CHAPTER 17 STORMWATER MANAGEMENT (May 3, 2005)

ARTICLE 17A APPLICABILITY OF SITE RUNOFF STORAGE REQUIREMENTS

A. The following developments shall comply with Article 17D:

1. Single Family Subdivisions, Manufactured Home Subdivision Multi-family or non-residential land use constructed on a site more than one acre in size;

2. Existing multi-family or non-residential land uses on a site one acre or more in size, on which new development after the effective date of this chapter in the aggregate exceeds 25,000 square feet;

ARTICLE 17B GENERAL STORMWATER MANAGEMENT REQUIREMENTS

A. No development shall:

1. Result in any new or additional expense to any person other than the developer.

2. Not increase flood elevations or decrease flood conveyance capacity upstream or downstream of the area under the ownership or control of the developer.

3. Degrade surface or sub-surface water quality.

4. The development shall have an Overland Flow Path or a storm sewer pipe and inlet sized for the base flood, at the downstream limit of the property that will pass the base flood flow without increasing damage to structures or property.

ARTICLE 17C SITE RUNOFF REQUIREMENTS

A. The developer shall make adequate provisions for storm and floodwater runoff, including the installation of drainage improvements and dedicated drainage easements. Such easements shall be at least 15 feet in width. The planning commission has the authority to determine the adequacy of drainage improvements and easements. In addition, they may require that
low-lying lands along watercourses subject to flooding or overflowing during storm periods to be preserved and retained in their natural state as drainageways.

B. Stormwater facilities shall be functional before building permits are issued for residential and non-residential purposes.

C. Stormwater facilities shall be required and designed so runoff exits the site at a point where it exited prior to the development and in a manner that flows will not increase flood damage to adjacent property.

D. Stormwater systems shall be sized to carry the base flood without causing additional flood damage.

E. Design runoff rates shall be calculated using acceptable event hydrograph methods such as HEC-1 SCS, TR-20, HEC-HMS, TR-55 or Rational Methods.

ARTICLE 17D SITE RUNOFF STORAGE FACILITIES

A. Storage facilities design shall be with the following characteristics:

1. The design for all stormwater detention facilities shall be in accordance with professionally accepted hydraulic engineering practices and meet all state and federal agencies Erosion and Sedimentation Control standards and requirements.

2. The facilities shall be located in perpetual, unobstructed public easements of appropriate width and shall be accessible and easily maintained.

3. They shall be shown on the development plat.

4. The developer must provide documentation that agreement with the property owners will assume all liability for the maintenance and operation of the stormwater facilities.

5. The facility shall provide 2 feet of freeboard for water surface depths.

6. All design detention volume shall be provided above the seasonal high ground water table or invert elevation of the groundwater control system.

7. Storage facilities shall facilitate sedimentation and catchment of floating material.

8. Storage facilities shall minimize impacts of stormwater runoff on water quality by incorporating best management practices.

9. Storage facilities shall maximize the distance between inlets and outlets, tot the extent possible.

10. Storage facilities shall be designed to provide an emergency spillway in the event that the existing pre-development peak runoff rate from the 100-year, 24 hour duration rainfall is exceeded assuming the primary restrictor is blocked and the design detention volume is not effective (basin filled).

11. Storage facilities with single pipe outlets shall have a minimum inside diameter of 12 inches. If design release rates necessitate a smaller outlet, structures such as perforated risers, or flow control orifices shall be used. Outlets shall be designed for peak runoff rate using the 25-year, 24 hour duration rainfall.

12. Appropriate treatment for ditchlines shall be applied as required by the West Virginia Department of Environmental Protection.

ARTICLE 17E HYDROLOGY

The following table shall be used in determining average 24-hour precipitation for the various frequencies:

Frequencies (years)	1	2	5	10	25	50	100
	2.40	2.77	3.56	4.10	4.75	5.25	5.68

ARTICLE 17F STORMWATER PEAK FLOW BASIS

A. Stormwater drainage and erosion controls shall be provided based on peak flows resulting from the year frequencies occurring over the contributing watersheds as noted:

1. Erosion and Sediment Control - Use 10 year frequency and entire contributing watershed.

2. Floodplains - Use 100 year frequency and the entire contributing watershed.

3. Storm Drain Pipes and Ditchlines - Use 10 year frequency and the entire contributing watershed.

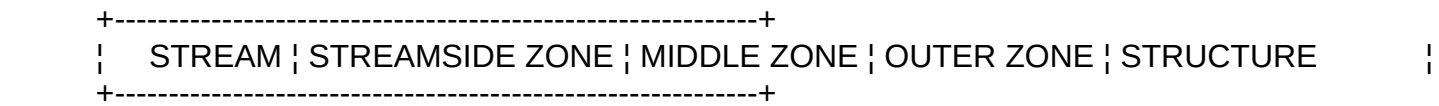
ARTICLE 17G FILTER STRIP

A. Definition - A strip or area of vegetation for removing sediment, organic matter, and other pollutants from runoff and wastewater.

B. Purpose - To control runoff or wastewater by filtration, deposition, infiltration, absorption and decomposition, thereby reducing flooding and protecting the environment.

C. Applicability - Applies at developments adjacent to ponds, streams, lakes and other waterways. It also applies when a vegetated filter is required as part of a waste management system, or as a part of a forestry operation to reduce sediment entering waterways.

D. Buffer Management Zones - Buffers between the stream and development minimizes adverse impacts to streams and other waterways due to impervious areas, pollutant runoff from parking areas and roads. Damage to the ecological function of the waterway is reduced if buffer zones are maintained. A Buffer Zone Management system required by the planning commission shall be utilized as follows:



Streamside Zone Requirements
Width - Minimum 25 feet plus wetlands and/or Floodplain.
Vegetative Target - Undisturbed mature forest or vegetation.
Allowable Uses - Very Restricted to Flood Control, Utility easements.

Middle Zone Requirements
Width - Minimum 25 feet plus Floodplain.
Vegetative Target - Managed forest or vegetation.
Allowable Uses - Restricted to Recreational Use, Stormwater Control.

Outer Zone Requirements
Width - Minimum 25 foot setback from structures.
Vegetative Target - Forest/woodlands or turfgrass.
Allowable Uses - Unrestricted for Lawns, Stormwater Controls.

ARTICLE 17H ENACTMENT

These Regulations shall become effective from the date of their adoption. Any other subdivision regulations shall be deemed repealed. These regulations shall in no way effect any subdivision that received prior preliminary plan approval, provided, however, that no changes to the approved preliminary plan are introduced by the subdivider.

May 3, 2005
Date

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John L. Aliff, President, County Commission

ATTEST:

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Betty Riffe, County Clerk

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Pat Reed, Commissioner

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John D. Humphrey, Commissioner