

### ARTICLE III

#### STORMWATER MANAGEMENT STANDARDS

##### §21-301. General Requirements

- A. For all Regulated Activities, unless specifically exempted in Section 21-302:
1. Preparation and implementation of an approved SWM Site Plan is required.
  2. No Regulated Activities shall commence until the municipality issues written approval of a Stormwater Management Site Plan, which demonstrates compliance with the requirements of this Article.
  3. The SWM Site Plan shall demonstrate that adequate capacity will be provided to meet the Volume and Rate Control Requirements, as described under Sections 304 and 305 of this Article.
  4. The SWM Site Plan approved by the municipality, shall be on-site throughout the duration of the Regulated Activities.
  5. Prior to submission of the SWM site plan a Pre-Application meeting is recommended with the Township Engineer.
- B. For all Regulated Earth Disturbance Activities, erosion and sediment control BMPs shall be designed, implemented, operated, and maintained during the Regulated Earth Disturbance Activities (e.g., during construction) to meet the purposes and requirements of this Article and to meet all requirements under Title 25 of the Pennsylvania Code (including, but not limited to Chapter 102 Erosion and Sediment Control) and the Clean Streams Law. Various BMPs and their design standards are listed in the *Erosion and Sediment Pollution Control Program Manual* (E&S Manual), No. 363-2134-008 (April 15, 2000), as amended and updated.
- C. For all Regulated Activities, stormwater BMPs shall be designed, installed, implemented, operated, and maintained to meet the purposes and requirements of this Article and to meet all requirements under Title 25 of the Pennsylvania Code and the Clean Streams Law, conform to the State Water Quality Requirements, meet all requirements under the Storm Water Management Act and any more stringent requirements as determined by the municipality.
- D. The municipality may, after consultation with PADEP and the Conservation District, approve measures for meeting the State Water Quality Requirements other than those in this Article, provided that they meet the minimum requirements of, and do not conflict with state law, including, but not limited to, the Clean Streams Law.
- E. All Regulated Activities shall include, to the maximum extent practicable, measures to:
1. Protect health, safety, and property.
  2. Meet the water quality goals of this Article by implementing measures to:
    - a. Minimize disturbance to floodplains, wetlands, natural slopes, existing native vegetation and woodlands.
    - b. Create, maintain, or extend riparian buffers and protect existing forested buffers.
    - c. Provide trees and woodlands adjacent to impervious areas whenever feasible.
    - d. Minimize the creation of impervious surfaces and the degradation of Waters of the Commonwealth and promote groundwater recharge.
    - e. Protect natural systems and processes (drainageways, vegetation, soils, and sensitive areas) and maintain, as much as possible, the natural hydrologic regime.
    - f. Incorporate natural site elements (wetlands, stream corridors, mature forests) as design elements.
    - g. Avoid erosive flow conditions in natural flow pathways.
    - h. Minimize soil disturbance and soil compaction.
    - i. Minimize thermal impacts to Waters of the Commonwealth.
    - j. Disconnect impervious surfaces by directing runoff to pervious areas, wherever possible and decentralize and manage stormwater at its source.

- F. Impervious Areas:
  - 1. The measurement of impervious areas shall include all of the impervious areas in the total proposed development, even if development is to take place in stages.
  - 2. For developments taking place in stages, the entire development plan must be used in determining conformance with this Article.
  - 3. For projects that add impervious area to a parcel, the total impervious area on the parcel is subject to the requirements of this Chapter.
  - 4. Existing gravel areas should be considered as impervious for stormwater purposes.
- G. If diffused flow is proposed to be concentrated and discharged onto adjacent property, the Applicant must document that adequate downstream conveyance facilities exist to safely transport the concentrated discharge, or otherwise prove that no erosion, sedimentation, flooding, or other harm will result from the concentrated discharge.
  - 1. Applicant must provide an easement for proposed concentrated flow across adjacent properties to a drainage way or public right-of-way.
  - 2. Such stormwater flows shall be subject to the requirements of this Article.
- H. Stormwater drainage systems shall be provided in order to permit unimpeded flow along natural watercourses, except as modified by stormwater management facilities or open channels consistent with this Article.
- I. Where watercourses traverse a development site, drainage easements (with a minimum width of 20 feet and include the 100-year water surface) shall be provided conforming to the line of such watercourses. The terms of the easement shall prohibit excavation, the placing of fill or structures, and any alterations that may adversely affect the flow of stormwater within any portion of the easement. Also, maintenance, including mowing of vegetation within the easement may be required, except as approved by the appropriate governing authority.
- J. When it can be shown that, due to topographic conditions, natural drainageways on the site cannot adequately provide for drainage, open channels may be constructed conforming substantially to the line and grade of such natural drainageways. Work within natural drainage ways shall be subject to approval by PADEP under regulations at 25 PA Code Chapter 105 through the Joint Permit Application process, or, where deemed appropriate by PADEP, through the General Permit process.
- K. Any stormwater management facilities or any facilities that constitute water obstructions (e.g., culverts, bridges, outfalls, or stream enclosures, etc.) that are regulated by this Article, that will be located in or adjacent to Waters of the Commonwealth (including wetlands), shall be subject to approval by PADEP under regulations at 25 PA Code Chapter 105 through the Joint Permit Application process, or, where deemed appropriate by PADEP, the General Permit process. When there is a question whether wetlands may be involved, it is the responsibility of the Applicant or his agent to show that the land in question cannot be classified as wetlands; otherwise, approval to work in the area must be obtained from PADEP.
- L. Should any stormwater management facility require a dam safety permit under PADEP Chapter 105, the facility shall be designed in accordance with Chapter 105 and meet the regulations of Chapter 105 concerning dam safety.
- M. Any stormwater management facilities regulated by this Article that will be located on, or discharged onto State highway rights-of-ways shall be subject to approval by the Pennsylvania Department of Transportation (PENNDOT).
- N. Minimization of impervious surfaces and infiltration of runoff through seepage beds, infiltration trenches, etc., are encouraged, where soil conditions and geology permit, to reduce the size or eliminate the need for detention facilities.
- O. Infiltration BMPs should be dispersed throughout the site, made as shallow as practicable, and located to maximize use of natural on-site infiltration features while still meeting the other requirements of this Article.
- P. The design of facilities over karst shall include an

evaluation and implementation of measures to minimize adverse effects.

- Q. Roof drains shall not be connected to streets, sanitary or storm sewers, or roadside ditches in order to promote overland flow and infiltration/percolation of stormwater where it is advantageous to do so. When it is more advantageous to connect directly to streets or storm sewers, then the Municipality shall permit it on a case-by-case basis.
- R. Applicants are encouraged to use Low Impact Development Practices to reduce the costs of complying with the requirements of this Article and the State Water Quality Requirements.
- S. When stormwater management facilities are proposed within 1,000 feet of a downstream Municipality, the Developer shall notify the downstream Municipality and provide a copy of the SWM Plan, if requested, for review and comment.

**§21-302. Exemptions/Modifications**

- A. Under no circumstance shall the Applicant be exempt from implementing such measures as necessary to:
  - 1. Meet State Water Quality Standards and Requirements.
  - 2. Protect health, safety, and property.
  - 3. Meet special requirements for High Quality (HQ) and Exceptional Value (EV) watersheds.
- B. The Applicant must demonstrate that the following BMPs are being utilized to the maximum extent practicable to receive consideration for the exemptions:
  - 1. Design around and limit disturbance of Floodplains, Wetlands, Natural Slopes over 15%, existing native vegetation, and other sensitive and special value features.
  - 2. Maintain riparian and forested buffers.
  - 3. Limit grading and maintain non-erosive flow conditions in natural flow paths.
  - 4. Maintain existing tree canopies near impervious areas.
  - 5. Minimize soil disturbance and reclaim disturbed areas with topsoil and vegetation.

6. Direct runoff to pervious areas.

- C. The Applicant must demonstrate that the proposed development/additional impervious area will not adversely impact the following:
  - 1. Capacities of existing drainageways and storm sewer systems.
  - 2. Velocities and erosion.
  - 3. Quality of runoff if direct discharge is proposed.
  - 4. Existing known problem areas.
  - 5. Safe conveyance of the additional runoff.
  - 6. Downstream property owners.
- D. An Applicant proposing Regulated Activities may be eligible for exemption from Rate Control, Volume Control, or Stormwater Management Site Plan requirements in this Article according to the following table:

Table 302.1 – Exemptions and Submission Requirements	
New Impervious Area <sup>1,2</sup> (square footage)	Applicant Must Provide
0 < 1,000	No submission is required
1,000 < 5,000	Documentation of new impervious surfaces <sup>3</sup>
5,000 and greater	Rate Controls, Volume Controls & SWM Site Plan

Section 20-1816 Stormwater Drainage

NOTES:

1 New Impervious Area since the date of Adoption of this Article.

2 Gravel in existing condition shall be considered pervious and gravel in proposed condition shall be considered impervious.

3 The Small Project Stormwater Management Application included in Appendix D shall be used to document new impervious surfaces.

- E. Single Family Residential activities are exempt from these requirements provided the construction:
  - 1. Comply with Sections 301.G, 302.A, 302.B, 302.C, and
  - 2. Have building setback 75 feet from downstream property lines, and
  - 3. Driveways:
    - a. Runoff must discharge onto pervious surface with a gravel strip or other spreading device.
    - b. No more than 1,000 square feet of paved surface may discharge to any one point.

- c. The length of flow on the pervious must exceed the length of the paved surface flow.
- 4. The municipality can require more information or require mitigation of certain impacts through installation of stormwater management BMP's if there is a threat to property, health, or safety.
- F. An Applicant proposing Regulated Activities, after demonstrating compliance with Sections 21-302.A, 21-302.B, and 21-302.C, may be exempted from various requirements of this Article if documentation can be provided that a downstream man-made water body (i.e., reservoir, lake, or man-made wetlands) has been designed or modified to address the potential stormwater flooding impacts of the proposed development.
- G. The purpose of this section is to ensure consistency of stormwater management planning between local ordinances and NPDES permitting (when required) and to ensure that the Applicant has a single and clear set of stormwater management standards to which the Applicant is subject. The Municipality may accept alternative stormwater management controls under this section provided that:
  - 1. The Municipality, in consultation with the PADEP (or Delegated Authority), determines that meeting the Volume Control requirements (See Section 21-304) is not possible or places an undue hardship on the Applicant.
  - 2. The alternative controls are documented to be acceptable to PADEP (or Delegated Authority), for NPDES requirements pertaining to post construction stormwater management requirements.
  - 3. The alternative controls are in compliance with all other sections of this Article, including but not limited to Sections 21-301.D and 21-302.A-C.
- H. Agricultural activities are exempt from the rate control and SWM Site Plan preparation requirements of this A. Chapter provided the activities are performed according to the requirements of 25 PA Code Chapter 102.
- I. Forest management and timber operations are exempt from the Rate and Volume Control

requirement and SWM Site Plan preparation requirement of this Article provided the activities are performed according to the requirements of 25 PA Code Chapter 102. It should be noted that temporary roadways are not exempt.

- J. The municipality may deny or revoke any exemption pursuant to this Section at any time for any project that the municipality believes may pose a threat to public health, safety, property or the environment.

**§21-303. Waivers**

- A. The provisions of this Article are the minimum standards for the protection of the public welfare.
- B. All waiver requests must meet the provisions of Section 21-303.G. and H. Waivers shall not be issued from implementing such measures as necessary to:
  - 1. Meet State Water Quality Standards and Requirements.
  - 2. Protect health, safety, and property.
  - 3. Meet special requirements for High Quality (HQ) and Exceptional Value (EV) watersheds.

Municipalities will then consider waivers in accordance with Section 21-301.D.
- C. If an Applicant demonstrates to the satisfaction of the governing body of the Municipality that any mandatory provision of this Article is unreasonable or causes unique or undue unreasonableness or hardship as it applies to the proposed Project, or that an alternate design may result in a superior result within the context of Section 21-102 and 21-103 of this Article, the governing body of the Municipality upon obtaining the comments and recommendations of the Municipal Engineer may grant a waiver or relief so that substantial justice may be done and the public interest is secured; provided that such waiver will not have the effect of nullifying the intent and purpose of this Article.
- D. The Applicant shall submit all requests for waivers in writing and shall include such requests as a part of the plan review and approval process. The Applicant shall state in full the facts of unreasonableness or hardship

on which the request is based, the provision or provisions of this Article that are involved, and the minimum waiver or relief that is necessary. The Applicant shall state how the requested waiver and how the Applicant's proposal shall result in an equal or better means of complying with the intent or Purpose and general principles of this Article.

- E. The Municipality shall keep a written record of all actions on waiver requests.
- F. The Municipality may charge a fee for each waiver request, which shall be used to offset the administrative costs of reviewing the waiver request. The Applicant shall also agree to reimburse the Municipality for reasonable and necessary fees that may be incurred by the Municipal Engineer in any review of a waiver request.
- G. In granting waivers, the Municipality may impose reasonable conditions at will, in its judgment, secure substantially the objectives of the standards or requirements that are to be modified.
- H. The Municipality may grant applications for waivers when the following findings are made, as relevant:
  - 1. That the waiver shall result in an equal or better means of complying with the intent of this Article.
  - 2. That the waiver is the minimum necessary to provide relief.
  - 3. That the applicant is not requesting a waiver based on cost considerations.
  - 4. That existing down gradient stormwater problems will not be exacerbated.
  - 5. That runoff is not being diverted to a different drainage area.
  - 6. That increased flooding or ponding on off-site properties or roadways will not occur.
  - 7. That potential icing conditions will not occur.
  - 8. That increase of peak flow or volume from the site will not occur.
  - 9. That erosive conditions due to increased peak flows or volume will not occur.

- 10. That adverse impact to water quality will not result.
- 11. That increased 100-Year Floodplain levels will not result.
- 12. That increased or unusual municipal maintenance expenses will not result from the waiver.
- 13. That the amount of stormwater generated has been minimized to the greatest extent allowed.
- 14. That infiltration of runoff throughout the proposed site has been provided where practicable and pre-development ground water recharge protected.
- 15. That peak flow attenuation of runoff has been provided.
- 16. That long term operation and maintenance activities are established.
- 17. That the receiving streams and/or water bodies will not be adversely impacted in flood carrying capacity, aquatic habitat, channel stability and erosion and sedimentation.

**§21-304. Volume Controls**

- A. The Low Impact Development Practices provided in the BMP Manual and in Appendix D of this Article shall be utilized for all Regulated Activities to the maximum extent practicable.
- B. Stormwater runoff Volume Controls shall be implemented using the *Design Storm Method* or the *Simplified Method* as defined below. For Regulated Activity areas equal or less than one (1) acre that do not require hydrologic routing to design the stormwater facilities, This Article establishes no preference for either method; therefore, the Applicant may select either method on the basis of economic considerations, the intrinsic limitations on applicability of the analytical procedures associated with each methodology, and other factors.
  - 1. The *Design Storm Method* (CG-1 in the BMP Manual) is applicable to any sized Regulated Activity. This method requires detailed modeling based on site conditions.
    - a. Do not increase the post-development total runoff volume when compared to

the pre-development total runoff volume for the 2-year/24-hour storm event.

- b. For hydrologic modeling purposes:
  - 1) Existing non-forested pervious areas must be considered meadow (good condition) for pre-development hydrologic calculations.
  - 2) Twenty (20) percent of existing impervious area, when present within the proposed project site, shall be considered meadow (good condition) for pre-development hydrologic calculations for re-development.
- 2. The *Simplified Method* (CG-2 in the BMP Manual) is independent of site conditions and should be used if the *Design Storm Method* is not followed. This method is not applicable to Regulated Activities greater than 1 acre or for projects that require detailed design of stormwater storage facilities. For new impervious surfaces:
  - a. Stormwater facilities shall capture at least the first 2 inches of runoff from all new impervious surfaces.
  - b. At least the first 1 inch of runoff from new impervious surfaces shall be permanently removed from the runoff flow, i.e. it shall not be released into surface Waters of the Commonwealth. Removal options include reuse, evaporation, transpiration, and infiltration.
  - c. Wherever possible, infiltration facilities should be designed to accommodate infiltration of the entire permanently removed runoff; however, in all cases at least the first 0.5 inch of the permanently removed runoff should be infiltrated.
  - d. Actual field infiltration tests at the location of the proposed elevation of the stormwater BMPs are required. Infiltration test shall be conducted in accordance with the BMP Manual. Notification of the Municipality shall be

provided to allow witnessing of the testing.

- 3. In cases where it is not possible or desirable to use infiltration-based best management practices to partially fulfill the requirements in either Section 21-304.B.1 or 21-304.B.2, the following procedure shall be used:
  - a. At a minimum, the following documentation shall be provided to justify the decision to not use infiltration BMPs:
    - 1) Description of and justification for field infiltration/permeability testing with respect to the type of test and test locations).
    - 2) An interpretive narrative describing existing site soils and their structure as these relate to the interaction between soils and water occurring on the site. In addition to providing soil and soil profile descriptions, this narrative shall identify depth to seasonal high water tables and depth to bedrock, and provide a description of all subsurface elements (fragipans and other restrictive layers, geology, etc.) that influence the direction and rate of subsurface water movement.
    - 3) A qualitative assessment of the site's contribution to annual aquifer recharge shall be made, along with identification of any restrictions or limitations associated with the use of engineered infiltration facilities. iv. The provided documentation must be signed and sealed by a professional engineer or geologist.
  - b. The following water quality pollutant load reductions will be required for all disturbed areas within the proposed development:

b.	Pollutant Load	Units	Required reduction (%)
	Total Suspended Solids (TSS)	Pounds	85
	Total Phosphorous (TP)	Pounds	85
	Total Nitrate (NO3)	Pounds	50

- c. The performance criteria for water quality best management practices

shall be determined from the Pennsylvania Stormwater Best Management Practices Manual, most current version.

- C. The applicable Worksheets from the BMP Manual must be used in calculations to establish Volume Control.

**§21-305. Rate Controls**

- A. Lands contained within Butler County that have not had release rates established under an approved Act 167 Stormwater Management Plan:
  - 1. Post-Development Discharge rates shall not exceed 90% of the pre-development discharge rates for the 1-year, 2-year, 10-year, 25-year, 50-year and 100-year storms.
- B. Lands contained within Butler County that have had release rates established under an approved Act 167 Stormwater Management Plan:
  - 1. The post-development peak discharge rates shall be in accordance with the approved release rate map for the following watersheds (see Appendices for Release Rate Map):
    - a. Connoquenessing Creek Watershed

**§21-306. Sensitive Areas and Stormwater Hotspots**

- A. Sensitive areas and water quality sensitive developments as defined below which require special consideration with regard to stormwater management.
  - 1. Sensitive areas are defined as those areas that, if developed, have the potential to endanger a water supply. These areas consist of the delineated 1-year zone of contribution and direct upslope areas tributary to the water supply wells. Municipalities may update the sensitive area boundaries based on new research or studies as required.
  - 2. Stormwater Hotspots are defined as a land development project that has a high potential to endanger local water quality, and could potentially threaten ground water reservoirs. The Municipal Engineer

will determine what constitutes these classifications on a case-by-case basis. The PADEP wellhead protection contaminant source list shall be used as a guide in these determinations. Industrial manufacturing site and hazardous material storage areas must provide NPDES SIC codes.

**B. Performance Standards**

- 1. The location of the boundaries of sensitive areas is set by drainage areas tributary to any public water supply. The exact location of these boundaries as they apply to a given development site, shall be determined using mapping at a scale which accurately defines the limits of the sensitive area. If the project site is within the sensitive area (in whole or in part), 2-foot contour interval mapping shall be provided to define the limits of the sensitive area. If the project site is adjacent to but within 500 linear feet of a defined Sensitive Area, a 5-foot contour interval map defining the limits of the Sensitive Area shall be included in the Stormwater Management Plan to document the site's location relative to the sensitive area.
- 2. Stormwater Hotspots may be required to prepare and implement a stormwater pollution prevention plan and file notice of intent as required under the provision of the EPA Industrial Stormwater NPDES Permit Requirements.
- 3. Stormwater Hotspots must use an acceptable pre-treatment BMP prior to volume control and/or rate control BMPs. Acceptable pre-treatment BMPs for these developments include those based on filtering, settling, or chemical reaction processes such as coagulation.