MUNICIPALITY OF MONROEVILLE

ALLEGHENY COUNTY, PENNSYLVANIA

ORDINANCE NO. 2700

AN ORDINANCE OF THE MUNICIPALITY OF MONROEVILLE, ALLEGHENY COUNTY, PENNSYLVANIA, A HOME RULE CHARTER COMMUNITY, REPEALING ORDINANCE NO. 2541, AND ADOPTING NEW COMPREHENSIVE STORMWATER MANAGEMENT PROVISIONS FOR THE MUNICIPALITY OF MONROEVILLE PURSUANT TO THE STORMWATER MANAGEMENT ACT 32 P.S., SECTION 680.1.

NOW, THEREFORE, BE IT ORDAINED AND ENACTED by the Council of the Municipality of Monroeville, County of Allegheny, Commonwealth of Pennsylvania, and it is hereby ordained and enacted by the authority of the same as follows:

Section 1. The Municipality of Monroeville desires to repeal Ordinance No. 2541 and adopt new comprehensive Stormwater Management Provisions pursuant to the Stormwater Management Act as more particularly described in Exhibit "A" attached hereto.

Section 2. All Ordinances or Resolutions or parts of Ordinances or Resolutions in conflict herewith are hereby repealed.

ORDAINED AND ENACTED into law the 9th day of April, 2019.

ATTEST:

Timothy J. Little
Municipal Manager

MUNICIPALITY OF MONROEVILLE

Dr. Nicholas J. Gresock
Mayor

ENTERED INTO LEGAL BOOK ON: April 19, 2019

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STORMWATER MANAGEMENT ORDINANCE

ARTICLE I – PURPOSE

001-1. GENERAL

A. In order to protect the health, safety, and general welfare of the residents of the Municipality, as well as to protect, sustain, and enhance the surface and ground water resources of the Municipality, drainage and storm water management practices shall be utilized as directed herein to achieve the following goals and objectives:

1. Accommodate site development and redevelopment in a manner that is consistent with (or re-establishes) the natural hydrologic characteristics of each watershed and sustains ground water recharge, stream base flows, stable stream channel (geomorphology) conditions, the carrying capacity of streams and their floodplains, ground water and surface water quality.

2. Reduce and minimize the volume of stormwater generated.

3. Protect natural infiltration and ground water recharge rates in order to sustain ground water supplies and stream base flows and to prevent degradation of surface and groundwater quality.

4. Prevent scour and erosion of stream banks and streambeds.

5. Maintain runoff characteristics of the site after development or redevelopment that are consistent with the predevelopment conditions of the receiving streams, and in accordance with the requirements of the Turtle Creek Watershed Act 167 Storm Water Management Plan.

6. Protect water quality by removing and/or treating pollutants prior to discharge to ground and surface waters throughout the Municipality, and to protect, restore, and maintain the chemical, physical, and biological quality of ground and surface waters.

7. Reduce flooding impacts and prevent a significant increase in surface runoff rates and volumes, predevelopment to post-development, which could worsen flooding downstream in the watershed, in general, to preserve and restore the natural flood-carrying capacity of streams and their floodplains.

8. Protect adjacent lands from adverse impacts of direct stormwater discharges.

9. Ensure effective long-term operation and maintenance of all permanent stormwater management facilities.

10. Maintain natural drainage patterns and encourage the use of natural drainage systems.

11. Treat and release stormwater as close to the source of runoff as possible using a minimum of structures and maximizing reliance on natural processes.

12. Provide procedures and performance standards for stormwater planning and management.

13. Protect and/or restore natural hydrologic characteristics and habitats wherever possible throughout the watershed systems.

14. Address certain requirements of the Municipal Separate Storm Sewer System (MS4), National Pollution Discharge Elimination System (NPDES), Phase II Stormwater Regulations.

15. Reduce the impacts of runoff from existing developed sites undergoing redevelopment while encouraging development and redevelopment.

16. Meet legal water quality requirements under State law, including regulations at 25 Pa. Code Chapter 93.4a to protect and maintain "existing uses" and maintain the level of water quality to support those uses in all streams, and to protect and maintain water quality in "special protection" streams.

ARTICLE II - GENERAL PROVISIONS

002-1. SHORT TITLE

This ordinance shall be known and may be cited as the "Municipality of Monroeville) Stormwater Management Ordinance."

002-2. STATEMENT OF FINDINGS

A. The governing body of the Municipality finds that:

1. Inadequate management of accelerated runoff of stormwater resulting from development throughout a watershed increases runoff volumes, flows and velocities, contributes to erosion and sedimentation, overtaxes the carrying capacity of streams and storm sewers, greatly increases the cost of public facilities to carry and control stormwater, undermines flood plain management and flood control efforts in downstream communities, reduces groundwater recharge, threatens public health and safety, and increases nonpoint source pollution of water resources.

2. A comprehensive program of stormwater management (SWM), including regulation of development and activities causing accelerated runoff, is fundamental to the public health, safety, and welfare and the protection of people of the Commonwealth, their resources, and the environment.

3. Stormwater is an important water resource that provides groundwater recharge for water supplies and supports the base flows of streams.

4. The use of green infrastructure (GI) and low impact development (LID) are intended to address the root cause of water quality impairment by using systems and practices which use or mimic natural processes to: 1) infiltrate and recharge, 2) evapotranspire, and/or 3) harvest and use precipitation near where it falls to earth. Green infrastructure practices and LID contribute to the restoration or maintenance of pre-development hydrology.

5. Federal and state regulations require certain municipalities to implement a program of stormwater controls. These municipalities are required to obtain a permit for stormwater discharges from their separate storm sewer systems under the National Pollutant Discharge Elimination System (NPDES) program.

002-3. GENERAL PROVISIONS

A. Statutory Authority

1. Primary Authority:

a. The Municipality is empowered to regulate these activities by the authority of the Act of October 4, 1978, P.L. 864 (Act 167), 32 P.S. Section 680.1, et seq., as amended, the "Storm Water Management Act".

2. Secondary Authority:

a. The Municipality also is empowered to regulate land use activities that affect runoff by

the authority of the Act of July 31, 1968, P.L. 805, No. 247, The Pennsylvania Municipalities Planning Code, as amended.

002-4. APPLICABILITY

A. The standards contained herein shall apply to all Regulated Activities within the Municipality and all stormwater runoff entering the Municipality's separate storm sewer system from lands within and tributary to the Municipal boundary including the sources of such runoff.

1. Activities regulated by this Ordinance include, but are not limited to, the following:

a. Land development.

b. Subdivision.

c. Construction of new or additional impervious or semi-pervious surfaces (driveways, parking lots, etc.).

d. Construction of new buildings or additions to existing buildings.

e. Installation, maintenance, and alterations to stormwater management facilities or appurtenances thereto.

f. Any Earth Disturbances or any activities that involve the alteration or development of land or removal of trees and vegetation in a manner that may affect post construction stormwater runoff.

g. New earth disturbance activities on a previously developed property, which includes properties that have been graded, altered, and/or compacted, whether or not any structures have been built.

h. The demolition or partial demolition of an existing facility, however such work required for building or site maintenance, parking lot resurfacing, roof replacement, building exterior repairs, etc., shall not constitute a regulated activity unless deemed so by the Municipality.

i. Construction of new buildings or facilities in existing impervious or semi- pervious areas.

002-5. EXEMPTIONS

A. If the Municipality determines that any requirement under this Ordinance cannot be achieved for a particular regulated activity the Municipality may, after an evaluation of alternatives, approve measures other than those in this Ordinance, subject to Section **§ 002-5**, paragraph B. The proposed area of disturbance shall be less than one (1) acre. The request for a modification or waiver shall originate with the Landowner, shall be in writing, and shall accompany the Stormwater Management Site Plan submitted to the Municipality. The request shall provide the facts on which the request is based, the provisions of the Ordinance involved, and the proposed modification. The Designated Plan Reviewer shall review the request to determine if it meets the requirements of the Ordinance, including paragraph B below. If acceptable to the Municipality, the Municipality may grant the waiver or modification.

B. Waivers or modifications of the requirements of this Ordinance may be approved by the

Municipality if enforcement will exact undue hardship because of unique physical circumstances or conditions peculiar to the land in question, provided that the modifications will not be contrary or detrimental to the public interest and will achieve the intended outcome, and that the purpose of the Ordinance is preserved. Hardship must be due to such unique physical circumstances or conditions and not to circumstances or conditions generally created by the provisions of the Stormwater Management Ordinance. Cost or financial burden shall not be considered a hardship. Modifications shall not substantially or permanently impair the appropriate use or development of adjacent property. A request for modifications shall be in writing and accompany the Stormwater Management Site Plan submission, as directed in Section **§ 002-5**, paragraph A above.

C. Some activities may be exempted by request of the Applicant from the full requirements of this Ordinance as detailed below. Unless specifically noted as automatic, exemption requests must be submitted to and approved by the Municipality. The Municipality reserves the right to deny exemptions where the exemption is deemed by the Municipality to violate the goals and objectives of the Ordinance. The exemption shall only apply to the portions of this Ordinance specifically noted and all other stormwater management design elements, such as a storm sewer system, road culverts, erosion and sedimentation control, etc., shall still be required.

D. There can be no exemptions for activities which will result in a total earth disturbance exceeding 1 acre.

E. The activity must not require Site Plan or Land Development Plan approval by the Municipality.

F. The following activities listed in **§002-5.G** through **§002-5.N** may be exempt from the requirement to submit a complete stormwater management plan as well as the storm water volume, rate, and water quality treatment requirements of this Ordinance.

G. Single-Family Detached Residential Exemption.

1. Individual detached single-family lots that are not part of an existing sub-division with an approved storm water management plan, existing at the effective date of this Ordinance.
2. In the case of individual single-family lots existing at the effective date of this Ordinance which are included in an existing stormwater management plan said plan shall remain valid and in full force.
3. Subdivision of one single-family detached residential lot into two such lots or the revision of the lot line(s) between two such lots. Should the Municipality suspect that repeated such subdivisions are being used to circumvent the requirement for stormwater management, the Municipality reserves the right to deny the exemption.

H. Loss Exemption

1. This exemption is applicable to an activity not classified as a single-family detached home on an individual lot.
2. Should an act of nature or other type of property loss (i.e. fire, wind, flooding, accident) cause damage to a property necessitating demolition of existing facilities such work

required to return the site to its previous condition may be exempted.

I. Emergency Exemption

1. Emergency maintenance work performed for the protection of public health, safety and welfare may be exempted from the requirements in this Ordinance to obtain approval for a Stormwater Management Plan before commencement of the activity.
2. A written description of the scope and extent of any emergency work performed shall be submitted to the Municipality within two (2) calendar days of the commencement of the activity.
3. If the Municipality finds that the work is not an emergency, then the work shall cease immediately and may not resume until a Stormwater Management Plan is submitted and approved.
4. Unless the emergency work meets the criteria for another exemption the project will still need to comply with this entire Ordinance, this exemption simply allows emergency work to proceed immediately.

J. Stormwater Maintenance Exemption

1. Maintenance work performed on an existing stormwater management facility that was installed in accordance with plans and specifications approved by the Municipal Engineer or Municipality may be exempted from the requirements of this Ordinance.
2. The Municipality shall be notified in writing a minimum of three (3) working days in advance of the proposed maintenance work, with such notice to include a description of the proposed work.
3. Work should be completed in compliance with the approved Operation & Maintenance Plan.
4. Work cannot alter the system only bring it back into compliance with the original approved plan.

K. Site Maintenance Exemption

1. Work required for building or site maintenance, parking lot resurfacing, roof replacement, building exterior repairs, etc.
2. This exemption is automatic and does not require a request.

L. Home Gardening Exemption

1. The use of land for gardening for home consumption.
2. This exemption is automatic and does not require a request.

M. Agricultural Activities Exemption

1. Agricultural activities operated in accordance with a conservation plan, nutrient management plan, or erosion and sedimentation control plan approved by the Allegheny County Conservation District and in accordance with 25 Pa. Code Chapter 102.

2. This exemption is by request which must be submitted to and approved by the Municipality.

N. Timber Harvesting Exemption

1. Forest management and timber harvesting operations conducted in accordance with the Municipality's Timber Harvesting Ordinance and according to the requirements of 25 Pa. Code Chapter 102.

2. This exemption is by request which must be submitted to and approved by the Municipality.

O. The following activities listed in **§002-5.P** through **§002-5.Q** may be exempt from the requirement to submit a complete stormwater management plan as well as the storm water volume and rate requirements of this Ordinance but shall not be exempted from the water quality treatment requirements as follows:

1. Appropriate stormwater quality BMPs must be implemented on the site.

2. The Applicant shall submit a Narrative describing the proposed use of BMPs on the site, including any calculations or justification for their selection, and including the Plans and Agreements for the continued operation and maintenance of the BMPs.

3. Exemptions will not be granted if the activity is found to be a significant contributor of pollution to the Waters of this Commonwealth, or if the runoff from the activity impacts an adjacent property.

P. Minor Impact Exemption

1. This exemption is applicable to an activity not classified as a single-family detached home on an individual lot.

2. The activity must involve less than 750 square feet (< 750 square feet) of impervious surface, including both new impervious surfaces and reconfigurations of existing impervious surfaces, AND result in a total earth disturbance of less than 5,000 square feet (< 5,000 square feet).

3. This exemption can only be applied once for each parcel. Subsequent, or phased, regulated activities on the same or contiguous properties which result in an overall total of 750 square feet or greater (≥ 750 square feet) of impervious surface, or 5,000 square feet or greater (≥ 5,000 square feet) of total earth disturbance shall be subject to the full requirements of this Ordinance.

4. The square footage of any existing impervious surfaces that may be permanently replaced with pervious surfaces on a project site may NOT be deducted from the square footage of impervious surface created to qualify for the exemption.

Q. Vertical Extension Exemption

1. This exemption is applicable to an activity not classified as a single-family detached home on an individual lot.

2. The activity must involve ONLY the vertical extension of a building or portion of a building, with an addition of the same size and shape as the building or portion thereof directly below the addition, and which require no earth disturbance activities other than for the construction of said addition. Applicants must submit a Narrative as described in **§002-5.O.2**. and obtain Municipal approval for the exemption.

R. Roadway resurfacing and maintenance projects, which do not increase impervious area, and underground infrastructure projects are exempt from the provisions of this Ordinance, provided the activities meet the requirements of all other Municipal, State, and Federal requirements.

S. Voluntary Green Stormwater Infrastructure (GSI) retrofit projects that are solely intended to better manage runoff from existing development and are not part of new development or redevelopment, are exempt from the stormwater management provisions of this Ordinance. This does not exempt such projects from any other municipal, state, or federal regulation.

002-6. GENERAL REQUIREMENTS

A. The management of stormwater on site, both during and upon completion of activities permitted under **§ 002-4.A**, shall be accomplished in accordance with the standards and criteria of this Ordinance. The design of any temporary or permanent facilities and structures and the utilization of any natural drainage systems shall be in full compliance with these requirements.

B. The intent of these design standards is to encourage environmentally sound stormwater management practices that provide necessary drainage facilities while protecting the hydrologic characteristics and water quality of the site and watershed. Stormwater management controls shall blend into the natural environment and be aesthetically integrated into the site design to the maximum extent practicable.

C. Applicants shall refer to the Pennsylvania Storm Water Best Management Practices Manual. as amended, Pennsylvania Handbook of Best Management Practices for Developing Areas (PACD, 1998), the 2000 Maryland Stormwater Design Manual (MDE, 2000) or other appropriate references for guidance in the design of stormwater management facilities most appropriate to individual site conditions. In addition, Applicants are strongly encouraged to use both structural and nonstructural stormwater management practices that reduce or eliminate the need for detention basins. If methods other than green infrastructure and LID methods are proposed to achieve the volume and rate controls required under this Ordinance, the SWM Site Plan must include a detailed justification, acceptable to the Designated Plan Reviewer, demonstrating that the use of LID and green infrastructure is not practicable.

D. All SWM design work must be prepared and sealed by a Registered Professional Engineer or Landscape Architect with training and experience in hydrology and hydraulics and licensed in the Commonwealth of Pennsylvania. All designs proposing the use of a SWM retention or detention facility shall be prepared and sealed by a Registered Professional Engineer licensed in the Commonwealth of Pennsylvania.

E. All development activity within a floodplain designated by the Federal Emergency Management Agency (FEMA) shall also comply with the Municipal Zoning Ordinance, latest revision.

F. The stormwater management system shall not create an adverse impact on stormwater quantity or quality in either upstream or downstream areas. Offsite areas which discharge to or across a site proposed for development shall be addressed in the Stormwater Management Plan prepared for the development.

G. Existing wetlands shall not be used to meet the minimum design requirements for stormwater management or storm water runoff quality treatment, except when used as part of a treatment train that incorporates a portion of the outer zone (filter strip) of the wetland's riparian buffer as a stormwater outfall.

H. Neither submission of a Plan under the provisions herein nor compliance with the provisions of these Regulations shall relieve any person from responsibility for damage to any person or property otherwise imposed by law.

I. Where deemed necessary by the Municipal Engineer, or as addressed in the Turtle Creek Watershed Act 167 Stormwater Management Plan, the Applicant shall construct storm sewers to convey on-site runoff To the maximum extent permitted under the Municipalities Planning Code and Act 167, or any amendments thereto, provide on- site/off-site drainage easements; and provide for the conveyance of off-site runoff to an acceptable outlet in the same watershed.

J. Where watercourses traverse a development site, drainage easements shall be provided conforming to the line of such watercourses. The terms of the easements shall prohibit excavation, the placing of fill or structures, except as needed for roadways, driveways and walkways, or any alterations that may adversely affect the flow of stormwater within any portions of the easement, and require the establishment and protection of riparian buffers.

K. For all Regulated Activities, stormwater management BMPs shall be designed, implemented, operated, and maintained to meet the purposes and requirements of this Ordinance and to meet all requirements under Pennsylvania Code Title 25, Clean Streams Law, and the Storm Water Management Act.

L. Any Regulated Activity that may affect the stormwater flows toward or onto a State or County highway or Pennsylvania Turnpike right-of-way or facility shall be designed, implemented, operated, and maintained in accordance with the regulations of the Pennsylvania Department of Transportation (PennDOT), the Pennsylvania Turnpike Commission, or Allegheny County, respectively.

M. At the time of application for a building permit for any approved lot created by a subdivision and/or improved as a land development project, issuance of the permit shall be conditioned upon adherence to the terms of this Ordinance.

N. 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 Ordinance and to meet all requirements under the Pennsylvania Code Title 25 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, as amended and updated.

O. No regulated earth disturbance activities within the Municipality shall commence until the requirements of this Ordinance are met.

P. Operations and maintenance of permanent stormwater BMPs shall be addressed as required by Article IV.

Q. 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 development taking place in stages, the entire development plan must be used in determining conformance with this Ordinance.

3. For projects that add impervious area to a parcel, the total impervious area on the parcel is subject to the requirements of this Ordinance; except that the volume controls in Section **§004-1.C.3** and the peak rate controls of Section **§004-1.C.2** do not need to be retrofitted to existing impervious areas that are not being altered by the proposed regulated activity.

R. Stormwater flows onto adjacent or downstream property shall not be created, increased, decreased, relocated, impeded, or otherwise altered without written notification of the affected property owner(s). Notification shall include a description of the proposed development and the stormwater flows that are being created, increased, decreased, relocated, impeded, or otherwise altered. Adjacent property shall at a minimum include any property having a shared boundary with the subject property of the SWM Site Plan, however, if in the judgment of the Designated Plan Reviewer additional properties are being affected, additional notifications may be required. Proof of notification (signed postal receipt for example) shall be included as part of the SWM Plan submission to the Municipality. Such stormwater flows shall be subject to the requirements of this Ordinance.

S. All regulated activities shall include such measures as necessary to:

1. Protect health, safety, and property

2. Meet the water quality goals of this Ordinance by implementing measures to:

a) Minimize disturbance to floodplains, wetlands, and wooded areas.

b) Maintain or extend riparian buffers.

c) Avoid erosive flow conditions in natural flow pathways.

d) Minimize thermal impacts to waters of this Commonwealth.

e) Disconnect impervious surfaces by directing runoff to pervious areas, wherever possible.

f) Reduce sediment loading of receiving watercourses.

T. Non-Structural Stormwater Management Practices are encouraged, because they reduce the costs of complying with the requirements of this Ordinance and the Stale Water Quality Requirements. A listing of Non-Structural Stormwater Management Practices accepted by the Municipality is on file in the office of the Engineering Department, and may be amended from time to time.

U. In selecting the appropriate BMPs or combinations thereof the Applicant shall consider the following:

1. Total contributing area.
2. Permeability and infiltration rate of the site soils.
3. Slope and depth to bedrock.
4. Seasonal high water table.
5. Proximity to building foundations and wellheads.
6. Erodibility of soils.
7. Land availability and configuration of the topography.
8. Peak discharge and required volume control.
9. Stream bank erosion.
10. Efficiency of the BMPs to mitigate potential water quality problems.
11. The volume of runoff that will be effectively treated.
12. The nature of the pollutant being removed.
13. Maintenance requirements.
14. Creation/protection of aquatic and wildlife habitat.

V. Transference of runoff from one DEP designated Act 167 watershed to another shall be prohibited unless approved by the Municipality.

002-7. REPEALER

A. Any Ordinance or Ordinance provision of the Municipality inconsistent with any of the provisions of this Ordinance is hereby repealed to the extent of the inconsistency only; provided, however, that this repeal shall in no manner be construed as a waiver, release or relinquishment of the right to initiate, pursue or prosecute, as the case may be, any proceeding at law or in equity pertaining to any act done which would have constituted a violation of such prior ordinance or ordinance provision. All of said ordinance or ordinance provisions shall remain in full force and effect and arc not repealed hereby as they pertain to such acts and to the processing of such plans filed prior to the effective date of this

Ordinance, which are protected from the effect of intervening ordinances by Section 508(4) of the Pennsylvania Municipalities Planning Code.

002-8. SEVERABILITY

A. Should any section or provision of this Ordinance be declared invalid by a court of competent jurisdiction, such determination of invalidity shall not affect the validity of the remaining provisions of this Ordinance.

002-9. COMPATIBILITY WITH OTHER ORDINANCE REQUIREMENTS

A. Permits and approvals issued pursuant to this Ordinance shall not relieve the Applicant of the responsibility to comply with or to secure other required permits or approvals for activities regulated by any other applicable code, rule, act, statute or ordinance. This Ordinance shall not preclude the inclusion in such other permit of more stringent requirements concerning regulation of stormwater and erosion. Where a conflict exists between a provision within this Ordinance and that of the PADEP Phase II NPDES regulations, as amended, or any other ordinance of the Municipality, the more stringent requirements shall govern.

002-10. PERMIT REQUIREMENTS BY OTHER GOVERNMENT ENTITIES

A. All regulated earth disturbance activities subject to permit requirements by PADEP under regulations at 25 Pa. Code Chapter 102.

B. Work within natural drainage ways subject to permit by PADEP under 25 Pa. Code Chapter 105.

C. Any stormwater management facility that would be located in or adjacent to Waters of this Commonwealth, including wetlands, subject to permit by PADEP under 25 Pa. Code Chapter 105.

D. Any stormwater management facility that would be located in a State, County, or Pennsylvania Turnpike highway right-of-way, or require access to/from the same, shall be subject to approval by the Pennsylvania Department of Transportation (PennDOT), Pennsylvania Turnpike Commission, or County.

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 25 Pa. Code Chapter 105.

002-11. ERRONEOUS PERMIT

A. Any permit or authorization issued or approved based on false, misleading or erroneous information provided by an applicant is void without the necessity of any proceedings for revocation. Any work undertaken or use established pursuant to such permit or other authorization is unlawful. No action may be taken by a board, agency or employee of the Municipality purporting to validate such a violation.

002-12. VERSION OF REGULATIONS AND STANDARDS

A. Any reference to a statute, regulation or standard, shall be interpreted to refer to the latest or most current version of that document.

002-13. EROSION AND SEDIMENT CONTROL DURING REGULATED EARTH DISTURBANCE ACTIVITIES

A. No Regulated Earth Disturbance activities within the Municipality shall commence until the Municipality receives a copy of any required approvals from the Allegheny County Conservation District or P ADEP for an Erosion and Sediment Control Plan.

B. PADEP has regulations requiring an Erosion and Sediment Control Plan for any earth disturbance activity of 5,000 square feet or more, under 25 Pa. Code § 102.4(b).

C. In addition, under 25 Pa. Code Chapter 102, a PADEP "NPDES Permit for Stormwater Discharges Associated with Construction Activities" permit is required for Regulated Earth Disturbance activities of 1 acre or greater.

D. A copy of the Erosion and Sediment Control plan and any required permits, as required by PADEP regulations, shall be available at the project site at all times.

E. Additional erosion and sediment control design standards and criteria are recommended to be applied where infiltration BMPs are proposed and shall include the following:

1. Areas proposed for infiltration BMPs shall be protected from sedimentation and compaction during the construction phase to maintain maximum infiltration capacity.

2. Infiltration BMPs shall not be constructed nor receive runoff until the entire contributory drainage area to the infiltration BMP has achieved final stabilization.

002-14. PROHIBITED DISCHARGES AND CONNECTIONS

A. No person in the Municipality shall allow, or cause to allow, stormwater discharges into the Municipality's separate storm sewer system and or Waters of this Commonwealth which are not composed entirely of stormwater, except (1) as provided in § 002-14.B below, and (2) discharges allowed under a State or Federal permit.

B. The following discharges are authorized unless they are determined to be significant contributors of pollution to the Waters of this Commonwealth:

Discharges or flows from firefighting activities.

1. Discharges from potable water sources including water line flushing and fire hydrant flushing, if such discharges do not contain detectable concentrations of Total Residual Chlorine (TRC).

2. Non-contaminated irrigation water, water from lawn maintenance, landscape drainage and flows from riparian habitats and wetlands.

3. Diverted stream flows and springs.

4. Non-contaminated pumped ground water and water from foundation and footing drains and crawl space pumps.

5. Non-contaminated HVAC condensation and water from geothermal systems.

6. Residential (i.e., not commercial) vehicle wash water where cleaning agents are not utilized.

7. Non-contaminated hydrostatic test water discharges, if such discharges do not contain detectable concentrations of TRC.

C. In the event that the Municipality determines that any of the discharges identified in § **002-I4.B** significantly contribute to pollution of waters of the Commonwealth, or is so notified by PADEP, the Municipality or PADEP will notify the responsible person to cease the discharge. Upon receipt of such notice, the discharger will have a reasonable time, as determined by the Municipality, to cease the discharge, consistent with the degree of pollution caused by the discharge.

D. Nothing in this Section shall affect a discharger's responsibilities under State law.

E. Roof drains, under drains, sump pump discharges, and other private drainage facilities, shall be directed to a lawn area or other pervious area no closer than five (5) feet from a municipal roadway, unless permitted otherwise in writing by the Municipality. If required by the Municipality, the discharge shall be directed to an infiltration BMP. Ifapproved in writing by the Municipality, the discharge may be directly connected to the storm sewer system. Under no circumstance shall any roof drains be directly connected to sanitary sewers.

F. The following connections are prohibited, except as provided in§ **002-14.B** above:

1. Any drain or conveyance, whether on the surface or subsurface, which allows any non-storm water discharge, including sewage, process wastewater, and wash water, to enter the separate storm sewer system, and any connections to the storm sewer system from indoor drains and sinks.

2. Any drain or conveyance connected from a commercial or industrial land use to the separate storm sewer system which has not been documented in plans, maps, or equivalent records, and approved by the Municipality.

002-15. ENFORCEMENT AND PENALTIES

A. Right of Entry

1. Upon presentation of proper credentials, the Municipality may enter at reasonable times upon any property within the Municipality to inspect the condition of the stormwater structures and facilities in regard to any aspect regulated by this Ordinance.

2. Inspection

a. SWM facilities and BMPs should be inspected by the responsible person according to the following list of frequencies. Inspection reporting requirements shall be as described in **§ 005-3.**

1) Annually.

2) During or immediately after the cessation of a 10-year or greater storm.

Inspections should be conducted during or immediately following precipitation events. A written inspection report shall be created to document each inspection. The inspection report shall contain the date and time of the inspection, the individual(s) who completed the inspection, the location of the BMP, facility or structure inspected, observations on performance, and recommendations for improving performance, if applicable. Inspection reports shall be submitted to the Municipality within 30 days following completion of the inspection.

3. Enforcement

   a. It shall be unlawful for a person to undertake any Regulated Activity without conforming to the provisions of this Ordinance.

   b. It shall be unlawful to alter or remove any structure or BMP required by an approved Stormwater Management Plan without the written approval of the Municipality.

   c. Determinations regarding an activity's compliance with the Stormwater Management Plan will be made by the Municipality.

   d. Whenever the Municipality finds that a person has violated a prohibition or failed to meet a requirement of this Ordinance, the Municipality may order compliance by written notice to the responsible person. Such notice may require without limitation:

      1) The performance of monitoring, analyses, and reporting.

      2) The elimination of prohibited connections or discharges.

      3) Cessation of any violating discharges, practices, or operations.

      4) The abatement or remediation of storm water pollution or contamination hazards and restoration of any affected property.

      5) Payment of a line to cover administrative and remediation costs.

      6) The implementation of storm water BMPs.

      7) Operation and maintenance of storm water BMPs.

   e. Such notification shall set forth the nature of the violation(s) and establish a time limit for correction of the violation(s). Said notice may further advise that, if applicable, should the violator fail to take the required action within the established deadline, the work will be done by the Municipality or designee and the expense thereof shall be charged to the violator. Said notice shall also include the violator's appeal rights.

   f. Failure to comply within the time specified shall also subject such person to the penalty provisions of this Ordinance. All such penalties shall be deemed cumulative and shall not prevent the Municipality from pursuing any and all other remedies available in law or equity.

4. Suspension and Revocation

   a. Any approval for a Regulated Activity issued may be suspended or revoked, in whole or in part, by the Municipality for:

      1) Non-compliance with or failure to implement any provision of the approval.

      2) A violation of any provision of this Ordinance or any other applicable law, Ordinance, rule or regulation relating to the Regulated Activity.

      3) The creation of any condition or the commission of any act during the Regulated Activity which constitutes or creates a hazard or nuisance, pollution, or which endangers the life or property of others.

   b. A suspended approval may be reinstated by the Municipality when:

      1) The Municipality has inspected and approved the corrections to the violations that caused the suspension.

      2) The Municipality is satisfied that the violation bas been corrected.

   c. An approval that has been revoked by the Municipality cannot be reinstated. The Applicant may apply for a new approval under the provisions of this Ordinance.

   d. Prior to revocation or suspension of a permit, if there is no immediate danger to life, public health, or property the Municipality may notify the land owner/ developer to discuss the non-compliance.

B. Penalties

   1. Anyone violating the provisions of this Ordinance shall be guilty of a misdemeanor offense, and upon conviction shall be subject to a fine of not more than $1000.00 for each violation, recoverable with costs, or imprisonment of not more than 30 days, or both. Each day that the violation continues shall be a separate offense and penalties shall be cumulative.

   2. In addition, the Municipality may institute injunctive, mandamus or any other appropriate action or proceeding at law or in equity for the enforcement of this Ordinance. Any court of competent jurisdiction shall have the right to issue restraining orders, temporary or permanent injunctions, mandamus or other appropriate forms of remedy or relief.

C. Appeals

   1. Any person aggrieved by any decision of the Municipality, relevant to the provisions of this Ordinance, may appeal to the Monroeville Municipal Council within thirty (30) days of the Municipality's decision.

ARTICLE III - STORMWATER MANAGEMENT PLAN

003-1. STORMWATER MANAGEMENT PLAN REQUIREMENTS

Appropriate sections from the Municipality's Subdivision and Land Development Ordinance, and other applicable local ordinances, shall be followed in preparing the SWM Site Plans.

The Municipality shall not approve any SWM Site Plan that is deficient in meeting the requirements of this Ordinance. At its sole discretion and in accordance with this Article, when a SWM Site Plan is found to be deficient, the Municipality may either disapprove the submission and require a resubmission, or in the case of minor deficiencies, the Municipality may accept submission of modifications.

The following items shall be included in the SWM Site Plan:

A. Provisions for permanent access or maintenance easements for all physical SWM BMPs, such as ponds and infiltration structures, as necessary to implement the Operation and Maintenance (O&M) Plan.

B. The following signature block for the Municipality:

"(Municipal official or Designated Plan Reviewer (Section **§ 006-2**)), on this date (Signature date), has reviewed and hereby certifies that the SWM Site Plan meets all design standards and criteria of the Municipal Ordinance No. 2541, except where waivers have been granted as noted on the Plan. The review is based on a survey and plan prepared by others and assumes that all information is correct and valid as submitted."

C. The overall stormwater management concept for the project.

D. For all Regulated Activities not eligible for exemptions pursuant to **§ 002.5** of this Ordinance, the Applicant shall submit a Stormwater Management Plan and report prepared and sealed by a Professional Engineer or Landscape Architect licensed in the Commonwealth of Pennsylvania, which shall contain, but not be limited to, the following. Final copies of all plans, specifications and reports shall also be submitted to the Municipality in Adobe PDF format.

1. A Location Map of the watershed within which the project is proposed (a United States Geological Survey quadrangle map is sufficient) with existing and proposed development areas shown.
2. Maps and drawings, in accordance with the Municipality's Subdivision and Land Development Ordinance, showing all existing natural and constructed drainage facilities affecting the subject property.
3. Hydrologic (watershed) and water feature boundaries, including all areas flowing to the proposed project, existing streams (including first order and intermittent streams), springs, lakes, ponds, or other bodies of water within the project area.

4. Existing and proposed topographical information with elevations to verify the location of all ridges, streams, etc. Two (2)-foot contour intervals are required within the project's boundaries and for proposed offsite improvements; for slopes greater than fifteen percent (15%), five (5)-foot contours are acceptable.

5. Locations of existing standing water, areas of heavy seepage, springs, wetlands, streams, and hydrologically sensitive areas. The Chapter 93 Water Quality Standards use designation must also be provided on the plan.

6. Soils data with Hydrologic Soil Group, estimated permeability in inches per hour, and location and results of all soil tests and borings (if needed).

7. 100-year flood elevations for any floodplains on or within one hundred (l00) feet of the property.

8. Existing and proposed ground cover and land use. The total area and percent impervious cover shall be noted.

9. A wetland delineation report for the project site with a location map identifying wetland areas if necessary.

10. A plan of the proposed stormwater drainage system, including runoff calculations, stormwater management practices to be applied both during and after development, and the expected project time schedule.

11. The design computations for all proposed stormwater drainage systems, including storm sewer pipes, inlets, runoff control measures and culverts, drainage channels, and other features, facilities, and stormwater management practices.

12. A grading plan, including all areas of disturbance of the subject activity. The total area of disturbance shall be noted in square feet and acres. Topographic contours showing the existing and proposed final contours at an interval of two (2) feet; in areas having slope of greater than 15% a five (5) contour interval may be used.

13. A plan of the erosion and sedimentation procedures to be utilized, as prepared for and submitted to the approval authority.

14. The effect of runoff volumes and peak flows on adjacent properties and on any other stormwater collection system that may receive runoff from the project site and specifics of how erosion and flooding impacts to adjacent properties will be avoided or otherwise mitigated.

15. An Operation and Maintenance Plan consistent with the requirements of Article V of this Ordinance. The Plan should clearly explain how the proposed facilities operate and the Junctions they serve.

16. The name of the development, the name and address of the property owner and Applicant, and the name and address of the individual or firm preparing the plan.

17. A north arrow, submission date, graphic scale and revision dates as applicable shall be included on each page of all plans submitted.

18. Complete delineation of the flow paths used for calculating the time of concentration for the pre-developed and post-developed conditions.

19. Construction details sufficient to completely express the intended stormwater design components consistent with this Ordinance.

20. A listing of all permits required for the site providing the status of the permit application(s) and approval(s).

21. For any sites with existing stormwater management facilities or BMPs, the nature and condition of such facilities must be discussed in the Stormwater Management Plan narrative. If the existing facilities are proposed to remain intact and function as all or part of the facilities required for the project, the following information must be included in the Stormwater Management Plan:

    a. Inspections and/or certifications that the existing facilities are sized and capable of operating as required, including:

        1) Surveys of all pertinent elevations associated with the facility, including but not limited to inverts or channel bottoms, outlet controls, embankments, and receiving streams or structures;

        2) Internal conditions of all underground pipes and structures, including the use of photographs or video for documentation;

        3) Design calculations from the facilities' original construction, if available;

        4) Operation and maintenance records, if available.

    b. Plans and descriptions of any alterations proposed to the facilities.

    c. Runoff and design calculations.

22. A post-development drainage map delineating the area tributary to each receiving feature or facility (inlet, BMP, swale, roadway, etc.).

23. Subsurface facilities hydraulically connected to a PennDOT drainage facility, and/or new or modified subsurface stormwater facilities in a PennDOT right-of-way draining the highway and/or adjacent properties shall be identified. The long-term operation and maintenance of such facilities shall be in conformance with the current requirements of PennDOT's Highway Occupancy Permit program.

24. A justification, acceptable to the Designated Plan Reviewer, must be included in the SWM Site Plan if BMPs other than green infrastructure methods and LID practices are proposed to achieve the volume, rate, and water quality controls under this Ordinance.

003-2 MASTER STORMWATER MANAGEMENT MITIGATION PLANS

A. Purpose - On large previously developed the Municipality may permit or require a Master Stormwater Management Mitigation Plan (MSMMP) to be developed for the entire site or project which will be implemented incrementally by a series of more detailed stormwater management plans and designs developed in accordance with the MSMMP.

B. Goals -- The intent of the MSMMP is to guide the development or redevelopment of a large

project or site including the retrofitting of stormwater management by managing the site as a whole instead of as individually distinct pieces. The overriding goals of the MSMMP are:

1. To limit the peak post development stormwater runoff rates as specified in Article IV of this Ordinance,

2. To manage and treat the runoff volume difference for the 2-year/ 24-hour storm as specified in Article IV of this Ordinance.

C. Criteria

1. In order to qualify for a MSMMP the site or project must include more than one principal structure as defined by the Municipality's Zoning Ordinance and exceed 10 acres at the date of application.

2. Because sites and projects can cross property lines the Municipal Engineer will determine what area the site or project encompasses.

3. The Municipal Engineer may require or permit projects outside of these criteria to employ a MSMMP or may deny use of a MSMMP to projects that meet the criteria based on the Municipal Engineer's professional judgment.

D. Master Stormwater Management Mitigation Plan Requirements

1. The MSMMP must be prepared and sealed by a Professional Engineer or Landscape Architect licensed in the Commonwealth of Pennsylvania.

2. The predevelopment assumptions for the MSMMP will be those which exist at the date of the last approved stormwater management plan for the site should one exist otherwise it will be that which exists at the date of application. Said predevelopment assumptions shall remain unchanged for the MSMMP throughout the life of the MSMMP.

3. The Municipal Engineer must approve the geographical scope of the plan due to the fact that projects or developments, whether existing or proposed, can spread across multiple properties or can encompass relatively small portions of a large property.

4. The MSMMP shall contain the following:

a. The name of the development, the name and address of the property owner and Applicant, and the name and address of the individual or firm preparing the plan.

b. A north arrow, submission date, graphic scale and revision dates as applicable shall be included on each page of all plans submitted.

c. A Location Map of the watershed within which the project is proposed (a United States Geological Survey quadrangle map is sufficient) with the project area shown.

d. Maps and drawings, in accordance with the Municipality's Subdivision and Land Development Ordinance, showing all existing natural and constructed drainage and stormwater management facilities affecting the subject property.

e. Hydrologic (watershed) and water feature boundaries, including all areas flowing to the project, existing streams (including first order and intermittent streams), springs, lakes, ponds, or other bodies of water within the project area.

f. Existing topographical information with elevations to verify the location of all ridges, streams, etc. Two (2)-foot contour intervals are required within the project's boundaries and for proposed offsite improvements; for slopes greater than fifteen percent (15%), five (5)-foot contours are acceptable.

g. Locations of existing standing water, areas of heavy seepage, springs, wetlands, streams, and hydrologically sensitive areas. The Chapter 93 Water Quality Standards use designation must also be provided on the plan.

h. Soils data with Hydrologic Soil Group, estimated permeability in inches per hour, and location and results of all soil tests and borings (if needed).

i. 100-year flood elevations for any floodplains on or within one hundred (100) feet of the property.

j. Existing ground cover and land use. The total area and percent impervious cover shall be noted.

k. A wetland delineation report for the project site with a location map identifying wetland areas if necessary.

l. Design calculations and maps used to calculate the predevelopment peak runoff rates from the site in accordance with Article IV of this Ordinance.

m. Design calculations and maps used to calculate the 2-year/ 24-hour design storm runoff volume to be managed in accordance with Article IV of this Ordinance.

n. Identification of any areas on-site currently negatively impacted by stormwater runoff (such as erosion gullies below outfalls, displaced erosion protection, areas of frequent flooding or ponding, malfunctioning detention facilities or BMP's, etc.) as well as a plan to remedy those issues.

o. Complete delineation of the flow paths used for calculating the time of concentration for the pre-developed conditions.

p. For any sites with existing stormwater management facilities or BMPs, the nature and condition of such facilities must be discussed in the MSMMP narrative. If the existing facilities are proposed to remain intact and function as all or part of the facilities required for the project, the following information must be included in the MSMMP:

   1) Inspections and/or certifications that the existing facilities are sized and capable of operating as required, including:

      a) Surveys of all pertinent elevations associated with the facility, including but not limited to inverts or channel bottoms, outlet controls, embankments, and receiving streams or structures;

      b) Internal conditions of all underground pipes and structures, including the use of photographs or video for documentation;

      c) Design calculations from the facilities' original construction, if available;

      d) Operation and maintenance records, if available.

2) Plans and descriptions of any alterations proposed to the facilities.

3) Runoff and design calculations.

q. Phasing- The maximum number of phases the MSMMP can encompass shall be determined by calculating the greater of the following criteria (based upon the existing conditions of the parcel at the time of initial MSMMP application) not to exceed 8 phases nor be less than 2 phases:

1) The total number of individually lease-able retail tenant spaces on the parcel with a gross floor area exceeding 20,000 square feet as defined by the Municipality's Zoning Ordinance. Or

2) The total number of principal structures on the parcel as defined by the Municipality's Zoning Ordinance.

5. Master Stormwater Management Mitigation Plan Implementation

a. The MSMMP shall be designed to reduce the site peak runoff rates to the prescribed predevelopment rates and mitigate and treat the 2-year/24-hour runoff volume difference via a prescribed number of phases as previously defined with each phase making either equal progress toward those goals or by "front-loading" the phases if desired so that progress is maximized in the first phase and diminishes through later phases.

b. Each phase shall make the required progress towards meeting the overall site goals listed in item **§003-2.D.5.a**. while also accounting for its own individual impacts.

c. Phases shall be triggered by initiation of a Regulated Activity or elapsing of 5 years since the commencement of the prior phased.

d. Each phase shall develop a Stormwater Management Plan in accordance with §003-1 that must show clearly how the phase will mitigate the impacts of the changes proposed in the phase as well as how the phase will meet its incremental progress goals for the overall site in accordance with the MSMMP.

6. Master Storm water Management Mitigation Plan Lifecycle

a. The MSMMP shall be in full force until its prescribed number of phases have been completed.

b. The MSMMP shall remain in full force regardless of change in ownership of the involved property (ies) or facilities. The landowner shall record in the office of the Allegheny County Department of Real Estate a declaration in a form satisfactory to the Municipal Solicitor setting forth the responsibilities of the landowner to complete the MSMMP. The declaration shall be perfected to run with the land and be binding upon the landowner and any successors in interest until the MSMMP's completion.

c. Should the Municipality's stormwater management regulations or other applicable regulations change while the MSMMP is in effect the MSMMP must be revised so that only the remaining phases must comply with the changes.

ARTICLE IV- PERMANENT STORMWATER MANAGEMENT DESIGN STANDARDS

004-1. DESIGN GOALS, PRINCIPLES, AND STANDARDS

A. Design Goals

1. Achieve post-development hydrologic conditions that are consistent with the requirements of this Ordinance. The design goals are:

   a. Minimize the volume of runoff that must be collected, conveyed, treated and released by stormwater management facilities;

   b. Maintain the natural infiltration process and rate, and infiltrate runoff at its source when appropriate;

   c. Remove and/or treat pollutants at the source or during conveyance;

   d. Provide for peak flow attenuation, as needed;

   c. Attenuate runoff to protect the channel of the receiving stream;

   f. Conform to all requirements of the Turtle Creek Watershed Act 167 Storm Water Management Plan. The location and boundaries of all subareas are shown on the current "Assigned Release Rate Percentages Map", which is hereby adopted as a part of this Ordinance.

B. General Principles

1. The following general principles apply to all applicable activities pursuant to § 002-4.

   a. Incorporate design practices to minimize the amount of storm water generated on a site. Encourage the disconnection of impervious land cover. Maximize the use of pervious areas for stormwater treatment and on-site rainfall infiltration.

   b. Infiltration of surface water runoff at its source can be a mechanism for stormwater management based on infiltration testing results. Infiltration practices include, but are not limited to, those referenced in § 004-3 and as outlined in the publications listed in § 004-3. Infiltration practices shall adhere to the following criteria:

      1) In choosing methods of infiltration, preference shall be given to a combination of surface and subsurface infiltration methods.

      2) Applicants shall first consider minimum disturbance/minimum maintenance techniques combined with site grading that distributes runoff to reduce concentration. Next, Applicants shall consider depression areas combined with subsurface infiltration practices followed by other subsurface measures, including, but not limited to, pervious pavers and perforated pipe storage.

      3) The use of multiple infiltration features and facilities that provide for the following is encouraged:

         a) Discourage concentration of flows,

b) Encourage disconnection of flows,

c) Infiltrate as close to the source of runoff as possible, and

d) Reduce visual impact.

4) Where site constraints preclude achieving the required infiltration volume, additional Conservation Design practices and alternative stormwater management practices should be implemented to reduce to the maximum extent practicable the total volume of stormwater released to streams. Applicant shall follow the storm water runoff hierarchy of§ 004-3.

5) Infiltration areas should be designed to maintain any broad and even infiltration pattern which existed prior to earth disturbance. Such facilities should use the natural topography and vegetation in order to blend in with the site. Infiltration designs which do not provide this may be used if the Applicant demonstrates to the Municipality's satisfaction that alternative approaches would be more effective, more harmonious with their existing environment and as easily maintained.

6) Surface stormwater infiltration facilities should be as shallow as possible while still achieving the requirements of this Ordinance.

2. Water quality improvements shall also be provided for drainage areas not otherwise addressed by infiltration practices either at the source of runoff and/or during conveyance away from the source of runoff.

3. To reduce the need for large retention and/or detention basins, innovative stormwater management practices located close to the source of runoff generation shall be considered, including rooftop storage, open vegetated channels, bioretention, and infiltration trenches.

4. All existing channels, drainage ways, swales, natural streams and other surface water concentrations shall be considered and where possible incorporated into design decisions.

C. Minimum Performance Criteria

1. The following minimum performance standards shall apply to all applicable activities, pursuant to § 002-4.

a. Water quality treatment of stormwater runoff shall be provided for all discharges prior to release to a receiving water body.

b. The Municipality requires regulated activities to provide a sediment reduction of a minimum of 20% for the project site. Sediment loading calculations and BMP effectiveness values shall be determined using methodologies acceptable to PADEP and to the Municipal Engineer. Applicants are encouraged to exceed the 20% minimum reduction and may choose to take advantage of the Municipality's "Sediment Reduction Credit" towards reduction of their Pollution Control & Flood Reduction Fee in accordance with the Pollution Control & Flood Reduction Fee Credit Manual. The Post Construction Stormwater Management Report shall include a specific section entitled "Sediment Reduction" which shall provide sediment loading calculations for existing conditions, a narrative of sediment loading reduction methods, and sediment loading calculations for the proposed conditions.

c. Water quality management shall be provided through the use of structural and/or non-structural stormwater management practices. Water quality stormwater management practices shall be designed to reduce or eliminate solids, sediment, nutrients, and other potential pollutants from leaving the site. It is presumed that a stormwater management practice complies with this requirement if it is:

1) Designed according to the specific performance criteria outlined in § 002-6.

2) Constructed in accordance with all permits and approved plans and specifications; and

3) Maintained per an approved Operation and Maintenance Plan or Agreement.

c. Stormwater discharges from land uses or activities with higher potential for pollutant loadings ("hot spots") may require the use of specific structural stormwater management and pollution prevention practices. In addition, stormwater from a hot spot land use shall be provided with proper pretreatment prior to infiltration. For the purpose of this Ordinance, the sites/facilities listed below, are considered hot spots.

d. Certain industrial sites 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. Industrial sites storing significant quantities of chemicals/wastes should also prepare a Prevention Plan. Sites that are required by EPA to prepare a Plan include, but are not limited to:

1) Vehicle salvage yards and recycling facilities;

2) Vehicle and equipment cleaning facilities;

3) Fleet storage areas for buses, trucks etc.;

4) Marinas (service and maintenance);

5) Facilities that generate or store hazardous materials;

6) Metal scrap yards and salvage yards;

7) Light manufacturing, including food processing, printing and publishing, electronic/electrical equipment manufacturing, and public warehousing/storage.

e. Conveyance structures/channels shall be designed and adequately sized to protect the properties receiving runoff from impacts of flooding and erosion. Where necessary, and to the maximum extent permitted under the Municipalities Planning Code and Act 167, or any amendments thereto, drainage easements from adjoining properties shall be obtained to ensure the drainage way and the property and shall also establish the operation and maintenance requirements for the drainage way.

f. All stormwater management practices shall have an Operation and Maintenance Plan pursuant to § 005-3 of this Ordinance, and if to be privately owned, an enforceable Operation and Maintenance Agreement per § 005-4 of this Ordinance to ensure the system functions as designed and to provide remedies for system failure.

g. Stormwater runoff discharged directly into a jurisdictional wetland, or waters of the United States and their adjacent wetlands, shall be treated by an approved stormwater management practice prior to release. This flow may not be used to meet the minimum calculated design requirements for stormwater management or storm water runoff quality treatment, except when used as part of a treatment train that incorporates a portion of the outer zone (filter strip) of the wetland's riparian buffer as a stormwater outfall.

   1) The discharge velocity from the terminal end of a pipe or associated energy dissipation practice shall not exceed two feet per second for the two-year frequency storm event.

   2) Where such a management strategy is used, all feasible methods shall be used to convert concentrated flow to uniform, shallow sheet flow before entering the outer zone of the wetland's riparian buffer.

   3) It shall be demonstrated that such an approach will not cause erosion.

2. The following minimum performance standards shall apply to all applicable Regulated Activities, pursuant to **§ 002-4.**

   a. Water quality improvements shall be provided at the source of runoff and/or during conveyance away from the source of runoff. Stormwater quality management practices shall be designed to capture and treat the storm water runoff volume difference between pre and post development generated by the 2-year/ 24- hour rainfall event. Refer to **§ 004-3.** for Water Quality Volume design standards and assumptions.

   b. For areas covered by a release rate map from an approved Act 167 Stormwater management Plan:

      1) The post development peak discharge rate shall not exceed the predevelopment peak discharge rate multiplied by the "subbasin release rate percentage" for the 1-year, 2- year, 5-year, 10-year, 25-year, 50-year, and 100-year 24-hour storm events pursuant to the predevelopment cover assumption described in **§ 004-2.** Refer to the current release rate percentage information.

c. Facilities shall be designed to attenuate the runoff volume increase for the 2-year/ 24-hour storm event for at least 24 hours.

d. Stormwater shall be infiltrated and/or discharged within the same drainage area of the stream receiving the runoff from the development site prior to development.

3. The green infrastructure and low impact development practices provided in the BMP Manual shall be utilized for all regulated activities wherever possible. Water volume controls shall be implemented using the Design Storm Method in Subsection A or the Simplified Method in Subsection B below. Water volume controls shall be implemented using the Design Storm Method in Subsection A or the Simplified Method in Subsection B below, or alternative design criteria as allowed by PA Code Title 25, Chapter 102.

a. The Design Storm Method (CG-1 in the BMP Manual) is applicable as a method to any size of regulated activity. This method requires detailed modeling based on site conditions. The following shall be incorporated into the CG-1 method:

1) Do not increase the post-development total runoff volume for all storms equal to or less than the 2-year 24-hour duration precipitation.

2) At least the first one inch of runoff from the net increase in impervious surfaces shall be permanently removed from the runoff flow, i.e., it shall not be released into the surface waters of this Commonwealth. Removal options include reuse, evaporation, transpiration, and infiltration. If the developer provides justification that the listed removal options are not feasible, and the Designated Plan Reviewer agrees, runoff shall be detained in a facility designed for a 24 to 72 hour dewatering time in an area with a dedicated stormwater system (not contributory to a combined sewer system) and shall be detained in a facility designed for a 72 hour dewatering time in an area contributory to a combined sewer system before discharge to local stormwater systems or the environment.

3) For modeling purposes:

a) Existing (predevelopment) non-forested pervious areas must be considered meadow in good condition.

b) 20% of existing impervious area, when present, shall be considered meadow in good condition in the model for existing conditions.

b. The Simplified Method (CG-2 in the BMP Manual) provided below 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 one acre or for projects that require design of stormwater storage facilities. For new impervious surfaces:

1) Stormwater facilities shall capture at least the first two (2) inches of runoff from the net increase in impervious surfaces.

2) At least the first one inch of runoff from the net increase in impervious surfaces shall be permanently removed from the runoff flow, i.e., it shall not be released into the surface waters of this Commonwealth. Removal options include reuse, evaporation, transpiration, and infiltration. If the developer provides justification that the listed removal options are not feasible, and the Designated Plan Reviewer agrees, runoff shall be detained in a facility designed for a 24 hour dewatering time in an area with a dedicated stormwater system (not contributory to a combined sewer system) and shall be detained in a facility designed for a 72 hour dewatering time in an area contributory to a combined sewer system before discharge to local stormwater systems or the environment.

3) 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.

4) This method is exempt from the requirements of Section **§ 004-1.2**. Stormwater Runoff Calculation Criteria

004-2. STORMWATER RUNOFF CALCULATION CRITERIA

A. Determination of runoff and peak flows shall be consistent with the following stormwater calculation methods:

1. The following design storms shall be used for analysis of the pre and post development conditions. These values are applicable to the Soil-Cover-Complex Method:

Table A

DESIGN RAINFALL DEPTHS

Return Period (years)	24 Hour Storm (inches)
1	2.00
2	2.50
10	3.61
25	4.31
100	5.71

2. The precipitation values for each frequency storm listed above were abstracted from the precipitation frequency estimates developed by the National Oceanic and Atmospheric Administration as set forth in NOAA Atlas 14, Volume 2 (NOAA June 2004). The NOAA data are available from the Hydrometeorological Design Studies Center of the National Weather Service.

3. The following assumptions shall be used for runoff calculations and modeling purposes:

a. The ground cover used as the **predevelopment** assumption for runoff calculations shall be as follows:

1) Predevelopment conditions shall be those which exist on the date of the Application.

2) Wooded sites shall use a ground cover of "woodland" in good condition (see Curve Number Table).

3) Agricultural sites shall use a ground cover of "pasture" in good condition (see Curve Number Table).

4) All other pervious portions of a site shall use a ground cover of "meadow" in good condition (see Curve Number Table).

5) All watershed area(s) contributing to the point of interest including off-site area shall be considered.

6) If there are existing impervious areas on the site, the predevelopment calculations shall be based on the requirement that 20% of the existing impervious area must be considered as "meadow" in good condition. This requirement is only applicable to calculation of the 2-year/24-hour attenuation and water quality treatment volume and does not apply to calculation of predevelopment peak runoff rates.

7) If there are existing stormwater management facilities on the site that the Applicant is proposing to use for the project, the predevelopment calculations shall include the impact of such facilities, along with the requirement that the Applicant must certify the condition and operation of the existing facilities as discussed in **§ 003-I.D** of this Ordinance.

b. The runoff curve numbers listed in the table below shall be used in developing the runoff calculations for the ground covers noted above. These values are referenced from the Urban Hydrology for Small Watersheds Technical Release No. 55 (USDA, 1986). Coefficients for equivalent ground cover conditions shall be used if a runoff method other than the Soil Cover Complex Method is used.

Table B

RUNOFF CURVE NUMBERS

Ground Cover	Curve Numbers
Woodland	70
Meadow	71
Pasture	74
Lawn	74

1) Impervious cover shall have a curve number of 98.

2) Gravel pavement shall have a curve number of 89.

4. Average antecedent moisture conditions, or AMC II, shall be used (for the Soil Cover Complex Method, for example, TR-55, TR-20).

5. A type II distribution storm shall be used (for the Soil Cover Complex Method, for example, TR-55, TR-20).

6. For time of concentration calculations, sheet flow lengths shall not exceed 1 00 feet and shallow concentrated flow lengths shall not exceed 1000 feet.

B. Note that when TR-55 is used, calculations must be performed on a detailed small sub- area basis.

C. The design professional's selection of a specific runoff calculation method shall be based on the suitability of the method for the given project site conditions with due consideration to the limitations of the method chosen. Table C summarizes the computational methods available.

I. The Municipal Engineer reserves the right to stipulate the runoff calculation method appropriate for any project site.

D. The release rate percentage defines the percentage of the predevelopment peak rate of runoff that can be discharged from the site after development. It applies to all Regulated Activities within a designated subarea. The subareas and required release rate percentages are delineated on the current "Release Rate Percentage Map".

Table C

ACCEPTABLE COMPUTATION METHODOLOGIES FOR STORMWATER MANAGEMENT PLANS

METHOD	SOURCE	APPLICABILITY
TR-20 or Commercial Package based on TR-20	USDA-NRCS	When use of full model is desirable or necessary
TR-55 or Commercial Package based on TR-55	USDA-NRCS	Applicable for plans within the model's limitations
HEC-HMS	U.S. Army Corps of Engineers	When full model is desirable or necessary
Modified Rational Method or Commercial package based on this Method	Emil Kuiching (1889)	Sites less than 2 acres
Small Storm Hydrology Method (as included in SLAMM)	PV & Associates, or the website www.winslamm.com	Calculation of runoff volume from urban and suburban areas

E. The Modified Rational Method analysis may be used for drainage areas smaller than two (2) acres when permitted by the Municipal Engineer. The term "Modified Rational Method" used herein refers to a procedure for manipulation of the basic rational method techniques to reflect the fact that storms with durations greater than the normal time of concentration for a basin will result in a larger volume of runoff even though the peak discharge is reduced. Information on the Modified Rational Method is presented in the Recommended Hydrologic Procedures for Computing Urban Runoff from Small Watersheds in Pennsylvania (PADEP, 1982).

F. The Rational Method (Q = CIA) shall be used for calculations of the peak rate of runoff for the design of storm sewers and drainage swales but not for the design of stormwater management facilities where a full hydrograph is needed. The equation representing the Rational Method is comprised of the following (in English units):

Q = Peak f1ow rate, cubic feet per second (CFS)

C = Runoff coefficient, dependent on land use/cover

I = Design rainfall intensity, inches per hour

A = Drainage area, acres

G. Rainfall intensities used for the Rational and Modified Rational Methods shall be based on the precipitation frequency estimates developed by the National Oceanic and Atmospheric Administration as set forth in NOAA Atlas 14.

H. Runoff characteristics of off-site areas that drain through a proposed development shall be considered and be based on the existing conditions in the off-site area.

004-3. STANDARDS FOR STORMWATER MANAGEMENT PRACTICES

A. The Pennsylvania Stormwater Best Management Practices Manual shall serve as a guide for the design of stormwater management practices. Additional design guidance may be obtained from other related sources, including the 2000 Maryland Stormwater Design Manual Volumes I and II (MDE, 2000), Design of Stormwater Filtering Systems (CWP, 1996), and the American Society of

Civil Engineers Manual and Report on Engineering Practice, No. 87, Urban Runoff Quality Management (ASCE, 1998) for the design of stormwater runoff quality control features for site development.

B. The municipality may, after consultation with DEP, approve measures for meeting the state water quality requirements other than those in this Ordinance, provided that they meet the minimum requirements of, and do not conflict with, state law including, but not limited to, the Clean Streams Law.

C. Pursuant to the design options recommended in the above documents, the following standards shall apply:

1. Extended Detention, Water Quality Volume, Infiltration & Nonstructural BMP Criteria

a. The following sizing criteria shall be followed at all sites required to meet the standards of this Ordinance.

1) Extended Detention

a) Detain the volume difference between the pre and post development 2- year, 24-hour design storm using the SCS Type II distribution. Provisions shall be made so that the volume takes a minimum of 24 hours to drain from the facility from a point where the maximum volume of water is captured or is infiltrated. (i.e., the maximum water surface elevation achieved in the facility). Release of water can begin at the start of the storm (i.e., the invert of the water quality orifice is at the invert of the facility). The design of the facility shall consider and minimize the chances of clogging and sedimentation potential.

b) All subsequent orifices for the 2, 10, 25, and 100-year storm events shall be placed above the maximum water surface elevation of the extended detention.

c) Flow from off-site areas must be considered as pass-through flow if it is conveyed through the BMP and should be modeled as "present condition" for the two year storm event.

2) Water Quality Volume

a) Treatment of the Water Quality Volume (WQv) of stormwater prior to its release to receiving waters or water bodies shall be provided for all Regulated Activities. The WQv equals the extended detention volume.

b) Drainage areas having no impervious cover and no proposed disturbance during development may be excluded from the WQv calculations. However, designers are encouraged to incorporate water quality treatment practices for these areas.

c) Stormwater Quality Treatment: The final WQv shall be treated by an acceptable stormwater management practice(s) from those described in this Section or as approved by the Municipality.

d) Infiltration is considered an acceptable method of satisfying part or all of the Water Quality Volume, if site testing results indicate appropriate capacity.

e) As a basis for design, the following assumptions may be made:

- Multiple Drainage Areas: When a project contains or is divided by multiple drainage areas, the WQv volume shall be addressed for each drainage area.
- Offsite Drainage Areas: The WQv shall be based on the impervious cover of the proposed site. Offsite existing impervious areas may be excluded from the calculation of the water quality volume requirements.

3) Infiltration Volume

a) Where possible, all of the Water Quality Volume should be treated using infiltration BMPs.

- Infiltrated volume may be subtracted from the total site WQv.
- Infiltration should not be considered for sites or areas of sites that have activities that may allow pollution to be infiltrated. For example the use of infiltration for the runoff of a service station's paved lot would not be appropriate, although roof water from the service station may be infiltrated.
- Infiltration should only be used when in the opinion of a professional engineer it will not contribute to slope instability or cause seepage problems into basements or developed down- gradient areas.
- All infiltration facilities shall be set back at least fifteen (15) feet from all structures with sub-grade elements (e.g., basements, foundation walls).

D. Stormwater Infiltration Practices

1. In selecting the appropriate infiltration BMPs, the Applicant shall consider the following:
   a. Permeability and infiltration rate of the site soils.
   b. Slope and depth to bedrock.
   c. Seasonal high water table.
   d. Proximity to building foundations and well heads.
   e. Erodibility of soils.
   f. Land availability and topography.
   g. Slope stability.
   h. Effects on nearby properties and structures.
2. A detailed soils evaluation of the project site shall be performed to determine the suitability of infiltration BMPs. The evaluation shall be performed by a qualified professional. The general process for designing the infiltration BMP shall be:
   a. Provide field testing data to determine appropriate percolation rate and/or hydraulic connectivity.

b. Design infiltration BMPs for required stormwater volume based on field- determined capacity at the level of the proposed infiltration surface.

3. Soil characteristics, as subject to the specific considerations below:
   a. Low-erodibility factors ("K" factors) are preferred for the construction of basins.
   b. There must be a minimum depth of 48 inches between the bottom of any facility and the seasonal high water table and/or bedrock (limiting zones).
   c. Infiltration BMPs receiving only roof runoff shall be placed in soils having a minimum depth of 24 inches between the bottom of the facility and the limiting zone.

a. There must be an infiltration and/or percolation rate sufficient to accept the additional stormwater load, and to drain completely as determined by field tests.

b. The infiltration system shall have positive overflow controls to prevent storage within 1 foot of the finished surface or grade.

c. Infiltration rates shall not be used in computing the storage volume of the infiltration system.

d. Surface inflows shall be designed to prevent direct discharge of sediment into the infiltration system.

e. Any infiltration BMP shall be capable of completely infiltrating the impounded water within 48 hours. The 48 hour period is to be measured from the end of the 24 hour design storm.

5. The Municipality may require additional analyses for stormwater management facilities proposed for susceptible areas such as:
   a. Strip mines.
   b. Storage areas for salt, chloride, other materials for winter deicing.
   c. Unstable Slopes.

6. During land disturbance, runoff shall be controlled prior to entering any proposed infiltration area. Areas proposed for infiltration BMPs shall also be protected from sedimentation and compaction during the construction phase.

7. Infiltration BMPs shall not be constructed nor receive runoff until the entire contributory drainage area to the infiltration BMP has received final stabilization.

f. Acceptable infiltration facilities include, but are not limited to: filter strips or stormwater filtering systems (bioretention facilities), open vegetated channels (dry swales and wet swales), retention basins, wet extended detention ponds, riparian

corridor management, riparian forested buffers, and rooftop runoff management systems.

g. 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.

10. The Applicant shall propose the distance infiltration facilities shall be set back from all structures with sub-grade elements (e.g., basements, foundation walls), subject to review by the Municipal Engineer.

11. All infiltration facilities that serve more than one (1) lot and are considered a common facility shall have a drainage easement. The easement shall provide to the Municipality the right of access.

h. If detailed infiltration study is required, the following guidance shall be followed:

a. Soil evaluations shall be performed to determine the feasibility and extent to which infiltration systems can be used. The evaluation shall be performed by a qualified, Professional Geologist, Geotechnical/Civil Engineer or Soil Scientist registered in the Commonwealth of Pennsylvania. The testing and evaluation should be completed at the preliminary design stage.

b. Use of stormwater management facilities to retain stormwater for infiltration should be applied to all areas where the soils evaluation indicates favorable conditions. Areas generally not favorable for infiltration shall still be provided with an appropriate water quality practice.

c. Soil infiltration tests shall be performed to an equivalent depth or elevation of the bottom of the proposed infiltration areas. These tests shall follow the procedures of percolation test holes as established by the Allegheny County Health Department (ACHD) for on-lot septic systems.

1) The testing shall include a test pit and percolation test holes. The test pit shall be excavated to a depth so that the presence or absence of bedrock and/or seasonal high water table can be determined. A soil log describing the soils present in each test pit shall be completed.

2) All test holes used for evaluating the percolation rate shall be pre-soaked in accordance with the procedures established by the ACHD.

3) The location and number of test pits and percolation holes shall be determined based on the type(s) of stormwater management facilities being designed.

4) Acceptability of infiltration rates shall be based on sound engineering judgment and recommended design considerations described in the design manuals listed in the references or other source material acceptable to the Municipal Engineer.

13. The following design and construction standards shall be followed when planning and constructing infiltration BMPs.

a. The lowest elevation of the infiltration area shall be at least four (4) feet above the Seasonal High Water Table and bedrock.

i. Where roof drains are designed to discharge to infiltration facilities, they shall have appropriate measures to prevent clogging by unwanted debris such as silt, leaves and vegetation. Such measures shall include, but are not limited to, leaf traps, gutter guards and cleanouts.

j. All infiltration facilities shall have appropriate positive overflow controls to prevent storage within one (1) foot of the finished surface or grade, unless:

l) A specific amount of surface storage away from pedestrian and vehicular traffic is provided; and

k. Such areas infiltrate the stored volume within 48 hours after the end of the 24-hour design storm.

l. All infiltration facilities shall be designed to infiltrate the stored volume within 48 hours after the end of the 24-hour design storm.

m. All surface inflows shall be treated to prevent the direct discharge of sediment into the infiltration practice. No sand, salt or other particulate matter may be applied to a porous (pervious) surface for winter ice conditions.

n. During site construction, areas that are accidentally compacted or graded shall be remediated to restore soil composition and porosity. Adequate documentation to this effect shall be submitted for review by the Municipal Engineer.

g. 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 meet the specifications of PennDOT Publication 408, Section 735, Construction Class 1.

5) Perforated distribution pipes connected to centralized catch basins and/or manholes with the provision for the collection of debris shall be provided in all facilities. Where perforated pipes are used to distribute stormwater to the infiltration practice, stormwater shall be distributed uniformly throughout the entire seepage bed/trench or like facility.

o. Open Vegetated Channels

1. Open Vegetated Channels are conveyance systems that are engineered to also perform as water quality and infiltration facilities. Such systems can be used for the conveyance, retention, infiltration and filtration of stormwater runoff.

p. Open Vegetated Channels primarily serve a water quality function (WQv). They also have the potential to augment infiltration. Examples of such systems include, but are

not limited to: dry swales, wet swales, grass channels, and biofilters. Open Vegetated Channels are primarily applicable for land uses such as roads, highways, residential developments (dry swales only) and pervious areas.

4. Open Vegetated Channels shall be designed to meet the following minimum standards:

   a. The channel shall be designed to safely convey the twenty-five-year frequency storm event with a freeboard of at least twelve (12) inches.

   b. The peak velocity of the runoff from the twenty-five-year storm shall be non-erosive for the soil and ground cover provided in the channel.

   c. The longitudinal slope shall be no greater than four percent (4%).

   d. Channels shall be trapezoidal in cross section.

   e. Channels shall be designed with moderate side slopes of four (4) horizontal to one (1) vertical. Flatter side slopes may be necessary under certain circumstances.

   f. The maximum allowable ponding time in the channel shall be 48 hours.

   g. Channels (for example, dry swales) may require an under-drain in order to function and dewater.

   h. Channels shall be designed to temporarily store the WQv within the system for a maximum period of 48 hours and a minimum period of one (1) hour.

   i. The designer shall provide landscape specifications addressing the grass species, lining material, wetland plantings (if applicable), soil amendment and hydric conditions present along the channel.

   j. Accumulated sediment within the channel bottom shall be removed when twenty-five (25%) of the original WQv volume has been exceeded. The channel shall be provided with a permanent concrete cleanout marker that indicates the 25% level.

   k. Check dams along the channel length may be warranted.

   l. The bottom of the open vegetated channel shall be situated at least two (2) feet above the seasonal high water table.

4. Additional design information for Open Vegetated Channels is available in Design of Roadside Channels with Flexible Linings, I-IEC 15, FHWA, September 2005.

F. Detention and Retention Basins

1. Basin Definitions

   a. Detention Basins are designed to be empty during dry weather and drain completely within a certain time period following a storm.

   b. Retention Basins are designed to maintain a permanent pool of water and allow for the addition of the required stormwater management volume during a storm.

2. Retention Basin Requirements

   a. The retention basin shall be of sufficient size to maintain healthy pond ecology and avoid mosquitoes capable of carrying West Nile Virus and other diseases.

The Allegheny County Health Department, Pennsylvania Fish and Boat Commission, the Natural Resource Conservation Service, the Pennsylvania Extension Service, or other qualified professional shall be consulted during the design of these facilities in order to ensure the health of aquatic communities and minimize the risk of creating mosquito breeding areas.

b. A dewatering mechanism shall be designed to allow complete drainage of the pond for maintenance.

c. The design of a retention basin shall include the determination of the proposed site's ability to support a viable permanent pool. The design shall take into account such factors as the available rate and quality of dry weather inflow, the stormwater inflow, seasonal and longer-term variations in ground water table, and impacts of potential pollutant loadings.

d. Sediment storage volume equal to at least twenty percent (20%) of the volume of the permanent pool shall be provided.

e. Existing ponds or permanent pool basins can be used for storm water management provided that it can be demonstrated that the ponds are structurally sound and meet the design requirements herein.

   1) Runoff from the proposed Regulated Activity must, at a minimum, flow through a water quality BMP prior to entering an existing pond.

   2) The use of an existing pond or permanent pool basin will not be permitted where the water quality may be degraded by the addition of runoff from a Regulated Activity.

f. Retention basins shall be designed to provide a length-to-width ratio of at least 3L:1W as measured in plan view (for example, a ratio of 4L: 1W is too narrow).

g. The retention basin depth shall average three (3) to six (6) feet.

h. Fencing of the facility is not required if the interior slope of the pond is 4H:1V or flatter and the design also includes a five-foot (5') wide bench around the pond perimeter at an elevation 1foot below the permanent water surface elevation.

i. Any side slopes below the permanent water surface level shall not exceed 3H:1V. Interior side slopes above the permanent water surface level shall not exceed 3H:1V.

j. Inlet structures and outlet structures shall be separated to the greatest extent possible in order to maximize the flow path through the retention basin.

3. Detention Basin Requirement

   a. Ground Surface Detention Ponds

      1) The exterior shall be landscaped and vegetated in an aesthetically pleasing manner acceptable to the Municipality.

      2) The maximum inside side slopes shall not exceed two-and-one-half (2-1/2) horizontal to one (1) vertical (2-1/2H: 1V). The minimum required slope for the basin bottom is two percent (2%). A level bottom is acceptable, provided

the designer demonstrates to the Municipality's satisfaction that the basin bottom will be landscaped with appropriate wetland vegetation.

3) Inlet Structures. The inlet pipe invert into a basin shall be six (6) inches above the basin floor or lining so that the pipe can adequately drain after rainstorms. Inlets shall discharge into areas of the basin that slope toward the outlet structure.

4) Low Flow Channels. Low flow channels constructed of concrete or asphalt are not permitted. Where low flow channels are necessary, they shall be composed of a natural or bioengineered material. Low flow channels shall be designed to promote water quality and slow the rate of flow through the basin. Low flow channels may also be designed to infiltrate where practical.

b. Underground Detention Facilities

1) Pipes/tanks, etc. shall be a minimum of 48 inches in diameter, or provide an equivalent area if not circular, for case of inspection and maintenance.

2) Access shall be provided through means of an inlet or manhole at both the uppermost end of the facility and at the orifice plate or other outlet control. Manholes are preferred.

3) The designer is encouraged to include manholes at intersections of tank barrels and headers for ease of inspection and maintenance.

4) The total volume of an underground detention facility must be 110 % of the storage volume required for the 100-year storm, to allow for sediment accumulation.

5) Orifice plates shall be a minimum of ¼ inch thick painted steel and shall not be covered by trash racks or screens.

6) Orifice plates shall be bolted securely and watertight to the surrounding walls and floor.

4. Common Requirements for Detention and Retention Basins

a. Shared-storage facilities, which provide detention or retention of runoff for more than one development site within a single subarea may be considered and are encouraged. Such facilities shall meet the criteria contained in this section.

1) Runoff from the development sites involved shall be conveyed to the facility in a manner that avoids adverse impacts to channels and properties located between the development site and the shared storage facilities.

b. Where detention or retention basins are proposed, multiple use facilities, including recreational and open space uses, are encouraged wherever feasible, subject to the approval of the Municipality.

c. Outlet structures shall meet the following specifications:

1) Outlet pipes shall have an internal diameter of at least fifteen (15) inches and a minimum grade of one percent (1%) to minimize clogging and to facilitate cleaning and inspection.

2) Anti-seep collars shall be provided on all outlet pipes within a constructed berm.

3) All principal outlet structures shall be built using reinforced concrete with watertight construction joints.

4) The use of architecturally treated concrete, stucco, painted surface or stone facade treatment shall be considered for enhancing the outlet structure. Such facilities shall be both functional and harmonious in design with the surrounding environment.

5) Outlet pipes shall be constructed of reinforced concrete with rubber gaskets in conformance with AASHTO M 170, M198 and M207, or smooth interior HDPE pipe in conformance with AASHTO M252 or M294.

6) Energy dissipation facilities that convert concentrated flow to uniform shallow sheet now shall be used where appropriate.

7) Basin outlet structures shall have childproof non-clogging trash racks over all openings exceeding twelve (12) inches in diameter except those openings designed to carry perennial stream flows. The minimum size opening in the trash rack shall be 4 inches in each direction.

8) Anti-vortex devices, consisting of a thin vertical plate normal to the basin berm, shall be provided at the top of all circular risers or standpipes.

9) Buoyancy calculations shall be submitted to certify that the outlet structure will not become buoyant or to specify concrete footing dimensions required to counteract buoyancy. Outlet structure box sections shall be bolted together with steel straps of sufficient thickness to prevent separation.

d. Emergency spillways:

1) Shall be sized and located to permit the safe passage of stormwater flows from the unattenuated 100-year post-development storm with 1 foot of freeboard.

2) The maximum velocities in vegetated spillways shall be based upon an assumed clogged primary outlet condition. Where maximum velocities exceed design standards contained in the Engineering Field Manual for Conservation Practices (USDA, SCS, July 1984) suitable lining shall be provided.

3) Emergency spillways should not be located in fill areas. Facilities placed on fill materials shall be lined.

a) Lining for emergency spillways shall incorporate native colors and materials where possible, including mono slab revetments, grass pavers, rip rap and native stone.

4) Emergency spillways may be either incorporated into the principal outlet structure or designed as a separate pipe or channel.

e. Basin and pond embankments:

1) Must be designed and scaled by a Professional Engineer with relevant experience registered in the Commonwealth of Pennsylvania.

2) Must include an investigation of the subsurface conditions at the proposed embankment location to evaluate settlement potential, groundwater impacts, and the need for seepage controls.

3) A geotechnical report prepared by a geotechnical engineer licensed in the Commonwealth of Pennsylvania must be submitted for any embankment over 10 feet in effective height or posing a significant hazard to downstream property or life.

4) The selection of fill materials is subject to approval of the Municipal Engineer. Fill must be free of frozen soil, rocks over six inches, sod, brush, stumps, tree roots, wood, or other perishable materials.

5) Embankment fills less than 10 feet in fill height must be compacted using methods that would reasonably guarantee that the fill density is at least 90% of the maximum density as determined by standard proctor (ASTM-698).

6) All embankment fills more than 10 feet in fill height must be compacted to at least 90% of the maximum density as determined by standard proctor (ASTM-698) and must have their density verified by field density testing.

7) A PADEP Dam permit is required for:

   a) Embankments having a maximum depth of water, measured from the upstream toe of the dam to the top of the dam at maximum storage elevation, of greater than 15 feet;

   b) Ponds having a contributory drainage area of greater than 100 acres;

   c) Impoundments of greater than 50 acre-feet.

8) The embankment's interior slope may not be steeper than 2-1/2H:1V (2-1/2 horizontal to 1 vertical). The exterior slope of the embankment may not exceed 2:1 (2 horizontal to 1 vertical).

9) The embankment width shall be in conformance with the requirements of the PADEP and subject to the approval of the Municipal Engineer.

f. Fencing of the facility may not be required if the interior slope of the pond is 4H: 1V or flatter. The Municipality reserves the right to require fencing.

g. Energy dissipators and/or level spreaders shall be installed to prevent erosion and/or initiate sheet flow at points where pipes or drainage ways discharge to or from basins.

   1) Level Spreaders shall be used only where the maximum slope between the discharge point and the waterway does not exceed five (5%) percent.

   2) Energy dissipators shall comply with criteria in Hydraulic Design of Energy Dissipators for Culverts and Channels, 1-IEC 14, FHWA, July, 2006, or current edition.

   3) Such facilities shall be both functional and attractive; for example, native rock

shall be used in constructing dissipators where practical.

h. Proper stabilization structures, including stilling basins, energy dissipaters, and channel lining, shall be constructed at the outlets of all basins and emergency spillways.

i. The minimum distance between a proposed basin discharge point (including the energy dissipator, etc.) and a downstream property boundary shall in no case be less than fifteen (15) feet.

1) Where there is discharge onto or through adjacent properties prior to release to a stream, designers shall demonstrate how downstream properties are to be protected.

2) The Municipal Engineer may require that the setback distance is increased based upon factors such as topography, soil conditions, the size of structures, the location of structures, and discharge rates.

3) A drainage easement must be obtained, where required.

j. A sediment forebay shall be provided at each inlet into a surface basin. The forebay storage capacity shall at minimum be ten (l 0) percent of the permanent pool storage. The forebay shall be designed to allow for access by maintenance equipment and to facilitate periodic cleaning, including an access road and gate in conformance with the Municipality's current Standards for Construction.

G. Conveyance System

1. Applicants are encouraged to design conveyance systems that facilitate infiltration and improve water quality wherever practicable.

2. Open channels with landscaped banks shall be designed to carry the 25-year, 24-hour stormwater runoff. The Municipal Engineer may increase the design storm as conditions require. All open channels shall be designed with one (l) foot of freeboard above the water surface elevation of the design runoff condition.

3. Flood relief channels shall be designed to convey the runoff from the 100-year, 24-hour storm, such that its discharge to an adequate receiving stream or conveyance system occurs without allowing it to encroach upon other properties.

4. Where drainage swales are used in lieu of or in addition to storm sewers, they shall be designed to carry the required runoff with a minimum grade of two percent (2%) and a maximum grade of nine percent (9%).

a. Drainage swales used strictly for conveyance are not the same as Open Vegetated Channels. Design standards for Open Vegetated Channels are provided under **§ 004-3.D** of this Ordinance.

5. Use of grassed swales or open vegetated swales in lieu of curbing to convey, infiltrate and/or treat stormwater runoff from roadways is encouraged.

a. Inlets receiving water from the swale shall be placed at the center of the shoulder swale draining the street and shall be located no closer than four (4) feet from the edge of the cartway.

b. The invert of the swale shall be at least one (1) foot lower in elevation than the adjacent roadway subgrade.

6. When requested by the Municipality, the Applicant shall obtain or grant a minimum twenty (20)-foot-wide easement over all storm sewers, drainage swales, channels, etc., that are a component of the stormwater management system when located within undedicated land.

   a. All permanent detention basins and/or other stormwater management facilities providing stormwater control for other than a single residential lot shall be located within a defined drainage casement that allows proper legal and maintenance access.

7. No property owner shall obstruct or alter the flow, location or carrying capacity of a stream, channel or drainage swale to the detriment of any other property owner, whether upstream or downstream. All subdivision and/or land development plans containing streams, channels, drainage swales, storm sewers or other conveyance systems that cross property boundaries, existing or proposed, or whose discharge crosses such boundaries shall contain a note stating the above.

H. Water Quality Inlets

1. Water Quality Inlets shall be utilized in parking areas and/or loading areas exceeding 5,000 square feet of impervious coverage that discharge to stormwater management systems.

   a. The total capacity of the Water Quality Inlets installed shall be based upon the calculated runoff rates expected to be tributary to the inlets.

   b. In no case shall the number of Water Quality Inlets installed be less than one (1) per each acre of drainage area.

2. The purpose of water quality inlets is to remove oil, grease, heavy particulates, total suspended solids, hydrocarbons and other floating substances from stormwater runoff.

3. Methods other than water quality inlets may be permitted if the Applicant demonstrates to the Municipality's satisfaction that any such alternative will be as effective and as easily maintained.

4. Periodic cleaning of these systems shall be addressed in the Operation and Maintenance Plan submitted to the Municipality.

I. Pervious Pavement

1. Pervious pavements, including pervious Portland cement concrete, pervious or permeable asphalt concrete, pervious pavers, etc., are encouraged to be utilized as an environmentally- conscious surfacing material.

2. Designers cannot, however, use pervious pavements as infiltration credit for water quality requirements nor infiltration volume deductions from detention requirements due to the potential that pervious pavements will become clogged with sediments and winter deicing materials.

J. Rock Sumps

1. The use of rock sumps or other similar measures for runoff infiltration will not be permitted in the Municipality due to the potential for clogging and the need for significant maintenance.

K. Storm Sewer Criteria

1. Manholes and/or inlets shall not be spaced more than three hundred (300) feet apart for pipe sizes up to twenty-four (24) inches in diameter and not more than four hundred fifty (450) feet apart for larger pipe sizes.
2. Street curbing for the purpose of storm water conveyance is discouraged. On streets that must contain curbing, storm sewers shall be placed behind the curbing. To the greatest extent possible, storm sewers shall not be placed directly under curbing. At curbed street intersections, storm inlets shall be placed in the tangent section of the road.
3. Where practicable, sewers shall be designed to traverse under seeded and planted areas. If constructed within ten (10) feet of roads, sidewalks, or other paved surfaces, storm sewers shall be installed within the narrowest trench possible and backfilled with select material to prevent surface settlement.
4. Storm sewers will be designed with a concrete cradle when traversing fill areas of questionable stability.
5. Storm sewers shall be designed with pipe anchors when the pipe slope exceeds twenty (20) percent.
6. The minimum storm sewer size shall be fifteen (15) inches in diameter.
7. Pipe material, trenching, bedding, and backfilling requirements shall conform to the requirements of the Municipal Engineer and/or applicable sections of PennDOT Publication 408.
8. Storm sewer shall be either reinforced concrete or high density polyethylene (HDPE) pipe, subject to cover requirements and the approval of the Municipal Engineer.
9. Where a proposed sewer or other stormwater management facility connects with an existing storm sewer system, the Applicant shall demonstrate that sufficient capacity exists in the downstream system to convey the additional flow.

L. Properties on the high side of streets shall have downspouts or other private drainage facilities discharge to a lawn or other open space to provide overland flow to the area collection/ conveyance system.

M. Foundation drains from high-side properties may discharge directly to the area collection/conveyance system if surface discharge/overland flow is not feasible.

N. Properties on the low side of streets shall discharge downspouts and foundation drains to provide overland flow to the area collection/conveyance system or natural watercourse in accordance with the approved Stormwater Management Plan for the development site.

O. Collection/conveyance facilities should not be installed parallel or close to the top or bottom of an embankment to avoid the possibility of failure of the facility or the embankment

P. Riparian Buffer Requirements

1. The purpose of establishing buffer requirements is to ensure that antidegradation standards are met thereby resulting in elevated water quality. A Riparian Buffer Easement shall be created and recorded as part of any subdivision or land development that encompasses a Riparian Buffer. The Riparian Buffer is intended to slow overland flow to the stream through the presence of native grasses, trees and shrubs, allowing infiltration/groundwater recharge; causing deposition of sediment, nutrients, pesticides, and other pollutants in the buffer rather than in the stream; and reducing erosion by providing stream bank stabilization. The trees provide shade for streams; keeping waters cooler and reducing evaporation.

2. Except as required by PA Code Title 25 Chapter 102, the Riparian Buffer Easement shall be required for all streams (as defined in Article VII) with a contributing watershed area of greater than 10 acres. The Riparian Buffer Easement shall be measured to be a minimum of 50 feet from the top of the stream bank (on each side).

3. Riparian buffers shall be provided as per the following requirements:

   a. Effect on existing lots

      1) Pre-existing lots or parcels/development in buffers- In the case of legally pre-existing lots or parcels (approved prior to the effective elate of this Ordinance) where the useable area of a lot or parcel lies within a buffer area, rendering the lot or parcel unable to be developed in accordance with this Ordinance, the development may only be permitted by variance in accordance with the Municipality's Zoning Ordinance.

      2) Improvements to existing structures in buffers - The provisions of the buffer requirements do not require any changes or improvements to be made to lawfully existing structures in buffers. However, when any substantial improvement to a structure is proposed which results in a horizontal expansion of that structure, the improvement may only be permitted by variance in accordance with the Municipality's Zoning Ordinance.

   b. Riparian buffer considerations

      1) A fifty (50) foot buffer measured perpendicular to and horizontally from the edge of a delineated wetland, vernal pond, pond, lake, or along a stream shall be maintained.

      2) The buffer area should be maintained in a natural state to the maximum extent practical.

      3) Buffer averaging may be applied to account for required encroachments such as road crossings. The following criteria must be met in order to utilize buffer averaging on a development site:

         a) Buffer averaging is required for water quality buffers that have stream

crossings.

b) An overall average buffer width of at least 50 feet must be achieved within the boundaries of the property to be developed. Buffer corridors on adjoining properties cannot be included with buffer averaging on a separate property, even if owned by the same property owner.

c) The average width must be calculated based upon the entire length of stream bank or perimeter of the wetland, pond or lake that is located within the boundaries of the property to be developed. When calculating the buffer length for a stream, the natural stream channel should be followed.

d) Buffer averaging shall be applied to each side of a stream independently. If the property being developed encompasses both sides of a stream, buffer averaging can be applied to both sides of the stream, but must be applied to both sides of the stream independently.

e) Riparian buffer locations and widths should be illustrated on all subdivision plans with notations requiring that they be maintained in a natural state.

f) Riparian buffers should be illustrated on all grading and erosion and sedimentation control plans. The defined stream buffer location should be properly recorded. The recording should provide a plan illustrating the stream buffer location, width and the requirement that it be maintained in a natural stale.

g) No use or construction within the Riparian Buffer shall be permitted that is inconsistent with the intent of the Riparian Buffer as described in Section §044-3.P.

h) Whenever practicable, invasive vegetation shall be actively removed and the Riparian Buffer Easement shall be planted with native trees, shrubs and other vegetation to create a diverse native plant community appropriate to the intended ecological context of the site.

c. Permitted Activities/Development

1) The following activities are permitted within riparian buffers provided that the area of the buffer altered by such activities shall be minimized to the greatest extent practicable. Existing native vegetation shall be protected and maintained within the Riparian Buffer Easement.

a) Stormwater conveyance required by the Municipality

b) Maintenance of infrastructure by government entities and utilities permitted under the PUC.

c) Buffer maintenance and restoration

d) The correction of hazardous conditions

e) Wetland or stream crossings, boat docks/ launches permitted by DEP

f) Fish hatcheries

g) Wildlife sanctuaries

h) Passive, unpaved, stable trails shall be permitted

i) No other earth disturbance, grading, filling, buildings, structures, new construction, or development shall be permitted.

d. The Riparian Buffer Easement shall be enforceable by the Municipality and shall be recorded in the appropriate County Recorder of Deeds Office, so that it shall run with the land and shall limit the use of the property located therein. The easement shall allow for the continued private ownership and shall count toward the minimum lot area required by Zoning, unless otherwise specified in the municipal Zoning Ordinance.

e. Any permitted use within the Riparian Buffer Easement shall be conducted in a manner that will maintain the extent of the existing 100-year floodplain, improve or maintain the stream stability, and preserve and protect the ecological function of the floodplain.

f. Stormwater drainage pipes shall be permitted within the Riparian Buffer Easement, but they shall cross the Easement in the shortest practical distance. Other structural stormwater management facilities are not permitted within the Riparian Buffer Easement.

g. The following conditions shall apply when public and/or private recreation trails are permitted by the Municipality within Riparian Buffers:

1.) It is preferred that trails be designed to be permeable and for non-motorized use only; however, impermeable trails are permitted provided they have adequate drainage.

2.) Trails shall be designed to have the least impact on native plants species and other sensitive environmental features.

h. Septic drain fields and sewage disposal systems shall not be permitted within the Riparian Buffer Easement and shall comply with setback requirements established under 25 Pa. Code Chapter 73.

i. Underground utilities shall be permitted within the Riparian Buffer Easement; however, work shall be performed to minimize disturbance area and removal of trees. Restoration within the Riparian Buffer Easement shall be with native species

of trees, grasses, and other plantings. One tree shall be planted for each tree removed and the restoration shall be designed by a Registered Professional with the requisite experience. Aboveground utilities shall only be permitted to cross the Easement perpendicular to the Easement or in the shortest practical distance. Existing utilities may remain and be maintained as required.

ARTICLE V - OPERATION AND MAINTENANCE RESPONSIBILITIES

005-1. GENERAL RESPONSIBILITES

A. The owner of stormwater management facilities shall be responsible for the proper operation and maintenance of those facilities during and after construction. An Operation and Maintenance Plan consistent with the requirements of § 005-3 shall be prepared for review and approval by the Municipal Engineer and shall be executed and signed by the Municipality and Applicant.

B. The Owner of the stormwater management facilities for a tract shall be responsible for the proper installation and function of those facilities in accordance with the approved Stormwater Management Plan. All temporary soil erosion and sedimentation control measures shall be removed or converted to their permanent configuration in accordance with an approved Erosion and Sedimentation Control Plan. This requirement in no way precludes the authority of the Allegheny County Conservation District to determine when sufficient stabilization has occurred on a site in order to convert to the permanent stormwater management facilities.

C. Dedication and Acceptance of Stormwater Management Facilities.

1. If a development consists of structures or lots which are to be separately owned and in which streets, sewers, and other public improvements are to be dedicated to the Municipality, stormwater management facilities should also be dedicated to and maintained by the Municipality.

   a. Facilities proposed to be dedicated to the Municipality shall be denoted as such on the Plans.

   b. The Municipality is under no obligation to accept such facilities and may require that they remain undedicated, with operation and maintenance the responsibility of individual lot owners or a homeowners association or similar entity, or an organization capable of carrying out maintenance responsibilities.

2. If a development site is to be maintained in single ownership or if sewers and other public improvements arc to be privately owned and maintained, then the ownership and maintenance of stormwater management facilities should be the responsibility of the Owner or private management entity.

3. Regardless of ownership, the Applicant shall submit a written offer deeding an access and/or drainage easement to the Municipality pursuant to § **005-2.** Such easement shall cover the stormwater management facilities, any drainage to and from such facilities, and shall clearly permit Municipal entry for inspection and/or maintenance purposes. If inspections performed by the Municipality reveal deficiencies from the submitted and approved SWM Site Plan, the Municipality may request corrective actions. Any corrective action shall be at the cost of the stormwater facility owner.

4. Regardless of ownership, the Applicant shall submit "As-built" plans to the Municipality for the stormwater management facilities required per the approved Stormwater Management Plan. The "As-built" plans will be reviewed by the Municipal Engineer. The "As-built" plans shall include:

a. "As-built" information for all permanent stormwater management facilities including, but not limited to, pipe material and diameter, inlet, outlet and overflow elevations, 2' contours for all detention/retention basins and drainage swales.

b. A comparison of "As-built" capacities compared to the capacities of the approved design facilities shall be prepared and certified by a Professional Engineer registered in the Commonwealth of Pennsylvania.

c. The "As built" plans shall be based on an actual field survey performed by a Professional Land Surveyor registered in the Commonwealth of Pennsylvania. The surveyor shall certify as to the accuracy of the plan.

5. The "as-built" plan(s) shall be submitted to the Municipality in a digital formal or formats approved by the Municipality.

005-2. OWNERSHIP AND MAINTENANCE

A. All stormwater management facilities identified within an approved Stormwater Management Plan shall be owned and maintained by one, or a combination of, the following entities:

1. Private Ownership

a. Where individual on-lot stormwater management facilities are proposed, the subdivision and/or land development plan shall contain a note in a form satisfactory to the Municipal Solicitor designating the entity responsible for operation and maintenance of the on-lot facilities consistent with an approved Operation and Maintenance Plan.

I) In the event that the responsible person or entity fails to do so, the note shall grant to the Municipality the right, but not the duty, to enter upon the premises to repair or restore said facilities, to charge and assess the costs thereof to the owner, including a reasonable allowance for overhead, and to enforce said charges and assessments by lien upon the property if necessary.

2) In addition, the deed for each lot shall contain a perpetual covenant binding the grantee and all successors in interest designating the responsibility for operation and maintenance of the on-lot facilities in form acceptable to the Municipal Solicitor.

b. In addition to the above, developers of parcels with more than one (1) dwelling unit shall record in the Allegheny County Department of Real Estate a declaration of covenants and restrictions in a form satisfactory to the Municipal Solicitor describing the responsibility for operation and maintenance of the on-lot facilities, consistent with an approved Operation and Maintenance Plan, prior to the sale of any individual lots.

1) The terms of this covenant and restriction shall run with the land and be binding upon the initial grantees of each lot within the subdivision, his, her or their heirs, administrators, successors or assigns.

2. Homeowners or Condominium Association Ownership

   a. Where a Homeowners' Association is created to own and manage common L1cilities, the subdivision and/or land development plan shall contain a note in a form satisfactory to the Municipal Solicitor designating the entity responsible for construction and/or maintenance of the stormwater management facilities consistent with an approved Stormwater Management Plan.

      1) In the event that the responsible entity fails to do so, the note shall grant to the Municipality the right, but not the duty, to enter upon the premises to repair or restore said facilities, to charge and assess the costs thereof, plus a reasonable allowance for overhead, to each owner of property within the development and to enforce said charges and assessments by lien upon each property within the development if necessary.

      2) In addition, the developer shall record in the office of Allegheny County Department of Real Estate a declaration of covenants in a form satisfactory to the Municipal Solicitor setting forth the rights and responsibilities of the Homeowners' Association for operation and maintenance of the stormwater management facilities, prior to the sale of individual lots. The terms of this covenant and restriction shall run with the land and be binding upon the initial grantees of each lot within the subdivision, his, her or their heirs, administrators, successors and assigns.

3. Municipal Ownership

   a. Where the Municipality has accepted an offer of dedication of the permanent stormwater management facilities, the Municipality shall be responsible for operation and maintenance. Municipal ownership notwithstanding, the Applicant is required to prepare a Stormwater Management Plan and an Operation and Maintenance Plan, as defined herein. Upon approval of the stormwater management facilities by the Municipality, the Applicant shall provide a lump sum long-term maintenance payment to the Municipality, to be reserved and used at all times by the Municipality only for costs of operation and maintenance of the dedicated facilities, as follows:

      1) The long-term maintenance payment shall be in an amount equal to the present value of operation and maintenance costs for the facilities for a ten- year period.

      2) The long-term maintenance payment shall be based on a ten-year cost estimate prepared by the Applicant's engineer and reviewed and approved by the Municipal Engineer.

      3) The amount of the payment shall cover all costs of operation and maintenance. These shall include but not be limited to typical operation and maintenance costs as well as costs such as landscaping and planting, tax payments required, and construction of any kind associated with the use, benefit and enjoyment of the facilities by the owners.

      4) A description of routine facility operation and day-to-day management requirements and a description of projected maintenance actions and

schedules necessary to ensure proper operation of the stormwater management facilities shall be submitted for review and approval to the Municipal Engineer.

5) Documentation. The terms of the long-term maintenance payment shall be documented as part of the Stormwater Management Plan and the Operation and Maintenance Plan.

005-3. OPERATION AND MAINTENANCE PLAN

A. An Operation and Maintenance Plan shall be prepared by a Professional Engineer licensed to practice in the Commonwealth of Pennsylvania that identifies the ownership, operation and maintenance responsibilities and as-built conditions for all stormwater management facilities. At a minimum, the Operation and Maintenance Plan shall include the following:

1. Any obligations concerning perpetuation and/or maintenance of natural drainage or infiltration facilities, and other facilities identified within the Stormwater Management Plan. Ownership of and responsibility for operation and maintenance of stormwater management facilities, including names and contact information, shall be required.

2. Drawings and descriptions of the permanent stormwater management facilities on the site, explaining how each facility is intended to function and operate over time. All drainage and access easements shall be depicted and any site restrictions to be recorded against the property shall be identified on the recorded plan. All such easements and restrictions shall be perfected to run with the land and be binding upon the landowner and any successors in interest.

3. A description of the actions, budget and schedule for operating and maintaining the stormwater management facilities. This description should be written in a clear manner, consistent with the knowledge and understanding of the intended user.

4. A general description of operation and maintenance activities and responsibilities for facilities held in common or on-lot, including but not limited to:

   a. Lawn care and vegetation maintenance

   b. Removal of accumulated debris and sediment (including from grates, trash racks, inlets, etc.)

   c. Liability insurance

   d. Maintenance and repair of stormwater management facilities

   e. Landscaping and planting

   f. Payment of taxes

   g. Construction of any kind associated with the use, benefit and enjoyment of the facilities by the owners

   h. A description of routine facility operation and day-to-day management requirements (as needed).

   i. A description of routine maintenance actions and schedules necessary to ensure proper operation of stormwater management facilities.

5. Assurances that no action will be taken by any lot owner to disrupt or in any way

impair the effectiveness of any stormwater management system.

6. Deed restrictions describing the ability of the Municipality to take corrective measures if it is determined at any time that stipulated permanent stormwater management facilities have been eliminated, altered, or improperly maintained, including the ability of the Municipality to cause the work to be done and lien all costs plus a reasonable overhead allowance against the property should the required corrective measures not be taken by the lot owner, following written notification, within a period of time set by Municipal Engineer.

7. Parties responsible for the long term operation and maintenance of stormwater management facilities shall make records of the installation and of all maintenance and repairs, and shall retain the records for at least ten (10) years. These records shall be submitted to the Municipality as established by the Operation and Maintenance Plan or if otherwise required by the Municipality.

005-4. OPERATIONS AND MAINTENANCE AGREEMENT

A. The owner of any land upon which permanent stormwater management facilities and/or BMPs will be placed, constructed or implemented, as described in an approved Stormwater Management Plan and the Operations and Maintenance Plan, shall record the following documents in the Allegheny County Department of Real Estate, within 15 days of approval of the Operations and Maintenance Plan by the Municipality:

1. The Operations and Maintenance Plan, or a summary thereof,

2. Operations and Maintenance Agreement, and

3. Access and/or drainage Easements.

B. The Operation and Maintenance Agreement shall be substantially the same as the sample agreement available on file in the Municipality's Engineering Department.

C. Other items or conditions may be included in the Operation and Maintenance Agreement where determined necessary to guarantee the satisfactory operation and maintenance of all permanent stormwater facilities and BMPs. The agreement shall be subject to the review and approval of the Municipality.

D. The Municipality may suspend or revoke any approvals granted for the project site upon discovery of the failure of the owner to comply with Article V of this Ordinance.

E. The owner shall keep on file with the Municipality the name, address, and telephone number of the person or company responsible for maintenance activities; in the event of a change, new information shall be submitted by the owner to the Municipality within ten (10) working days of the change.

005-5. PERFORMANCE GUARANTEE

A. For SWM Site Plans that involve subdivision and land development, the applicant shall provide a financial guarantee to the Municipality for the timely installation and proper construction of all stormwater management controls as required by the approved SWM Site Plan and this Ordinance in accordance with the provisions of Sections 509, 510, and 511 of the Pennsylvania

Municipalities Planning Code.

ARTICLE VI- PLAN SUBMISSION, REVIEW AND REVIEW FEES

006-I. PLAN SUBMISSION

Up to five copies of the SWM Site Plan shall be submitted as follows:

A. Two copies to the Municipality

B. One copy to the municipal engineer (when applicable)

C. One copy to the Allegheny County Conservation District (when requested by the District).

D. One copy to the Allegheny County Sanitary Authority (in areas with combined sewer systems)

E. The Municipality shall require receipt of a complete plan, as specified in this Ordinance. The Municipality shall notify the Applicant of the number of copies and formal required of each submission.

006-2. REVIEW

A. The Municipality's Designated Plan Reviewer(s)shall review the Stormwater Management Plan for consistency with the Stormwater Management Ordinance. Any Stormwater Management Plan found incomplete shall not be accepted for review and shall be returned to the Applicant.

B. When required by regulation, the County Conservation District shall review and approve the Erosion & Sedimentation Control Plan for consistency with PADEP's Chapter 102 regulations.

C. For activities regulated by this Ordinance, the Municipal Engineer shall notify the Applicant and the Municipality whether the Stormwater Management Plan is in compliance with the Ordinance.

1. Should the Stormwater Management Plan be determined to be consistent with the Stormwater Management Ordinance, the Municipal Engineer shall forward an approval letter to the Municipality who will then forward a copy to the Applicant within 45 days. If the Stormwater Management Site Plan involves a Subdivision and Land Development Plan, the notification shall occur within the time period allowed by the Municipalities Planning Code (90 days). If a longer notification period is provided by other statue, regulation, or ordinance, the applicant will be so notified by the Municipality.

2. For any SWM Site Plan that proposes to use any BMPs other than green infrastructure and LID practices to achieve the volume and rate controls required under this Ordinance, the Municipality will not approve the SWM Site Plan unless it determines that green infrastructure and LID practices are not practicable.

3. Should the Stormwater Management Plan be determined to not be consistent with the Stormwater Management Ordinance, the Municipal Engineer shall forward a disapproval letter to the Municipality who will then forward a copy to the Applicant. The disapproval letter shall cite the reason(s) and specific Ordinance sections for the disapproval. Disapproval may be clue to inadequate information to make a reasonable

judgment as to compliance with the Stormwater Management Plan. Any disapproved Stormwater Management Plans may be revised by the Applicant and resubmitted consistent with this Ordinance.

D. For Regulated Activities specified in Article II of this Ordinance, and which require a building permit, the Municipal Engineer shall notify the Municipality in writing, within a time frame consistent with the Municipal Building Code and/or Municipal Subdivision Ordinance, whether the Stormwater Management Plan is consistent with the Stormwater Management Ordinance and forward a copy of the approval/disapproval letter to the Applicant. Any disapproved Stormwater Management Plan may be revised by the Applicant and resubmitted consistent with this Ordinance.

E. For regulated activities under this Ordinance that require an NPDES Permit Application, the Applicant shall forward a copy of the Municipal Engineer's letter stating that the Stormwater Management Plan is consistent with the Stormwater Management Ordinance to the County Conservation District. PADEP and the County Conservation District may consider the Municipal Engineer's review comments in determining whether to issue a permit.

F. The Municipality shall not grant preliminary or final approval to any subdivision or land development for Regulated Activities specified in Article II of this Ordinance if the Stormwater Management Plan has been found to be inconsistent with the Stormwater Management Ordinance, as determined by the Municipal Engineer. All required permits from PADEP must be obtained prior to approval of any subdivision or land development.

G. No building permits shall be issued for any Regulated Activity specified in Article II of this Ordinance if the Stormwater Management Plan has been found to be inconsistent with the Stormwater Management Ordinance, as determined by the Municipal Engineer, or without considering the comments of the Municipal Engineer. All required permits from PADEP must be obtained prior to issuance of a building permit.

H. The Applicant shall be responsible for completing record ("as-built") drawings of all stormwater management facilities included in the approved Stormwater Management Plan. The record drawings and an explanation of any discrepancies with the design plans shall be submitted to the Municipal Engineer for final approval. In no case shall the Municipality approve the record drawings until the Municipality receives a copy of an approved Highway Occupancy Permit from the PennDOT District Office, NPDES Permit, and any other applicable permits or approvals, from PADEP or the County Conservation District. The above permits and approvals must be based on the record drawings. The record drawings must include copies of all applicable permits and approvals.

I. The Municipality's approval of a Stormwater Management Plan shall be valid for a period not to exceed five (5) years commencing on the date that the Municipality approves the Stormwater Management Plan. If stormwater management facilities included in the approved Stormwater Management plan have not been constructed, or if constructed and record drawings of these facilities have not been approved within this time period, then the Municipality may consider the Stormwater Management Plan disapproved and may revoke any and all permits. Stormwater Management Plans that are considered disapproved by the Municipality shall be resubmitted in accordance with § **006-4** of this Ordinance.

006-3. MODIFICATION OF PLANS

A. A modification to a Stormwater Management Plan under review by the Municipality for a development site that involves a change in stormwater management facilities or techniques, or that involves the relocation or re-design of stormwater management facilities, or that is necessary because soil or other conditions are not as stated on the Stormwater Management Plan as determined by the Municipal Engineer, shall require a resubmission of a modified Stormwater Management Plan consistent with this Ordinance and shall be subject to review as specified in Article VI of this Ordinance.

006-4. RESUBMISSION OF DISAPPROVED STORMWATER PLANS

A. A disapproved Stormwater Management Plan may be resubmitted; with the revisions addressing the Municipal Engineer's concerns documented in writing, addressed to the Municipality in accordance with Article VI of this Ordinance, distributed accordingly, and shall be subject to review as specified in Article VI of this Ordinance. Any applicable Municipal Review and Inspection Fee must accompany a resubmission of a disapproved Stormwater Management Plan.

006-5. MUNICIPAL STORMWATER MANAGEMENT PLAN REVIEW AND INSPECTION FEES

A. Fees may be established from time-to-time by the Municipality in accordance with applicable laws to defray plan review and construction inspection costs incurred by the Municipality. All fees shall be paid by the Applicant at the time of Stormwater Management Plan submission.

B. Any fees established pursuant to this Ordinance may include, but not necessarily be limited to, any of the following:

1. Administrative costs.

2. The review of the Stormwater Management Plan by the Municipality, County (if applicable), Allegheny County Conservation District (if applicable) and the Municipal Engineer.

3. The site inspections.

4. The inspection of stormwater management facilities and stormwater management improvements during construction.

5. The final inspection upon completion of the stormwater management facilities.

6. Any additional work required to enforce any permit provisions regulated by this Ordinance, correct violations, and assure proper completion of stipulated remedial actions.

C. If the Municipality's actual costs exceed the fees submitted by the Applicant, the Municipality may invoice the Applicant for the difference. Such payment will be submitted by the Applicant to the Municipality within 30 days of receipt of the invoice.

D. If the Municipality's actual costs are less than the fees submitted by the Applicant, the Municipality will refund the difference to the Applicant within 30 days of final project approval, or such time that it is determined that the Municipality will expend no additional costs on the project.

006-6. RECORD DRAWINGS, COMPLETION CERTIFICATE, AND FINAL INSPECTION

A. The developer shall be responsible for providing record drawings of all SWM BMPs included in the approved SWM Site Plan. The record drawings and an explanation of any discrepancies with the construction plans shall be submitted to the Municipality.

B. The record drawing submission shall include a certification of completion signed by a qualified professional verifying that all permanent SWM BMPs have been constructed according to the approved plans and specifications. The latitude and longitude coordinates for all permanent SWM BMPs must also be submitted, at the central location of the BMPs. If any licensed qualified professionals contributed to the construction plans, then a licensed qualified professional must sign the completion certificate.

C. The Municipality may conduct inspections during construction as it deems appropriate. If inspections performed by the Municipality reveal deficiencies from the submitted and approved SWM Site Plan, the Municipality may request corrective actions. Any corrective action shall be at the cost of the stormwater facility owner.

D. After receipt of the completion certification by the Municipality, the Municipality may conduct a final inspection.

ARTICLE VII - DEFINITIONS

007-1. GENERAL

A. For the purposes of this Ordinance, certain terms and words used herein shall be interpreted as follows:

1. Words used in the present tense include the future tense.
2. Singular numbers include the plural, and plural numbers include the single.
3. Words of masculine gender include feminine gender, and words of feminine gender include masculine gender.
4. The words "includes" or "including" shall not limit the term to the specific example but are intended to extend their meaning to all instances of like kind.
5. The words "shall" and "must" are mandatory.
6. The words "may" and "should" are permissive.

These definitions do not necessarily reflect the definitions contained in pertinent regulations or statutes, and are intended for this Ordinance only.

B. **SPECIFIC TERMS**. Other terms or words used in this ordinance are defined as follows:

1. **AASHTO**. American Association of State Highway & Transportation Officials.
2. **ACCD**. Allegheny County Conservation District
3. **ACHD**. Allegheny County Health Department
4. **Accelerated Erosion**. The removal of the surface of the land through the combined action of human activities and natural processes at a rate greater than would occur because of the natural process alone.
5. **ACT 167**. The Storm Water Management Act (Act of October 4, 1978, P.L. 864 No. 167; 32 P.S. §680.1-680.17, as amended).
6. **ACT 167 Plan (or watershed plan)**. The plan for managing stormwater runoff throughout a designated watershed adopted by Allegheny County as required by the Pennsylvania Storm Water Management Act (Act 167).
7. **Agricultural Activity**. The work of producing crops including tillage, land clearing, plowing, disking, harrowing, planting, harvesting crops, or pasturing and raising of livestock and installation of conservation measures. Construction of new buildings or impervious area is not considered an Agricultural Activity.
8. **Applicant**. A landowner, developer, or person, as hereinafter defined, including heirs, successors, and assigns, who has filed an application to the Municipality for approval to engage in any regulated activity at a project site in the Municipality.
9. **Application**. Every application, whether preliminary or final, required to be filed and approved prior to start of construction or development for the approval of a subdivision plat or plan, or for the approval of a development plan.

10. **Attenuate**. To reduce the magnitude of the flow rate by increasing the time it takes to release a specified volume of runoff (for example the 1 year, 24 hour storm event). Attenuation is a method of reducing the peak flow rates for post development compared to the peak flow rates in predevelopment.
11. **Base flow**. Portion of stream discharge derived from ground water; the sustained discharge that does not result from direct runoff or from water diversions, reservoir releases, piped discharges, or other human activities.
12. **Best Management Practice (BMP)**. Activities, facilities, designs, measures, or procedures used to manage stormwater impacts from regulated activities, to meet state water quality requirements, to promote groundwater recharge, and to otherwise meet the purposes of this Ordinance. Stormwater BMPs are commonly grouped into one of two broad categories or measures: "structural" or "non-structural." In this Ordinance, non-structural BMPs or measures refer to operational and/or behavior-related practices that attempt to minimize the contact of pollutants with stormwater runoff, whereas structural BMPs or measures are those that consist of a physical device or practice that is installed to capture and treat stormwater runoff. Structural BMPs include, but are not limited to, a wide variety of practices and devices, from large-scale retention ponds and constructed wetlands, to small-scale underground treatment systems, infiltration facilities, filter strips, low impact design, bioretention, wet ponds, permeable paving, grassed swales, riparian or forested buffers, sand filters, detention basins, and manufactured devices. Structural stormwater BMPs are permanent appurtenances to the project site.
13. **CFS**. Cubic Feet per Second.
14. **Channel**. A perceptible natural or artificial waterway which periodically or continuously contains moving water or which forms a connecting link between two bodies of water. It has a defined bed and banks which confine the water.
15. **Conservation Design**. A series of holistic land development design practices that maximize protection of key land and environmental resources, preserve significant concentrations of open space and greenways, evaluate and maintain site hydrology, and ensure flexibility in development design to meet community needs for complementary and aesthetically pleasing development. Conservation Design encompasses the following objectives: conservation/enhancement of natural resources, wildlife habitat, biodiversity corridors and greenways (interconnected open space); minimization of environmental impact resulting from a change in Janel use (minimum disturbance, minimum maintenance); maintenance of a balanced water budget by making use of site characteristics and infiltration; incorporation of unique natural, scenic and historic site features into the configuration of the development; preservation of the integral characteristics of the site as viewed from adjoining roads; and reduction in maintenance required for stormwater management practices. Such objectives can be met on a site through an integrated development process that respects natural site conditions and attempts, to the maximum extent possible, to replicate or improve the natural hydrology of a site.
16. **Conservation District**. A conservation district, as defined in section 3(c) of the Conservation District Law (3 P. S. § 851(c)), which has the authority under a delegation agreement

executed with PADEP to administer and enforce all or a portion of the erosion and sediment control program in this Commonwealth.

17. **Demolition**. The intentional act of substantially pulling down, destroying, dismantling, defacing, removing or razing a building or structure, or commencing the work of a total, substantial, or partial destruction with the intent of completing the same. Demolition includes but is not limited to; removal of one or more exterior wall(s) or partition(s) of a building or separately leased portions of a multi-tenant building, gutting of a building's interior to the point where exterior features (windows, doors, roof, etc.) or the building's structural framework is impacted, removal of more than 50% of a structure's overall gross square footage as determined by the Municipal Building Official, the lifting and relocating of a building on its existing site or to another site.
18. **DEP**. The Pennsylvania Department of Environmental Protection.
19. **Designated Plan Reviewer**. A Qualified Professional as defined herein, or organization such as the Allegheny County Conservation District, that has been designated by the Municipality to be the reviewer of SWM Site Plans for the Municipality, and shall be understood to be the reviewer where indicated as the Municipality within this ordinance.
20. **Design Storm**. The magnitude and temporal distribution of precipitation from a storm event measured in probability of occurrence (e.g., a 5-year storm) and duration (e.g., 24-hours), used in the design and evaluation of storm water management systems.
21. **Detention or To Detain**. The prevention of, or to prevent, the discharge, directly or indirectly, of a given volume of storm water runoff into surface waters by temporary storage.
22. **Detention Basin**. An impoundment designed to collect and retard stormwater runoff by temporarily storing the runoff and releasing it at a predetermined rate. Detention basins are designed to drain completely shortly after any given rainfall event and are essentially dry until the next rainfall event.
23. **Detention Volume**. The volume of runoff that is captured and released into the waters of the Commonwealth at a controlled rate.
24. **Developer**. Any landowner, agent of such landowner, or tenant with the permission of the landowner, who makes or causes to be made a subdivision of land or a land development.
25. **Development**. See "Earth Disturbance Activity". This term includes redevelopment.
26. **Development Site (Site)**. See Project Site.
27. **Discharge**. To release of water from a project, site, aquifer, drainage basin or other point of interest (verb); The rate and volume of flow of water such as in a stream, generally expressed in cubic feet per second (volume per unit of time) (noun).
28. **Disturbed Area**. An un-stabilized land area where an Earth Disturbance is occurring or has occurred.
29. **Drainage Area**. That land area contributing runoff to a single point and that is enclosed by a ridge line, or the area served or drained by a sewer or watercourse.
30. **Drainage System**. All facilities and natural features used for the movement of stormwater

through and from a drainage area, including, but not limited to, any and all of the following; conduits, pipes and appurtenant features: channels, ditches, flumes, culverts, streets, swales, gutters as well as all watercourses, water bodies and wetlands.

31. **EPA**. United States Environmental Protection Agency.

32. **Earth disturbance activity**. A construction or other human activity which disturbs the surface of the land, including land clearing and grubbing, grading, excavations, embankments, land development, agricultural plowing or tilling, operation of heavy animal use areas, timber harvesting activities, road maintenance activities, oil and gas activities, well drilling, mineral extraction, and the moving, depositing, stockpiling, or storing of soil, rock or earth materials.

33. **Easement**. Authorization by a property owner for the use by another, and for a specific purpose, of any designated part of his property.

34. **Erosion**. The detachment and movement of soil or rock fragments, or the wearing away of the surface of the land by wind, water, ice, or gravity.

35. **Erosion and Sediment Pollution Control Plan**. A plan for a project site which identifies BMPs to minimize accelerated erosion and sedimentation.

36. **Existing Condition**. The dominant land cover during the 5-year period immediately preceding a proposed regulated activity, unless previous activities have been performed without required Municipal approvals in which case the Municipality reserves the right to designate existing conditions as that which existed prior to the non-permitted alterations.

37. **FEMA**. Federal Emergency Management Agency.

38. **Floodplain**. A relatively flat or low land area which is subject to inundation from the rapid accumulation of surface waters; including Floodway Districts, Flood-Fringe Districts, and General Floodplain Districts . Also includes areas that comprise Group 13 Soils, as listed in Appendix A of the Pennsylvania DEP Technical Manual for Sewage Enforcement Officers (as amended or replaced from time to time DEP).

35. **Floodway**. The channel of a water course and portions of the adjoining f1ood plain which are reasonably required to carry and discharge the l 00-year frequency flood. The boundary of the flood way shall be as delineated on maps and studies prepared by the Federal Emergency Management Agency (FEMA). In areas where no FEMA maps and studies have defined the floodway, the assumed floodway boundary shall be 50 feet, as measured from the top of the bank of the stream.

36. **Forest Management**. Planning and activities necessary for the management of forestland. These include timber inventory and preparation of forest management plans, silvicultural treatment, cutting budgets, logging road design and construction, timber harvesting, site preparation and reforestation.

37. **Freeboard**. The vertical distance from the water surface to the top of a channel. In an emergency spillway, freeboard is the difference between the elevation of the design flow in the emergency spillway (usually the l 00 year peak elevation) and the top elevation of the settled basin embankment (that is, top of berm).

38. **Green Infrastructure**. Systems and practices that use or mimic natural processes to

infiltrate, evapotranspire, or reuse stormwater on the site where it is generated.

39. **Ground Water**. Water that occurs in the subsurface and fills or saturates the porous openings, fractures, and fissures of under-ground soils and rock units.

40. **Hotspots**. An area where land use or activities generate highly contaminated runoff, with concentrations of pollutants in excess of those typically found in stormwater.

41. **Hydrologic Soil Group (HSG)**. Infiltration rates of soils vary widely and are affected by subsurface permeability as well as surface intake rates. Soils are classified into four HSG's (A, B, C, and D) according to their minimum infiltration rate, which is obtained for bare soil after prolonged wetting. The Natural Resources Conservation Service (NRCS) of the US Department of Agriculture defines the four groups and provides a list of most of the soils in the United States and their group classification. The soils in the area of the development site may be identified from a soil survey report that can be obtained from local NRCS offices or conservation district offices. Soils become less pervious as the HSG varies from A to D.

42. **Hydrology**. The study of the properties, distribution, circulation and effects of water on the Earth's surface, soil and atmosphere.

43. **Hydrograph**. A graph of discharge versus time for a selected point in the drainage system.

44. **Impervious Cover**. See "Impervious Surface".

45. **Impervious Surface**. A surface (area), which has been compacted or covered with a layer of material so that it prevents the infiltration of water into the ground. Impervious surfaces (areas) shall include semi- pervious surfaces such as compacted clayey soils, as well as most conventionally surfaced streets, roofs, sidewalks, parking lots, and other similar surfaces. Net Increase of Impervious Surface refers to the difference between the existing impervious coverage and the total impervious surface proposed.

46. **Infiltration**. Movement of surface water into the soil, where it is absorbed by plant roots, evaporated into the atmosphere, or percolates downward to recharge ground water.

47. **Intensity**. The depth of accumulated rainfall per unit of time.

48. **Intermittent Stream**. A defined channel in which surface water is absent during a portion of the year, as ground water levels drop below the channel bottom.

49. **Invasive Species**. DCNR defines invasive plants as those species that are not native to the state, grow aggressively, and spread and displace native vegetation. (see http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_010314.pdf for a list of invasive species.)

50. **Land Development**. Any of the following:

    a. The improvement of one lot or two or more contiguous lots, tracts, or parcels of land for any purpose involving:

        1) a group of two or more residential or nonresidential buildings, whether proposed initially or cumulatively, or a single nonresidential building on a lot or lots regardless of the number of occupants or tenure; or

2) the division or allocation of land or space, whether initially or cumulatively, between or among two or more existing or prospective occupants by means of, or for the purpose of streets, common areas, leaseholds, condominiums, building groups, or other features;

3) development in accordance with Section 503(1.1) of the PA Municipalities Planning Code.

b. A subdivision of land. (See "Subdivision")

c. Land Development shall not include:

1) the conversion of an existing single family detached dwelling or single family semi-detached dwelling into not more than three residential units, unless such units are intended to be a condominium;

2) the addition of an accessory building, including farm buildings, on a lot or lots subordinate to an existing principal building; or

3) the addition or conversion of buildings or rides within the confines of an enterprise which would be considered an amusement park. For purposes of this sub clause, an amusement park is defined as a tract or area used principally as a location for permanent amusement structures or rides. This exclusion shall not apply to newly acquired acreage by an amusement park until initial plans for the expanded area have been approved.

51. **Level Spreader**. A low earthen berm constructed perpendicular to the direction of slope and extending across the width of the slope for the purpose of intercepting surface runoff and spreading it behind the berm to enhance infiltration and reduce erosion and runoff from the slope. The purpose of a level spreader is to prevent concentrated, erosive flows from occurring and to spread out stormwater runoff uniformly over the ground as sheet flow.

52. **Loading**. The total amount (generally measured in pounds or kilograms per acre per year) of material (sediment, nutrients, oxygen-demanding material, or other chemicals or compounds) brought into a lake, stream or water body by inflowing streams, runoff, direct discharge through pipes, ground water, the air (aerial or atmospheric deposition) and other sources over a specific period of time (often annually) .

53. **Low Impact Development (LID)**. Site design approaches and small-scale stormwater management practices that promote the use of natural systems for infiltration, evapotranspiration, and reuse of rainwater. LID can be applied to new development, urban retrofits, and revitalization projects. LID utilizes design techniques that infiltrate, filter, evaporate, and store runoff close to its source. Rather than rely on costly large-scale conveyance and treatment systems, LID addresses stormwater through a variety of small, cost-effective landscape features located on-site.

54. **Maintenance**. The action taken to restore or preserve the as-built functional design of any facility or system.

55. **MS4**. Municipal Separate Storm Sewer System.

56. **Municipality**. Municipality of Monroeville, a Home Rule Charter Municipality, Allegheny County, Pennsylvania.

57. **Native Vegetation**. Plant species that have historically grown in Pennsylvania and are not invasive species as defined herein.

58. **NOAA**. National Oceanic and Atmospheric Administration.

59. **NPDES**. National Pollutant Discharge Elimination System, the federal government's system for issuance of permits under the Clean Water Act, which is delegated to PADEP in Pennsylvania.

60. **NRCS**. Natural Resources Conservation Service.

61. **New Development**. Any activity regulated by this Ordinance that is not considered a redevelopment as defined in this Ordinance.

62. **Non-structural Stormwater Management Practices**. Passive, site design approaches or regulatory approaches that positively impact water quality and reduce or minimize the generation of storm water runoff without requiring the construction of specific or discrete stormwater management control structures.

63. **Open Channel**. Sec "Channel".

64. **Open Vegetated Channel**. Also known as swales, grass channels, and biofilters. These vegetated channels are used for the conveyance, retention, infiltration and filtration of stormwater runoff.

65. **Outfall**. "Point source" as described in 40 CFR, 122.2 at the point where the Municipality's storm sewer system discharges to surface waters of this Commonwealth.

66. **PADEP**. Pennsylvania Department of Environmental Protection.

67. **Peak Discharge**. The maximum rate of stormwater runoff from a specific storm event.

68. **PennDOT**. Pennsylvania Department of Transportation.

69. **Percolation Rate**. The rate of movement of water under hydrostatic pressure through interstices of rock or soil. For stormwater analysis, it is typically measured as a distance per unit of time (e.g., inches per hour).

70. **Person**. An individual, partnership, public or private association or corporation, or a governmental unit, public utility, or other legal entity whatsoever which is recognized by law as the subject of rights and duties.

71. **Pervious Area**. Any area not defined as impervious.

72. **Point Source**. Any discernible, confined and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, or conduit from which storm water is or may be discharged, as defined in State regulations at 25 Pa. Code Chapter 92.1.

73. **Predevelopment Assumption**. The ground cover assumption used when analyzing the stormwater runoff characteristics of a drainage area prior to the proposed development.

74. **Project Site**. The specific area of land where any Regulated Activities 111 the Municipality are planned, conducted, or maintained.

75. **Qualified Professional.** Any person licensed by the Pennsylvania Department of State or otherwise qualified under Pennsylvania law to perform the work required by this Ordinance.

76. **Rainfall Intensity.** The depth of accumulated rainfall per unit of time.

77. **Rate.** Volume per unit of time.

78. **Receiving Waters.** Any water bodies, watercourses or wetlands into which surface waters flow.

79. **Recharge.** The replenishment of ground water through the infiltration of rainfall, other surface waters, or land application of water or treated wastewater.

80. **Redevelopment.** An existing, developed property and/or a graded, altered and compacted site (as of or after the date of adoption of this Ordinance) that is proposed fell' reconstruction involving the demolition or partial demolition of the property.

81. **Regulated Activities.** Any Earth Disturbances or any activities that involve the alteration or development of land in a manner that may affect post construction storm water runoff, as specified in this Ordinance.

82. **Regulated Earth Disturbance Activity.** Activity involving Earth Disturbance subject to regulation under 25 Pa. Code Chapters 92, Chapter 102, or the Clean Streams Law.

83. **Release Rate District.** A watershed or portion of a watershed for which a release rate has been established by an adopted Act 167 Stormwater Management Plan.

84. **Release Rate Percentage.** The percentage of predevelopment peak rate of runoff from a watershed subarea (as delineated in the Act 167 watershed plan), which defines the allowable post-development peak discharge from any development site in that subarea.

85. **Retention Basin.** An impoundment designed to collect and retard stormwater runoff by temporarily storing the runoff and releasing it at a predetermined rate. Retention basins may also be designed to permanently retain additional stormwater runoff. Retention basins are designed to retain a permanent pool of water during dry weather.

86. **Retention or To Retain.** The prevention of direct discharge of stormwater runoff into receiving waters or water bodies by temporary or permanent containment in a pond or depression; examples include systems which discharge by percolation to ground water, exfiltration, and/or evaporation processes and which generally have residence times of less than three days.

87. **Retention Volume/Removed Runoff.** The volume of runoff that is captured and not released directly into the surface waters of this Commonwealth during or after a storm event.

88. **Return Period.** The average interval, in years, within which a storm event of a given magnitude can be expected to occur one time. For example, the 25-year return period rainfall would be expected to occur on average once every twenty-five years.

89. **Riparian.** Pertaining to anything connected with or immediately adjacent to the banks of a stream or other body of water.

90. **Riparian Buffer.** An area of land adjacent to a body of water and managed to maintain the

integrity of stream channels and shorelines to 1) reduce the impact of upland sources of pollution by trapping, filtering and converting sediments, nutrients and other chemicals, and 2) supply food, cover and thermal protection to fish and other wildlife.

91. **Runoff**. See "Stormwater."

92. **Semi-Pervious Surface**. A surface consisting of gravel, limestone, or other aggregate. See impervious surface definition.

93. **SLAMM**. Source Loading and Management Model. This model is based on small storm hydrology and pollutant runoff from urban land uses. Pollutant sources are identified and both structural and nonstructural storm water practices can be accounted for in the model.

94. **SCS**. Soil Conservation Service.

95. **SWMM**. Stormwater Management Model. EPA developed this model for analyzing stormwater quantity and quality associated with runoff fi-om urban areas. Both single event and continuous simulation can be performed on catchments having storm sewers, or combined sewers and natural drainage, for prediction of flows, stages and pollutant concentrations.

96. **Sediment**. Fragmented material that originated from weathering rocks and decomposing organic material that is transported by, suspended in, and eventually deposited in the streambed.

97. **Sedimentation**. Occurs when sediment particles that have been suspended within flowing water are deposited on the stream bottom or floodplain.

98. **Separate Storm Sewer System**. A conveyance or system of conveyance, including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm sewers, primarily used for collecting and conveying storm water runoff

99. **Sheet Flow**. A flow process associated with broad, shallow water movement on sloping ground surfaces that is not channelized or concentrated.

100. **State Water Quality Requirements**. The regulatory requirements to protect, maintain, reclaim, and restore water quality under Pennsylvania Code Title 25 and the Clean Streams Law.

101. **Storm Event**. The storm of a specific duration, intensity, and frequency.

102. **Stormwater or Runoff**. The flow of water overland and/or in water bodies that results from and occurs during and immediately following a rainfall event or snow or ice melt.

103. **Stormwater Management BMPs**. Is abbreviated as SWM BMPs or BMPs throughout this Ordinance. Also see "Best Management Practices".

104. **Stormwater Management Facility**. Any structure, natural or man-made, that, due to its condition, design, or construction, conveys, stores, or otherwise affects stormwater runoff. Typical stormwater management facilities include, but are not limited to: detention and retention basins; open channels; storm sewers; pipes; and infiltration facilities.

105. **Stormwater Management Plan**. The approved detailed analysis, design, and drawings of the stormwater management system required for all construction.

106. **Stormwater Management Practices**. The designed and/or constructed features which

infiltrate, treat, collect, convey, channel, store, inhibit, or divert the movement of stormwater; such practices include structural and non-structural practices.

107. **Stream**. A channel or conveyance of surface water having a defined bed and banks, whether natural or artificial, with perennial or intermittent flow.

108. **Structure**. Any man-made object having an ascertainable stationary location on or in land or water, whether or not affixed to the land, including, in addition to buildings, billboards, carports, porches, and other building features, but not including sidewalks and driveways.

109. **Structural Stormwater Management Practices**. Any measures that require the design and construction of a facility to help reduce or eliminate a non-point source of pollution and control stormwater.

110. **Subarea (subbasin)**. A portion of the watershed (basin) that has similar hydrological characteristics and drains to a common point.

111. **Subdivision**. The division or re-division of a lot, tract, or parcel of land by any means into two or more lots, tracts, parcels, or other divisions of land, including changes in existing lot lines for the purpose, whether immediate or future, of lease, partition by the court for distribution to heirs or devisees, transfer of ownership, or building, or lot development; provided, however, that the subdivision by lease of land for agricultural purposes into parcels of more than 10 acres, not involving any new street or easements of access or any residential dwelling shall be exempted.

112. **Subgrade**. The top elevation of graded and compacted earth underlying roadway pavement.

113. **Swale**. An artificial or natural waterway which may contain contiguous areas of standing or flowing water only following a rainfall event, or is planted with or has stabilized vegetation suitable for soil stabilization, storm water treatment, and nutrient uptake, or is designed to take into account the soil erodibility, soil percolation, slope, slope length, and contributing drainage area so as to prevent erosion and reduce the pollutant concentration of any discharge.

114. **Total Site Area (Site Area)**. Total area of the parcel(s) being developed.

115. **USDA**. United States Department of Agriculture.

116. **FHWA**. United States Department of Transportation Federal Highway Administration.

117. **Water Body**. Any natural or artificial pond, lake, reservoir, or other area which ordinarily or intermittently contains water and which has a discernible shoreline and receives surface water flow.

118. **Watercourse**. A channel or conveyance of surface water having defined bed and banks, whether natural or artificial, with perennial or intermittent flow.

119. **Water Table**. The upper most level of saturation of pore space or fractures by subsurface water in an aquifer. Seasonal High Water Table refers to a water table that rises and falls with the seasons due either to natural or man-made causes.

120. **Waters of the Commonwealth**. Any and all rivers, streams, creeks, rivulets, impoundments, ditches, watercourses, storm sewers, lakes, dammed water, wetlands, ponds, springs, and

all other bodies or channels of conveyance of surface and underground water, or parts thereof, whether natural or artificial, within or on the boundaries of this Commonwealth.

121. **Watershed**. All land and water within the confines of a drainage basin.

122. **Wetland**. Any area defined as a wetland by the Federal Manual for Identifying and Delineating Jurisdictional Wetlands.