

ARTICLE III – STORMWATER MANAGEMENT STANDARDS

Section 301. General Requirements

- A. Applicants proposing Regulated Activities in the Borough which are not exempt under Section 106 shall submit a Stormwater Management Site Plan (SWM Site Plan) to the Borough for review and approval in accordance with Articles III and IV. SWM Site Plans approved by the Borough shall be kept on Site throughout the duration of the Regulated Activity.
- B. The stormwater management and runoff control criteria and standards in this Ordinance as well as the measurement of the Impervious Surfaces shall apply to the total proposed Regulated Activity, even if it is to take place in stages.
- C. No Regulated Activity within the Borough shall commence until:
 - 1. The Borough issues approval of a SWM Site Plan in the form of a SWM permit, which demonstrates compliance with the requirements of this Ordinance; and
 - 2. The Applicant has received a letter of adequacy or approval for the Erosion and Sediment Control Plan review by the Borough and the Conservation District (if required), and has received all other local, State and Federal permit approvals required for the project involving the Regulated Activity.
- D. Neither submission of an SWM Site Plan under the provisions herein nor compliance with the provisions of this Ordinance shall relieve any person from responsibility for damage to any person or property otherwise imposed by law.
- E. The Applicant shall design the Site to minimize disturbances to land, Site hydrology, and natural resources, and to maintain the natural hydrologic regime, drainage patterns and flow conditions. The Applicant shall apply the procedures set forth in Section 304 for the overall Site design and for selection, location and design of features and BMPs to be used to comply with the requirements of this Ordinance.
- F. To the maximum extent practicable, Post-construction stormwater shall be discharged within the drainage area of the same stream or water body receiving the runoff prior to construction of the proposed Regulated Activity.
- G. For Regulated Activities with one (1) acre or more of proposed Earth Disturbance, existing drainage peak rate discharges up to and including the one hundred (100)-year storm onto or through adjacent property(ies) or downgradient property(ies), including diffuse drainage discharge, shall not be altered in any manner without written permission from, and, where applicable as determined by the Borough an easement and agreement with, the affected Landowner(s) for conveyance of discharges onto or through their property(ies). Such discharge shall be subject to any applicable discharge criteria specified in this Ordinance.

1. For Regulated Activities with one (1) acre or less proposed Earth Disturbance the Applicant shall provide written notification to the affected Landowner(s) describing the proposed Regulated Activity and proposed discharge(s), unless otherwise required by the Borough.
- H. Areas located outside of the Site (i.e., areas outside of the Regulated Activity) that drain through a proposed Site are not subject to water quality and volume control, infiltration, stream channel protection, or peak flow rate control requirements (as presented in Sections 305, 306, 307, and 308). Drainage facilities located on the Site shall be designed to safely convey flows from outside of the Site through the Site.
- I. If Site conditions preclude capture of runoff from limited portions of the Disturbed Area for achieving water quality volume control standards, stream channel protection standards, and the 2-year storm event peak runoff rate reduction standards for New Development required by this Ordinance, the Applicant shall propose alternate methods to mitigate the bypass of the BMPs, subject to the approval of the Municipal Engineer. In no case shall resulting peak rate be greater than the Pre-development peak rate for the equivalent design storm.
- J. For all Regulated Activities, erosion and sediment control BMPs shall be designed, implemented, operated, and maintained during the Regulated Activities (i.e., during construction) as required to meet the purposes and requirements of this Ordinance, to meet the erosion and sediment control requirements of the Borough, if applicable, and to meet all requirements under Title 25 of the PA Code and the Clean Streams Law.
- K. For all Regulated Activities, permanent BMPs and Conveyances shall be designed, implemented, operated, and maintained to meet the purposes and requirements of this Ordinance and to meet all requirements under Title 25 of the Pennsylvania Code, the Clean Streams Law, and the Storm Water Management Act.
- L. The design of all BMPs and Conveyances shall incorporate sound engineering principles and practices in a manner that does not aggravate existing stormwater problems as identified by the Borough. The Borough reserves the right to disapprove any design that would result in construction in an area affected by existing stormwater problem(s) or continuation of an existing stormwater problem(s).
- M. Existing wetlands, either on the Site or on an adjacent property, shall not be used to meet the minimum design requirements for stormwater management or stormwater runoff quality treatment. Stormwater discharges to existing wetlands shall not degrade the quality or hydrologic integrity of the wetland.
- N. Hotspots Runoff Controls. Specific structural or pollution prevention practices may be required, as determined to be necessary by the Borough Engineer, to pretreat runoff from Hotspots prior to infiltration. Following is a list of examples of Hotspots:
1. Vehicle salvage yards and recycling facilities;
 2. Vehicle fueling stations;
 3. Vehicle service and maintenance facilities;

4. Vehicle and equipment cleaning facilities;
 5. Fleet storage areas (bus, truck, etc.);
 6. Industrial sites based on Standard Industrial Classification Codes;
 7. Marinas (service and maintenance areas);
 8. Outdoor liquid container storage;
 9. Outdoor loading/unloading facilities;
 10. Public works storage areas;
 11. Facilities that generate or store hazardous materials;
 12. Commercial container nursery;
 13. Contaminated sites/brownfields;
 14. Other land uses and activities as designated by the Borough.
- O. Contaminated and Brownfield Sites. Where BMPs may contribute to the migration of contaminants in groundwater, the water quality and runoff volume, stream channel protection, and peak rate control standards shall be met; however, at the Borough Engineer's discretion, the minimum infiltration requirement may be reduced or eliminated commensurate with the contaminated area and the required water quality and runoff control measures may be increased to mitigate the reduced infiltration requirement for the contaminated area.
- P. Additional Water Quality Requirements. The Borough may require additional stormwater control measures for stormwater discharges to special management areas including, but not limited to:
1. Water bodies listed as "impaired" by PADEP.
 2. Any water body or watershed with an approved Total Maximum Daily Load (TMDL).
 3. Areas of known existing flooding problems.
 4. Critical areas with sensitive resources (e.g., State designated special protection waters, cold water fisheries, carbonate geology or other groundwater recharge areas that may be highly vulnerable to contamination, drainage areas to water supply reservoirs, etc.).
- Q. Applicants shall utilize the *Pennsylvania Stormwater Best Management Practices Manual* (PA BMP Manual), as amended, or other sources acceptable to the Borough Engineer, for testing and design standards for BMPs, and where there is a conflict with the provisions of this Ordinance, the most restrictive applies.

- R. For areas underlain by karst or carbonate geology (Refer to Appendix D for Known Karst Features map) that may be susceptible to the formation of sinkholes and other karst features, the location, type, and design of infiltration BMPs shall be based on a Site evaluation conducted by a qualified Licensed Professional and based on the PA BMP Manual or other design guidance acceptable to the Borough Engineer. The following certificate shall be included on all stormwater site plans and shall be signed and sealed by the Developer's Professional Geologist, "I, _____, certify that the proposed stormwater/BMP facility (circle one) is / is not underlain by carbonate geology."
- S. All Regulated Activities located within a Special Flood Hazard Area designated by the Federal Emergency Management Agency (FEMA) shall comply with the Atglen Borough Zoning Ordinance section(s) regarding Floodplain management and shall be designed to maintain the flood carrying capacity of the floodway such that the base flood elevations are not increased, either upstream or downstream. The natural conveyance characteristics of the Site and the receiving floodplain shall be incorporated into the stormwater management practices proposed for the Site.
- T. Any disturbance of existing ground cover during construction of the proposed Regulated Activity is prohibited within fifty (50) feet of top-of-bank of all perennial waterways and intermittent waterways, water bodies (lakes, ponds, etc.) and wetlands, except for activities otherwise approved by State or local agencies (e.g. stream restoration projects, road crossings, subsurface utility projects, etc.). At the Borough Engineer's discretion, and with Conservation District and PADEP approval where necessary, the non-disturbance buffer may be reduced because of setback or other Site constraints, but never be less than ten (10) feet.
- U. Riparian buffers shall be designed to meet the requirements of Section 312.

Section 302. Permit Requirements by Other Governmental Entities

The following permit or other regulatory requirements may apply to certain Regulated Activities and shall be met prior to (or as a condition of) final approval by the Borough of the SWM Site Plan and prior to commencement of any Regulated Activities, as applicable:

- A. All Regulated Activities subject to permit or regulatory requirements by PADEP under regulations at Title 25 Pennsylvania Code Chapter 102, or erosion and sediment control requirements of the Borough.
- B. Work within natural drainage ways subject to permit by PADEP under Title 25 Pennsylvania Code Chapter 105.
- C. Any BMP or Conveyance that would be located in or adjacent to surface Waters of the Commonwealth, including wetlands, subject to permit by PADEP under Title 25 Pennsylvania Code Chapter 105.
- D. Any BMP or Conveyance that would be located on or discharge to a State highway right-of-way, or require access to or from a State highway and be subject to approval by PennDOT.

- E. Culverts, bridges, storm sewers, or any other facilities which must pass or convey flows from the tributary area and any facility which may constitute a dam subject to permit by PADEP under Title 25 Pennsylvania Code Chapter 105.

Section 303. Erosion and Sediment Control

- A. No Regulated Activity within the Borough shall commence until:
 - 1. The Borough receives documentation that the Applicant has received:
 - a. A “letter of adequacy” from the Conservation District or other approval from PADEP in compliance with Title 25 Chapter 102 of the Pennsylvania Code of an Erosion and Sediment Control Plan for construction activities, if applicable;
 - b. A PADEP NPDES Construction Activities Permit as required under Title 25 Pennsylvania Code Chapter 92.a, if applicable;
 - c. Evidence of any other permit(s) or approvals required for the Regulated Activities; and
 - 2. An Erosion and Sediment Control Plan has been approved by the Borough, if required.
- B. A copy of the Erosion and Sediment Control Plan and any required permit(s), as required by PADEP regulations, shall be available on the Site at all times.
- C. Additional erosion and sediment control measures shall be applied where infiltration BMPs are proposed, at a minimum including those required in Subsection 306.M.

Section 304. Site Design Process

The Applicant shall design the Site to minimize the disturbances to land, Site hydrology, and natural resources, and to maintain the natural hydrologic regime, drainage patterns and flow conditions. For Regulated Activities with ten thousand (10,000) or more square feet of proposed Earth Disturbance OR two thousand (2,000) or more square feet of Proposed Impervious Surfaces, the Applicant shall demonstrate in its SWM Site Plan (as required in Subsection 402.C) that the design sequence, objectives and techniques described below were applied to the maximum extent practicable in the Site design of the Regulated Activity while complying with all other requirements of this Ordinance. The Site design shall:

- A. First, identify and delineate all existing natural resources and natural and man-made hydrologic features listed in Subsection 402.B.8 that are located within the Site, or receive discharge from, or may be impacted by the proposed Regulated Activity.
- B. Second, provide a prioritized listing of these resources and features to identify:

1. Those to be incorporated into the Site design in a manner that provides protection from any disturbance or impact from the proposed Regulated Activity;
 2. Those to be protected from further disturbance or impact but for which the proposed Regulated Activity will provide improvement to existing conditions;
 3. Those that can be incorporated into and utilized as components of the overall Site design in a manner that protects or improves their existing conditions while utilizing their hydrologic function within the limits of their available capacity (e.g., for infiltration, evapotranspiration, or reducing pollutant loads, runoff volume or peak discharge rates, etc.) to reduce the need for or size of constructed BMPs; and
 4. Those that may be considered for alteration, disturbance or removal.
- C. Third, develop the Site design to achieve the following:
1. Recognize and incorporate the priorities identified in Section 304.B as the basis for the proposed Site layout, grading, construction, and permanent ground cover design;
 2. Minimize Earth Disturbance (both surface and subsurface);
 3. Maximize protection of or improvement to natural resources and special management areas;
 4. Minimize the disturbance of natural Site hydrology, in particular natural drainage features and patterns, discharge points and flow characteristics, natural infiltration patterns and characteristics, and natural channel and floodplain conveyance capacity;
 5. Incorporate natural hydrologic features and functions identified in Subsection 304.B into the Site design to protect and utilize those features and their hydrologic functions to reduce the need for or size of constructed BMPs;
 6. Maximize infiltration and the use of natural Site infiltration features, patterns and conditions, and evapotranspiration features;
 7. Apply selective grading design methods to provide final grading patterns or preserve existing topography in order to evenly distribute runoff and minimize concentrated flows;
 8. Minimize the cumulative area to be covered by Impervious Surfaces and:
 - a. Minimize the size of individual Impervious Surfaces,
 - b. Separate large Impervious Surfaces into smaller components,
 - c. Disconnect runoff from one Impervious Surface to another, and
 - d. Utilize porous materials in place of impervious wherever practicable;
 9. Minimize the volume and peak discharge rates of stormwater generated;

10. Avoid or minimize stormwater runoff pollutant loads and receiving stream channel erosion;
 11. Locate infiltration and other BMPs:
 - a. At or as near to the source of generation as possible, and
 - b. At depths that are as shallow as possible;
 12. Prioritize the selection and design of BMPs as follows:
 - a. Nonstructural and vegetation BMPs, then
 - b. Structural (surface and subsurface) BMPs;
 13. For flow volumes requiring conveyance from the source of generation to a BMP for management, give preference to open channel conveyance techniques that provide infiltration and water quality benefits, and landscaped-based management in common open space areas, where practicable; and
 14. Consider additional guidance for incorporating natural hydrology into the Site and BMP designs, methods and techniques that support the objectives of Subsections 304.B and 304.C. Appendix E presents additional discussion of natural hydrology site design and sources of information for “Conservation Design”, “Low Impact Design”, and “Sustainable Design”.
- D. The procedures set forth above shall be utilized to the maximum extent practicable for the overall Site design and selection, location and design of features and BMPs to be used to comply with the requirements of Sections 305, 306, 307 and 308.

Section 305. Water Quality and Runoff Volume Requirements

To control Post-construction stormwater impacts from Regulated Activities and meet State water quality requirements, BMPs shall be provided in the Site design that replicate Predevelopment stormwater infiltration and runoff conditions, such that Post-construction stormwater discharges do not degrade the physical, chemical, or biological characteristics of the receiving waters. The Applicant shall comply with the following water quality and runoff volume requirements for all Regulated Activities, including all New Development and Redevelopment activities:

- A. The Post-construction total runoff volume shall not exceed the Predevelopment total runoff volume for all storms equal to or less than the two (2)-year, twenty-four (24)-hour duration precipitation (design storm). The water quality and runoff volume to be managed shall consist of any runoff volume generated by the proposed Regulated Activity over and above the Predevelopment total runoff volume and shall be captured and permanently retained or infiltrated on the Site. Permanent retention options may include, but are not limited to, reuse, evaporation, transpiration, and infiltration.

- B. For modeling purposes, the Predevelopment ground cover conditions shall be determined using the corresponding ground cover assumptions presented in Subsection 309.D of this Ordinance.
- C. The design of the facility outlet shall provide for protection from clogging and unwanted sedimentation.
- D. BMPs that moderate the temperature of stormwater shall be used to protect the temperature of receiving waters.
- E. Water quality improvement shall be achieved in conjunction with achieving the infiltration requirements of Section 306. The infiltration volume required under Section 306 may be included as a component of the water quality volume. If the calculated water quality and runoff volume is greater than the volume infiltrated, then the difference between the two (2) volumes shall be managed for water quality and runoff volume control through other techniques or practices but shall not be discharged from the Site.
- F. Runoff from the Disturbed Area shall be treated for water quality prior to entering existing waterways or water bodies. If a stormwater management practice does not provide water quality treatment, then water quality BMPs shall be utilized to provide pre-treatment prior to the runoff entering the stormwater management practice.
- G. The Borough may require additional water quality and runoff control measures for stormwater discharging to special management areas such as those listed in Subsection 301.P.
- H. When the Regulated Activity contains or is divided by multiple drainage areas, the water quality and runoff volume shall be separately addressed for each drainage area.
- I. Weighted averaging of runoff coefficients shall not be used for manual computations or input data for water quality and runoff volume calculations.
- J. Areas located outside of the Site (i.e., areas outside of the Regulated Activity) may be excluded from the calculation of the water quality and runoff volume requirements.
- K. Water quality and volume control practices shall be selected and designed to meet the criteria of Subsection 304.C that apply to water quality and volume control.

Section 306. Infiltration Requirements

Providing for infiltration consistent with the natural hydrologic regime is required to compensate for the reduction in the recharge that occurs when the ground surface is disturbed or Impervious Surface is created or expanded. The Applicant shall achieve the following infiltration requirements:

- A. Wherever possible, infiltration should be designed to accommodate the entire water quality and runoff volume required in Section 305.
- B. For Regulated Activities involving New Development, the volume of a minimum of one (1)-inch of runoff from all Proposed Impervious Surfaces shall be infiltrated.

C. For Regulated Activities involving Redevelopment, whichever is less of the following volume options shall be infiltrated:

1. The volume of a minimum of one (1)-inch of runoff from all Proposed Impervious Surfaces;

OR

2. The total water quality and runoff volume required in Section 305 of this Ordinance.

D. If the requirements of Subsections 306.B or 306.C cannot be physically accomplished, then the Applicant shall be responsible for demonstrating with data or calculations to the satisfaction of the Borough Engineer why this infiltration volume cannot be physically accomplished on the Site (e.g., shallow depth to bedrock or limiting zone, open voids, steep slopes, etc.) and what alternative volume can be infiltrated; however in all cases at least the first one-half (0.5) inch of runoff volume shall be infiltrated.

E. Only if a minimum of at least one-half (0.5) inch infiltration requirement cannot be physically accomplished on the Site, shall a waiver from Section 306 be considered by the Borough unless the proposed activity involving earth disturbance of one (1) acre or greater as described in Section 111.C.

F. If Site conditions preclude capture of runoff from portions of the Impervious Surfaces, the infiltration volume for the remaining area shall be increased an equivalent amount to offset the loss.

G. When a project contains or is divided by multiple watersheds, the infiltration volume shall be separately addressed for each watershed.

H. Existing Impervious Surfaces located in areas outside of the Site (i.e., outside of the Regulated Activity) may be excluded from the calculation of the required infiltration volume.

I. A detailed soil evaluation of the Site shall be conducted by a qualified professional and at a minimum shall address soil permeability, depth to bedrock or other limiting zone, and subgrade stability. The general process for designing the infiltration BMP shall be conducted by a qualified Licensed Professional and shall be consistent with the PA BMP Manual (as amended) (or other guidance acceptable to the Borough Engineer) and in general shall:

1. Analyze hydrologic soil groups as well as natural and man-made features within the Site to determine general areas of suitability for infiltration practices. In areas where development on fill material is under consideration, conduct geotechnical investigations of sub-grade stability; infiltration may not be ruled out without conducting these tests.

2. Provide field tests such as double ring infiltrometer or other hydraulic conductivity tests (at the elevation of the proposed infiltration surface) to determine the appropriate hydraulic conductivity rate. **Standard septic/sewage percolation tests are not acceptable for design purposes.**

3. Design the Infiltration Facility for the required retention (infiltration) volume based on field-determined infiltration capacity (and apply safety factor as per applicable design guidelines) at the elevation of the proposed infiltration surface.
 4. On-lot infiltration features are encouraged; however, it shall be demonstrated to the Borough Engineer that the soils are conducive to infiltration on the identified lots.
- J. Infiltration BMPs shall be selected based on suitability of soils and Site conditions and shall be constructed on soils that have the following characteristics:
1. A minimum depth of twenty-four (24) inches between the bottom of the BMP and the top of the Limiting Zone. Additional depth may be required in areas underlain by karst or carbonate geology (see Subsection 306.N).
 2. An infiltration rate sufficient to accept the additional stormwater volume and drain completely as determined by field tests conducted by the Applicant.
 3. The Infiltration Facility shall completely drain the retention (infiltration) volume within three (3) days (seventy-two (72) hours) from the end of the design storm.
- K. All infiltration practices shall:
1. Be selected and designed to meet the criteria of Subsection 304.C that are applicable to infiltration;
 2. Be set back at least ten (10) feet from all buildings and features with sub-grade elements (e.g., basements, foundation walls, etc.), unless otherwise approved by the Borough Engineer;
 3. For any infiltration practice that collects runoff from shared or multiple features and that is located within fifty (50) feet of a building or feature with sub-grade elements (e.g., basements, foundation walls, etc.), the bottom elevation shall be set below the elevation of the sub-grade element unless a smaller setback is justified by a flow net calculation for the facility.
- L. Infiltration Facilities shall, to the maximum extent practicable, be located to avoid introducing contaminants to groundwater:
1. When a Hotspot is located in the area draining to a proposed infiltration facility, an evaluation of the potential of groundwater contamination from the proposed infiltration facility shall be performed, including a hydrogeologic investigation (if necessary) by a qualified Licensed Professional to determine what, if any, pre-treatment or additional design considerations are needed to protect groundwater quality.
 2. When located within a “well head protection area” of a public water supply well, infiltration practices shall be in conformance with the applicable approved source water protection assessment or source water protection plan.

3. The Applicant shall provide appropriate safeguards against groundwater contamination for land uses that may cause groundwater contamination should there be a mishap or spill.
- M. During Site construction, all infiltration practice components shall be protected from compaction due to heavy equipment operation or storage of fill or construction material. Infiltration areas shall also be protected from sedimentation. Areas that are accidentally compacted or graded shall be remediated to restore soil composition and porosity. Adequate documentation to this effect shall be submitted to the Borough Engineer for review. All areas designated for infiltration shall not receive runoff until the contributory drainage area has achieved final stabilization.
 - N. Consideration of infiltration BMPs for areas underlain by karst or carbonate geology is encouraged, but only where the design, supporting calculations, results of soils or other Site investigations or other documentation are provided to the Borough demonstrating that the potential or likelihood of subsidence or sinkholes is minimal. Evaluation of Site conditions and infiltration design shall rely on guidance in the PA BMP Manual (as amended) or other guidance acceptable to the Borough Engineer.
 - O. Groundwater quality of the carbonate aquifer shall be protected from infiltration of pollutants. At a minimum, stormwater runoff from Hotspots (i.e., sources of significant pollutant runoff) shall first be discharged through a water quality BMP(s) to remove pollutants prior to infiltration. Where soil characteristics are insufficient to provide removal of pollutants from sources other than Hotspots, stormwater runoff shall first be discharged through a water quality BMP(s) to remove pollutants prior to infiltration.
 - P. Where sediment transport in the stormwater runoff is anticipated to reach the infiltration system, appropriate permanent measures to prevent or collect sediment shall be installed prior to discharge to the infiltration system.
 - Q. Where roof drains are designed to discharge to infiltration practices, they shall have appropriate measures to prevent clogging by unwanted debris (for example, silt, leaves and vegetation). Such measures shall include but are not limited to leaf traps, gutter guards and cleanouts.
 - R. All infiltration practices shall have appropriate positive overflow controls.
 - S. No sand, salt or other particulate matter may be applied to a porous surface material for winter ice conditions. This shall be noted on the Stormwater Site Plan.
 - T. The following procedures and materials shall be required during the construction of all subsurface facilities:
 1. Excavation for the Infiltration Facility shall be performed with equipment that will not compact the bottom of the seepage bed/trench or like facility.
 2. The bottom of the bed and/or trench shall be scarified prior to the placement of aggregate.
 3. Only clean aggregate with documented porosity, free of fines, shall be allowed.

4. The tops and sides of all seepage beds, trenches, or like facilities shall be covered with drainage fabric. Fabric shall be non-woven fabric acceptable to the Borough Engineer.
5. Stormwater shall be distributed throughout the entire seepage bed/trench or like facility and provisions for the collection of debris shall be provided in all facilities (i.e. cleanout with sump).

Section 307. Stream Channel Protection Requirements

For Regulated Activities involving New Development with one (1) or more acres of Earth Disturbance, the Applicant shall comply with the following stream channel protection requirements to minimize stream channel erosion and associated water quality impacts to the receiving waters:

- A. The peak flow rate of the Post-construction two (2)-year, twenty-four (24)-hour design storm shall be reduced to the Predevelopment peak flow rate of the one (1)-year, twenty-four (24)-hour duration precipitation, using the SCS Type II distribution.
- B. To the maximum extent practicable, and unless otherwise approved by the Borough Engineer, the Post-construction one (1)-year, twenty-four (24)-hour storm flow shall be detained for a minimum of twenty-four (24) hours and a maximum not to exceed seventy-two (72) hours from a point in time when the maximum volume of water from the one (1)-year, twenty-four (24)-hour storm is stored in a proposed BMP (i.e., when the maximum water surface elevation is achieved in the facility). Release of water can begin at the start of the storm (i.e., the invert of the orifice is at the invert of the proposed BMP).
- C. For modeling purposes, the Predevelopment ground cover conditions shall be determined using the corresponding ground cover assumptions presented in Subsection 309.D of this Ordinance.
- D. The minimum orifice size in the outlet structure to the BMP shall be three (3) inches in diameter unless otherwise approved by the Borough Engineer, and a trash rack shall be installed to prevent clogging. For Sites with small drainage areas contributing to the BMP that do not provide enough runoff volume to allow a twenty-four (24) hour attenuation with the three (3)-inch orifice, the calculations shall be submitted showing this condition.
- E. When the calculated orifice size is below three (3) inches, gravel filters (or other methods) are recommended to discharge low-flow rates subject to the Borough Engineer's satisfaction. When filters are utilized, maintenance provisions shall be provided to ensure filters meet the design function.
- F. All proposed stormwater facilities shall make use of measures to extend the flow path and increase the travel time of flows in the facility.
- G. When a Regulated Activity contains or is divided by multiple drainage areas, the peak flow rate control shall be separately addressed for each drainage area.

Section 308. Stormwater Peak Rate Control Requirements

The Applicant shall comply with the following peak flow rate control requirements for all Regulated Activities including those that involve New Development and Redevelopment.

- A. Post-construction peak flow rates from any Regulated Activity shall not exceed the Predevelopment peak flow rates as shown for each of the design storms specified in Table 308.1.

**TABLE 308.1
Peak Rate Control Standards**

POST-CONSTRUCTION DESIGN STORM FREQUENCY (24-Hour Duration)	PREDEVELOPMENT DESIGN STORM	
	New Development Regulated Activities	Redevelopment Regulated Activities
2-Year	1-Year	2-Year
5-Year	5-Year	5-Year
10-Year	10-Year	10-Year
25-Year	25-Year	25-Year
50-Year	50-Year	50-Year
100-Year	100-Year	100-Year

- B. For modeling purposes, the Predevelopment ground cover conditions shall be determined using the corresponding ground cover assumptions presented in Subsection 309.D of this Ordinance.
- C. For Regulated Activities involving only Redevelopment, no peak flow rate controls are required when and **only if** the total Proposed Impervious Surface area is at least twenty percent (20%) less than the total existing Impervious Surface area to be disturbed by the Regulated Activity. In all cases where this requirement is not met, the Redevelopment Regulated Activity shall achieve the peak flow rate controls presented in Table 308.1, using the Redevelopment Ground Cover Assumptions presented in Subsection 309.D.
- D. Only the area of the proposed Regulated Activity shall be subject to the peak flow rate control standards of this Ordinance. Undisturbed areas for which the discharge point has not changed are not subject to the peak flow rate control standards.
- E. Areas located outside of the Site (i.e., areas outside of the Regulated Activity) that drain through a proposed Site are not subject to peak flow rate control requirements. Drainage facilities located on the Site shall be designed to safely convey flows from outside of the Site through the Site.
- F. When a Regulated Activity contains or is divided by multiple drainage areas, the peak flow rate controls shall be separately addressed for each drainage area.
- G. The effect of structural and non-structural stormwater management practices implemented as part of the overall Site design may be taken into consideration when calculating total storage volume and peak flow rates.