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Proposed Model Storm Water Ordinance for Kent County Townships and Municipalities

**Prepared by the Kent County Drain Commissioner
Storm Water Management Task Force**



July 2001



Prepared by the Annis Water Resources Institute of Grand Valley State University as part of the "Developing Administrative Tools And Authority For Stormwater Management In The Grand Rapids Metropolitan Area" project with support from the Michigan Department of Environmental Quality and the Environmental Protection Agency through funds from Section 319 of the Federal Clean Water Act.



JOHN ENGLER, Governor

DEPARTMENT OF ENVIRONMENTAL QUALITY

"Better Service for a Better Environment"

HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973

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RUSSELL J. HARDING, Director

REPLY TO:

SURFACE WATER QUALITY DIVISION
KNAPPS CENTRE
PO BOX 30273
LANSING MI 48909-7773

November 26, 2001

Storm Water Task Force
Attn: Nichol Stout
Annis Water Resources Institute
Grand Valley State University
740 West Shoreline Drive
Muskegon, Michigan 49441

Dear Storm Water Task Force:

SUBJECT: Kent County Storm Water Model Ordinance

I would like to thank all the members who participated on the Kent County Storm Water Task Force. I appreciate the wide diversity of participants and your level of effort and diligence in addressing many complex issues relating to storm water management during the development of this model ordinance.

The Department of Environmental Quality (DEQ), Surface Water Quality Division (SWQD), has reviewed the proposed model storm water ordinance in terms of the Phase I and Phase II regulations. The traditional storm water general permit for Phase I and Phase II communities includes as a minimum control measure, a post construction storm water management program for new development and redevelopment projects. This model ordinance appears to be consistent with the requirement to implement ordinances or other regulatory mechanisms to address post construction storm water runoff from new development and redevelopment projects.

In addition, implementation of this ordinance by all the units of government in Kent County will provide a significant level of consistency across the region. This consistency will provide a good basis for storm water master planning on a watershed basis. Storm water master planning is a requirement of both the Phase I and the draft Phase II storm water permits.

The SWQD looks forward to our continuing partnership with the Grand Valley Metro Area stakeholders in addressing the various watershed issues in order to protect and preserve our water resources.

Sincerely,

David A. Hamilton, Chief
Surface Water Quality Division
517-335-4176

cc: Mr. Steve Houtteman, DEQ
Ms. Janice Tompkins, DEQ
Mr. Mark Fife, DEQ
Mr. Dave Drullinger, DEQ

OFFICE OF THE DRAIN COMMISSIONER

Roger G. Laninga, Drain Commissioner
1500 Scribner NW, Grand Rapids, Michigan 49504-3233
Telephone (616) 336-3688 Fax: (616) 336-3575
Office Hours: 7:30 am - 4:00 pm



January, 2002

To Public Officials and Citizens of Michigan:

I am pleased to present to you this Model Stormwater Ordinance. This ordinance was prepared by the Kent County Drain Commissioner's Task Force, with representation from local, county, and state governments, as well as engineers, attorneys, developers, environmentalists and university researchers.

The technical basis for the ordinance reflects a whole new approach to Stormwater Management, which is on the cutting edge of technology in Michigan. It recognized that one set of criteria cannot be used to address a wide range of conditions, but rather design standards for three different stormwater management zones have been developed. With this in mind, it is important that the ordinance be considered in its entirety and that alterations be kept to a minimum. If your municipality considers adoption with significant changes, we would strongly recommend that you consult with our offices or your engineer to ensure that the effectiveness of the ordinance has not been diminished.

The task force hopes that this model ordinance will assist local governments in preserving our natural environment and assuring a higher quality of life for the people of Michigan.

Sincerely,

A handwritten signature in cursive script that reads "Roger G. Laninga".

Roger G. Laninga, Chairperson
Kent County Drain Commissioner's
Stormwater Task Force

ACKNOWLEDGEMENTS

Many interested persons contributed their time, efforts and talent toward the preparation of this Model Ordinance. We acknowledge the contributions of all of the members of the Storm Water Management Task Force, and thank them for their efforts toward improved storm water management and regulation among Kent County local governments.

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Jeff Gritter
Doug Sporte

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Mark Fleet
Sharon Steffens
Frank Wash

Caledonia Township

John Wallace

Cannon Township

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Center for Environmental Study

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Richard W. Butler, Jr., of Richard W. Butler, Jr. PLC

Jeffrey V.H. Sluggett, of Law, Weathers & Richardson PC

On Monday, July 9, 2001, the Kent County Stormwater Management Task Force recommended unanimously that the proposed Stormwater Ordinance language contained within this document be distributed with appropriate educational materials and support to all Townships and Municipalities in Kent County. In the interest of preserving and protecting our precious water resources, these communities are strongly encouraged to give serious consideration to the adoption of this model ordinance.

**PROPOSED MODEL STORM WATER ORDINANCE
FOR
KENT COUNTY TOWNSHIPS AND MUNICIPALITIES**

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_____ of _____
COUNTY OF KENT, MICHIGAN

AN ORDINANCE to provide for the regulation and control of storm water runoff; to provide for storm water permits and the procedures and standards for the issuance thereof; to provide for payment or reimbursement of costs and expenses incurred by the **Township/Municipality** associated with storm water permits and the consideration thereof; to establish standards and requirements for the protection of floodways and for the control of soil erosion and sedimentation; to adopt other provisions for the establishing, maintaining and protection of drains and drainageways; to provide regulations for the inspection, sampling and monitoring of storm water and other discharges; to establish performance and design standards for storm water management in specified zones of the **Township/Municipality**; and to provide penalties for violations of the ordinance.

THE _____ OF _____ ORDAINS:

Article I - General

Sec. 1.01 Statutory Authority and Title

[For a General Law Township:]

This ordinance is adopted in accordance with the Township Ordinance Act, as amended, being MCL 41.181, et seq.; the Township and Village Public Improvement Act, as amended, being MCL 41.721, et seq.; the Drain Code of 1956, as amended, being MCL 280.1, et seq.; the Land Division Act, as amended, being MCL 560.1, et seq.; the Revenue Bond Act, as amended, being MCL 141.101, et seq.; the Natural Resources and Environmental Protection Act, as amended, being MCL 324.101, et seq.; Section 401(p) of the Federal Water Pollution Control Act (also known as the Clean Water Act), as amended, being 33 USC 1342(p) and 40 CFR Parts 9, 122, 123 and 124; and other applicable state and federal laws.

[For a Charter Township:]

This ordinance is adopted in accordance with the Charter Township Act, as amended, being MCL 42.1, et seq.; the Township and Village Public Improvement Act, as amended, being MCL 41.721, et seq.; the Drain Code of 1956, as amended, being MCL 280.1, et seq.; the Land Division Act, as amended, being MCL 560.1, et seq.; the Revenue Bond Act, as amended, being

MCL 141.101, et seq.; and the Natural Resources and Environmental Protection Act, as amended, being MCL 324.101, et seq.; Section 401(p) of the Federal Water Pollution Control Act (also known as the Clean Water Act), as amended, being 33 USC 1342(p) and 40 CFR Parts 9, 122, 123 and 124; and other applicable state and federal laws.

[For a Home Rule City:]

This ordinance is adopted in accordance with the Home Rule City Act, as amended, being MCL 117.1, et seq.; the Drain Code of 1956, as amended, being MCL 280.1, et seq.; the Land Division Act, as amended, being MCL 560.1, et seq.; the Revenue Bond Act, as amended, being MCL 141.101, et seq.; and the Natural Resources and Environmental Protection Act, as amended, being MCL 324.101, et seq.; Section 401(p) of the Federal Water Pollution Control Act (also known as the Clean Water Act), as amended, being 33 USC 1342(p) and 40 CFR Parts 9, 122, 123 and 124; and other applicable state and federal laws.

[For a General Law Village:]

This ordinance is adopted in accordance with the Incorporation of Villages Act, as amended, being MCL 61.1, et seq.; the Township and Village Public Improvement Act, as amended, being MCL 41.721, et seq.; the Drain Code of 1956, as amended, being MCL 280.1, et seq.; the Land Division Act, as amended, being MCL 560.1, et seq.; the Revenue Bond Act, as amended, being MCL 141.101, et seq.; and the Natural Resources and Environmental Protection Act, as amended, being MCL 324.101, et seq.; Section 401(p) of the Federal Water Pollution Control Act (also known as the Clean Water Act), as amended, being 33 USC 1342(p) and 40 CFR Parts 9, 122, 123 and 124; and other applicable state and federal laws.

[For a Charter Village:]

This ordinance is adopted in accordance with the Home Rule Village Act, as amended, being MCL 78.1, et seq.; the Township and Village Public Improvement Act, as amended, being MCL 41.721, et seq.; the Drain Code of 1956, as amended, being MCL 280.1, et seq.; the Land Division Act, as amended, being MCL 560.1, et seq.; the Revenue Bond Act, as amended, being MCL 141.101, et seq.; and the Natural Resources and Environmental Protection Act, as amended, being MCL 324.101, et seq.; Section 401 (p) of the Federal Water Pollution Control Act (also known as the Clean Water Act), as amended, being 33 USC 1342(p) and 40 CFR Parts 9, 122, 123 and 124; and other applicable state and federal laws.

This ordinance shall be known and may be cited as the _____
of _____ Storm Water Ordinance.

Sec. 1.02 Findings

The **Township/Municipality** finds that:

- (1) Water bodies, roadways, structures, and other property within, and downstream of the **Township/Municipality** are at times subjected to flooding;
- (2) Flooding is a danger to the lives and property of the public and is also a danger to the natural resources of the **Township/Municipality** and the region;
- (3) Land development alters the hydrologic response of watersheds, resulting in increased storm water runoff rates and volumes, increased flooding, increased stream channel erosion, and increased sediment transport and deposition;
- (4) Storm water runoff produced by land development contributes to increased quantities of water-borne pollutants;
- (5) Increases of storm water runoff, soil erosion, and non-point source pollution have occurred as a result of land development, and cause deterioration of the water resources of the **Township/Municipality** and downstream municipalities;
- (6) Storm water runoff, soil erosion, and non-point source pollution, due to land development within the **Township/Municipality**, have resulted in a deterioration of the water resources of the **Township/Municipality** and downstream municipalities;
- (7) Increased storm water runoff rates and volumes, and the sediments and pollutants associated with storm water runoff from future development projects within the **Township/Municipality** will, absent reasonable regulation and control, adversely affect the **Township/Municipality's** water bodies and water resources, and those of downstream municipalities;
- (8) Storm water runoff, soil erosion, and non-point source pollution can be controlled and minimized by the regulation of storm water runoff from development;
- (9) Adopting the standards, criteria and procedures contained in this ordinance and implementing the same will address many of the deleterious effects of storm water runoff;
- (10) Adopting these standards is necessary for the preservation of the public health, safety and welfare.

Sec. 1.03 Purpose

It is the purpose of this ordinance to establish minimum storm water management requirements and controls to accomplish, among others, the following objectives:

- (1) To reduce artificially induced flood damage;
- (2) To minimize increased storm water runoff rates and volumes from identified new land development;
- (3) To minimize the deterioration of existing watercourses, culverts and bridges, and other structures;
- (4) To encourage water recharge into the ground where geologically favorable conditions exist;
- (5) To prevent an increase in non-point source pollution;
- (6) To maintain the integrity of stream channels for their biological functions, as well as for drainage and other purposes;
- (7) To minimize the impact of development upon stream bank and streambed stability;
- (8) To reduce erosion from development or construction projects;
- (9) To preserve and protect water supply facilities and water resources by means of controlling increased flood discharges, stream erosion, and runoff pollution; and,
- (10) To reduce storm water runoff rates and volumes, soil erosion, and non-point source pollution, wherever practicable, from lands that were developed without storm water management controls meeting the purposes and standards of this ordinance.
- (11) To reduce the adverse impact of changing land use on water bodies and, to that end, this ordinance establishes minimum standards to protect water bodies from degradation resulting from changing land use where there are insufficient storm water management controls.

Sec. 1.04 Applicability, Exemptions and General Provisions

- (1) This ordinance shall apply to any development site which requires approval of a plat, a site development plan, building permit, or any other permit for work which will alter storm water drainage characteristics of the development site, provided, however, that this ordinance shall not apply to the following:
 - (a) The installation or removal of individual mobile homes within a mobile home park. This exemption shall not be construed to apply to the construction, expansion, or modification of a mobile home park.
 - (b) Farm operations and buildings, except dwellings, directly related to farm operations. This exemption shall not apply to greenhouses and other similar structures.
 - (c) Plats with preliminary plat approval and other developments with final land use approval prior to the effective date of this ordinance, where such approvals remain in effect.

Sec. 1.05 Definitions

For the purpose of this ordinance, the following words and phrases shall have the meanings respectively ascribed to them by this Section unless the context in which they are used specifically indicates otherwise:

- (1) Base Flood – A flood having a one (1) percent chance of being equaled or exceeded in any given year.
- (2) Base Flood Elevation – The high water elevation of the Base Flood, commonly referred to as the "100-year flood elevation".
- (3) Base Flood Plain – The area inundated by the Base Flood.
- (4) Best Management Practices (BMPs) – A practice, or combination of practices and design criteria that comply with the Michigan Department of Environmental Quality's Guidebook of BMPs for Michigan Watersheds, or equivalent practices and design criteria that accomplish the purposes of this ordinance (including, but not limited to minimizing storm water runoff and preventing the discharge of pollutants into storm water) as determined by the **Township/Municipal** Engineer, and, where appropriate, the standards of the Kent County Drain Commissioner.
- (5) Building Opening – Any opening of a solid wall such as a window or door, through which floodwaters could penetrate.

- (6) Clean Water Act – The Federal Water Pollution Control Act, 33 USC Sec 1251 et seq., as amended, and the applicable regulations promulgated thereunder.
- (7) Construction Site Storm Water Runoff – Storm water runoff from a development site following an earth change.
- (8) Design Engineer – Registered and licensed professional engineer responsible for the design of a drainage plan.
- (9) Detention – A system which is designed to capture storm water and release it over a given period of time through an outlet structure at a controlled rate.
- (10) Developed or Development – The installation or construction of impervious surfaces on a development site that require, pursuant to state law or local ordinance, the **Township/Municipality's** approval of a site plan, plat, site condominium, special land use, planned unit development, rezoning of land, land division approval, private road approval or other approvals required for the development of land or the erection of buildings or structures; provided, however, that for purposes of Article II only, developed or development shall not include the actual construction of, or an addition, extension or modification to, an individual single-family or a two-family detached dwelling.
- (11) Developer – Any person proposing or implementing the development of land.
- (12) Development Site – Any land that is being or has been developed, or that a developer proposes for development.
- (13) Discharger – Any person or entity who directly or indirectly discharges storm water from any property. Discharger also means any employee, officer, director, partner, contractor, or other person who participates in, or is legally or factually responsible for, any act or omission which is or results in a violation of this ordinance.
- (14) Drain – Any drain as defined in the Drain Code of 1956, as amended, being MCL 280.1, et. seq., other than an established county or intercounty drain.
- (15) Drainage – The collection, conveyance, or discharge of ground water and/or surface water.
- (16) Drainageway – The area within which surface water or ground water is carried from one part of a lot or parcel to another part of the lot or parcel or to adjacent land.

- (17) Earth Change – Any human activity which removes ground cover, changes the slope or contours of the land, or exposes the soil surface to the actions of wind and rain. Earth change includes, but is not limited to, any excavating, surface grading, filling, landscaping, or removal of vegetative roots.
- (18) EPA – The United States Environmental Protection Agency.
- (19) Erosion – The process by which the ground surface is worn away by action of wind, water, gravity or a combination thereof.
- (20) Exempted Discharges – Discharges other than storm water as specified in Section 4.02 of this ordinance.
- (21) Federal Emergency Management Agency (FEMA) – The agency of the federal government charged with emergency management.
- (22) Flood or Flooding – A general and temporary condition of partial or complete inundation of normally dry land areas resulting from the overflow of water bodies or the unusual and rapid accumulation of surface water runoff from any source.
- (23) Floodplain – Any land area subject to periodic flooding.
- (24) Flood-Proofing – Any structural and/or non-structural additions, changes, or adjustments to structures or property that reduce or eliminate flood damage to land, or improvements utilities and structures.
- (25) Flood Protection Elevation (FPE) – The Base Flood Elevation plus one (1) foot at any given location.
- (26) Floodway – The channel of any watercourse and the adjacent land areas that must be reserved to carry and discharge a base flood without cumulatively increasing the water surface elevation more than one-tenth (1/10) of a foot due to the loss of flood conveyance or storage.
- (27) Grading – Any stripping, excavating, filling, and stockpiling of soil or any combination thereof and the land in its excavated or filled condition.
- (28) Illicit Connection – Any method or means for conveying an illicit discharge into water bodies or the **Township/Municipality's** storm water system.
- (29) Illicit Discharge – Any discharge to water bodies that does not consist entirely of storm water, discharges pursuant to the terms of an NPDES permit, or exempted discharges as defined in this ordinance.

- (30) Impervious Surface – Surface that does not allow storm water runoff to slowly percolate into the ground.
- (31) KCDC – Kent County Drain Commissioner.
- (32) Lowest Floor – The lowest floor or the lowest enclosed area (including a basement), but not including an unfinished or flood-resistant enclosure which is usable solely for parking of vehicles or building access.
- (33) MDEQ – Michigan Department of Environmental Quality.
- (34) NPDES – National Pollution Discharge Elimination System.
- (35) Overland flow-way – Surface area that conveys a concentrated flow of storm water runoff.
- (36) Person – An individual, firm, partnership, association, public or private corporation, public agency, instrumentality, or any other legal entity.
- (37) Plan – Written narratives, specifications, drawings, sketches, written standards, operating procedures, or any combination of these which contain information pursuant to this ordinance.
- (38) Pollutant – A substance discharged which includes, but is not limited to the following: any dredged spoil, solid waste, vehicle fluids, yard wastes, animal wastes, agricultural waste products, sediment, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological wastes, radioactive materials, heat, wrecked or discharged equipment, rock, sand, cellar dirt, and industrial, municipal, commercial and agricultural waste, or any other contaminant or other substance defined as a pollutant under the Clean Water Act.
- (39) Property Owner – Any person having legal or equitable title to property or any person having or exercising care, custody, or control over any property.
- (40) Retention – A system which is designed to capture storm water and contain it until it infiltrates the soil or evaporates.
- (41) Soil Erosion – The stripping of soil and weathered rock from land creating sediment for transportation by water, wind or ice, and enabling formation of new sedimentary deposits.
- (42) State of Michigan Water Quality Standards – All applicable State rules, regulations, and laws pertaining to water quality, including the provisions of Section 3106 of Part 31 of 1994 PA 451, as amended.

- (43) Storm Drain – A system of open or enclosed conduits and appurtenant structures intended to convey or manage storm water runoff, ground water and drainage.
- (44) Storm Water Permit – A permit issued pursuant to this ordinance.
- (45) Storm Water Runoff – The runoff and drainage of precipitation resulting from rainfall or snowmelt or other natural event or process.
- (46) Storm Water Runoff Facility – The method, structure, area, system, or other equipment or measures which are designed to receive, control, store, or convey storm water.
- (47) Stream – A river, stream or creek which may or may not be serving as a drain, or any other water body that has definite banks, a bed, and visible evidence of a continued flow or continued occurrence of water.
- (48) **Township/Municipality** – The City/Township/Charter Township/Village of _____.
- (49) Water Body – A river, lake, stream, creek or other watercourse or wetlands.
- (50) Watershed – A region draining into a water body.
- (51) Wetlands – Land characterized by the presence of water at a frequency and duration sufficient to support wetland vegetation or aquatic life.

Article II – Storm Water Permits

Sec. 2.01 Permit Required.

- (1) A developer shall not engage in any development without first receiving a storm water permit from the **Township/Municipality** pursuant to Section 2.02.
- (2) The granting of a storm water permit shall authorize only such development for which the permit is required, subject to the terms of the permit, and it shall not be deemed to approve other development or other land use activities.

Sec. 2.02 Storm Water Permit Review Procedures

The **Township/Municipality** shall grant a storm water permit, which may impose terms and conditions in accordance with Section 2.09, and which shall be granted only upon compliance with each of the following requirements:

- (1) The developer has submitted a drainage plan complying with Section 2.03.
- (2) The drainage plan contains a description of an adequate, temporary storm water retention system to prevent construction site storm water runoff, satisfying the requirements of Section 2.05, and the developer has obtained a soil erosion permit, if necessary.
- (3) One of the following conditions is satisfied:
 - (a) The developer provides:
 - (1) A permanent on-site storm water system sufficient to provide on-site detention of storm water runoff in a twenty-five (25) year storm event, and
 - (2) A direct connection for all storm water runoff that will be discharged from and through the development site in a one hundred (100) year storm event; or
 - (b) The developer provides a permanent on-site storm water system with a restricted outlet designed to result in no net increase in storm water runoff volume or rate onto any adjacent property in a one hundred (100) year storm event.
- (4) The developer has paid or deposited the storm water permit review fee pursuant to Section 2.04.

- (5) The developer has paid or posted the applicable financial guarantee pursuant to Section 2.06.
- (6) The developer provides all easements necessary to implement the approved drainage plan and to otherwise comply with this Ordinance including, but not limited to, Section 7.02. All easements shall be acceptable to the **Township/Municipality** in form and substance and shall be recorded with the Kent County Register of Deeds.
- (7) The drainage plan is designed in conformity with the **Township/Municipality's** design and performance standards for drains and storm water management systems, as set forth in Article VIII.
- (8) All storm water runoff facilities shall be designed in accordance with the then-current BMPs.
- (9) The developer provides the required maintenance agreement for routine, emergency, and long-term maintenance of all storm water runoff facilities and in compliance with the approved drainage plan and this Ordinance including, but not limited to, Section 7.03. The maintenance agreement shall be acceptable to the **Township/Municipality** in form and substance and shall be recorded with the Kent County Register of Deeds.

Sec. 2.03 Drainage Plan.

The developer shall provide a drainage plan to the **Township/Municipality** for review and approval by the **Township/Municipality**. The drainage plan shall identify and contain all of the following:

- (1) The location of the development site and water bodies that will receive storm water runoff.
- (2) The existing and proposed topography of the development site, including the alignment and boundary of the natural drainage courses, with contours having a maximum interval of one foot (using USGS datum). The information shall be superimposed on the pertinent Kent County soil map.
- (3) The development tributary area to each point of discharge from the development.
- (4) Calculations for the final peak discharge rates.
- (5) Calculations for any facility or structure size and configuration.
- (6) A drawing showing all proposed storm water runoff facilities with existing and final grades.

- (7) The sizes and locations of upstream and downstream culverts serving the major drainage routes flowing into and out of the development site. Any significant off-site and on-site drainage outlet restrictions other than culverts should be noted on the drainage map.
- (8) An implementation plan for construction and inspection of all storm water runoff facilities necessary to the overall drainage plan, including a schedule of the estimated dates of completing construction of the storm water runoff facilities shown on the plan and an identification of the proposed inspection procedures to ensure that the storm water runoff facilities are constructed in accordance with the approved drainage plan.
- (9) A plan to ensure the effective control of construction site storm water runoff and sediment track-out onto roadways.
- (10) Drawings, profiles, and specifications for the construction of the storm water runoff facilities reasonably necessary to ensure that storm water runoff will be drained, stored, or otherwise controlled in accordance with this ordinance.
- (11) A maintenance agreement, in form and substance acceptable to the **Township/Municipality**, for ensuring maintenance of any privately-owned storm water runoff facilities. The maintenance agreement shall include the developer's written commitment to provide routine, emergency, and long-term maintenance of the facilities and, in the event that the facilities are not maintained in accordance with the approved drainage plan, the agreement shall authorize the **Township/Municipality** to maintain any on-site storm water runoff facility as reasonably necessary, at the developer's expense.
- (12) The name of the engineering firm and the registered professional engineer that designed the drainage plan and that will inspect final construction of the storm water runoff facilities.
- (13) All design information must be compatible for conversion to Grand Valley Regional Geographic Information System (REGIS).
- (14) Any other information necessary for the **Township/Municipality** to verify that the drainage plan complies with the **Township/Municipality's** design and performance standards for drains and storm water management systems.

Sec. 2.04 Storm Water Permit Review Fees.

- (1) All expenses and costs incurred by the **Township/Municipality** directly associated with processing, reviewing and approving or denying a storm water permit application shall be paid (or reimbursed) to the **Township/Municipality** from the funds in a separate escrow account established by the developer, as provided in subsection (2). The **Township/Municipality** may draw funds from a developer's escrow account to reimburse the **Township/Municipality** for out-of-pocket expenses incurred by the **Township/Municipality** relating to the application. Such reimbursable expenses include, but are not limited to, expenses related to the following:
 - (a) Services of the **Township/Municipality** Attorney directly related to the application.
 - (b) Services of the **Township/Municipality** Engineer directly related to the application.
 - (c) Services of other independent contractors working for the **Township/Municipality** which are directly related to the application.
 - (d) Any additional public hearings, required mailings and legal notice requirements necessitated by the application.
- (2) At the time a developer applies for a storm water permit, the developer shall deposit with the **Township/Municipality** clerk, as an escrow deposit, an initial amount as determined by resolution of the **[legislative body]** for such matters and shall provide additional amounts as requested by the **Township/Municipality** in such increments as are specified in said resolution. Any excess funds remaining in the escrow account after the application has been fully processed, reviewed, and the final **Township/Municipality** approval and acceptance of the development has occurred will be refunded to the developer with no interest to be paid on those funds. At no time prior to the **Township/Municipality's** final decision on an application shall the balance in the escrow account fall below the required initial amount. If the funds in the account are reduced to less than the required initial amount, the developer shall deposit into the account an additional amount as determined by **[Legislative Body]** resolution, before the application review process will be continued. Additional amounts may be required to be placed in the escrow account by the developer, at the discretion of the **Township/Municipality**.

Sec. 2.05 Construction Site Runoff Controls

Prior to making any earth change on a development site regulated by this ordinance, the developer shall first obtain a soil erosion permit issued in accordance with Part 91 of Act No. 451 of the Public Acts of 1994, as amended, if one is required. The developer shall install storm water runoff facilities and shall phase the development activities so as to prevent construction site storm water runoff and off-site sedimentation. During all construction activities on the development site, the **Township/Municipality** Engineer may inspect the development site to ensure compliance with the approved construction site runoff controls.

Sec. 2.06 Financial Guarantee

- (1) The **Township/Municipality** Engineer shall not approve a storm water permit until the developer submits to the **Township/Municipality**, in a form and amount satisfactory to the **Township/Municipality**, a letter of credit or other financial guarantee for the timely and satisfactory construction of all storm water runoff facilities and site grading in accordance with the approved drainage plan. Upon certification by a registered professional engineer that the storm water runoff facilities have been completed in accordance with the approved drainage plan including, but not limited to, the provisions contained in Section 2.03(8), the **Township/Municipality** may release the letter of credit, or other financial guarantee subject to final **Township/Municipality** acceptance and approval.
- (2) Except as provided in subsection (3), the amount of the financial guarantee shall be \$_____, unless the **Township/Municipality** determines that a greater amount is appropriate, in which case the basis for such determination shall be provided to the developer in writing. In determining whether an amount greater than \$_____ is appropriate, the **Township/Municipality** shall consider the size and type of the development, the size and type of the on-site storm water system, and the nature of the off-site storm water runoff facilities the development will utilize.
- (3) The **Township/Municipality** _____ [planner, zoning administrator, etc.] may reduce or waive the amount of the financial guarantee for a development that will not increase the percentage of impervious surface of the development site by more than ten percent (10%).
- (4) This ordinance shall not be construed or interpreted as relieving a developer of its obligation to pay all costs associated with on-site private storm water runoff facilities as well as those costs arising from the need to

make other drainage improvements in order to reduce a development's impact on a drain consistent with adopted design standards.

Sec. 2.07 Certificate of Occupancy

No certificate of occupancy shall be issued until storm water runoff facilities have been completed in accordance with the approved drainage plan; provided, however, the **Township/Municipality** may issue a certificate of occupancy if an acceptable letter of credit or other financial guarantee has been submitted to the **Township/Municipality**, for the timely and satisfactory construction of all storm water runoff facilities and site grading in accordance with the approved drainage plan.

Sec. 2.08 No Change in Approved Facilities

Storm water runoff facilities, after construction and approval, shall be maintained in good condition, in accordance with the approved drainage plan, and shall not be subsequently altered, revised or replaced except in accordance with the approved drainage plan, or in accordance with approved amendments or revisions in the plan.

Sec. 2.09 Terms and Conditions of Permits

In granting a storm water permit, the **Township/Municipality** may impose such terms and conditions as are reasonably necessary to effectuate the purposes of this ordinance. A developer shall comply with such terms and conditions.

Article III – Storm Water System, Floodplain and Other Standards, Soil Erosion Control

Sec. 3.01 Management of and Responsibility for Storm Water System

The **Township/Municipality** is not responsible for providing drainage facilities on private property for the management of storm water on said property. It shall be the responsibility of the property owner to provide for, and maintain, private storm water runoff facilities serving the property and to prevent or correct the accumulation of debris that interferes with the drainage function of a water body.

Sec. 3.02 Storm Water System

All storm water runoff facilities shall be constructed and maintained in accordance with all applicable federal, state and local ordinances, and rules and regulations.

Sec. 3.03 Storm Water Discharge Rates and Volumes

The **Township/Municipality** is authorized to establish minimum design standards for storm water discharge release rates and to require dischargers to implement on-site retention, detention or other methods necessary to control the rate and volume of surface water runoff discharged into the storm water drainage system, in the following circumstances:

- (1) A parcel of land is being developed in a manner that increases the impervious surface area of the parcel; or
- (2) The discharge exceeds the **Township/Municipality**-calculated pre-development discharge characteristics for the subject property, and the **Township/Municipality** determines that the discharge is a violation of the drainage, flooding or soil erosion regulations of this ordinance.

Sec. 3.04 Floodplain Standards

- (1) All new buildings and substantial improvements to existing buildings shall be protected from flood damage up to the Flood Protection Elevation (FPE) and shall be in accordance with all applicable federal, state and local ordinances, and rules and regulations. Floodway alteration shall be permitted only upon review and approval by the **Township/Municipality**, in accordance with an approved drainage plan.
- (2) A drainage plan providing for the filling or alteration of a floodway may include provisions for maintaining stability of the banks of streams or other water bodies, by means of the establishing of buffer zones and other means of providing protection of the slopes and banks of water bodies.

- (3) Within any required buffer zone, no earth change shall take place except in accordance with the approved drainage plan. Such a plan may also include provisions for the replacement of floodplain storage volume, where such storage volume is lost or diminished as a result of approved development.

Sec. 3.05 Soil Erosion and Sedimentation Control

- (1) All persons who cause, in whole or in part, any earth change to occur shall provide soil erosion and sedimentation control so as to adequately prevent soils from being eroded and discharged or deposited onto adjacent properties or into a storm water drainage system, a public street or right of way, wetland, creek, stream, water body, or floodplain. All development shall be in accordance with all applicable federal, state and local ordinances, rules and regulations.
- (2) During any earth change which exposes soil to an increased risk of erosion or sediment track-out, the property owner and other persons causing or participating in the earth change shall do the following:
 - (a) Comply with the storm water management standards of this ordinance.
 - (b) Obtain and comply with the terms of a soil erosion and sedimentation control permit if required by law.
 - (c) Prevent damage to any public utilities or services within the limits of grading and within any routes of travel or areas of work of construction equipment.
 - (d) Prevent damage to or impairment of any water body on or near the location of the earth change or affected thereby.
 - (e) Prevent damage to adjacent or nearby land.
 - (f) Apply for all required approvals or permits prior to the commencement of work.
 - (g) Proceed with the proposed work only in accordance with the approved plans and in compliance with this ordinance.
 - (h) Maintain all required soil erosion and sedimentation control measures, including but not limited to, measures required for compliance with the terms of this ordinance.

- (i) Promptly remove all soil, sediment, debris, or other materials applied, dumped, tracked, or otherwise deposited on any lands, public streets, sidewalks, or other public ways or facilities, including catch basins, storm sewers, ditches, drainage swales, or water bodies. Removal of all such soil, sediment, debris or other materials within twenty-four (24) hours shall be considered prima facie compliance with this requirement, unless such materials present an immediate hazard to public health and safety.
- (j) Refrain from grading lands at locations near or adjoining lands, public streets, sidewalks, alleys, or other public or private property without providing adequate support or other measures so as to protect such other lands, streets, sidewalks or other property from settling, cracking or sustaining other damage.
- (k) Request and obtain inspection of soil erosion and sedimentation control facilities, by the **Township/Municipality** at such frequency as required by the **Township/Municipality**.

Sec. 3.06 Building Openings

- (1) No building opening shall be constructed below the following elevations:
 - (a) One foot above the 100-year floodplain.
 - (b) The building opening established at the time of plat or development approval and on file in the **Township/Municipal** Engineering Department.
 - (c) Three feet above the top of any downstream culvert.
 - (d) Four feet above the bottom of any permanent and defined drain.
- (2) A waiver from elevations stated in Section 3.05(1) may be granted by the **Township/Municipal** Engineer following receipt of a certification from a registered professional engineer demonstrating that the proposed elevation does not pose a risk of flooding.
- (3) Upon completion of construction of the structure's foundation and or slab on grade, a registered land surveyor shall certify any minimum building opening elevation specified by this ordinance. This certificate shall attest that the building opening elevation complies with the standards of this ordinance. The permittee for the building permit shall submit the certificate to the **Township/Municipal** Building Inspections official prior to the commencement of framing and/or structural steel placement. If the surveyor should find that the minimum building opening elevation is below the elevation specified in Section 3.06(1)(b) or (c), that opening must be

raised using a method that meets with the approval of the **Township/Municipality**. After reconstruction, a registered land surveyor or engineer shall re-certify that the minimum building opening elevation complies with the standards of this ordinance prior to the commencement of framing and or structural steel placement.

[optional] Sec. 3.07 Sump Pump Discharge

- (1) Whenever building footing drains are required or utilized, a direct connection between the footing drains through a sump pump-check valve system to a storm sewer is required. A gravity system is not permitted.
- (2) A storm water lateral shall be provided for each parcel at the time of storm sewer construction.

Sec. 3.08 Public Health, Safety and Welfare

Protection of the public health, safety and welfare shall be a primary consideration in the design of all storm water runoff facilities.

Article IV – Prohibitions and Exemptions

Sec. 4.01 Prohibited Discharges

- (1) No person shall discharge to a water body, directly or indirectly, any substance other than storm water or an exempted discharge. Any person discharging storm water shall effectively prevent pollutants from being discharged with the storm water, except in accordance with best management practices.
- (2) The **Township/Municipality** is authorized to require dischargers to implement pollution prevention measures, utilizing BMPs, necessary to prevent or reduce the discharge of pollutants into the **Township's/Municipality's** storm water drainage system.

Sec. 4.02 Exempted Discharges

The following non-storm water discharges shall be permissible, provided that they do not result in a violation of State of Michigan water quality standards:

- Water supply line flushing
- Landscape irrigation
- Diverted stream flows
- Rising ground water
- Uncontaminated ground water infiltration to storm drains
- Uncontaminated pumped ground water
- Discharges from potable water sources
- Foundation drains
- Air conditioning condensate
- Individual residential car washing
- Dechlorinated swimming pool water
- Street washwater
- Discharges or flows from emergency fire fighting activities
- Discharges for which a specific federal or state permit has been issued.

Sec. 4.03 Interference with Natural or Artificial Drains

- (1) It shall be unlawful for any person to stop, fill, dam, confine, pave, alter the course of, or otherwise interfere with any natural or constructed drain, or drainageway without first submitting a drainage plan to the **Township/Municipality** and receiving approval of that plan. Any deviation from the approved plan is a violation of this ordinance. This section shall not prohibit, however, necessary emergency action so as to prevent or mitigate drainage that would be injurious to the environment, the public health, safety, or welfare.
- (2) No filling, blocking, fencing or above-surface vegetation planting shall take place within a floodway.

- (3) For an overland flow-way:
 - (a) Silt screen fences shall not be permitted below the top of the bank of a water body.
 - (b) Chain link fences shall be permitted if the **Township/Municipality** determines that the fence will not obstruct or divert the flow of water.
 - (c) If a fence is removed by the **Township/Municipality** for drain access or drain maintenance, the fence shall be replaced by the owner of the fence at the owner's expense.
 - (d) No shrubs or trees shall be planted below the top of the bank of a water body.
- (4) Shrubs, trees or other above-ground vegetation shall not be planted over the top of an underground storm sewer or over the top of the easement within which the storm sewer has been installed.

Sec. 4.04 Storage of Hazardous or Toxic Materials in Drainageway

Except as permitted by law, it shall be unlawful for any person to store or stockpile within a drainageway any hazardous or toxic materials unless adequate protection and/or containment has been provided so as to prevent any such materials from entering a drainageway.

Article V – Inspection, Monitoring, Reporting, and Recordkeeping.

Sec. 5.01 Inspection and Sampling

To assure compliance with the standards in this pervasively regulated area, the **Township/Municipality** may inspect and/or obtain storm water samples from storm water runoff facilities of any discharger to determine compliance with the requirements of this ordinance. Upon request, the discharger shall allow the **Township/Municipality's** properly identified representative to enter upon the premises of the discharger at all hours necessary for the purposes of such inspection or sampling. The **Township/Municipality** shall provide the discharger reasonable advance notice of such inspection and/or sampling. The **Township/Municipality** or its properly identified representative may place on the discharger's property the equipment or devices used for such sampling or inspection.

Sec. 5.02 Storm Water Monitoring Facilities

A discharger of storm water runoff shall provide and operate equipment or devices for the monitoring of storm water runoff, so as to provide for inspection, sampling, and flow measurement of each discharge to a water body or a storm water runoff facility, when directed in writing to do so by the **Township/Municipality**. The **Township/Municipality** may require a discharger to provide and operate such equipment and devices if it is necessary or appropriate for the inspection, sampling and flow measurement of discharges in order to determine whether adverse effects from or as a result of such discharges may occur. All such equipment and devices for the inspection, sampling and flow measurement of discharges shall be installed and maintained in accordance with applicable laws, ordinances and regulations.

Sec. 5.03 Accidental Discharges

- (1) Any discharger who accidentally discharges into a water body any substance other than storm water or an exempted discharge shall immediately inform the **Township/Municipality** concerning the discharge. If such information is given orally, a written report concerning the discharge shall be filed with the **Township/Municipality** within five (5) days. The written report shall specify:
 - (a) The composition of the discharge and the cause thereof.
 - (b) The exact date, time, and estimated volume of the discharge.
 - (c) All measures taken to clean up the accidental discharge, and all measures proposed to be taken to reduce and prevent any recurrence.

- (d) The name and telephone number of the person making the report, and the name of a person who may be contacted for additional information on the matter.
- (2) A properly-reported accidental discharge shall be an affirmative defense to a civil infraction proceeding brought under this ordinance against a discharger for such discharge. It shall not, however, be a defense to a legal action brought to obtain an injunction, to obtain recovery of costs or to obtain other relief as a result of or arising out of the discharge. A discharge shall be considered properly reported only if the discharger complies with all the requirements of Section 5.03(1).

Sec. 5.04 Record Keeping Requirement

Any person subject to this ordinance shall retain and preserve for no less than three (3) years any and all books, drawings, plans, prints, documents, memoranda, reports, correspondence and records, including records on magnetic or electronic media and any and all summaries of such records, relating to monitoring, sampling and chemical analysis of any discharge or storm water runoff from any property.

Article VI – Enforcement

Sec. 6.01 Sanctions for Violation

- (1) Any person violating any provision of this ordinance shall be responsible for a municipal civil infraction and subject to a fine of not less than \$_____ for a first offense, and not less than \$_____ for a subsequent offense, plus costs, damages, expenses, and other sanctions as authorized under Chapter 87 of the Revised Judicature Act of 1961 and other applicable laws, including, without limitation, equitable relief; provided, however, that the violation stated in Section 6.01(2) shall be a misdemeanor. Each day such violation occurs or continues shall be deemed a separate offense and shall make the violator liable for the imposition of a fine for each day. The rights and remedies provided for in this section are cumulative and in addition to any other remedies provided by law. An admission or determination of responsibility shall not exempt the offender from compliance with the requirements of this ordinance.

For purposes of this section, "subsequent offense" means a violation of the provisions of this ordinance committed by the same person within 12 months of a previous violation of the same provision of this ordinance for which said person admitted responsibility or was adjudicated to be responsible.

The **Township/Municipality** [zoning administrator, building inspector, enforcement officer, etc.] is authorized to issue municipal civil infraction citations to any person alleged to be violating any provision of this ordinance.

- (2) Any person who neglects or fails to comply with a stop work order issued under Section 6.02 shall, upon conviction, be guilty of a misdemeanor, punishable by a fine of not more than \$500 or imprisonment in the county jail for not more than 93 days, or both such fine and imprisonment, and such person shall also pay such costs as may be imposed in the discretion of the court.
- (3) Any person who aids or abets a person in a violation of this ordinance shall be subject to the sanctions provided in this section.

Sec. 6.02 Stop Work Order

Where there is work in progress that causes or constitutes in whole or in part, a violation of any provision of this ordinance, the **Township/Municipality** is authorized to issue a Stop Work Order so as to prevent further or continuing violations or adverse effects. All persons to whom the stop work order is directed, or who are involved in any way with the work or matter described in the stop work order shall fully and promptly comply therewith. The

Township/Municipality may also undertake or cause to be undertaken, any necessary or advisable protective measures so as to prevent violations of this ordinance or to avoid or reduce the effects of noncompliance herewith. The cost of any such protective measures shall be the responsibility of the owner of the property upon which the work is being done and the responsibility of any person carrying out or participating in the work, and such cost shall be a lien upon the property.

Sec. 6.03 Failure to Comply; Completion

In addition to any other remedies, should any owner fail to comply with the provisions of this ordinance, the **Township/Municipality** may, after the giving of reasonable notice and opportunity for compliance, have the necessary work done, and the owner shall be obligated to promptly reimburse the **Township/Municipality** for all costs of such work.

Sec. 6.04 Emergency Measures

When emergency measures are necessary to moderate a nuisance, to protect public safety, health and welfare, and/or to prevent loss of life, injury or damage to property, the **Township/Municipality** is authorized to carry out or arrange for all such emergency measures. Property owners shall be responsible for the cost of such measures made necessary as a result of a violation of this ordinance, and shall promptly reimburse the **Township/Municipality** for all of such costs.

Sec. 6.05 Cost Recovery for Damage to Storm Drain System

A discharger shall be liable for all costs incurred by the **Township/Municipality** as the result of causing a discharge that produces a deposit or obstruction, or causes damage to, or impairs a storm drain, or violates any of the provisions of this ordinance. Costs include, but are not limited to, those penalties levied by the EPA or MDEQ for violation of an NPDES permit, attorney fees, and other costs and expenses.

Sec. 6.06 Collection of Costs; Lien

Costs incurred by the **Township/Municipality** and the Drain Commissioner pursuant to Sections 6.02, 6.03, 6.04 and 6.05 shall be a lien on the premises which shall be enforceable in accordance with Act No. 94 of the Public Acts of 1933, as amended from time to time. Any such charges which are delinquent for six (6) months or more may be certified annually to the **Township/Municipality** Treasurer who shall enter the lien on the next tax roll against the premises and the costs shall be collected and the lien shall be enforced in the same manner as provided for in the collection of taxes assessed upon the roll and the enforcement of a lien for taxes. In addition to any other lawful enforcement methods, the **Township/Municipality** or the Drain Commissioner shall have all remedies authorized by Act No. 94 of the Public Acts of 1933, as amended.

Sec. 6.07 Appeals

Any person as to whom any provision of this ordinance has been applied may appeal in writing, not later than 30 days after the action or decision being appealed from, to the **Township/Municipal [legislative body or other board]** the action or decision whereby any such provision was so applied. Such appeal shall identify the matter being appealed, and the basis for the appeal. The **Township/Municipality [legislative body or other board]** shall consider the appeal and make a decision whereby it affirms, rejects or modifies the action being appealed. In considering any such appeal, the **Township/Municipality [legislative body or other board]** may consider the recommendations of the **Township/Municipal** Engineer and the comments of other persons having knowledge of the matter. In considering any such appeal, the **Township/Municipal [legislative body or other board]** may grant a variance from the terms of this ordinance so as to provide relief, in whole or in part, from the action being appealed, but only upon finding that the following requirements are satisfied:

- (1) The application of the ordinance provisions being appealed will present or cause practical difficulties for a development or development site; provided, however, that practical difficulties shall not include the need for the developer to incur additional reasonable expenses in order to comply with the ordinance; and
- (2) The granting of the relief requested will not substantially prevent the goals and purposes sought to be accomplished by this ordinance, nor result in less effective management of storm water runoff.

Article VII – Storm Water Easements and Maintenance Agreements

Sec. 7.01 Applicability of Requirements

The requirements of this Article concerning storm water easements and maintenance agreements shall apply to all persons required to submit a drainage plan to the **Township/Municipality** for review and approval.

Sec. 7.02 Storm Water Management Easements

The developer shall provide all storm water management easements necessary to implement the approved drainage plan and to otherwise comply with this ordinance in form and substance required by the **Township/Municipality** and shall record such easements as directed by the **Township/Municipality**. The easements shall assure access for proper inspection and maintenance of storm water runoff facilities and shall provide adequate emergency overland flow-ways.

Sec. 7.03 Maintenance Agreements

The developer shall provide all storm water maintenance agreements necessary to implement the approved drainage plan and to otherwise comply with this ordinance in form and substance as required by the **Township/Municipality**, and shall record such agreements as directed by the **Township/Municipality**. The maintenance agreements shall, among other matters, assure access for proper inspection and maintenance of storm water runoff facilities and adequate emergency overland flow-ways.

Sec. 7.04 Establishment of County Drains

Prior to final approval, all storm water management facilities for platted subdivisions 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 VIII – Performance and Design Standards

Sec. 8.01 Performance Standards

In order to achieve the goals and purposes of this ordinance, the following three storm water management zones (Zones A, B and C) are hereby established. The Zones are shown on the map attached as Appendix A and made a part of this ordinance.

- (1) Zone A represents areas which require the most protective storm water management regulations. The goal of this zone is to preserve the natural condition of water bodies included in it, in whole or in part. Zone A has, in general, little impervious surface area and few storm water facilities. In this zone, when site conditions permit, infiltration of storm water runoff shall be required, rather than the directed flow of storm water runoff into water bodies. This storm water management practice provides greater protection for surface water quality, and also assists in augmenting stream base flow, reduction of flash storm flows and prevention of stream bank erosion. Section 8.02 specifies design criteria for Zone A, in order that the volume and rate of storm water runoff are controlled at predevelopment levels.
- (2) Zone B represents developed areas that have significant impervious surfaces and storm water runoff facilities in place. The goal of Zone B is the control of storm water runoff in order to prevent further destabilizing of streams and other water bodies. In this zone, the use of detention ponds, the maintenance and enhancement of buffer strips and other measures to reduce directly-connected impervious areas are specified in Section 8.02 for the achieving of the storm water management standards applicable to Zone B. The management practices for this zone are intended to maintain existing water quality and to alleviate adverse downstream impact on water bodies.
- (3) Zone C consists of highly urbanized areas, or areas where there has been significant modification of drainageways. The amount of impervious surface area in Zone C is generally greater than 25%. Among the measures required in Zone C, as stated in Section 8.02, are the use of sediment basins, the maintenance and enhancement of buffer strips along water bodies and the reduction of impervious surface areas that are directly connected to water bodies. An important element of storm water management practice in Zone C is the control and prevention of sedimentation, in order to reduce pollution of water bodies.

Sec. 8.02 Design Standards

The design standards for storm water runoff facilities for Zones A, B and C, as described in Section 8.01, are the following:

	Zone A	Zone B	Zone C
Criteria	High quality waters. Meets water quality standards. Less than 10% imperviousness.	Degraded physical, biological, or water quality indicators. 10% to 25% imperviousness.	Heavily degraded physical, biological, or water quality indicators. Greater than 25% imperviousness.
Storm Water Management Standards	Use infiltration basins, infiltration trenches, extended detention basins, and/or constructed wetlands. Maintain and enhance buffer strips.	Use detention ponds; maintain and enhance buffer strips, and reduce directly connected impervious area.	Use sediment basins, maintain and enhance buffer strips, and reduce directly connected impervious area.
Water Quality Control	Detain the first 0.5" of runoff from the contributing watershed, with detention per Zone B and infiltration where conditions permit, or provide equivalent treatment.	Detain the first 0.5" of runoff from the contributing watershed for 24 hours or provide equivalent treatment.	Provide sedimentation control within the drainage system.
Bank Erosion Control	Rate of release shall be limited to 0.05 cfs/acre for a 2-year storm event.	None	Storm water runoff shall not exceed the capacity of the downstream conveyance system.
Flood Control	Detention with infiltration when conditions permit. Release rate of 0.13 cfs/acre per KCDC rules.	Release rate of 0.13 cfs/acre per KCDC rules.	Direct conveyance of storm water runoff within the capacity of downstream system.

Sec. 8.03 Resolution to Implement Performance and Design Standards

The [legislative body] of the **Township/Municipality** may adopt a resolution establishing more detailed design and performance standards for storm water runoff facilities, consistent with the terms of this ordinance, and in order to further implement its goals and purposes.

Article IX – Other Matters

Sec. 9.01 Interpretation

Words and phrases in this ordinance shall be construed according to their common and accepted meanings, except that words and phrases defined in Section 1.05 shall be construed according to the respective definitions given in that section. Technical words and technical phrases that are not defined in this ordinance but which have acquired particular meanings in law or in technical usage shall be construed according to such meanings.

Sec. 9.02 Catch-Line Headings

The catch-line headings of the articles and sections of this ordinance are intended for convenience only, and shall not be construed as affecting the meaning or interpretation of the text of the articles or sections to which they may refer.

Sec. 9.03 Severability

The provisions of this ordinance are hereby declared to be severable, and if any part or provision of this ordinance should be declared invalid or unenforceable by any court of competent jurisdiction, such invalidity or unenforceability shall not affect any other part or provision of the ordinance.

Sec. 9.04 Other Ordinances

This ordinance shall be in addition to other ordinances of the **Township/Municipality**, and shall not be deemed to repeal or replace other ordinances or parts thereof except to the extent that such repeal is specifically provided for in this Article.

Sec. 9.05 Effective Date

This ordinance shall become effective _____, following its publication or following the publication of a summary of its provisions in a local newspaper of general circulation.

Sec. 9.06 Repeal [if applicable]

Ordinance No. ____, titled _____, is hereby repealed, as of the effective date of this ordinance.

This ordinance was adopted _____, by the **[Township Board, City Council or City Commission, Village Council]** and made effective _____.

Township/Municipality Clerk

_____ OF _____

COUNTY OF KENT, MICHIGAN

**RESOLUTION TO APPROVE ADDITIONAL DESIGN
AND PERFORMANCE STANDARDS FOR
STORM WATER RUNOFF FACILITIES
AND TO APPROVE OTHER STANDARDS PERTAINING
TO STORM WATER MANAGEMENT**

WHEREAS on _____, the [Township Board, City Council, City
Commission or Village Council] adopted Ordinance No. ____, the _____ of _____
Storm Water Ordinance;

WHEREAS, Section 8.03 of said ordinance provides that the [Township Board,
City Council, City Commission or Village Council] may adopt by resolution additional design
and performance standards for storm water runoff facilities, consistent with the terms of the
ordinance, in order to further implement its goals and purposes;

WHEREAS, the [Township Board, City Council, City Commission or Village
Council] now desires to adopt such additional design and performance standards for storm water
runoff facilities and other standards pertaining to storm water management.

IT IS, THEREFORE, RESOLVED AS FOLLOWS:

Section 1. Lot Drainage.

(a) Any drainage situation not involving any public property water is
the responsibility of the property owner.

(b) In plat and site plan review, the **Township/Municipality** will only review private property drainage for the purpose of assuring that private property can be drained.

(c) Lot grading and private property drainage is a civil matter among the property owners affected.

(d) To aid contractors and builders in grading private property, a lot grading plan will be required on all development and such information shall be disbursed along with the building permit. This lot grading plan must show:

- (1) Any established minimum building opening.
- (2) Floodway and floodplain elevations.
- (3) All storm sewers, the rise, grades, invert elevations and top of casting elevations.
- (4) All storm sewer laterals.
- (5) All utility and drainage easements and their full description.
- (6) Minimum basement elevation for sanitary sewer.
- (7) Direction of drainage on each lot.
- (8) Elevations of any constructed surface drainage facilities.
- (9) Surface grading of the entire parcel.

(e) A minimum rear yard of twenty-five (25') prior to any drainage encumbrance is required. This will allow opportunity for rear yard use for sheds, play equipment, etc., without concern about water damage or inconvenience.

(f) Prior to construction of any structure on a parcel or lot upon which a floodway easement, floodplain and drainageway exists, the permittee must obtain from the

Township/Municipality, a copy of the approved plans showing the location and design elevations of that floodway, floodplain and drainageway. Upon completion of the structure and prior to the issuance of an occupancy permit, the permittee must provide a certification from a registered land surveyor that the floodway, floodplain and drainageway grades and dimensions are as designed. If the floodway, floodplain and drainageway does not conform to the approved plans, the floodway, floodplain and drainageway must be reconstructed and certified prior to the issuance of an occupancy permit for that lot or parcel. Concurrent floodway, floodplain and drainageway reconstruction and issuance of an occupancy permit are permitted only if that action does not present a danger to the safety and welfare of any affected property. To permit concurrent action, the permittee shall provide the **Township/Municipality** with a performance bond, a letter of credit, or a cash deposit to cover the cost of said reconstruction at a dollar amount established by the **Township/Municipality**.

Section 2. **Storm Water Management Zones.** The performance standards stated in Section 8.01 of said ordinance are hereby supplemented as follows:

(a) In any single development site, up to three different detention volumes may be calculated to determine the staged outlet elevations: (1) water quality control, (2) bank erosion control, and (3) flood control. These volumes are not intended to be additive; the flood control volume shall include the water quality control and bank erosion control volumes.

(b) The default flood control volume shall be based on detaining the 25-year storm frequency so long as the downstream storm water conveyance system has adequate capacity and includes an acceptable emergency overland floodway. If the design engineer determines the

downstream conveyance system is not adequate or an acceptable emergency overland floodway does not exist, then the Flood control volume shall be based on detaining the 100-year storm.

Section 3. Flood Plain Protection. Section 8.01 of said ordinance is supplemented as follows:

(a) Natural floodway filling or alteration shall not be allowed without review and approval by the **Township/Municipality** and compliance with the Floodplain Regulatory Authority found in Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA) on watercourses with contributing drainage area of 2 square miles or greater. If a floodway has not been mapped, the applicant's consultant shall provide the floodway delineation to the **Township/Municipality** for approval.

(b) Natural floodway fringe filling or alteration shall not be allowed without review and approval by the **Township/Municipality** and compliance with the Floodplain Regulatory Authority found in Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA) on watercourses with contributing drainage area of 2 square miles or greater. If a floodplain has not been mapped, the applicant's consultant shall provide the floodplain delineation including the floodway, to the **Township/Municipality** for approval.

(c) To provide for streambank stability a buffer zone is to be established and called out on a recorded plat, an approved block grading plan, a site plan, or an improvement plan. This zone shall consist of existing natural tree and vegetation slope protection within a minimum of 25 feet from the ordinary high-water mark. This buffer zone shall be maintained as is, that is, no earth change or disturbance is to take place.

- (d) Replacement of lost floodplain shall meet the following criteria.
- (i) Replacement of the loss of floodplain storage volume at a 1 to 1 ratio unless watershed conditions warrant a higher ratio. This applies to floodplain associated with rainfall events up to a 100-year frequency. The grading plan shall provide for an equivalent volume of storage for floodplains associated with more frequent events such as 10 and 25 year frequencies.
 - (ii) Storm water detention does not apply toward the replacement volume.
 - (iii) Floodplain storage volume shall be computed above the seasonal high ground water level only.
 - (iv) The inflow and outflow rates to the area shall be consistent with pre-development rates.
 - (v) Up to 50 percent of the floodplain mitigation storage volume may be used for snow storage.
 - (vi) The proximity of the floodplain mitigation area shall provide for an equivalent hydrologic impact to the receiving stream and adjacent parcels.

AYES: _____

NAYS: _____

RESOLUTION DECLARED ADOPTED.

_____, Clerk