

January, 2005

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STATE OF MICHIGAN

COUNTY OF WASHTENAW

ANN ARBOR TOWNSHIP

ORDINANCE NO.

DRAFT

STORM WATER MANAGEMENT ORDINANCE

An ordinance to prevent water quality degradation, flooding, and drainage problems resulting from storm water runoff; reduce streambank erosion during and after site development; identify requirements for storm water management; provide for long-term maintenance of storm water systems; identify requirements and prohibitions relative to discharge to and use of storm water systems; to achieve compliance with state and federal regulations; and to protect the health, safety and general welfare of Ann Arbor Township residents.

THE TOWNSHIP BOARD OF ANN ARBOR TOWNSHIP, COUNTY OF WASHTENAW, STATE OF MICHIGAN ORDAINS:

Section 1 of Ordinance

A new ordinance of the Ann Arbor Township shall be established, reading as follows:

ARTICLE I. PURPOSES AND INTERPRETATION

Section 1.01 Purposes

The purposes of this Ordinance shall be:

- A. To protect public health, safety and welfare by requiring storm water management whenever new, expanded or modified developments are proposed.
- B. To assure that storm water runoff from development is controlled so that the water quality in watercourses, ground water recharged by storm water and habitat situated in areas impacted by storm water are protected, and that siltation, pollution and streambank erosion are minimized.
- C. To provide for cost-effective and functionally-effective storm water management, and to reduce the need for future remedial projects.
- D. To prevent soil erosion and sedimentation.

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- E. To ensure that, if wetlands are to be used for storm water detention, the natural functions and quality of the affected wetlands throughout the Township are protected to the maximum extent feasible.
- F. To recognize private responsibility to incorporate storm water management systems into the early stages of site planning and design.
- G. To ensure that all storm water conveyance and detention facilities will be properly maintained.
- H. To promote the avoidance of water resource degradation by reducing and/or avoiding the hydrologic impacts of storm water runoff.
- I. To establish regulations to prevent harmful effects of changes in the quantity and quality of surface water discharge into water bodies that are in Ann Arbor Township, in whole or part.
- J. To achieve compliance with state and federal law and regulations relating to water quality, including the Middle Huron Phosphorus Total Maximum Daily Load (TMDL); the Gallup Pond E. Coli TMDL and the NPDES Phase II Permit.

Section 1.02 Construction of Language

The following rules of construction apply to the text of this Ordinance:

- A. Particulars provided by way of illustration or enumeration shall not control general language.
- B. Ambiguities, if any, shall be construed liberally in favor of protecting natural land and water resources.
- C. Words used in the present tense shall include the future, and words used in the singular number shall include the plural, and the plural the singular, unless the context clearly indicates the contrary.
- D. Terms not specifically defined in this Ordinance shall have the meaning customarily assigned to them.
- E. Considering that storm water management in many cases requires sophisticated engineering design and improvements, some of the terms of this Ordinance are complex in nature. Effort has been made to simplify terms to the extent the subject matter permits. In addition, assistance and examples will be provided by or on behalf of the Township as needed for the interpretation and understanding of this Ordinance.

Section 1.03 Abrogation and Conflict of Authority

Nothing in this Ordinance shall be interpreted to conflict with present or future state statutes in the same subject matter. Conflicting provisions of this Ordinance shall be abrogated to the extent of the conflict. The provisions of this Ordinance shall be construed, if possible, to be consistent with and in addition to relevant state regulations and statutes.

In their interpretation and application, the provisions of this Ordinance shall be held to be minimum requirements and shall be liberally construed in favor of achieving the objectives of this Ordinance, and shall not be deemed a limitation or repeal of any other powers granted by state statutes.

This Ordinance is not intended to repeal, abrogate or impair any existing easements, covenants, or deed restrictions. However, where this Ordinance imposes greater restrictions, the provisions of this Ordinance shall prevail. If there is another ordinance that is inconsistent, the terms of the Ordinance that promotes the objectives of this Ordinance to the greatest extent shall apply.

Section 1.04 Incorporate by Reference

For the purposes of this Ordinance, the following document is incorporated by reference: Rules of the Washtenaw County Drain Commissioner Procedures and Design Criteria for Stormwater Management Systems (latest published edition at the time of plan submittal) and is incorporated by reference by Ann Arbor Township and shall serve as the official guide for stormwater principles, methods, and practices.

ARTICLE II. DEFINITIONS

Section 2.01 Definition of Terms

The following terms, phrases, words and derivatives shall have the meaning defined below:

Accelerated soil erosion. The increased movement of soils that occurs as a result of the impact of development upon the flow of storm water.

Best Management Practice (BMP). A structural, vegetative or managerial practice used to treat Nonpoint Source Pollution and to prevent or reduce to the maximum extent practicable, the discharge of Nonpoint Source Pollution directly or indirectly to stormwater, stormwater conveyance systems, or receiving waters. BMPs must comply with other regulations as well as Stormwater regulations; BMPs must be compatible with the area's land use, character, facilities,

and activities; and BMPs must be technically feasible (considering area soil, geography, water resources, and other resources available). Innovative BMPs are those practices designed by the applicant's engineer to meet or exceed these performance standards.

Conveyance facility. A storm drain, as defined in this Ordinance.

Detention basin. A structure or facility, natural or artificial, which stores storm water on a temporary basis and releases it at a controlled rate. A detention basin may drain completely after a storm event, or it may be a pond with a fixed minimum water elevation between runoff events.

Development. ~~Any change in land and/or vegetative cover that tends to alter storm water impact. This term shall not include customary lawn maintenance, gardening, and farming.~~ Any construction, rehabilitation, redevelopment or reconstruction of any public or private residential project (whether single-family, multi-unit or planned unit development); industrial, commercial, retail and other non-residential projects, including public agency projects; or mass grading for future construction. It does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility, no does it include emergency construction activities required to immediately protect public health and safety.

Discharge. Any addition or introduction of any pollutant, storm water, or any other substance into the storm water system or into ground water.

Disturbed area. An area of land subjected to development.

Drainage system. All facilities, measures, areas, and structures which serve to convey, catch, hold, filter, store, and/or receive storm water, either on a temporary or permanent basis.

Earth change. A human-made change in the natural cover or topography of land, including but not limited to cut and fill activities, which may result in or contribute to soil erosion or sedimentation of watercourses or wetlands.

Engineered site grading. A sealed drawing or plan and accompanying text prepared by a registered engineer or landscape architect which shows alterations of topography, alterations of watercourses, flow directions of storm water runoff, and proposed storm water management and measures, having as its purpose to ensure that the objectives of this Ordinance are met.

Factor of Safety. A factor used in engineering calculations to adjust design parameters to account for uncertainties associated with data, construction and long-term performance. Use of a factor of safety provides a more conservative design.

Flood. A temporary rise in the level of any waterbody, watercourse or wetland which inundates areas not ordinarily covered by water.

Floodplain. For a given flood event, that area of land adjoining a continuous watercourse that has been covered temporarily by water.

French Drain. A below-ground drain consisting of a trench filled with gravel to permit movement of water through the gravel and into the ground. Perforated pipe may be used to enhance the efficiency of the system.

Infiltration. The percolation of water into the ground, expressed in inches per hour.

Infiltration facility. A structure or designated area which allows runoff to seep gradually into the ground, e.g., bioretention basin, rain garden, French drains, seepage pits, infiltration trenches (dry swale), dry well, perforated pipe, or green roof.

Maintenance agreement. A binding agreement that sets forth the terms, measures and conditions for the maintenance of storm water systems and facilities.

NPDES. National Pollution Discharge Elimination System. Federal permitting system for point and non-point source discharges.

Non-erosive velocity. Storm water flow that does not cause accelerated soil erosion.

Non-Point Source. Diffuse source of pollution, distinguished from a point source where the discharge comes from one identifiable location; e.g., a treatment plant outfall.

Offsite facility. All or part of a drainage system that is located partially or completely off of the development site which it serves.

Peak rate of discharge. The maximum rate of storm water flow at a particular location following a storm event, as measured at a given point and time in cubic feet per second.

Person. Any individual, firm, partnership, association, corporation, company, or organization of any kind including school districts and government agencies conducting operations within the Township.

Planning Commission. Ann Arbor Township Planning Commission.

Public storm sewer. A drainage system serving a platted subdivision or other development which has been designed and constructed and accepted to be operated and maintained by the Washtenaw County Drain Commissioner or the Washtenaw County Road Commission.

Receiving body of water. Any watercourse or wetland into which storm waters are directed, either naturally or artificially.

Redevelopment Project: ~~A project that proposes to add, replace or modify impervious or pervious surface for purposes other than a residential subdivision or routine maintenance, resurfacing, re grading, or repair on a site that is already substantially developed as currently zoned or designated or as a legal non-conforming use (for example, a residential-zoned parcel that contains an existing residence or other allowed structure or uses).~~ Land-disturbing activity that results in the creation, addition, or replacement of one thousand (1,000) square feet or more of impervious surface are on an already developed site. Redevelopment includes, but is not limited to: the expansion of a building footprint; addition or replacement of a structure; replacement of impervious surface area that is not part of a routine maintenance activity; and land disturbing activities related to structural or impervious surfaces. It does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility, or does it include emergency construction activities required to immediately protect public health and safety.

Retention basin. A holding area for storm water, either natural or man-made, which does not have an outlet to adjoining watercourses or wetlands. Water is removed from retention basins through infiltration and/or evaporation processes, and retention basins may or may not have a permanent pool of water.

Runoff. That part of precipitation which flows over the land.

Sediment. Mineral or organic particulate matter that has been removed from its site of origin by the processes of soil erosion, is in suspension in water, or is being transported.

Soil erosion. The wearing away of land by the action of wind, water, gravity or a combination thereof.

Soil erosion control measures. A structure, facility, barrier, berm, process, vegetative cover, basin, and/or other installations designed to control accelerated soil erosion. Temporary measures are installed to control soil erosion during construction or until soils in the contributing drainage area are stabilized. Permanent measures remain after the project is completed.

Storage facility. A basin, structure, or area, either natural or human made, which is capable of holding storm water for the purpose of controlling or eliminating discharge from the site.

Storm water discharge. The volume of water passing a given point at a given time expressed in cubic feet per second. Also referred to as rate of flow.

Storm drain. A conduit, pipe, swale, natural channel or manmade structure which serves to transport storm water runoff. Storm drains may be either enclosed or open.

Storm water management measure and facility. Any facility, structure, channel, area, process or measure which serves to control storm water runoff in accordance with the purposes and standards of this Ordinance.

Storm water management plan. Drawings and written information prepared by a registered engineer, registered landscape architect or registered surveyor which describe the way in which accelerated soil erosion and/or storm water flows are proposed to be controlled, both during and after construction, having as its purpose to ensure that the objectives of this Ordinance are met.

Storm water management system. Entire storm water conveyance and storage facilities and all appurtenances thereto.

Swale. Defined contour of land with gradual slopes that transports and directs the flow of storm water.

Township. Ann Arbor Township.

Township Board. Ann Arbor Township Board.

Watercourse. Any identifiable natural or manmade channel or course or other body of flowing water having reasonably well defined banks. Rivers, streams, creeks and brooks and channels, whether continually or intermittently flowing, as well as lakes and ponds are watercourses for purposes of storm water management.

Watershed. An area in which there is a common receiving body of water into which surface water, including storm water, ultimately flows, otherwise known as a drainage area.

Wetlands. Land characterized by the presence of water at a frequency and duration sufficient to support, and that under normal circumstances does support, wetland vegetation or aquatic life and is commonly referred to as a bog, swamp or marsh, as defined by state law.

ARTICLE III. GENERAL PROVISIONS

Section 3.01 Applicability

Development (as defined in this Ordinance), ~~or redevelopment~~ projects, described in Section 3.01 A and Section 3.01 B, in Ann Arbor Township shall have either a storm water management plan or an engineered site grading plan, depending on the type of activity, as listed below. No development or preparation for development on a site shall occur unless and until an application

has been submitted and approved for a storm water management plan or engineering site grading plan.

A. Requirement for a Storm Water Management Plan

A storm water management plan shall be submitted and reviewed in accordance with requirements of Article IV. Approval of final development plans, site plans, and final preliminary subdivision and condominium plans shall not be granted prior to approval of the storm water management plan. The following types of developments and earth changes require a storm water management plan:

1. Land development proposals subject to site plan review requirements in the Ann Arbor Township Zoning Ordinance.
 - a. Subdivision plat proposals.
 - b. Site condominium developments pursuant to the Condominium Act, P.A. 59 of 1978 as amended; MCLA 559. 101 et. seq.
 - c. Any development on property divided by land division in connection with which one or more public or private roads are created or extended, and/or in connection with which more than three parcels of less than one acre are created.
2. Any proposal to mine, excavate, or clear and grade or other-wise develop one acre or more of land for purposes other than routine single family residential landscaping and gardening, or any proposal within 500 feet of the top of the bank of an inland lake or stream.
- ~~6. Development projects of federal, state and local agencies and school districts.~~

B. Requirement for an Engineered Site Grading Plan

An engineered site grading plan shall be submitted and reviewed in accordance with requirements of Article VI. The engineered site grading plan shall be approved by the Township Engineer and the designated Township building official prior to the issuance of any building permit. The following types of new construction require an engineered grading plan:

- ~~1. Development on acreage parcels (lot splits) for which a storm water management plan is not required.~~

~~2. Development on platted subdivision lots.~~

~~3. Development on site condominium units.~~

1. Earth changes within 500 feet of a surface water's edge and disturbing more than 225 square feet.
2. Earth changes (including spoils from grading activities) that disturb one (1) or more acres.
3. Access roads to logging and mining operations.
4. Ancillary activities associated with logging and mining.
5. The removal of clay, gravel, sand, peat, or topsoil.
6. Installation of new ponds or alterations to existing ponds, regardless of size or proximity to surface water.
7. Transportation facilities, including streets, highways, railroads, airports, common carrier pipelines and mass transition facilities.

Section 3.02 Exempt Activities

Notwithstanding the requirements of Section 3.01, neither a storm water management plan nor an engineered site grading plan shall be required for:

- A. Activities commonly associated with farming, horticulture and silviculture including plowing, irrigation, irrigation ditching, seeding, cultivating, minor drainage, harvesting for the production of food, fiber, and forest products.
- B. Routine single family residential landscaping and/or gardening that does not alter the management plan or site grading plan as determined by the Township.
- C. ~~Any residential structure with a floor area less than 5,000 square feet.~~

Section 3.03 Prohibited Discharges

- A. Discharges Prohibited to Public Storm Sewer.

It is unlawful to make illicit discharges, as defined in subsection B below, either directly or indirectly to a public storm sewer.

- B. Illicit Discharges Defined.

1. Except as provided in subsection C below, all discharges which are not entirely composed of stormwater are illicit discharge.

2. The following is a partial list, provided for informational purposes only, of common substances which are illicit damages when allowed to enter a public storm sewer:

Solid Waste; human and animal waste; antifreeze, oil, gasoline, grease and all other automotive and petroleum products; flammable or explosive materials, metals in excess of naturally occurring amounts, whether in liquid or solid form; chemicals not normally found in uncontaminated water; solvents and degreasers; painting products; drain cleaners; commercial and household cleaning materials; pesticides; herbicides; fertilizers; acids; alkalis; ink; steam-cleaning waste; laundry waste; soap; detergent; ammonia; chlorine; chlorinated swimming pool or hot tub water; domestic or sanitary sewage; animal carcasses; food and food waste; yard waste; dirt; sand; and gravel.

C. Permissible Discharges

Discharges from the sources listed below shall only be illicit discharges if the Township Engineer determines that the type of discharge, whether singly or in combination with others, is causing or contributing to a violation of the Township's NPDES stormwater permit or is causing or contributing to a water quality problem, such as those which contain more contamination than typical discharges in the Township, or which contain a type of contamination that is more toxic or is otherwise a more serious problem than typical discharges in the Township:

Potable water sources; washing of potable water storage reservoirs; flushing of potable water lines; natural uncontaminated surface water; natural uncontaminated groundwater; air conditioning condensation; natural springs; uncontaminated water from crawl space pumps; runoff from lawn watering; irrigation runoff; runoff from residential car washing by individuals; flows from riparian habitats and wetlands; heat; discharges in compliance with an NPDES permit; and discharges from approved footing drains and other subsurface drains or, where approval is not required, installed in compliance with this subtitle and rules promulgated pursuant to this subtitle.

D. Exemption

Discharges resulting from public firefighting activities, but not from activities not related to firefighting equipment, are exempt from regulation under this Section.

E. Testing for Illicit Discharges

When the Township Engineer has reason to believe that any discharge is an illicit discharge, the Township Engineer may sample and analyze the discharge and recover the costs from a responsible party in an enforcement proceeding. When the discharge is likely to contain illicit discharges on a recurring basis, the Township Engineer may conduct, or may require the responsible party to conduct, ongoing monitoring at the responsible party's expense.

ARTICLE IV. STORM WATER MANAGEMENT PLAN REQUIREMENTS

Section 4.01 Pre-application Conference

If required by the Township, a pre-application conference shall be held with the Township Supervisor and/or his/her designee prior to the submittal of a storm water management plan. The purpose of the pre-application conference is to provide information about plan submittal requirements, and Township and county regulations.

Section 4.03 Contents of Storm Water Management Plan

A. Plan Presentation

1. Through plans, illustrations, reports, and calculations, the storm water management plan shall display the required information specified in the Rules of the Washtenaw County Drain Commissioner.
2. The storm water management plan must be sufficiently detailed to specify the type, location, and size of storm water management facilities, using preliminary calculations. Detailed construction drawings are not required at the storm water management plan review stage.
3. If it is proposed to develop a parcel in two or more phases, the storm water management plan shall be prepared and submitted for the total project unless a variance has been approved by the Ann Arbor Township Board of Trustees.

B. Plan Preparation

The storm water management plan shall be prepared by a registered civil engineer, and shall meet the requirements specified in the Rules of the Washtenaw County Drain Commissioner. Other persons and professionals may assist in the preparation of the plan.

C. Scale for Mapping

The storm water management plan shall be drawn to a scale no smaller than 1"=50'.

D. Required Information

1. Identification and Description

The following information is required for all storm water management plans:

- a. Information specified in the Rules of the Washtenaw County Drain Commissioner.
- b. Zoning classification of petitioner's parcel and all abutting parcels.

2. Existing Conditions

The information describing existing site conditions for all storm water management plans as specified in the Rules of the Washtenaw County Drain Commissioner.

3. Proposed Conditions

A description of the site after the proposed development as specified in the Rules of the Washtenaw County Drain Commissioner. .

Section 4.03 Plan Submission

A. Five (5) copies of the storm water management plan required under Section 3.01 A shall be submitted to the Township Clerk. Five (5) full size, 24"x36", copies of site plan drawings showing the storm water management plan and ten (10) copies reduced to half size, 12" x 18", shall be submitted to the Township Clerk

B. For developments subject to site plan review, the proprietor shall submit a storm water management plan to the Township Clerk at the time that the preliminary site plan is submitted.

- C. For developments subject to subdivision plat review, the applicant shall submit a storm water management plan to the Township Clerk at the time that the tentative preliminary plan is submitted.
- D. For other earth changes or activities subject to storm water management plan requirements, the plan shall be submitted to the Township Clerk before construction drawings are submitted.
- E. Compliance with the requirements of this Ordinance does not eliminate the need for the proprietor to obtain required permits and approvals from county and state agencies. Such permits and approvals include, but are not limited to, soil erosion permits from the Washtenaw County Soil Erosion Control Officer, drainage approvals from the Washtenaw County Drain Commissioner, road drainage approvals from the Washtenaw County Road Commission, wetlands permits from the Township and Michigan Department of Environmental Quality, and dam construction permits from the Michigan Department of Natural Resources.
- F. Compliance with the requirements of this Ordinance does not eliminate the need for the proprietor to comply with other applicable Township ordinances and regulations.

Section 4.04 Revision of Plan

If it becomes necessary to alter a development or earth change proposal after the storm water management plan has been approved, a revised storm water management plan must be submitted. All requirements and standards for storm water management plans (Article V) shall apply.

Section 4.05 Review Procedures

- A. Building Official Review
 - 1. Engineered site grading plans do not require approval by the Township Planning Commission and/or the Township Board. The building official shall approve, approve with conditions, or deny the application within ninety (90) days after receipt of the site grading plan. The building official may determine if the site engineered plans should be reviewed by the Township Board and/or Planning Commission if significant natural features may be affected **or offsite impact**.
- B. Planning Commission Review
 - 1. In case of site plan reviews, the Township Planning Commission shall review storm water management plans.

2. When the storm water management plan appears on the Planning Commission's agenda for the first time, it will be distributed to Township consultants and staff.
3. If the Planning Commission determines that the required information has not all been received, the proprietor may request that the matter be tabled to allow for the submittal of the required information.
4. The Township Planning Commission shall approve, approve with conditions or deny the application within ~~ninety (90)~~ one hundred thirty five (135) days after receipt of a complete storm water management plan in accordance of this ordinance. If the Township Planning Commission does not make a final determination on the application within ~~ninety (90)~~ one hundred thirty five (135) days after receipt of a complete application, then the application of the storm water management plan shall be considered approved. The denial of a storm water management plan shall be accompanied by a written statement of all reasons for denial.
5. An approval by the Township Planning Commission shall not be issued or effective until ten (10) calendar days following the date of the approval.

C. Township Board Review

1. In the case of conditional use permits and rezoning petitions, the Township Board shall decide on the storm water management plan
2. Following completion of its review of the storm water management plan, the Township Board shall approve or deny the proposed storm water management plan, with or without modifications and/or conditions.

Section 4.06 Review Fees

The Township Board shall establish application fees and escrow requirements by resolution. Fees and escrow account payments shall be sufficient to cover administrative and technical review costs anticipated to be incurred by the Township including the costs of on-site inspections.

Section 4.07 Standards for Storm Water Management Plan Approval

All developments requiring a storm water management plan shall be designed, constructed, and maintained to prevent flooding, mimic natural hydrology and protect water quality. The particular facilities and measures required on-site shall take into consideration the natural features, wetlands, and watercourses on the site; the potential for on-site and off-site adverse storm water impacts, water pollution, and erosion; and the size of the site.

A. General Standards for On-Site and Off-site Storm Water Management

1. Storm water management conveyance, storage and infiltration measures and facilities shall be designed to prevent flood hazards and water pollution related to storm water runoff, to prevent accelerated soil erosion from the proposed development, and shall conform with the requirements as specified in the Rules of the Washtenaw County Drain Commissioner Procedures and Design Criteria for Stormwater Management Systems (latest published edition at the time of plan submittal). Additionally, infiltration facility testing and design shall conform to the requirements in Section 4.07 (B) and 4.07 (C) below.
2. Natural topography and site drainage shall be preserved and site grading shall be minimized to the maximum extent reasonably achievable considering the nature of the development. Watercourses shall not be obstructed.
3. Unless otherwise approved, storm water runoff shall be conveyed through swales and vegetated buffer strips so as to decrease runoff velocity, allow for natural infiltration, allow suspended sediment particles to settle, and to remove pollutants.
4. Runoff rates from detention basins shall conform with the requirements specified in the Rules of the Washtenaw County Drain Commissioner Procedures and Design Criteria for Stormwater Management Systems (latest published edition at the time of plan submittal).
5. Watercourses shall not be deepened, widened, dredged, cleared of vegetation, straightened, stabilized or otherwise altered without applicable permits or approvals from the Township Board, relevant county agencies and the Michigan Department of Environmental Quality.
6. Drainage systems shall be designed to protect public health and safety and to facilitate efficient and effective maintenance.

B. Infiltration Facilities

1. Site runoff for the first flush rainfall event, defined as 0.5 inches, must be infiltrated on-site as long as all the other conditions of this section are met. This infiltration requirement meets the Washtenaw County Drain Commissioner requirement for first flush volume treatment and does not have to be considered in the design of detention facilities.
2. Infiltration facilities may not be allowed on areas: a) containing pollutants at sediment or groundwater concentrations above Michigan Department of

Environmental Quality criteria; b) on steep, unstable slopes; c) within the 100-year floodplain d) entirely covered by Washtenaw County soil group D, e) directly upslope or within close proximity (< 25 feet) to basements, sensitive structural foundations, water supply wells or septic tanks and drainfields, or where the bottom of the planned infiltration facility is less than three feet from the seasonably high water table.

3. Where feasible, Ann Arbor Township encourages the use of infiltration facilities as integral components of storm water management plans. To that end, the Township has developed an incentive program for the use of on-site infiltration. The incentive program offers the opportunity to downsize detention/retention basins with the use of properly engineered infiltration facilities that meet the standards of this section. Reduction in detention/retention facility size must be calculated and demonstrated in one of two ways:

- a. The estimated site infiltration (estimated per the procedures of this Ordinance) of engineered infiltration facilities can be converted to an outflow rate and added to the Washtenaw County maximum allowable runoff rate (0.15 cfs/ac). Detention pond volume can then be based on the adjusted maximum allowable runoff rate. This procedure is detailed below:

Existing Washtenaw County Drain Commissioner (WCDC) Standard

$$\text{Total allowable site runoff} = \text{Site area} * 0.15 \text{ cfs}$$

Ann Arbor Township Standard

$$\text{Adjusted maximum allowable site runoff} = (\text{Site area} * 0.15 \text{ cfs/ac}) + \text{Estimated site infiltration converted to an outflow rate (cfs)}$$

$$\text{Estimated site infiltration} = \text{Infiltration rate} * \text{Infiltration area}$$

- b. Application of a dynamic stormwater model that simulates infiltration, such as the U.S.E.P.A. Stormwater Management Model (SWMM), or equal approved by the engineer of jurisdiction, to demonstrate that the proposed facilities meet all standards of the Washtenaw County Drain Commissioner.
4. The order of preference for sources contributing runoff to an engineered infiltration facility are:

1. Roofs

2. Walkways, sidewalks, paths, etc.
3. Parking lots and roads
4. Auto repair shops, loading docks and car washes

That is, rooftop runoff has first preference for capture by infiltration facilities while auto repair shops, loading docks and car washes are the last choices for capture by infiltration facilities.

5. All sources contributing runoff to infiltration facilities must have traps, sumps, or filters of some type that will limit solids, leaves, trash, etc. from reaching and accumulating in the facility. The source order preference given above provides an indication of the effort involved in pre-treating runoff source water to infiltration facilities. For roof runoff, the preferred source water to infiltration facilities, screening to keep out leaves and twigs would be a sufficient level of control. For walkways, sidewalks, paths, etc, appropriate pretreatment could consist of 25-foot vegetated buffers strips between the runoff source and the infiltration facility. For parking lots and roads, however, pretreatment would require more substantial effort, such as a sediment forebay or in-line filtration device.
6. Infiltration facilities are defined as engineered facilities. Undeveloped land that receives sheet flow from an impervious surface is not considered to be an engineered infiltration facility. Engineered facilities can however be as simple as an earthen berm designed and built to retain first flush runoff in order to enhance infiltration over undisturbed earth. Types of infiltration facilities include, but are not limited to, bioretention basins, sand filters, dry swales, and rain gardens.
7. All infiltration facilities must provide a route for flooded water to be safely conveyed off-site as needed. Estimates of infiltration facility flood water that will be conveyed off-site must be included in the outlet design.
8. Proposed and constructed infiltration facilities must be protected during construction and maintenance and operation from both eroded and eroding soil and from compaction by heavy equipment. Fine soils, such as silt and clays can clog pore spaces in well-draining soils and their migration into proposed or existing infiltration facilities must be avoided. Heavy equipment compaction of well-draining soils can significantly decrease the infiltration capacity and must also be avoided for proposed or existing infiltration facilities.
9. For all infiltration facilities, a minimum infiltration rate of 0.5 inches per hour (average rate for a loam soil texture class) is required. If the infiltration capacity of existing soils or engineered soils exceeds this criterion, the size of infiltration facilities may be increased and a proportionate decrease in the size of retention and detention facilities allowed.

10. For a conservative calculation of cumulative infiltration volume over a design rainfall event, Darcy's Law ($Q = KIA$)^a and an assumed gradient of 1 shall be used. Cumulative infiltration based on the changing ponding depth can be calculated by use of the Green-Ampt model, or an equivalent method approved by the Township Engineer. A Factor of Safety shall be applied to all infiltration calculations; i.e., total infiltration = calculated infiltration divided by the Factor of Safety. For infiltration facilities and dry ponds the Factor of Safety shall be 2. For wet ponds the Factor of Safety shall range between 2 and 10, depending on site constraints.

11. Determination of on-site infiltration capacity shall be determined by in-situ testing. The number of required borings and infiltration tests are based on the size of the proposed facilities and the anticipated variation of site soil types. Testing is done in two phases, (1) Initial Feasibility, and (2) Design Testing. Refer to Table 2 for detailed requirements. Note: On-site soil borings conducted for other purposes, such as structural stability analyses, that are within 25 feet of a proposed infiltration facility, can also be used for design of that proposed infiltration facility and counted towards the required number of borings when the number of borings required for that facility is greater than one (1).
 - a. Testing shall be conducted by a qualified professional. This professional shall either be a registered professional engineer in the State of Michigan, a soils scientist or geologist also licensed in the State of Michigan.

 - b. Feasibility testing is conducted to determine whether full-scale testing is necessary, and is meant to screen unsuitable sites, and reduce testing costs. A soil test pit or boring is not required at this stage. However, a designer or landowner may opt to perform design test borings per Table 2 at his or her discretion, without feasibility testing.

 - c. The initial feasibility investigation involves either one soil boring or infiltration test per soil type, or previous testing data, such as the following:

Septic percolation testing on-site, within 200 feet of the proposed facility location and on the same five-foot elevation contour line.

Previous written geotechnical reporting on the site location as prepared by a qualified geotechnical consultant.

^a Darcy's Law: $Q = kIA$; Q = flow rate, k = hydraulic conductivity, I = hydraulic gradient, and A = cross sectional area.

NRCS (USDA) Washtenaw County Soil Mapping shows infeasible results such as a hydrologic group “C” or “D” soil in a low-lying area.

d. If the results of initial feasibility testing as determined by a qualified professional show that an infiltration rate of greater than 0.5 inches per hour is probable, then the design and post-construction testing shall be per the following table. The Township Engineer may waive design testing requirements if it is determined that adequate testing data exists. An encased soil boring may be substituted for a test pit, if desired.

**TABLE 2
INFILTRATION TESTING SUMMARY TABLE***

Type of Facility	Initial Feasibility Testing	Design Testing (initial testing yields a rate greater than 0.27"/hour)	Post-Construction Testing
Private Drywell System	NRCS (USDA) soils classification or previous testing data	1 infiltration test per drywell	May be required by Township Engineer
Private Infiltration Trench	NRCS (USDA) or previous testing data	1 infiltration test per 500 square-feet of private infiltration trench;	May be required by Township Engineer
Public Infiltration Sump System	Call Township Engineer for initial feasibility	May be required by Township Engineer	May be required by Township Engineer
Vegetative Infiltration Basin	NRCS (USDA) soils classification or previous testing data	1 infiltration test per 500 square-feet of facility	May be required by Township Engineer

* Adapted from *Maryland Stormwater Design Manual, Maryland Department of the Environment, 2000.*

e. Infiltration testing data shall be documented, which shall also include a description of the infiltration testing method, if completed. This is to ensure that the tester understands the procedure.

Note: Unless, otherwise noted, all field-testing must be done in the proposed area of the facility.

C. Testing Methods

1. Test Pit/Boring Requirements

- a. Excavate a test pit or dig a standard soil boring to a minimum depth of 4 feet below the proposed facility bottom elevation.
- b. Determine depth to highest seasonal groundwater table (if within 10 feet of proposed bottom) upon initial digging or drilling, and again 24 hours later.
- c. Conduct Standard Penetration Testing (SPT) every 2 feet to a depth of 4 feet below the facility bottom.
- d. Determine United States Department of Agriculture (USDA) texture or Unified Soil Classification System soil type at the proposed bottom and 4 feet below the bottom of the facility.
- e. Determine depth to bedrock (if within 10 feet of proposed bottom).
- f. The soil description should include all soil horizons.
- g. The location of the test pit or boring shall correspond to the facility location; test pit/soil boring stakes are to be left in the field for inspection purposes and shall be clearly labeled as such.

2. Infiltration Testing Requirements

- a. Install casing (solid 5-inch diameter, 30" length) to a minimum of 48" below proposed facility bottom.
- b. Remove any smeared soiled surfaces and provide a natural soil interface into which water may percolate. Remove all loose material from the casing. Upon the tester's discretion, a two-inch layer of coarse sand or fine gravel may be placed to protect the bottom from scouring and sediment. Fill casing with clean water to a depth of 24" and allow to pre-soak for twenty-four hours.
- c. Twenty-four (24) hours later, refill casing with another 24" of clean water and monitor water level (measured drop from the top of the casing) for 1 hour. Repeat

this procedure (filling the casing each time) three additional times, for a total of four observations. Upon the tester's discretion, the final field rate may either be the average of the four observations, or the value of the last observation. The final rate shall be reported in inches per hour.

d. Testing may be done through a boring or open excavation.

e. The location of the test shall correspond to the facility location.

f. Upon completion of the testing, the casings shall be immediately pulled, and the test pit shall be back-filled.

3. Laboratory Testing

Use grain-size sieve analysis and hydrometer tests (where appropriate) to determine unified soil classification system textural fractions and texture class. Visual inspection by a qualified professional may also be used, provided it is documented. The use of lab testing to establish infiltration rates is prohibited.

D. Soil Erosion Control

1. Excavation, filling and grading shall conform with the requirements specified in the most current rules of the Washtenaw County Drain Commissioner at the time of plan submittal.
2. All development and other earth changes shall be designed, constructed and completed in such a manner that the exposed area of any disturbed land is limited to the smallest area and to the shortest practical period of time. Proposed soil erosion control measures shall be submitted to the Washtenaw County Soil Erosion Control Authority for determination that such measures comply with the Washtenaw County Soil Erosion Control Ordinance, as follows:
 - a. Limit construction vehicle access to one route wherever possible. Stabilize all access points to minimize tracking of sedimentation onto public roads.
 - b.. Approved soil erosion control measures shall be installed between the disturbed area and any downgradient watercourses (including rivers, streams, creeks, lakes, ponds and other watercourses), wetlands, roadways and property lines.

- c. Sediment resulting from accelerated soil erosion shall be removed from runoff water before it leaves the site of the development.
- d.. Temporary and permanent soil erosion control measures designed and constructed for the conveyance of water around, through or away from the development or earth change area shall be designed to limit the water flow to a non-erosive velocity.
- e. Temporary soil erosion control measures shall be removed after permanent soil erosion control measures have been implemented and stabilized. All developments and earth change areas shall be stabilized with permanent soil erosion control measures.
- f. If inland lakes, ponds, rivers, creeks, streams or other watercourses and wetlands are located on or near the site, measures which trap sediment shall be provided. Straw bale berms may be used as temporary storm water diversion structures but will not be considered sufficient by themselves for trapping sediment on-site. The use of temporary sediment basins, sediment traps, filter fabric, and rock filters in lieu of straw bale berms shall be employed as required as part of a permit. Other measures may be required if reasonably determined to be necessary to protect a watercourse or wetland.
- g.. When it is not possible to permanently stabilize a disturbed area after an earth change has been completed or where significant earth change activity ceases, temporary soil erosion control measures shall be implemented within two calendar days.
- h.. Permanent soil erosion control measures for all slopes, channels, ditches, or any disturbed land area shall be completed within 15-calendar days after final grading or the final earth change has been completed. All temporary soil erosion control measures shall be maintained until permanent soil erosion control measures are implemented and stabilized.
- i. Vegetated filter strips, a minimum of 25 feet in width, shall be created or retained along the edges of all lakes, creeks, streams, and other watercourses. As part of permit approval, the width of a particular filter strip may be reduced to the extent it is demonstrated that a portion of the

width will serve no useful function, e.g., to the extent the grade is such that water flow will be away from the watercourse and the filter strip does not serve to protect wildlife habitat or other useful function.

3. The Township shall have the authority to issue stop-work orders for failure to comply with the requirements of this section, provided a proprietor shall be entitled to a hearing before the Supervisor or the Supervisor's designee within three business days to determine whether the stop-work order shall continue.

E. Storm Water Storage Facilities

Storm water storage facilities required pursuant to this Ordinance shall comply with the requirements specified in the most current published edition of the Rules of the Washtenaw County Drain Commissioner at the time of plan submittal.

F. Storm Water Infiltration Facilities

Storm water infiltration facilities required pursuant to this Ordinance shall comply with the requirements specified in Article IV.

G. Discharge to Watercourses

Where storm water is discharged directly to a watercourse or to a conveyance system that discharges to a watercourse, streambank erosion and effects on water quality in streams shall be minimized through the selection, design, installation, and maintenance of temporary and permanent controls.

H. Discharge of Storm Water Runoff to Wetlands

1. Wetlands will be protected from damaging modification and adverse changes in runoff quality and quantity associated with land developments. Before approval of a final plat or site plan, all necessary wetland permits from the Michigan Department of Environmental Quality (MDEQ) and the Township will be in place.
2. Direct discharge of untreated storm water to a natural wetland is prohibited. All runoff from the development will be pre-treated to remove sediment and other pollutants prior to discharge to a wetland. Such treatment facilities shall be constructed before property grading begins.

3. Site drainage patterns will not be altered in any way that will modify existing water levels in protected wetlands without proof that all applicable permits from the MDEQ and/or the Township have been obtained.
4. Wetland construction, reconstruction, or modification will be overseen by a qualified professional with specific wetland expertise.
5. Whenever feasible, a permanent filter strip at least 25 feet wide, preferably vegetated with native plant species, will be maintained or restored around the periphery of wetlands.
6. Wetlands will be protected during development by appropriate soil erosion and sediment control measures.

I. Automated Watering Systems

Over-saturation of managed turf landscapes can limit soil infiltration, increase runoff volume and contribute to nonpoint source pollution. Automated watering systems shall be equipped with rain sensors that can disable watering systems during and following rainstorms.

1. Required installation.
 - a. New installation. Rain sensors shall be required on all automatic irrigation systems.
 - b. Existing systems. Rain sensors shall be installed on all existing automatic irrigation systems at the time of sale of property.
 - c. The requirements of this provision shall be incorporated into all master deed restrictions, homeowner association rules and prevailing maintenance agreements.
2. Required maintenance.

All rain sensors shall be adjusted and set so that they automatically shut off the irrigation system for at least 24 hours after not more than one-fourth (1/4) inch of rainfall has occurred. All rain sensors shall be installed according to manufacturer's instructions in a location that will provide full exposure to rainfall such that accuracy of operation is assured, and shall be maintained in good working condition. No person shall, with the intent of circumventing the purpose of this section, adjust either the rain sensor or

irrigation system so that the rain sensor is not able to override and turn off the irrigation system after one-fourth (1/4) inch of rain has fallen.

Section 4.09 Off-Site Storm Water Management

A. Requirements

1. In lieu of on-site storm water detention, the use of off-site storm water conveyance, infiltration, and/or detention areas may be proposed. Off-site storm water management facilities shall be designed to comply with the requirements specified in the most current rules of the Washtenaw County Drain Commissioner at the time of plan submittal and all other standards provided by this Ordinance that are applicable to on-site facilities.
2. Off-site storm water management areas may be shared with other landowners, provided that a county drainage district is established.
3. Adequate provision and agreements providing for maintenance and inspection of storm water management facilities shall be made by recorded instrument, including an access easement, approved by the Washtenaw County Drain Commissioner.
4. Accelerated soil erosion shall be managed off-site as well as on-site.

B. Performance Guarantees, Inspections, Maintenance, and Enforcement

All provisions of Articles VIII, X and XI shall apply to off-site storm water conveyance and detention.

ARTICLE V. STORM WATER MANAGEMENT FACILITY

Section 5.01 Submittal, Review and Approval Procedures Requirements

- A. Four copies of construction drawings and engineering specifications shall be submitted to the Washtenaw County Drain Commissioner and to the Township Clerk following storm water management plan approval but prior to the issuance of any construction or building permits.

- B. Construction drawings and engineering specifications shall be reviewed by the Township's Consultant for engineering review, and a copy shall be transmitted to the Washtenaw County Drain Commissioner.
- C. A building permit, construction permit or certificate of occupancy shall not be issued unless the detailed engineering drawings and specifications meet the standards of this Ordinance, applicable engineering standards and practices, and any applicable requirements of other government agencies.

ARTICLE VI. ENGINEERED GRADING PLANS

Section 6.01 Contents of Engineered Site Grading Plans

- A. Four copies of engineered site grading plans for single-family homes and private road developments shall be submitted by the proprietor to the Township Clerk.
- B. The engineered grading plan shall include the following site information:
 - 1. The legal property description.
 - 2. Existing grades in one foot contours on a 50-foot grid to a minimum of 50 feet beyond the site property line and sufficient intermediate grades to determine such things as ditches, swales, adjacent pavement, buildings and other pertinent features.
 - 3. Location of any watercourses, wetlands, lakes and ponds on the site.
 - 4. Existing easements.
 - 5. Existing utilities, manholes and culverts.
 - 6. Road rights-of-way, existing and proposed.

7. Location and description of any existing and proposed storm water management and soil erosion control measures.
8. Flow direction(s) of storm water runoff onto and from the site before and after development, including the direction of overland flow.
9. Proposed topography of the site. Proposed elevations, in one foot contours, shall be underlined or boxed in to differentiate from existing elevations. It is expected that all elevations shall be in hundredths of a foot.
10. A location map.

Section 6.02 Review Procedures and Standards

- A. The Township Engineer shall review engineered site grading plans to assure compliance with the following standards:
1. Cutting, filling and grading shall be minimized and the natural topography of the site shall be preserved to the extent feasible.
 2. Sediment caused by accelerated soil erosion shall be trapped and retained on the site through the use of effective soil and erosion control measures.
 3. Seeding, mulching, establishment of a vegetative cover, or other permanent soil erosion control measures for all disturbed land areas shall be completed within 15-calendar days after final grading or the final earth change has been completed.
 4. When it is not possible to permanently stabilize a disturbed area after an earth change has been completed or where significant earth change activity ceases, temporary soil erosion control measures shall be implemented within two-calendar days. All temporary soil measures shall be maintained until permanent soil measures are implemented.
 5. The engineered site grading plan shall promote retention and detention on site through the design of site contours, yards, paved areas, roadways, driveways, landscaping, and infiltration measures, including but not limited to native landscaping, bioretention basins, and rain barrels.

6. Alterations of storm water runoff to adjacent properties that result in off-site impacts such as concentrated flow, flooding, accelerated soil erosion, damage to natural features including wildlife habitat or stream channels shall be prohibited.

B. Engineered grading plans shall be reviewed and approved by the Township Engineer prior to the issuance of a building permit.

ARTICLE VII. PERFORMANCE GUARANTEES, EASEMENTS, AND

MAINTENANCE

Section 7.01 Applicability of Requirements

Requirements of this Article concerning performance guarantees, easements, and maintenance agreements shall apply to proprietors required to submit a storm water management plan to the Township for review and approval. These requirements do not apply to engineered grading plans.

Section 7.02 Performance Guarantees

For projects under the jurisdiction of the Township, the proprietor shall post an acceptable form of letter of credit, cash escrow, certified check, or other Township approved performance security, unless waived by the Township Board, based upon good cause demonstrated by the applicant. The performance guarantee shall be an amount determined by the Township Engineer, equal to one and one-half times the amount required to complete storm water management and facilities as specified in the storm water management plan, together with reasonable administrative expenses. Required performance guarantees shall be provided to the Township after storm water management plan approval but prior to the initiation of any earth change.

For projects under the jurisdiction of Washtenaw County, the proprietor shall consult the Washtenaw County Drain Commissioner for performance guarantee requirements.

After determination by the Township Engineer that all facilities are constructed in compliance with the approved plan, the letter of credit or other securities shall be released.

Section 7.03 Construction Modifications

During construction of stormwater facilities the engineer of jurisdiction may require, or the applicant may request, that the construction of drainage control facilities and associated project designs be modified if physical conditions are discovered on the site which are inconsistent with the assumptions upon which the approval was based, including, but not limited to, unexpected soil and/or water conditions, weather generated problems, or changes in the design of the improved areas. Modifications shall be submitted to the engineer of jurisdiction for approval

prior to implementation.

Any such modifications made during the construction of drainage control facilities shall be recorded on the final approved drainage control plan, a revised copy of which shall be filed by the engineer of jurisdiction.

Section 7.04 Storm Water Management Easements

A. Necessity of Easements

For projects under the jurisdiction of the Township, storm water management easements shall be provided in a form required by the Township and recorded as directed by the Township to assure (1) access for inspections; (2) access to storm water management facilities for maintenance purposes; and (3) preservation of ~~primary and secondary~~ existing drainageways which are needed to serve storm water management needs of other properties. For projects under the jurisdiction of Washtenaw County, the proprietor shall consult the Washtenaw County Drain Commissioner for easement requirements.

B. Easements for Off-site Storm Water Management

The proprietor shall obtain easements assuring access to all areas used for off-site storm water management, including wetlands.

C. Recording of Easements

Easements shall be recorded with the Washtenaw County Register of Deeds according to Washtenaw County requirements.

D. Recording Prior to Building Permit Issuance

The proprietor must provide the Township administrative official with evidence of the recording of the easement prior to final subdivision plat approval or final construction approval.

Section 7.05 Maintenance Agreement and Inspection

A. Purpose of Maintenance Agreement

The purpose of the maintenance agreement is to provide the means and assurance that maintenance of storm water management and facilities shall be undertaken.

B. Maintenance Agreement Required

1. A maintenance agreement shall be submitted to the Township Clerk for all development subject to storm water management plan requirements (Article IV).
2. Maintenance agreements shall be approved by the Ann Arbor Township Board prior to final subdivision plat approval in the case of subdivisions, and prior to construction approval in other cases.

C. Maintenance Agreement Provisions

1. The maintenance agreement shall include a plan for routine, emergency and long-term maintenance of all storm water facilities with a detailed annual estimated budget for the initial three years.
2. The maintenance agreement shall be binding on all subsequent owners of land served by the storm water management and facilities, and shall be recorded in the office of the Washtenaw County Register of Deeds prior to the effectiveness of the approval of the Ann Arbor Township Board.

D. Maintenance and Inspection

1. Responsibility for Maintenance and Inspection. Drainage control facilities, source controls, and stormwater treatment facilities required by this subtitle and rules adopted hereunder, shall be maintained as specified in rules promulgated by the Township Engineer, by the owner and other responsible party. The owner and other responsible party shall inspect permanent drainage control facilities at least annually, and shall inspect temporary drainage control facilities and other temporary best management practices or facilities sufficient for the facilities to function at design capacity. The Township Engineer may require the responsible party to conduct more frequent inspections and/or maintenance when necessary to insure functioning at design capacity. The owner(s) shall inform future purchasers and other successors and assignees to the property of the existence of drainage control facilities and the elements of the drainage control plan, limitations of the drainage control facilities, and the requirements for continued inspection and maintenance of the drainage control facilities.
2. Inspection by Township. The Township Engineer may establish inspection programs to insure compliance with the requirements of this subtitle and accomplishment of its purposes. Inspection programs may be established on any reasonable basis, including, but not limited to: routine inspections; random inspections; inspections based upon complaints or other notice of possible violations; inspection of drainage basins or areas identified as higher than typical sources of sediment or other contaminants or pollutants; inspection of businesses

or industries of a type associated with higher than usual discharges of a type which are more likely than the typical discharge to cause violations of state or federal water or sediment quality standards or the Township's NPDES stormwater permit; and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include, but are not limited to: reviewing maintenance and repair records; sampling discharges, surface water, groundwater, and material or water in drainage control facilities; and evaluating the condition of drainage control facilities and other best management practices.

3. Entry for Inspection and Abatement Purposes

a. New Installation and Connections. When any new drainage control facility is installed on private property, and when any new connection is made between private property and a public drainage control system, the property owner shall execute a permission form provided by the Township Engineer. The property owner shall grant the Township the right to enter the property at reasonable times and in a reasonable manner pursuant to an inspection program established pursuant to subsection 2 above, and to enter the property when the Township has a reasonable basis to believe that a violation of this subtitle is occurring or has occurred, and to enter when necessary for abatement of a public nuisance or correction of violation of this subtitle.

b. Existing Land Uses and Discharges. Owners of property with existing discharges or land uses subject to this subtitle who are not installing a new drainage control facility or making a new connection between private property and a public drainage control system, sanitary sewer or combined sewer, have the option to execute a permission form for the purposes described above when provided with the form by the Township Engineer.

4. Disposal of Waste from Maintenance Activities. Disposal of waste from maintenance of drainage and stormwater control facilities shall be conducted in accordance with federal, state and local regulations.

Section 7.06 Establishment of County Drains and Storm Water Systems for Multiple Users

Prior to final approval, all storm water management facilities for platted subdivisions, site condominiums and any other circumstance in which multiple owners will use common storm water facilities, shall be established as county drains, as authorized in Section 433, Chapter 18 of the Michigan Drain Code (P.A. 40 of 1956, as amended) for long-term maintenance.

ARTICLE IX VARIANCES

Section 9.01 Township-Board Authority

The Township Board shall have the authority to grant variances from the strict terms of this Ordinance in accordance with the terms specified below.

Section 9.02 Written Application Requirements

A written application shall be submitted to the Township Clerk demonstrating that:

1. Special conditions and circumstances exist which are peculiar to the land or project involved, and which are not generally applicable to other plans or projects.
2. The special conditions and circumstances do not result or have not resulted from the actions of the applicant or the applicant's predecessor.
3. Literal interpretation of the provisions of this Ordinance would deprive the applicant of reasonable use of the property as a whole.
4. A plan demonstrating an alternate means to achieve the objectives of this Ordinance.

Section 9.03 Hearing Required

Variances from the terms of this Ordinance shall not be granted unless and until a hearing shall be held by Township Board, and the Township Board determines that the applicant has demonstrated all of the requirements of Section 9.02.

Section 9.04 Conditions for Approval

The Township Board may prescribe appropriate conditions and safeguards consistent with the purposes and standards of this Ordinance in connection with the grant of a variance.

ARTICLE X SEVERABILITY

If any section, clause, provision or portion of this Ordinance is adjudged unconstitutional or invalid by a court of competent jurisdiction, the remainder of this Ordinance shall remain in force and effect.

ARTICLE XI PENALTIES AND ENFORCEMENT

Section 11.01 Penalties

- A. Any person found guilty of violating any of the provisions of this Ordinance shall be punished by a fine not to exceed Five Hundred Dollars (\$500.00) or imprisonment not to exceed ninety (90) days, or both such fine and imprisonment, at the discretion of the Court.
- B. The Township Board, in addition to other remedies, may institute any appropriate action or proceeding to prevent, abate or restrain the violation.
- C. Each day's continuance of a violation shall be deemed a separate and distinct offense. Expenses in connection with such action shall be assessed as damages against the violation.

Section 11.02 Effect of Approval on Remedies

The approval or disapproval of any storm water management plan shall not have any effect on any remedy of any person at law or in equity.

Section 2 of Ordinance

CERTIFICATION

It is hereby certified that the foregoing Resolution was adopted by the Township Board of the Ann Arbor Township, Washtenaw County, Michigan, at a meeting of the Board duly called and held on this the _____ day of _____, 2003.

ANN ARBOR TOWNSHIP

By: _____

ADOPTED:
EFFECTIVE:
PUBLISHED: