

**STORMWATER MANAGEMENT ORDINANCE**

Implementing the Requirements of the

**Crawford County Stormwater Management Plan**

ORDINANCE NO. 001 OF 2011

BLOOMFIELD TOWNSHIP, CRAWFORD COUNTY, PENNSYLVANIA

Adopted at a Public Meeting Held on

April 5, 2011

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## ARTICLE I - GENERAL PROVISIONS

### **Section 101. Short Title**

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

### **Section 102. Statement of Findings**

The governing body of Bloomfield 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, threatens public health and safety, and increases non-point source pollution of water resources.
- B. A comprehensive program of stormwater management, including reasonable regulation of development and activities causing accelerated runoff, is fundamental to the public health, safety, welfare, and the protection of the people of Municipality and all the people of the Commonwealth, their resources, and the environment.
- C. Inadequate planning and management of stormwater runoff resulting from land development and redevelopment throughout a watershed can also harm surface water resources by changing the natural hydrologic patterns; accelerating stream flows (which increase scour and erosion of streambeds and stream banks thereby elevating sedimentation); destroying aquatic habitat; and elevating aquatic pollutant concentrations and loadings such as sediments, nutrients, heavy metals, and pathogens. Groundwater resources are also impacted through loss of recharge.
- D. 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.
- E. Public education on the control of pollution from stormwater is an essential component in successfully addressing stormwater issues.
- F. ~~Federal and state regulations require certain municipalities to implement a program of stormwater controls. These municipalities are required to obtain a permit for stormwater discharges from their separate storm sewer systems under the National Pollutant Discharge Elimination System (NPDES).~~

### **Section 103. Purpose**

The purpose of this Ordinance is to promote health, safety, and welfare within Bloomfield Township Crawford County, by minimizing the harms and maximizing the benefits described in Section 102 of this Ordinance through provisions intended to:

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

- B. Manage accelerated runoff and erosion and sedimentation problems close to their source, by regulating activities that cause these problems.
- C. Preserve the natural drainage systems as much as possible.
- D. Maintain groundwater recharge, to prevent degradation of surface and groundwater quality, and to otherwise protect water resources.
- E. Maintain existing flows and quality of streams and watercourses.
- F. Preserve and restore the flood-carrying capacity of streams and prevent scour and erosion of stream banks and streambeds.
- G. Manage stormwater impacts close to the runoff source, with a minimum of structures and a maximum use of natural processes.
- H. Provide procedures, performance standards, and design criteria for stormwater planning and management.
- I. Provide proper operations and maintenance of all temporary and permanent stormwater management facilities and Best Management Practices (BMPs) that are constructed and implemented.
- J. Provide standards to meet the NPDES permit requirements.

**Section 104. Statutory Authority**

- A. Primary Authority: Bloomfield Township is empowered to regulate these activities by the authority of the Act of October 4, 1978, 32 P.S., P.L. 864 (Act 167), 32 P.S. Section 680.1 et seq., as amended, the "Storm Water Management Act", and the Second Class Township Code, Act 230 of 1953, P.L. 723; 16 P.S. 3101 et seq.
- B. Secondary Authority: Bloomfield 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**

~~In Bloomfield Township, all regulated activities and all activities that may affect stormwater runoff, including land development and earth disturbance activity, are subject to regulation by this Ordinance.~~

Earth disturbance activities and associated stormwater management controls are also regulated under existing state law and implementing regulations. This Ordinance shall operate in coordination with those parallel requirements; the requirements of this Ordinance shall be no less restrictive in meeting the purposes of this Ordinance than state law.

"Regulated Activities" are any earth disturbance activities or any activities that involve the alteration or development of land in a manner that may affect stormwater runoff. □Regulated Activities□include, but are not limited to, the following listed items:

- A. Earth Disturbance Activities
- B. Land Development
- C. Subdivision where earth disturbance activities are proposed
- D. Construction of new or additional impervious or semi-pervious surfaces
- E. Construction of new buildings or additions to existing buildings
- F. Diversion or piping of any natural or man-made stream channel
- G. Installation of stormwater management facilities or appurtenances thereto
- H. Installation of stormwater BMPs

See Section 302 of this Ordinance for Exemption/Modification Criteria.

**Section 106. Repealer**

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

**Section 107. Severability**

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

**Section 108. Compatibility with Other Ordinance Requirements**

Approvals issued and actions taken pursuant to this Ordinance do not relieve the Applicant of the responsibility to comply with or to secure required permits or approvals for activities regulated by any other applicable codes, laws, rules, statutes, or ordinances. To the extent that this Ordinance imposes more rigorous or stringent requirements for stormwater management, the specific requirements contained in this Ordinance shall be followed.

**Section 109. Duty of Persons Engaged in the Development of Land**

Notwithstanding any provision(s) of this Ordinance, including exemptions, any landowner or any person engaged in the alteration or development of land which may affect stormwater runoff characteristics shall implement such measures as are reasonably necessary to prevent injury to health, safety, or other property. Such measures also shall include actions as are required to manage the rate, volume, direction, and quality of resulting stormwater runoff in a manner which otherwise adequately protects health, property, and water quality.

**Section 110. Municipal Liability Disclaimer**

- A. Neither the granting of any approval under this Ordinance, nor the compliance with the provisions of this Ordinance, or with any condition imposed by a municipal official hereunder, shall relieve any person from any responsibility for damage to persons or property resulting there from, or as otherwise imposed by law nor impose any liability upon the Municipality for damages to persons or property.
- B. The granting of a permit which includes any storm water management facilities shall not constitute a representation, guarantee or warranty of any kind by the Municipality, or by an official or employee thereof, of the practicability or safety of any structure, use or other plan

proposed, and shall create no liability upon or cause of action against such public body, official or employee for any damage that may result pursuant thereto.

## ARTICLE II - DEFINITIONS

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

- A. Words used in the present tense include the future tense; the singular number includes the plural; and the plural number includes the singular; words of masculine gender include feminine gender; and words of feminine gender include masculine gender.
- B. The word "includes" or "including" shall not limit the term to the specific example but is intended to extend its meaning to all other instances of like kind and character.
- C. The 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 human activity and natural processes at a rate greater than would occur because of the natural process alone.

**Agricultural Activities** - Activities associated with agriculture such as agricultural cultivation, agricultural operation, and animal heavy use areas. This includes the work of producing crops, tillage, land clearing, plowing, disking, harrowing, planting, harvesting crops, or pasturing and raising of livestock and installation of conservation measures. Construction of new buildings or impervious area is not considered an Agricultural Activity.

**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; changing of surface conditions by causing the surface to be more or less impervious; land disturbance.

**Applicant** - A landowner, developer, or other person who has filed an application for approval to engage in any Regulated Activities at a project site within the municipality.

**Best Management Practices (BMPs)** - 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: non-structural or structural. Non-structural BMPs are measures referred to as operational and/or behavior-related practices that attempt to minimize the contact of pollutants with stormwater runoff whereas structural BMPs are measures that consist of a physical device or practice that is installed to capture and treat stormwater runoff. Structural BMPs include, but are not limited to, a wide variety of practices and devices, from large-scale retention ponds and constructed wetlands, to small-scale underground treatment systems, infiltration facilities, filter strips, low impact design, bioretention, wet ponds, permeable paving, grassed swales, riparian or forested buffers, sand filters, detention basins, and manufactured devices. Structural stormwater BMPs are permanent appurtenances to the project site.

**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 used for storing rainwater.

**Conservation District** - The Crawford County Conservation District. The Crawford County Conservation District has the authority under a delegation agreement executed with the Department of Environmental Protection to administer and enforce all or a portion of the regulations promulgated under 25 PA Code Chapter 102.

**Culvert** - A structure with appurtenant works that carries a stream and/or stormwater runoff 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.

**Design Storm** - The magnitude and temporal distribution of precipitation from a storm event measured in probability of occurrence (e.g., a 25-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 this municipality 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 Waters of the 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 - (Site)** - The specific tract of land for which a Regulated Activity is proposed. Also see Project Site.

**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 all overland or pipe flow from the site would be directed toward it.

**Drainage Conveyance Facility** - A stormwater management facility designed to convey 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, drainage, or conveyance purposes.

**Drainageway** - Any natural or artificial watercourse, trench, ditch, pipe, swale, channel, or similar depression into which surface water flows.

**Earth Disturbance Activity** - A construction or other human activity which disturbs the surface of the land, including, but not limited to, clearing and grubbing, grading, excavations, embankments, land

- g. Avoid erosive flow conditions in natural flow pathways.
- h. Minimize soil disturbance and soil compaction.
- i. Minimize thermal impacts to Waters of the Commonwealth.
- j. Disconnect impervious surfaces by directing runoff to pervious areas, wherever possible and decentralize and manage stormwater at its source.

F. Impervious Areas:

- 1. The measurement of impervious areas shall include all of the impervious areas in the total proposed development, even if development is to take place in stages.
- 2. For developments taking place in stages, the entire development plan must be used in determining conformance with this Ordinance.

G. If diffused flow is proposed to be concentrated and discharged onto adjacent property, the Applicant 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.

- 1. Applicant must provide an easement for proposed concentrated flow across adjacent properties to a drainage way or public right-of-way.
- 2. Such stormwater flows shall be subject to the requirements of this ordinance.

H. 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.

I. Where watercourses traverse a development site, drainage easements (to encompass the 100-year flood elevation with a minimum width of 20 feet) 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 may be required, except as approved by the appropriate governing authority.

J. 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 drainage ways shall be subject to approval by PADEP under regulations at 25 PA Code Chapter 105 through the Joint Permit Application process, or, where deemed appropriate by PADEP, through the General Permit process.

~~K. Any stormwater management facilities or any facilities that constitute water obstructions (e.g., culverts, bridges, outfalls, or stream enclosures, etc.) that are regulated by this Ordinance, that will be located in or adjacent to Waters of the Commonwealth (including wetlands), shall be subject to approval by PADEP under regulations at 25 PA Code Chapter 105 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 Applicant or his agent to show that the land in question cannot be classified as wetlands; otherwise, approval to work in the area must be obtained from PADEP.~~

L. Should any stormwater management facility require a dam safety permit under PADEP Chapter 105, the facility shall be designed in accordance with Chapter 105 and meet the regulations of Chapter 105 concerning dam safety.

- M. Any stormwater management facilities regulated by this Ordinance that will be located on, or discharged onto State highway rights-of-ways shall be subject to approval by the Pennsylvania Department of Transportation (PENNDOT).
- N. Minimization of impervious surfaces and infiltration of runoff through seepage beds, infiltration trenches, etc., are encouraged, where soil conditions and geology permit, to reduce the size or eliminate the need for detention facilities.
- O. Infiltration BMPs should be dispersed throughout the site, made as shallow as practicable, and located to maximize use of natural on-site infiltration features while still meeting the other requirements of this Ordinance.
- P. Roof drains shall not be connected to streets, sanitary or storm sewers, or roadside ditches in order to promote overland flow and infiltration/percolation of stormwater where it is advantageous to do so. When it is more advantageous to connect directly to streets or storm sewers, then the Municipality shall permit it on a case-by-case basis.
- Q. Applicants are encouraged to use Low Impact Development Practices to comply with the requirements of this Ordinance and the State Water Quality Requirements.
- R. When stormwater management facilities are proposed within 1,000 feet of a downstream Municipality, the Developer shall notify the downstream Municipality and, upon request, provide the SWM Plan to the downstream Municipality's Engineer for review and comment.

**Section 302. Exemptions/Modifications**

- A. Under no circumstance shall the Applicant be exempt from implementing such measures as necessary to:
  - 1. Meet State Water Quality Standards and Requirements.
  - 2. Protect health, safety, and property.
  - 3. Meet special requirements for High Quality (HQ) and Exceptional Value (EV) watersheds.
- B. The Applicant must utilize the following BMPs to the maximum extent practicable to receive consideration for the exemptions:
  - 1. Design around and limit disturbance of Floodplains, Wetlands, Natural Slopes over 15%, existing native vegetation, and other sensitive and special value features.
  - ~~2. Maintain riparian and forested buffers.~~
  - 3. Limit grading and maintain non-erosive flow conditions in natural flow paths.
  - 4. Maintain existing tree canopies near impervious areas.
  - 5. Minimize soil disturbance and reclaim disturbed areas with topsoil and vegetation.
  - 6. Direct runoff to pervious areas.
- C. The Applicant's proposed development/additional impervious area may not adversely impact the following:
  - 1. Capacities of existing drainageways and storm sewer systems.
  - 2. Velocities and erosion.
  - 3. Quality of runoff if direct discharge is proposed.
  - 4. Existing known problem areas.

- 5. Safe conveyance of the additional runoff.
- 6. Downstream property owners.

D. An Applicant proposing Regulated Activities, after demonstrating compliance with Sections 302.A, 302.B, and 302.C, may be exempted from the SWM Site Plan, Rate Control, or Volume Control requirements of this Ordinance according to the following table:

**EXEMPTION TABLE**

New Impervious Area <sup>1, 2</sup> (square footage)	Applicant Must Provide
0 □ 1,000	---
> 1,000 □ 2,500	Documentation of new impervious surface <sup>3</sup>
> 2,500 □ 5,000	Volume Controls & Small Project SWM Application <sup>3</sup>
> 5,000	Rate Controls, Volume Controls & SWM Site Plan

NOTES:

- <sup>1</sup> New Impervious Area since the date of Adoption of this Ordinance.
- <sup>2</sup> Gravel in existing condition shall be considered pervious and gravel in proposed condition shall be considered impervious. Existing maintained municipal roads are considered impervious.
- <sup>3</sup> The Small Project Stormwater Management Application included in Appendix E shall be used to establish eligibility for the exemptions listed in the above table for projects under 5,000 sq. ft. or for single family home construction. The Small Project SWM Application satisfies the requirement for demonstrating compliance with Sections 302.A, 302.B, and 302.C and for documentation of new impervious surface; credits for disconnection of impervious surfaces and tree planting; and for computing the size of Volume Control BMP<sup>3</sup>, when required.

E. An Applicant proposing Regulated Activities, after demonstrating compliance with Sections 302.A, 302.B, and 302.C, may be exempted from various requirements of this Ordinance if documentation can be provided that a downstream man-made water body (i.e., reservoir, lake, or man-made wetlands) has been designed or modified to address the potential stormwater flooding impacts of the proposed development.

F. The purpose this section is to ensure consistency of stormwater management planning between local ordinances and NPDES permitting (when required) and to ensure that the Applicant has a single and clear set of stormwater management standards to which the Applicant is subject. The Municipality may accept alternative stormwater management controls under this section provided that:

- 1. The Municipality, in consultation with the PADEP, determines that meeting the Volume Control requirements (See Section 304) is not possible or places an undue hardship on the Applicant.
- 2. The alternative controls are documented to be acceptable to PADEP, for NPDES requirements pertaining to post construction stormwater management requirements.
- 3. The alternative controls are in compliance with all other sections of this ordinance, including but not limited to Sections 301.D and 302.A-C.

G. 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.

H. Forest management and timber operations are exempt from the Rate and Volume Control requirement and SWM Site Plan preparation requirement of this Ordinance provided the

activities are performed according to the requirements of 25 PA Code Chapter 102. It should be noted that temporary roadways are not exempt.

### Section 303. Waivers

- A. The provisions of this Ordinance are the minimum standards for the protection of the public welfare.
- B. All waiver requests must meet the provisions of Section 303.G. and H. Waivers shall not be issued from implementing such measures as necessary to:
  - 1. Meet State Water Quality Standards and Requirements.
  - 2. Protect health, safety, and property.
  - 3. Meet special requirements for High Quality (HQ) and Exceptional Value (EV) watersheds.

The Municipality then will consider waiver requests in accordance with Section 301.D, except that requests for waivers from the design requirements of Sections 601 and 602 will be considered by the Municipality at its sole discretion.

- C. If an Applicant demonstrates to the satisfaction of the governing body of the Municipality that any mandatory provision of this Ordinance is unreasonable or causes unique or undue unreasonableness or hardship as it applies to the proposed Project, or that an alternate design may result in a superior result within the context of Section 102 and 103 of this Ordinance, the governing body of the Municipality upon obtaining the comments and recommendations of the Municipal Engineer may grant a waiver or relief so that substantial justice may be done and the public interest is secured; provided that such waiver will not have the effect of nullifying the intent and purpose of this Ordinance.
- D. The Applicant shall submit all requests for waivers in writing and shall include such requests as a part of the plan review and approval process. The Applicant shall state in full the facts of unreasonableness or hardship on which the request is based, the provision or provisions of the Ordinance that are involved, and the minimum waiver or relief that is necessary. The Applicant shall state how the requested waiver and how the Applicant's proposal shall result in an equal or better means of complying with the intent or Purpose and general principles of this Ordinance.
- E. The Municipality shall keep a written record of all actions on waiver requests.
- ~~F. The Municipality may charge a fee for each waiver request, which shall be used to offset the administrative costs of reviewing the waiver request. The Applicant shall also agree to reimburse the Municipality for reasonable and necessary fees that may be incurred by the Municipal Engineer in any review of a waiver request.~~
- G. In granting waivers, the Municipality may impose reasonable conditions at will, in its judgment, secure substantially the objectives of the standards or requirements that are to be modified.
- H. The Municipality may grant applications for waivers when the following findings are made, as relevant:
  - 1. That the waiver shall result in an equal or better means of complying with the intent of this Ordinance.

2. That the waiver is the minimum necessary to provide relief.
3. That the applicant is not requesting a waiver based on cost considerations.
4. That existing down gradient stormwater problems will not be exacerbated.
5. That runoff is not being diverted to a different drainage area.
6. That increased flooding or ponding on off-site properties or roadways will not occur.
7. That potential icing conditions will not occur.
8. That increase of peak flow (design storms up to 100-year) or volume (design storms up to 2-year) from the site will not occur.
9. That erosive conditions due to increased peak flows or volume will not occur.
10. That adverse impact to water quality will not result.
11. That increased 100-Year Floodplain levels will not result.
12. That increased or unusual municipal maintenance expenses will not result from the waiver.
13. That the amount of stormwater generated has been minimized to the greatest extent allowed.
14. That infiltration of runoff throughout the proposed site has been provided where practicable and pre-development ground water recharge protected.
15. That peak flow attenuation of runoff has been provided.
16. That long term operation and maintenance activities are established.
17. That the receiving streams and/or water bodies will not be adversely impacted in flood carrying capacity, aquatic habitat, channel stability and erosion and sedimentation.

#### **Section 304. Volume Controls**

- A. The Low Impact Development Practices provided in the BMP Manual and in Appendix B of this Ordinance shall be utilized for all Regulated Activities to the maximum extent practicable.
- B. Stormwater runoff Volume Controls shall be implemented using the *Design Storm Method* or the *Simplified Method* as defined below. For Regulated Activity areas equal or less than one (1) acre that do not require hydrologic routing to design the stormwater facilities, this Ordinance establishes no preference for either method; therefore, the Applicant may select either method on the basis of economic considerations, the intrinsic limitations on applicability of the analytical procedures associated with each methodology, and other factors.
  1. The *Design Storm Method* (CG-1 in the BMP Manual) is applicable to any sized Regulated Activity. This method requires detailed modeling based on site conditions.
    - a. Do not increase the post-development total runoff volume when compared to the pre-development total runoff volume for the 2-year/24-hour storm event.
    - b. For hydrologic modeling purposes:
      - i. Existing non-forested pervious areas must be considered meadow (good condition) for pre-development hydrologic calculations.
      - ii. Twenty (20) percent of existing impervious area, when present within the proposed project site, shall be considered meadow (good condition) for pre-development hydrologic calculations for re-development.
  2. The *Simplified Method* (CG-2 in the BMP Manual) is independent of site conditions and should be used if the *Design Storm Method* is not followed. This method is not applicable to Regulated Activities greater than 1 acre or for projects that require detailed design of stormwater storage facilities. For new impervious surfaces:

- a. Stormwater facilities shall capture at least the first 2 inches of runoff from all new impervious surfaces.
  - b. At least the first 1 inch of runoff from new impervious surfaces shall be permanently removed from the runoff flow, i.e. it shall not be released into surface Waters of the Commonwealth. Removal options include reuse, evaporation, transpiration, and infiltration.
  - c. 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.
  - d. Actual field infiltration tests at the location of the proposed elevation of the stormwater BMPs are required. Infiltration test shall be conducted in accordance with the BMP Manual. Notification of the Municipality shall be provided to allow witnessing of the testing.
3. In cases where it is not possible or desirable to use infiltration-based best management practices to partially fulfill the requirements in either Section 304.B.1 or 304.B.2, the following procedure shall be used:
- a. At a minimum, the following documentation shall be provided to justify the decision to not use infiltration BMPs:
    - i. Description of and justification for field infiltration/permeability testing with respect to the type of test and test locations).
    - ii. An interpretive narrative describing existing site soils and their structure as these relate to the interaction between soils and water occurring on the site. In addition to providing soil and soil profile descriptions, this narrative shall identify depth to seasonal high water tables and depth to bedrock, and provide a description of all subsurface elements (fragipans and other restrictive layers, geology, etc.) that influence the direction and rate of subsurface water movement.
    - iii. A qualitative assessment of the site's contribution to annual aquifer recharge shall be made, along with identification of any restrictions or limitations associated with the use of engineered infiltration facilities.
    - iv. The provided documentation must be signed and sealed by a professional engineer or geologist.

b. The following water quality pollutant load reductions will be required for all disturbed areas within the proposed development:

<b>Pollutant Load</b>	<b>Units</b>	<b>Required reduction (%)</b>
Total Suspended Solids (TSS)	Pounds	85
Total Phosphorous (TP)	Pounds	85
Total Nitrate (NO <sub>3</sub> )	Pounds	50

- c. The performance criteria for water quality best management practices shall be determined from the Pennsylvania Stormwater Best Management Practices Manual, most current version.

- C. The applicable Worksheets from the BMP Manual must be used in calculations to establish Volume Control. Worksheets documenting Volume Control Credits are also acceptable.

**Section 305. Rate Controls**

- A. Lands contained within Crawford County that have not had release rates established under an approved Act 167 Stormwater Management Plan:
  - 1. Post-development discharge rates shall not exceed the pre-development discharge rates for the 1-year, 2-year, 10-year, 25-year, 50-year, and 100-year storms.
- B. Lands contained within Crawford County that have had release rates established under an approved Act 167 Stormwater Management Plan:
  - 1. The post-development peak discharge rates shall be in accordance with the approved release rate map for the individual watershed.
    - a. Conneaut Outlet Watershed - for the 2-year, 10-year, 25-year and 100-year storms, post-development peak discharge rates shall follow the approved release rate map.



## ARTICLE IV □ PROTECTED WATERSHED STANDARDS

### Section 401. Protected Watershed Requirements

- A. For any Regulated Activity within a protected watershed (High Quality or Exceptional Value), the applicant shall meet requirements as contained in 25 PA Code, Chapters 93 as required and applicable.
- B. Existing Resources and Site Analysis Plan. Shall be prepared to provide the developer and the Municipality with a comprehensive analysis of existing conditions, both on the proposed development site and within 500 feet of the site. Conditions beyond the parcel boundaries may be described on the basis of existing published data available from governmental agencies and from aerial photographs. The Municipality shall review the plan to assess its accuracy, conformance with Municipal ordinances, and likely impact upon the natural and cultural resources on the property. The following information shall be required:
  1. Complete current perimeter boundary survey of the property to be subdivided or developed prepared by a registered surveyor, showing all courses, distances, and area and tie-ins to all adjacent intersections.
  2. A vertical aerial photograph enlarged to a scale not less detailed than one inch equals 400 feet, with the site boundaries clearly marked.
  3. Natural features, including:
    - a. Contour lines at intervals of not more than two feet. (Ten-foot intervals are permissible beyond the parcel boundaries, interpolated from USGS published maps.) Contour lines shall be based on information derived from a topographic survey for the property, evidence of which shall be submitted, including the date and source of the contours. Datum to which contour elevations refer and references to known, established benchmarks and elevations shall be included on the plan.
    - b. Steep slopes in the following ranges: 15% to 25%, 25% and greater. The location of these slopes shall be graphically depicted by category on the plan. Slope shall be measured over three or more two-foot contour intervals.
    - c. Areas within the floodway, flood fringe, and approximated floodplain.
    - d. Watercourses, either continuous or intermittent and named or unnamed, and lakes, ponds or other water features as depicted on the USGS Quadrangle Map, most current edition.
    - e. ~~Wetlands and wetland margins.~~
    - f. Riparian buffers.
    - g. Soil types and their boundaries, as mapped by the USDA Natural Resource Conservation Service, including a table listing the soil characteristics pertaining to suitability for construction and, in un-sewered areas, for septic suitability. Alluvial and hydric soils shall specifically be depicted on the plan.
    - h. Existing vegetation, denoted by type, including woodlands, hedgerows, tree masses, tree lines, individual freestanding trees over six inches DBH, wetland vegetation, pasture or croplands, orchards, permanent grass land, old fields, and any other notable vegetative features on the site. Vegetative types shall be described by plant community, relative age, and condition.
    - i. Any identified Pennsylvania Natural Diversity Inventory (PNDI) site conflicts.

- j. Geologic formations on the tract, including rock outcroppings, cliffs, sinkholes, and fault lines, based on available published information or more detailed data obtained by the applicant.
  - 4. Existing man-made features, including:
    - a. Location, dimensions, and use of existing buildings and driveways.
    - b. Location, names, widths, center line courses, paving widths, identification numbers, and rights-of-way, of existing streets and alleys.
    - c. Location of trails that have been in public use (pedestrian, equestrian, bicycle, etc.).
    - d. Location and size of existing sanitary sewage facilities.
    - e. Location and size of drainage facilities.
    - f. Location of water supply facilities, including wellhead protection areas.
    - g. Any easements, deed restrictions, rights-of-way, or any other encumbrances upon the land, including location, size, and ownership.
    - h. Site features or conditions such as hazardous waste, dumps, underground tanks, active and abandoned wells, quarries, landfills, sandmounds, and artificial land conditions.
  - 5. Total acreage of the tract, the adjusted tract area, where applicable, and the constrained land area with detailed supporting calculations.
- C. Stormwater Management System Concept Plan. A written and graphic concept plan of the proposed post-development stormwater management system shall be prepared and include:
- 1. Preliminary selection and location of proposed structural stormwater controls;
  - 2. Location of existing and proposed conveyance systems such as grass channels, swales, and storm drains;
  - 3. Location of floodplain/floodway limits;
  - 4. Relationship of site to upstream and downstream properties and drainages.
  - 5. Preliminary location of proposed stream channel modifications, such as bridge or culvert crossings.
- D. Consultation Meeting. Prior to any stormwater management permit application submission, the land owner or developer shall meet with the Municipality for a consultation meeting on a concept plan for the post-development stormwater management system to be utilized in the proposed project. This consultation meeting shall take place at the time of the preliminary plan or other early step in the development process. The purpose of this meeting is to discuss the post-development stormwater management measures necessary for the proposed project, as well as to discuss and assess constraints, opportunities and potential ideas for stormwater management designs before the formal site design engineering is commenced.
- E. All proposed Regulated Activities within a protected watershed shall utilize, to the maximum extent possible, Low Impact Development Practices as contained in Appendix B.
- 1. SWM Plan and Report shall address the following:
    - a. Design using nonstructural BMPs
      - i. Lot configuration and clustering.
        - (a) Reduced individual lot impacts by concentrated/clustered uses and lots
        - (b) Lots/development configured to avoid critical natural areas
        - (c) Lots/development configured to take advantage of effective mitigative stormwater practices

- (d) Lots/development configured to fit natural topography
- ii. Minimum disturbance
  - (a) Define disturbance zones (excavation/grading) for the site and individual lots to protect maximum total site area from disturbance
  - (b) Barriers/flagging proposed to protect designated non-disturbance areas
  - (c) Considered mitigative practices for minimal disturbance areas (e.g., Soil Restoration)
  - (d) Considered re-forestation and re-vegetation opportunities
- iii. Reduce Impervious coverage
  - (a) Reduced road width
  - (b) Reduced driveway lengths and widths
  - (c) Reduced parking ratios and sizes
  - (d) Utilized porous surfaces for applicable features
- iv. Stormwater disconnected from impervious area
  - (a) Disconnected drives/walkways/small impervious areas to natural areas
  - (b) Use rain barrels and/or cisterns for lot irrigation
- b. Apply structural BMP selection process that meets runoff quantity and quality needs.
  - i. Manage close to source with collection with conveyance minimized
  - ii. Consistent with site factors (e.g., soils, slope, available space, amount of sensitive areas, pollutant removal needs)
  - iii. Minimize footprint and integrate into already disturbed areas/other building program components (e.g., recharge beneath parking areas, vegetated roofs)
  - iv. Consider other benefits such as aesthetic, habitat, recreational and educational benefits
  - v. BMPs select based on maintenance needs that fit owner/users
  - vi. BMPs sustainable using a long-term maintenance plan

## ARTICLE V □ RIPARIAN BUFFER STANDARDS

### **Section 501. Riparian Buffer Requirements**

Where a Regulated Activity is proposed, the Riparian Buffer shall be established as follows:

- A. The buffer shall be measured perpendicularly from the top of the stream bank landward.
  1. High Quality or Exceptional Value Watersheds - a minimum of 150 feet;
  2. Impaired Watersheds □ a minimum of 150 feet;
  3. All other watersheds - a minimum of 50 feet; or
  4. As determined by a stream corridor study approved by PADEP and the Municipality.
  
- B. The riparian buffer shall be located on both sides of all perennial and intermittent streams. The perennial and intermittent streams and the riparian buffer boundaries shall be shown on all applications for Building Permits, subdivision, or land development. Existing uses within the buffer are permitted to continue but not be expanded. Placement of new structures or roadways within the riparian buffer shall be prohibited. Where a wetland exists within the buffer area, the buffer shall be extended landward to provide a minimum buffer of 25 feet, as measured perpendicularly from the wetland boundary.
  
- C. The buffer shall be undisturbed forest consisting of appropriate native species.
  
- D. Where wetlands are located partially or entirely within a buffer, the buffer shall be extended to encompass the wetland and shall be widened by a distance sufficient to provide a 25 foot forested buffer measured perpendicularly from the wetland boundary.
  
- E. The following uses shall be permitted in the buffer:
  1. Footpaths, trails and bike paths provided that:
    - a. Width is limited to 5 feet;
    - b. Width may be increased provided a corresponding increase in the buffer is provided;
    - c. Construction shall have minimal impact to the buffer.
  2. Stream crossings, provided the crossing is designed and constructed in such a manner as to minimize the impact to the buffer. The Riparian Buffer shall be restored to its original condition, to the maximum extent practical, upon completion of construction.
  3. Utility lines, provided that the crossing is designed and constructed in such a manner as to minimize the impact to the inner buffer and provided that there is no practical alternative to locating the utility line within the buffer. The Riparian Buffer shall be restored to its original condition, to the maximum extent practical, upon completion of construction.
  4. Maintenance and restoration of the Riparian Buffer.
  5. Projects conducted with the objective of improvement, stabilization, restoration, or enhancement of the stream bank, stream channel, floodplain, watershed hydrology, riparian buffers, or aquatic habitat and maintenance activities associated with such projects. These projects include, but are not limited to agricultural and stormwater management best management practices. Such projects must receive appropriate permits and approvals from PADEP prior to starting the project.
  6. Minor private recreational uses for the property owner. Such uses include benches, fire rings, and similar uses. Such uses do not include structures such as cabins, sheds, pavilions, garages, dwellings or similar structures.

- F. Disturbance of the Riparian Buffer shall be limited to the area necessary to perform an allowable use.
- G. Where possible and practical, disturbances shall be phased with each phase restored prior to beginning the next phase.
- H. Allowable activities shall not cause stormwater flow to concentrate.
- I. Any vegetation removed for an allowable activity shall be replaced immediately upon completion of the activity. Where mature trees are removed, such trees shall be replaced with the largest practical tree of acceptable native species.
- J. Erosion and sediment pollution control shall be installed and maintained during construction. Evidence of an approved Erosion and Sediment Control Plan, NPDES Permit or other PADEP permit, where required, shall be submitted prior to issuance of local permits.
- K. Riparian buffers shall be maintained in a manner consistent with sound forest management practices. In the absence of a site specific management plan, the following maintenance guidelines apply:
  - 1. Buffers shall be inspected periodically for evidence of excessive sediment deposition, erosion or concentrated flow channels. Prompt action shall be taken to correct these problems and prevent future occurrence.
  - 2. Trees presenting an unusual hazard of creating downstream obstructions shall be removed. Such material shall be removed from the floodplain or the riparian buffer (whichever is widest); or cut into sections small enough so as to prevent the possibility of creating obstructions downstream. Wherever possible, large stable debris should be conserved.
  - 3. Vegetation should be inspected periodically to ensure diverse vegetative cover and vigorous plant growth consistent with buffering objectives.
    - a. Remove invasive plant species that may threaten the integrity of the buffer.
    - b. Periodic cutting of trees may be necessary to promote vigorous growth and encourage regeneration.
  - 4. Excessive use of fertilizers, pesticides, herbicides, and other chemicals shall be avoided. These products should be used only when absolutely necessary to maintain buffer vegetation.

## **Section 502. Riparian Buffer Easement**

For all required Riparian Buffers, an easement shall be provided:

- A. Easements shall be in accordance with Section 801 and recorded in accordance with Section 1303 of this Ordinance.

## ARTICLE VI - DESIGN CRITERIA

### Section 601. Design Criteria for Stormwater Management & Drainage Facilities

#### A. General Design Guidelines:

1. Stormwater shall not be transferred from one watershed to another, unless (1) the watersheds are sub-watersheds of a common watershed which join together within the perimeter of the property; (2) the effect of the transfer does not alter the peak rate discharge onto adjacent lands; or (3) easements from the affected landowner(s) are provided.
2. Consideration shall be given to the relationship of the subject property to the drainage pattern of the watershed. A concentrated discharge of stormwater to an adjacent property shall be within an existing watercourse or confined in an easement or returned to a pre-development flow type condition.
3. Stormwater BMPs and recharge facilities are encouraged (e.g., rooftop storage, drywells, cisterns, recreation area ponding, diversion structures, porous pavements, holding tanks, infiltration systems, in-line storage in storm sewers, and grading patterns). They shall be located, designed, and constructed in accordance with the latest technical guidance published by PADEP, provided they are accompanied by detailed engineering plans and performance capabilities and supporting site specific soils, geology, runoff and groundwater and infiltration rate data to verify proposed designs. Additional guidance from other sources may be accepted at the discretion of the Municipal Engineer (a pre-application meeting is suggested).
4. All existing and natural watercourses, channels, drainage systems and areas of surface water concentration shall be maintained in their existing condition unless an alteration is approved by the appropriate regulatory agency.
5. The design of all stormwater management facilities shall incorporate sound engineering principles and practices. The Municipality shall reserve the right to disapprove any design that would result in the continuation or exacerbation of a documented adverse hydrologic or hydraulic condition within the watershed, as identified in the Plan.
6. The design and construction of multiple use stormwater detention facilities are strongly encouraged. In addition to stormwater management, facilities should, where appropriate, allow for recreational uses including ball fields, play areas, picnic grounds, etc. Consultation with the Municipality, and prior approval are required before design. Provision for permanent wet ponds with stormwater management capabilities may also be appropriate.
  - a. Multiple use basins should be constructed so that potentially dangerous conditions are not created.
  - b. Water quality basins or recharge basins that are designed for a slow release of water or other extended detention ponds are not permitted for recreational uses, unless the ponded areas are clearly separated and secure.
7. Should any stormwater management facility require a dam safety permit under PADEP Chapter 105, the facility shall be designed in accordance with Chapter 105 and meet the regulations of Chapter 105 concerning dam safety.

- B. Stormwater Management Facility Design Considerations: All stormwater management facilities shall meet the requirements contained in the *Crawford County Stormwater Management Facility Design Criteria*.

**Section 602. Calculation Methodology**

- A. All calculations shall be consistent with the guidelines set forth in the BMP Manual, as amended herein.
- B. Stormwater runoff from all development sites shall be calculated using either the Rational Method or the NRCS Rainfall-Runoff Methodology. Methods shall be selected by the design professional based on the individual limitations and suitability of each method for a particular site.
- C. Rainfall Values:
  - 1. Rational Method □ The Pennsylvania Department of Transportation Drainage Manual, Intensity-Duration-Frequency Curves, Publication 584, Chapter 7A, latest edition, shall be used in conjunction with the appropriate time of concentration and return period.
  - 2. NRCS Rainfall-Runoff Method □ The Soil Conservation Service Type II, 24-hour rainfall distribution shall be used in conjunction with rainfall depths from NOAA Atlas 14 or be consistent with the following table:

Return Interval (Year)	24-hour Rainfall Total (inches)
1	2.08
2	2.49
10	3.50
25	3.60
50	4.67
100	5.23

- D. Runoff Volume:
  - 1. Rational Method □ Not to be used to calculate runoff volume.
  - 2. NRCS Rainfall-Runoff Method □ This method shall be used to estimate the change in volume due to Regulated Activities. Combining Curve Numbers for land areas proposed for development with Curve Numbers for areas unaffected by the proposed development into a single weighted curve number is NOT acceptable.
- E. Peak Flow Rates:
  - 1. Rational Method □ This method may be used for design of conveyance facilities only. Extreme caution should be used by the design professional if the watershed has more than one main drainage channel, if the watershed is divided so that hydrologic properties are significantly different in one versus the other, if the time of concentration exceeds 60 minutes, or if stormwater runoff volume is an important factor. The combination of Rational Method hydrographs based on timing shall be prohibited.
  - 2. NRCS Rainfall-Runoff Method □ This method is recommended for design of stormwater management facilities and where stormwater runoff volume must be taken into consideration. The following provides guidance on the model applicability:

- a. NRCS TR-55 □ limited to 100 acres in size
- b. NRCS TR-20 or HEC-HMS □ no size limitations
- c. Other models as pre-approved by the Municipal Engineer

The NRCS antecedent runoff condition II (ARC II, previously AMC II) must be used for all simulations. The use of continuous simulation models that vary the ARC are not permitted for stormwater management purposes.

- 3. For comparison of peak flow rates, flows shall be rounded to a tenth of a cubic foot per second (cfs).

F. Runoff Coefficients:

- 1. Rational Method □ Use Table C-1 (Appendix C).
- 2. NRCS Rainfall-Runoff Method □ Use Table C-2 (Appendix C). Curve Numbers (CN) should be rounded to tenths for use in hydrologic models as they are a design tool with statistical variability. For large sites, CN should realistically be rounded to the nearest whole number.
- 3. For the purposes of pre-development peak flow rate and volume determination, existing non-forested pervious areas conditions shall be considered as meadow (good condition).
- 4. For the purposes of pre-development peak flow rate and volume determination, 20 percent of existing impervious area, when present, shall be considered meadow (good condition).

G. Design Storm:

- 1. All stormwater management facilities shall be verified by routing the proposed 1-year, 2-year, 10-year, 25-year, 50-year, and 100-year hydrographs through the facility using the storage indication method or modified puls method. The design storm hydrograph shall be computed using a calculation method that produces a full hydrograph.
- 2. The stormwater management and drainage system shall be designed to safely convey the post development 100-year storm event to stormwater detention facilities, for the purpose of meeting peak rate control.
- 3. All structures (culvert or bridges) proposed to convey runoff under a Municipal road shall be designed to pass the 50-year design storm with a minimum 1 foot of freeboard measured below the lowest point along the top of the roadway.

H. Time of Concentration:

- 1. The Time of Concentration is to represent the average condition that best reflects the hydrologic response of the area. The following Time of Concentration (T<sub>c</sub>) computational methodologies shall be used unless another method is pre-approved by the Municipal Engineer:

- a. Pre-development □ NRCS Lag Equation:

$$\text{Time of Concentration} = T_c = [(T_{lag}/.6) * 60] \text{ (minutes)}$$



$$T_{lag} = L^{0.8} \frac{(S+1)^{0.7}}{1900\sqrt{Y}}$$

Where:

$T_{lag}$  = Lag time (hours)

L = Hydraulic length of watershed (feet)

Y = Average overland slope of watershed (percent)

S = Maximum retention in watershed as defined by:  $S = [(1000/CN) \square 10]$

CN = NRCS Curve Number for watershed

- b. Post-development; commercial, industrial, or other areas with large impervious areas (>20% impervious area) □ NRCS Segmental Method. The length of sheet flow shall be limited to 100 feet.  $T_c$  for channel and pipe flow shall be computed using Manning's equation.
- c. Post-development; residential, cluster, or other low impact designs less than or equal to 20% impervious area □ NRCS Lag Equation or NRCS Segmental Method.

2. Additionally, the following provisions shall apply to calculations for Time of Concentration:

- a. The post-development  $T_c$  shall never be greater than the pre-development  $T_c$  for any watershed or sub-watershed. This includes when the designer has specifically used swales to reduce flow velocities. In the event that the designer believes that the post-development  $T_c$  is greater, it will still be set by default equal to the pre-development  $T_c$  for modeling purposes.
- b. The minimum  $T_c$  for any watershed shall be 5 minutes.
- c. The designer may choose to assume a 5 minute  $T_c$  for any post development watershed or subwatershed without providing any computations.
- d. The designer must provide computations for all pre-development  $T_c$  paths. A 5 minute  $T_c$  can not be assumed for pre-development.
- e. Undetained fringe areas (areas that are not tributary to a stormwater facility but where a reasonable effort has been made to convey runoff from all new impervious coverage to best management practices) may be assumed to represent the pre-development conditions for purpose of  $T_c$  calculation.

I. Where uniform flow is anticipated, the Manning's equation shall be used for hydraulic computations and to determine the capacity of open channels, pipes, and storm sewers. The Manning's equation should not be used for analysis of pipes under pressure flow or for analysis of culverts. Manning's  $n$  values shall be obtained from PENNDOT's *Drainage Manual, Publication 584*. Inlet control shall be checked at all inlet boxes to ensure the headwater depth during the 10-year design event is contained below the top of grate for each inlet box.

J. The Municipality may approve the use of any generally accepted full hydrograph approximation technique that shall use a total runoff volume that is consistent with the volume from a method that produces a full hydrograph.

K. The Municipality has the authority to require that computed existing runoff rates be reconciled with field observations, conditions and site history. If the designer can substantiate, through actual physical calibration, that more appropriate runoff and time of concentration values should be utilized at a particular site, then appropriate variations may be made upon review and recommendation of the Municipality.

## ARTICLE VII - SWM SITE PLAN & REPORT REQUIREMENTS

### **Section 701. General Requirements**

For any of the activities regulated by this Ordinance and not eligible for the exemptions provided in Section 302, the final approval of subdivision and/or land development plans, the issuance of any building or occupancy permit, or the commencement of any land disturbance activity, may not proceed until the Applicant has received written approval of a SWM Site Plan from the Municipality.

### **Section 702. SWM Site Plan & Report Contents**

- A. The SWM Site Plan & SWM Site Report shall consist of all applicable calculations, maps, and plans. All SWM Site Plan materials shall be submitted to the Municipality in a format that is clear, concise, legible, neat and well organized; otherwise, the SWM Site Plan shall be rejected.
- B. The SWM Site Plan & Report shall meet the requirements set forth in the *Crawford County Stormwater Management Facility Design Handbook*
- C. Appropriate sections from the Municipal Subdivision and Land Development Ordinance, and other applicable local ordinances, shall be followed in preparing the SWM Site Plan.

### **Section 703. SWM Site Plan & Report Submission**

- A. The Applicant shall submit the SWM Site Plan & Report for the Regulated Activity.
- B. Three (3) copies of the SWM Site Plan & Report shall be submitted and be distributed as follows:
  1. Two (2) copies to the Municipality accompanied by the requisite executed Review Fee Reimbursement Agreement, as specified in this Ordinance
  2. One (1) copy to the Municipal Engineer
- C. Additional copies shall be submitted as requested by the Municipality or PADEP.

### **Section 704. SWM Site Plan & Report Review**

- A. The Municipality shall require receipt of a complete SWM Site Plan & Report as specified in this Ordinance. The Municipality shall review the SWM Site Plan & Report for consistency with the purposes, requirements, and intent of this Ordinance.
- B. The Municipality shall not approve any SWM Site Plan & Report that is deficient in meeting the requirements of this Ordinance. At its sole discretion and in accordance with this Article, when a SWM Site Plan & Report is found to be deficient, the Municipality may disapprove the submission and require a resubmission, or in the case of minor deficiencies, the Municipality may accept submission of modifications.
- C. The Municipality shall notify the Applicant in writing within forty-five (45) calendar days whether the SWM Site Plan & Report is approved or disapproved if the SWM Site Plan & Report is not part of a Subdivision or Land Development Plan. If the SWM Site Plan & Report involves a Subdivision or Land Development Plan, the timing shall follow the Subdivision and Land Development process according to the Municipalities Planning Code.

- D. The Municipal Building Permit Office shall not issue a building permit for any Regulated Activity if the SWM Site Plan & Report has been found to be inconsistent with this Ordinance, as determined by the Municipality. All required permits from PADEP must be obtained prior to issuance of a building permit.

#### **Section 705. Modification of Plans**

- A. A modification to a submitted SWM Site Plan & Report for a development site that involves a change in stormwater management facilities or techniques, or that involves the relocation or re-design of stormwater management facilities, or that is necessary because soil or other conditions are not as stated on the SWM Site Plan as determined by the Municipality, shall require a resubmission of the modified SWM Site Plan in accordance with this Ordinance.

#### **Section 706. Resubmission of Disapproved SWM Site Plan & Report**

- A. A disapproved SWM Site Plan & Report may be resubmitted with the revisions addressing the Municipality's concerns documented in writing, to the Municipality in accordance with this Ordinance. The applicable Municipal Review Fee must accompany a resubmission of a disapproved SWM Site Plan & Report.

#### **Section 707. Authorization to Construct and Term of Validity**

- A. The Municipality's approval of a SWM Site Plan & Report authorizes the Regulated Activities contained in the SWM Site Plan for a maximum term of validity of five (5) years following the date of approval. The Municipality may specify a term of validity shorter than five (5) years in the approval for any specific SWM Site Plan. Terms of validity shall commence on the date the Municipality signs the approval for a SWM Site Plan. If stormwater management facilities included in the approved SWM Site Plan have not been constructed, or if an Record Drawing of these facilities has not been approved within this time, then the Municipality may consider the SWM Site Plan disapproved and may revoke any and all permits or approvals.

#### **Section 708. Record Drawings, Completion Certificate and Final Inspection**

- A. The Applicant shall be responsible for providing Record Drawings of all stormwater BMPs included in the approved SWM Site Plan. The Record Drawing and an explanation of any discrepancies with the approved SWM Site Plan shall be submitted to the Municipality as a prerequisite for the release of the guarantee or issuance of an occupancy permit.
- B. The Record Drawing shall include a certification of completion signed by a Qualified Professional verifying that all permanent stormwater BMPs have been constructed according to the approved SWM Site Plan & Report.
  - 1. Drawings shall show all approved revisions and elevations and inverts to all manholes, inlets, pipes, and stormwater control facilities.
  - 2. Submission shall include a comparison of the constructed stage-storage (volume vs. elevation) of all above ground and below ground stormwater storage facilities to the approved design.
- C. After receipt of the Record Drawing and certification of completion by the Municipality, the Municipality may conduct a final inspection.

## ARTICLE VIII - EASEMENTS

### **Section 801. Easements**

- A. Easements provided shall be in favor of the Municipality, granting access and maintenance rights to the Municipality.
- B. Easements shall be established to accommodate the existence of drainageways.
- C. Where a tract is traversed by a watercourse, drainage-way, channel or stream, there shall be provided an easement paralleling the line of such watercourse, drainage-way, channel or stream with a width adequate to preserve the unimpeded flow of natural drainage in the 100-year floodplain.
- D. Easements shall be established for all on-site stormwater management or drainage facilities, including but not limited to: detention facilities (above or below ground), infiltration facilities, all stormwater BMPs, drainage swales, and drainage facilities (inlets, manholes, pipes, etc.).
- E. Easements are required for all areas used for off-site stormwater control.
- F. All easements shall be a minimum of 20 feet wide and shall encompass the 100-year surface elevation of the proposed stormwater facility.
- G. Easements shall provide ingress to, and egress from, a public right-of-way. In lieu of providing an easement to the public right-of-way, a note may be added to the plan granting the Municipality or their designees access to all easements via the nearest public right-of-way able for vehicle ingress and egress on grades of less than 10% for carrying out inspection or maintenance activities.
- H. Where possible, easements shall be centered on side and/or rear lot lines.
- I. Nothing shall be planted or placed within the easement which would adversely affect the function of the easement, or conflict with any conditions associated with such easement.
- J. All easement agreements shall be recorded with a reference to the recorded easement indicated on the site plan. The format and content of the easement agreement shall be reviewed and approved by the Municipal Engineer and Solicitor.

## ARTICLE IX - MAINTENANCE RESPONSIBILITIES

### **Section 901. Financial Guarantee**

- A. When an approved SWM Site Plan requires the timely installation and proper construction of stormwater management controls, the Applicant shall provide a Financial Guarantee to the Municipality equal to 110% of the full construction cost of the required controls in accordance with the Municipalities Planning Code.
- B. At the completion of the project and as a prerequisite for the release of the Financial Guarantee, the Applicant 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 SWM Site Plan & Report and approved revisions thereto.
  2. Provide a set of Record Drawings.
  3. Request a final inspection from the Municipality to certify compliance with this Ordinance, after receipt of the certification of completion and Record Drawings by the Municipality.

### **Section 902. Maintenance Responsibilities**

- A. The SWM Site Plan & Report for the project site shall describe the future operation and maintenance responsibilities. The operation and maintenance description shall outline required routine maintenance actions and schedules necessary to ensure proper operation of the stormwater control facilities.
- B. The SWM Site Plan & Report for the project site shall establish responsibilities for the continuing operating and maintenance of all proposed stormwater control facilities, consistent with the following principals:
  1. If a development consists of structures or lots that are to be separately owned and in which streets, sewers, and other public improvements are to be dedicated to the Municipality, stormwater control facilities/BMPs may also be dedicated to and maintained by the Municipality.
  2. If a development site is to be maintained in a single ownership or if sewers and other public improvements are to be privately owned and maintained, then the ownership and maintenance of stormwater control facilities/BMPs shall be the responsibility of the owner or private management entity.
  3. Facilities, areas, or structures used as stormwater BMPs shall be enumerated as permanent real estate appurtenances and recorded as deed restrictions or easements that run with the land.
  4. The SWM Site Plan & Report shall be recorded as a restrictive deed covenant that runs with the land.
  5. The Municipality may take enforcement actions against an Applicant for failure to satisfy any provision of this Ordinance.
- C. The Municipality, upon recommendation of the Municipal Engineer, shall make the final determination on the continuing maintenance responsibilities prior to final approval of the SWM Site Plan & Report. The Municipality may require a dedication of such facilities as part of the requirements for approval of the SWM Site Plan. Such a requirement is not an indication that the Municipality will accept the facilities. The Municipality reserves the right to accept or reject

the ownership and operating responsibility for any portion of the stormwater management controls.

- D. If the Municipality accepts ownership of stormwater BMPs, the Municipality may, at its discretion, require a fee from the Applicant to the Municipality to offset the future cost of inspections, operations, and maintenance.
- E. It shall be unlawful to alter or remove any permanent stormwater BMP required by an approved SWM Site Plan, or to allow the property to remain in a condition, which does not conform to an approved SWM Site Plan, unless the Municipality grants an exception in writing.

**Section 903. Maintenance Agreement for Privately Owned Stormwater Facilities**

- A. Prior to final approval of the SWM Site Plan & Report, the Applicant shall sign the Operation and Maintenance (O&M) Agreement (Appendix A) covering all stormwater control facilities that are to be privately owned. The Operation and Maintenance (O&M) Agreement shall be recorded with the SWM Site Plan and made a part hereto.
- B. Other items may be included in the Operation and Maintenance (O&M) Agreement where determined necessary to guarantee the satisfactory operation and maintenance of all BMP facilities. The Operation and Maintenance (O&M) Agreement shall be subject to the review and approval of the Municipality and the Municipal Solicitor.
- C. The owner is responsible for operation and maintenance of the stormwater BMPs. If the owner fails to adhere to the Operation and Maintenance (O&M) Agreement, the Municipality may perform the services required and charge the owner appropriate fees. Non-payment of fees may result in a lien against the property.

## ARTICLE X - INSPECTIONS

### **Section 1001. Schedule of Inspections**

- A. PADEP or its designees normally ensure compliance with any permits issued, including those for stormwater management. In addition to PADEP compliance programs, the Municipality or their municipal assignee may inspect all phases of the installation of temporary or permanent stormwater management facilities.
- B. During any stage of Earth Disturbance Activities, if the Municipality determines that the stormwater management facilities are not being installed in accordance with the approved SWM Site Plan, the Municipality shall revoke any existing permits or approvals until a revised SWM Site Plan is submitted and approved as specified in this Ordinance.
- C. Stormwater BMPs shall be inspected by the landowner, or the landowner's designee according to the inspection schedule described on the SWM Site Plan for each BMP.
  - 1. The Municipality may require copies of the inspection reports, in a form as stipulated by the Municipality.
  - 2. If such inspections are not conducted or inspection reports not submitted as scheduled, the Municipality, or their designee, may conduct such inspections and charge the owner appropriate fees. Non-payment of fees may result in a lien against the property.
    - a. Prior to conducting such inspections, the Municipality shall inform the owner of its intent to conduct such inspections. The owner shall be given thirty (30) days to conduct required inspections and submit the required inspection reports to the Municipality.

### **Section 1002. Right-of-Entry**

- A. Upon presentation of proper credentials, duly authorized representatives of the Municipality may enter at reasonable times, upon any property within the Municipality, to inspect the implementation, condition, or operations and maintenance of the stormwater BMPs in regard to any aspect governed by this Ordinance.
- B. Stormwater BMP owners and operators shall allow persons working on behalf of the Municipality ready access to all parts of the premises for the purposes of determining compliance with this Ordinance.
- C. Persons working on behalf of the Municipality shall have the right to temporarily locate on any stormwater BMP in the Municipality such devices, as are necessary, to conduct monitoring and/or sampling of the discharges from such stormwater BMP.
- D. Unreasonable delay in allowing the Municipality access to a stormwater BMP is a violation of this Ordinance.

## ARTICLE XI - ENFORCEMENT AND PENALTIES

### **Section 1101. Notification**

- A. In the event that a person fails to comply with the requirements of this Ordinance, an approved SWM Site Plan, or fails to conform to the requirements of any permit or approval issued hereunder, the Municipality shall provide written notification of the violation. Such notification shall set forth the nature of the violation(s) and establish a time limit for correction of these violation(s).
- B. Failure to comply within the time specified shall subject such person to the Penalties Provisions of this Ordinance. All such penalties shall be deemed cumulative and shall not prevent the Municipality from pursuing any and all other remedies. It shall be the responsibility of the owner of the real property on which any Regulated Activity is proposed to occur, is occurring, or has occurred, to comply with the terms and conditions of this Ordinance.

### **Section 1102. Enforcement**

- A. The municipal governing body is hereby authorized and directed to enforce all of the provisions of this Ordinance. The approved SWM Site Plan shall be on file at the project site throughout the duration of the construction activity. The Municipality or their designee may make periodic inspections during construction.
- B. 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 by an approved SWM Site Plan and pursuant to the requirements of this Ordinance.
  - 2. It shall be unlawful to alter or remove any control structure required by the SWM Site Plan pursuant to this Ordinance.
  - 3. It shall be unlawful to allow a property to remain in a condition that does not conform to an approved SWM Site Plan.

### **Section 1103. Public Nuisance**

- A. A violation of any provision of this Ordinance is hereby deemed a Public Nuisance.
- B. Each day that a violation continues shall constitute a separate violation.

### **Section 1104. Suspension and Revocation**

- A. Any approval or permit issued by the Municipality may be suspended or revoked for:
  - 1. Non-compliance with or failure to implement any provision of the approved SWM Site Plan or Operation & Maintenance (O&M) Agreement.
  - 2. A violation of any provision of this Ordinance or any other applicable law, Ordinance, rule or regulation relating to the Regulated Activity.
  - 3. The creation of any condition or the commission of any act, during the Regulated Activity which constitutes or creates a hazard or nuisance, pollution, or which endangers the life or property of others.



- B. A suspended approval or permit may be reinstated by the Municipality when:
  - 1. The Municipality or their designee has inspected and approved the corrections to the violation(s) that caused the suspension.
  - 2. The Municipality is satisfied that the violation(s) has been corrected.
- C. An approval that has been revoked by the Municipality cannot be reinstated. The Applicant may apply for a new approval under the provisions of this Ordinance.

**Section 1105. Penalties**

*[Municipalities should ask their solicitors to provide appropriate wording for this section.]*

- A. Anyone violating the provisions of this Ordinance shall be guilty of a summary offense and upon conviction, shall be subject to a fine of not more than \$ \_\_\_\_ for each violation, recoverable with costs. Each day that the violation continues shall be a separate offense and penalties shall be cumulative.
- B. In addition, the Municipality, 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 1106. Appeals**

- A. Any person aggrieved by any action of the Municipality or its designee, relevant to the provisions of this Ordinance, may appeal to the Municipality within thirty (30) days of that action.
- B. Any person aggrieved by any decision of the Municipality, relevant to the provisions of this Ordinance, may appeal to the Crawford County Court of Common Pleas within thirty (30) days of the Municipality's decision.

**ARTICLE XII - PROHIBITIONS**

**Section 1201. Prohibited Discharges and Connections**

- A. Any drain (including indoor drains and sinks), or conveyance whether on the surface or underground, that allows any non-stormwater discharge including sewage, process wastewater, and wash water to enter the Municipality's separate storm sewer system or Waters of the Commonwealth is prohibited.
- B. Any drain or conveyance connected from a commercial or industrial land use to the Municipality's separate storm sewer system, which has not been documented in plans, maps, or equivalent records, and approved by the Municipality is prohibited.
- C. No person shall allow, or cause to allow, discharges into the Municipality's separate storm sewer system or into surface Waters of the Commonwealth, which are not composed entirely of stormwater, except: (1) as provided in subsection 1301.D below, and (2) discharges allowed under a state or federal permit.
- D. The following discharges are authorized unless they are determined to be significant contributors to pollution to the Waters of the Commonwealth:
  - Discharges from fire fighting activities
  - Potable water sources including dechlorinated water and fire hydrant flushings
  - Air conditioning condensate
  - Springs
  - 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
  - Water from crawl space pumps
  - Flows from riparian habitats and wetlands
  - Uncontaminated water from foundations or from footing drains
  - Irrigation or Lawn watering
  - Dechlorinated swimming pool discharges
  - Water from individual residential car washing
  - Routine external building washdown (which does not use detergents or other compounds)
- E. In the event that the Municipality or PADEP determines that any of the discharges identified in subsection 1301.D is a significant contributor to pollution to the Waters of the Commonwealth, the responsible person(s) shall be notified to cease the discharge. Upon notice provided by the Municipality or PADEP, the discharger will have a reasonable time, as determined by the Municipality or PADEP, to cease the discharge, consistent with the degree of pollution caused by the discharge.
- F. Nothing in this Section shall affect a discharger's responsibilities under Commonwealth Law.

**Section 1202. Roof Drains**

- A. Roof drains and sump pumps shall discharge to infiltration areas, vegetative BMPs, or pervious areas to the maximum extent practicable.

**Section 1203. Alteration of BMPs**

- A. No person shall modify, remove, fill, landscape, or alter any existing stormwater BMP, facilities, areas, or structures unless it is part of an approved maintenance program, without the written approval of the Municipality.
- B. No person shall place any structure, fill, landscaping, or vegetation into a stormwater BMP, facilities, areas, structures, or within a drainage easement which would limit or alter the functioning of the BMP without the written approval of the Municipality.

## ARTICLE XIII - FEES AND EXPENSES

### **Section 1301. General**

- A. The fee required by this Ordinance is the Municipal Review Fee. The Municipal Review Fee shall be established by the Municipality to defray review costs incurred by the Municipality and the Municipal Engineer. The Applicant shall pay all fees.

### **Section 1302. Expenses Covered by Fees**

- A. The fees required by this Ordinance shall, at a minimum, cover:
  1. Administrative and Clerical Costs.
  2. Review of the SWM Site Plan & Report by the Municipality.
  3. Pre-construction meetings.
  4. Inspection of stormwater management facilities/BMPs and drainage improvements during construction.
  5. Final inspection upon completion of the stormwater management facilities/BMPs and drainage improvements presented in the SWM Site Plan.
  6. Any additional work required to enforce any permit provisions regulated by this Ordinance, correct violations, and assure proper completion of stipulated remedial actions.

### **Section 1303. Recording of Approved SWM Site Plan and Related Agreements**

- A. The owner of any land upon which permanent BMPs will be placed, constructed, or implemented, as described in the SWM Site Plan, shall record the following documents in the Office of the Recorder of Deeds of Crawford County, within (\_\_) days of approval of the SWM Site Plan by the Municipality:
  1. The SWM Site Plan.
    - a. Refer to the requirements of 1.A. of the *Crawford County Stormwater Management Facility Design Criteria*. At a minimum, the items 1.A.1-7, 8-11, 13, 14, 16, 18, and 10 must be included on the recorded SWM Site Plan.
  2. Operations and Maintenance (O&M) Agreement (Appendix A).
  3. Easements under Section 901.
  4. Riparian buffers under Section 602.
- B. The Municipality may suspend or revoke any approvals granted for the project site upon discovery of the failure of the owner to comply with this Section.

BLOOMFIELD TOWNSHIP Stormwater Management Ordinance

(ORDINANCE NUMBER)

**ENACTED and ORDAINED** at a regular meeting of the

BLOOMFIELD TOWNSHIP SUPERVISORS

on this 5th day of APRIL, 20 11.

This Ordinance shall take effect immediately.

James S. Souley Supervisor  
(Name) (Title)

[Signature] Supervisor  
(Name) (Title)

Christopher Kemmer SUPERVISOR  
(Name) (Title)

ATTEST:

Mary Valente  
Secretary

I hereby certify that the foregoing Ordinance was advertised in the MEADVILLE TRIBUNE on [date], a newspaper of general circulation in the Municipality and was duly enacted and approved as set forth at a regular meeting of the Bloomfield Township Board of Supervisors held on 4/5/2011

Mary Valente  
Secretary