

City of Galax

Stormwater Management Plan Application Form & Checklist

Environmental Program Manager, City of Galax, 111 E. Grayson Street, Galax, VA 24333 - Telephone 276-236-7380

GENERAL INFORMATION

Application Date: _____

Project Name: _____

Project Address: _____

Tax Map / Parcel Number(s): _____

PROPERTY OWNER / DEVELOPER

Firm Name: _____

Contact Person: _____

Title: _____

Address: _____

City / State / Zip: _____

Telephone: _____ Fax: _____

Email: _____

APPLICANT

Firm Name: _____

Contact Person: _____

Title: _____

Address: _____

City / State / Zip: _____

Telephone: _____ Fax: _____

Email: _____

All the information requested above must be provided for the submittal to be deemed complete.

SWM Application Form & Checklist

Project Name: _____

Tax / Parcel No(s): _____

SWPPP Dated: _____

Plans Dated: _____

Submittal Number: _____

INFORMATION SUBMITTED

- Proof of VSMP General Permit Registration Statement completion, as required.
- Proof of payment of VSMP Permit Fee (Department portion), as required.
- Payment of VSMP Authority Permit Fee
- Certified and completed Erosion and Sediment Control and Stormwater Management Application Form and Checklist
- Erosion and Sediment Control Plan(s) (Plans, Details, etc.) or Agreement in-lieu-of
- Stormwater Management Design Plan(s) (Plans, Profiles, Details, etc.)
- Stormwater Pollution Prevention Plan (SWPPP), including Erosion and Sediment Control, Report, Pollution Prevention Plan, and Stormwater Management narrative and calculations.
- BMP Maintenance Agreement (must be provided and approved prior to plan approval)
- Erosion and Sediment Control and Stormwater Management Bond Estimate (must be provided and approved prior to VSMP permit approval)
- Other Local, State, and Federal Requirements

All submittals shall include this completed checklist, and certification statement below signed by the responsible licensed professional or applicant as required by the VSMP Authority.

For all second and subsequent submittals, the submitting Engineer shall include a cover letter that provides explanation as to how each comment is addressed and references the relevant plan or narrative location. In addition, significant changes in the plan should be listed.

Additional comments may be warranted depending upon how prior submittal comments were addressed.

Required Certification

I have reviewed the accompanying plan submission, this checklist, the Stormwater Ordinance and applicable Subdivision Ordinance and Zoning Ordinance provisions. The submitted plan is complete and meets all applicable requirements to the best of my knowledge.

Licensed Professional / Applicant Signature

Date

Printed Name

Section 1: Erosion and Sediment Control

GENERAL

Complete set of plans; include all sheets pertaining to the site grading and stormwater and any activities impacting erosion and sediment control and drainage:

- Existing conditions
- Demolition
- Site grading
- Erosion and sediment control
- Storm sewer systems
- Stormwater management facilities
- Utility layout
- Landscaping
- On-site and off-site borrow and disposal areas that do not have separate approved ESC Plans

Variance if necessary, requested in writing, for the plan approving authority to waive or modify any of the minimum standards and specifications of the *Virginia Erosion and Sediment Control Handbook (VESCH)* deemed inappropriate based on site conditions specific to this review case only. Variances which are approved shall be properly documented in the plan and become part of the approved erosion and sediment control plan for the site.

Professional's seal; the designer's original seal, signature, and date are required on the cover sheet of each Narrative and each set of Plan Sheets, as required by the VSMP Authority. A facsimile is acceptable for subsequent Plan Sheets.

PLANS

Vicinity map - a small map locating the site in relation to the surrounding area. Include any landmarks that might assist in locating the site.

Indicate north - The direction of north in relation to the site.

Off-site areas - Include any off-site land-disturbing activities (e.g., borrow sites, disposal areas, waste areas, utility extensions, etc.) not covered by a separate approved ESC Plan.

Erosion and sediment control notes - At a minimum, include the erosion and sediment control notes found in the *VESCH*. Ensure that all applicable Minimum Standards not covered elsewhere in the plan have been addressed. Include a note that any off-site land-disturbing activity associated with the project must have an approved ESC Plan.

- Legend - Provide a complete listing of all ESC measures used, including the VESCH uniform code symbol and the standard and specification number. Include any other items necessary to identify pertinent features in the plan.

- Property lines and easements - Show all property and easement lines. For each adjacent property, list the deed book and page number and the property owner's name and address.

- Existing vegetation - The existing tree lines, grassed areas, or unique vegetation.

- Limits of clearing and grading – Delineate all areas that are to be cleared and graded.

- Disturbed area estimates – in acres or square feet.

- Protection of areas not being cleared - Fencing or other measures to protect areas that are not to be disturbed on the site.

- Critical areas – Note all critical areas on the plan.

- Existing contours - The existing contours of the site at no more than a five foot contour interval.

- Final contours and elevations - Changes to the existing contours, including final drainage patterns, at no more than a two foot contour interval. Note the finished floor elevation (FFE) of all buildings on site, including basements.

- Existing and proposed spot elevations – to supplement existing and proposed contours, topography, or site grading information. Spot elevations may replace final contours in some instances, especially if terrain is in a low lying area or relatively flat.

- Existing site features – includes roads, buildings, homes, utilities, streams, fences, structures, and other important surface features of the site.

- Soils map – includes soil symbols, boundaries, and legend in accordance with the current Soil Survey of Carroll/Grayson County.

- Environmental inventory – generally includes tidal shores and wetlands, non-tidal wetlands, resource protection area, hydric soils and slopes steeper than 25 percent. For wetlands, provide a copy of issued permits or satisfactory evidence that appropriate permits are being pursued for the entire project.

- 100-year floodplain limits – also includes any special flood hazard area or flood zones based on appropriate Federal Management Agency Flood Insurance Rate Maps (FIRMs) or Flood Hazard Boundary Maps (FHBMs) of the City of Galax.

- Drainage areas - includes offsite and onsite areas, existing or proposed as applicable. Include drainage divides and directional labels for all subareas at points of interest and size (in acres), weighted runoff coefficient or curve number and times of concentration for each subarea.
- Critical erosion areas – these areas require special consideration or unique erosion and sediment control measures. Refer to the VESCH for criteria.
- Site development - All improvements such as buildings, parking lots, access roads, utility construction, above and below ground utilities, stormwater management and drainage facilities, trails or sidewalks, proposed vegetation and landscaping, amenities, etc. Show all physical items that could affect or be affected by erosion, sediment, and drainage.
- Adequate conveyances – Ensure that stormwater conveyances with adequate capacity and adequate erosion resistance have been provided for all on-site concentrated stormwater runoff. Off-site channels that receive runoff from the site, including those receiving runoff from stormwater management facilities, must be adequate. Increased volumes of sheet flows must be diverted to a stable outlet, adequate channel, pipe or pipe system, or a stormwater management facility.
- Location of practices - The locations of erosion and sediment control and stormwater management practices used on the site. Use the standard symbols and abbreviations in Chapter 3 of the VESCH.
- Temporary stockpile areas – Includes staging and equipment storage areas as required for onsite or offsite construction activities, or indicate that none are anticipated for this project.
- Direction of flow for conveyances - Indicate the direction of flow for all stormwater conveyances (storm drains, stormwater conveyance channels).
- Maintenance - A schedule of regular inspections, maintenance, and repair of temporary erosion and sediment control structures and permanent stormwater management facilities should be set forth.
- Storm drain profiles - Provide profiles of all storm drains except roof drains. If the type of pipe (RCP, CMP, HDPE, etc.) is not called out on the profiles, then the most conservative pipe material that may be specified for the project must be used in the adequacy calculations.
- Detail drawings - Any structural practices used that are not found in the VESCH or approved annual agency specifications should be described and illustrated with detail drawings.
- Trench dewatering – includes methods and erosion and sediment control if anticipated for the project.

- Construction sequence – outlines the anticipated sequence for installation of erosion and sediment controls and site grading and utility work to be performed for the project by the site contractor.
- Phasing plan – required for larger project sites that are to be developed in stages or phases.
- Professional seal and signature – as required by the VSMP Authority, on final and complete approved plans, drawings, technical reports, and specifications.

NARRATIVE

- Project description - Briefly describe the nature and purpose of the land-disturbing activity. Provide the area (acres) to be disturbed. Identify the Owner of the development.
- Existing site conditions - A description of the existing topography (% slopes), ground cover, and drainage (on-site and receiving channels).
- Adjacent areas - A description of all neighboring areas such as residential developments, agricultural areas, streams, lakes, roads, etc., that might be affected by the land disturbance.
- Off-site areas - Describe any off-site land-disturbing activities that may occur (borrow sites, disposal areas, easements, etc.). Identify the Owner of the off-site area and the locality responsible for plan review. Include a statement that any off-site land-disturbing activity associated with the project must have an approved ESC Plan. Submit documentation of the approved ESC Plan for each of these sites.
- Soils - Provide a description of the soils on the site, giving such information as soil name, mapping unit, ability to erode, permeability, surface runoff, and a *brief* description of depth, texture and soil structure. Show the site location on the Soil Survey, if it is available. Include a plan showing the boundaries of each soil type on the development site.
- Critical areas - A description of areas on the site that have potentially serious erosion problems or that are sensitive to sediment impacts (steep slopes, watercourses, wet weather / underground springs, etc.).
- Erosion and sediment control measures - A description of the structural and vegetative methods that will be used to control erosion and sedimentation on the site. Controls should satisfy applicable minimum standards and specifications in Chapter 3 of the 1992 *Virginia Erosion and Sediment Control Handbook* (VESCH).

- Management strategies / Sequence of construction - Address management strategies, the sequence of construction, and any phasing of installation of ESC measures.

- Stabilization measures - A brief description, including specifications, of how the site will be stabilized after construction is completed, including temporary and permanent seeding and mulching, paving, stone, soil stabilization blankets, and matting, sodding, landscaping, or special stabilization techniques to be used at the site.

- Maintenance of ESC measures - A schedule of regular inspections, maintenance, and repair of erosion and sediment control structures should be set forth.

- Calculations for temporary erosion and sediment control measures - For each temporary ESC measure, provide the calculations required by the standards and specifications.

- Specifications for erosion and sediment control measures - For each erosion and sediment control measure employed in the plan, include in the Narrative the following sections from the standard and specification in the VESCH:
 1. Construction Specifications
 2. Installation
 3. Maintenance
 4. Any approved variances or revisions to the standards and specifications.

- Temporary sediment basin design data sheet – submitted for each basin along with a schematic or sketch cross section showing applicable design and construction data, storage volumes (wet-dry), dimensions, and elevations. Peak design runoff should be based on the 2- or 25-year design storm event based on maximum disturbed site conditions (existing, interim, or proposed conditions).

MINIMUM STANDARDS (must be on plan sheets)

- MS-1:** Has temporary stabilization been addressed for any period longer than 14 days and permanent stabilization been addressed for any period longer than one year in the narrative?

- MS-2:** Has stabilization of soil stockpiles, borrow areas, and disposal areas been addressed in the narrative and on the plan?

- MS-3:** Has the establishment and maintenance of permanent vegetative stabilization been addressed?

- MS-4:** Does the plan specifically state that sediment-trapping facilities shall be constructed as a first step in land-disturbing activities?
- MS-5:** Does the plan specifically state that stabilization of earthen structures is required immediately after installation? Is this noted for each measure on the plan?
- MS-6:** Are sediment traps and sediment basins specified where needed and designed to the standard and specification?
- MS-7:** Have the design and temporary/permanent stabilization of cut and fill slopes been adequately addressed? Is surface roughening provided for slopes steeper than 3:1?
- MS-8:** Have adequate temporary or permanent conveyances (paved flumes, channels, slope drains) been provided for concentrated stormwater runoff on cut and fill slopes?
- MS-9:** Has water seeping from a slope face been addressed (e.g., subsurface drains)?
- MS-10:** Is adequate inlet protection provided for all operational storm drain and culvert inlets?
- MS-11:** Are adequate outlet protection and/or channel linings provided for all stormwater conveyance channels and receiving channels? Is there a schedule indicating:
 1. Dimensions of the outlet protection? Lining? Size of riprap?
 2. Cross section and slope of the channels? Type of lining? Size of riprap, if used?
- MS-12:** Are in-stream protection measures required so that channel impacts are minimized?
- MS-13:** Are temporary stream crossings of non-erodible material required where applicable?
- MS-14:** Are all applicable federal, state and local regulations pertaining to working in or crossing live watercourses being followed?
- MS-15:** Has immediate re-stabilization of areas subject to in-stream construction (bed and banks) been adequately addressed?
- MS-16:** Have disturbances from underground utility line installations been addressed?
 1. No more than 500 linear feet of trench open at one time?
 2. Excavation material placed on the uphill side of trenches (except where prohibited by safety standard requirements)?
 3. Effluent from dewatering filtered or passed through a sediment-trapping device?
 4. Proper backfill, compaction, and restabilization?

MS-17: Is the transport of soil and mud onto public roadways properly controlled? (i.e., Construction Entrances, wash racks, transport of sediment to a trapping facility, cleaning of roadways at the end of each day, no washing before sweeping and shoveling)

MS-18: Has the removal of temporary practices been addressed?

Have the removal of accumulated sediment and the final stabilization of the resulting disturbed areas been addressed?

MS-19: Are properties and waterways downstream from development adequately protected from sediment deposition, erosion, and damage due to increases in volume, velocity and peak flow rate of stormwater runoff? Have adequate channels been provided on-site?

a) 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.

b) Adequacy of all channels and pipes shall be verified in the following manner:

i) The applicant shall demonstrate that the total drainage area to the point of analysis within the channel is one hundred times greater than the contributing drainage area of the project in question; or

(1) Natural channels shall be analyzed by the use of a two-year storm to verify that stormwater will not overtop channel banks nor cause erosion of channel bed or banks.

(2) All previously constructed man-made channels shall be analyzed by the use of a ten-year storm to verify that stormwater will not overtop its banks and by the use of a two-year storm to demonstrate that stormwater will not cause erosion of channel bed or banks; and

(3) Pipes and storm sewer systems shall be analyzed by the use of a ten-year storm to verify that stormwater will be contained within the pipe or system.

ii) 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 ten-year storm will not overtop the banks and a two-year storm will not cause erosion to channel the bed or banks; or

(2) Improve the pipe or pipe system to a condition where the ten-year storm is contained within the appurtenances;

(3) Develop a site design that will not cause the pre-development peak runoff rate from a two-year storm to increase when runoff outfalls into a natural channel or will not cause the pre-development peak runoff rate from a ten-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 VESCP authority to prevent downstream erosion.
- c) The applicant shall provide evidence of permission to make the improvements.
 - d) All hydrologic analyses shall be based on the existing watershed characteristics and the ultimate development condition of the subject project.
 - e) If the applicant chooses an option that includes stormwater detention, he shall obtain approval from the VESCP 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.
 - f) 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.
 - g) All on-site channels must be verified to be adequate.
 - h) 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.
 - i) 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.
 - j) 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.
 - k) Any plan approved prior to July 1, 2014, that provides for stormwater management that addresses any flow rate capacity and velocity requirements for natural or man-made channels shall satisfy the flow rate capacity and velocity requirements for natural or man-made channels if the practices are designed to:
 - i) Detain the water quality volume and to release it over 48 hours;
 - ii) Detain and release over a 24-hour period the expected rainfall resulting from the one year, 24-hour storm; and
 - iii) Reduce the allowable peak flow rate resulting from the 1.5, 2, and 10-year, 24-hour storms to a level that is less than or equal to the peak flow rate from the site assuming it was in a good forested condition, achieved through multiplication of the forested peak flow rate by a reduction factor that is equal to the runoff volume from the site when it was in a good forested condition divided by the runoff volume from the site in its proposed condition, and shall be exempt from any flow rate capacity and velocity requirements for natural or man-made channels as defined in any regulations promulgated pursuant to § 62.1-44.15:54 or 62.1-44.15:65 of the act.

- l) For plans approved on and after July 1, 2014, the flow rate capacity and velocity requirements of § 62.1-44.15:51 for the act and this subsection shall be satisfied by compliance with water quantity requirements in the Stormwater Management Act (§ 62.1-44.15:24 et seq. of the Code of Virginia) and attendant regulations, unless such land-disturbing activities are in accordance with 9VAC25-870-48 of the Virginia Stormwater Management Program (VSMP) permit regulations.
- m) Compliance with the water quantity minimum standards set out in 9VAC25-870-66 of the Virginia Stormwater Management Program (VSMP) permit regulations shall be deemed to satisfy the requirements of minimum standard 19.

Section 2: Stormwater Management

GENERAL

- Certification: Professional Seal and Signature required on final and complete approved stormwater management plans, drawings, technical reports, and specifications, as required by the VSMP Authority.
- Exception Request: If necessary, request in writing to the VSMP authority to waive or modify any requirements of the stormwater ordinance deemed inappropriate based on site conditions specific to this review case only. Exceptions, which are approved, shall be properly documented in the plan and become part of the approved stormwater management plan for the site.
- SWM Maintenance Agreement: An agreement is required to be prepared and executed with the City of Galax for each proposed BMP for the project prior to permit approval.
- FEMA FIRM Panel: Reference designated special flood hazard areas or zone designations associated with the site, as applicable.
- Sequence of Construction: Modification plan(s), including notes and calculations, shall be provided for temporary sediment control structures which will be converted to permanent SWM/BMP structures. Modifications of temporary sediment control structures to bio-retention, infiltration, and filtering system facilities is discouraged.

REPORT

Format: The report should be bound in 8 ½ x 11 inch size format. The City of Galax recommends using the available comprehensive [SWPPP template](#) (refer to Appendix I) for the report. Report shall generally include:

- Title sheet
- Date
- Project identification
- Owner and preparer information
- Table of contents
- Narrative description of methodology and design of stormwater management facilities
- Summary tables showing compliance with the regulations
- Calculations (detailed below)

Drainage Area Map: The map should be a maximum scale of 1" = 200' scale and include the following:

- Drainage area boundaries, including delineation of forest/open space, managed turf, and impervious surface(s), for pre- and post-development conditions;
- Time of concentration (Tc) flow paths for pre- and post-development conditions; and
- Information tables for each drainage and sub-drainage areas shown on the map to include the following:
 - Δ Total area;
 - Δ Area of forest/open space, managed turf, and impervious surface(s);
 - Δ Runoff coefficient or curve number; and
 - Δ Time of concentration.

Soils Map: The map should include soil symbols, hydrologic soil group, boundaries, and legend in accordance with the current Soil Survey of Carroll/Grayson County, Virginia with approximate locations of the project site, BMPs, and applicable drainage basins.

Calculations

- Conveyance Systems
 - Δ Storm sewer design computations based on 10-year design event.
 - Δ Hydraulic grade line computations based on 10-year design event.
 - Δ Inlet computations based on current VDOT procedures for spread, ponding depth and grate size required.
 - Δ Culvert headwater computations. Design based on 10-year design storm event, or as otherwise required by VDOT, and check only for 100-year storm event.
 - Δ Open channel computations as required.
 - Δ Outlet protection or special energy dissipaters.

- Water Quality Control
 - Δ Runoff curve number or coefficient determinations – pre-developed, post-developed, and ultimate development (as applicable) land use scenarios.
 - Δ Runoff reduction method spreadsheet to show water quality compliance.

- Water Quantity Control
 - Δ Hydrologic Computations
 - The Soil Conservation Service (SCS) based methodology is preferred for the design of stormwater management/BMP facilities with watersheds. If a site is less than 200 acres, modified rational method or rational method may be used at the discretion of the VSMP Authority.
 - *Use the modified runoff curve number as provided by the runoff reduction spreadsheet for each drainage area.***
 - Time of concentration: Pre-developed, post-developed, and ultimate development (as applicable) indicating overland, shallow concentrated, and channel flow components (200 ft. maximum length for overland flow).
 - Hydrographs: Provide graphical and/or tabular information for pre- and post-development conditions for the 1-, 2-, 10-, and 100-year design storm events.
 - Δ Hydraulic Computations
 - 1-, 2-, 10-, and 100-year design storm events.
 - Elevation- or stage-storage curve and/or tabular data.
 - Emergency spillway capacity and depth of flow.
 - Elevation – discharge (outlet rating) curve and/or table. Provide all supporting calculations and/or design assumptions.

- Miscellaneous Computations
 - Anti-seep collar design (concrete preferred) or match material type.
 - Riser/base structure floatation analyses. FS = 1.25 minimum.

PLANS

General

- Plan View at 1" = 50' scale or less (1" = 30', 1" = 40', etc.)
- North arrow and plan legend
- Property lines
- Adjacent property information
- Existing site features and existing impervious cover areas
- Forest/open space, managed turf, and impervious cover tabulations
- Existing drainage facilities (natural or manmade)

- Existing environmentally sensitive areas (RPS, wetlands, floodplain, steep slopes, critical soils, buffers, etc.)
- Existing and proposed contours (1' or 2' contour interval) and spot elevations as necessary to define high and low topographic information
- Existing and proposed easement locations
- Proposed site improvements and proposed impervious cover areas
- Proposed landscaping and seeding plans (disturbed areas, pond interior, etc.)
- Proposed slope stabilization areas (riprap, blankets, mattings, walls, etc.)
- Delineation of ponding, headwater, surcharge, or backwater areas which may affect adjacent existing or proposed buildings, structures, or upstream adjacent properties.
- Test boring locations with reference surface elevations (if known)
- Existing and proposed site utilities and protection measures
- Erosion and sediment control measures (for site and BMP)
- Maintenance or access corridors to permanent stormwater BMPs or drainage facilities

□ Stormwater Conveyance Systems

- Plan views
 - Δ Storm drain lengths, sizes, types, classes and slopes for all segments. Label directly on plan or use a structure/pipe schedule.
 - Δ Structure (inlets, manholes, junctions, end sections, etc.) information shall be provided for each structure and include, but not limited to, a unique identifier, rim elevation, pipe inverts and sizes, type, and required grate type or top unit and lengths labeled.
 - Δ Adequate horizontal clearance from other site utilities or structures.
- Profiles are generally not required but are encouraged to expedite review. If not provided, ensure all pipe segments have adequate minimum cover, do not exceed maximum depths of cover for the type/class of pipe specified and do not conflict with other site utilities or excavation areas.
- Details
 - Δ Typical storm drain bedding details or reference note.
 - Δ Typical pipe and/or underdrain details or reference note.
 - Δ Standard details or reference note for all purposed access structure types (inlets, manholes, junctions, etc.).
 - Δ Inlet shaping detail or applicable reference note.
 - Δ Step detail or applicable reference note (if depth of 4 feet or more).
 - Δ Typical open channel details with designation, location, shape, type, bottom width, top width, lining, slope, length, side slope, and installation depth required for construction. Channel design data as necessary may also be included.
 - Δ Outlet protection at all pipe outfalls.

□ Stormwater Management Facilities (Best Management Practices – BMPs)

- Plan views
 - Δ Location and dimensions of proposed stormwater conveyance systems and BMPs with appropriate labeled construction data and information.
 - Δ Location and dimensions of pretreatment devices, as required by the BMP Clearinghouse specifications for the selected county BMP facility type.
 - Δ Delineation of permanent pool(s) and 1-, 2-, 10-, and 100-year design water surface elevations.
 - Δ Emergency spillway level and outlet channel section
- Details: Provide cross-section and details, as suggested in the VA DEQ Stormwater Design Specification provided on the [Virginia BMP Clearinghouse](#) website.
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- Notes: Provide notes, as suggested in the VA DEQ Stormwater Design Specification provided on the [Virginia BMP Clearinghouse](#) website, including the following:
 - Δ BMP landscaping (deep, shallow, fringe, perimeter, etc.)
 - Δ Maintenance provisions for each proposed BMP
 - Entity responsible for maintenance identified.
 - Long-term schedule for inspection/maintenance of the facility and forebay(s), as applicable.
 - Access from public right-of-way or publicly traveled road.
 - Easement provided encompassing high water pool and buffer, principal and emergency spillways, outlet structures, forebays, embankment area, and possible sediment removal stockpile areas.

□ Construction Specifications and General Notes

- Provisions to control base stream or storm flow conditions encountered during construction.
- Site and subgrade preparation requirements.
- Embankment, fill, and backfill material soil and placement (lift) thickness requirements.
- Compaction and soil moisture content requirements.
- Geosynthetics for drainage, filtration, moisture barrier, separation, and reinforcement purposes.
- Storm drain, underdrain, and pipe conduit requirements.
- Minimum depth of pipe cover for temporary construction and final cover conditions.
- Concrete requirements for structural components.
- Riprap and slope protection.
- Access or maintenance road surface, base, subbase.
- Temporary and permanent stabilization measures.
- Temporary or permanent safety fencing.

- Dust and traffic control (if warranted).
- Construction monitoring and certification by a certified project inspector for SWM.

GEOTECHNICAL REQUIREMENTS

Geotechnical report with recommendations specific to BMP facility type selected as required by the BMP clearinghouse. Report prepared by a registered professional engineer, as required by the VSMP Authority. Requires submission, review, and approval prior to issuance of VSMP Permit.

ADDITIONAL COMMENTS OR INFORMATION SPECIFIC TO THE PLAN