

Chapter 2 – Stormwater Management Plan Review and Approval

In order to maintain the character and integrity of neighborhoods, to promote excellence of development, to prevent undue traffic and environmental hazards, and to encourage the most harmonious development and use of land, a site development plan is required for commercial and residential development and shall be submitted to the County of Roanoke's Development Review Coordinator.

These plans will be distributed to the appropriate departments and divisions for review and approval. When required, the applicant is also responsible for submittals to the Virginia Department of Environmental Quality, the Virginia Department of Conservation and Recreation, and other applicable regulatory agencies for their review and approval. When applicable, all of these entities must approve the site development plan prior to the issuance of any permits for all types of developments as required by the Zoning Ordinance and the Erosion and Sediment Control Ordinance.

In cases where jurisdictional waters exist on the proposed site, the applicant may need to obtain approvals and/or permits from any or all of the following agencies: the U.S. Army Corps of Engineers, the Federal Emergency Management Agency, the Virginia Department of Environmental Quality, the Virginia Department of Conservation and Recreation, and the Virginia Marine Resource Commission.

2.1 Overview of the Review and Approval Process

No application for land development, land use conversion, or land disturbance will be approved unless it includes a stormwater management plan, detailing how runoff and associated water quality impacts resulting from the activity will be controlled or managed. The stormwater management plan will be submitted as a part of the site development plan. No building, zoning, grading, site development, or land disturbance permit will be issued without first meeting the requirements of the Stormwater Management Ordinance, as shown in the approved stormwater management plan.

The submittal, review, and approval of site development plans, including concept stormwater management plans and final stormwater management plans will follow the Roanoke County Land Development Procedures. This document is available from the County of Roanoke Development Review Coordinator.

2.2 Concept Stormwater Management Plan Submittal

A concept site development plan, including a concept stormwater management plan, is required by the County of Roanoke when the proposed development meets any of the conditions set forth in the Roanoke County Land Development Procedures.

2.3 Final Stormwater Management Plan Submittal

An approved site development plan, including a final stormwater management design, is required prior to issuance of a Land Disturbance Permit, Building Permit or a Zoning Permit.

The final stormwater management plan shall be appropriately sealed and signed by a professional in adherence to all minimum standards and requirements pertaining to the practice of that profession in accordance with Chapter 4 (§ 54.1-400 et seq.) of Title 54.1 of the Code of Virginia and attendant regulations.

Copies of the stormwater management plan will be reviewed by the County of Roanoke Engineering Division. In addition to Roanoke County's review, the Virginia Department of Transportation, Virginia Department of Environmental Quality, and Virginia Department of Conservation and Recreation may also review the site development plan with the final stormwater management plan, as appropriate. Plans for review by these entities must be submitted directly to them, when required.

Following the submission of the site development plan, including the final stormwater management design, a review meeting will be scheduled with all reviewing entities, the design engineer, and the applicant to allow the opportunity to discuss plans and comments with the plan review team.

2.4 Submittal of Stormwater Calculations

Calculations shall be submitted to the County of Roanoke supporting the stormwater management and storm drainage design. Calculations shall be well organized and coordinated with the design to allow for efficient review by the County. Calculations shall be bound together in a booklet or stapled together, depending on the number of pages. Calculations shall follow the following general format:

- Cover Sheet – The cover sheet shall contain the project name, property tax parcel(s) number(s), applicant's name, design professional's name, calculations date, and (for final calculations) the seal and signature of the design professional.
- Table of Contents – A table of contents shall be provided where the calculations exceeds 25 pages, or where appropriate to assist the reviewer in locating information in the calculations.
- Introduction – A general description of the project providing information to assist the reviewer in understanding the nature and scope of the project and of the storm drainage and stormwater management facilities that are proposed.

- **Criteria and Methodology** – A listing of the basic design criteria (e.g. 10/2 and 25/10 year peak flow control, no increase in phosphorous, and no flooding during the 100-year storm) and of the methodologies that the calculations will follow to demonstrate that the basic design criteria are met.
- **References** – A listing of references that are used in the calculations
- **Assumptions** – A listing of all assumptions, and justification of the assumptions that are used in the calculations.
- **Analysis** – The body of the calculations clearly labeled as to what storm water management facility or storm drainage system the calculations are for. The calculations shall be step-by-step to ensure that a reviewer that is not familiar with the project can follow the progression of the calculations. If computer printouts are provided highlight the input and output information and ensure that the input information is clearly supported in the calculations, and that the output is properly evaluated in the summary and conclusions. All calculation parameters must be fully supported and documented and include the design storm frequency, intensity and duration, times of concentration, soil curve numbers or runoff coefficients; calculations identifying pre-and post-development peak runoff rates and total runoff volumes for each watershed area, infiltration rates (where applicable), culvert, storm drain, and open channel capacities, flow velocities, data on the increase in rate and volume of runoff for the specified design storms, pre- and post-development phosphorous runoff rates and all other calculations needed to support the proposed design.
- **Summary and Conclusions** – A summary of the results, preferably in tabular or chart form for each storm drain system and stormwater management facility to indicate that the land disturbing project meets the requirements of the Design Manual and any conclusions.
- **Appendices and Attachments** – Any supporting information such as drainage area maps, soils maps, U.S.G.S. quadrangle maps, design nomographs, and computer printouts.

Calculations that are not well organized and coordinated with the design shall be rejected and the submittal shall not be reviewed until proper calculations are submitted.

2.5 Changes and Modifications to an Approved Plan

Changes to an approved subdivision or site plan, including an approved stormwater management plan, must be submitted for review to the County of Roanoke Development Review Coordinator. The County of Roanoke, upon receipt of the resubmittal of an approved development plan, shall review and approve or disapprove the resubmitted plan according to the

Roanoke County Land Development Procedures. Approval or disapproval of the resubmitted plan shall be made in writing to the applicant.

Any use, arrangement, location, or construction not in compliance with the approved plan is a violation of the County Code.