



Attachment H: Engineered Stormwater Management Supplemental Information & Application Checklist

1. INTRODUCTION

Pennsylvania's Storm Water Management Act (Act 167) was enacted in 1978. This Act was in response to the impacts of accelerated stormwater runoff resulting from land development in the state. It requires counties to prepare and adopt watershed based stormwater management plans. It also requires municipalities to adopt and implement ordinances to regulate development consistent with these plans.

The purpose of these regulations are to protect public health, safety and general welfare, property values and water quality by implementing drainage and Stormwater Management practices, criteria, and provisions included herein for land development, construction and Earth Disturbance Activities, and to achieve the following throughout the Township:

- Reduce the frequency and magnitude of flooding and stormwater impacts.
- Sustain or improve the natural characteristics and quality of groundwater and surface waters.
- Protect natural resources, including riparian and aquatic living resources and habitats.
- Maintain the natural hydrologic flow of land development sites and their receiving watersheds.
- Minimize land disturbance and protect and incorporate natural hydrologic features, drainage patterns, infiltration, and flow conditions within land development site designs.
- Reduce and minimize the volume of stormwater generated, and manage stormwater as close to the source as possible.
- Provide infiltration and maintain natural groundwater recharge to protect groundwater supplies and stream baseflows, prevent degradation of surface water and groundwater quality, and to otherwise protect water resources.
- Reduce stormwater pollutants to protect and improve the quality of ground and surface waters.
- Reduce scour, erosion and sedimentation of stream channels.
- Reduce flooding impacts and preserve and restore the natural flood-carrying capacity of streams and their floodplains.
- Protect adjacent and downgradient lands from adverse impacts of direct stormwater discharges.
- Minimize impervious surfaces and connected impervious surfaces to promote infiltration and reduce the volume and impacts of stormwater runoff.
- Provide proper long-term operation and maintenance of all permanent Stormwater Management facilities, BMPs and conveyances that are implemented within the Township.
- Reduce the impacts of runoff from existing developed land undergoing redevelopment while encouraging few development and redevelopment in urban areas and areas designated for growth.
- Implement an illicit discharge detection and elimination program that addresses non-stormwater discharges.
- Provide performance standards and design criteria based on watershed-based Stormwater Management planning.
- Provide standards to meet certain NPDES stormwater permit requirements.

- Meet legal water quality requirements under State law, including regulations at 25 Pa. Code Ch. 93, to protect, maintain, reclaim and restore the existing and designated uses of the Waters of the Commonwealth.
- Implement the requirements of Total Maximum Daily Load (TMDLs) where applicable to waters within or impacted by the Township.
- Provide review procedures and performance standards for Stormwater planning and management.
- Fulfill the purpose and requirements of PA Act 167 (PA Act 167, Section 3):
 - Encourage planning and management of storm water runoff in each watershed which is consistent with sound water and land use practices.
 - Authorize a comprehensive program of Stormwater management designated to preserve and restore the flood carrying capacity of Commonwealth streams; to preserve to the maximum extent practicable natural storm water runoff regimes and natural course, current and cross-section of water of the Commonwealth; and to protect and conserve ground waters and ground-water recharge areas.
 - Encourage local administration and management of storm water consistent with the Commonwealth's duty as trustee of natural resources and the people's constitutional right to the preservation of natural, economic, scenic, aesthetic, recreational and historic values of the environment.”

2. FREQUENTLY ASKED QUESTIONS

What is Stormwater Management?

Stormwater Management is a way to reduce the effect of altering the land from natural conditions. Examples of residential stormwater management are rain gardens, rain barrels, porous pavers, drywells and infiltration trenches.

Why do I have to do Stormwater Management for my small project?

The new East Brandywine Township regulations, based in Federal and State mandates, require that all property owners be responsible for water quality. All projects requiring a Zoning or Building Permit will be reviewed by the Township for stormwater considerations.

How does the Township determine if a stormwater permit is required?

If your project or the combination of project since January 2, 2014, disturbs 5,000 sq. ft. or will result in 1,000 sq. ft. of new impervious surface (cumulative), a stormwater management plan will be required.

Is the square footage of the BMP included in the earth disturbance calculation?

Yes. All disturbed soils are to be included in the calculation for earth disturbance.

What if I am removing and replacing impervious surface or changing the land cover?

The net change in the land cover is what will be considered for the permit.

Do I need to hire an engineer or surveyor?

A Stormwater Management Plan for projects or the combination of projects since January 2, 2014 cumulatively creating greater than 1,000 sq. ft. of new impervious surface, or 5,000 sq. ft. of disturbance must be designed by a professional engineer.

What inspections are required for the installation of the Stormwater Management systems?

Each type of stormwater management system requires different number of inspections. The Township will advise you of the number and frequency of inspections at the time of approval.

What are the maintenance requirements?

Each type of system requires a different type of maintenance. Yearly inspection reporting is required of all permittees.

What is the penalty if I don't apply for or follow the application process or maintenance obligations?

The Township has legal enforcement action defined in Chapter 345-906 which includes the right to deny occupancy permits and assess fines as needed for enforcement.

What is the cost of the permit?

Permit fees are governed by the Township's approved fee schedule. Application and review fees are due and payable with the application for a stormwater management permit. A financial security for construction of BMPs will be required in the form of a refundable escrow based on the type of approved system. A perpetual operation and maintenance \$250.00 per property, where stormwater management is required, will be charged in addition to application and review fees upon receipt of permit.

How do I apply for a waiver?

There is a waiver available from the Township. Waivers are considered on a case by case basis, and must be requested in writing with an engineering justification why a waiver is applicable for the project. Cost or financial burden shall not be considered a hardship. Additional qualifications for waivers are found in Section 345-110 of the Township Code.

What if I do a couple small projects, can I avoid Stormwater Management?

Starting in 2014, projects and impervious surfaces will be measured cumulatively. If you do a small project this year that does not qualify for stormwater management, but next year the total impervious surface for the two projects exceed the applicability threshold, stormwater management for the entirety of the two projects will be required.

3. STORMWATER MANGEMENT PLAN (SWM) REQUIREMENTS

A Stormwater Management Plan for projects or the combination of projects since January 2, 2014 cumulatively creating greater than 1,000 sq. ft. of new impervious surface, or 5,000 sq. ft. of disturbance must be designed by a professional engineer.

A. General

1. A general description of the proposed project;
2. A listing of all regulatory approvals required for the proposed project and the status of the review and approval process for each. Final approval or adequacy letters must be submitted to the Township prior to (or as a condition of) the Township's issuing final approval of the SWM Site Plan. Proof of application or documentation of required permit(s) or approvals for the programs listed below shall be part of the SWM Site Plan, if applicable:
 - a. NPDES Permit for Stormwater Discharges from Construction Activities;
 - b. PADEP permits as needed:
 - i. PADEP Joint Permit Application,
 - ii. 25 Pa. Code, Ch. 105 (Dam Safety and Waterway Management),
 - iii. 25 Pa. Code, Ch. 106 (Floodplain Management);
 - c. PennDOT Highway Occupancy Permit;
 - d. Erosion and Sediment Control Plan letter of adequacy; and
 - e. Any other permit required under applicable Municipal, State or Federal regulations.
3. A statement, signed by the Applicant, acknowledging that any revision to the approved SWM Site Plan shall be submitted to and approved by the Township, and that a revised Erosion and Sediment Control Plan shall be submitted to, and approved by, the Chester County Conservation District or Township (as applicable) for a determination of adequacy prior to construction of the revised features.
4. The following signature block signed and sealed by the qualified Licensed Professional responsible for the preparation of the SWM Site Plan:

"I (name), on this date (date of signature), hereby certify to the best of my knowledge that the SWM Site Plan meets all design standards and criteria of the East Brandywine Township Ordinance 07 of 2013, Stormwater Management Ordinance." *[Note: include signature, name, discipline of professional license, and license stamp or seal here]*

B. Maps or Plan Sheets

Map(s) or plan sheets of the Site shall be submitted on minimum twenty-four (24)-inch by thirty-six (36)-inch sheets and shall be prepared in a form that meets the requirements for recording at the Chester County Office of the Recorder of Deeds and the requirements of the O&M Plan and O&M Agreement (Article VII). An 8.5" by 11" reproduction of the approved plans must be attached to the approved O&M agreement for recording. If the SALDO has additional or more stringent criteria than this Ordinance, then the SALDO criteria shall also apply. Unless otherwise approved by the Township Engineer, the contents of the maps or plan sheets shall include, but not be limited to:

1. A location map, with a scale of one (1) inch equals two thousand (2,000) feet or greater, showing the Site location relative to highways, municipal boundaries, or other identifiable landmarks.

2. The name of the project, tax parcel number(s), and the names, addresses and phone numbers of the owner of the property, the Applicant, and firm preparing the plan.
3. Signature and seal of the qualified Licensed Professional(s) responsible for preparation of the maps and plan sheets.
4. The date of SWM Site Plan submission and revision dates, as applicable.
5. A graphic and written scale of one (1) inch equals no more than fifty (50) feet.
6. A north arrow.
7. Legal property boundaries, including:
 - a. The total project property boundary and size with distances marked to the nearest foot and bearings to the nearest degree.
 - b. Boundaries, size and description of the purpose of all existing easements and deed-restricted areas of the project property, with distances marked to the nearest foot and bearings to the nearest degree.
8. Existing natural resources and natural or man-made hydrologic features that are located within the site or receiving discharge from, or that may otherwise be impacted by, the proposed Regulated Activity, including but not limited to:
 - a. All existing natural resources, hydrologic features and drainage patterns including natural waterways, water bodies, wetlands, streams (intermittent and perennial), ponds, lakes, vernal pools, etc., natural infiltration areas and patterns, areas of significant natural evapotranspiration, and other water features and aquatic resources.
 - b. Any existing man-made drainage features, BMPs, conveyances, facilities, open channels, swales, drainage patterns, or other flood, stormwater or drainage control features.
 - c. For the site, discharge points and locations of concentrated flows and their drainage areas.
 - d. For named waters, show names and their watershed boundaries within the site.
 - e. Special management areas (as per Subsection 301.P).
 - f. For the water bodies, streams and wetlands identified in Subsection 402.B.8.a, label or otherwise show the following attributes, if applicable:
 - i. The designated use as determined by PADEP (25 Pa. Code, Ch. 93);
 - ii. Impairments listed on the PADEP "Integrated List" (as updated) and the listed source and cause of impairment;
 - iii. Name, date, and target pollutant(s) for any approved Total Maximum Daily Load ("TMDL"); and
 - iv. Drainages to water supply reservoirs.
 - g. Areas that are part of the Pennsylvania Natural Diversity Inventory (PNDI) and a list of potential impacts and clearances received (for Regulated Activities involving one (1) acre or more proposed Earth Disturbance).
 - h. Woods, vegetated riparian buffers, and other areas of natural vegetation.

- i. Topography using contours (with elevations based on established bench marks) at intervals of two (2) feet. In areas of slopes greater than fifteen (15) percent five (5)-foot contour intervals may be used. The datum used and the location, elevation and datum of any bench marks used shall be shown.
 - j. Areas classified by the Township as steep slopes.
 - k. Soil names and boundaries, general type of soils with Hydrologic Soil Group noted, and in particular note areas most conducive to infiltration BMPs, such as groups A and B, etc., estimated permeability in inches per hour, and location and other results of all soil tests and borings.
 - l. If present, areas with underlying carbonate geologic units, existing sinkholes, subsidence or other Karst features, and any associated groundwater recharge areas with increased vulnerability to contamination.
 - m. Any contaminated surface or subsurface areas of the Site.
 - n. Water supply wells:
 - i. Location of existing wells on the project property and delineation of their recharge area(s), if known, or a fifty (50) foot diameter assumed recharge area; and
 - ii. Location of existing well(s) within fifty (50) feet beyond the boundary of the project property boundary (if public water supply is proposed for the Regulated Activity).
 - o. Current FEMA one hundred (100)-year floodplain boundaries, elevations, and Floodway boundaries for any Special Flood Hazard Areas on or within one hundred (100) feet of the property.
 - p. Boundaries of Riparian Buffer(s) as required by §399-13.1.B.(2).(b)
9. Location of the proposed Regulated Activity, limits of Earth Disturbance (or Earth Disturbance Activity), and BMPs and conveyances relative to the location of existing natural resources and hydrologic features and special management areas resulting from the site design process of Section 304.
10. Description of existing and proposed ground cover and land use including the type and total area.
11. Existing and proposed man-made features including roads, paved areas, buildings, and other impervious and pervious surfaces on the project property (or an appropriate portion of the property as determined in consultation with the Township Engineer) and within the proposed Earth Disturbance, and including the type and total area of the following:
- a. Existing impervious surfaces;
 - b. Existing impervious surfaces proposed to be replaced;
 - c. Existing impervious surfaces to be permanently removed and replaced with pervious ground cover;
 - d. New or additional impervious surfaces; and
 - e. Percent of the site covered by impervious surfaces for both the existing and proposed post-construction conditions.

12. The total extent of the upstream area draining through the site.
13. All BMPs, conveyances and other Stormwater Management Facilities shall be located on the plan sheets, including design drawings, profile drawings, construction details, materials to be used, description of function, etc.
14. Complete delineation of the flow paths used for calculating the time of concentration for the predevelopment and post-construction conditions shall be included.
15. The locations of all existing and proposed utilities, sanitary sewers, on-lot wastewater facilities (including subsurface tanks and leach fields), and water supply lines within the Site and within fifty (50) feet beyond the proposed limits of Earth Disturbance.
16. A grading plan, including all areas of proposed Earth Disturbance and the proposed Regulated Activity and delineating the boundary or limits of Earth Disturbance of the Site. The total Earth Disturbance of the site shall be noted in square feet and acres.
17. Proposed final grade elevations and contours at intervals of two (2) feet. In areas of steep slopes (greater than fifteen (15) percent), five (5)-foot contour intervals may be used.
18. For each proposed BMP and Conveyance included in the SWM Site Plan (including any to be located on any property other than the property being developed by the applicant), the following shall be included on the SWM Site Plan map or plan sheets:
 - a. Identification of the person responsible for ongoing inspections, operation, repair, and maintenance of the BMP or conveyance after completion of construction.
 - b. Delineation of the land area, structures, impervious surfaces, and conveyances draining to and from the BMP or conveyance.
 - c. Easements, as per the requirements of Article VII, shall include:
 - i. Boundaries labeled with distances shown in feet and bearings to the nearest degree;
 - ii. Notes or other documentation, as needed, to grant the Township the right of access to all BMPs and conveyances for the purposes of inspection and enforcement of the requirements of this Ordinance, and any applicable O&M Plans and O&M Agreements;
 - iii. Notes or other documentation, as needed, to grant the Township the right of access to all roadways necessary to access all BMPs and Conveyances, where roadways are not to be dedicated to the Township;
 - iv. Notes or other documentation as needed to grant the owner of any BMP or conveyance the right of access for the purpose of inspection, operation, maintenance, and repair of the BMP or conveyance that is to be owned, operated and maintained by a person other than the Township, and other than the owner of the property on which the BMP or conveyance is located;
 - v. A minimum twenty (20) foot wide perimeter (or other width as determined in consultation with the Township Engineer) around all BMPs and conveyances; Sufficient vehicular ingress to and egress from a public right-of-way or roadway, as determined in consultation with the Township Engineer; and

- vi. Accompanying notes or other documentation as needed, and in accordance with Article VII describing the type, purpose and total area of easements, who the easement is granted to, and the rights, duties and obligations of the parties with respect to every BMP or conveyance.
 - d. d. Boundaries of land areas (if any) for which deed restrictions are required for the purpose of protecting and prohibiting disturbance to a BMP or conveyance, indicating the area to which the restriction applies with distances shown in feet and bearings to the nearest degree, and a written description of the type, purpose and nature of the restriction.
 - e. Other items that may be needed to comply with all other requirements of Article VII.
- C. Written description of Proposed Activity, Including the following:
1. Existing features, conditions, natural resources, hydrologic features, and special management areas (as listed in Subsection 402.B.8);
 2. How the site design achieves the requirements of Section 304, and if applicable, where they could not be achieved and why;
 3. The overall Stormwater Management design concept for the project and how the site design achieves the requirements of Sections 301 through 311 of Article III;
 4. Proposed features and conditions, proposed erosion and sediment control features, proposed BMPs, conveyances, and any other stormwater facilities;
 5. A description of the effect of the project (in terms of flow alteration and runoff volumes, water quality and peak flows, etc.) on existing natural resources, hydrologic features and special management areas, adjacent and downgradient properties, and any existing municipal or other stormwater conveyance system(s), that may be affected by or receive runoff from the Regulated Activity (whether located within or outside of the area of the Regulated Activity), and specifics of how erosion, water quality and flow impacts will be avoided or otherwise mitigated;
 6. Proposed Nonpoint Source Pollution controls and justification and confirmation that the proposed project will not result in any increased pollutant loadings to any existing stream or stream impairment identified by PADEP, or to any receiving water body;
 7. Expected project time schedule; and
 8. Description of construction stages or project phases, if so proposed.

D. Site Evaluation

A detailed site evaluation conducted by a qualified Licensed Professional for projects proposed in areas of carbonate geology or Karst topography, and other environmentally sensitive areas, such as contaminated sites and brownfields, as described in Subsections 301.O and 301.R of this Ordinance.

E. Design Calculations

Stormwater runoff design computations and documentation, such as hydrologic, hydraulic, and structural computations, assumptions, BMP loading ratios, etc., consistent with the guidelines and criteria presented in the PA BMP Manual (as amended) or other guidance acceptable to the

Township Engineer, and used in the design of the BMPs, conveyances and other features proposed to be utilized for Stormwater Management, or as otherwise necessary to demonstrate that the requirements of this Ordinance have been met, specifically including the requirements in Sections 301 and 304 through 309.

4. INSPECTIONS, OPERATION AND MAINTENANCE REQUIREMENTS

A. Performance and Inspection of Regulated Activities

1. All Regulated Activities shall be conducted, operated and maintained in accordance with the requirements set forth in Articles III, VII, and VIII of this Ordinance. When a SWM Site Plan is required by this Ordinance, all Regulated Activities shall be performed in accordance with the requirements of the final approved Stormwater Management Plan.
2. The Township Engineer or other municipal designee shall be provided access to the Site to inspect all phases of the erosion and sediment control measures and installation of the permanent BMPs and conveyances at such times as deemed appropriate by the Township Engineer or other municipal designee.
3. Periodic inspections may be made by the Township Engineer or other designee during construction. A set of design plans approved by the Township shall be on file and available for viewing at the site throughout the duration of the construction activity.
4. Inspections, including but not limited to a final inspection, of all constructed BMPs, conveyances, or other stormwater facilities, and related improvements may be conducted by the Township Engineer or other designee to confirm compliance with this Ordinance and with the final approved Stormwater Management Plan prior to the issuance of any occupancy permit, use permit, or other form of final approval of the project by the Township.
5. Upon completion of construction, every permanent stormwater BMP, conveyance or other stormwater facility constructed or used as part of the Regulated Activity shall be operated, maintained and inspected by the property owner, or other designated person, in accordance with the O&M Plan and O&M Agreement approved by the Township.
6. The Township or its designee may periodically inspect any permanent stormwater BMP, conveyance or facility for compliance with this Ordinance, an approved O&M Plan, or an approved O&M Agreement, per the provisions of Article IX. The Township may inspect at any time there is a reason to believe a violation exists. The Township may pursue enforcement for violations consistent with the provisions of Article IX.

B. Operation and Maintenance Plans

The following documents shall be prepared and submitted to the Township for review and approval as part of the Stormwater Management Plan, in accordance with the requirements of Chapter 345 –Article VII, for each BMP and conveyance included in the Stormwater Management Plan (including any to be located on any property other than the property being developed by the Applicant):

1. An O&M Plan;
2. An O&M Agreement (This document is prepared by Township Staff using the template shown in this attachment);

3. Any easement agreements that are needed to ensure access, inspection, maintenance, operation, repair and permanent protection of any permanent BMP(s) and Conveyances associated with the Regulated Activity;
4. Any written deed, deed amendment or equivalent document (if needed) to be recorded against a subject property, as shown on the Stormwater Management Plan maps or plan sheets, or recorded plan sheets for the purpose of protecting and prohibiting disturbance to a BMP or conveyance; and
5. Written approval, easement agreements, or other documentation for discharges to adjacent or downgradient properties when required to comply with Subsection 345-301.G and Article VII of Chapter 345.

5. COMPLETENESS STORMWATER MANAGEMENT PLAN CHECKLIST

Use the following list as a tool to make sure that all the required information has been included in your application. Place a checkmark in the column provided for all items provided. Failure to provide all the requested information will delay the processing of the application. NOTE: The Stormwater Management Plan consists of Drawing(s) and Report(s). **There is no need to include this list in your application.**

- §345-303: Erosion and Sediment Control
- §345-305: Water Quality and Runoff Volume Requirements
- §345-306: Infiltration Requirements [when possible should be volume from §345-305] §345-306.I: Detailed Soils Evaluation of the Site shall be conducted by a qualified professional and at a minimum shall address soil permeability, depth to bedrock, and subgrade stability.
- §345-308: Stormwater Peak Rate Control Requirement
- §345-402.A.2 Listing of All Regulatory Approvals required for the proposed project and the status of the review and approval process for each.
- §345-402.A.3: A statement, signed by the Applicant, acknowledging that any revision to the approved SWM Site Plan shall be submitted to approved by the Township, and that a revised Erosion and Sediment Control Plan shall be submitted to, and approved by, the Conservation District or Township (as applicable) for a determination of adequacy prior to construction of the revised features.
- §345-402.A.4: Signature block signed and sealed by the qualified Licensed Professional: *"I (name), on this date(date of signature), hereby certify to the best of my knowledge that the SWM Site Plan meets all design standards and criteria of the East Brandywine Chapter 345, Stormwater Management Ordinance."*
- §345-402.B.7: Legal property boundaries
- §345-402.B.8: Existing Natural Resources and Natural or Man-Made Hydrologic Features that are located within the Site or receiving discharge
- §345-402.B.11: All the existing and proposed man-made features
- §345-402.B.12: The Total Extent of the Upstream Area Draining through the Site

- §345-402.B.14: Complete Delineation of the Flow Paths used for calculating the time of concentration for the Predevelopment and Post-Construction conditions shall be included.
- §345-402.B.16: A Grading Plan, including all areas of proposed Earth Disturbance and the proposed Regulated Activity and delineating the boundary or limits of Earth Disturbance of the Site. The total Disturbed Area of the Site shall be noted in square feet and acres.
- §345-402.C: A Written Description of the following information shall be included in the SWM Site Plan [a narrative in the Report]
- §345-402.D: Site evaluation conducted by a qualified Licensed Professional for project proposed in areas of carbonate geology or karst topography and other sensitive areas. [only necessary if in these sensitive areas]
- §345-402.E: Stormwater Runoff Design Computations and Documentation, such as hydrologic, hydraulic, and structural computations, assumptions, BMP loading ratios, etc., consistent with the guidelines and criteria presented in the PA BMP Manual.
- §345-402.F: Inspection, Operation and Maintenance Requirements. The operations and maintenance agreement for the Recorder of Deeds will be prepared by Township Staff using the template shown in this attachment beginning on page 13 after the plan has been approved by the Township Engineer.
- §345-702.B.4: The following statement shall be included: “The Landowner acknowledges that, per the provisions of the Township’s Stormwater Management Ordinance, it is unlawful to modify, remove, fill, landscape, alter or impair the effectiveness of, or place any structure, other vegetation, yard waste, brush cuttings, or other waste or debris into any permanent stormwater management BMP or Conveyance described in this O&M Plan or to allow the BMP or Conveyance to exist in a condition which does not conform to this O&M Plan, without written approval from the Township.”



Fact Sheet

Commonwealth of Pennsylvania • Department of Environmental Protection

Pennsylvania's Storm Water Management Act (Act 167)

Pennsylvania's Storm Water Management Act (Act 167) was enacted in 1978. This Act was in response to the impacts of accelerated stormwater runoff resulting from land development in the state. It requires counties to prepare and adopt watershed based stormwater management plans. It also requires municipalities to adopt and implement ordinances to regulate development consistent with these plans.

What is accelerated stormwater runoff?

Precipitation that falls on the natural landscape is managed by a system of vegetation, soil, groundwater and surface waters that has formed over time. Natural events shape this system to efficiently handle stormwater through infiltration, evaporation and runoff. When less precipitation is infiltrated into the soil and groundwater or evaporated, either directly to the air or through plants and trees, there is an increase in the volume and rate, or acceleration, of stormwater runoff.

Why is accelerated stormwater runoff a concern?

As changes to the landscape alter the balance of the natural water cycle, accelerated stormwater runoff causes further impacts to the landscape. Higher volumes and rates of stormwater runoff cause increased soil erosion, greater and more frequent flooding, and reshape surface waters through scour and deposition. It also reduces groundwater levels because less precipitation ends up there and this in turn reduces dry weather stream flows that are fed by groundwater. More soil and other water pollutants are picked up and carried further with accelerated stormwater runoff. Depending on the extent of these impacts, serious safety, property and environmental risks can also result.

How does development accelerate stormwater runoff?

Changing the soil cover by placing impervious surfaces (pavement, roofs), removing vegetation (grass, plants, trees) and changing the shape of the land and the way water flows across it can all accelerate stormwater runoff. During construction vegetation is removed, soil is exposed, the landscape is reshaped and impervious surfaces are installed. Following construction, some vegetation is replaced, the impervious surfaces prevent infiltration and may attract new pollution sources and the reshaped landscape alters the flow and destination of stormwater runoff.

How can the impacts of accelerated stormwater runoff be reduced and prevented?

If there is no change from preconstruction to post-construction stormwater runoff volume, rate and quality, accelerated stormwater runoff will be avoided and the impacts prevented. This is accomplished by minimizing changes to the landscape and implementing stormwater management practices that replicate pre-development conditions.

What is a watershed based Stormwater Management Plan?

Watershed based Stormwater Management Plans provide municipalities with a framework, including model

ordinances and management practices, to control stormwater runoff from new development in a watershed. These plans include standards for managing the quantity and quality of stormwater runoff given the characteristics of the watershed including current and future development plans. The goal is to control post-development stormwater runoff rate, volume and quality to replicate pre-development conditions. This is to prevent additional downstream flooding and to protect water resources and their uses. The Department of Environmental Protection (DEP) may require counties to develop joint plans where a watershed includes land in more than one county.

How is the public involved in this process?

During the watershed planning process, counties establish plan advisory committees consisting of county and municipal representatives. Counties may also appoint representatives of interest groups and the public. These committees help to define local concerns and develop stormwater control strategies. The processes for county adoption of the plan includes a public hearing. Municipal adoption of ordinances to implement the plan is also an opportunity for public input.

How are Stormwater Management Plans implemented?

Following adoption of the Stormwater Management Plan by the county and approval by DEP, anyone engaged in construction activities in the watershed is required to implement stormwater management measures consistent with the plan. In addition, each municipality in the watershed covered by the plan must, within six months of DEP's approval, adopt ordinances consistent with the plan. This includes zoning, subdivision and development, building code, erosion and sedimentation and post-construction stormwater management requirements in the municipality. This process is also consistent with municipal obligations under federal National Pollutant Discharge Elimination System (NPDES) permitting requirements for Municipal Separate Storm Sewer Systems (MS4).

What assistance is available to counties and municipalities?

DEP provides technical, administrative and financial assistance to counties in preparing Stormwater Management Plans. DEP pays for 75% of the costs counties incur in preparing plans, and it approves reimbursements to municipalities for 75% of the allowable costs of preparing plans and enacting, administering and implementing stormwater ordinances.

Prepared By:

East Brandywine Township
1214 Horseshoe Pike
Downingtown, PA 19335

Return To:

East Brandywine Township
1214 Horseshoe Pike
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UPI#: #- #-###

**STORMWATER BEST MANAGEMENT PRACTICES (BMPs) AND CONVEYANCES
OPERATION AND MAINTENANCE AGREEMENT**

THIS AGREEMENT, made and entered into this _____ day of _____, 20____, by and _____ (hereinafter the "Landowner"), and East Brandywine Township Chester County, Pennsylvania, (hereinafter "Municipality");

WITNESSETH

WHEREAS, the Landowner is the owner of certain real property by virtue of a deed of conveyance recorded in the land records of Chester County, Pennsylvania, at Deed Book _____ and Page _____, (hereinafter "Property"); and

WHEREAS, the Landowner is proceeding to build and develop the Property; and

WHEREAS, the stormwater Best Management Practices (herein after BMP(s)) And Conveyances Operations and Maintenance Plan approved by the Municipality (hereinafter referred to as the "O&M Plan") for the Property, which is attached hereto as Appendix A and made part hereof, provides for management of stormwater within the confines of the Property through the use of BMP(s) and conveyances; and

WHEREAS, the Municipality and the Landowner, for itself and its administrators, executors, successors, heirs, and assigns, agree that the health, safety, and welfare of the residents of the Municipality and the protection and maintenance of water quality require that stormwater BMP(s) and conveyances be constructed and maintained on the Property; and

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

BMP - "Best Management Practice" - Those activities, facilities, designs, measures, or procedures as specifically identified in the O&M Plan, used to manage stormwater impacts from land development, to meet state water quality requirements, to promote groundwater recharge, and to otherwise meet the purposes of the Municipality's Stormwater Management Ordinance. BMPs may 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, manufactured devices, and operational and/or behavior-related practices that attempt to minimize the contact of pollutants with stormwater runoff. The BMPs identified in the O&M Plan are permanent appurtenances to the Property; and

Conveyance - As specifically identified in the O&M Plan, a man-made, existing or proposed facility, structure or channel used for the transportation or transmission of stormwater from one place to another, including pipes, drainage ditches, channels and swales (vegetated and other), gutters, stream channels, and like facilities or features. The conveyances identified in the O&M Plan are permanent appurtenances to the Property; and

WHEREAS, the Municipality requires, through the implementation of the O&M Plan, that stormwater management BMPs and conveyances, as required by said O&M Plan and the Municipality's Stormwater Management Ordinance, be constructed and adequately inspected, operated and maintained by the Landowner, its administrators, executors, successors in interest, heirs, and assigns.

NOW, THEREFORE, in consideration of the foregoing promises, the mutual covenants contained herein, and the following terms and conditions, the parties hereto, intending to be legally bound hereby, agree as follows:

1. The foregoing recitals to this Agreement are incorporated as terms of this Agreement as if fully set forth in the body of this Agreement.

2. The Landowner shall construct the BMP(s) and conveyance(s) in accordance with the final design plans and specifications as approved by the Municipality _____
dated _____ and last revised _____.

3. The Landowner shall inspect, operate and maintain the BMP(s) and conveyance(s) as shown on the O&M Plan in good working order acceptable to the Municipality and in accordance with the specific inspection and maintenance requirements in the approved O&M Plan.

4. The Landowner hereby grants permission to the Municipality, its authorized agents and employees, to enter upon the Property from a public right-of-way or roadway, at reasonable times and upon presentation of proper identification, to inspect the BMP(s) and conveyance(s) whenever it deems necessary for compliance with this Agreement, the O&M Plan and the Municipality's Stormwater Management Ordinance. Whenever possible, the Municipality shall notify the Landowner prior to entering the Property.

5. The Municipality intends to inspect the BMP(s) and conveyance(s) at a minimum of once every _____ years to determine if they continue to function as required.

6. The Landowner acknowledges that, per the Municipality's Stormwater Ordinance, it is unlawful, without written approval of the Municipality, to:

- a. Modify, remove, fill, landscape, alter or impair the effectiveness of any BMP or conveyance that is constructed as part of the approved O&M Plan;
- b. Place any structure, fill, landscaping, additional vegetation, yard waste, brush cuttings, or other waste or debris into a BMP or conveyance that would limit or alter the functioning of the BMP or conveyance;
- c. Allow the BMP or conveyance to exist in a condition which does not conform to the approved O&M Plan or this Agreement; and
- d. Dispose of, discharge, place or otherwise allow pollutants including, but not limited to, deicers, pool additives, household chemicals, and automotive fluids to directly or indirectly enter any BMP or conveyance.

7. In the event that the Landowner fails to operate and maintain the BMP(s) and conveyance(s) as shown on the O&M Plan in good working order acceptable to the Municipality, the Landowner shall be in violation of this Agreement, and the Landowner agrees that the Municipality or its representatives may, in addition to and not in derogation or diminution of any remedies available to it under the Stormwater Ordinance or other statutes, codes, rules or regulations, or this Agreement, enter upon the Property and take whatever action is deemed necessary to maintain said BMP(s) and conveyance(s). It is expressly understood and agreed that the Municipality 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 Municipality.

8. In the event that the Municipality, 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 Municipality for all expenses (direct and indirect) incurred within _____ days of delivery of an invoice from the Municipality. Failure of the Landowner to make prompt payment to the Municipality may result in enforcement proceedings, which may include the filing of a lien against the Property, which filing is expressly authorized by the Landowner.

9. The intent and purpose of this Agreement is to ensure the proper maintenance of the on-site BMP(s) and conveyance(s) by the Landowner; provided, however, that this Agreement shall not be deemed to create or affect any additional liability on any party for damage alleged to result from or be caused by stormwater runoff.

10. The Landowner, for itself and its executors, administrators, assigns, heirs, and other successors in interest, hereby releases and shall release the Municipality's employees, its agents and designated representatives from all damages, accidents, casualties, occurrences, or claims which might arise or be asserted against said employees, agents or representatives arising out of the construction, presence, existence, or maintenance of the BMP(s) and conveyance(s) either by the Landowner or Municipality. In the event that a claim is asserted or threatened against the Municipality, its employees, agents or designated representatives, the Municipality shall notify the Landowner, and the Landowner shall defend, at his own expense, any claim, suit, action or proceeding, or any threatened claim, suit, action or proceeding against the Municipality, or, at the request of the Municipality, pay the cost, including attorneys' fees, of defense of the same undertaken on behalf of the Municipality. If any judgment or claims against the Municipality's employees, agents or designated representatives shall be allowed, the

Landowner shall pay all damages, judgments or claims and any costs and expenses incurred by the Municipality, including attorneys, regarding said damages, judgments or claims.

11. The Municipality may enforce this Agreement in accordance with its Stormwater Ordinance, at law or in equity, against the Landowner for breach of this Agreement. Remedies may include fines, penalties, damages or such equitable relief as the parties may agree upon or as may be determined by a Court of competent jurisdiction. Recovery by the Municipality shall include its reasonable attorney's fees and costs incurred in seeking relief under this Agreement.

12. Failure or delay in enforcing any provision of this Agreement shall not constitute a waiver by the Municipality of its rights of enforcement hereunder.

13. The Landowner shall inform future buyers of the Property about the function of, operation, inspection and maintenance requirements of the BMP(s) prior to the purchase of the Property by said future buyer, and upon purchase of the Property the future buyer assumes all responsibilities as Landowner and must comply with all components of this Agreement.

14. This Agreement shall inure to the benefit of and be binding upon, the Municipality and the Landowner, as well as their heirs, administrators, executors, assigns and successors in interest.

15. Additional items or conditions, as required by the Municipality (per §345-703B of this chapter), as attached herein:

This Agreement shall be recorded at the Office of the Recorder of Deeds of Chester County, Pennsylvania, and shall constitute a covenant running with the Property, in perpetuity.

IN WITNESS WHEREOF, being duly authorized and empowered to do so, the Owner and Township have duly executed and delivered this Agreement as of the date and year first above written.

WITNESS:

OWNER(S):

For Owner

By: _____

By: _____

WITNESS:

EAST BRANDYWINE TOWNSHIP:

For Township

By: _____

Township Manager