responsibility changes, then a new maintenance agreement, signed by the new person responsible for maintenance, must be provided to the Department. If a new, signed maintenance agreement is not provided to the Department, then the entity/ person who signed the most recent maintenance agreement on file with the Department will be considered the responsible entity.*

Standard Notes

1. If necessary, slopes, which exceed eight (8) vertical feet should be stabilized with synthetic or vegetative mats, in addition to hydroseeding. It may be necessary to install temporary slope drains during construction. Temporary berms may be needed until the slope is brought to grade.

2. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than fourteen (14) days after work has ceased, except as stated below.
   - Where stabilization by the 14th day is precluded by snow cover or frozen ground conditions stabilization measures must be initiated as soon as practicable.
   - Where construction activity on a portion of the Site is temporarily ceased, and earth-disturbing activities will be resumed within 14 days, temporary stabilization measures do not have to be initiated on that portion of the Site.

3. All sediment and erosion control devices shall be inspected once every calendar week. If periodic inspection or other information indicates that a BMP has been inappropriately, or incorrectly, the Permittee must address the necessary replacement or modification required to correct the BMP within 48 hours of identification.

4. Provide silt fence and/or other control devices, as may be required, to control soil erosion during utility construction. All disturbed areas shall be cleaned, graded, and stabilized with grassing immediately after the utility installation. Fill, cover, and temporary seeding at the end of each day are recommended. If water is encountered while trenching, the water should be filtered to remove sediment before being pumped back into any waters of the State.

5. All erosion control devices shall be properly maintained during all phases of construction until the completion of all construction activities and all disturbed areas have been stabilized. Additional control devices may be required during construction in order to control erosion and/or offsite sedimentation. All temporary control devices shall be removed once construction is complete and the site is stabilized.

6. The contractor must take necessary action to minimize the tracking of mud onto paved roadway(s) from construction areas and the generation of dust. The contractor shall daily remove mud/soil from pavement, as may be required.

7. Residential subdivisions require erosion control features for infrastructure as well as for individual lot construction. Individual property owners shall follow these plans during construction or obtain approval of an individual plan in accordance with S.C Reg. 72-300 et seq. and SCR100000.

8. Temporary diversion berms and/or ditches will be provided as needed during construction to protect work areas from upslope runoff and/or to divert sediment-laden water to appropriate traps or stable outlets.

9. All waters of the State (WoS), including wetlands, are to be flagged or otherwise clearly marked in the field. A double row of silt fence is to be installed in all areas where a 50-foot buffer can't be maintained between the disturbed area and all WoS. A 10-foot buffer should be maintained between the last row of silt fence and all WoS.

10. Litter, construction debris, oils, fuels, and building products with significant potential for impact (such as stockpiles of freshly treated lumber) and construction chemicals that could be exposed to storm water must be prevented from becoming a pollutant source in storm water discharges.

11. A copy of the SWPPP, inspections records, and rainfall data must be retained at the construction site or a nearby location easily accessible during normal business hours, from the date of commencement of construction activities to the date that final stabilization is reached.

12. Initiate stabilization measures on any exposed steep slope (3H:1V or greater) where land-disturbing activities have permanently or temporarily ceased, and will not resume for a period of 7 calendar days.

13. Minimize soil compaction and, unless infeasible, preserve topsoil.

14. Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;

15. Minimize the discharge of pollutants from dewatering of trenches and excavated areas. These discharges are to be routed through appropriate BMPs (sediment basin, filter bag, etc.).

16. The following discharges from sites are prohibited:

    - Wastewater from washout of concrete, unless managed by an appropriate control;
    - Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
    - Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and
    - Soaps or solvents used in vehicle and equipment washing.

17. After construction activities begin, inspections must be conducted at a minimum of at least once every calendar week and must be conducted until final stabilization is reached on all areas of the construction site.

18. If existing BMPs need to be modified or if additional BMPs are necessary to comply with the requirements of this permit and/or SC's Water Quality Standards, implementation must be completed before the next storm event whenever practicable. If implementation before the next storm event is impracticable, the situation must be documented in the SWPPP and alternative BMPs must be implemented as soon as reasonably possible.

19. A Pre-Construction Conference must be held for each construction site with an approved On-Site SWPPP prior to the implementation of construction activities. For non-linear projects that disturb 10 acres or more this conference must be held on-site unless the Department has approved otherwise.