STORMWATER MANAGEMENT ORDINANCE #2011-8-8-1

HAZLE TOWNSHIP
LUZERNE COUNTY, PENNSYLVANIA

ADOPTED SEPTEMBER 12, 2011

PREPARED BY:

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COMMONWEALTH OF PENNSYLVANIA
TOWNSHIP OF HAZLE, LUZERNE COUNTY, PA

ORDAINING CLAUSE

AN ORDINANCE BY THE TOWNSHIP BOARD OF SUPERVISORS IN AND FOR THE TOWNSHIP OF HAZLE, LUZERNE COUNTY, PENNSYLVANIA, CONCERNING THE MANAGEMENT OF STORMWATER RUNOFF WITHIN SAID TOWNSHIP; STATING PUBLIC PURPOSES AND INTENTIONS; DEFINING TERMS; CREATING RULES, REGULATIONS AND CRITERIA FOR SUCH MANAGEMENT, INCLUDING THE DEVELOPMENT OF PLANS AND STUDIES; REQUIRING PERMITS AND INSPECTIONS; PRESCRIBING DESIGN STANDARDS; ESTABLISHING ADMINISTRATIVE PROCEDURES; PROVIDING ENFORCEMENT REMEDIES AND PENALTIES.

BE IT ORDAINED AND ENACTED by the Hazle Township Board of Supervisors, Luzerne County, Pennsylvania, as follows:

ARTICLE 1 – GENERAL PROVISIONS

Section 101. Short Title

This Ordinance shall be known and may be cited as the "Hazle Township Stormwater Management Ordinance."

Section 102. Statement of Findings

The Supervisors of the Municipality of Hazle Township finds that:

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

B. A comprehensive program of stormwater management, including reasonable regulation of development and activities causing accelerated erosion, is fundamental to the public health, safety, welfare, and the protection of the people of the Municipality of Hazle Township and all the people of the Commonwealth, their resources, and the environment. Stormwater is an important water resource, which provides groundwater recharge for water supplies and base flow of streams, which also protects and maintains surface water quality.

C. Federal and state regulations require Hazle Township to implement a program of stormwater controls. Each person, corporation, or other entity which makes any surface changes shall be required to a) collect on-site surface runoff and dispose of it

to the point of discharge into the common natural water course of the drainage area: b) handle existing off-site runoff through his/her development: c) implement a Stormwater Management Plan (SWM Site Plan) designed to provide performance-based "best management practices" ("BMPs") as set forth by DEP, acceptable to manage stormwater and prevent pollution of waters of the Commonwealth. Federal and state regulations require Hazle Township to implement a program of stormwater controls.

D. The discharge of water from roofs, ground, paved surfaces, sump pumps, footing tiles, swimming pools, and other real estate improvements into the Township's sanitary sewer system and neighboring private properties has caused and will continue to cause flooding, creation of unsanitary wet conditions, erosion and deterioration of soil as well as overloading of the sanitary sewer system. Such flooding and overloading has caused and will continue to cause significant and grave damage to the property of large numbers of Township residents. The damage creates a hazard to the health of Township residents. The Supervisors further find it essential to the maintenance of health, safety and general welfare of its residents that such discharges to be prohibited and the provisions of this Ordinance be strictly enforced to comply with the requirements of the 1978 Pennsylvania Stormwater Management Act, ACT 167.

Section 103. Purpose

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

A. Manage accelerated runoff and erosion and sedimentation problems at their source by regulating activities that cause these problems.

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

C. Encourage recharge of groundwater where appropriate and prevent degradation of surface and groundwater quality and to otherwise protect water resources.

D. Maintain the peak rate of stormwater runoff leaving the site during and after construction of the regulated activity to be no greater than the peak rate of runoff that existed prior to start of the regulated activity and to a greater reduction in specified Stormwater Management Districts. Maintain existing flows and quality of streams and watercourses in the municipality and the Commonwealth. Use a grassland condition for cleared agricultural land and a good woodland condition for forested land. For land previously developed, the prior condition shall reflect the actual developed condition.

E. Preserve and restore the flood-carrying capacity of streams prevent scour and erosion of streambanks and streambeds.

F. Provide proper operation and maintenance of all permanent stormwater management facilities and all permanent BMP's that are constructed in the Township.

G. Provide performance standards and design criteria for watershed-wide stormwater management and planning and meet National Pollutant Discharge Elimination System (NPDES) II permit requirements.

H. Meet legal water quality requirements under state law, including regulations at 25 PA. Code 93 to protect, maintain, reclaim, and restore the existing and designated uses of the waters of this Commonwealth.

I. Prevent flooding and erosion on properties adjacent to earth disturbance activities.

Section 104. Statutory Authority

A. Primary Authority:

Hazle Township is empowered to regulate these activities by the authority of the Act of October 4, 1978, P.L. 864 (Act 167), 32 P.S. Section 680.1, et seq., as amended, the "Storm Water Management Act" and, Act of May 1, 1933, (P.L. 103, No. 69) reenacted and amended November 9, 1995, (P.L. 350, No. 60, as amended) the "Pennsylvania Second Class Township Code" and the applicable codes and ordinances of the Municipality of Hazle Township.

B. Secondary Authority:

Hazle Township 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

This Ordinance shall apply to those areas of the Township that are located within the boundaries of Hazle Township.

This Ordinance shall only apply to stormwater management facilities constructed as part of any of the Regulated Activities that may affect stormwater runoff, including Land Development and Earth Disturbance Activity, listed in this Section. Erosion and sedimentation control during construction activities are specifically not regulated by this Ordinance, but shall continue to be regulated under all applicable existing laws and ordinances.

Local stormwater management design criteria (e.g. inlet spacing, inlet type. collection system design and details, outlet structure design, etc.) shall be regulated by applicable sections of this Ordinance, by other applicable Township Ordinances, or at the Township Engineer's discretion. Should the Township determine a potential conflict with Township Engineer review the alternate engineer shall be the reviewing engineer.

Pennsylvania Department of Transportation (PennDOT) roadway projects will perform stormwater management consistent with Publication 13M (Design Manual-2) Chapter 13.6 Antidegradation and Post Construction Stormwater Management Policy.

The following activities are defined as **"Regulated Activities"** and shall comply with and be subject to the requirements of this Ordinance:

A. Any Major Land development as defined by the Hazle Township Subdivision and Land Development Ordinance and which involves construction of impervious surfaces.

B. Any Major Subdivision as defined by the Hazle Township Subdivision and Land Development Ordinance.

C. Diversion or piping of any natural or man-made stream channel directly impacting land of others.

D. Installation of stormwater management facilities or appurtenances thereto directly impacting land of others.

E. Any other activity including Minor Subdivision and/or Land Development unless specifically exempt by Section 302.

F. Any earth disturbance activities or any activities that involve the alteration or development of land in a manner that may affect stormwater runoff.

This includes but is not limited to: the clearing and grubbing of wooded areas, grading and excavating, placement of pavement (driveways, parking areas, roads), construction of buildings, construction of stormwater management facilities, the diversion or piping of any natural or man-made stream channel, the construction of other structures (homes, sheds, garages, commercial and industrial buildings), and other activities which alter the way stormwater runs off of the landscape. See Section 301.V.1 of Ordinance for additional detail on Regulated Activities.

G. Proposed single family residential and multi-family residential dwelling units that are associated with a Subdivision and/or Land Development that has obtained a SWM Site Plan approval from Hazle Township and/or a NPDES Permit approval from the PA DEP prior to or after the adoption of this Ordinance shall still be considered a regulated activity of this Ordinance. The majority of proposed residential dwelling units require the approval of a Level 2 Application prior to construction. If the Land Development or NPDES Permit approval required specific individual lot stormwater management controls, the applicant shall construct the individual lot stormwater management controls required by the original approval and may not be required to meet the DIA requirements of this Ordinance. The purpose of the Level 2 application

for these undeveloped "approved" lots is for Hazle Township to ensure that the individual lot stormwater management controls required by the original approval are being properly implemented by the lot owner. Drawings and calculations must be submitted to Hazle Township in enough detail for the Township Engineer to determine compliance with the previously granted approval and also to physically construct the stormwater management facilities on site. Drawings must contain, at a minimum, all of the items required for a Level 2 Sketch (See Worksheet C.1 and E) and volume calculations must be provided for all stormwater storage facilities. (Worksheets available at Township Office).

Depending on the amount of impervious area placed and the amount of earth disturbance to the project site, this Ordinance requires different levels of stormwater management and corresponding different levels of design and review.

Level 1: Proposed impervious area is 500 sq. ft. to 1,000 sq. ft. or total earth disturbance is 1,000 sq. ft. to 5,000 sq. ft.

Stormwater Management Controls: Ensure that adverse downstream impacts do not occur due to redirecting stormwater flows towards nearby structures. Stormwater Management Controls must comply with Section 301 of this Ordinance.

Submission: Submit the Stormwater Management Permit Application and Sketch to Hazle Township Code Enforcement Officer.

Review: Shall be completed by Hazle Township Zoning Officer or Building Inspector.

Level 2: Proposed impervious area is 1,000 sq. ft. to 5,000 sq. ft. or total earth disturbance is between 5,000 sq. ft. and 10,000 sq. ft.

Stormwater Management Controls: Utilize Disconnected Impervious Area (DIA) for stormwater controls as outlined in worksheet C.1; if DIA cannot be achieved, utilize stormwater management controls for small projects as outlined in Worksheet E.

Submission: Submit the Stormwater Management Permit Application and computations for DIA; the worksheet C.1 shall be used and submitted. If DIA cannot be achieved, submit computations for Stormwater Management for Small Projects; the worksheet E must be used and submitted.

Review: Shall be completed by Hazle Township Engineer.

Level 3: Proposed impervious area is 5,000 sq. ft. to 10,000 sq. ft. or total earth disturbance

is between 10,000 sq.ft. and 20,000 sq. ft. but does not qualify as a Land Development. All Land Developments require a Level 4 submission and review.

Stormwater Management Controls: Capture and permanently remove the first 2 inches of runoff over all proposed impervious areas; infiltrate at least the first 0.5 inches.

Submission: Submit the Stormwater Management Permit Application and computations for permanently removing the first 2 inches of runoff over all proposed impervious areas; worksheet D must be used.

Review: Shall be completed by Hazle Township Engineer.

Level 4: Proposed impervious area is greater than 10,000 sq. ft. or total earth disturbance is greater than 20,000 sq. ft. or any project that qualifies as a Land Development.

Stormwater Management Controls: All requirements of this Ordinance are applicable, including water quality and volume controls as found in Section 303 and peak rate controls as found in Section 304.

Submission: Submit the Stormwater Management Permit Application and Stormwater Management (SWM) Site Plan as required in Section 401 of this Ordinance.

Review: Shall be completed by Hazle Township Engineer.

Prior to the preliminary and final approval of a Level 4 application as defined above, the owner, subdivider, developer, or his agent shall submit a SWM Site Plan to the Planning Department for review and recommendation to the Board of Supervisors for Approval. Approval of Levels 1 through 3 permits shall be vested with the Zoning Officer and/or Township Engineer.

Section 106. Repealer

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

Section 107. Severability

Should a court of competent jurisdiction declare any section or provision of this Ordinance invalid, 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 pursuant to 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.

B. The standards and criteria in this Ordinance amend the standards and criteria in the previously enacted Hazle Township Stormwater Management Ordinance and Article 12 of the previously enacted Hazle Township Subdivision and Land Development Ordinance.

C. The Hazle Township Supervisors and their agents shall be responsible for administrating this Ordinance.

D. All Land Developments must also comply with Article 12 of the Hazle Township Subdivision and Land Development Ordinance (SALDO). If there are any conflicts between this Ordinance and the SALDO, the more restrictive requirement shall apply.

ARTICLE II - DEFINITIONS

For the purposes and application of this Stormwater 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 word "person" includes an individual, firm, association, organization, partnership, trust, company, corporation, or any other similar entity.

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

E. The words "used or occupied" include the words "intended, designed, maintained, or arranged to be used, occupied or maintained".

ACCELERATED EROSION: The removal of the surface of the land through the combined action of man's activity and the natural processes of a rate greater than would occur because of the natural process alone.

AGRICULTURAL ACTIVITIES: The work of producing crops and raising livestock including tillage, plowing, disking, harrowing, pasturing and installation of conservation measures. Construction of new buildings or impervious area is not considered an agricultural activity.

ALTERATION: As applied to land, a change in topography as a result of the moving of soil and rock from one location or position to another; also the changing of surface conditions by causing the surface to be more or less impervious; land disturbance.

APPLICANT: A landowner, ~~or~~ developer, or other person who has filed an application to the Township for approval to engage in any Regulated Activities as defined in Section 1201.4 of this Ordinance.

BEST MANAGEMENT PRACTICE (BMP): Activities, facilities, designs, measures, or procedures used to manage stormwater impacts from regulated activities, to meet state water quality requirements, to promote groundwater recharge, and to otherwise meet the purposes of this Ordinance. Stormwater BMPs are commonly grouped into one of two broad categories or measures: "structural" or "nonstructural." In this Ordinance, nonstructural BMPs or measures refer to operational and/or behavior-related practices that attempt to minimize the contact of pollutants with

stormwater runoff whereas structural BMPs or measures are those that consist of a physical device or practice that is installed to, capture and treat stormwater runoff. Structural BMPs include, but are not limited to 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.

CAPTURED: The process of collecting runoff to be managed by a stormwater BMP.

CHANNEL EROSION: The widening, deepening, and headward cutting of small channels and waterways, due to erosion caused by moderate to large floods.

CISTERN: An underground reservoir or tank for storing rainwater.

CONSERVATION DISTRICT: A conservation district, as defined in Section 3(c) of the Conservation District Law (3 P.S. §851(c)) that has the authority under a delegation agreement executed with DEP to administer and enforce all or a portion of the regulations promulgated under 25 Pa. Code 102; refers to the Luzerne Conservation District unless otherwise noted.

CULVERT: A structure with appurtenant works that carries a stream under or through an embankment or fill.

DAM: An artificial barrier, together with its appurtenant works, constructed for the purpose of impounding or storing water or another fluid or semifluid, or a refuse bank, fill or structure for highway, railroad or other purposes which does or may impound water or another fluid or semifluid.

DEP: The Pennsylvania Department of Environmental Protection.

DESIGN STORM: The magnitude and temporal distribution of precipitation from a storm event measured in probability of occurrences (e.g. a 5-year storm and duration (e.g. 24 hours), used in the design and evaluation of stormwater management systems. Also see return period.

DESIGNEE: The agent of the Hazle Township Planning Department and/or agent of the governing body involved with the administration, review or enforcement of any provisions of this ordinance by contract or memorandum of understanding.

DETENTION BASIN: An impoundment structure designed to manage stormwater runoff by temporarily storing the runoff and releasing it at a predetermined rate.

DETENTION VOLUME: The volume of runoff that is captured and released into the waters of this Commonwealth at a controlled rate.

DEVELOPER: A person, partnership, association, corporation, or other entity, or any responsible person therein or agent thereof, that undertakes any Regulated Activity of this Ordinance.

DEVELOPMENT SITE: Any human – induced change to improved or unimproved real estate, whether public or private, including, but not limited to, land development, construction, installation, or expansion of a building or other structure, land division, street construction, drilling, and site alteration such as embankments, dredging, grubbing, grading, paving, parking or storage facilities, excavation, filling, stockpiling, or clearing.

DISCONNECTED IMPERVIOUS AREA (DIA): An impervious or impermeable surface that is disconnected from any stormwater drainage or conveyance system and is redirected or directed to a pervious area, which allows for infiltration, filtration, and increased time of concentration as specified in Appendix A Disconnected Impervious Area.

DISTURBED AREA: An unstabilized land area where an earth disturbance activity is occurring or has occurred.

DOWNSLOPE PROPERTY LINE: That portion of the property line of the lot, tract, or parcels of land being developed located such that ~~tall~~ all overland or pipe flow from the site would be directed towards it.

DRAINAGE CONVEYANCE FACILITY: A Stormwater Management Facility designed to transmit stormwater runoff and shall include streams, channels, swales, pipes, conduits, culverts, storm sewers, etc.

DRAINAGE EASEMENT: A right granted by a landowner to a grantee, allowing the use of private land for stormwater management purposes.

DRAINAGE PERMIT: A permit issued by the Township governing body after the drainage plan has been approved. Said permit is issued prior to or with the final Township approval.

DRAINAGE PLAN: The documentation of the stormwater management system, if any, to be used for a given development site, the contents of which are established in Section 1204.3. (See also Stormwater Management Site Plan)

EARTH DISTURBANCE ACTIVITY: Any activity involving, but not limited to, grading, tilling, digging, or filling of ground, stripping of vegetation, or any other action that causes an alteration to the natural condition of the land and is a regulated activity.

EROSION: The movement of soil particles by the action of water, wind, ice, or other natural forces.

EROSION AND SEDIMENT POLLUTION CONTROL PLAN: A plan which is designed to minimize accelerated erosion and sedimentation pursuant to 25 Pa. Code, Chapter 102.

EXISTING CONDITION: The dominant land cover during the 5-year period immediately preceding a proposed regulated activity.

FEMA: Federal Emergency Management Agency.

FLOOD: A general but temporary condition of partial or complete inundation of normally dry land areas from the overflow of streams, rivers, and other waters of this Commonwealth.

FLOODPLAIN: Any land area susceptible to inundation by water from any natural source or delineated by applicable FEMA maps and studies as being a special flood hazard area. Also includes areas that comprise Group 13 Soils, as listed in Appendix A of the Pennsylvania DEP Technical Manual for Sewage Enforcement Officers (as amended or replaced from time to time by DEP).

FLOODPLAIN MANAGEMENT: The operation of a program or activities which may consist of both corrective and preventive measures for reducing flood damage, including but not limited to such things as emergency preparedness plans, flood control works, and flood plain management regulations.

FLOODPLAIN MANAGEMENT REGULATIONS: Zoning ordinances, subdivision and land development regulations, building codes, health regulations, special purpose ordinances, and other applications of the police power. The term describes such State or local regulations in any combination thereof, which provide standards for the purpose of flood damage prevention and reduction.

FLOODPLAIN, ONE HUNDRED YEAR (FP): Any land area susceptible to inundation by water from any natural source or delineated by applicable Department of Housing and Urban Development, Federal Insurance Administration Flood Hazard Boundary – Mapped as being a special flood hazard area. Also included are areas that comprise Group 13 Soils, as listed in Appendix A of the Pennsylvania Department of Environmental Protection (PADEP) Technical Manual for Sewage Enforcement Officers (as amended or replaced from time to time by PADEP).

FLOODWAY (FW): The channel of the watercourse and those portions of the adjoining floodplains which are reasonably required to carry and discharge the 100-year frequency flood. Unless otherwise specified, the boundary of the floodway is as

indicated on maps and Flood insurance studies provided by FEMA. In an area where no FEMA maps or studies have defined the boundary of the 100-year frequency floodway, it is assumed – absent evidence to the contrary – that the floodway extends from the stream to 50 feet from the top of the bank of the stream.

FOREST MANAGEMENT/TIMBER OPERATIONS: Planning and activities necessary for the management of forestland. These include timber inventory and preparation of forest management plans, silvicultural treatment, cutting budgets, logging road design and construction, timber harvesting, site preparation and reforestation.

FREEBOARD: A vertical distance, expressed in feet, between the elevation of the design high-water and the top of a dam, levee, tank, basin, or diversion ridge. The space is required as a safety margin in a pond or basin.

GEOTEXTILE: A porous fabric manufactured from synthetic fiber that is used to provide separation between different types of media (i.e., between soil and stone).

GRADE: A slope, usually of a road, channel or natural ground specified in percent and shown on plans as specified herein. (To) Grade - to finish the surface of a roadbed, top of embankment or bottom of excavation.

GRASSED WATERWAY: A natural or constructed waterway, usually broad and shallow, covered with erosion-resistant grasses, used to conduct surface water.

GRAVEL (CRUSHED STONE): Considered to be impervious when the intended use of the stone is for transportation purposes, parking areas, construction areas, trails, or if the gravel is compacted at any time during or after its placement; landscaping stone is not considered as impervious area.

GROUNDWATER RECHARGE: Replenishment of existing natural underground water supplies.

HOTSPOT: Areas where land use or activities generate highly contaminated runoff, with concentrations of pollutants that are higher than those that are typically found in stormwater (e.g., vehicle salvage yards and recycling facilities, vehicle fueling stations, fleet storage areas, vehicle equipment and cleaning facilities, and vehicle service and maintenance facilities.

HYDROLOGIC SOIL GROUP (HSG): Infiltration rates of soils vary widely and are affected by subsurface permeability as well as surface intake rates. Soils are classified into four HSGs (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. Soils become less pervious as the HSG varies from A to D (NRCS).

IMPERVIOUS SURFACE: A surface that prevents the percolation of water into the ground including but not limited to bituminous pave, concrete pave, rooftops, and awnings. See definition of "Gravel (Crushed Stone)" for when gravel classifies as impervious area.

IMPOUNDMENT: A retention or detention basin designed to retain stormwater runoff and release it at a controlled rate.

INFILTRATION: Movement of surface water into the soil, where it is absorbed by plant roots, evaporated into the atmosphere, or percolated downward to recharge groundwater.

INFILTRATION STRUCTURES: A structure designed to direct runoff into the ground (e.g. french drains, seepage pits, seepage trench).

INLET: A surface connection to a closed drain, A structure at the diversion end of a conduit. The upstream end of any structure through which water may flow.

KARST: A type of topography or landscape characterized by surface depressions, sinkholes, rock pinnacles/uneven bedrock surface, underground drainage, and caves. Karst is formed on carbonate rocks, such as limestone or dolomite.

LAND DEVELOPMENT: The improvement ~~of~~ on, upon, or of one lot or two or more contiguous lots, tracts, or parcels of land for any purpose including and not limited to involving:

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

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, infrastructure or improvements, common areas, leaseholds, condominiums, building groups or other features.

C. Any expansion of a non-residential building.

D. The conversion of an existing single-family detached dwelling or single family semidetached dwelling into more than three (3) residential units. Any conversion, which results in not more than three (3) residential units shall be deemed as a land development if the units are intended to be a condominium.

E. The development of a mobile home park or the expansion of an existing mobile home park.

F. A new single residential structure containing more than five (5) residential units.

G. Any increase in impervious area which will result in the generation of stormwater in such volume or location to exceed existing stormwater facility capacity pursuant to the requirements of this ordinance and Act 167.

H. The development of any accessory building subordinate to an existing principal building.

I. Exceptions to the definition of land development. The following shall not be considered land development, but shall be subject to all Act 167 Stormwater Management requirements:

1) Any new or expansion of an existing non-residential building, structure, or improvement where the proposed total earth disturbance is less than 5,000 square feet and the proposed impervious area is less than 1,000 sq. ft. (Earth disturbance includes all impervious areas) Note: All improvements shall comply with requirements of current Hazle Township Stormwater Management Ordinance.

2) The development of any accessory farm building of five thousand (5,000) square feet or less on a lot or lots which are subordinate to an existing principal building

3) Residential garage, shed, storage or accessory building of six hundred (600) square feet or less.

LAND DEVELOPMENT: MAJOR: A land development which does not qualify or classify as a minor land development.

LAND DEVELOPMENT: MINOR:

A. A development of a parcel of land which contains not more than two (2) detached single family residential structures or non-residential principal structures, whether developed initially or cumulatively, but the total parcel size remains under one (1) acre.

B. Any new or expansion of an existing non-residential building, structure or improvement, where the proposed total earth disturbance is between 5,000 to 10,000 square feet and the proposed impervious area is between 1,000 to 5,000 square feet. (Earth disturbance includes all impervious areas).

C. Not more than six (6) single family residential units in compliance with the definition of a minor subdivision.

D. The total number of existing or proposed principal structures on the project parcel does not exceed two (2) or,

E. Subdivisions which involve the combination of lots of record which are shown on a map on file at the office of the Luzerne County Recorder of Deeds and which will eliminate not more than two (2) lot lines and do not involve the creation of any new lot lines. (See Boundary Line Adjustment)

F. In the case of a land development which has been approved under the terms of this Ordinance or predecessor ordinance, in the previous five (5) years, any further land development shall be considered a major land development.

LAND DISTURBANCE: See Earth Disturbance.

LOW IMPACT DEVELOPMENT: A land development and construction approach that uses various land planning, design practices, and technologies to simultaneously conserve and protect natural resource systems, while allowing for necessary infrastructure improvements associated with land development.

MAIN STEM (MAIN CHANNEL): Any stream segment or other runoff conveyance facility used as a reach in a hydrologic model.

MANNING EQUATION IN (MANNING FORMULA): A method for calculation of velocity of flow (e.g. feet per second) and flow rate (e.g. cubic feet per second) in open channels based upon channel shape, roughness, depth of flow and slope. "Open channels" may include closed conduits so long as the flow is not under pressure.

MUNICIPALITY: Hazle Township, Luzerne County, Pennsylvania.

NONPOINT SOURCE POLLUTION: Pollution that enters a watery body from diffuse origins in the watershed and does not result from discernible, confined, or discrete conveyances.

NPDES: National Pollutant Discharge Elimination System

NRCS: USDA Natural Resource Conservation Service (previously SCS).

OPEN CHANNEL: A drainage element in which stormwater flows with an open surface. Open channels include, but shall not be limited to, natural and man-made drainageways, swales, streams, ditches, canals, and pipes flowing partly full.

OUTFALL: Point where water flows from a conduit, stream, or drain. Outlet - Points of water disposal from a stream, river, lake, tidewater or artificial drain.

PARCEL: A quantity of land recorded as property of the claimant person or company with a single legal boundary description of metes and bounds on which the activity is proposed.

PARKING LOT STORAGE: Involves the use of impervious parking areas as temporary impoundments with controlled release rates during rainstorms. This design philosophy is not acceptable in Hazle Township.

PEAK DISCHARGE: The maximum rate of stormwater runoff from a specific storm event.

PENN STATE RUNOFF MODEL (CALIBRATED): The computer-based hydrologic modeling technique adapted to a specific watershed for the Act 167 Plan. The model has been "calibrated" to reflect actual recorded flow values by adjoining key model input parameters.

PERVIOUS AREA: Any area not defined as impervious.

PIPE: A culvert, closed conduit, or similar structure (including appurtenances) that conveys stormwater.

PLANNING DEPARTMENT: The Planning Department of Hazle Township.

PMF: Probable Maximum Flood - The flood that may be expected from the most severe combination of critical meteorologic and hydrologic conditions that are reasonably possible in any area. The PMF is derived from the probable maximum precipitation (PMP) as determined on the basis of data obtained from the National Oceanographic and Atmospheric Administration (NOAA).

POINT OF INTEREST (POI): The existing points of natural drainage discharge onto adjacent property.

PROJECT SITE: The specific area of land where any regulated activities in the municipality are planned, conducted, or maintained.

QUALIFIED PROFESSIONAL: Any person licensed by the Pennsylvania Department of State or otherwise qualified by law to perform the work required by the Ordinance.

RATIONAL FORMULA: A rainfall-runoff relation used to estimate peak flow.

REDEVELOPMENT: Any development that requires demolition or removal of existing structure or impervious surfaces at a site and replacement with new impervious surfaces. Maintenance activities such as top-layer grinding and re-paving are not considered to be redevelopment. Interior remolding projects and tenant improvements are also not considered to be redevelopment.

REGULATED ACTIVITIES: Actions or proposed actions that have an impact on stormwater runoff and that are specified in Section 1201.4 of this Ordinance.

REGULATED EARTH DISTURBANCE ACTIVITY: Activity involving earth disturbance subject to regulation under 25 Pa. Code 92, 25 Pa. Code 102, or the Clean Streams Law.

RETENTION BASIN: An impoundment in which stormwater is stored and not released during the storm event. Stored water may be released from the basin at some time after the end of the storm.

RETENTION VOLUME/REMOVED RUNOFF: The volume of runoff that is captured and not released directly into the surface waters of this Commonwealth during or after a storm event.

RETURN PERIOD: The average interval, in years, within which a storm event of a given magnitude can be expected to ~~reeur~~ occur one time. For example, the 25-year return period rainfall would be expected to ~~reeur~~ occur on ~~the~~ average once every twenty-five years or stated in another way, the probability of a 25-Year Storm occurring in any one year is 0.04 (i.e., a 4% change).

RISER: A vertical pipe extending from the bottom of a pond that is used to control the discharge rate from the pond for a specified design storm.

ROOFTOP DETENTION: Temporary ponding and gradual release of stormwater falling directly onto flat roof surfaces by incorporating controlled-flow roof drains into building designs.

RUNOFF: The surface water discharge or rate of discharge of a given watershed after a fall of rain or snow that does not enter the soil but ~~runs on~~ flows over the surface of the land.

SEDIMENT: Soils or other materials transported by surface water as a product of erosion.

SEDIMENT BASIN: A barrier, dam, retention or detention basin located and designed to retain rock, sand, gravel, silt, or other material transported by water.

SEDIMENT POLLUTION: The placement, discharge or any other introduction of sediment into the waters of the Commonwealth occurring from the failure to design, construct, implement or maintain control measures and control facilities in accordance with the requirements of this Ordinance.

SEDIMENTATION: The process by which mineral or organic matter is accumulated or deposited by the movement of water.

SEEPAGE PIT/SEEPAGE TRENCH: An area of excavated earth filled with loose stone or similar coarse material, into which surface water is directed for infiltration into the ground.

SHEET FLOW: Runoff which flows over the ground surface as a thin, even layer, not concentrated in a channel.

SOIL-COVER COMPLEX METHOD: A method of runoff computation developed by the NRCS that is based on relating soil type and land use/cover to a runoff parameter called Curve Number (CN).

SOIL GROUP, HYDROLOGIC: A classification of soils by the Soil Conservation Service into four hydrologic soil groups based on the soils runoff potential. The four (4) hydrologic soil groups are A, B, C, and D. Where A's generally have the smallest runoff potential and D's the greatest.

SPILLWAY: A depression in the embankment of a pond or basin that is used to pass peak discharge greater than the maximum design storm controlled by the pond.

STATE WATER QUALITY REQUIREMENTS: The regulatory requirements to protect, maintain, reclaim, and restore water quality under Title 25 of the Pennsylvania Code and the Clean Streams Law.

STORAGE INDICATION METHOD: A reservoir routing procedure based on solution of the continuity equation (inflow minus outflow equals the change in storage) with outflow defined as a function of storage volume and depth.

STORM FREQUENCY: The number of times that a given storm "event" occurs or is exceeded on the average in a stated period of years. See "Return Period".

STORM SEWER: A system of pipes and/or open channels that convey intercepted runoff and stormwater from other sources, but excludes domestic sewage and industrial wastes.

STORMWATER: The total amount of precipitation reaching the ground surface resulting from precipitation or snow or ice melt.

STORMWATER MANAGEMENT FACILITY: Any structure, natural or man-made, that, due to its condition, design, or construction, conveys, stores, or otherwise affects stormwater runoff. Typical stormwater management facilities include, but are not limited to, detention and retention basins, open channels, storm sewers, pipes, French drains underground on-lot seepage pits and infiltration structures.

STORMWATER MANAGEMENT BEST MANAGEMENT PRACTICES: Is abbreviated as **BMPs** or **SWM BMPs** throughout this Ordinance.

STORMWATER MANAGEMENT PLAN: The Luzerne County Stormwater Management Plan for managing stormwater runoff adopted by the County of Luzerne 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 particular site of interest according to this Ordinance. **Stormwater Management Site Plan** will be designated as **SWM Site Plan** throughout this Ordinance.

STREAM ENCLOSURE: A bridge, culvert or other structure in excess of 100 feet in length upstream to downstream which encloses a regulated water of this Commonwealth.

SUBDIVISION: In accordance with Section 503(1.1) of the PA Municipalities Planning Code (iv) and as defined in Article 2 of this Ordinance.

SWALE: A low-lying stretch of land that gathers or carries surface water runoff.

TIMBER OPERATIONS: See Forest Management.

TIME OF CONCENTRATION (TC): The time for surface runoff to travel from the hydraulically most distant point of the watershed to a point of interest within the watershed. This time is the combined total of overland flow time and flow time in pipes or channels, if any.

USDA: United States Department of Agriculture

VOID RATIO: The ratio of the volume of void space to the total volume of the BMP material (void space plus solid material/media providing structural support to create the storage area).

WATERCOURSE: A stream of water; river; brook; creek; or a channel or ditch for water, whether natural or manmade.

WATER DISCHARGE: The discharge of water from roofs, ground, paved surfaces, sump pumps, footing tiles, swimming pools, and other Real Estate Improvements into the Township's Sanitary Sewer collection system.

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 surface water of this Commonwealth.

WETLAND: Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, and similar areas defined as such by State and Federal Laws and Regulations.

ARTICLE III – STORMWATER MANAGEMENT STANDARDS

Section 301. General Requirements

A. There shall be no increase in the rate of storm water discharge from the land development or subdivision that would have occurred from the land prior to the activity. No Level 4 regulated activities shall commence until the Township issues written approval of a SWM Site Plan.

B. Each person, corporation, or other entity which makes any surface changes shall be required to: a) collect on-site surface runoff and dispose of it to the point of discharge into the common natural water course of the drainage area; b) handle existing off-site runoff through his development.

C. All regulated activities in the Municipality that do not fall under the exemption criteria of Section 302 or Table III.1 Stormwater Management Requirements and Exemptions of this Ordinance shall submit a drainage plan consistent with this ordinance to the Township for review. This criterion shall apply to the total proposed development even if development is to take place in stages.

D. Stormwater drainage systems shall be provided in order to permit unimpeded flow along natural watercourses, except as modified by stormwater management facilities or open channels consistent with this Ordinance.

E. Stormwater flows onto adjacent property shall not be created, increased, decreased, relocated, or otherwise altered without written permission of the adjacent property owner(s). Such stormwater flows shall be subject to the requirements of this Ordinance. If written permission cannot be obtained from the adjacent property owner (proof must be submitted that the applicant attempted to obtain written permission) the applicant must successfully demonstrate that the proposed discharge:

1. Qualifies for a "Common Law Flowage Easement" as defined by Pennsylvania courts. Pennsylvania courts have upheld a common law right to discharge stormwater to adjoining properties downstream "because water is descendible by nature, the owner of the dominant or superior heritage has an easement in the servient or inferior tenement for the discharge of all waters which by nature rise in or flow or fall upon the superior". To qualify for a "Common Law Flowage Easement", as defined by this Ordinance, the applicant must demonstrate that the discharge will not result in a significant increase in volume of stormwater on the downstream property, will not create a channel for the water to flow where it does not flow naturally, and also provide evidence that all attempts to obtain written permission of the downstream property owner have failed.

2. Will not cause accelerated erosion or damage to the proposed flow area and/or adjoining properties. The applicant must utilize methods recommended by PA

DEP to demonstrate that erosion and damage will not occur on adjoining properties.

3. Shall be located at least twenty (20) feet from the downstream property line of the subject property.

F. Areas of existing diffused drainage discharge shall be subject to any applicable discharge criteria in the general direction of existing discharge, whether proposed to be concentrated or maintained as diffused drainage areas, except as otherwise provided by this ordinance. If diffused flow is proposed to be concentrated and discharged onto adjacent property, the Developer must document that adequate downstream conveyance facilities exist to safely transport the concentrated discharge, or otherwise prove that no erosion, sedimentation, flooding or other harm will result from the concentrated discharge.

G. Where watercourses traverse a development site, drainage easements shall be provided conforming to the line of such watercourses. The terms of the easement shall prohibit excavation, the placing of fill or structures, and any alterations that may adversely affect the flow of stormwater within any portion of the easement. Also, maintenance, including mowing of vegetation within the easement shall be required, except as approved by the appropriate governing authority.

H. When it can be shown that, due to topographic conditions, natural drainageways on the site cannot adequately provide for drainage, open channels may be constructed conforming substantially to the line and grade of such natural drainageways. Work within natural drainageways shall be subject to approval by PADEP through the Joint Permit Application process, or, where deemed appropriate by PADEP, through the General Permit process.

I. Any stormwater management facilities regulated by this Ordinance that would be located in or adjacent to waters of the Commonwealth or wetlands shall, if required by State Law, be subject to approval by PADEP through the Joint Permit Application process, or, where deemed appropriate by PADEP, the General Permit process. When there is a question whether wetlands may be involved, it is the responsibility of the Developer or his agent to show that the land in question is not classified as wetlands, otherwise approval to work in the area must be obtained from PADEP.

J. Any stormwater management facilities regulated by this Ordinance that would be located on or discharge to State highway rights-of-way shall be subject to approval by the Pennsylvania Department of Transportation (PADOT).

K. Minimization of impervious surfaces and infiltration of runoff through seepage beds, infiltration trenches, grass channels, vegetative strips, routing flow over grass area, decreasing impervious area, etc. are encouraged, where soil conditions permit, to reduce the size or eliminate the need for detention facilities. All State and Federal regulations must be followed in the use of any control method. Various combinations

of methods should be tailored to suit the particular requirements of the type of development and topographic features of the project area.

L. Roof drains and other building discharges that do not require treatment must not be connected to township sanitary sewers and shall meet the requirements of Section 702 of this Ordinance.

M. "Downstream Hydraulic Capacity Analysis" - Any downstream capacity hydraulic analysis conducted in accordance with this Ordinance shall use the following criteria for determining adequacy for accepting increased peak flow rates:

1. Downstream Drainage Conveyance Facility must pass the peak runoff from the 25 Year Design Storm based on the Time of Concentration.

2. Natural or man-made channels or swales must be able to convey the increased runoff associated with the design storm event within their banks at velocities consistent with protection of the channels from erosion and with acceptable freeboard. Acceptable velocities shall be based upon criteria included in the DEP Erosion and Sediment Pollution Control Program Manual.

3. Natural or man-made channels or swales must be able to convey the increased 25 year return period runoff based on the time of concentration without creating any hazard to persons or property.

4. Culverts, bridges, storm sewers or any other facilities which must pass or convey flows from the tributary area must be designed in accordance with DEP, Chapter 105 regulations (if applicable) and, at a minimum, pass the peak runoff from the 25 year storm based upon the time of concentration.

N. All stormwater retention/detention facilities shall be designed on the basis of providing adequate control for all storms of a 24 hour duration and a frequency of 100 years.

O. Emergency spillways shall be designed to pass the expected post development flows for a one-hundred (100) year storm frequency assuming the principal spillway is 100% blocked with ½ foot freeboard.

P. The SWM Site Plan and calculations shall meet the requirements set forth in this Ordinance, and shall be designed, implemented, operated, and maintained to meet all requirements under Title 25 of the Pennsylvania Code, the Clean Streams Law, and the Stormwater Management Act.

Q. For all regulated activities, submission of the Stormwater Management Permit Application provided in the SALDO Package is required.

R. For all regulated activities, unless preparation of a SWM Site Plan is specifically exempted in Section 302.

1. Preparation and implementation of an approved SWM Site Plan is required.

2. No Level 4 regulated activities shall commence until the Township issues written approval of a SWM Site Plan, which demonstrated compliance with the requirements of this Ordinance.

S. SWM Site Plans approved by the Township, in accordance with this Ordinance shall be on site throughout the duration of the regulated activity.

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

U. For all Level 3 and Level 4 regulated activities, implementation of the volume controls in Section 303 is required, unless otherwise exempted by Section 302.

V. Stormwater Management Requirements and Exemptions

1. Regulated Activities

Activities that create impervious areas or earth disturbance shall adhere to Table III.1 to meet the requirements of this Ordinance. The larger of the two areas determines the applicable requirements of this Ordinance (i.e. if only 500 sq. ft. of impervious area is proposed, but 15,000 sq. ft. of earth disturbance, the requirements follow Level 3 of Table III.1).

Table III.1 Stormwater Management Requirements and Exemptions

Level	Proposed Impervious Area (sq.ft.)	Proposed Total Earth Disturbance (sq.ft.)	Ordinance Exemptions	Stormwater Management Requirements	What is required to submit to municipality?*	Entity to Review Worksheet and Calculations
1	500 to 1,000	1,000 to 5,000	Section 303, Section 304 and Article IV of this Ordinance	Ensure Section 301 General Requirements are met	Project Sketch	Zoning Officer or Building Inspector
2	1,000 to 5,000 ***	5,000 to 10,000 ***	Section 303 and Section 304 of this Ordinance	Disconnected Impervious Area (DIA) as in C.1 Worksheet	Worksheet C.1 and Sketch (or equivalent)	Township Engineer
				OR	OR	
				Capture and control first 1 inch of runoff over proposed impervious areas as in Worksheet E	Worksheet E and Sketch (or equivalent)	Township Engineer
3	5,000 to 10,000 **	10,000 to 20,000 **	Section 304 and Article IV of this Ordinance	Capture and permanently remove the first 2 inches of runoff over proposed impervious areas as in Section 303.B of this Ordinance	Worksheet D and Sketch (or equivalent)	Township Engineer

4	>10,000	>20,000	None	All requirements of Article 12 of the Hazle Township Subdivision and Land Development Ordinance (SALDO)	SWM Site Plan	Township Engineer

* In addition to the Stormwater Management Permit Application provided in this Ordinance.

** Regardless of the proposed amount of impervious area and earth disturbance all Land Developments shall require a **Level #4** application.

*** For Level #2 applications for existing lots governed by previous approvals see Section 105.G.

Copies of applications and all worksheets are available at the Hazle Township Municipal Building.

Section 302. Exemptions

A. Regulated activities that create impervious areas or earth disturbance shall adhere to Table III.1 to meet the requirements of this Ordinance. The larger of the two areas determines the applicable requirements of this Ordinance (i.e. if only 500 sq. ft. of impervious area is proposed, but 15,000 sq. ft. of earth disturbance, the requirements follow row 3 of Table III.1).

B. Agricultural activity is exempt from the rate control and SWM Site Plan preparation requirements of this Ordinance provided the activities are performed according to the requirements of 25 PA. Code 102.

C. Forest management and timber operations are exempt from the rate control and SWM Site Plan preparation requirements of this Ordinance provided the activities are performed according to the requirements of 25 PA Code 102.

D. Exemptions from any provisions of this Ordinance shall not relieve the applicant from the requirements in Section 301.A and B (i.e., If an applicant proposes an impervious area less than 500 sq. ft. or an earth disturbance of less than 1,000 sq. ft. although there is no formal submittal required by the Township, it is the applicants responsibility to comply with Section 301 of this Ordinance.

Section 303. Volume Controls (Level 3 – Level 4)

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 all regulated activities that require submission of a formal SWM Site Plan, both the *Design Storm Methods* and the *Simplified Method* shall be calculated; the larger control volume based on the two calculations shall be controlled.

Subsection C below provides requirements for mined, karst, or other geologically limiting areas where infiltration shall not occur.

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.

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

2. For modeling purposes:

a. Existing (predevelopment) non-forested pervious areas must be considered meadow or its equivalent.

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

B. When *Design Storm* Method CG-1 guidelines are not used, the *Simplified Method* (CG-2 in the BMP Manual[1]) has been modified to accommodate 2" of permanently removed runoff volume. This method (provided below) is independent of site conditions and should be used if the *Design Storm Method* is not followed. For new impervious surfaces:

1. The first 2 inches 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.

2. 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.

3. Facilities, to the greatest extent possible and subject to the Township Engineer's discretion, shall be designed to drain the permanently removed runoff volume in a period no less than 24 hours and no greater than 72 hours.

4. Runoff volume in excess of 2 inches shall be safely conveyed to existing stormwater collection systems or streams, in the direction of the existing drainage course.

5. This method is exempt from the requirements of Section 304, Rate Controls.

C. Before infiltration is proposed on a site, site conditions shall be evaluated by a qualified design professional through subsurface investigation and testing to determine if site conditions are suitable to support proposed infiltration facilities to manage runoff. If it is determined that infiltration is not feasible due to physical constraints of the site, or will adversely impact the environment as demonstrated by the presence of

acid mine drainage, sinkhole formation, or other serious environmental issues, then the above volume controls must be achieved through surface BMP mitigation. Reference the BMP Manual[1] for alternative mitigation measures that do not require infiltration.

Section 304. Rate Controls

A. Areas not covered by a Stormwater Management District Map contained in Appendix F.1 of the Ordinance:

Post-development discharge rates shall not exceed the predevelopment discharge rates for the 1- through 100-year, 24-hour storms. If it is shown that the peak rates of discharge indicated by the post-development analysis are less than or equal to the peak rates of discharge indicated by the predevelopment analysis for 1- through 100-year, 24-hour storms, then the requirements of this section have been met. Otherwise, the applicant shall provide additional controls as necessary to satisfy the peak rate of discharge requirement.

B. Areas covered by a Stormwater Management District Map contained in Appendix F.1 of the Ordinance:

For the 1- through 100-year storms, the post-development peak discharge rates will follow the applicable approved Stormwater Management District Maps. For any areas not shown on the Stormwater Management District Maps, the post-development discharge rates shall not exceed the predevelopment discharge rates.

C. Areas designated as District B-2 – Nescopeck Creek Watershed Only:

a) If a mine reclamation project is proposed, the post-development discharge rates shall not exceed the predevelopment discharge rates for the 1-, 2-, 5-, 10-, 25-, 50-, and 100-year storms. Predevelopment land cover conditions shall be considered forest in good condition.

b) Proposed land development projects shall apply the 60% release rate criterion for the 1-, 2-, 5-, 10-, 25-, 50-, and 100-year storms. This applies to all sites including those that have been previously reclaimed. Predevelopment land cover conditions shall be considered forest in good condition.

Section 305. Design Criteria of Stormwater Management Facilities associated with a SWM Site Plan (Level 4)

All applications must meet the requirements of Article 12 of the Hazle Township Subdivision and Land Development Ordinance (SALDO).

Section 306. Calculation Methodology for Stormwater Management Facilities associated with a SWM Site Plan (Level 4)

All applications must meet the requirements of Article 12 of the Hazle Township Subdivision and Land Development Ordinance (SALDO).

ARTICLE IV - STORMWATER MANAGEMENT (SWM) SITE PLAN REQUIREMENTS (LEVEL 4)

Section 401. Requirements

All Level 4 applications most meet the requirements of Article 12 of the Hazle Township Subdivision and Land Development Ordinance (SALDO).

ARTICLE V – OPERATION AND MAINTENANCE

Section 501. Responsibilities of Developers and Landowners

A. The SWM Site Plan for the development site shall contain an operation and maintenance plan/program prepared by the developer and approved by the Township Engineer. The operation and maintenance plan shall outline proposed final ownership of facilities, detailed financial responsibility of all required maintenance, required routine maintenance and inspection actions and schedules necessary to insure proper operation of the facility including but not limited to all infiltration systems, retention or detention structures, embankments, discharge, or other approved improvements.

1. Three (3) options exist for perpetual ownership and responsibility of stormwater management facilities:
   a. The developer retains ownership;
   b. A Homeowners Association assumes ownership and responsibility;
   c. The facility is dedicated to, and accepted by, Hazle Township.

B. The SWM Site Plan for the development site shall establish responsibilities for the continuing operating and maintenance of all proposed stormwater control facilities, consistent with the following principals.

C. If a development consists of structures or lots which are to be separately owned and in which streets, sewers and other public improvements are to be dedicated to the Township, stormwater infrastructure (pipe and inlets) in areas of public dedication shall be maintained by the Township. The Township will not accept responsibility of maintaining detention/retention ponds.

D. If a development site is to be maintained in a single ownership and/or Home Owners Association or if sewers and other public improvements are to be privately owned and maintained, then the ownership and maintenance of stormwater control facilities and detention/retention pond shall be the responsibility of the owner or private management entity. A Management Agreement shall be provided with request for Final Approval.

E. The governing body, upon recommendation of the Township engineer, shall make the final determination on the continuing maintenance responsibilities prior to final approval of the SWM Site Plan. The governing body reserves the right to accept the ownership and operating responsibility for any or all of the stormwater infrastructure

(pipes and inlets in public access) but shall not accept responsibility for detention/retention ponds.

Section 502. O&M Agreements

A. Prior to final approval of the site's SWM Site Plan, the property owner shall sign and record a Standard Stormwater Facilities Maintenance and Monitoring Agreement covering all stormwater control facilities which are to be privately owned. The agreement shall stipulate that:

1. The owner or owner's successors and assigns including owner's vendee(s), shall maintain all facilities in accordance with an approved reasonable maintenance schedule and shall keep all facilities in a safe and attractive manner.

2. The owner or owner's successors and assigns including owner's vendee(s), shall convey to the Township easements and/or rights-of-way necessary to assure access for periodic inspections by the municipality and maintenance, if required.

3. The owner or owner's successors and assigns including owner's vendee(s), shall keep in file with the Township the name, address and telephone number of the person or company responsible for maintenance activities; in the event of a change, new information will be submitted to the Township within ten (10) days of the change.

4. If the owner or owner's successors and assigns including owner's vendee(s), fails to maintain the stormwater control facilities following due notice by the Township to correct the problem(s), the Township may perform the necessary maintenance work or corrective work and the owner or owner's successors and assigns including owner's vendee(s), shall reimburse the Township for all costs.

B. Other items may be included in the agreement where determined necessary to guarantee the satisfactory maintenance of all facilities. The maintenance agreement shall be subject to the review and approval of the Township solicitor and governing body.

C. Facilities, areas, or structures used as Stormwater Management BMPs shall be enumerated as permanent real estate appurtenances and recorded as deed restrictions or conversation easements that run with the land.

D. The O&M Plan shall be recorded as a restrictive deed covenant that runs with the land.

ARTICLE VI – FEES AND EXPENSES

Section 601. General

The fees required by this Ordinance include all Township Review Fees. The Township Review fee shall be established by the Township and shall include all review costs incurred by the Township and the Township Engineer. The Applicant shall pay all fees. The Applicant shall also be required to submit all required fees for review and comment to the Luzerne County Planning Commission, the Luzerne County Engineer's office, and the County Conservation District.

1. The as-built submission shall include a certification of completion signed by a qualified professional verifying that all permanent SWM BMPs have been constructed according to the approved plans and specifications. If any licensed qualified professionals contributed to the construction plans, then a licensed qualified professional must sign the completion certificate.

2. After receipt of the completion certification by the Township, the Township or official designee may conduct a final inspection.

Section 602. Hazle Township Stormwater Management (SWM) Site Plan Review Fee

The Township shall establish a Review Fee Schedule by resolution of the Township governing body based on the size of the Regulated Activity and based on the Township's costs for reviewing SWM Site Plan. The Township shall periodically update the Review Fee Schedule to ensure that review costs are adequately reimbursed.

Section 603. Expenses Covered By Fees

The fees required by this Ordinance shall at a minimum cover:

A. Administrative Costs.

B. The review of the SWM Site Plan by the Township and the Township Engineer.

C. The site inspections.

D. The inspection of stormwater management facilities and drainage improvements during construction.

E. The final inspection upon completion of the stormwater management facilities and drainage improvements presented in the SWM Site Plan.

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

G. Annual inspection costs performed by the Hazle Township Engineer for a two (2) year period from date of Final Completion and approval of as built drawing.

Section 604. Hazle Township Post Construction Stormwater Management Facility Inspection Fund

A. Persons installing stormwater storage facilities shall be required to pay a specified amount to the Township 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 reasonable cost of periodic inspections performed by the Township for a period of two (2) years, as estimated by the Township Engineer. After that period of time, inspections will be performed at the expense of the Township.

2. The amount of the deposit to the fund shall be converted to present worth of the annual series values. The Township Engineer shall determine the present worth equivalents, which shall be subject to the approval of the municipal governing body.

B. If a storage facility is proposed that also serves as a recreation facility (e.g. ball field, lake), the municipality may reduce or waive the amount of the maintenance fund deposit based upon the value of the land for public recreation purpose.

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 municipal cost of overseeing and reviewing the abandoning of the facility and connecting to the storm sewer system or other facility.

D. Maintenance Guarantees: If any stormwater management facilities are offered for public dedication and accepted by the Township, the developer shall provide a financial security, in a form approved by the Township Solicitor for a maintenance guarantee, equal to fifteen (15%) percent of the total cost of the installation of said facility, used as financial security to guarantee the stability of the newly constructed facility and revegetation for a period of eighteen (18) months.

Section 605. Performance Guarantee

The applicant should provide a financial guarantee to the Township for the timely installation and proper construction of all stormwater management controls as required by this Ordinance.

A. If the Board of Supervisors determines that improvements indicated on the SWM Site Plan are not required to be installed at the time of final approval, an improvement bond or other form of financial security shall be deposited with the Township which shall insure and guarantee the installation and completion of all required improvements as indicated upon the approved SWM Site Plan within one year or less from the date of final plan approval.

ARTICLE VII – PROHIBITIONS

Section 701. Prohibited Discharges and Connections

A. Any drain or conveyance, whether on the surface or subsurface, that allows any non-stormwater discharge including sewage, process wastewater, and wash water to enter the waters of this Commonwealth is prohibited.

B. No person shall allow, or cause to allow, discharge into surface waters of this Commonwealth which are not composed entirely of stormwater, except (1) as provided in Subsection C below and (2) discharges allowed under a state or federal permit.

C. The following discharges are authorized unless they are determined to be significant contributions to pollution to the waters of this Commonwealth:

-	Discharges from firefighting activities	-	Flows from riparian habitats and wetlands
-	Potable water sources including water line flushing	-	Uncontaminated water from foundations or from footing drains
-	Irrigation drainage	-	Lawn watering
-	Air conditioning condensate	-	Dechlorinated swimming pool discharges
-	Springs	-	Uncontaminated groundwater
-	Water from crawl space pumps	-	Water from individual residential car washing
-	Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spill material has been removed) and where detergents are not used	-	Routine external building wash down (which does not use detergents or other compounds)

D. In the event that Hazle Township or DEP determines that any of the discharges identified in Subsection C significantly contributes to pollution of the waters of this Commonwealth, Hazle Township or DEP will notify the responsible person(s) to cease the discharge.

Section 702. Roof Drains, Sump Pumps and Foundation Drains

A. The Supervisors of Hazle Township finds that the discharge of water from roofs, ground, paved surfaces, sump pumps, footing tiles, swimming pools, and other real estate improvements into the Township's sanitary sewer system and neighboring private properties has caused and will continue to cause flooding, creation of unsanitary wet conditions, erosion and deterioration of soil as well as overloading of the sanitary sewer collection system. The damage creates a hazard to the health of Township residents. The Supervisors further find it essential to the maintenance of health, safety and general welfare of its residents that such discharges be prohibited and the provisions of this Ordinance be strictly enforced. Rainspouts must be

disconnected from sanitary sewer systems and it must be shown that adverse stormwater impacts are not created downstream. (See illustration C.2)

B. Any water that does not require treatment shall not be discharged into the Township's sanitary sewer collection system. For purposes of this Ordinance, it shall be considered a violation for any person, firm or corporation to effect the discharge of water from any roof, ground, paved surface, sump pump, footing tile, swimming pool, or other improvement except for facilities generating sanitary sewer, into the Township's sanitary sewer collection system or onto adjacent properties. All water discharged shall be discharged as follows:

1. All drains shall connect to an existing infiltration or vegetative BMP if a BMP exists within the subject property outbound. If a drain is to be connected to a proposed underground infiltration BMP evidence must be submitted to the Township that the existing soil in the area of the proposed BMP is suitable for infiltration.

2. If an infiltration or vegetative BMP does not exist within the subject property outbound all drains should be directed to a Township roadside swale if a swale exists adjacent to a roadway and positive drainage can be achieved. If a swale does not exist adjacent to a Township roadway and no other acceptable discharge can be achieved on the property the discharge point of the drain shall be a minimum of fifteen (15') feet (20 feet may be required to comply with DIA requirements) from the shoulder of the Township roadway and shall be on a pervious ground surface to minimize the possibility of the freezing of water on the roadway in the winter months.

3. Discharges to wetland areas are encouraged however the discharge shall be a minimum of five (5') feet from the wetland boundary to avoid the requirement of state or federal permitting and to avoid the inundation of the drain outfall.

4. Sump pump discharges shall be a minimum of ten (10') feet from the foundation of the building from where the water is being pumped out to prevent the recycling of water back into the foundation drains of the building.

5. All drain outlets shall be a minimum of twenty (20') feet from any property line with the exception of the front property line.

6. The isolation distances of Section 703.B. may be slightly modified at the discretion of the Township Engineer if the applicant can demonstrate that no adverse downstream stormwater impact is being created or worsened.

C. This Ordinance shall also apply to dwellings and other buildings and structures which have a sump pump system to discharge excess water from the premises because of the infiltration of water into basements, crawl spaces, and the like. Persons, firms or corporations owning such real estate shall have a permanently installed discharge line which shall not at any time discharge water into the sanitary sewer collection system or adjacent properties, except as provided herein. A "permanently installed discharge line" shall be one which meets the requirements of Section 703.B.

D. Any person, firm or corporation having a roof, ground, paved surface, sump pump, footing tile or swimming pool, or other improvement that does not generate sanitary sewage and is connected to or causes discharge into the sanitary sewer collection system or discharges onto the neighboring or adjacent property, shall disconnect or remove the same immediately. Any disconnections or openings in the sanitary sewer shall be closed or repaired in an effective, workmanlike manner. Such disconnections or openings are subject to inspection by the Township Code Enforcement Officer and Plumbing Inspector, and shall not be considered to be in compliance with this Ordinance until approved by such Township Officers.

E. Any person, firm or corporation owning any improved real estate that discharges into the Township's sanitary sewer system shall allow the Township Code Enforcement Officer or his designated representative to inspect such real estate and improvements to whether there is a connection or discharge to the sanitary sewer collection system or neighboring adjacent property. Any property owner found to violate this Ordinance shall make the changes necessary to comply with the Ordinance and furnish proof of the changes to the Township Code Enforcement Officer. The Township Code Enforcement Officer shall inspect such premises after such completion, and shall approve such changes if the stormwater drainage complies with the Ordinance and all applicable laws and ordinances.

F. At any future time, if the Township has reason to believe that an illegal connection may exist in or on a premises, the owner, upon written notice from the Township, shall comply with the provisions of E. above.

G. Should any person at any premises subject to the terms of this Ordinance refuse to permit any Township Officer, Supervisor or employee from entering the premises or from entering any part of the premises, for the purpose of inspecting the premises, the Township Officer, Supervisor, or employee shall seek appropriate court action, with the aid of the Township Solicitor.

Any person or entity violating this Ordinance shall be subject to penalty in accordance with Section 805 of this Article.

Section 703. Alteration of SWM BMPs

No person shall modify, remove, fill, landscape, or alter any SWM BMPs, facilities, areas, or structures without written approval Hazle Township.

ARTICLE VIII - ENFORCEMENT AND PENALTIES

Section 801. Right-of-Entry

Upon presentation of proper credentials, duly authorized representatives of the Township may enter at reasonable times upon any property within the Township to inspect the condition of the stormwater structures and facilities in regard to any aspect regulated by this Article.

Section 802. Post Construction Maintenance Inspections

A. Basins and other BMP's should be inspected by the land owner/developer or responsible entity (including the Township Engineer for dedicated facilities) on the following basis:

1. Annually for the first five (5) years.
2. Once every 3 years thereafter,
3. During or immediately after the cessation of a ten (10) year or greater storm event.

B. After completing each inspection the entity conducting the inspection for the Owner/Developer shall submit a report to the Township regarding the condition of the facility and recommending necessary repairs or maintenance, if needed.

E. Maintenance inspection reports shall include but not be limited to: date, name of inspector, condition of facility including status of vegetation, spillways, fences, embankments, reservoir area, outlet channels, swales, rip-rap, sedimentation, underground piping, catch basins, and any other item that may affect the proper operation of the stormwater management facility.

Section 803. Enforcement

The Township governing body is hereby authorized and directed to enforce all of the provisions of this Ordinance. All inspections regarding compliance with the SWM Site Plan shall be the responsibility of the Township Engineer or other qualified persons designated by the Township.

A. A set of design plans approved by the Township shall be on file at the site throughout the duration of the regulated activity. The Township or designee may make periodic inspections during construction.

B. Any portion of the work which does not comply with the approved plan must be corrected by the applicant, owner, and developer. No work may proceed on any subsequent phase of the SWM Site Plan, the subdivision or land development, building construction, or activity until the required corrections have been made.

C. If at any stage of the work, the Board of Supervisors determines that the soil or other conditions are not as stated or shown in the approved application or plan, it may refuse to approve further work and may revoke existing permits and approvals until a revised plan is submitted and approved in accordance with this Ordinance.

D. Adherence to Approved SWM Site Plan:

1. It shall be unlawful for any person, firm or corporation to undertake any regulated activity on any property except as provided for in the approved SWM Site Plan and pursuant to the requirements of this Ordinance unless specifically exempted in Section 302. It shall be unlawful to alter or remove any control structure required by the SWM Site Plan pursuant to this Ordinance or to allow the property to remain in a condition which does not conform to the approved SWM Site Plan.

E. At the completion of the project, and as a prerequisite for the release of any performance guarantee, the owner or his successors and assigns including owner's vendee (s) shall:

1. Provide a certification of completion from an engineer, architect, surveyor or other qualified person verifying that all permanent facilities have been constructed according to the plans and specifications and approved revisions thereto.

2. Provide a set of as built drawings.

F. After receipt of the certification by the Township, a final inspection shall be conducted by the governing body or its designee to certify compliance with this Ordinance.

G. Prior to revocation or suspension of a permit, the governing body will schedule a hearing to discuss the non-compliance if there is no immediate danger to life, public health or property.

Section 804. Suspension and Revocation

Suspension and Revocation of Permits

1. Any permit issued under this ordinance may be suspended or revoked by the governing body for:
   a. Non-compliance with or failure to implement any provision of the approved SWM Site Plan or O&M agreements.
   b. A violation of any provision of this Ordinance or any other applicable law, ordinance, rule or regulation relating to the regulated activity.
   c. The creation of any condition or the commission of any act during construction or development of the regulated activity which constitutes or creates a hazard or nuisance, pollution or which endangers the life or property of others.

2. A suspended permit shall be reinstated by the governing body when:
   a. The Township Engineer or his designee has inspected and approved the corrections to violation(s) of the stormwater management and erosion and sediment pollution control measure(s), or the elimination of the hazard or nuisance, and/or;

b. The governing body is satisfied that the violation of the ordinance, law, or rule and regulation has been corrected.

3. An applicant may petition the Township to reinstate a revoked permit at a regularly scheduled public meeting. A permit which has been denied reinstatement may apply for a new permit under the procedures outlined in this Ordinance.

4. If violation causes no immediate danger to life, public health, or property, at its sole discretion, the Township may provide a limited time period for the owner to correct the violation. In these cases, the Township will provide the owner, or the owner's designee, with a written notice of the violation and the time period allowed for the owner to correct the violation. If the owner does not correct the violation within the allowed time period, the Township may revoke or suspend any, or all, applicable approvals and permits pertaining to any provision of this Ordinance.

Section 805. Penalties

A. Anyone violating the provisions of this Article shall be guilty of a summary offense, and upon determination of violation by the District Magistrate shall be subject to a fine of not more than $ 500.00 for each violation, recoverable with costs. Each day that the violation continues shall be a separate offense. A violation shall be deemed to have occurred as of the date as determined by the District Magistrate.

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

Section 806. Appeals

A. Any person aggrieved by any action of Hazle Township or its designee may appeal in compliance with Section 909.1.(a)(9) of the PA Municipalities Planning Code.

B. Any person aggrieved by any decision of Hazle Township may appeal to the County Court of Common Pleas in the county where the activity has taken place within thirty (30) days of the Township decision.

ARTICLE IX - REFERENCES

1. Pennsylvania Department of Environmental Protection. No. 363-0300-002 (December 2006), as amended and updated. *Pennsylvania Stormwater Best Management Practices Manual*. Harrisburg, PA.

2. Pennsylvania Department of Environmental Protection. No. 363-2134-008 (April 15, 2000), as amended and updated. *Erosion and Sediment Pollution Control Program Manual.* Harrisburg, PA.

3. U.S. Department of Agriculture, National Resources Conservation Service (NRCS). *National Engineering Handbook.* Part 630: Hydrology, 1969-2001. Originally published as the *National Engineering Handbook*, Section 4: Hydrology. Available from the NRCS online at: http://www.nrcs.usda.gov/.

4. U.S. Department of Agriculture, Natural Resources Conservation Service. 1986. *Technical Release 55: Urban Hydrology for Small Watersheds*, 2nd Edition. Washington, D.C.

5. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service, Hydrometeorological Design Studies Center. 2004-2006. *Precipitation-Frequency Atlas of the United States, Atlas 14*, Volume 2, Version 3.0, Silver Spring, Maryland. Internet address: http://hdsc.nws.noaa.gov/hdsc/pfds/.

ARTICLE X – ADOPTION

Section 1000. Severability

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

Section 1001. Repealer

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

Section 1002. Effective Date

This Ordinance is to be enacted, ordained, adopted and approved by the Hazle Township Supervisors, on this _____ day of _____, 2011.
This Ordinance shall take effect immediately upon its adoption.

Attested:

_____
Secretary

_____
Chairman

_____
Vice Chairman

_____
Secretary/Treasurer

APPENDIX A

STANDARD OPERATION AND MAINTENANCE (O&M) AGREEMENT STORMWATER MANAGEMENT BEST MANAGEMENT PRACTICES (SWM BMPs) NOTE: THIS AGREEMENT IS TO BE USED AS AN EXAMPLE ONLY!

THIS AGREEMENT, made and entered into this _____ day of _____, 20___, by and between _____, (hereinafter the "Landowner"), and the Municipality of Hazle Township, Luzerne County, Pennsylvania, (hereinafter "Hazle Township");

WITNESSETH

WHEREAS, the Landowner is the owner of certain real property as recorded by deed in the land records of Luzerne County, Pennsylvania, Deed Book _____ at page _____, (hereinafter "Property").

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

WHEREAS, the SWM BMP O&M Plan approved by Hazle Township (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 Hazle Township, provides for management of stormwater within the confines of the Property through the use of BMPs; and

WHEREAS, Hazle Township, and the Landowner, his successors and assigns, agree that the health, safety, and welfare of the residents of Hazle Township and the protection and maintenance of water quality require that on-site SWM BMPs be constructed and maintained on the Property; and

WHEREAS, Hazle Township requires, through the implementation of the approved SWM Site Plan entitled_____, completed by_____, last revised _____, including all applicable construction detail sheets, that SWM BMPs as required by said Plan and the Hazle Township Stormwater Management Ordinance be constructed and adequately operated and maintained by the Landowner, successors, and assigns.

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 Landowner shall construct the BMPs in accordance with the plans and specifications identified in the approved SWM Site Plan.

2. The Landowner shall operate and maintain the BMPs as shown on the Plan in good working order in accordance with the specific maintenance requirements noted on the approved SWM Site Plan at the Landowners sole expense.

3. The Landowner hereby grants permission to Hazle Township, its authorized agents and employees, to enter upon the property, at reasonable times and upon presentation of proper credentials, to inspect the BMPs whenever necessary. The Landowner shall reimburse Hazle Township for all reasonable costs for inspections that are not covered by the Hazle Township Post Construction Stormwater Inspection Fund Fee paid to Hazle Township by the Landowner prior to SWM Site Plan approval.

4. In the event the Landowner, his successor and assigns, fails to maintain the BMPs in good working condition acceptable to Hazle Township, Hazle Township may enter upon the property and take such necessary and prudent action to maintain said BMPs and to charge the costs of the maintenance and/or repairs to the Landowner, his successors and assigns. It is expressly understood and agreed that Hazle Township is under no obligation to maintain or repair said facilities and in no event shall this agreement be misconstrued to impose any such obligation on Hazle Township. In the event Hazle Township, 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 on account of the Landowner's or his successor's and assign's failure to perform such work, the Landowner, his successors and assigns, shall reimburse Hazle Township upon demand, within thirty (30) days of receipt of invoice thereof, for all costs incurred by Hazle Township hereunder. If not paid within said thirty (30) day period, Hazle Township may enter a lien against the property for costs, or may proceed to recover its costs through proceedings in equity or at law as authorized under the provisions of the Second Class Township Code or any other law of the Commonwealth of Pennsylvania.

5. The Landowner, his successors and assigns, shall and do hereby agree to exonerate, indemnify and save harmless Hazle Township, Hazle Township officers, elected officials, engineers and attorneys and Hazle Township appointees and any other agent, from any and all claims, actions, awards, verdicts, judgments, damages, casualties and/or occurrences that do arise out of Hazle Township's approval and the construction, presence, existence and/or maintenance of the BMPs by the Landowner and the Landowner's heirs, successors and/or assigns.

6. In the event a claim is asserted against Hazle Township, its agents or employees, Hazle Township shall promptly notify the Landowner, his successors and assigns, and the Landowner shall defend, at their own expense, any suit based on such claim. If any judgment or claims against Hazle Township, its agents or employees shall be allowed, the Landowner, his successors and assigns shall pay said judgment and/or claim, as well as all costs and expenses in connection therewith.

7. In the event of an emergency or the occurrence of special or unusual circumstances or situations, Hazle Township may enter the property, if the Landowner is not immediately available, without notification or identification, to inspect and perform necessary maintenance and repairs, if needed, when the health, safety or welfare of the citizens is at jeopardy. However, Hazle Township shall notify the Landowner of any inspection, maintenance or repair undertaken within ten (10) days of the activity. The Landowner shall reimburse Hazle Township for the costs.

8. If any part of this Agreement is held to be invalid or unenforceable, all other remaining provisions of the Agreement shall remain in full force and effect.

9. Nothing in this Agreement shall be construed as an offer by the Landowner to dedicate any of the BMPs to Hazle Township, and nothing herein shall be deemed to be an acceptance of an offer of dedication.

10. This agreement shall be recorded by the Landowner among the land records of Luzerne County, Pennsylvania prior to SWM Site Plan approval being issued by Hazle Township, 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.

ATTEST:

WITNESS the following signatures and seals:

(SEAL)

For Hazle Township:

_____
Chairman

_____
Vice Chairman

_____
Secretary/Treasurer

For the Landowner:

_____

ATTEST:

_____ (City, Borough, Township)

County of _____, 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)**

APPENDIX B

STORMWATER MANAGEMENT PERMIT GUIDELINES AND APPLICATIONS

Anyone performing a regulated activity, unless specifically exempt by Section 302 of the Ordinance, must complete the accompanying Stormwater Management Permit Application and required drawings and documents, and submit to Hazle Township. A regulated activity is defined by this Ordinance as:

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

This includes but is not limited to: the clearing of wooded areas, grading and excavating, placement of pavement (driveways, parking areas, roads), construction of buildings, construction of stormwater management facilities, the diversion or piping of any natural or man-made stream channel, the construction of other structures (homes, sheds, garages, commercial and industrial buildings), and other activities which alter the way stormwater runs off of the landscape. See Section 105 of Ordinance for additional detail on Regulated Activities. Impervious area is defined by this Ordinance as:

Impervious Surface (Impervious Area) - A surface that prevents the infiltration of water into the ground. Impervious surfaces include, but are not limited to, streets, sidewalks, pavements, parking lots, driveways, roofs, stone patios. See definition of "Gravel (Crushed Stone)" for when gravel classifies as impervious area.

Gravel (Crushed Stone) - Considered to be impervious when the intended use of the stone is for transportation purposes, parking areas, construction areas, trails, or if the gravel is compacted at any time during or after its placement; landscaping stone is not considered as impervious area.

Depending on the amount of impervious area placed and the amount of earth disturbance to the project site, this Ordinance requires different levels of stormwater management, and correspondingly different levels of design and review.

Level 1: Proposed impervious area is 500 sq. ft. to 1,000 sq. ft. or total earth disturbance is 1,000 sq. ft. to 5,000 sq. ft.

Stormwater Management Controls: Ensure that adverse downstream impacts do not occur due to redirecting stormwater flows towards nearby structures. Stormwater Management Controls must comply with Section 301 of this Ordinance.

Submission: Submit the Stormwater Management Permit Application and Sketch to Hazle Township Code Enforcement Officer.

Review: Shall be completed by Hazle Township Zoning Officer or Building Inspector.

Level 2: Proposed impervious area is 1,000 sq. ft. to 5,000 sq. ft. or total earth disturbance is between 5,000 sq. ft. and 10,000 sq. ft.

Stormwater Management Controls: Utilize Disconnected Impervious Area (DIA) for stormwater controls as outlined in worksheet C.1; if DIA cannot be achieved, utilize stormwater management controls for small projects as outlined in Worksheet E.

Submission: Submit the Stormwater Management Permit Application and computations for DIA; the worksheet C.1 shall be used and submitted. If DIA cannot be achieved, submit computations for Stormwater Management for Small Projects; the worksheet E must be used and submitted.

Review: Shall be completed by Hazle Township Engineer.

Level 3: Proposed impervious area is 5,000 sq. ft. to 10,000 sq. ft. or total earth disturbance is between 10,000 sq.ft. and 20,000 sq. ft. but does not qualify as a Land Development. All Land Developments require a Level 4 submission and review.

Stormwater Management Controls: Capture and permanently remove the first 2 inches of runoff over all proposed impervious areas; infiltrate at least the first 0.5 inches.

Submission: Submit the Stormwater Management Permit Application and computations for permanently removing the first 2 inches of runoff over all proposed impervious areas; worksheet D must be used.

Review: Shall be completed by Hazle Township Engineer.

Level 4: Proposed impervious area is greater than 10,000 sq. ft. or total earth disturbance is greater than 20,000 sq. ft. or any project that qualifies as a Land Development.

Stormwater Management Controls: All requirements of this Ordinance are applicable, including water quality and volume controls as found in Section 303 and peak rate controls as found in Section 304.

Submission: Submit the Stormwater Management Permit Application and Stormwater Management (SWM) Site Plan as required in Section 401 of this Ordinance.

Review: Shall be completed by Hazle Township Engineer.

STORMWATER MANAGEMENT PERMIT APPLICATION – Levels 1, 2, 3, & 4
Hazle Township, Luzerne County, PA
(Level 4 Requires a Detailed Application)

Applicant Name, Address, Phone Number and Email	Nature of Activity (i.e. driveway, single-lot structure, parking lot, road, trail, subdivision, etc.):

Total Proposed Impervious Area (I) (sq. ft.):

Total Proposed Earth Disturbance (ED) (sq. ft.):

Level 1: (I) is between 500 sq. ft. and 1,000 sq. ft. or (ED) is between 1,000 sq. ft. and 5,000 sq. ft.

Level 2: (I) is between 1,000 sq. ft. and 5,000 sq. ft. or (ED) is between 5,000 sq. ft. and 10,000 sq. ft.

Complete and attach worksheet C.1 or E and sketch (or equivalent) or Section 105.C requirements → Is information attached? No / Yes

Level 3: (I) is between 5,000 sq. ft. and 10,000 sq. ft. or (ED) is between 10,000 sq. ft. and 20,000 sq. ft.

Complete and attach worksheet D and sketch (or equivalent) → Is worksheet attached? No / Yes

Level 4: (I) is greater than 10,000 sq. ft. or (ED) is greater than 20,000 sq. ft.

Complete and submit SWM Site Plan in accordance with Section 1204.3, Article 12, Hazle Township Subdivision and Land Development Ordinance (SALDO) and Stormwater Management Level 4 Permit Application → Is a SWM Site Plan included? No / Yes

Show on the accompanying sketch that adverse downstream stormwater impacts are not created or worsened, and that additional stormwater runoff will not discharge towards adjacent property owners.

All requirements of the Ordinance have been met. Applicant Signature_____ Date: _____

FOR REVIEWER ONLY

This stormwater management permit application has been APPROVED DENIED (circle one)

Reviewed by (print):_____ Reason for Denial: _____

Signature:_____ Date: _____

HAZLE TOWNSHIP INSPECTION LOG (TO BE ATTACHED TO STORMWATER MANAGEMENT PERMIT APPLICATION LEVELS 1, 2, AND 3 APPLICATION)

Application Level No.: _____

Stormwater Management Permit No. _____

PRE-COSTRUCTION INSPECTION

Inspector Name: _____

Date: _____

Signature: _____

Comments: _____

_____

DURING – CONSTRUCTION INSPECTION

Inspector Name: _____

Date: _____

Signature: _____

Comments: _____

_____

POST – CONSTRUCTION INSPECTION

Inspector Name: _____

Date: _____

Signature: _____

Complies/Does Not Comply: _____

Comments: _____

_____

Hazle Township, Luzerne County, PA
STORMWATER MANAGEMENT LEVEL 4 PERMIT APPLICATION
(Two Signed Copies Required)

To be submitted with all Level 4 Applications for Subdivision/Land Development

Level 4: Proposed impervious area is greater than 10,000 sq. ft. or total earth disturbance is greater than 20,000 sq. ft. or any project that qualifies as a Land Development.

Stormwater Management Controls: All requirements of Article 12 of the Hazle Township Subdivision and Land Development Ordinance (SALDO) are applicable, including water quality and volume controls as found in Section 1203.1.V.2 and peak rate controls as found in Section 1203.1.V.3.

Submission: Submit the Stormwater Management Level 4 Permit Application and Stormwater Management (SWM) Site Plan and related data as required in Article 12 of the Hazle Township Subdivision and Land Development Ordinance (SALDO).

Review: Shall be completed by Hazle Township Engineer.

Anyone performing a **Level 4** regulated activity must complete the Stormwater Management Level 4 Permit Application, and submit to the Township. A regulated activity is defined by this Ordinance as:

> **Regulated Activity** – Any earth disturbance activities or any activities that involve the alteration or development of land in a manner that may affect stormwater runoff.

This includes but is not limited to: the clearing of wooded areas, grading and excavating, placement of pavement (driveways. Parking areas, roads), construction of buildings and other structures (homes, sheds, garages, commercial and industrial buildings), and other activities which alter the way stormwater runs off of the landscape. Impervious area defined by this Ordinance as:

> **Impervious Surface (Impervious Area)** – A surface that prevents the infiltration of water into the ground. Impervious surfaces include, but are not limited to, streets, sidewalks, pavements, parking lots, driveways, roofs, stone patios. See definition of "Gravel (Crushed Stone)" for when gravel classifies as impervious area.
>
> **Gravel (Crushed Stone)** – Considered to be impervious when the intended use of the stone is for transportation purposes, parking areas, construction areas, trails, or if the gravel is compacted at any time during or after its placement; landscaping stone is not considered as impervious area.

Application is hereby made for review of the Stormwater Management and Erosion and Sedimentation Control Plan and related data as submitted herewith in accordance with Article 12, Stormwater Management and water discharge requirements of the Hazle Township Subdivision and Land Development Ordinance (SALDO).

1. Project Name: _____

2. Property Owner: _____
   (provide mailing address and phone number) (If corporation, list the corporation's name and the names of two (2) officers of the corporation)

3. Applicant/Developer: _____
   (if different from Owner)
   _____
   Phone: _____

4. Physical Location of Project: _____
   _____

5. Engineer/Surveyor: _____
   _____
   Phone: _____

6. Area of proposed and existing impervious area on entire tract.
   a. Existing Impervious (to remain undisturbed_____s.f. _____% of property
   b. Proposed Impervious_____s.f. _____% of property
   c. Total Impervious _____s.f. _____% of property
   d. Total Proposed Earth Disturbance _____s.f. _____% of property

7. Attach a Narrative Report, with sufficient detail, on nature of activity for proposed Stormwater Management Plan. (i.e. driveway, single-lot structure, parking lot, road, trail, subdivision, land development, etc.)

8. Are any modifications from Article 12, Stormwater Management and Water Discharge requirements, of the Hazle Township Subdivision and Land Development Ordinance (SALDO) Stormwater Management Ordinance requested?

_____ YES _____ NO

If yes, specify the requested modifications and sections and/or provisions of the ordinance related to such request on the waiver request form found in the SALDO packet.

9. Plan(s) Submitted:

_____ Sketch Plan

_____ Preliminary Plan

_____ Final Plan

10. Development Type: (Check All Boxes That Apply)

_____	Residential	_____	Total Acreage
_____	Commercial	_____	Total Acreage
_____	Industrial	_____	Total Acreage
_____	PRD	_____	Total Acreage
_____	Other	_____	Total Acreage

11. Stormwater

a. Does the peak rate of runoff from proposed conditions exceed that flow which occurred for pre-development conditions for the designed design storm?

_____

b. Design storm utilized

_____

c. Number of Sub-Areas/Drainage Areas

_____

d. Watershed name as per state classification

_____

http://www.dep.state.pa.us/river/Maps/PAbasins.htm

e. Does the submission and/or district meet the release rate criteria for the applicable subarea? (See Nescopeck Creek Watershed Management District Map, Article 12 (SALDO))

_____

f. Does the proposed stormwater control criteria meet the requirement/guidelines of Article 12 of the SALDO?

_____

g. Was TR-55, June 1986 utilized in determining the time of concentration?

_____

h. What hydrologic method was used in the stormwater computations?

_____

i. Is a hydraulic routing through the stormwater control structure submitted?

_____

j. Is a construction schedule or staging attached?

_____

12. Erosion and Sediment Pollution Control (E&S)

a. Total Area of Earth Disturbance _____ s.f. _____ acres

b. Were plans and reports provided for Township to submit to the Luzerne Conservation District? _____ (Applicant to provide submission to Township, Administrator will forward to District.)

c. Will NPDES permit be required?

_____

13. Wetlands

a. Have the Wetlands been delineated by someone trained in Wetland Delineation? _____

b. Have the Wetland Lines been verified by a State or Federal Permitting Authority? _____

c. Have the Wetland Lines been surveyed?

_____

d. Total Acreage of Wetland within the Property

_____

e. Total Acreage of Wetland Disturbed

_____

f. Supporting Documentation

_____

g. Will a permit be required from the Army Corps of Engineers or the Pennsylvania Department of Environmental Protection?

_____

14. Filing

a. Has the required fee been submitted?

_____

b Has the proposed schedule of Construction been Submitted?

_____

c. Name of Individual whom will be responsible for making the required notification to the Township to schedule the Inspection._____

d. General Comments about Stormwater Management at Development. _____

_____

15. Fee Schedule

a. See SALDO Package

16. Certification of Information and Payment of Consulting Fees

I hereby certify that the information contained within this application is true and accurate to the best of my knowledge. I further agree to pay for all consulting fees incurred by Hazle Township for the review of this application, accompanying plans and for inspection of site work as so required and directed by Hazle Township Ordinances. Said payment, in full, shall be submitted to Hazle Township within 30 days from billing date indicated upon the invoice of Notice of Payment. I further certify and agree to provide the Township with "as-built" drawings of all improvements offered for dedication to Hazle Township.

_____ _____

Signature of Applicant/Developer Date

_____ _____

Signature of Owner Date

(if not same as Applicant/Developer)

FOR REVIEWER ONLY

This Stormwater Management Permit Application has been APPROVED DENIED (circle one)

Review by (Print): _____ Reason for Denial: _____

Signature: _____ Date: _____

LEVEL 1 APPLICATION – PROJECT SKETCH
HAZLE TOWNSHIP ACT 167 STORMWATER MANAGEMENT

Level 1: Proposed impervious area is 500 sq. ft. to 1,000 sq. ft. or total earth disturbance is 1,000 sq. ft. to 5,000 sq. ft.

Stormwater Management Controls: Ensure that adverse downstream impacts do not occur due to redirecting stormwater flows towards nearby structures. The following general requirements shall be met as follows:

A. There shall be no increase in the rate of storm water discharge from the land development or subdivision that would have occurred from the land prior to the activity. No Level 4 regulated activities shall commence until the Township issues written approval of a SWM Site Plan.

B. Each person, corporation, or other entity which makes any surface changes shall be required to: a) collect on-site surface runoff and dispose of it to the point of discharge into the common natural water course of the drainage area; b) handle existing off-site runoff through his development.

Submission: Submit the Stormwater Management Permit Application and Sketch to Hazle Township Code Enforcement Officer.

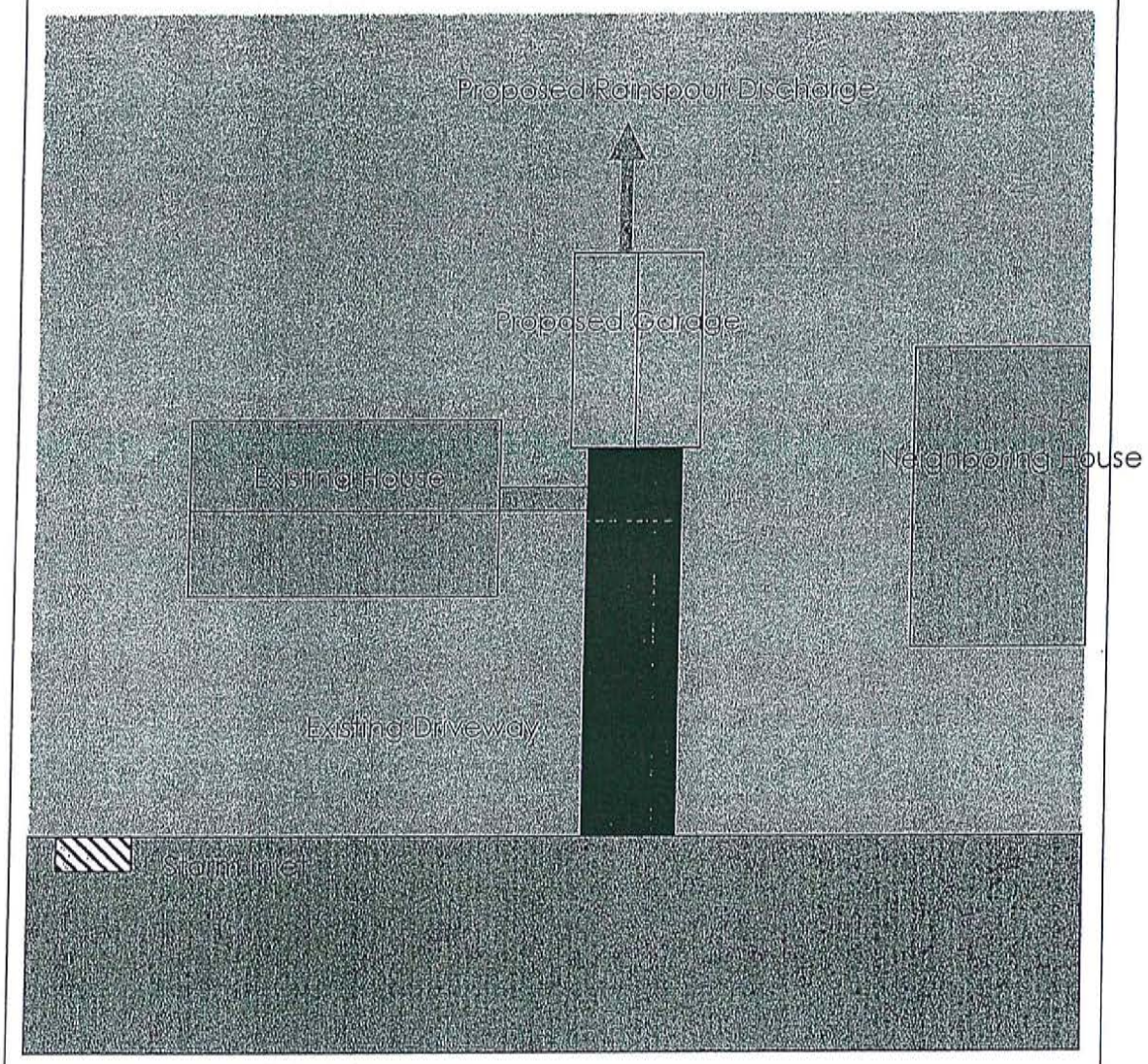
Review: Shall be completed by Hazle Township Zoning Officer or Building Inspector.

LEVEL 1 APPLICATION – PROJECT SKETCH
(See Attached Example)

- Show direction of proposed stormwater discharges
- Show all structures within 50 feet of site
- If storm sewers are present, show approximate location of inlets
- Note: The applicant must construct all structures and discharge points as depicted on this sketch. Any deviation from this sketch without prior approval from Hazle Township may be considered a violation of the Hazle Township Stormwater Management Ordinance and may subject the applicant to the penalties of the Ordinance and/or the revocation of the Stormwater Management Permit.

EXAMPLE 1 PROJECT SKETCH

- Show direction of proposed stormwater discharges
- Show all structures within 50 feet of site
- If storm sewers are present, show approximate location of inlets



WORKSHEET C.1 - LEVEL 2
HAZLE TOWNSHIP ACT 167 STORMWATER MANAGEMENT

Level 2: Proposed impervious area is 1,000 sq. ft. to 5,000 sq. ft. or total earth disturbance is between 5,000 sq. ft. and 10,000 sq. ft.

Stormwater Management Controls: Utilize Disconnected Impervious Area (DIA) for stormwater controls as outlined in worksheet C.1; if DIA cannot be achieved, utilize stormwater management controls for small projects as outlined in Worksheet E.

Submission: Submit the Stormwater Management Permit Application and computations for DIA; the worksheet C.1 shall be used and submitted. If DIA cannot be achieved, submit computations for Stormwater Management for Small Projects; the worksheet E must be used and submitted.

Review: Shall be completed by Hazle Township Engineer.

WORKSHEET C.1 – LEVEL 2

DISCONNECTED IMPERVIOUS AREA (DIA) AND WORKSHEET

When a regulated activity creates impervious areas between 1,000 sq. ft. and 5,000 sq. ft., or total earth disturbance between 5,000 and 10,000 sq. ft., the stormwater management requirements follow Worksheet C.1 – Disconnected Impervious Areas (DIAs), of this Ordinance. If site conditions prevent the requirements of Worksheet C.1 from being met, then the first 1 inch of runoff shall be captured and controlled in a manner consistent with Worksheet E – Stormwater Management for Small Projects, of this Ordinance. See Section 105.G. for the requirements for existing lots governed by a previous Land Development or NPDES Permit Approval.

When rooftop or pavement runoff is directed to a pervious area that allows for infiltration, filtration, and increased time of concentration, the contributing rooftop or pavement area may qualify as a Disconnected Impervious Area (DIA). A rooftop or pavement area is considered to be a DIA if it meets the requirements listed below:

- The soil, in proximity of the discharge area, is not designated as hydrologic soil group "D" or equivalent (see Hydrologic Soil Group Map);
- The overland flow path (pervious area serving as BMP) from discharge area has a positive slope of approximately 10% or less;
- The length of overland flow path (pervious area serving as BMP) is greater than or equal to the contributing rooftop or pavement length;
- The length of overland flow path (pervious area serving as BMP) is greater than 25 feet.
- The 25 minimum length of pervious overland flow path for a driveway shall be waived in the area of the driveway connection point to the existing roadway. (i.e. Areas where it is physically impossible to provide a 20 foot pervious overland flow path for the entire driveway cross-section). Note: All areas of the driveway shall be cross-sloped toward pervious areas.

If the discharge is concentrated at one or more discrete points, no more than 1,000 square feet of impervious area may discharge to any one point. In addition, a gravel strip or other spreading device is required for concentrated discharges. For non-concentrated discharges along the edge of the pavement, this requirement is waived; however, there must be a provision for the establishment of vegetation along the pavement edge and temporary stabilization of the area until vegetation becomes stabilized.

If rainspouts are discharged underground to provide infiltration, the portion of the impervious area draining to those rainspouts is waived from the DIA discharge requirements. Rainspouts discharged underground which are directly connected to a storm sewer system are not waived from the DIA requirements. Prior to any rainspout being allowed to be discharged underground to provide infiltration the suitability of the existing soil in the area of the proposed infiltration must be demonstrated by the applicant.

WORKSHEET C.1 – LEVEL 2 – DISCONNECTED IMPERVIOUS AREAS (DIAs)

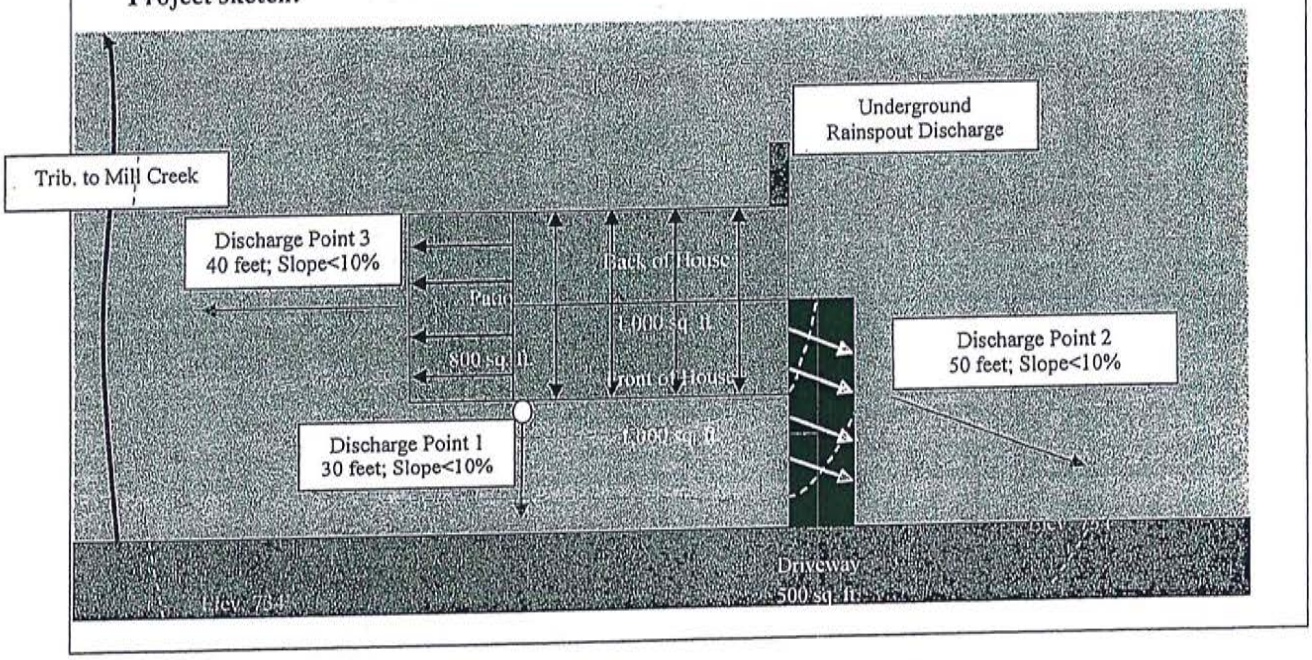
Computations for DIA as a BMP must be submitted to the Township. This worksheet shall be used for the computations. (See example – following page)

Applicant Address:	Brief Description of Project:				
Nearest Waterbody:	No more than 1,000 sq. ft. can discharge to one point on the surface. Number of discharge points required:				
Total Proposed Impervious Area (A):	Discharge Point 1	Discharge Point 2	Discharge Point 3	Discharge Point 4	Discharge Point 5
Total Earth Disturbance:	Area:	Area:	Area:	Area:	Area:
Are rainspouts discharged underground? (Y/N)	Impervious Path Length:	Impervious Path Length:	Impervious Path Length:	Impervious Path Length:	Impervious Path Length:
If yes, contributing impervious area (B):	Pervious Path Length:	Pervious Path Length:	Pervious Path Length:	Pervious Path Length:	Pervious Path Length:
Total Impervious Area Discharged on Surface (A) – (B):	Pervious Path Slope <10%? (Y/N)	Pervious Path Slope <10%? (Y/N)	Pervious Path Slope <10%? (Y/N)	Pervious Path Slope <10%? (Y/N)	Pervious Path Slope <10%? (Y/N)
Provide Level 2 Sketch of project below or on a separate sheet if necessary. HSG Soil Group from Hydrologic Soils Group Map (Cannot be "D" Soils):					
Project Sketch:					

Example: WORKSHEET C.1 – LEVEL 2: Joe Homeowner would like to build a single-family home, with a driveway and backyard stone patio. The home is 2,000 sq. ft., the stone patio is 800 sq. ft., and the asphalt driveway is 500 square feet.

Applicant Address: Joe Homeowner 123 Site Street Anytown, PA 12345	**Brief Description of Project:** Construction of 2,000 sq. ft. (40' x 50') single-family home with 500 sq. ft. driveway (10' x 50') and 800 sq. ft. stone patio (20' x 40'). The back half of the house discharges to rainspouts underground.				
Nearest waterbody: Tributary to Mill Creek	**No more than 1,000 sq. ft. can discharge to one point on the surface.** **Number of surface discharge points required:** 3				
Total Proposed Impervious Area (A): 3,300 sq. ft. **Total Earth Disturbance:** 6,000 sq. ft.	**Discharge Point 1:** Front of Home	**Discharge Point 2:** Driveway	**Discharge Point 3:** Patio	**Discharge Point 4:** N/A	**Discharge Point 5:** N/A
	Area: 1,000 sq. ft.	**Area:** 500 sq. ft.	**Area:** 800 sq. ft.	**Area:** N/A	**Area:** N/A
Are rainspouts discharged underground? (Y/N) Yes **If yes, contributing impervious area (B):** 1,000 sq. ft.	**Impervious Path Length:** 20 ft	**Impervious Path Length:** 10 ft	**Impervious Path Length:** 20 ft	**Impervious Path Length:** N/A	**Impervious Path Length:** N/A
	Pervious Path Length: 30 ft	**Pervious Path Length:** 50 ft	**Pervious Path Length:** 40 ft	**Pervious Path Length:** N/A	**Pervious Path Length:** N/A
Total Impervious Area Discharged on Surface (A) – (B): 3,300 – 1,000 = 2,300 sq. ft.	**Pervious Path Slope <10%? (Y/N)** Yes	**Pervious Path Slope <10%? (Y/N)** Yes	**Pervious Path Slope <10%? (Y/N)** Yes	**Pervious Path Slope <10%? (Y/N)** N/A	**Pervious Path Slope <10%? (Y/N)** N/A
HSG Soil Group from Appendix F.2 Hydrologic Soils Group Map (Cannot be "D" Soils): HSG "C"					

Project sketch:



WORKSHEET D - LEVEL 3
HAZLE TOWNSHIP ACT 167 STORMWATER MANAGEMENT

Level 3: Proposed impervious area is 5,000 sq. ft. to 10,000 sq. ft. or total earth disturbance is between 10,000 sq.ft. and 20,000 sq. ft. but does not qualify as a Land Development. All Land Developments require a Level 4 submission and review.

Stormwater Management Controls: Capture and permanently remove the first 2 inches of runoff over all proposed impervious areas; infiltrate at least the first 0.5 inches.

Submission: Submit the Stormwater Management Permit Application and computations for permanently removing the first 2 inches of runoff over all proposed impervious areas; worksheet D must be used.

Review: Shall be completed by Hazle Township Engineer.

WORKSHEET D – LEVEL 3

PROJECTS MEETING REQUIREMENTS IN SECTION 303.B.

When a regulated activity creates impervious areas between 5,000 sq. ft. and 10,000 sq. ft., or total earth disturbance between 10,000 and 20,000 sq. ft., the stormwater management requirements follow Section 303.B of this Ordinance.

Section 303.B is duplicated below:

B. When CG-1 guidelines are not used, the *Simplified Method* (CG-2 in the BMP Manual[1]) has been modified to accommodate 2" of permanently removed runoff volume. This method (provided below) is independent of site conditions and should be used if the *Design Storm Method* is not followed. For new impervious surfaces:

1. The first 2 inches 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.

2. 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.

3. Facilities, to the greatest extent possible and subject to the Township Engineer's discretion, shall be designed to drain the permanently removed runoff volume in a period no less than 24 hours and no greater than 72 hours.

4. Runoff volume in excess of 2 inches shall be safely conveyed to existing stormwater collection systems or streams, in the direction of the existing drainage course.

5. This method is exempt from the requirements of Section 304, Rate Controls.

WORKSHEET D – LEVEL 3 (SECTION 303.B.)

Computations for all stormwater facilities must be submitted to the Township. This worksheet shall be used for the computations. (See example – following page)

Applicant Address:	Brief Description of Project:		
Nearest Waterbody:	Permanently Removed Volume = (2 inches / 12) x (Impervious Area) =		
Total Proposed Impervious Area:	A Factor of Safety of 2 is applied to the Tested Infiltration Rate. Design Infiltration Rate = Tested Infiltration Rate / 2 =		
Total Earth Disturbance:	Components of the project may be directed to multiple facilities. Number of facilities used:		
Soil Testing Method:	Facility #1	Facility #2	Facility #3
	Component of Project: Volume Collected:	Component of Project: Volume Collected:	Component of Project: Volume Collected:
Tested Infiltration Rate (in/hr):	Type of Facility: Volume of Facility*: Area of Facility: Depth of Facility:	Type of Facility: Volume of Facility*: Area of Facility: Depth of Facility:	Type of Facility: Volume of Facility*: Area of Facility: Depth of Facility:
Additional Calcs/Notes:	Drawdown Time = Depth of Facility / Design Infiltration Rate =	Drawdown Time = Depth of Facility / Design Infiltration Rate =	Drawdown Time = Depth of Facility / Design Infiltration Rate =
	Loading Ratio = Impervious Area Controlled : Area of Facility =	Loading Ratio = Impervious Area Controlled : Area of Facility =	Loading Ratio = Impervious Area Controlled : Area of Facility =
	Existing Discharge Point (Inlet/Sewer/Stream):	Existing Discharge Point (Inlet/Sewer/Stream):	Existing Discharge Point (Inlet/Sewer/Stream):
	Discharge Method for Runoff in Excess of 2": Capacity**:	Discharge Method for Runoff in Excess of 2": Capacity**:	Discharge Method for Runoff in Excess of 2": Capacity**:

*Infiltration facilities with stone beds: 40% void space, multiply volume in stone portion by 0.4. Calculations:

**If a grass spillway is used: Capacity (cfs) = 2.5 x Length x Freeboard$^{1.5}$
**If an orifice structure is used: Capacity (cfs) = 0.6 x Orifice Area x (2 x 32.2 x Flow Depth Above Orifice)$^{0.5}$
Capacity Calculations:

Example: WORKSHEET D-(SECTION 303.B.) A doctor's office is proposed for a site. The building is 5,000 sq. ft. and the parking lot is 3,000 sq. ft.

Applicant Address: Dr. Office 123 Site Street Anytown, PA 12345	**Brief Description of Project:** A proposed doctor's office consisting of 5,000 sq. ft. building (50' x 100') and 3,000 sq. ft. parking lot (30' x 100'). The building drains to the back of the property to an infiltration facility, and the parking lot drains to an infiltration facility adjacent the parking lot.		
Nearest Waterbody: Trib. to Mill Creek	**Permanently Removed Volume = (2 inches / 12) x (Impervious Area)** = (2 inches / 12) x (8,000 sq. ft.) = 1,333 cu. ft.		
Total Proposed Impervious Area: 8,000 sq. ft. **Total Earth Disturbance:** 12,000 sq. ft.	**A Factor of Safety of 2 is applied to the Tested Infiltration Rate.** **Design Infiltration Rate = Tested Infiltration Rate / 2** = 1 in/hr / 2 = 0.5 in/hr		
	Components of the project may be directed to multiple facilities. **Number of facilities used:** 2		
Soil Testing Method: Percolation Test	**Facility #1**	**Facility #2**	**Facility #3**
	Component of Project: Building **Volume Collected:** 5,000 x 2/12 = 833 cu. ft.	**Component of Project:** Parking Lot **Volume Collected:** 3,000 x 2/12 = 500 cu. ft.	**Component of Project:** N/A **Volume Collected:** N/A
Tested Infiltration Rate (in/hr): 1 in/hr	**Type of Facility:** Infiltration **Volume of Facility*:** 1,133 cu. ft. **Area of Facility:** 50' x 10' = 500 sq. ft. **Depth of Facility:** 1 ft. stone + 1.3 ft. = 2.3 ft.	**Type of Facility:** Infiltration **Volume of Facility*:** 590 cu. ft. **Area of Facility:** 30' x 10' = 300 sq. ft. **Depth of Facility:** ½ ft. stone + 1.3 ft. = 1.8 ft.	**Type of Facility:** N/A **Volume of Facility*:** N/A **Area of Facility:** N/A **Depth of Facility:** N/A
Additional Calcs/Notes: Facilities have 2:1 horizontal:vertical side slopes. Therefore, actual volumes are greater which provides some additional storage for larger events. Both facilities have 1 foot of freeboard. This volume is additional to the volume provided in the calculations.	**Drawdown Time = Depth of Facility / Design Infiltration Rate =** 2.3 ft. x 12 in. / 0.5 in/hr = 55.2 hrs	**Drawdown Time = Depth of Facility / Design Infiltration Rate =** 1.8 ft. x 12 in. / 0.5 in/hr = 43.2 hrs	**Drawdown Time = Depth of Facility / Design Infiltration Rate =** N/A
	Loading Ratio = Impervious Area Controlled : Area of Facility = 5,000 sq. ft. : 500 sq. ft. = 10:1	**Loading Ratio = Impervious Area Controlled : Area of Facility =** 3,000 sq. ft. : 300 sq. ft. = 10:1	**Loading Ratio = Impervious Area Controlled : Area of Facility =** N/A
	Existing Discharge Point (Inlet/Sewer/Stream): Stream	**Existing Discharge Point (Inlet/Sewer/Stream):** Inlet/Sewer System	**Existing Discharge Point (Inlet/Sewer/Stream):** N/A
	Discharge Method for Runoff in Excess of 2": Spillway **Capacity**:** 50 cfs	**Discharge Method for Runoff in Excess of 2":** Orifice Outlet **Capacity**:** 77 cfs	**Discharge Method for Runoff in Excess of 2":** N/A **Capacity**:** N/A

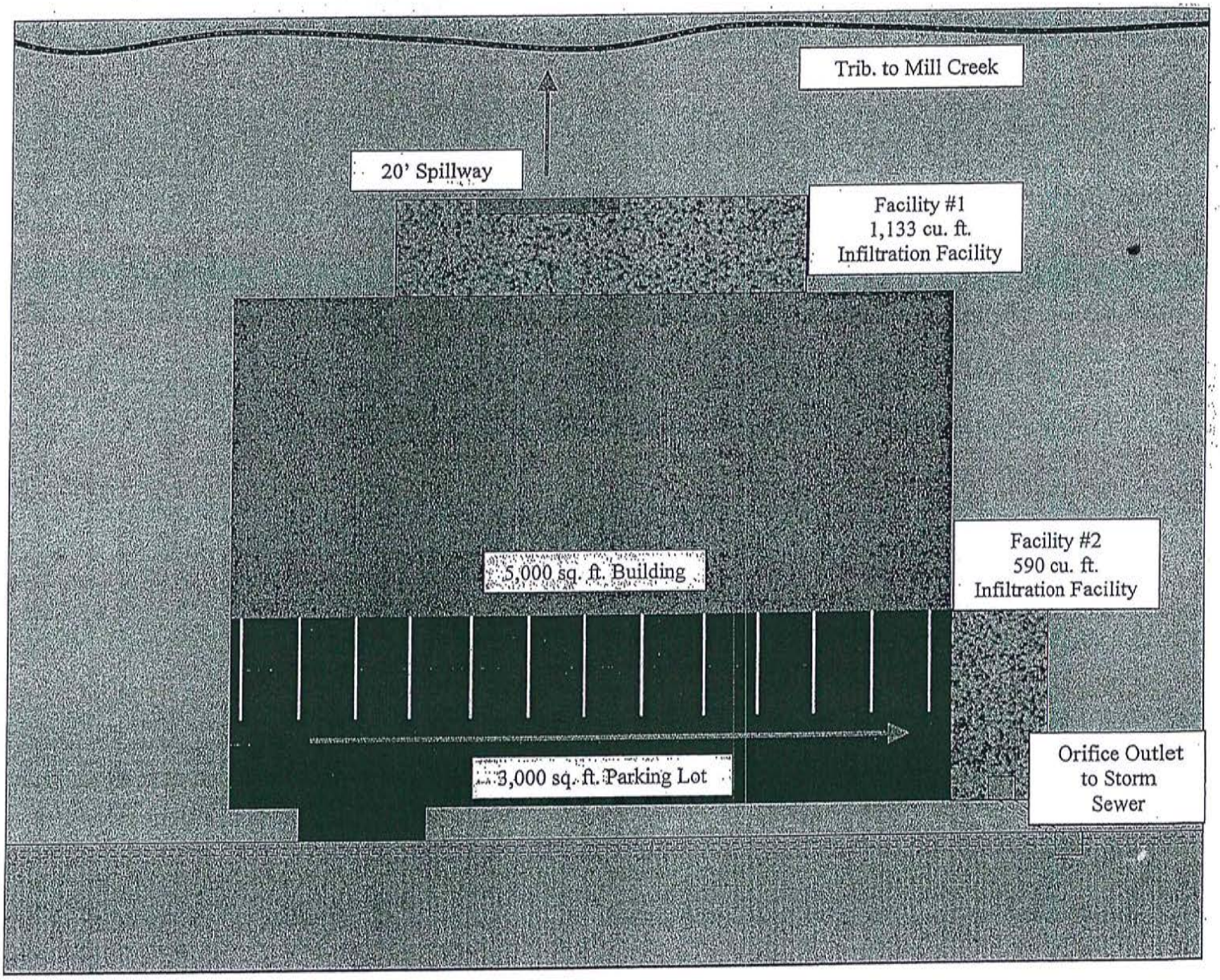
***Infiltration facilities with stone beds: 40% void space, multiply volume in stone portion by 0.4. Calculations:**
Facility #1 has 1 ft. of stone: 500 ft^2 x 1 ft. stone x 0.4 = 200 ft^3 in stone portion; Volume = 500 ft^3 stone + (833 – 200) = 1,133 cu. ft.
Depth = 1 ft. stone + (833 – 200) / 500 ft^2 = 1 ft. + 1.3 ft = 2.3 ft.
Facility #2 has ½ ft. of stone: 300 ft^2 x ½ ft. stone x 0.4 = 60 ft^3 in stone portion; Volume = 150 ft^3 stone + (500 – 60) = 590 cu. ft.
Depth = ½ ft. stone + (500 – 60) / 300 sq. ft. = ½ ft. + 1.3 ft. = 1.8 ft.

****If a grass spillway is used: Capacity (cfs) = 2.5 x Length x Freeboard$^{1.5}$**
****If an orifice structure is used: Capacity (cfs) = 0.6 x Orifice Area x (2 x 32.2 x Flow Depth Above Orifice)$^{0.5}$**
Capacity Calculations:
Facility #1 spillway: Capacity = 2.5 x (20 ft.) x (1 ft.)$^{1.5}$ = 50 cfs
Facility #2 orifice outlet: Use 1 ft. high by 2 ft. wide orifice; Capacity = 0.6 x (2 ft^2) x (2 x 32.2 x 1)$^{0.5}$ = 77 cfs

EXAMPLE - PROJECT SKETCH

LEVEL 3

NOTE: The applicant must construct all structures and discharge points as depicted on this sketch. Any deviation from this sketch without prior approval from Hazle Township may be considered a violation of the Hazle Township Stormwater Management Ordinance and may subject the applicant to the penalties of the Ordinance and/or the revocation of the Stormwater Management Permit.



WORKSHEET E - LEVEL 2 ALTERNATE
STORMWATER MANAGEMENT FOR SMALL PROJECTS
HAZLE TOWNSHIP ACT 167 STORMWATER MANAGEMENT

Applicability: Stormwater management procedures for projects between 1,000 sq. ft. and 5,000 sq. ft. of proposed impervious area or total earth disturbance between 5,000 sq. ft. and 10,000 sq. ft. for which site conditions prevent the use of Worksheet C.1 - Disconnected Impervious Area (DIA) as a BMP.

Notes:

1. This small projects document is not to be used to plan for multiple lots without obtaining prior written approval from Hazle Township. Approvals and actions associated with this document do not relieve the applicant of the responsibility to secure required permits or approvals for activities regulated by any other code, law or ordinance.

2. Due to the fact that the procedure outlined in Worksheet C.1 – Disconnected Impervious Area (DIA) is much better less burdensome than the procedure contained here in Worksheet E, Hazle Township strongly recommends that an applicant make all possible attempts to comply with Worksheet C.1 prior to completing the procedure outlined here in Worksheet E.

E.1 Introduction

These methods have been developed to allow homeowners to comply with stormwater management criteria for new projects to meet the requirements of the Act 167 Stormwater Management requirements of the Hazle Township Ordinances including sizing, designing, locating, and installing on-lot measures, referred to herein as "Best Management Practices" (BMPs). Pennsylvania Act 167 was authorized on October 4, 1978 (32 P.S., P.L. 864) and gave Pennsylvania municipalities the power to regulate activities that affect stormwater runoff and surface and groundwater quantity and quality.

Individual home construction projects on single-family lots which result in 1,000 sq. ft. to 5,000 sq. ft. of proposed impervious area (including the building footprint, driveway, sidewalks, and parking areas) are not required to submit formal stormwater management (SWM) site plans to the Township or County; however, they must address water quality and infiltration goals, and submit the worksheet as outlined in this small projects document. If the guidelines presented in this Worksheet are followed, the individual homeowner will not require professional services to comply with these water quality and infiltration goals.

Section E.2 presents options of BMPs that can be considered for on-lot stormwater management. Section E.3 describes requirements and outlines the method for designing a suitable BMP, and a description of what needs to be included on the simple sketch plan, and the Small Projects Worksheet in Table E.4. Section E.4 contains an example of how to obtain the size and dimensions of the BMPs, complete the site sketch, and prepare the Small Project Worksheet.

The stormwater management method for small projects requires:

- The first 1" of rainfall runoff from proposed impervious surfaces to be captured (see definition of captured in Article II this Ordinance).

The purpose of this small projects document is to help reduce stormwater runoff in the community, to maintain groundwater recharge, to prevent degradation of surface and groundwater quality, and to otherwise protect water resources and public safety.

What needs to be sent to the Township?

Stormwater computations and a sketch plan must be submitted to the Township. The small projects worksheet found in Table E.4 and a simple sketch plan containing the features described in Step 5 of Section E.3 is provided as an example, or may be used for submission to the Township, and if applicable, the contractor prior to construction.

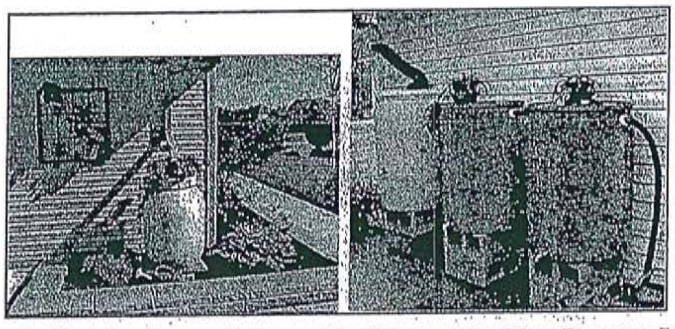
E.2 Description of BMPs

The following is a description of several types of BMPs that could be implemented. Refer to Chapter 6 of the PA BMP Manual which can be found on the PA Department of Environmental Protection's website for specifications and steps for construction for the following BMPs. A list of routine maintenance for each of the BMPs described below is also included at the end of this section.

Rain Barrels/Cisterns

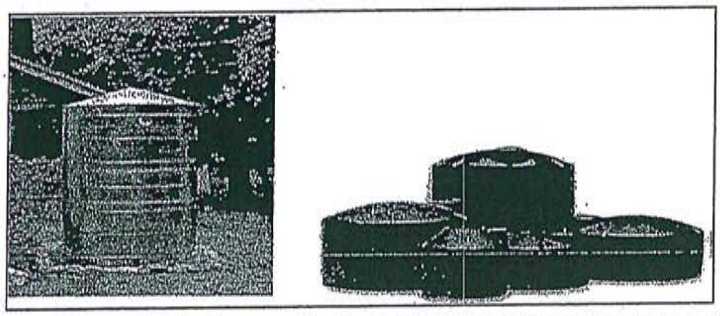
- Rain barrels and cisterns are large containers that collect drainage from roof leaders and temporarily store water to be released to lawns, gardens, and other landscaped areas; rain barrels are typically less than 50 gallons in size, and cisterns typically have volumes of up to 1,000 gallons or more, and can be placed on the surface or underground.

Figure E.1. Rain Barrels.



Source (left): http://www.rfcity.org/Eng/Stormwater/YourProperty/YourProperty.htm
Source (right): :http://www.floridata.com/tracks/transplantedgardener/Rainbarrels.cfm

Figure E.2. Cisterns.

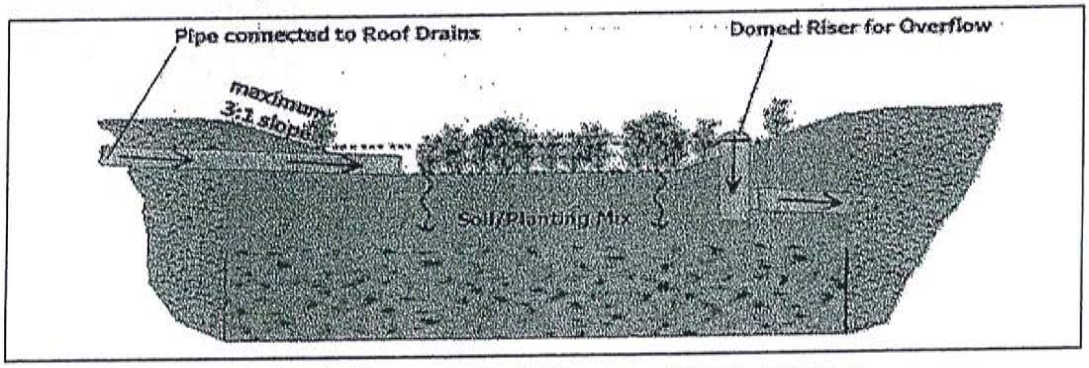


Source: Pennsylvania Stormwater Best Management Practices Manual.

Rain Garden/Bioretention Area

- A rain garden/bioretention area is an excavated depression area on the surface of the land in which native vegetation is planted to filter and use stormwater runoff; depths of 1.0 foot or less are recommended. Planting species should be native to Pennsylvania.

Figure E.3. Typical Rain Garden/Bioretention Area.



Source: Pennsylvania Stormwater Best Management Practices Manual.

Table E.1. Sample Plant List for Use in a Rain Garden/Bioretention Area.

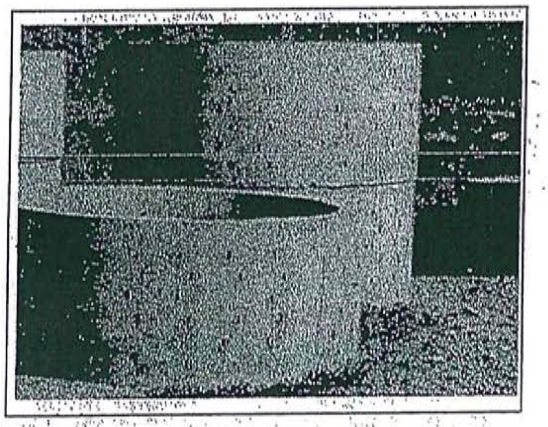
Common Name	Scientific Name	Plant Type
Red Maple	Acer rubrum	Tree
Grey Birch	Betula populifolia	Tree
Shadbush Serviceberry	Amelanchier canadensis	Tree
Eastern Cotton-wood	Populus grandidentata	Tree
Virginia Sweetspire	Itea virginica	Shrub
Red-Twig Dogwood	Cornus sericea (stolonifera) 'Arctic Fire'	Shrub
Southern Arrow-wood	Viburnum dentatum	Shrub
Black Choke Berry	Aronia melanocarpa	Shrub
Great Blue Lobelia	Lobelia siphilitica	Perennial
Dwarf Pink false aster	Boltonia asteroides 'Nana'	Perennial
White false aster	Boltonia asteroides 'Snowbank'	Perennial
Switchgrass	Panicum virgatum	Grass

Source: Pennsylvania Stormwater Best Management Practices Manual.

Dry Wells

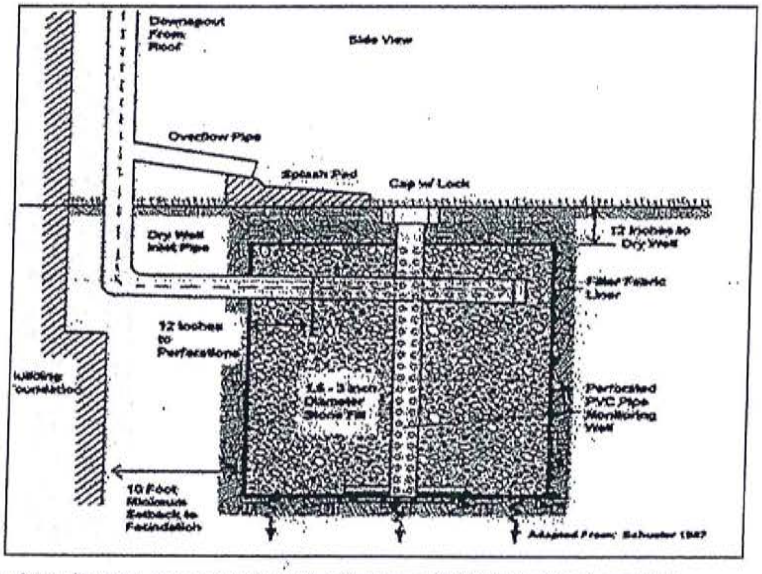
- A dry well, also referred to as a seepage pit is a subsurface storage facility that temporarily stores and infiltrates runoff from the roofs of buildings or other impervious surfaces; recommended depth of dry well is between 1.0 and 4.0 feet.
- Dry Well #1 – structural prefabricated chamber; no stone fill.
- Dry Well #2 – excavated pit filled with stone fill.

Figure E.4. Dry Well #1 – Structural Prefabricated Chamber.



Source: http://www.copelandconcreteinc.net/1800652.html

Figure E.5. Dry Well #2 – Excavated Pit Filled with Stone Fill.

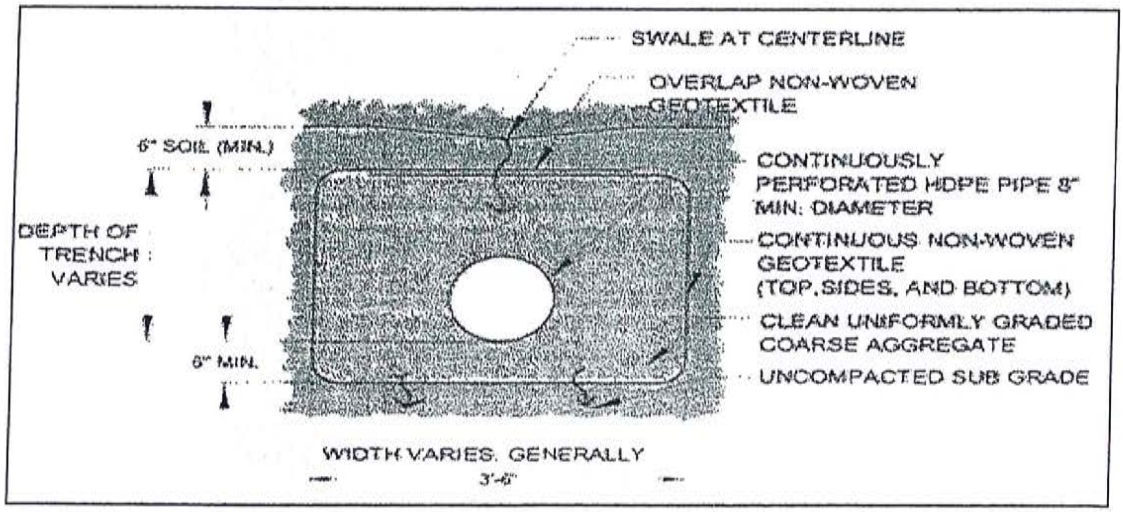


Source: http://www.seagrant.sunysb.edu/pages/BMPsForMarinas.htm

Infiltration Trench

- An infiltration trench is a long, narrow, rock-filled trench with or without a perforated pipe that receives stormwater runoff and has no outlet.
- Runoff is stored in the void space between the stones and in the pipe and infiltrates through the bottom and into the underlying soil matrix.
- The width is limited to between 3 and 8 feet, and the depth ranges from 2 to 5 feet.

Figure E.6. Infiltration Trench.



Source: Pennsylvania Stormwater Best Management Practices Manual.

Routine Maintenance for BMPs

- Vegetation along the surface of an infiltration trench should be maintained in good condition, and any bare spots should be revegetated as soon as possible.
- Vehicles shouldn't be parked or driven on an infiltration trench, and care should be taken to avoid excessive compaction by mowers.
- Any debris such as leaves blocking flow from reaching an infiltration trench or bioretention/rain garden should be routinely removed.
- While vegetation is being established, pruning and weeding may be required for a bioretention/rain garden.
- Mulch in a bioretention/rain garden needs to be re-spread when erosion is evident. Once every two to three years or after major storms the entire area may require mulch replacement.
- At least twice a year the landowner needs to inspect the bioretention/rain garden for sediment buildup and vegetative conditions.
- During periods of extended drought, the bioretention/rain garden requires watering.
- Trees and shrubs in a bioretention/rain garden need to be inspected at least twice per year by the landowner to evaluate their health. If they are in poor health, they need to be replaced.
- Dry wells need to be inspected by the landowner at least four times a year and after significant rainfalls, and debris/trash, sediment, and any other waste material need to be removed and disposed of at suitable disposal/recycling sites and in compliance with local, state, and federal waste regulations.
- For dry wells, gutters need to be regularly cleaned out, and proper connections must be maintained to facilitate the effectiveness of the dry well.
- The filter screen for the dry well that intercepts roof runoff must be replaced as necessary.
- Dry wells that are damaged need to be fixed or replaced immediately.
- If an intermediate sump box exists in conjunction with a dry well, it must be cleaned out at least once per year.
- Rain barrels and cisterns need to be cleared of debris routinely at least every three months and after significant storms to allow stormwater from gutters to enter them.
- Gutters that directly convey rain water to dry wells, rain barrels, and cisterns need to be routinely cleared of trash and debris at least every three months and after significant storms.
- Rain barrels and cisterns must be kept covered.
- Rain barrels and cisterns should be routinely emptied so that they are only ¼ of the way full to allow for storage of additional rainwater.
- Overflow outlets from rain barrels and cisterns must be kept free and clear of debris.
- Rain barrels and cisterns that are damaged need to be fixed or replaced immediately.

E.3. Determination of BMPs and Volume Requirements

All proposed impervious areas must be included in the determination of the amount of new impervious areas and the size of proposed BMPs needed to control stormwater.

Proposed impervious areas on an individual residential lot include:

- Roof area
- Pavement
- Sidewalks
- Driveways
- Patios
- Porches
- Permanent pools
- Parking areas

Sidewalks, driveways, or patios that are constructed with pervious pavers that will not be converted to an impervious surface in the future need not be included in this calculation. Therefore, the amount of proposed impervious area can be reduced for proposed driveways, patios, and sidewalks through the use of pervious pavement, and turf pavers. All proposed impervious areas must be constructed so that runoff is conveyed to a BMP; no runoff can be directed to storm sewers, inlets, or other impervious areas (i.e., street).

All new construction should incorporate design techniques that include: minimizing the amount of land disturbance, reducing impervious cover, disconnecting gutters and directing runoff to vegetated areas to infiltrate, and redirecting the flow of runoff from impervious driveways to vegetated areas instead of to the street or gutter.

Below are the steps that must be undertaken to meet the Ordinance requirements. The results obtained for each step must be included in the Small Projects Worksheet found in Table E-4:

STEP 1 – Determine the total area of all proposed impervious surfaces (square feet) that will need to drain to one or more BMPs.

STEP 2 – Determine locations where BMPs need to be placed, and the contributing impervious area "***I***" (square feet) to each.

STEP 3 – Select the BMPs to be used and determine the requirements of each from Section E.3.

STEP 4 – Obtain the required storage volume "*V*" (cubic feet) and surface area "*A*" (square feet) needed for each of the proposed BMPs from the appropriate heading below.

Note: All calculations are based on 1 inch of rainfall.

For Rain Barrels/Cisterns

- The typical volume of a rain barrel is less than 50 gallons; if a greater volume is required, more than one rain barrel will be needed or a cistern may be used.
- For calculations, assume the rain barrel is already 25% full.
- Calculate volume in Cubic Feet:

  V_{cf} = **(1 inch x 1/12 x *I*) / 0.75**
- Convert to Gallons:

  $V_{gal} = V_{cf}$ **x 7.48**

For Rain Gardens/Bioretention or Dry Well #1:

- Rain gardens and bioretention areas are only used for depths less than or equal to 1.0 feet; a dry well #1 is used for depths between 1.0 and 4.0 feet.
- Select the depth "***D***" (feet) for the facility.
- For calculations, assume the facility is empty (0% full).
- Calculate volume in Cubic Feet:

  V_{cf} = **(1 inch x 1/12 x *I*)**
- Calculate surface area of the facility in Square Feet:

  $A_{sf} = V_{cf}$ **/ *D***

For Dry Well #2 or Infiltration Trench:

- A dry well #2 is used for depths between 1.5 feet and 4.0 feet; an infiltration trench is used for depths between 2.0 and 5.0 feet.
- Select the depth "***D***" (feet) for the facility.
- For calculations, assume the void ratio of the stone is 40%.
- Calculate volume in Cubic Feet:

  V_{cf} = **(1 inch x 1/12 x *I*) / 0.4**
- Calculate surface area of the facility in Square Feet:

  $A_{sf} = V_{cf}$ **/ *D***
- Determine the dimensions of the facility based on "***A***" calculated.

STEP 5 - Sketch a simple site plan that includes:

- Name and address of the owner of the property, and or name and address of the individual preparing the plan, along with the date of submission.
- Location of proposed structures, driveways, or other paved areas with approximate size in square feet.
- Location, orientation, and dimensions of all proposed BMPs. For all rain gardens/bioretention, infiltration trenches, and dry wells, the length, width, and depth must be included on the plan. For rain barrels or cisterns the volume must be included.
- Location of any existing or proposed on-site septic system and/or potable water wells showing rough proximity to infiltration facilities.
- Location of any existing waterbodies such as; streams, lakes, ponds, wetlands, or other waters of the Commonwealth within 100 feet of the project site, and the distance to the project site and/or BMPs. It is recommended that the project or BMPs be located at least than fifty (50) feet away from a perennial or intermittent stream. If an existing buffer is legally prescribed (i.e., deed, covenant, easement, etc.), the existing buffer shall be maintained.
- Location of all existing structures including buildings, driveways, and roads within fifty (50) feet of the project site.

Fill in the small projects worksheet found in Table E.4, then submit the worksheet and the simple site sketch (or equivalent) to the Township.

Table E.4. Small Projects Worksheet.
(See Example)

Small Projects Worksheet					
STEP 1					
Component #1 of Project:	Impervious Area from Component #1:	Component #2 of Project:	Impervious Area from Component #2:	Component #3 of Project:	Impervious Area from Component #3:
	sq. ft.		sq. ft.		sq. ft.
Total Impervious Area =		sq. ft.			
STEP 2					
BMP #1		BMP #2		BMP #3	
Captures:		Captures:		Captures:	
Impervious Area I_1:	sq. ft.	Impervious Area I_2:	sq. ft.	Impervious Area I_3:	sq. ft.
STEP 3					
BMP #1		BMP #2		BMP #3	
Type:		Type:		Type:	
STEP 4					
BMP #1		BMP #2		BMP #3	
Volume:		Volume:		Volume:	
Dimensions:		Dimensions:		Dimensions:	

Note: For additional BMPs, use additional sheets

E.4. Example

Joe Homeowner wants to build an 800 sq. ft. two car garage, and a 700 sq. ft. impervious driveway. Site conditions in the urban setting prevent the use of Disconnected Impervious Area (DIA) as a BMP.

STEP 1 – Determine the total area of all proposed impervious surfaces that will need to drain to one or more BMPs.

- Garage roof: 20 ft. x 40 ft. = 800 sq. ft.
- Driveway: 50 ft. x 14 ft. = 700 sq. ft.
- Total proposed impervious surface = 800 + 700 = **1,500 sq. ft.**

STEP 2 – Determine locations where BMPs need to be placed, and the contributing impervious area "*I*" to each.

- Use BMP #1 to capture runoff from the garage (I_1 = 800 sq. ft.)
- Use BMP #2 to capture runoff from the driveway (I_2 = 700 sq. ft.).

STEP 3 – Select the BMPs to be used and determine the requirements of each from Section E.3.

- BMP #1 – rain barrel/cistern
- BMP #2 – infiltration trench

STEP 4 – Obtain the required storage volume "*V*" and surface area "*A*" needed for each of the proposed BMPs from the appropriate heading below.

For Rain Barrel/Cistern (BMP #1)

- Calculate volume in cubic feet:

  V_{cf} = **(1 inch x 1/12 x I_1) / 0.75**
  = **(1 inch x 1/12 x 800) / 0.75**
  = **88.89 cubic feet**

- Convert to gallons:

  V_{gal} = V_{cf} **x 7.48**
  = **88.89 x 7.48**
  = **664.8 gallons → round up to 665 gallons**

For Infiltration Trench (BMP #2)

- Select depth **"*D*"** for the facility of **2 feet** (between 2.0 feet and 5.0 feet).
- Calculate volume in cubic feet:

$$V_{cf} = (1 \text{ inch} \times 1/12 \times I_2) / 0.4$$
$$= (1 \text{ inch} \times 1/12 \times 700) / 0.4$$
$$= 145.8 \text{ cubic feet} \rightarrow \text{round up to } 150 \text{ cubic feet}$$

- Calculate surface area of the facility in square feet:

$$A_{sf} = V_{cf} / D$$
$$= 150 / 2$$
$$= 75 \text{ square feet}$$

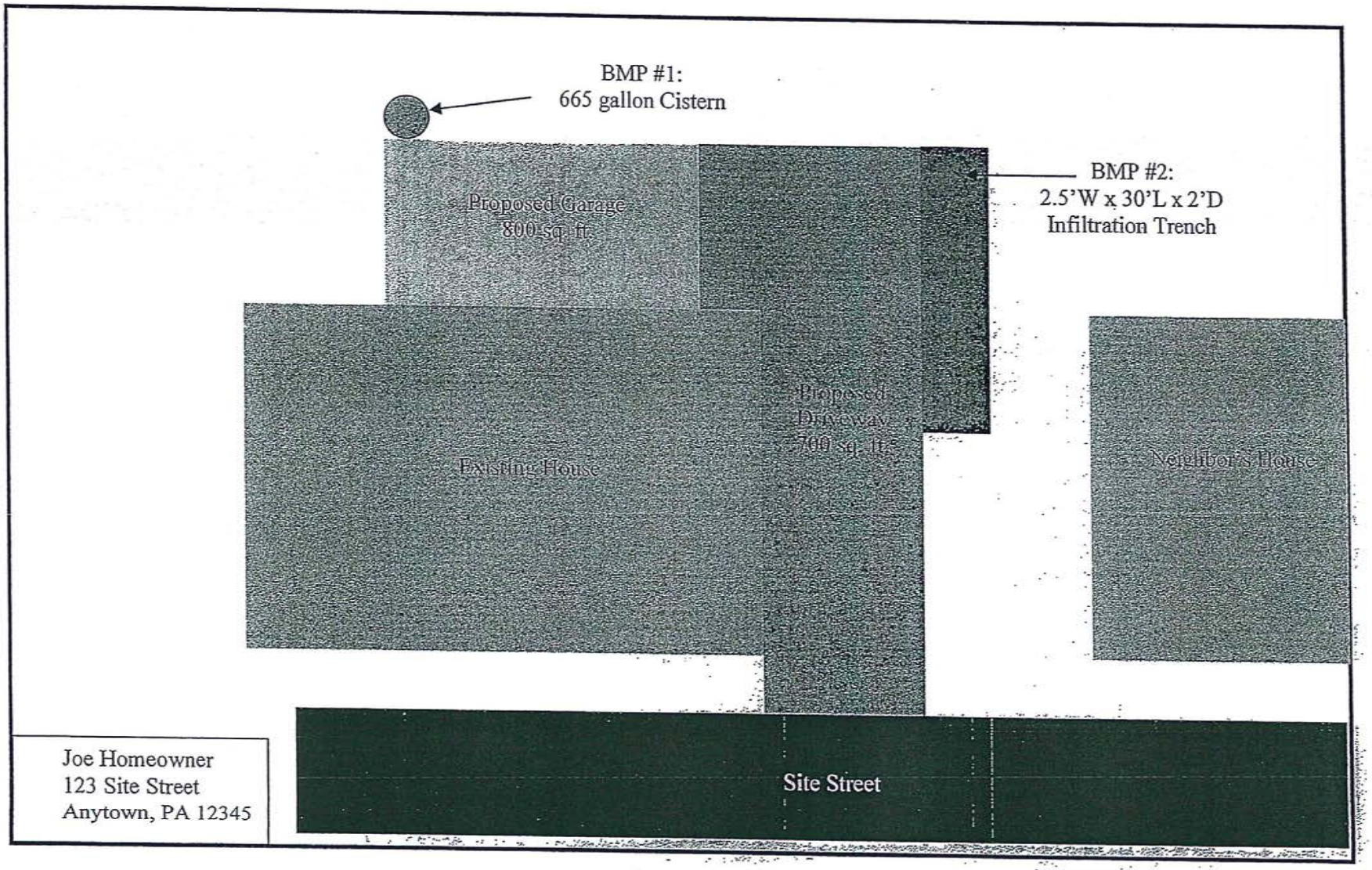
- The driveway is 50 feet long, so using the upper 30 feet of the driveway as the length of the infiltration trench, the width of the trench =

75 square feet / 30 feet = 2.5 feet

- Use a **2.5 ft. wide x 30 ft. long x 2 ft. deep** infiltration trench.

STEP 5 – Prepare a simple site sketch (Figure E.7) and complete Small Projects Worksheet (Table E.4) to send to Township.

Figure E.7. Simple Site Sketch of Proposed Project and Proposed BMPs.



EXAMPLE

Table E.4. Small Projects Worksheet.

Small Projects Worksheet					
STEP 1					
Component #1 of Project	Impervious Area from Component #1	Component #2 of Project	Impervious Area from Component #2	Component #3 of Project	Impervious Area from Component #3
Garage Roof	800 sq. ft	Driveway	700 sq. ft	N/A	N/A
Total Impervious Area =		1,500 sq. ft			
STEP 2					
BMP #1		BMP #2		BMP #3	
Captures:	Garage Roof	Captures:	Driveway	Captures:	N/A
Impervious Area 1:	800 sq. ft	Impervious Area 2:	700 sq. ft	Impervious Area 3:	N/A
STEP 3					
BMP #1		BMP #2		BMP #3	
Type:	Cistern	Type:	Infiltration Trench	Type:	N/A
STEP 4					
BMP #1		BMP #2		BMP #3	
Volume:	88.89 cu. ft	Volume:	150 cubic feet	Volume:	N/A
Dimensions:	665 gallons	Dimensions:	2.5' W x 30'L x 2' D'	Dimensions:	N/A

Note: For additional BMPs, use additional sheets

LEVEL 4
HAZLE TOWNSHIP ACT 167 STORMWATER MANAGEMENT

Level 4: Proposed impervious area is greater than 10,000 sq. ft. or total earth disturbance is greater than 20,000 sq. ft. or any project that qualifies as a Land Development.

Stormwater Management Controls: All requirements of this Ordinance are applicable, including water quality and volume controls as found in Article III Section 303 and Article 12 of the Hazle Township Subdivision and Land Development Ordinance (SALDO) and peak rate controls as found in Article III Section 304.

Submission: Submit the Stormwater Management Level 4 Permit Application and Stormwater Management (SWM) Site Plan as in Article 4 of this Ordinance.

Review: Shall be completed by Hazle Township Engineer.

Anyone performing a Level 4 regulated activity must complete the Stormwater Management Permit Application, and submit to the Township. A regulated activity is defined by this Ordinance as:

> **Regulated Activity** – Any earth disturbance activities or any activities that involve the alteration or development of land in a manner that may affect stormwater runoff.

This includes but is not limited to: the clearing of wooded areas, grading and excavating, placement of pavement (driveways. Parking areas, roads), construction of buildings and other structures (homes, sheds, garages, commercial and industrial buildings), and other activities which alter the way stormwater runs off of the landscape. Impervious area defined by this Ordinance as:

> **Impervious Surface (Impervious Area)** – A surface that prevents the infiltration of water into the ground. Impervious surfaces include, but are not limited to, streets, sidewalks, pavements, parking lots, driveways, roofs, stone patios. See definition of "Gravel (Crushed Stone)" for when gravel classifies as impervious area.
>
> **Gravel (Crushed Stone)** – Considered to be impervious when the intended use of the stone is for transportation purposes, parking areas, construction areas, trails, or if the gravel is compacted at any time during or after its placement; landscaping stone is not considered as impervious area.

APPENDIX F.1

STORMWATER MANAGEMENT DISTRICT MAP

APPENDIX F.2

Municipality SWM Site Plan Review Fee

The Township shall establish a Review Fee Schedule by resolution of the Township governing body based on the size of the Regulated Activity and based on the Township's costs for reviewing SWM Site Plan. The Township shall periodically update the Review Fee Schedule to ensure that review costs are adequately reimbursed.

STORM WATER ORDINANCE #2011-9-12-1
(FORMERLY #2011-8-8-1)

DULY ORDAINED this 12th day of September, 2011, at a duly advertised, regularly scheduled meeting of the Hazle Township Board of Supervisors.

HAZLE TOWNSHIP SUPERVISORS

By: _____
William Gallagher, Chairman

By: _____
Andy Benyo, Vice-Chairman

By: _____
Francis Boyarski, Jr.,
Secretary/Treasurer