

PROPOSED MODEL STORMWATER ORDINANCE

FOR LOCAL GOVERNMENTS
WITHIN THE LOWER GRAND RIVER
WATERSHED

2020

[LOCAL GOVERNMENT]

Prepared by the Stormwater Ordinance Committee of the
Lower Grand River Organization of Watersheds

GVMC

ACKNOWLEDGEMENTS

This version of the Model Ordinance was based on the 2001 Kent County Model Ordinance, which was created through a collaboration of municipal officials, engineers, attorneys, and stormwater management experts led by the Kent county Drain Office. The Municipal Stormwater Permit Applications submitted by the communities in the Lower Grand River Watershed in 2019 included a commitment by all permittees to develop and submit a revised ordinance or regulatory process, which required numerous adjustments and modifications to the 2001 version to meet the new requirements. A Stormwater Ordinance (SWOrd) committee was formed in June 2014 to fulfill that commitment.

The committee members, with support of their community, contributed their time, efforts, and talent toward the preparation of this document. The Grand Valley Metro Council (GVMC) would like to acknowledge the assistance provided from all the members to the completion of this Model Ordinance and to thank them for their efforts toward creating a coordinated approach to storm water management and regulations among the Lower Grand River local governments.

As written, this model ordinance is not intended to repeal or replace any other related ordinances previously adopted by the municipality (i.e. Illicit discharge ordinance, soil erosion and sedimentation control ordinance).

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[LOCAL GOVERNMENT]

COUNTY OF KENT MICHIGAN

AN ORDINANCE to provide for the regulation and control of stormwater runoff; to provide for stormwater permits and the procedures and standards for the issuance thereof; to provide for payment or reimbursement of costs and expense incurred by [LOCAL GOVERNMENT] associated with stormwater 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 stormwater and other discharges; to establish performance and design standards for stormwater management in [LOCAL GOVERNMENT]; and to provide penalties for violations of the ordinance.

[LOCAL GOVERNMENT] 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.

This ordinance shall be known and may be cited as the [LOCAL GOVERNMENT] Stormwater Management Ordinance.

Sec. 1.02 Findings

[LOCAL GOVERNMENT] finds that:

- (1) Water bodies, roadways, structures, and other property within, and downstream of [LOCAL GOVERNMENT] 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 [LOCAL GOVERNMENT] and the region;
- (3) Land developed alters the hydrologic response of watersheds, resulting in increased stormwater runoff rates and volumes, increased flooding, increased stream channel erosion, and increased sediment transport and deposition;
- (4) Stormwater runoff produced by land development contributes to increased quantities of water-borne pollutants;
- (5) Increases of stormwater runoff, soil erosion, and non-point sources pollution have occurred as a result of land development, and cause deterioration of the water resources of [LOCAL GOVERNMENT] and downstream municipalities;
- (6) Stormwater runoff, soil erosion, and non-point source pollution, due to land development within [LOCAL GOVERNMENT], have resulted in a deterioration of the water resources of [LOCAL GOVERNMENT] and downstream municipalities;
- (7) Increased stormwater runoff rates and volumes, and the sediments and pollutants associated with stormwater runoff from future development projects within [LOCAL GOVERNMENT] will, absent reasonable regulation and control, adversely affect [LOCAL GOVERNMENT] water bodies and water resources, and those of downstream municipalities;
- (8) Stormwater runoff, soil erosion, and non-point source pollution can be controlled and minimized by the regulation of stormwater runoff from development;
- (9) Post-construction stormwater runoff program requirements for new development and redevelopment within [LOCAL GOVERNMENT] are set forth in the 2013 Michigan Department of Environment, Great Lakes, and Energy (formerly Michigan Department of Environmental Quality) *Permit Application for Discharge of Storm Water to Surface Waters of the State from a Municipal Separate Storm Sewer System (MS4)* under the National Pollution Discharge Elimination System (NPDES) program (Rev 10/2014).

- (10) Adopting the standards, criteria and procedures contained in this ordinance and implementing the same will address many of the deleterious effects of stormwater runoff.
- (11) Adopting these standards is necessary for the preservation of the public health, safety, and welfare;
- (12) Adopting these standards is necessary to comply with the NPDES MS4 permit;
- (13) Illicit discharges contain pollutants that will significantly degrade the [LOCAL GOVERNMENT]'s water bodies and water resources;
- (14) Illicit discharges enter [LOCAL GOVERNMENT]'s MS4 through either direct connections (e.g. sanitary sewer laterals mistakenly or deliberately connected to the storm sewers) or indirect connections (e.g. infiltration, or spills conveyed by surface flow into the storm sewer system); and,
- (15) Establishing and implanting measures for controlling illicit discharges and connections will address many of their deleterious effects.

Sec. 1.03 Purpose

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

- (1) To reduce artificially induced flood damage;
- (2) To minimize increased stormwater 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;
- (10) To reduce stormwater runoff rates and volumes, soil erosion, and non-point source pollution, wherever practicable, from lands that were developed without stormwater 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 stormwater management controls;
- (12) To regulate the contribution of pollutants to the MS4 from stormwater discharges;
- (13) To prohibit illicit discharges and connections to the MS4; and,
- (14) To establish legal authority to carry out all inspection, surveillance and monitoring procedures necessary to ensure compliance with this ordinance.

Sec. 1.04 Applicability, Exemptions and General Provisions

- (1) This ordinance shall apply to all new development and all redevelopment projects, including private, commercial and public projects that disturb one (1) acre or more, and projects less than one (1) acre that are part of a larger common plan of development or sale that would disturb one (1) acre or more.
- (2) 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) Construction of, or an addition, extension or modification to, an individual single-family or a two-family detached dwelling;
 - (c) Farm operations and buildings, except dwellings, directly related to farm operations. This exemption shall not apply to greenhouses and other similar structures; and,

- (d) 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.

Sect. 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 practices, or combination of practices and design criteria that accomplish the purposes of this ordinance (including, but not limited to reducing stormwater runoff rates, reducing stormwater runoff volume, and reducing the amount of pollutants in stormwater) as determined by [LOCAL GOVERNMENT] and, where appropriate, the standards of the [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 Stormwater Runoff – Stormwater runoff from a development site following an earth change and before final site stabilization
- (8) Detention – A system which is designed to capture stormwater and release it over a given period of time through an outlet structure at a controlled rate
- (9) Development – The installation or construction of buildings, structures or other impervious surfaces on a site that disturbs one (1) acre of land or more, including projects less than one (1) acre that are part of a larger common plan or sale that would disturb one (1) acre or more. A development may include a land division, plat, site condominium, planned unit development, mobile home park, private road or other special land use requiring land use or other review and approval by [LOCAL GOVERNMENT]

- (10) Developer – Any person or entity proposing or implementing the development of land
- (11) Development Site – Any land that is being or has been developed, or that a developer proposed for development
- (12) Discharger – Any person or entity who directly or indirectly discharges stormwater from any property
- (13) Drain – Any drain as defined in the Drain Code of 1956, as amended, being MCL 280.1, et seq
- (14) Drainage – The collection or conveyance of stormwater, ground water, and/or surface water
- (15) Drainageway – The area within which surface water or ground water is conveyed from one part of a lot or parcel to another part of the lot or parcel or to adjacent land or to a watercourse
- (16) 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
- (17) EGLE - Michigan Department of Environment, Great Lakes and Energy
- (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) Federal Emergency Management Agency (FEMA) – The agency of the federal government charged with emergency management
- (21) 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
- (22) Flood-Proofing – Any structural and/or non-structural additions, changes, or adjustments to structures or property that reduce or eliminate flood damage to land, improvements, utilities, or structures

- (23) Flood Protection Elevation (FPE) – The base flood elevation plus one (1) foot at any given location
- (24) Floodway – The channel of a river or stream and the portions of the floodplain adjoining the channel that are reasonably required to carry and discharge a 100-year flood
- (25) Grading – Any stripping, excavating, filling, and stockpiling of soil or any combination thereof, and the land in its excavated or filled condition
- (26) Groundwater – Water below the land surface in the zone of saturation as defined by EGLE Part 213
- (27) Hazardous Material(s) – Any material including any substance, waste or combination thereof, which because of its quantity, concentration or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.
- (28) High Groundwater – A groundwater elevation which does not meet minimum distance from the bottom of proposed practice as defined in the Stormwater Standards Manual
- (29) Illicit Connection – Any method or means for conveying an illicit discharge into water bodies or [LOCAL GOVERNMENT]'s stormwater system
- (30) Illicit Discharge – Any discharge to water bodies or stormwater systems that does not consist entirely of stormwater, discharges pursuant to the terms of an NPDES permit, or exempted discharges as defined in this ordinance
- (31) Impervious Surface – Any surface that does not allow stormwater to percolate into the ground
- (32) Local Floodplain – Any land area subject to periodic flooding as determined by [LOCAL GOVERNMENT]
- (33) Local Government – The [LOCAL GOVERNMENT], or a properly delegated official
- (34) 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

- (35) MS4 – Municipal Separate Storm Sewer System is a system of drainage (including roads, storm drains, pipes and ditches, etc.) that is not a combined sewer or part of a sewage treatment plant. During wet weather, pollutants are transported through MS4s to local water bodies
- (36) MS4 Permit – Regulated communities with MS4s that discharge to waters of the state are required to obtain a permit under Section 402 of the Federal Clean Water Act, as amended, and under the Water Resources Protection (Part 31, Act 451, PA 1994) of the Michigan Natural Resources and Environmental Protection Act (NREPA), as amended
- (37) NPDES – National Pollution Discharge Elimination System. The NPDES program protects the surface waters of the state by assuring that discharges of wastewater comply with state and federal regulations. Anyone discharging or proposing to discharge wastewater to the surface waters of the state are required to make application for and obtain a valid NPDES permit prior to wastewater discharge
- (38) Overland Flow-Way – Surface area that conveys a concentrated flow of stormwater runoff
- (39) Person – An individual, firm, partnership, association, public or private corporation, public agency, instrumentality, or any other legal entity
- (40) Plan – Written narratives, specifications, drawings, sketches, written standards, operating procedures, or any combination of these
- (41) 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 defines as a pollutant under the Clean Water Act
- (42) Project Site – Area of earth change or disturbance
- (43) Property Owner – Any person having legal or equitable title to property or any person having or exercising care, custody, or control over any property
- (44) Retention – A system which is designed to capture stormwater and contain it until it infiltrates the soil or evaporates

- (45) Riparian Property Owner – A property owner whose land is adjacent to a waterbody
- (46) Sewershed – A catchment defined by storm drain infrastructure emptying into a common outlet
- (47) Soil Erosion – The stripping of soil and weather rock from land creating sediment for transportation by water, wind, or ice, and enabling formation of new sedimentary deposits
- (48) State of Michigan Water Quality Standards – All applicable state rules, regulations, and laws pertaining to water quality, including the provisions of Section 3106 of Par 31 of 1994 PA 451, as amended
- (49) State-Regulated Floodplain – Any area of land adjoining a river or stream that will be inundated by a base flood that has a drainage area of two (2) square miles or more when measured at the downstream limits of the proposed development site
- (50) Storm Drain – A system of open or enclosed conduits and appurtenant structures intended to convey or manage stormwater runoff, ground water and drainage
- (51) Stormwater Permit – A permit issued pursuant to this ordinance
- (52) Stormwater Runoff – Water that originates during precipitation events or with snowmelt. Stormwater that does not soak into the ground or evaporates becomes stormwater runoff, which either flows directly into surface waters or is channeled into storm drainage systems
- (53) Stormwater Management Facility – The method, structure, area, system, plantings, trees, or other equipment or measures which are designed to receive, control, store, convey, infiltrate, or treat stormwater
- (54) Stormwater Standards Manual – Establishes a uniform set of minimum stormwater design standards necessary to provide for public safety, the protection of property, and to comply with the NPDES MS4 individual permit
- (55) 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
- (56) Substantial Improvement – A repair, reconstruction, or improvement of an existing structure, such that the cost equals or exceeds fifty percent (50%) of the true cash value of the structure either:

- (a) Before the improvement is started, or
 - (b) Before the damage occurred if the structure has been damaged and is being restored, or
 - (c) Substantial improvement is started when the first alteration of any structural part of the building commences
- (57) Uncontaminated Pumped Groundwater – Pumped groundwater from dewatering wells at sites where no known soil or groundwater contamination exists
- (58) Wastewater – Any water or other liquid other than uncontaminated stormwater discharged from a facility
- (59) Water Body – A river, lake, stream, creek or other watercourse or wetlands
- (60) Watershed – A land area draining into a water body
- (61) Wetlands – Land characterized by the presence of water at a frequency and duration sufficient to support wetland vegetation and aquatic life

Article II – Stormwater Permits

Sec. 2.01 Permit Required

- (1) No person shall engage in any development activity without first receiving a stormwater permit from [LOCAL GOVERNMENT] pursuant to Section 2.02.
- (2) The granting of a stormwater permit only authorizes the discharge of stormwater from the development for which the permit is required, subject to the terms of the permit. It shall not be deemed to approve other development, other land use activities, or replace other required permits.

Sec. 2.02 Stormwater Permit Review Procedures

[LOCAL GOVERNMENT] shall grant a stormwater permit, which may impose terms and conditions in accordance with Section 2.09, only upon compliance with each of the following requirements:

- (1) The developer has submitted a site (drainage) plan complying with Section 2.03.

- (2) The developer has paid or deposited the stormwater permit review fee pursuant to Section 2.04.
- (3) The developer has paid or posted an applicable performance guarantee pursuant to Section 2.06.
- (4) The developer agrees to provide 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 [LOCAL GOVERNMENT] in form and substance and shall be recorded with the County Register of Deeds. At the discretion of [LOCAL GOVERNMENT] the final easement may be required to be recorded prior to permit issuance.
- (5) The developer provides the required maintenance agreement for routine, emergency, and long-term maintenance of all structural and vegetative BMPs installed and implemented to meet the performance standards, and to comply with the approved drainage plan and this ordinance including, but not limited to, Section 7.03. The maintenance agreement shall be acceptable to [LOCAL GOVERNMENT] in form and substance, may not be amended without the approval of [LOCAL GOVERNMENT], shall be binding on all future property owners, and shall be recorded with the county Register of Deeds.

Sec. 2.03 Drainage Plan

The developer shall provide adequate stormwater management facilities for the Development site. Adequate facilities reduce the exposure of people to drainage-related adverse impacts and to health and safety hazards. They reduce the exposure of real and personal property to damage through stormwater inundation. The stormwater management system and stormwater best management practices (BMPs) shall be designed in accordance with the latest version of the document “Stormwater Standards Manual” of [LOCAL GOVERNMENT].

The Developer shall provide a drainage Plan to [Local Government] for review and approval by [Local Government]. The drainage Plan shall identify and contain all the information required in the “Stormwater Standards” manual, including an implementation Plan relative to the Development site.

The implementation Plan for construction and inspection of all stormwater management facilities necessary to the overall drainage Plan shall include a schedule of the estimated dates of completing construction of the stormwater management facilities shown on the Plan and an identification of the proposed inspection procedures to ensure that the stormwater management facilities are constructed in accordance with the approved drainage Plan.

Sec. 2.04 Stormwater Permit Review Fees

- (1) All expenses and cost incurred by [LOCAL GOVERNMENT] directly associated with processing, reviewing and approving or denying a stormwater permit application shall be paid to [LOCAL GOVERNMENT] from the funds in a separate escrow account established by the developer, as provided in subsection (2). [LOCAL GOVERNMENT] shall draw funds from a developer's escrow account to reimburse [LOCAL GOVERNMENT] for out-of-pocket expenses incurred by [LOCAL GOVERNMENT] relating to the application. Such reimbursable expenses include, but are not limited to the following:
 - (a) Services of [LOCAL GOVERNMENT] attorney directly related to the application
 - (b) Services of [LOCAL GOVERNMENT] engineer directly related to the application
 - (c) Services of other independent contractors or consultants working for [LOCAL GOVERNMENT] 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 stormwater permit they may be required to deposit with the [LOCAL GOVERNMENT] clerk an escrow deposit, an initial amount as determined by resolution of the [BOARD] for such matters, and shall provide additional amounts as requested by [LOCAL GOVERNMENT] 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 [LOCAL GOVERNMENT] 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 [LOCAL GOVERNMENT]'s final decision on an application shall the balance in the escrow account fall below the amount as designated by [LOCAL GOVERNMENT]. If the funds in the account are reduced to less than the required amount, the developer shall deposit into the account an additional amount as determined by [BOARD] resolution, before the application review process will be continued. Additional amounts necessary to process the application may be required to be placed in the escrow account by the developer, at the discretion of [LOCAL GOVERNMENT] and based upon the criteria set forth in this ordinance.

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

otherwise required by law. The Developer shall install stormwater management facilities and shall phase the Development activities to prevent construction site stormwater runoff and off-site sedimentation. During all construction activities on the Development site, [LOCAL GOVERNMENT] may inspect the Development site to ensure compliance with the approved construction site runoff controls

Sec. 2.06 Performance Guarantee

- (1) [LOCAL GOVERNMENT] shall not approve a stormwater permit until developer submits to [LOCAL GOVERNMENT] a letter of credit or other performance guarantee in a form and amount satisfactory to [LOCAL GOVERNMENT], a letter of credit or other performance guarantee to ensure the timely and satisfactory construction of all approved stormwater management facilities and to complete site grading in accordance with the approved drainage plan. Upon 1) certification by a registered professional engineer that the stormwater management facilities have been completed in accordance with the approved drainage plan including, but not limited to, the implementation plan required to be submitted in Section 2.03, and 2) receipt of construction record drawings meeting the minimum requirements of [LOCAL GOVERNMENT] or the County Drain Commissioner, [LOCAL GOVERNMENT] may release the letter of credit, or other performance guarantee subject to final [LOCAL GOVERNMENT] acceptance and approval.
- (2) Except as provided in subsection (3), the amount of the performance guarantee shall be \$ _____, unless [LOCAL GOVERNMENT] reasonably 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, [LOCAL GOVERNMENT] shall consider the size and type of the development, the size and type of the on-site stormwater system, and the nature of the off-site stormwater management facilities the development will utilize.
- (3) [LOCAL GOVERNMENT] [SUPERINTENDENT OR DESIGNATED STAFF PERSON] may reduce or waive the amount of the performance guarantee for a development that will not increase the percentage of impervious surface of the development site by more than ten percent (10%) and in accordance with those factors set forth in subsection (2).
- (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 stormwater management 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 final certificate of occupancy shall be issued to a development until stormwater management facilities have been completed in accordance with the approved drainage plan; provided, however, [LOCAL GOVERNMENT] may issue a certificate of occupancy if an acceptable letter of credit or other performance guarantee has been submitted to [LOCAL GOVERNMENT], for the timely and satisfactory construction of all stormwater management facilities and site grading in accordance with the approved drainage plan.

Sec. 2.08 No Change in Approved Facilities

Stormwater management facilities, after construction and approval, shall be maintained in good operational 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 to that plan.

Sec. 2.09 Terms and Conditions of Permits

In granting a stormwater permit, [LOCAL GOVERNMENT] 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 – Stormwater System, Floodplain and Other Standards, Soil Erosion Control

Sec. 3.01 Management of and Responsibility for Stormwater System

[LOCAL GOVERNMENT] is not responsible for providing drainage facilities on private property for the management of stormwater on said property. IT shall be the responsibility of the property owner to provide for, and maintain, private stormwater management facilities serving the property and to prevent or correct the accumulation of debris that interferes with the drainage function of a water body or the functioning of such drainage.

Sec. 3.02 Stormwater System

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

Sec. 3.03 Stormwater Discharge Rates and Volumes

[LOCAL GOVERNMENT] minimum design standards [LOCAL GOVERNMENT] set forth in Article VIII of this ordinance shall apply to all new development and redevelopment projects, including preventing or minimizing water quality impacts. Specific exemptions are listed in the Stormwater Standards Manual.

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 regulation. Floodway alteration in a local floodplain shall be permitted only upon review and approval by [LOCAL GOVERNMENT], in accordance with an approved drainage plan.
- (2) A drainage plan providing for the filling or alteration of a floodway within a local floodplain shall include provisions for maintaining stability of banks of streams or other water bodies. Establishing buffer zones is one means of providing protection of the slopes and banks or 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 local flood plain storage volume, where such storage volume is lost or diminished as a result of approved development.
- (4) Any earth change with a state-regulated floodplain shall only be undertaken in accordance with any required state or federal permit.
 - (a) Advisability of additional flood protection. The degree of flood protection required by this ordinance is hereby found to be the minimum necessary and reasonable for regulator purposes. Larger floods may occur, and higher floodwater heights may occur than will be mitigated or controlled by compliance with these requirements. This ordinance shall not be interpreted to imply or guarantee that areas outside the floodway or the state-regulated floodplain or uses permitted within such areas, shall remain free from flooding or flood damage. Compliance with the terms of this ordinance will not guarantee freedom from damage, injury or loss of life. This ordinance shall not be interpreted or applied to create liability for [LOCAL GOVERNMENT] or any officer, agent, or employee of [LOCAL GOVERNMENT] for any flood or flood related damage.

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 stormwater 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 stormwater 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 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 and the Stormwater Standards Manual
 - (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, as directed by the regulatory agency issuing the soil erosion and sediment control permit. 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 as to protect such other lands, streets, sidewalks or other property from settling, cracking or sustaining other damage

- (k) The property owner shall have the soil erosion and sediment control measure inspected weekly and within twenty-four (24) hours of a rain event of sufficient quantity to cause runoff. The inspection for sites one (1) acre or greater shall be conducted by a EGLE certified construction site stormwater operator who shall maintain written inspection logs. Logs shall be made available to [LOCAL GOVERNMENT].

Sec. 3.06 Building Openings

- (1) No building opening shall be constructed below the following elevations:
 - (a) One foot above the base flood elevation
 - (b) One foot above the 100-year water surface hydraulic grade line of the stormwater system
 - (c) The building opening established at the time of plat or development approval and on file with the [LOCAL GOVERNMENT]
- (2) No lowest floor shall be constructed below the following elevations:
 - (a) Two (2) feet above the highest known ground water elevation
- (3) The lowest allowable floor established at the time of plat or redevelopment approval and on file with the [LOCAL GOVERNMENT]. A waiver from elevations stated in Section 3.06 (1) may be granted by [LOCAL GOVERNMENT] following receipt of a certification from a registered professional engineer demonstrating that the proposed elevation does not pose a risk of flooding.
- (4) Upon completion of construction of the structure's foundation and or slab on grade, a registered land surveyor shall certify any minimum building opening or lowest floor elevation specified by this ordinance. This certificate shall attest that the building opening or lowest floor elevation complies with the standards of this ordinance. The permittee for the building permit shall submit the certificate to the [LOCAL GOVERNMENT] building inspections official prior to the commencement of framing and/or structural steel placement. If the surveyor should find that the minimum building opening or lowest floor elevation is below the elevation specified in Section 3.06 (1) (a) through (c), that opening must be raised using a method that meets with the approval of [LOCAL GOVERNMENT]. After reconstruction, a registered land surveyor or engineer shall re-certify that the minimum building opening or lowest floor elevation complies with the standards of this ordinance prior to the commencement of framing and/or structural steel placement.

Sec. 3.07 Sump Pump Discharge [OPTIONAL]

- (1) Whenever building footing drains are required or utilized, a direct connection between the footing drains and the storm sewer through a sump pump-check valve system, or a gravity pipe with a double flap gate valve for backflow prevention is required. The check valve system shall be installed on private property and maintained by the property owner.
- (2) A stormwater lateral shall be provided for each parcel at the time of storm sewer construction. If no lateral is provided, the property owner shall discharge said water in such a manner as to not impact neighboring land or public streets. If a stormwater lateral does not exist, and if it is technically feasible to construct one, the property owner may install one at their expense. Any work to be conducted within the right-of-way must be expressly authorized by [LOCAL GOVERNMENT].
- (3) The property owner assumes all risks associated with connecting directly into the storm sewer system. The requirements outlined in subsection (1) of this section (3.07) are the minimum required for [LOCAL GOVERNMENT] to allow a property owner to connect a foundation drain to the storm sewer system. Additional measures may be considered to reduce the risk of storm sewer backups, such as the inclusion of a physical air gap between the residential stormwater discharge line and the public storm sewer system. All backflow prevention devices shall be installed on private property and maintained by the property owner. Stormwater runoff shall not be redirected or infiltrated within the influence of footing drains.
- (4) None of the requirements of this section (3.07) shall be interpreted to require a property owner to connect into the storm sewer system.
- (5) If a storm sewer connection is not utilized, foundation drain outlets shall comply with [LOCAL GOVERNMENT] code of ordinances.

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 stormwater or an exempted discharge. Any person discharging stormwater shall effectively prevent pollutants from being discharged with the stormwater, except in accordance with BMPs.
- (2) [LOCAL GOVERNMENT] is authorized to require dischargers to implement pollution prevention measures, utilizing BMPs as necessary, to prevent or reduce the discharge of pollutants into [LOCAL GOVERNMENT]'s stormwater drainage system.

- (3) No person shall discharge or cause to be discharged into [LOCAL GOVERNMENT] storm drain system or watercourse any materials, including, but not limited to, pollutants, or water containing any pollutants that cause or contribute to a violation of applicable water quality standards other than stormwater. The commencement, conduct, or continuance of any illicit discharge to the storm drain system is prohibited except for discharges authorized by [LOCAL GOVERNMENT] as being necessary to protect public health and safety.
- (4) Prohibition of illicit connections
 - (a) The construction, use, maintenance, or continued existence of illicit connections to the MS4 is prohibited.
 - (b) This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.
 - (c) Without limitation, a person is considered to be in violation of this ordinance if the person connects a line conveying wastewater to the MS4 or allows such a connection to continue.
- (5) The prohibitions of this section shall not apply to any non-stormwater discharge permitted under a NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the Federal Environmental Protection Agency, provided, that the discharge is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for any discharge to the MS4.

Sec. 4.02 Exempted Discharges

- (1) The following non-stormwater discharges shall be exempted from the requirement of this article, provided that they do not result in a violation of State of Michigan water quality standards:
 - (a) Water supply line flushing
 - (b) Landscape irrigation
 - (c) Diverted stream flows
 - (d) Rising ground water
 - (e) Uncontaminated ground water infiltration to storm drains

- (f) Uncontaminated pumped ground water
 - (g) Discharges from potable water sources
 - (h) Foundation drains
 - (i) Air conditioning condensate
 - (j) Individual residential car washing
 - (k) Dechlorinated swimming pool water
 - (l) Street wash water
 - (m) Discharges or flows from emergency firefighting activities
 - (n) Discharges for which a specific federal or state permit has been issued
- (2) None of the above exemptions eliminate the need to provide appropriate pollution control or pollution prevention measures required under this ordinance or under any other Federal or State law, rule or regulation.

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, ditch, swale, culvert, water body, floodplain, or flood prone area without first submitting a drainage plan to [LOCAL GOVERNMENT] 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) No shrubs or trees shall be planted below the top of the bank of a water body.
- (4) 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 [LOCAL GOVERNMENT] determines that the fence will not obstruct or diver the flow of water.
 - (c) If a fence is removed by [LOCAL GOVERNMENT] for drain access or drain maintenance, the fence shall be replaced by the owner of the fence at the owner's expense.
- (5) 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 Materials in Drainageway

It shall be unlawful for any person to store, stockpile or dispose of any hazardous, toxic, or non-toxic material including, but not limited to, chemicals, explosives, buoyant materials, yard wastes, log and brush piles, unsecured landscaping materials, play or work sheds, animal wastes, fertilizers, flammable liquids and pollutants within an overland flow-way, drainage system or a floodplain unless adequate protection and or containment has been provided to prevent such materials from entering, diverting or blocking [LOCAL GOVERNMENT] drainage system, except as specifically permitted by State and Federal law.

Article V – Inspection, Monitoring, Reporting, and Recordkeeping

Sec. 5.01 Inspection and Sampling

To assure compliance with the standards outlined in Article VIII, [LOCAL GOVERNMENT] may inspect and/or obtain stormwater samples from stormwater management facilities of any discharger to determine compliance with the requirements of this ordinance. Upon request, the discharger shall allow [LOCAL GOVERNMENT]'s properly identified representative to enter upon the premises of the discharger at all hours necessary for the purposes of such inspection or sampling absent exigent circumstances. [LOCAL GOVERNMENT] shall make a reasonable effort to provide the discharger with advance notice of such inspection and/or sampling. Unreasonable delays in allowing access to a discharger's facility is a violation of this ordinance. [LOCAL GOVERNMENT] as a condition of the issuance of any permit in accordance with this ordinance, a permittee is deemed to consent to [LOCAL GOVERNMENT]'s exercise of its right to place on the discharger's property the equipment or devices used for such sampling or inspection.

Sec. 5.02 Stormwater Monitoring Facilities

A discharger of stormwater runoff shall install and operate equipment or devices for the monitoring of stormwater runoff, at its own expense, so as to provide for inspection, sampling, and flow measurement of each discharge to a water body or a stormwater management facility, when directed in writing to do so by [LOCAL GOVERNMENT]. [LOCAL GOVERNMENT] may require a discharger to provide

an 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 stormwater or an exempted discharge shall immediately inform [LOCAL GOVERNMENT] concerning the discharge. If such information is given orally, a written report concerning the discharge shall be filed with [LOCAL GOVERNMENT] 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 date to clean up the accidental discharge, and all measures proposed to be taken to reduce and prevent any recurrence; and,
 - (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 an any and all summaries of such records, relating to monitoring, sampling, and chemical analysis of any discharge or stormwater 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, 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 for 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 twelve (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.

[LOCAL GOVERNMENT] enforcement officer is authorized to issue municipal civil infraction citations for a violation of 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 no more than five hundred (500) dollars or imprisonment for no more than ninety three (93) days, or both such fine and imprisonment, and such person shall also pay such costs of prosecution and other charges 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, [LOCAL GOVERNMENT] is authorized to issue a stop work order to prevent further or continuing violations or adverse effects. All persons to whom a stop work order is directed, or who are involved in any way with the work or matter described in a stop work order shall fully and promptly comply therewith.

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, [LOCAL GOVERNMENT] may, after giving reasonable notice and an opportunity for compliance, have the necessary work done, and the owner shall be obligated to promptly reimburse [LOCAL GOVERNMENT] for all costs of such work. Without limiting the foregoing, a failure to comply or otherwise bring property into compliance with this ordinance is deemed a public nuisance and shall be subject to abatement.

Sec. 6.04 Emergency Measures

When emergency measures are necessary to protect public safety, health and welfare, and/or to prevent loss of life, injury, or damage to property, [LOCAL GOVERNMENT] 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 [LOCAL GOVERNMENT] for all such costs.

Sec. 6.05 Cost Recovery for Damage to Storm Drain System

A discharger shall be liable for all costs incurred by [LOCAL GOVERNMENT] 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 MEDQ for violation of a NPDES permit, attorney fees, and other costs and expenses.

Sec. 6.06 Collection of Costs; Lien

To the extent permitted by law, service charge incurred by [LOCAL GOVERNMENT] and the [County] Drain Commissioner in any manner authorized by law including, but not limited to, all remedies authorized by Act No. 94 of the Public Acts of 1933, as amended. When applicable, said costs 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 or as otherwise authorized by law with any such charges which are delinquent for six (6) months or more may be certified annually to [LOCAL GOVERNMENT] 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 of taxes.

Sec. 6.07 Appeals

Any person as to whom any provision of this ordinance has been applied may appeal in writing, no later than thirty (30) days after the action or decision being appealed from, to the [LOCAL GOVERNMENT] [Board] the action or decision whereby any such provision was so applied. Such appeal shall identify the manner being appealed, and the basis for the appeal. The [LOCAL GOVERNMENT] [Board] shall consider the appeal and may affirm, reject, or modify the action being

appealed based on the standards set forth in this ordinance. The [LOCAL GOVERNMENT] [Board] may impose reasonable conditions on an affirmative decision in an appeal. [LOCAL GOVERNMENT] [Board] shall make its decision in writing and shall furnish a copy of the decision to the person making the appeal. In considering any such appeal, the [LOCAL GOVERNMENT] [Board] may consider the recommendations of [LOCAL GOVERNMENT] engineer and the comments of other persons having knowledge of the matter.

Sec. 6.08 Suspension of MS4 Access

- (1) [LOCAL GOVERNMENT] may, without prior notice, suspend a person's discharge access to the MS4 when such suspension is necessary to stop an actual or threatened discharge that presents or may present imminent and substantial danger to the environment, or to the health or welfare of person or the MS4. If the person fails to comply with a suspension order issued herein, [LOCAL GOVERNMENT] may take such steps as deemed necessary to prevent or minimize damage to the MS4 or the environment, or to minimize danger to persons. A person failing to comply with a suspension order pursuant to this section shall be liable for all cost incurred by [LOCAL GOVERNMENT] as the result of such failure to comply and a violation shall constitute a public nuisance.
- (2) Any person discharging to the MS4 in violation of this ordinance may have their MS4 access terminated in such termination would abate or reduce an illicit discharge. [LOCAL GOVERNMENT] will notify a violator of the proposed termination of its MS4. A person violates this ordinance if the person reinstates MS4 access to a premise terminated pursuant to this section, without the prior approval of [LOCAL GOVERNMENT].

Article VII – Stormwater Easements and Maintenance Agreements

Sec. 7.01 Applicability of Requirements

The requirements of this article concerning stormwater easements and maintenance agreements shall apply to all person required to submit a drainage plan to [LOCAL GOVERNMENT] for review and approval.

Sec. 7.02 Stormwater Management Easements

The property owner shall provide all stormwater management easements necessary to implement the approved drainage plan and to otherwise comply with this ordinance in from and substance required by [LOCAL GOVERNMENT] and shall record such easements as directed by [LOCAL GOVERNMENT]. The easements shall assure access for proper inspection and maintenance of stormwater management facilities and shall provide adequate emergency overland flow-ways.

Sec. 7.03 Maintenance Agreements

- (1) Maintenance agreement required. The developer shall provide all stormwater maintenance agreements necessary to implement the approved drainage plan and to otherwise comply with this ordinance in form and substance as required by [LOCAL GOVERNMENT] and shall record such agreements as directed by [LOCAL GOVERNMENT]. The maintenance agreements shall, among other matters, assure access for proper inspection and maintenance or corrective actions of stormwater CMPs, including emergency overland flow-ways, and include provisions for tracking the transfer of operation and maintenance responsibility to ensure the performance standards are met in perpetuity.
- (2) Maintenance agreement provisions:
 - (a) The maintenance agreement shall include a maintenance plan and schedule for routine, emergency and long-term maintenance of all structural and vegetative stormwater BMPs installed and implemented to meet the performance standards, with a detailed annual estimated budget for the initial three years, and a clear statement that only future maintenance activities in accordance with the maintenance agreement plan shall be permitted without the necessity of securing new permits.
 - (b) Written notice and submittal of maintenance documentation shall be provided to [LOCAL GOVERNMENT] by the property owner at the interval set forth in the maintenance agreement and subject to the provisions of Sections 5.01 through 6.07.
 - (c) If it has been found by [LOCAL GOVERNMENT], following notice and an opportunity to be heard by the property owner, that there has been a material failure or refusal to undertake maintenance as required under this ordinance and/or as required in the approved maintenance agreement as required here under, [LOCAL GOVERNMENT] shall then be authorized, but not required, to hire an entity with qualifications and experience in the subject matter to undertake the monitoring and maintenance required, in which event the property owner shall be obligated to advance or reimburse payment for all costs and expense associated with such monitoring and maintenance, together with a reasonable administrative fee. The maintenance agreement required under this ordinance shall contain a provision spelling out the requirements and, if the applicant objects in any respect to such provision or the underlying rights and obligations, such objection shall be resolved prior to the commencement of construction of the proposed development of the property.

Sec. 7.04 Establishment of County Drains

Prior to final approval of a platted subdivision, all stormwater management facilities for platted subdivisions shall be established as county drains, as authorized in Section 433, Ordinance 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 Design Standards

Stormwater BMPs shall be designed to manage stormwater flow within the available capacity of the downstream conveyance system as determined by [LOCAL GOVERNMENT].

In addition, stormwater BMPs shall be designed to meet performance standards as described in Section 8.02. Stormwater system design shall be in accordance with the latest version of the Stormwater Standards manual published by [LOCAL GOVERNMENT].

Sec. 8.02 Performance Standards

In order to achieve the goals and purposes of this ordinance, the following stormwater management performance standards are hereby established;

- (1) **Water Quality Treatment:** Treat the calculated site runoff for the entire project site from the ninety percent (90%) annual non-exceedance storm, which is approximately equal to one (1) inch of rain (i.e. on average, ninety percent (90%) of the storm in a given year, produces one (1) inch or less). The treatment volume specified is based on capturing and treating the volume of stormwater that is the first to runoff in a storm and expected to contain the majority of pollutants. This volume of runoff is often referred to as the “first flush”. The water quality treatment standard is required for all sites.
 - (a) **Total Suspended Solids (TSS).** The methods selected to treat the volume of water calculated for the water quality treatment performance standard shall be designed on a site-specific basis to achieve either a minimum of eighty percent (80%) removal of TSS, as compared with uncontrolled runoff, or discharge concentration of TSS that does not exceed eighty (80) milligrams per liter (mg/l). This performance standard is based on TSS as a surrogate for other pollutants normally found in stormwater runoff. Control of TSS to meet this standard is expected to achieve control of other pollutants to an acceptable level that protects water quality.
- (2) **Channel Protection:** Maintain the post-development project site runoff volume and peak flow rate at or below pre-development levels for all storms up to the two (2) year, twenty-four (24) hour event. At a minimum, pre-development is defined as the last land use prior to the planned new development or

redevelopment. The channel protection standard is required for stormwater discharges to surface waters or the MS4.

(3) Flood Control: Control the volume of site runoff from the flood control rainfall event with a maximum allowable release rate to reduce the potential for property damage for overbank flooding and preserve existing floodplains. The flood control event and maximum allowable release rate shall be determined by [LOCAL GOVERNMENT]. The flood control standard is required for all sites.

(a) Overflow Routes: Acceptable overflow routes for the one hundred (100) year flood shall be identified for the site and for downstream areas between the site and the nearest acceptable floodway or outlet. Stormwater conveyance systems are usually designed to handle flows generated by the ten (10) year storm. When larger storms generate higher flows, the conveyance system is expected to surcharge resulting in stormwater accumulating on the surface of the ground. Gravity will cause such stormwater to flow overland to lower elevations. By carefully managing the shape of the land surface such overland stormwater flow can be directed to locations that will not cause property damage. Adequate emergency overland flow-ways will direct stormwater flows generated by the one hundred (100) year storm to avoid damage to structures and facilities.

(4) Site-Specific Requirements:

(a) Pretreatment: Pretreatment of site runoff is required on a site-specific basis prior to discharging to certain stormwater BMPs. Pretreatment provides for the removal of fine sediment, trash and debris, and preserves the longevity and function of the BMP.

(b) Hot Spots and Groundwater Contamination: Some land use activities have a potentially greater risk of polluted runoff than others. Project sites with these types of activities are referred to as "hot spots" and include uses such as gas stations, commercial vehicle maintenance and repair, auto recyclers, recycling centers, and scrap yards. Hot spots also include areas with the potential for contaminating public water supply intakes. Pretreatment of stormwater runoff to address pollutants associated with hot spots is required for the site. Stormwater management strategies and BMPs that reduce the potential to mobilize existing soil and groundwater contaminants, or that capture and treat stormwater runoff and/or accidental spills to protect groundwater or nearby surface waters are required.

(c) Coldwater Streams: Stormwater management strategies and BMPs that minimize thermal impacts from site runoff and maximize groundwater

recharge are required for sites with a surface water discharge to a coldwater stream as determined by the Michigan Department of Natural Resources (MDNR).

Sec. 8.03 Off-site Mitigation and Payment-in-Lieu Programs for Redevelopment Projects [OPTIONAL]

The water quality treatment and channel protection performance standards focus on maintaining or restoring stable hydrology. However, potential physical constraints may limit the ability to fully meet the post-construction requirement at the project site. When physical constraints limit the feasibility of maintaining or restoring hydrology, offsite mitigation and/or payment-in-lieu may be approved by [LOCAL GOVERNMENT]. Offsite mitigation will only be considered if there is a planned or constructed private mitigation bank or project immediately downstream. [LOCAL GOVERNMENT] will only consider payment-in-lieu if [LOCAL GOVERNMENT] has a planned or constructed water quality improvement project immediately downstream. The cost of payment-in-lieu will be considered on a case to case basis and will represent the actual cost of implementing public downstream water quality enhancements. Any request for payment-in-lieu shall be accompanied by a development agreement that clearly states a public/private partnership has been formed for the site development. Payment-in-lieu will be considered, at the discretion of [LOCAL GOVERNMENT], when reviewing a project of regional significance.

Consideration of either off-site mitigation or payment-in-lieu will be entirely the discretion of [LOCAL GOVERNMENT].

Offsite mitigation refers to BMPs implemented at a location different from the original project site.

Payment-in-lieu refers to the developer paying a fee to [LOCAL GOVERNMENT] that is applied to a public stormwater management project. The stormwater management project may be either a new BMP or a retrofit to an existing BMP and developed in accordance with the Stormwater Standards Manual.

The location for offsite mitigation and payment-in-lieu projects shall be within the same watershed and Sewershed as the original project, and within [LOCAL GOVERNMENT]'s jurisdictional boundaries. The watershed is the area represented by the State of Michigan, EGLE, ten (10) digit Hydrologic Unit Code (HUC). The Sewershed is the area where stormwater is conveyed by an MS4 to a common outfall or point of discharge.

The determination to approve offsite mitigation or payment-in-lieu will be based on multiple criteria and not solely on the difficulty of cost of implanting BMPs on site. Conditions under which the option to move off site would become available may include:

- (1) Limited size of the lot outside of the building footprint to create the necessary infiltration capacity even with amended soils.
- (2) Soil instability as documents by a thorough geotechnical analysis.
- (3) A site use that is inconsistent with capture and reuse of stormwater.
- (4) Too much shade or other physical conditions that preclude adequate use of plants.
- (5) The potential water quality impact from the original project site and the benefits realized at the offsite location.

[LOCAL GOVERNMENT] may approve offsite mitigation or payment-in-lieu if the developer demonstrates that site constraints preclude sufficient treatment and restoration of hydrology onsite. At a minimum [LOCAL GOVERNMENT] requires:

- (1) Offsite ratio. The offset ratio for the amount of stormwater not managed onsite in relation to the amount of stormwater required to be mitigated at another site, or for which in-lieu payments will be made as follows:
 - (a) First Tier: Manage a minimum of zero point four (0.4) inches of stormwater runoff onsite and provide a one (1) to one point five (1.5) offset ratio for the remaining amount of stormwater managed offsite.
 - (b) Second Tier: If it completely infeasible to manage the minimum onsite, provide a one to two (1:2) offset ratio for the amount of stormwater managed onsite.
- (2) Schedule. Offsite mitigation and payment-in-lieu projects shall be completed within twenty-four (24) months after the start of the original site construction.
- (3) Assurances. Offsite and in-lieu projects shall be preserved and maintained in perpetuity through the procedures and tracking system administered by [LOCAL GOVERNMENT].

Sec. 8.04 Alternative Approach for Channel Protection

In many cases, infiltration will likely be used as the primary means of retention. It is not, however, the sole means of providing onsite retention, and the developer must include consideration of stormwater reuse, interception, evapotranspiration, and other vegetative (non-structural) BMPs at the project site. Site constraints that limit the use of infiltration may include:

- (1) Poorly draining soils (<0.24 inches per hour; typically, hydrologic soil groups C and D)
- (2) Bedrock
- (3) High groundwater, or the potential of mounded groundwater to impair other uses
- (4) Wellhead protection areas
- (5) Stormwater hot spots
- (6) Part 201 and 213 sites, and areas of soil or groundwater contamination

[LOCAL GOVERNMENT] may grant a waiver of the onsite retention criteria for channel protection described in Section 8.02 and allow an alternative approach to meet the channel protection performance standard if the developer demonstrates that site constraints preclude sufficient retention onsite. If a waiver is granted, the developer must meet the following extended detention criteria:

- (1) Extended Detention: Detain the portion of the channel protection volume unable to be retained onsite for a minimum of twenty-four (24) hours with a maximum release rate no greater than the existing one (1) year peak discharge, and a drawdown time no greater than seventy two (72) hours. A waiver from [LOCAL GOVERNMENT] must be granted to use this alternative approach.

Sec. 8.05 Resolution to Implement Performance and Design Standards

The [Board of Trustees] of [LOCAL GOVERNMENT] may adopt a resolution establishing more detailed design and performance standards for stormwater management 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 Effective Date

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

Sec. 9.05 Repeal [IF APPLICABLE]

Ordinance No. [], titled [], is hereby repealed, as of the effective date of this ordinance.

This ordinance was adopted and [], by the [Township Board], made effective [].

[Local Government Clerk]