4.7 SUBMITTAL REQUIREMENTS

The following information must be submitted to the municipality for any new development or redevelopment where more than 10,000 square feet of impervious cover is added and the project disturbs one acre or more of land or is part of a larger common plan of development or sale that will result in disturbance of one acre or more. This material must be accompanied with a letter signed and sealed by a licensed engineer indicating that all drainage requirements in this guidance document have been met.

4.7.1. SITE ANALYSIS AND NARRATIVE

The site analysis and narrative should include:

- Location map, size, and existing land use of the site;
- Description of existing land use of all adjacent properties;
- General description of existing site topography, natural and manmade features, county's watershed name, drainage patterns, flow paths, receiving waters, soil types and ground cover;
- Identification if the following exist on-site:
    - Any body of water, including natural and manmade drainage paths, identifying each as natural or not.
    - Any natural depressions or areas identified as probable areas of inundation for 100-year storm events.
- A general description of the proposed uses and improvements, lot subdivision, roadways, and other pertinent improvements;
- Phasing and timing of project;
- A general description of proposed drainage, water quality, and erosion and sediment control facilities expected to be used on site and the methodology for choosing the facilities;
- Total Site Area and impervious cover planned for the development;
- Provide a description of the potential pollutant activities to be conducted at the site, if applicable. Such activities of interest include chemical storage and/or use, vehicle, equipment or boat repair and maintenance, on-site wastewater treatment, product fabrication or washing/cleaning activities;
- Confirmation that all applicable regulations and public health and safety requirements will be met by the developer/contractor/builder; and
- A simple drawing to depict the proposed layout, impervious cover areas, general hydrologic information, on-site and adjacent drainage conditions and improvements, and other pertinent information required for site stormwater assessment (a conceptual plan).

4.7.2. SITE LAYOUT AND DRAINAGE DESIGN

The site layout and drainage design should include:

- Legend, north arrow, and scale;
- Existing property lines, ROWs, structures, impervious surfaces and improvements;
- Existing topography - contours;
    - Location of FEMA 100-year Floodplain, Floodway, and Velocity Zone Boundaries that encroach on the site;

- Existing drainage patterns, flow paths, stormwater discharge locations, drainage easements;
- Buffer zones;
- Limits of existing disturbed area;
- Proposed lots and/or building locations, ROWs, roadway locations and cross sections impervious surface areas and pavement types;
- Proposed grading (contours or elevations), drainage patterns and basins, discharge locations, and proposed easements; and
- Size and location and basis of design for all permanent drainage and stormwater quality improvements including: culverts, pipes, detention basins, swales, etc.

4.7.3. DESIGN STEPS

1. Compute the impervious cover for the development. The applicant can use stormwater credits to reduce effective impervious cover and determine compliance with Low Impact Development.
2. Delineate drainage areas within development to define impervious cover percentage at each discharge point or structural control. When a site contains multiple drainage areas, the impervious cover shall be calculated for each area to determine the necessary water quality volume or compliance with the low impact development option in each drainage area.
3. Select the appropriate structural control(s) to meet the site constraints and manage stormwater runoff.
4. Compute the stormwater volume based on the runoff from the design storm in 4.3.3.
5. Design the stormwater controls per the guidance in Chapter 5 including discharge to the buffer zone in a sheet flow manner.

Table 4-6: Permanent BMP Summary

Permanent BMPs	Construction Cost	Recommended Drainage Area Size (acres)	Maintenance Requirement	Liability/ Safety Issues	Other Benefits
Vegetated Filter Strip	Low	< 3 acres or downstream of other measures	Low	None	Resilient
Vegetated Swale	Low	< 2 acres	Low	Low	Resilient
Extended Detention Pond	Moderate	Less than 128 acres	Low to Medium	Low, short term standing water	Promote baseflow enhancement
Bioretention/rain gardens	Moderate	< 10 acres	Medium to High	Low, shallow standing water depth	Promote baseflow enhancement
Infiltration	Moderate	Downstream of BMP	Medium to High	Moderate, standing water	Water supply
Wet Basins	Moderate to High	> 20 acres and less than 128	Medium to High	High, long term standing water	Habitat
Constructed Wetlands	Moderate to High	> 20 acres and less than 128	Medium to High	Moderate, long-term Standing water	Habitat
Stormwater Credits					

Table 4-6: Permanent BMP Summary Continued

Permanent BMPs	Construction Cost	Recommended Drainage Area Size (acres)	Maintenance Requirement	Liability/ Safety Issues	Other Benefits
Porous Pavement	Moderate	No off-site area drains to pavement	Moderate	Low, potential pavement issues	Water supply
Rainwater Harvesting	Moderate	House roof-top	Moderate	Low, rainwater stored in property owner tanks	Water supply
Soil amendment & conservation landscaping	Moderate	Lot size	Low	None	Water supply and resilient
Roof-top disconnection	Low	House roof-top	Low	None	Water supply and resilient
Natural Area Preservation	Low	NA	Low	None	Water supply and resilient
Buffers	Low	Creek, river, and tidal water boundaries	Very Low to none	None	Water supply and resilient