BOROUGH OF SEWICKLEY

ORDINANCE NO. 1335

AN ORDINANCE OF THE BOROUGH OF SEWICKLEY, ALLEGHENY COUNTY, PENNSYLVANIA, ESTABLISHING STORMWATER MANAGEMENT RULES AND REGULATIONS

Adopted at a Public Meeting Held on

August 17, 2015

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ARTICLE I- GENERAL PROVISIONS

Section 101. Short Title

This Ordinance shall be known and may be cited as the "Borough of Sewickley Stormwater Management Ordinance."

Section 102. Statement of Findings

The governing body of the Borough finds that:

A. Stormwater runoff from lands modified by human activities threatens public health and safety by causing decreased infiltration of rainwater and increased runoff flows and velocities, which overtax the carrying capacity of existing streams and storm sewers, and greatly increases the cost to the public to manage stormwater.

B. Inadequate planning and management of stormwater runoff resulting from land development and redevelopment throughout a watershed can also harm surface water resources by changing the natural hydrologic patterns, accelerating stream flows (which increase scour and erosion of stream-beds and stream-banks thereby elevating sedimentation), destroying aquatic habitat and elevating aquatic pollutant concentrations and loadings such as sediments, nutrients, heavy metals and pathogens. Groundwater resources are also impacted through loss of recharge.

C. A program of stormwater management, including reasonable regulation of land development and redevelopment causing loss of natural infiltration, is fundamental to the public health, safety, welfare, and the protection of the people of the Borough of Sewickley and all the people of the Commonwealth, their resources, and the environment.

D. Stormwater can be an important water resource by providing groundwater recharge for water supplies and base flow of streams, which also protects and maintains surface water quality.

E. Public education on the control of pollution from stormwater is an essential component in successfully addressing stormwater.

F. 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).

G. Non-stormwater discharges to municipal separate storm sewer systems can contribute to pollution of waters of the Commonwealth by the Borough.

Section 103.Purpose

The purpose of this Ordinance is to promote health, safety, and welfare within the Borough and its watershed by minimizing the harms and maximizing the benefits described in Section 102 of this Ordinance, through provisions designed to:

A. Manage stormwater runoff impacts at their source by regulating activities that cause the problems.

B. Provide review procedures and performance standards for stormwater planning and management.

C. Utilize and preserve the existing natural drainage systems as much as possible.

D. Manage stormwater impacts close to the runoff source, which requires a minimum of structures and relies on natural processes.

E. Focus on infiltration of stormwater, to maintain groundwater recharge, to prevent degradation of surface and groundwater quality and to otherwise protect water resources.

F. Maintain existing flows and quality of streams and watercourses.

G. Meet legal water quality requirements under state law, including regulations at 25 Pa. Code § 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.

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

I. Provide for proper operations and maintenance of all permanent stormwater management BMPs that are implemented in the Borough.

J. Provide a mechanism to identify controls necessary to meet the NPDES permit requirements.

K. Implement an illegal discharge detection and elimination program to address non--stormwater discharges into the Borough's separate storm sewer system.

Section 104. Statutory Authority

A. Primary Authority:

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

B. Secondary Authority:

The Borough is empowered to regulate land use activities that affect stormwater impacts by the authority of the Borough Code.

C. Secondary Authority:

The Borough 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.

Section 105. Applicability

The standards contained herein shall apply to all Regulated Activities within the Borough. In addition, all local, county and State erosion and sedimentation control approvals must be in place to proceed with any Regulated Activity.

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

1. Land development and redevelopment
2. Subdivision.
3. Construction of new or additional impervious or semi-pervious surfaces (driveways, parking lots, etc.).
4. Construction of new buildings or additions to existing buildings.
5. Diversion or piping of any natural or man-made stream channel.
6. Installation of stormwater management facilities or appurtenances thereto.
7. Any Earth Disturbances or any activities that involve the alteration or development of land or removal of tree and vegetation in a manner that may affect post construction stormwater runoff.
8. Earth Disturbance activities and associated stormwater management controls are also regulated under existing state law and implementing regulations. This Ordinance shall operate in coordination with those parallel requirements; the requirements of this Ordinance shall be no less restrictive in meeting the purposes of this Ordinance than state law.

Section 106. Repealer

Any other ordinance provision(s) or regulation of the Borough inconsistent with any of the provisions of this Ordinance is hereby repealed to the extent of the inconsistency only.

Section 107. Severability

In the event that any section or provision of this Ordinance is declared invalid by a court of competent jurisdiction, such decision shall not affect the validity of any of the remaining provisions of this Ordinance.

Section 108. Compatibility with Other Requirements

A. Approvals issued and actions taken under this Ordinance do not relieve the Applicant of the responsibility to secure required permits or approvals for activities regulated by any other code, law, regulation or ordinance. To the extent that this Ordinance imposes more rigorous or stringent requirements for stormwater management, the specific requirements contained in this Ordinance shall be followed.

Nothing in this Ordinance shall be construed to affect any of the Borough's other requirements regarding stormwater matters which do not conflict with the provisions of this Ordinance, such as local stormwater management design criteria (e.g. inlet spacing, inlet type, collection system design and details, outlet structure design, etc.). Conflicting provisions in other municipal ordinances or regulations shall be construed to retain the requirements of this ordinance addressing State Water Quality Requirements.

ARTICLE II- DEFINITIONS

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

A. Words used in the present tense include the future tense; the singular number includes the plural, and the plural number includes the singular; words of masculine gender include feminine gender; and words of feminine gender include masculine gender.

B. The word "includes" or "including" shall not limit the term to the specific example, but is intended to extend its meaning to all other instances of like kind and character.

C. The words "shall" and "must" are mandatory; the words "may" and "should" are permissive.

Accelerated Erosion - The removal of the surface of the land through the combined action of human activities and the natural processes, at a rate greater than would occur because of the natural process alone.

Agricultural Activity – Activities associated with agriculture such as agricultural cultivation, agricultural operation, and animal heavy use areas. This includes 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.

Applicant - A landowner, developer or other person who has filed an application for approval to engage in any Regulated Earth Disturbance activity at a project site in the Borough.

BMP (Best Management Practice) - Activities, facilities, designs, measures or procedures used to manage stormwater impacts from Regulated Earth Disturbance 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 the broad categories or measures: "structural" or "nonstructural." In this Ordinance, nonstructural 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.

BMPs include but are not limited to infiltration, filter snips, low impact design, bioretention, wet ponds, permeable paving, grassed swales, forested buffers, sand filters and detention basins.

Borough -Borough of Sewickley, Allegheny County, Pennsylvania.

Conservation District - The Allegheny County Conservation District.

DEP - The Pennsylvania Department of Environmental Protection.

Design Storm – The magnitude and temporal distribution of precipitation from a storm event measured in probability of occurrence (e.g. a 2-year storm) and duration (e.g. 24- hours), used in the design and evaluation of stormwater BMPs.

Developer - A person that seeks to undertake any Regulated Earth Disturbance activities at a project site in the Borough.

Development - See "Earth Disturbance Activity." The term includes redevelopment.

Development Site - The specific tract of land where any earth disturbance activities in the Borough are planned, conducted or maintained.

Earth Disturbance Activity - A construction or other human activity which disturbs the surface of the land, including, but not limited to, clearing and grubbing, grading, excavations, embankments, road maintenance, building construction and the moving, depositing, stockpiling, or storing of soil, rock or earth materials.

Erosion - The process by which the surface of the land, including channels, is worn away by water, wind, or chemical action.

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

Forest Management/Timber Operations - Planning and activities necessary for the management of forestland. These include conducting a timber inventory, preparation of forest management plans, silvicultural treatment, cutting budgets, logging road design and construction, timber harvesting, site preparation, and reforestation.

Groundwater Recharge - Replenishment of existing natural underground water supplies.

Hydrologic Soil Group (HSG) - Soils are classified into four HSGs designated A, B, C, and D according to their minimum infiltration rate, which is obtained for bare soil after prolonged wetting. The NRCS 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.

Impervious Surface - A surface that prevents the infiltration of water into the ground. Impervious surface includes, but is not limited to, any roof, parking or driveway areas, and any new streets and sidewalks. Any surface areas designed to initially be gravel or crushed stone shall be assumed to be impervious surfaces.

Land Development - Any of the following activities: (i) the improvement of one lot or two or more contiguous lots, tracts, or parcels of land for any purpose involving (a) a group of two or more residential or non-residential buildings, whether proposed initially or cumulatively; or a single-non-residential building on a lot or lots, regardless of the number of occupants or tenure; or (b) 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; (ii) any subdivision of land; (iii) development in accordance with Section 503(1.1) of the PA Municipalities Planning Code.

Municipality – Sewickley Borough, Allegheny County, Pennsylvania.

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

Outfall - "Point source" as described in 40 CFR § 122.2 at the point where the Borough's storm sewer system discharges to surface waters of the Commonwealth.

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

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

Project Site - The specific area of land where any Regulated Earth Disturbance activities in the Borough are planned, conducted or maintained.

Qualified Professional - Any person licensed by the Pennsylvania Department of State for the services they are providing.

Redevelopment - Earth disturbance activities on land which has previously been disturbed or developed.

Regulated Activities - Any earth disturbance activities or any activities that involve the alteration, development or redevelopment of land in a manner that may affect stormwater runoff.

Regulated Earth Disturbance Activity - Earth disturbance activity one acre or more with a point source discharge to surface waters or the Borough's storm sewer system, or five acres or more regardless of the planned runoff. This includes earth disturbance on any portion of, part, or during any stage of, a larger common plan of development.

Road Maintenance - Earth disturbance activities within the existing road cross-section, such as grading and repairing existing unpaved road surfaces, cutting road banks, cleaning or clearing drainage ditches and other similar activities.

Runoff -Any part of precipitation that flows over the land surface.

Separate Storm Sewer System - A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels or storm drains) primarily used for collecting and conveying stormwater runoff.

State Water Quality Requirements - As defined under state regulations - protection of designated and existing uses (See 25 pa. Code Chapters 93 and 96) - including:

A. Each stream segment in Pennsylvania has a "designated use," such as "cold water fishery" or "potable water supply," which are listed in Chapter 93. These uses must be protected and maintained, under state regulations.

B. "Existing uses" are those attained as of November 1975, regardless whether they have been designated in Chapter 93. Regulated Earth Disturbance activities must be designed to protect and maintain existing uses and maintain the level of water quality necessary to protect those uses in all streams, and to protect and maintain water quality in special protection streams.

C. Water quality involves the chemical, biological and physical characteristics of surface water bodies. After Regulated Earth Disturbance activities are complete, these characteristics can be impacted by addition of pollutants such as sediment, and changes in habitat through increased flow volumes and/or rates as a result of changes in land surface area from those activities. Therefore, permanent discharges to surface waters must be managed to protect the stream bank, streambed and structural integrity of the waterway, to prevent these impacts.

Stormwater - The surface runoff generated by precipitation reaching the ground surface.

Stormwater Management Plan - As required by the Act of October 4, 1978, P.L. 864, (Act 167), as amended, and known as the "Storm Water Management Act."

Stormwater Management Site Plan - The plan prepared by the developer or his representative indicating how stormwater runoff will be managed at the development site in accordance with this Ordinance. Stormwater Management Site Plan will be designated as SWM Plan throughout this Ordinance.

Storm Frequency - Design shall normally be based on a 25-year storm frequency and shall be computed in accordance with DEP, Office of Water Management Erosion and Sediment Pollution Control Program Manual and/or PENNDOT Design Manual Part 2, Highway Design, Publication !3M latest editions.

Stormwater Drainage - The maximum rate of post development stormwater runoff shall be less than or equal to the rate of predevelopment stormwater runoff.

Surface Waters of the Commonwealth - Any and all rivers, streams, creeks, rivulets, impoundments, ditches, watercourses, storm sewers, lakes, damned water, wetlands, ponds, springs, and all other bodies or channels of conveyance of surface water, or parts thereof, whether natural or artificial, within or on the boundaries of this Commonwealth.

Watercourse - A channel or conveyance of surface water, such as a stream or creek, having defined bed and banks, whether natural or artificial, with perennial or intermittent flow.

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.

Watershed - Region or area drained by a river, watercourse or other body of water, whether natural or artificial.

ARTICLE III - STORMWATER MANAGEMENT FOR WATER QUALITY

Section 301. General Requirements for Stormwater Management

A. All Regulated Earth Disturbance activities within the Borough shall be designed, implemented, operated and maintained to meet the purposes of this Ordinance, through these two elements:

1. Erosion and Sediment control during the earth disturbance activities (e.g., during construction), and

2. Water quality protection measures after completion of earth disturbance activities (e.g., after construction), including operations and maintenance.

B. No Regulated Earth Disturbance activities within the Borough shall commence until the requirements of this Ordinance are met.

C. Erosion and sediment control during Regulated Earth Disturbance activities shall be addressed as required by Section 303.

D. Post-construction water quality protection shall be addressed as required by Section 304. Operations and maintenance of permanent stormwater BMPs shall be addressed as required by Article IV.

E. All Best Management Practices (BMPs) used to meet the requirements of this Ordinance shall conform to the State Water Quality Requirements, and any more stringent requirements as determined by the Borough.

F. Techniques described in Appendix A (Low Impact Development) of this Ordinance are encouraged, because they reduce the costs of complying with the requirements of this Ordinance and the State Water Quality Requirements.

G. In conjunction with meeting the requirements of this Ordinance, the Applicant shall refer to and meet all conditions and requirements set forth in the Borough of Sewickley's Municipal Separate Storm Sewer System (MS4) Prohibited Discharge Ordinance.

H. In conjunction with meeting the requirements of this Ordinance, the applicant shall refer to and meet all conditions and requirements set forth in the Borough of Sewickley's Total Maximum Daily Load (TMDL) plan as adopted and revised.

Section 302. Permit Requirements by Other Government Entities

The following permit requirements may apply to certain Regulated Earth Disturbance activities, and must be met prior to commencement of Regulated Earth Disturbance activities, as applicable:

A. All Regulated Earth Disturbance activities subject to permit requirements by DEP under regulations at 25 Pa. Code Chapter 102.

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

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

D. Any stormwater management facility that would be located on a State highway right-of- way, or require access from a state highway, shall be subject to approval by the Pennsylvania Department of Transportation (PENNDOT).

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

Section 303. Erosion and Sediment Control During Regulated Earth Disturbance Activities

A. No Earth Disturbance activities within the Borough shall commence until approval by the Borough of an Erosion and Sediment Control Plan for construction activities. The Borough may require the Erosion and Sedimentation Control Plan be reviewed by the Allegheny County Conservation District.

B. DEP has regulations that require 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), and said regulation must be followed.

C. The Borough has regulations that require an Erosion and Sediment Control Plan for any earth disturbance activity of 5,000 square feet or more.

D. In addition, under 25 Pa. Code Chapter 92, a DEP "NPDES Construction Activities" permit is required for Regulated Earth Disturbance activities.

E. Evidence of any necessary permit(s) for Regulated Earth Disturbance activities from the appropriate DEP regional office or County Conservation District must be provided to the Borough. The issuance of an NPDES Construction Permit (or permit coverage under the statewide General Permit (PAG-2) satisfies the requirements subsection 303.A.

F. A copy of the Erosion and Sediment Control Plan, completed and sealed by a Professional Engineer, and any required permit, as required by DEP regulations, shall be available at the project site at all times.

Section 304. Water Quality Requirements After Regulated Earth Disturbance Activities Are Complete

A. No Regulated Earth Disturbance activities within the Borough shall commence until approval by the Borough of a plan which demonstrates compliance with State Water Quality Requirements after construction is complete.

B. The BMPs (Best Management Practices) must be designed, implemented and maintained to meet State Water Quality Requirements, and any other more stringent requirements as determined by the Borough.

C. To control post-construction stormwater impacts from Regulated Earth Disturbance activities, State Water Quality Requirements can be met by BMPs, including site design, which provide for replication of pre-construction stormwater infiltration and runoff conditions, so that post-construction stormwater discharges do not degrade the physical, chemical or biological characteristics of the receiving waters. As described in the DEP Comprehensive Stormwater Management Policy (#392-0300-002, September 28, 2002), this may be achieved by the following:

1. Infiltration: replication of pre-construction stormwater infiltration conditions,

2. Treatment: use of water quality treatment BMPs to ensure filtering out of the chemical and physical pollutants from the stormwater runoff, and

3. Streambank and Streambed Protection: management of volume and rate of post-construction stormwater discharges to prevent physical degradation of receiving waters (e.g., from scouring).

D. DEP has regulations that require municipalities to ensure design, implementation and maintenance of Best Management Practices ("BMPs") that control runoff from new development and redevelopment after Regulated Earth Disturbance activities are complete. These requirements include the need to implement post-construction stormwater BMPs with assurance of long-term operations and maintenance of those BMPs.

E. Evidence of any necessary permit(s) for Regulated Earth Disturbance activities from the appropliate DEP regional office must be provided to the Borough. The issuance of an NPDES Construction Permit (or permit coverage under the statewide General Permit (PAG-2) satisfies the requirements of subsection 304.A.

F. BMP operations and maintenance requirements are described m Article IV of this Ordinance.

Section 305. Stormwater Detention Facilities

The following provisions shall be considered the overriding performance standards against which all proposed stormwater control measures shall be evaluated, and they shall apply to all areas of the Borough.

A. Stormwater shall not be permitted, as a result of development undertaken after adoption of this Ordinance, to collect upon any property, or to pass from one property to another in a concentrated flow without benefit of a legal easement, or to cross a public street on the surface.

B. Any landowner and any person engaged in the alteration or development of land which may affect stormwater runoff characteristics shall implement such measures as are reasonably necessary to prevent injury to health, safety or other property. Such measures shall include such actions as are required:

1. To assure that the maximum rate of stormwater runoff is no greater after development than that prior to development activities; and

2. To manage the quality, velocity and direction of resulting stormwater runoff in a manner which will not adversely impact the health on, or value of, any affected properties.

C. In the case of a development in which the total of the building and paved surfaces on the site exceed five thousand (5,000) square feet, the developer shall provide as part of the design a stormwater management narrative signed and sealed by an engineer licensed in the Commonwealth of Pennsylvania. The stormwater management narrative shall include an analysis of both Pre- and Post-Developed runoff conditions.

1. For the analysis of redevelopment projects twenty percent (20%) of the existing impervious surface shall be considered meadow in good condition.

2. Post-development runoff rates after development shall not exceed the Pre-developed runoff rates including the reduction in impervious surface required for redevelopment projects.

D. Design Storms:

1. The 1-, 2-, 5-, 10-, 25-, 50- and 100-year design storm frequencies shall be used for analyzing stormwater runoff in pre- and post-developed conditions as well as for the designing runoff control facilities.

2. The SCS, Type II Rainfall Distribution shall be used for all analysis. The design storms, along with the 24-hour total rainfall for these storm frequencies for the water shed area:

Design Storm	Rainfall Depth 24 Hours
1 year	1.97 inches
2 year	2.60 inches
5 year	2.88 inches
10 year	3.30 inches
25 year	3.90 inches
50 year	4.40 inches
100 year	5.20 inches

E. Release Rate:

1. The Post-developed runoff rate may not exceed 90 percent of the Pre-developed runoff rate for the 1-, 2-, 5-, 10-, 25-, 50-, and 100-year design storm frequencies.

F. Method of Computation:

1. All computations used in conjunction with the analysis and design, of stormwater management facilities shall be based on one or more of the following methods:

   HEC-HMS – U. S. Army Corps of Engineers Hydrologic Modeling System

   TR-55 – Soil Conservation Service Technical Release No. 55

   TR-20 – Soil Conservation Service Technical Release No. 20

   Modified Rational Method (Watersheds less than 20 acres)

   Penn State Runoff Model

2. These methods for determining peak discharge shall be used (1) to determine pre-development runoff conditions; (2) to analyze the impact of development and (3) to perform calculations in the design of any detention/retention facilities used in controlling runoff. These methods of runoff computation developed and used by the Soil Conservation Service and other authorities are hereby adopted by the Borough.

G. Volume Controls

1. The low impact development practices provided in the BMP Manual[1] shall be utilized for all regulated activities to the maximum extent practicable. Water volume controls shall be implemented using the *Design Storm Method* in Subsection A or the *Simplified Method* in Subsection B below. For regulated activity areas equal or less than 1 acre that do not require hydrologic routing to design the stormwater facilities, this Ordinance establishes no preference for either methodology; the Applicant may select either methodology on the basis of economic considerations, the intrinsic limitations on applicability of the analytical procedures associated with each methodology, and other factors.

    a. The *Design Storm Method* (CG-1 in the BMP Manual[1]) is applicable to any size of regulated activity. This method requires detailed modeling based on site conditions.

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

        ii. For modeling purposes:

            1. Existing (predevelopment) nonforested pervious areas must be considered meadow or its equivalent.

            2. 20% of existing impervious area, when present, shall be considered meadow in the model for existing conditions.

    b. The *Simplified Method* (CG-2 in the BMP Manual[1]) 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 1 acre or for projects that require design of stormwater storage facilities. For new impervious surfaces:

        i. Stormwater facilities shall capture at least the first 2 inches of runoff from all new impervious surfaces.

        ii. At least the first 1 inch of runoff from new impervious surfaces shall be permanently removed from the runoff flow--i.e., it shall not be released into the surface waters of this Commonwealth. Removal options include reuse, evaporation, transpiration, and infiltration.

        iii. 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

H. Criteria for Stormwater Detention/Retention Facilities

1. If detention/retention facilities are utilized for the development site, the facility(s) shall be designed such that the post-development peak runoff rates from the developed site are controlled to those rates previously defined for the 1-, 2-, 5-, 10-, 25-, 50- and 100-year predeveloped design storms. Stormwater Detention Facilities shall drain within 24-72 hours from the end of the storm event.

2. All detention/retention facilities shall be equipped with multi-stage outlet structure to provide discharge controls or the 1-, 2-, 10-, 25-, 50- and 100-year storm frequencies provisions shall also be made for safely passing the post-development 100-year storm runoff flows without damaging (i.e., impairing the continued function of) the facilities.

3. Where detention facilities will be utilized, multiple-use facilities, such as lakes, ball fields or similar recreational uses, are encouraged wherever feasible.

4. Other considerations which should be incorporated into the design of the detention facilities include:

   a. Inflow and outflow structures shall be designed and installed to prevent erosion, and bottoms of impoundment type structures should be protected from soil erosion.

   b. Control and removal of debris both in the storage structure and in all inlet or outlet devices shall be a design consideration.

   c. Inflow and outflow structures, pumping stations, and other structures shall be protected and designed to minimize safety hazards.

   d. The water depth of a storage pond which is not fenced shall be limited to two (2) feet unless approved by the Borough Engineer. Otherwise, appropriate landscaped fencing at least four (4) feet in height shall be required.

   e. Landscaping shall be provided for the facility which harmonizes with the surrounding area.

   f. All stormwater detention facilities shall be screened from view of existing roads or streets located within the Borough, which is a minimum of 6-feet in height with sufficient access for maintenance vehicles. The screening material must be approved by the Borough. Landscaping of the pond embankment shall not be permitted at any time.

   g. The facility shall be located to facilitate maintenance, considering the frequency and type of equipment that will be required.

   h. The facility shall be equipped with an access road at least eight (8) feet wide and with a maximum of grade of 15 percent.

i. All pond outlet structures shall have suitable gaskets to prevent leakage and piping of water through the pond embankment. All storm pipe installed through the pond embankment must be constructed of reinforced concrete pipe.

j. The emergency spillway shall be sized to convey the 100-year peak flow rate with a minimum of one foot of free board. All emergency spillways shall include a cutoff wall.

5. A geotechnical investigation report for the construction of the stormwater detention/retention and infiltration facilities must be provided including design recommendations for embankment construction, interior and exterior slopes, drainage swales and infiltration areas.

Section 306. Collection and Conveyance Systems

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

B. Wherever conveyance channels are necessary, drainage shall be maintained by an open channel with landscape banks designed to carry the 100-year, 24-hour stormwater runoff from upstream contributory areas. If the runoff from stormwater collection and conveyance facilities would drain over land to a stormwater detention facility, the 25-year frequency storm event may be used. The Borough Engineer with the approval of the Borough may increase the design storm, as conditions require. All open channels shall be designed with one (1) foot of freeboard above the design water surface elevation of the design runoff condition.

C. Flood relief channels shall be provided and designed to convey the runoff from the 100-year, 24-hour storm, such that a positive discharge of this runoff is to a natural drainage course with a defined bed and bank.

D. 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.

E. Where drainage swales are used in lieu of or in addition to storm sewers, they shall be designed to carry the required runoff without erosion and in a manner not detrimental to the properties they cross. Drainage swales shall provide a minimum grade of one percent (1%) but shall not exceed a grade of nine percent (9%). Drainage swales used strictly for conveyance are not the same as Open Vegetated Channels.

F. Street curbing for the purpose of stormwater conveyance is discouraged. On streets that must contain curbing, storm sewers shall be placed in front of 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.

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

H. The developer shall obtain or grant a minimum twenty (20) foot wide drainage easement over all storm sewers, drainage swales, channels, etc., that are a component of the stormwater management system when located within undedicated land. 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 easement that allows proper legal access and maintenance vehicle access.

I. 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.

J. Water Quality Inlets. Storm drainage systems that collect runoff from parking areas and/or loading areas exceeding 10,000 square feet of impervious coverage and discharge to stormwater management systems, including surface or subsurface infiltration systems, shall have a minimum of one (1) water quality inlet per each acre of drainage area. The purpose of water quality inlets is to remove oil, grease, and heavy particulates or total suspended solids, hydrocarbons and other floating substances from stormwater runoff, Methods other than water quality inlets may be permitted if the Applicant demonstrates to the Borough's satisfaction that any such alternative will be as effective and as easily maintained. Periodic cleaning of these systems shall be addressed in the Operation and Maintenance Plan submitted to the Borough.

K. Suitable drainage structures, culverts, storm sewers, swales and related installations shall be provided along roads to insure removal of stormwater from all gutters, at all low points and at intervals elsewhere not exceeding 600-feet, such that the width of stormwater flow in any gutter does not exceed ¼ of the total cartway width.

L. No stormwater pipe (public or private) shall be less than 15-inches in diameter that conveys surface runoff. The minimum pipe slope shall be such that a minimum of 2 ft./sec velocity is maintained. Where a culvert or pipe is used to replace a stream, the cross-sectional area shall be at least as large as the original stream channel. All stormwater BMPs shall be constructed in accordance with the Borough's "Standard Details". Minimum pipe cover shall conform to the Manufacturer's recommendations. Stormwater conveyance pipes utilized in BMPs shall have a pipe size of 4-inch diameter or larger.

M. Where open watercourses for stormwater drainage are used the following standards shall apply:

1. Artificial channels shall be of trapezoidal cross section, with the channel width at the bottom not to exceed 10 times the maximum water depth which would be produced by

the 100-year design storm and with rough, permeable and flexible sides and bottom. No artificial channel shall be used to replace a natural stream.

2. At all points in the drainage system the velocity shall be less than the erosion threshold of the conveyance material, including at the outlet from the construction area or subdivision site.

N. All stormwater collection and conveyance facilities (pipes, swales, and structures) shall be designed for a 100-year design storm event, unless the runoff would naturally drain overland to a stormwater detention facility, in which case a 25-year design storm event may be used. All drainage facilities shall be designed to contain the energy gradeline for the peak flow rate for the design storm within the structures a minimum of two (2) foot below surface elevation. The hydraulic grade line must be within the pipe. Swales and channels shall provide at least one foot of freeboard above the energy gradeline. Backwater effects of pipes discharging under surcharge conditions shall be included in the calculations.

O. All workmanship and materials shall conform to the Borough's Construction Standards. In addition, all workmanship and materials shall conform to the latest edition of PennDOT Form 408 and be supplied by manufacturers of suppliers listed in PennDOT's Bulletin 15.

P. All connections to existing storm sewer pipes shall be made by construction of a suitable junction box (inlet or manhole) to provide access for cleanout. No blind connections shall be permitted.

Q. All pipe outlets shall discharge onto a stone riprap blanket to prevent erosion of soil. Riprap shall be sized considering pipe exit velocities.

R. The discharge of stormwater runoff shall be to a well-defined drainage course, which has a defined bed and bank. If stormwater runoff cannot be discharged to a defined drainage course, documentation of written permission from each downstream property owner shall be provided for all properties between the source of discharge and the defined drainage course.

S. Manhole and inlet structures and castings shall conform to the Pennsylvania Department of Transportation Form 408 and PennDOT Standards for Roadway Construction. Inlet grates shall be bicycle safe. Frames and grates shall be cast iron or structural steel. Concrete frames shall not be permitted.

T. All roof drains shall discharge to an on-lot sump, or to a storm sewer system which is controlled by a detention pond. Outlets from roof drain sumps shall not discharge directly to fill slopes. Outlets shall not discharge directly to the gutter line of any street. All pipes from roof drains shall be a minimum four-inch Schedule 40 ABS, PVC or SDR 26 pipe. Four-inch Schedule 40 PVC or ABS pipe is required for a distance of 10-feet from the foundation of the dwelling. No stormwater drainage system shall be permitted to be constructed through any curbing on any public street. Minimum pipe size for sump stormwater piping is four (4) inches.

U. All bridges and culverts shall be designed to support expected loads and to carry expected flows and shall be designed to meet current standards of the Pennsylvania Department of Transportation. All bridges and culverts shall be subject to all permits required by the Pennsylvania Department of Environmental Protection, Bureau of Dams and Waterways.

ARTICLE IV

PLAN SUBMISSION AND APPROVAL REQUIRED FOR ALL NEW DEVELOPMENT

Section 401. General Requirements for Stormwater Management

A. Prior to the final approval of all subdivision and/or land development plans submitted to Sewickley Borough, the owner, subdivider, Landowner or legal representative shall submit a Stormwater Management Plan to the Borough for review and approval.

B. In the case of subdivision and land development activities, the submission requirements and procedures of the Stormwater Management Plan shall be in accordance with the Subdivision and Land Development Ordinance of Sewickley Borough.

C. The Stormwater Management Plan will be submitted to Sewickley Borough with the subdivision plan to allow for timely review and inclusion in the final subdivision plan of any revision(s) which may result from the reviews of the Allegheny County Planning Commission and the Allegheny County Conservation District.

1. Evidence that the Stormwater Management Plan has been submitted to Sewickley Borough or Allegheny County Conservation District shall be presented to the Borough.

2. The review and comments of the Allegheny County Conservation District and/or municipal engineer shall be considered by the governing body in taking action of subdivision and land development plans.

D. The final Stormwater Management Plan approved by Sewickley Borough shall become a supplement to the final subdivision plan and be subject to all rules, regulations and procedures pertaining thereto, as well as the following requirement:

Prior to the final approval of subdivision or land development plan by Sewickley Borough, the Landowner must provide security to Sewickley Borough as stipulated in Act 247 (PA Municipalities Planning Code).

Section 402. Exemptions

The following activities are specifically exempt from this Ordinance.

A. Use of land for gardening primarily for home consumption.

B. Agricultural and Silviculture use of lands when operated in accordance with a farm conservation plan approved by the local soil conservation district or when it is determined by the local soil conservation district that such use will not cause excessive erosion and sedimentation.

Small Developments.

1. At the time of application, the Borough Engineer shall determine if the development qualifies as a small development, and therefore is eligible for a simplified stormwater plan submission. For the purposes of this Section, a "small development" is any development which results (or will result when fully constructed) in the creation of 5,000 or less square feet of impervious surface area.

2. A small development shall be exempt from the preparation of a stormwater management plan as specified Article III. However, such developments shall provide safe management of stormwater runoff in accordance with the performance standards of Article III and as approved by the Borough Engineer.

3. Applications for small developments shall include a plan which describes narratively and graphically, the type and location of proposed on-site stormwater management techniques for the proposed connection to an existing storm sewer system. The plan shall show accurately site boundaries, five foot interval contours, location of watershed and/or subarea boundaries on the site (if applicable) and any watercourses, floodplains or existing drainage facilities or structures located on the site. Depending upon actual site conditions, number of lots involved and similar considerations, the Borough Engineer shall determine if the plan must be prepared by a registered professional engineer.

4. The Borough Engineer shall review and approve the proposed provisions for stormwater management for small developments. Where the applicant is proposing to connect to an existing storm sewer, the Borough Engineer shall determine that sufficient capacity exists in the storm sewer from the point of connection to the point of outlet in the natural drainage system. The Borough Engineer shall also determine if the proposed development site is part of a larger parcel or tract subject to any specific stormwater management controls contained in a prior plan.

5. For a parcel or tract of land held under single ownership, only one (1) application for a small development, as defined above, shall be permitted before requiring a stormwater management plan for the entire parcel. A project cannot be phased to circumvent the stormwater requirements by using the exemption for small developments.

Section 403. Plan Requirements

The Stormwater Management Plan shall consist of three parts:

A. Part I: A narrative report as a portion of the Impact Statement required for the review of proposed site plans, conditional uses, subdivisions, and zoning district amendments. The narrative report shall be a general statement of the project giving the purpose and engineering assumptions and calculations for control measures and facilities. The following information shall be included:

1. General description of the project.

2. General description of accelerated runoff control plan.

3. General description of erosion and sedimentation control plan.

4. Expected project time schedule, including anticipated start and completion dates.

5. Project's stormwater district, location and watersheds characteristics.

6. On-site detention methods.

7. Hydraulic and hydrologic calculations, methodology and basis of design. Computation of hydraulic and energy gradelines shall be included. All drainage facilities shall be designed to contain the energy gradeline for the peak flow rate for the design storm within the structure. Swales and channels shall provide at least one foot of freeboard above the energy gradeline.

8. Brief soil description.

B. Part II – Preliminary Plans: A comprehensive plan, in preliminary form (or in combined preliminary and final plan form), designed to safely handle the stormwater runoff, detain the increased stormwater runoff, and control erosion and sedimentation. The plans shall provide, and be accompanied by, maps or other descriptive material indicating the feasibility of the plan and showing the following:

1. The extent and area of each watershed tributary to the existing and future drainage channels in the development.

2. The street storm sewers and other storm drains to be built, the basis of their design, and outfall and outlet locations and elevations, receiving stream or channel and its high water elevation, the functioning of the drains during high water conditions.

3. The parts of the proposed street system where pavements are planned to be depressed sufficiently to convey or temporarily store overflow from storm sewers and over-the-curb flows resulting from high intensity rainstorms and the outlets for such overflow.

4. Existing streams and floodplains to be maintained and new channels to be constructed, their locations, cross-sections and profiles.

5. Proposed culverts and bridges to be built, their materials, elevations, waterway openings and basis of design.

6. Existing detention ponds and basins to be maintained, enlarged, or otherwise altered and new ponds or basins to be built and the basis of their design.

7. The estimated location and percentage of the total development of land area which will be used for impervious surfaces after construction is completed.

8. The slope, type and size of all proposed and existing sewers and other waterways.

9. All existing topographic conditions of the site, including elevations, watercourses, trees and other significant natural features.

10. All existing buildings, sewers, waterlines and other significant manmade features.

11. Estimated depth, shape, size and storage of any proposed retention facility.

12. One or more typical cross-sections of all existing and proposed channels or other open drainage facilities, showing the elevation of the existing land and the proposed changes thereto, together with the high water elevations expected from the 100-year storm under the controlled conditions called for by this Ordinance, and the relationship of structures, streets and other utilities.

13. A site plan showing the dimensions of the site with existing and proposed structures properly located, together with contours of the terrain after proposed grading.

C. Part III – Final Plan: Upon approval of the preliminary plan, a final plan shall be submitted to the Borough Engineer. The final plan shall provide all descriptive material and maps previously submitted and required prior to the final plan, in addition to the following items:

1. All calculations, assumptions and criteria used in the design of the storm sewer system, detention facilities and sediment and erosion control operations.

2. All plans and profiles of proposed storm sewers and open channels including horizontal and vertical controls, elevations, sizes, slopes and materials. All drainage facilities shall be designed to contain the energy gradeline for the peak flow rate for the design storm within the structure. Swales and channels shall provide at least one foot of freeboard above the energy gradeline.

3. Locations, dimensions and design details required for the construction of all facilities.

4. For all detention basins, a plot or tabulation of storage volumes with corresponding water surface elevations and of the basin outflow rates for those water surface elevations.

5. For all detention basins, design hydrographs of inflow and outflow for the peak design flows from the site under natural and developed conditions.

6. A description of operation for all detention basins.

7. Contours of finished project site that adequately describe the final topography.

8. The staging of earthmoving activities and program of operation.

9. All information relative to the design and operation of emergency spillways.

10. Emergency routing or outfall should be shown for storm runoff in the event of failure of off-site drainage structures.

11. When major control facilities, such as retention basins, are planned, soil structures and characteristics shall be investigated. Plans and data prepared by a licensed professional engineer or geologist with experience and education in soil mechanics shall be submitted. These submissions should consider and offer design solutions for frost heave potential, shrink-swell potential, soil bearing strength, water infiltration, soil settling characteristics, fill and backfilling procedures and soil treatment techniques as required to protect the improvements or structures.

12. All erosion and sedimentation control measures, temporary as well as permanent, having sufficient detail in order to clearly indicate effectiveness of the plan.

13. Project specifications relative to stormwater control, erosion and sedimentation.

14. Evidence that all on-site and off-site easements required to convey runoff flow to an existing public drainage facility or a permanent stream have been granted to the operating entity.

15. Provide a list of adjacent property owners within 200 feet of the subject property and documentation that the adjacent property owners have been notified of the proposed project.

16. Provide the information to conform with the requirements noted in Appendices 1 through 6.

Section 404. Plan Submission

The Stormwater Management narrative and the preliminary plan may accompany, and be a part of, the site plan submission, required for approval of Sewickley Borough.

A. Coordination with Public Agencies: The Stormwater Management Control Plan and all information and procedures relating thereto shall in all respects be in compliance with the applicable provisions of this Ordinance. It is the responsibility of the owner, subdivider, Landowner or legal representative to coordinate the plans with respective public service agencies set forth in this Ordinance.

B. Fee: The application form shall be accompanied by the requisite fee as set forth in Section 502 of this Ordinance and by two (2) copies of all required material and six (6) sets of black and white or blue and white prints of the plan.

C. Plan Review:

1. If deemed necessary, upon receipt of the plan, the Reviewing Body shall forward one (1) copy of the plan and one (1) copy of all the other material, the Allegheny County

Conservation District for review. Comments from the District may be received within thirty (30) days by the Reviewing Body.

2. In cases where the stormwater management, and erosion and sedimentation control project fronts on an existing or proposed state highway, the Reviewing Body may require that a copy of the plans and pertinent data be submitted to the Pennsylvania Department of Transportation for review.

The Planning Commission will consider the plan to determine if it meets the standards set forth in this Ordinance. The Planning Commission shall act on any preliminary plan within sixty (60) days of its being received. In the event that any variance from this Ordinance is requested by the applicant or is deemed necessary for approval, the variance and the reasons for its necessity shall be entered into the records of Sewickley Borough Council.

Section 405. Plan Approval

A. The Sewickley Borough Planning Commission shall recommend whether the Plan shall be approved, approved with modifications or disapproved, and shall notify the applicant in writing thereof, including, if approved with modifications or disapproval, a statement of reasons for such action, not later than five (5) days following the decision.

B. When the application is not recommended for approval in terms as filed, the decision shall specify the defects found in the application and describe the requirements which have not been met and shall, in each case, cite the provisions of the Ordinance.

C. Failure of the Sewickley Borough Planning Commission to render a decision and communicate it to the applicant within the sixty (60) days time limit and in the manner required herein shall be deemed to be a recommendation for approval of the application in terms as presented unless the applicant has agreed in writing to an extension of time or change in the prescribed manner of presentation of communication of the decision, in which case, failure to meet the extended time or change in manner of presentation of communication shall have like effect.

D. Upon approval, the plan shall be submitted to the Sewickley Borough Board of Supervisors as a part of the final subdivision or land development plan.

Section 406. Adherence to Approved Plan

It shall be unlawful for any person, firm or corporation to undertake any earth disturbing activity on any property except as provided for in the Stormwater Management Plan approved pursuant to this Ordinance. It shall be unlawful to alter or remove any control structure required by the Stormwater Management Plan pursuant to this Ordinance or to allow the property to remain in a condition which does not conform to the approved Stormwater Management Plan.

Section 407. Dedication of Facilities

All drainage and stormwater control facilities serving private commercial or industrial developments shall remain the property of the land owner(s). Where multiple land owners are involved, recorded maintenance agreements shall be provided to the Borough and annual maintenance bonds shall be filed to warrant maintenance. All drainage and stormwater control facilities serving residential subdivision plans and designed and constructed in accordance with this Ordinance (with the exception in cases where agreements to the contrary have been executed) will be dedicated to Sewickley Borough. Landowners shall be responsible for the maintenance of all stormwater control improvements until the development is completed. Thereafter, the Landowner shall dedicate these drainage and stormwater control facilities to Sewickley Borough for maintenance purposes, but only after the Landowner has received final approval, provided complete as-built construction drawings, and final inspection and a Certificate of Compliance from the Borough Engineer and Reviewing Body.

ARTICLE V - STORMWATER BMP OPERATIONS AND MAINTENANCE PLAN REQUIREMENTS

Section 501. General Requirements

A. No Regulated Earth Disturbance activities within the Borough shall commence until approval by the Borough of BMP Operations and Maintenance plan which describes how the permanent (e.g., post-construction) stormwater BMPs will be properly operated and maintained.

B. The following items shall be included in the BMP Operations and Maintenance Plan, as completed and sealed by a Professional Engineer:

1. Map(s) of the project area, in a form that meets the requirements for recording at the offices of the Recorder of Deeds of Allegheny County, and shall be submitted on 24-inch x 36-inch or 30-inch x 42-inch sheets and in GIS Arcview 2 disc format. The contents of the map(s) shall include, but not be limited to:

    a. Clear identification of the location and nature of permanent stormwater BMPs,
    b. The location of the project site relative to highways, municipal boundaries or other identifiable landmarks,
    c. Existing and final contours at intervals of two feet, or others as appropriate,
    d. Existing streams, lakes, ponds, or other bodies of water within the project site area,
    e. Other physical features including flood hazard boundaries, sinkholes, streams, existing drainage courses, and areas of natural vegetation to be preserved,
    f. The locations of all existing and proposed utilities, sanitary sewers, and water lines within 50 feet of property lines of the project site,
    g. Proposed final changes to the land surface and vegetative cover, including the type and amount of impervious area that would be added,
    h. Proposed final structures, roads, paved areas, and buildings, and
    i. A fifteen-foot wide access easement around all stormwater BMPs that would provide ingress to and egress from a public right-of-way.

2. A description of how each permanent stormwater BMP will be operated and maintained, and the identity of the person(s) responsible for operations and maintenance,

3. The name of the project site, the name and address of the owner of the property, and the name of the individual or firm preparing the Plan, and

4. A statement, signed by the landowner, acknowledging that the stormwater BMPs are fixtures that can be altered or removed only after approval by the Borough.

Section 502. Responsibilities for Operations and Maintenance of BMPs

A. The BMP Operations and Maintenance Plan for the project site shall establish responsibilities for the continuing operation and maintenance of all permanent stormwater BMPs, as follows:

1. If a Plan includes structures or lots which are to be separately owned and in which streets, sewers and other public improvements are to be dedicated to the Borough, stormwater BMPs may also be dedicated to and maintained by the Borough;

2. If a Plan includes operations and maintenance by a single ownership, or if sewers and other public improvements are to be privately owned and maintained, then the operation and maintenance of stormwater BMPs shall be the responsibility of the owner or private management entity.

3. The Plan must be approved by the Borough and acceptance of public infrastructure improvements must be by ordinance.

B. The Borough shall make the final determination on the continuing operations and maintenance responsibilities. The Borough will require an 18-month maintenance bond for all improvements.

Section 503. Borough Review of BMP Operations and Maintenance Plan

A. The Borough shall review the BMP Operations and Maintenance Plan for consistency with the purposes and requirements of this ordinance, and any permits issued by DEP.

B. The Borough shall notify the Applicant in writing whether the BMP Operations and Maintenance Plan is approved.

C. The Borough shall require an "As-Built Survey" of all stormwater BMPs, and an explanation of any discrepancies with the Operations and Maintenance Plan.

Section 504. Adherence to Approved BMP Operations and Maintenance Plan

It shall be unlawful to alter or remove any permanent stormwater BMP required by an approved BMP Operations and Maintenance Plan, or to allow the property to remain in a condition which does not conform to an approved BMP Operations and Maintenance Plan, unless an exception is granted in writing by the Borough.

Section 505. Operations and Maintenance Agreement for Privately Owned Stormwater BMPs

A. The property owner shall sign an operations and maintenance agreement with the Borough covering all stormwater BMPs that are to be privately owned. The agreement shall be substantially the same as the agreement in Appendix B of this Ordinance.

B. Other items may be included in the agreement where determined necessary to guarantee the satisfactory operation and maintenance of all permanent stormwater BMPs. The agreement shall be subject to the review and approval of the Borough.

Section 506. Stormwater Management Easements

A. Stormwater management easements, of a minimum of twenty (20) feet, are required for all areas used for off-site stormwater control, unless a waiver is granted by the Borough Engineer.

B. Stormwater management easements shall be provided by the property owner if necessary for (1) access for inspections and maintenance, or (2) preservation of stormwater runoff conveyance, infiltration, and detention areas and other BMPs, by persons other than the property owner. The purpose of the easement shall be specified in any agreement under Section 405.

Section 507. Recording of Approved BMP Operations and Maintenance Plan and Related Agreements

A. The owner of any land upon which permanent BMPs will be placed, constructed or implemented, as described in the BMP Operations and Maintenance Plan, shall record the following documents in the Office of the Recorder of Deeds for Allegheny County, within the 15 days of approval of the BMP Operations Plan by the Borough:

1. The Operations and Maintenance Plan, or a summary thereof,
2. Operations and Maintenance Agreements under Section 405, and
3. Easements under Section 406.

B. The Borough may suspend or revoke any approvals granted for the project site upon discovery of the failure of the owner to comply with this section.

Section 508. Municipal Stormwater BMP Operation and Maintenance Fund

A. Persons Installing stormwater storage facilities shall be required to pay a specified amount to the Municipal Stormwater Maintenance Fund to help defray costs of periodic inspections and maintenance expenses. The amount of the deposit shall be determined as follows:

1. If the storage facility is to be privately owned and maintained, the deposit shall cover the cost of the periodic inspections and maintenance performed by the Borough for a period of twenty (20) years, as estimated by the Borough Engineer and approved by the Borough. After that period of time inspections will be performed at the expense of the person on record with the Borough as being responsible for the ownership and maintenance.

2. If the storage facility is to be owned and maintained by the Borough, the deposit shall cover the estimated costs for maintenance and inspections for a period of twenty (20)

years. The Borough Engineer will establish the estimated costs to be approved by the Borough utilizing information submitted by the Developer.

3. The amount of the deposit to the fund shall be converted to present worth of the annual series values. The Borough Engineer shall determine the present worth equivalents which shall be subject to the approval of the Borough.

B. If a storage facility is proposed that also serves as a recreation facility (e.g. ballfield, lake), the Borough may reduce or waive the amount of the maintenance fund based upon the value of the land for public recreation purposes, unless the recreation facilities were required to address another Borough Ordinance.

C. If at some future time a storage facility (whether publicly or privately owned) is eliminated due to the installation of storm sewers or other storage facility, the unused portion of the maintenance fund deposit will be applied to the cost of abandoning the facility and connecting to the storm sewer or other facility. Any amount of the deposit remaining after the costs of abandonment are paid will be turned over to the last entity responsible for the ownership and maintenance of the facility.

Section 509. Construction Criteria for Stormwater Control Facilities

Stormwater management facilities shall be constructed in accordance with the following minimum specifications:

A. All workmanship and materials shall conform to the Borough Construction Standards. In addition, all workmanship and materials shall conform to the latest edition of PennDOT Form 408 and be supplied by manufacturers or suppliers listed in PennDOT's Bulletin 15.

B. All connections to existing storm sewer pipes shall be made by construction of a suitable junction box (inlet or manhole) to provide access for clean-out. No blind connections shall be permitted.

C. All pipe outlets shall discharge onto a stone riprap blanket to prevent erosion of soil. Riprap shall be sized considering pipe exit velocities plus a Factor of Safety of 1.5.

D. The discharge of stormwater runoff shall be to a well-defined drainage course which has a defined bed and bank. If stormwater runoff cannot be discharged to a defined drainage course, documentation of written recorded drainage easement permission from each downstream property owner shall be provided for all properties between the source of discharge and the defined drainage course.

Section 510. Inspections of Stormwater Management Controls During Construction

A. The Borough or a designated representative shall field review the construction of the temporary and permanent stormwater management facilities for the development site. The Landowner shall notify the Borough forty-eight (48) hours in advance of the completion of the following key development phases:

1. At the completion of the preliminary site preparation, including stripping of vegetation, stockpiling of topsoil and construction of temporary stormwater management and erosion control facilities.

2. At the completion of rough grading, but prior to placing topsoil, permanent drainage or other site development improvement and ground covers.

3. During construction of the permanent stormwater facilities at such times as specified by the Borough.

4. Completion of permanent stormwater management facilities, including established ground covers and plantings.

5. Completion of any final grading, vegetative control measures or other site restoration work done in accordance with the approved plan and permit.

B. No work shall commence on any subsequent phase until the preceding one has been field reviewed by the Borough Engineer and approved by the Borough in writing. If there are deficiencies in any phase, the Borough shall issue a written description of the required corrections and stipulate the time by which the corrections must be made.

C. If during construction the Contractor Landowner identifies any site conditions, such as subsurface soil conditions or alterations in surface or subsurface drainage, which could affect the feasibility of the approved stormwater facilities, said person must notify the Borough within twenty-four (24) hours of the discovery of such condition and request a field review by the Borough. The Borough shall determine if the condition requires a stormwater plan modification.

D. In cases where stormwater facilities are to be installed in areas of landslide-prone soils or where other special site conditions exist, the Borough may require special precautions, such as soil tests and core borings, full-time resident project representative services and/or similar measures. All costs of any such measures shall be borne by the Permittee.

Section 511. Post-Construction Stormwater Record Plan

A. Prior to issuance of an Occupancy Permit or utilization of the proposed improvements, the Applicant must provide the Borough a copy of a recorded Post-Construction Stormwater Management Plan and the Proof of Recording for any projects containing stormwater management facilities including storm sewers and BMPs.

B. The Owner shall provide a digital file, on State Plain Coordinate System, of the location of all BMP's constructed on the property.

ARTICLE VI - INSPECTIONS AND RIGHT OF ENTRY

Section 601. Inspections

A. DEP or its designees (e.g., County Conservation Districts) normally ensure compliance with any permits issued, including those for stormwater management. In addition to DEP compliance programs, the Borough or its designee may inspect all phases of the construction, operations, maintenance and any other implementation of stormwater BMPs.

B. During any stage of the Regulated Earth Disturbance activities, if the Borough or its designee determines that any BMPs are not being implemented in accordance with this Ordinance, the Borough may suspend or revoke any existing permits or other approvals until the deficiencies are corrected.

Section 602. Right of Entry

A. Upon presentation of proper credentials, duly authorized representatives of the Borough may enter at reasonable times upon any property within the Borough to inspect the implementation, condition, or operation and maintenance of the stormwater BMPs in regard to any aspect governed by this Ordinance.

B. BMP owners and operators shall allow persons working on behalf of the Borough ready access to all parts of the premises for the purposes of determining compliance with this Ordinance.

C. Persons working on behalf of the Borough shall have the right to temporarily locate on any BMP in the Borough such devices as are necessary to conduct monitoring and/or sampling of the discharges from such BMP.

D. Unreasonable delays in allowing the Borough access to a BMP is a violation of this Article.

ARTICLE VII - FEES AND EXPENSES

Section 701. General

The Borough may charge a reasonable fee, established by Resolution based on the hourly rate, for review of BMP Operations and Maintenance Plans to defray review costs incurred by the Borough. The Applicant shall pay all such fees.

Section 702. Expenses Covered by Fees

The fees required by this Ordinance may cover:

A Administrative/Clerical Costs.

B. The review of the BMP Operations and Maintenance Plan by the Municipal Engineer.

C. The site inspections including, but not limited to, pre-construction meetings, inspections during construction of stormwater BMPs, and final inspection upon completion of the stormwater BMPs.

D. Any additional work required to monitor and enforce any provisions of *this* Ordinance, correct violations, and assure proper completion of stipulated remedial actions.

E. The fees may also cover legal expenses incurred by the Borough in reviewing plans or documents.

Section 703. Alteration of BMPs

A. No person shall modify, remove, fill, landscape or alter any existing stormwater BMP, unless it is part of an approved maintenance program, without the written approval of the Borough.

B. No person shall place any structure, fill, landscaping or vegetation into a stormwater BMP or within a drainage which would limit or alter the functioning of the BMP, without the writing approval of the Borough.

ARTICLE VII - ENFORCEMENT AND PENALTIES

Section 801. Public Nuisance

A. The violation of any provision of this ordinance is hereby deemed a Public Nuisance.

B. Each day that a violation continues shall constitute a separate violation.

Section 802. Enforcement Generally

A. Whenever the Borough finds that a person has violated a prohibition or failed to meet a requirement of this Ordinance, the Borough 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 the restoration of any affected property;
5. Payment of a fine to cover administrative and remediation costs;
6. The implementation of stormwater BMPs; and
7. Operation and maintenance of stormwater BMPs.

B. Such notification shall set forth the nature of the violation(s) and establish a time limit for correction of these 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 Borough or designee and the expense thereof shall be charged to the violator along with additional penalties, interest and attorney fees as allowed under the Municipal Claims Act.

C. 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 Borough from pursuing any and all other remedies available in law or equity.

Section 803. Suspension and Revocation of Permits and Approvals

A. Any building, land development or other permit or approval issued by the Borough may be suspended or revoked by the Borough for:

1. Non-compliance with or failure to implement any provision of the permit;

2. A violation of any provision of this Ordinance; or

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

B. A suspended permit or approval shall be reinstated by the Borough when:

1. The Borough Engineer or designee has inspected and approved the corrections to the stormwater BMPs, or the elimination of the hazard or nuisance, and/or;

2. The Borough is satisfied that the violation of the Borough, law, or rule and regulation has been corrected.

C. A permit or approval which has been revoked by the Borough cannot be reinstated. The applicant may apply for a new permit under the procedures outlined in this Ordinance.

Section 804. Penalties

A. Any person violating the provisions of this ordinance shall be guilty of a summary offense, and upon conviction shall be subject to a fine of not more than $500.00 for each violation, recoverable with costs, or imprisonment for a period not to exceed thirty (30) days for failure to pay. Each day that the violation continues shall be a .separate offense.

B. In addition, the Borough, through its solicitor, may institute injunctive, mandamus or any other appropriate action or proceeding at Jaw 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.

Section 805. Appeals

Any person aggrieved by any action of the Borough or its designee, relevant the provisions of this ordinance, may appeal to the relevant judicial or administrative body according to law, within the time period allowed.

Section 806.

This Ordinance shall take effect immediately.

ORDAINED AND ENACTED into law this 17th day of August, 2015.

ATTEST:

Kevin M. Flannery
Borough Manager/Secretary

BOROUGH OF SEWICKLEY

Susan H. Aleshire
President of Council

EXAMINED AND APPROVED by me this 17th day of August, 2015.

Brian F. Jeffe
Mayor

APPENDIX A

LOW IMPACT DEVELOPMENT PRACTICES
ALTERNATIVE APPROACH FOR MANAGING STORMWATER RUNOFF

Natural hydrologic conditions may be altered radically by poorly planned development practices, such as introducing unneeded impervious surfaces, destroying existing drainage swales, constructing unnecessary storm sewers, and changing local topography. A traditional drainage approach of development has been to remove runoff from a site as quickly as possible and capture it in a detention basin. This approach leads ultimately to the degradation of water quality as well as expenditure of additional resources for detaining and managing concentrated runoff at some downstream location.

The recommended alternative approach is to promote practices that will minimize post-development runoff rates and volumes, which will minimize needs for artificial conveyance and storage facilities. To simulate pre-development hydrologic conditions, forced infiltration is often necessary to offset the loss of infiltration by creation of impervious surfaces. The ability of the ground to infiltrate depends upon the soil types and its conditions.

Preserving natural hydrologic conditions requires careful alternative site design considerations. Site design practices include preserving natural drainage features, minimizing impervious surface area, reducing the hydraulic connectivity of impervious surfaces, and protecting natural depression storage. A well-designed site will contain a mix of all those features. The following describes various techniques to achieve the alternative approach:

Preserving Natural Drainage Features. Protecting natural drainage features, particularly vegetated drainage swales and channels, is desirable because of their ability to infiltrate and attenuate flows and to filter pollutants. However, this objective is often not accomplished in land development. In fact, commonly held drainage philosophy encourages just the opposite pattern – streets and adjacent storm sewers typically are located in the natural headwater valleys and swales, thereby replacing natural drainage functions with a completely impervious system. As a result, runoff and pollutants generated from impervious surfaces flow directly into storm sewers with no opportunity for attenuation, infiltration, or filtration. Developments designed to fit site topography also minimizes the amount of grading on site.

Protecting Natural Depression Storage Areas. Depressional storage areas have no surface outlet, or drain very slowly following a storm event. They can be commonly seen as ponded areas in farm fields during the wet season or after large runoff events. Traditional development practices eliminate these depressions by filling or draining, thereby obliterating their ability to reduce surface runoff volumes and trap pollutants. The volume and release-rate characteristics of depressions should be protected in the design of the development site. The depressions can be protected by simply avoiding the depression or by incorporating its storage as additional capacity in required detention facilities.

Avoiding introduction of impervious areas. Careful site planning should consider reducing impervious coverage to the maximum extent possible. Building footprints, sidewalks, driveways and other features producing impervious surfaces should be evaluated to minimize impacts on runoff.

Reducing the Hydraulic Connectivity of Impervious Surfaces. Impervious surfaces are significantly less of a problem if they are not directly connected to an impervious conveyance system (such as storm sewer). Two basic ways to reduce hydraulic connectivity are routing of roof runoff over lawns and reducing the use of storm sewers. Site grading should promote increasing travel time of stormwater runoff, and should help reduce concentration of runoff to a single point in the development.

Routing Roof Runoff Over Lawns. Roof runoff can be easily routed over lawns in most site designs. The practice discourages direct connections of downspouts to storm sewers or parking lots. The practice also discourages sloping driveways and parking lots to the street. By routing roof drains and crowing the driveway to run off to the lawn, the lawn is essentially used as a filter strip.

Reducing the Use of Storm Sewers. By reducing use of storm sewers for draining streets, parking lots and back yards, the potential for accelerating runoff from the development can be greatly reduced. The practice requires greater use of swales and may not be practical for some development sites, especially if there are concerns for areas that do not drain in a "reasonable" time. The practice requires educating local citizens and public works officials, who expect runoff to disappear shortly after a rainfall event.

Limiting Sidewalks to One Side of the Street. A sidewalk on one side of the street may suffice in low-traffic neighborhoods. The lost sidewalk could be replaced with bicycle/recreational trails that follow back-of-lot lines. Where appropriate, backyard trails should be constructed using pervious materials.

Using Permeable Paving Materials. These materials include permeable interlocking concrete paving blocks or porous bituminous concrete. Such materials should be considered as alternatives to conventional pavement surfaces, especially for low use surfaces such as driveways, overflow parking lots, and emergency access roads.

Constructing Cluster Developments. Cluster developments can also reduce the amount of impervious area for a given number of lots. The biggest savings is in street length, which also will reduce costs of the development. Cluster development clusters the construction activity onto less-sensitive areas without substantially affecting the gross density of development.

In summary, a careful consideration of the existing topography and implementation of a combination of the above-mentioned techniques may avoid construction of costly storm water control measures. Other benefits include reduced potential of downstream flooding, water quality degradation of receiving streams/water bodies and enhancement of aesthetics and reduction of development costs. Beneficial results include more stable base flows in receiving streams, improved groundwater recharge, reduced floor flows, reduced pollutant loads, and reduced costs for conveyance and storage.

APPENDIX B

STORMWATER BEST MANAGEMENT PRACTICES OPERATIONS AND MAINTENANCE AGREEMENT

THIS AGREEMENT, made and entered into this _____day of _____, 20__, by and between _____ (hereinafter the "Landowner"), and the Borough of Sewickley, Allegheny County, Pennsylvania, (hereinafter "Borough");

WITNESSETH

WHEREAS, the Landowner is the owner of certain real property as recorded by deed in the land records of Allegheny County, Pennsylvania, Block and Lot No._____ (hereinafter "Property").

WHEREAS, the Land owner is proceeding to build and develop the Property; and

WHEREAS, the stormwater management BMP Operations and Maintenance Plan approved by the Borough (hereinafter referred to as the "Plan") for the property identified herein, which is attached hereto as Appendix A and made part hereof, as approved by the Borough, provides for management of stormwater within the confines of the Property through the use of Best Management Practices (BMPs); and

WHEREAS, the Borough, and the Landowner, his successors and assigns, agree that the health, safety, and welfare of the residents of the Borough and the protection and maintenance of water quality require that on-site stormwater Best Management Practices be constructed and maintained on the Property; and

WHEREAS, for the purposes of this agreement, the following definitions shall apply:

BMP "Best Management Practice" - facilities, designs, measure or procedures used to manage stormwater impacts from land development, to protect and maintain water quality and groundwater recharge and to otherwise meet the purposes of the Borough Stormwater Management Ordinance, including but not limited to infiltration trenches, seepage pits, filter strips, bioretention, wet ponds, permeable paving, rain gardens, grassed swales, forested buffers, sand filters and detention basins,

Infiltration Trench - A BMP surface structure designed, constructed, and maintained for the purpose of providing infiltration or recharge of stormwater into the soil and/or groundwater aquifer,

Seepage Pit - An underground BMP structure designed, constructed, and maintained for the purpose of providing infiltration or recharge of stormwater into the soil and/or groundwater aquifer,

Rain Garden - A BMP overlain with appropriate mulch and suitable vegetation designed, constructed, and maintained for the purpose of providing infiltration or recharge of stormwater into the soil and/or underground aquifer, and

"WHEREAS, the Borough requires, through the implementation of the Plan, that stormwater management BMPs as required by said Plan the Municipal Stormwater Management Ordinance be constructed and adequately operated and maintained by the Landowner, his successors and assigns; and

NOW, THEREFORE, in consideration of the foregoing promises, the mutual covenants contained herein, and the following terms and conditions, the parties hereto agree as follows:

1. The BMPs shall be constructed by the Landowner in accordance with the plans and specification identified in the Plan.

2. The Landowner shall operate and maintain the BMP(s) as shown on the Plan in good working order acceptable to the Borough and in accordance with the specific maintenance requirements noted on the Plan.

3. The Landowner hereby grants permission to the Borough, its authorized agents and employees, to enter upon the property, at reasonable times and upon presentation of the proper identification, to inspect the BMP(s) whenever it deems necessary. Whenever possible, the Borough shall notify the Landowner prior to entering the property.

4. In the event the Landowner fails to operate and maintain the BMP(s) as shown on the Plan in good working order as determined by the Borough Engineer, the Borough or its representatives may enter upon the Property and take whatever action is deemed necessary to maintain said BMP(s). This provision shall not be construed to allow the Borough to erect any permanent structure on the land of the Landowner. It is expressly understood and agreed that the Borough is under no obligation to maintain or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation on the Borough.

5. In the event the Borough, pursuant to this Agreement, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like, the Landowner shall reimburse the Borough for all expenses (direct and indirect) incurred within 10 days of receipt of invoice from the Borough. The Borough shall require a bond to ensure payment for any repairs undertaken by the Borough.

6. The intent and purpose of this Agreement is to ensure the proper maintenance of the onsite BMPs by the Landowner; provide, however, that this Agreement shall not be deemed to create or effect any additional liability of any party for damage alleged to result from or be caused by stormwater runoff.

7. The Landowner, its executors, administrators, assigns, and other successors in interests, shall release the Borough 's employees and designated representatives from all damages, accidents, casualties, occurrences or claims which might arise or be asserted against said employees and representatives from the construction, presence, existence, or maintenance of the BMP(s) by the Landowner or Borough. In the event that a claim is asserted against the Borough, its designated representatives or employees, the Borough shall promptly notify the Landowner and the Landowner shall defend, at his own expense, any suit based on the claim. If any judgment or claims against the Borough 's employees or designated representatives shall be allowed, the Landowner shall pay all costs and expenses regarding said judgment or claim.

8. The Borough shall inspect the BMP(s) at a minimum of once every three years to ensure their continued functioning.

9. The officers and/or principals of any entity that is a landowner shall sign the Agreement in their individual capacities as guarantors of the landowner's obligation.

This Agreement shall be recorded at the Office of the Recorder of Deeds of Allegheny County, Pennsylvania, and shall constitute a covenant running with the Property and/or equitable servitude, and shall be binding on the Landowner, his administrators, executors, assigns, heirs and any other successors in interests, in perpetuity.

APPENDIX C
STANDARD SCHEDULE FOR MAINTENANCE OF STORMWATER MANAGEMENT FACILITIES

The Stormwater Management Plan developed for the Project is supplemented by this Maintenance Plan to help ensure continuing operations of all stormwater facilities.

The following is a list of items that shall be inspected and corrective action taken by the Owner.

Note: Owner refers to individual ultimately responsible for storm facility condition and function.

1. Outlet conditions in Detention Facility.
2. Storm sewer, swales, concrete gutters and other conveyance devices.
3. Catch Basins, Manholes and other stormwater catchment/transition structures.
4. Access for maintenance.

The following actions will be taken by the Owner to help ensure the facilities shown on the plan and identified above are in working order:

1. Replace or repair facilities so as to function as intended.
2. Remove silt debris and trash in catch basin/storm sewers.
3. Repair outlet structures.
4. Remove any silt, debris, and trash in Detention Facility.
5. Disposal of collected silt, debris and trash in a manner which will not adversely affect the environment.
6. Replace eroded material and re-vegetate eroded areas. Seed and mulch disturbed areas.

The corrective actions to be taken are not limited to those listed above.

Stormwater Facilities Maintenance Plan

The inspection shall be undertaken by a minimum of two (2) persons at least two (2) times per year on or before March 1 and October 1. Additional inspection will be required if it becomes apparent facilities are not functioning properly. Corrective actions will then be taken within thirty (30) days of the discovery of the deficiencies as required to help ensure continuing operation of stormwater facilities. Any deficiencies noted in items inspected by the Owner shall de documented and corrective action taken by the Owner. This recommended Maintenance Plan shall not be considered a guarantee as to the adequacy of the stormwater management facilities in the future.

Sewickley Borough may require other items to be included in the agreement where determined necessary to guarantee the satisfactory maintenance of all facilities. If stormwater facilities are not maintained by Sewickley Borough, the Owner shall maintain all facilities in accordance with the approved maintenance schedule and shall deep all facilities maintained in a safe and attractive manner. The owner shall convey to Sewickley Borough easements and/or right-of-way to assure access for periodic inspections by Sewickley Borough and maintenance if required. The owner shall keep on file

with Sewickley Borough the name, address and telephone number of the person or company responsible for maintenance activities and an as-build drawing of all stormwater facilities. In the event of a change, new information will be submitted to Sewickley Borough with ten (10) days of the change. The Owner shall establish any special maintenance funds or other financing sources, in accordance with the approved maintenance plan. If the Owner fails to maintain the stormwater control facilities, following due notice (30 days) by Sewickley Borough to correct deficiencies, Sewickley Borough shall perform the necessary maintenance or corrective work. The Owner shall reimburse Sewickley Borough for all costs associated with the required maintenance of the stormwater control facilities.

APPENDIX D
POLLUTANT LOADS FROM SPECIFIC LAND USE

Worksheet 11 – BMPs for Pollution Prevention		
Does the site design incorporate the following BMPs to address nitrate pollution? A summary "yes" rating is achieved if at least 2 Primary BMPs are provided across the site. "Provided across the site" is taken to mean that the specifications for that BMP set forward in Chapters 5 and 6 are satisfied.		
	Yes	**No**
BMPs for Pollution Prevention:	☐	☐
NS BMP 5.4.1 – Protect Sensitive/Special Value Features	☐	☐
NS BMP 5.4.2 – Protect/Conserve/Enhance Riparian Buffers	☐	☐
NS BMP 5.4.3 – Protect/Utilize Natural Flow Pathways in Overall Stormwater Planning and Design	☐	☐
NS BMP 5.5.1 – Cluster Uses at Each Site; Build on the Smallest Area Possible	☐	☐
NS BMP 5.6.1 – Minimize Total Disturbed Area - Grading	☐	☐
NS BMP 5.6.2 – Minimize Soil Compaction in Disturbed Areas	☐	☐
NS BMP 5.6.3 – Re-Vegetate/Re-Forest Disturbed Areas (Native Species)	☐	☐
NS BMP 5.7.1 – Reduce Street Imperviousness	☐	☐
NS BMP 5.7.2 – Reduce Parking Imperviousness	☐	☐
NS BMP 5.8.1 – Rooftop Disconnection	☐	☐
NS BMP 5.8.2 – Disconnection from Storm Sewers	☐	☐
NS BMP 5.9.15 – Street Sweeping	☐	☐
Structural BMP 6.7.1 – Riparian Buffer Restoration	☐	☐
Structural BMP 6.7.2 – Landscape Restoration	☐	☐
Structural BMP 6.7.3 – Soils Amendment and Restoration	☐	☐

Worksheet 12 – Water Quality Analysis of Pollutant Loading from All Disturbed Areas

Total Site Area (AC)	
Total Disturbed Area (AC)	
Disturbed Area Controlled by BMPs (AC)	

Total Disturbed Areas:

		Pollutant					Pollutant Load		
	Land Cover Classification	TSS EMC (mg/l)	TP EMC (mg/l)	Nitrate-Nitrite EMC (mg/l as N)	Cover (Acres)	Runoff Volume (AF)	TSS** (LBS)	TP** (LBS)	NO_3 (LBS)
Pervious Surfaces	Forest	39	0.15	0.17					
	Meadow	47	0.19	0.3					
	Fertilized Planting Area	55	1.34	0.73					
	Native Planting Area	55	0.40	0.33					
	Lawn, Low-Input	180	0.40	0.44					
	Lawn, High-Input	180	2.22	1.46					
	Golf Course Fairway/Green	305	1.07	1.84					
	Grassed Athletic Field	200	1.07	1.01					
Impervious Surfaces	Rooftop	21	0.13	0.32					
	High Traffic Street/Highway	261	0.40	0.83					
	Medium Traffic Street	113	0.33	0.58					
	Low Traffic/Residential Street	86	0.36	0.47					
	Res. Driveway, Play Courts, etc.	60	0.46	0.47					
	High Traffic Parking Lot	120	0.39	0.60					
	Low Traffic Parking Lot	58	0.15	0.39					
						TOTAL LOAD			
						REQUIRED REDUCTION (%)	85%	85%	50%
						REQUIRED REDUCTION (LBS)			

*Pollutant Load = [EMC, mg/l] X [Volume, AF] X [2.7, Unit Conversion]

**TSS and TP calculations only required for projects not meeting CG1/CG2 or not controlling less than 90% of the disturbed area

Worksheet 13 – Pollutant Reduction Through BMP Applications*

*Fill this worksheet out for each BMP type with different pollutant removal efficiencies. Sum pollutant reduction achieved for all BMP types on final sheet.

BMP Type: _____

Disturbed Area Controlled by this BMPs (AC)

Disturbed Area Controlled by this BMPs:

		Pollutant					Pollutant Load**		
	Land Cover Classification	TSS EMC (mg/l)	TP EMC (mg/l)	Nitrate-Nitrite EMC (mg/l as N)	Cover (Acres)	Runoff Volume (AF)	TSS** (LBS)	TP** (LBS)	NO_3 (LBS)
Pervious Surfaces	Forest	39	0.15	0.17					
	Meadow	47	0.19	0.3					
	Fertilized Planting Area	55	1.34	0.73					
	Native Planting Area	55	0.40	0.33					
	Lawn, Low-Input	180	0.40	0.44					
	Lawn, High-Input	180	2.22	1.46					
	Golf Course Fairway/Green	305	1.07	1.84					
	Grassed Athletic Field	200	1.07	1.01					
Impervious Surfaces	Rooftop	21	0.13	0.32					
	High Traffic Street/Highway	261	0.40	0.83					
	Medium Traffic Street	113	0.33	0.58					
	Low Traffic/Residential Street	86	0.36	0.47					
	Res. Driveway, Play Courts, etc.	60	0.46	0.47					
	High Traffic Parking Lot	120	0.39	0.60					
	Low Traffic Parking Lot	58	0.15	0.39					
	TOTAL LOAD TO THIS BMP TYPE								
	POLLUTANT REMOVAL EFFICIENCIES FROM APPENDIX A. STORMWATER MANUAL (%)								
	POLLUTANT REDUCTION ACHIEVED BY THIS BMP TYPE (LBS)								

POLLUTANT REDUCTION ACHIEVED BY ALL BMP TYPES (LBS)			
REQUIRED REDUCTION from WS12 (LBS)			

*Pollutant Load = [EMC, mg/l] X [Volume, AF] X [2.7, Unit Conversion]

**TSS and TP calculations only required for projects not meeting CG1/CG2 or not controlling less than 90% of the disturbed area

ATTEST:

WITNESS the following signatures and seals:

(SEAL)

BOROUGH OF SEWICKLEY:

_____
Susan H. Aleshire
President of Council

(SEAL)

FOR THE LANDOWNER:

_____

ATTEST:

_____
Kevin M. Flannery
Borough Manager/Secretary

County of Allegheny, Pennsylvania

I, _____ a Notary Public in and for the County and State aforesaid, whose commission expires on the day of _____, 20__ do hereby certify that _____ whose name(s) is/are signed to the foregoing Agreement bearing date of the _____ day of _____ 20_____, has acknowledged the same before me in my said County and State.

GIVEN UNDER MY HAND THIS _____ **day of** _____, 20____.

_____ _____
NOTARY PUBLIC **(SEAL)**