

DISCLAIMER: Below is the Storm Water Management Article contained in the Zoning Chapter of the City Code. This has been placed on the website for those interested in reviewing the City's storm water standards or using this ordinance as a guide for developing an ordinance for another community. Planners and engineers working on land development projects proposed for the City of DeWitt should access the entire City Code at www.municode.com so that the zoning ordinance can be reviewed in its entirety.

ARTICLE XIV. STORM WATER MANAGEMENT*

***Editor's note:** An amendment of Jan. 13, 2003(2), provided for the enactment of a new art. XIV to read as herein set out. Provisions of said amendment have been renumbered to maintain style of Code. See the Code Comparative Table for a detailed analysis of inclusion.

DIVISION 1. GENERAL

Sec. 78-981. Purpose of article.

The purpose of this article is to protect the public health, safety and welfare of city residents and to protect property values, quality of life, and natural systems relating to storm water runoff control and management. The city finds it is a matter of public concern and benefit to protect water bodies and properties within the city and to reduce the future need for public expenditures relating to flooding, water quality, and storm water system maintenance. Both the quality and quantity of storm water runoff are a matter of public concern.

(Amend. of 1-13-2003(2), § 1-1)

Sec. 78-982. Findings and objectives.

(a) *Findings.* The city finds that storm water regulation and management is a matter of public health, safety, and welfare because:

- (1) Water bodies, roadways, structures, and other property within, and downstream of the city 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 city and the region;
- (3) Changes in land use alter the hydrologic response of watersheds, resulting in increased storm water runoff rates and volumes, which further result in increased flooding, increased stream channel erosion, and increased sediment transport and deposition;
- (4) Storm water runoff produced by changes in land use 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 changes in land use, and cause deterioration of the water resources within and downstream of the city;

(6) Increased storm water runoff rates and volumes, and the sediments and pollutants associated with storm water runoff from future earth change projects within the city will, absent reasonable regulation and control, adversely affect the city water bodies and water resources, the resources contained therein, and those of downstream municipalities;

(7) Storm water runoff, soil erosion, and non-point source pollution can be controlled and minimized by the regulation of storm water runoff from earth changes and by the use of Best Management Practices and other innovative means;

(8) Adopting and implementing the standards, criteria and procedures contained in this article will address many of the deleterious effects of storm water runoff, both from a water quality and a water quantity perspective;

(9) Adopting these standards is necessary for the preservation of the public health, safety, and welfare and mitigation of adverse impacts from storm water runoff.

(b) *Objectives.* Based on the findings listed above, the city has established the following objectives to guide administration, decision-making, and enforcement of this article. It is therefore the purpose of this article to establish minimum storm water management requirements and controls to accomplish, among others, the following objectives:

(1) To reduce flood damage;

(2) To minimize increased storm water runoff rates and volumes due to changes in land use;

(3) To minimize the physical 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 changes in land use upon stream bank and streambed stability;

(8) To reduce erosion from earth change 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 storm water runoff rates and volumes, soil erosion, and non-point source pollution, wherever practicable, from lands proposed for redevelopment that were not previously developed with storm water management controls meeting the purposes and standards of this article;

(11) To reduce the adverse impact of changing land use on neighboring properties and water bodies and, to that end, this article establishes minimum standards to protect water bodies from degradation resulting from changing land use.

(Amend. of 1-13-2003(2), § 1-2)

Sec. 78-983. Definitions.

i;Definitions. For the purpose of this article, 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:

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 article (including, but not limited to minimizing storm water runoff and preventing the discharge of pollutants into storm water) as determined by the city engineer, and, when applicable, the standards of the Clinton County Drain Commissioner.

Changes in land use. Any land use change, including, but not limited to, construction, earth change, and redevelopment.

Construction site storm water runoff. Storm water runoff from a development site following an earth change.

Cut. An earth change, which lowers topography or removes soil.

Design storm. A precipitation event of a designated amount and/or frequency. Typically used in a regulatory setting to designate required design criteria for storm water facilities.

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.

Detention basin. A designed (although may be a natural area) facility which stores and detains runoff and releases water at a controlled rate. Size will depend on the design storm event (10-, 25-, 100-year storm). These basins may be dry between runoff events or may be "wet bottom", where a base water level occurs below the elevation of the outlet structure.

Detention time. The length of time water is held in a detention basin. This time is dictated by the amount of water stored and the release rate of same.

Developed or development. The installation or construction of impervious surfaces on a development site that require, pursuant to state law or local article, the city approval of a site plan, plat, site condominium, special land use, planned unit development, 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 this article 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.

Discharge. The rate of flow or volume of water passing a given point. Expressed as cubic feet per second.

Disturbed area. The surface of land from which vegetation has been removed and/or subjected to earth moving activities.

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.

Drainage. The collection, conveyance, or discharge of ground water and/or surface water.

Drainage area. The contributing watershed, which is expressed in acres or square miles.

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.

Erosion. The process by which the ground surface is worn away by action of wind, water, gravity or a combination thereof.

Fill. Earth or other materials added to existing topography.

First flush. The term given to the initial runoff quantity, typically highest in pollutant concentration, which is generally believed to be the first 1/2 inch of precipitation which washes pollutants off impermeable surfaces.

Grading. Any stripping, excavating, filling, and stockpiling of soil or any combination thereof and the land in its excavated or filled condition.

Groundwater. The naturally existing water beneath the land surface. The uppermost elevation, or "water table", will fluctuate seasonally or in response to precipitation. May be in multiple layers separated by aquatards (relatively impermeable layers). Deeper aquifers are used to withdraw water for domestic wells or irrigation.

Impervious. The ground condition (e.g. roads, parking lots, sidewalks, and rooftops) which does not allow percolation or infiltration of precipitation. The condition causes water to accumulate on the surface resulting in increased runoff.

Infiltration. The percolation and movement of water downward into and through the soil column. The rate of this movement is expressed in inches per hour.

Non-point source. ". . . sources of pollution which enter surface or groundwaters through widely diffused small increments," (from Federal Clean Water Act, 33 U.S. CFR Part 1344). This type of pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands and underground sources of drinking water.

Offsite facility. Any portion of a storm water management system which is located off the development site which it serves.

100-year flood. That water occupation adjacent to a waterbody which results from a storm event having a 1percent probability of occurrence in any given year. Thus, a 50-year storm has a two percent probability, a ten-year storm a ten percent probability, etc.

Overland flow-way. Surface area that conveys a concentrated flow of storm water runoff.

Peak discharge rate. The maximum rate of storm water flow from within a drainage area expressed as cubic feet per second.

Point source. A discharge that is released to the surface waters of the State by a discernible, confined and discrete conveyance, including, but not limited to, a pipe, ditch, channel, tunnel, conduit, well, boat, and concentrated animal feeding facility.

Practicable. Available and capable of being done after taking into consideration cost, existing technology and logistics.

Property owner. Any person, firm or corporation having legal or equitable title to property or any person having or exercising care, custody, or control over any property.

Retention. A system, which is designed to capture storm water and contain it until it infiltrates the soil or evaporates.

Retention basin. A storm water management facility, either natural or manmade, which does not have an outlet, which captures and holds runoff directed into it.

Runoff. The portion of precipitation which does not infiltrate or percolate into the ground, but rather moves over the land, eventually reaching a waterbody, wetland, or low area.

Runoff coefficient. The ratio of the amount of precipitation which is runoff over rainfall.

Sediment. Any solid particulate matter which has been moved from the site of origin by erosion, is being transported by water, is in suspension in water, or has been deposited in a water body, wetland or floodplain.

Sheetflow. Overland runoff which moves relatively uniformly over the ground surface rather than being concentrated in a conveyance channel.

Site. Any tract, lot, or parcel of land or combination of tracts, lots, or parcels, which compose an area proposed for development and/or earth change.

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.

Soil erosion control. Structures, facilities, barriers, berms, vegetative cover, basins, and/or any other installation, temporary or permanent, which are designed to minimize and prevent erosion.

Storm drain. A system of open or enclosed conduits and appurtenant structures intended to convey or manage storm water runoff, ground water and drainage.

Storm water facility. Methods, structures, BMP's, areas, or related items, which are used to control, store, receive, infiltrate, or convey runoff.

Storm water runoff. The runoff and drainage of precipitation resulting from rainfall, snowmelt or other natural event or process.

Time of concentration. The time it takes runoff to travel from the furthest portion of the watershed or drainage area to the point of flow measurement.

Watershed. The total land area which contributes runoff, or is within such an area, to a common outlet, such as a lake or stream. Also known as the drainage area.

Wetland. Land characterized by the presence of water at a frequency and duration sufficient to support, and that under normal circumstances does support, wetland vegetation and/or aquatic life. Also known as a bog, swamp, marsh, etc. (from § 324.30301 of Michigan Compiled Laws, Part 303 of NREPA, Wetlands Protection). The Michigan Department of Environmental Quality is the authority on the presence and regulatory status of wetlands.

(Amend. of 1-13-2003(2), § 1-3)

Sec. 78-984. Watershed map.

The city council by resolution adopted a watershed map and storm water management standards for the City of Dewitt which establishes the minimum design standards for calculating runoff, storm water discharge release rates, and requirements for dischargers to implement on-site detention, detention, infiltration, or other methods necessary to control the rate and volume of surface water runoff discharged into the storm water drainage system. Attachment A (Watershed Map) and Attachment B (Storm Water Management Standards) of a resolution adopted January 13, 2003, are not set out herein and are available for inspection in the offices of the city.

(Res. of 1-13-2003(3), Att. A, B)

Secs. 78-985--78-990. Reserved.

DIVISION 2. STORM WATER MANAGEMENT PLAN APPROVAL

Sec. 78-991. Systems subject to review.

(a) *Applicability.* A storm water management plan approved in accordance with this article shall be required for any earth change, any use subject to site plan approval under section 78-132(b) of the Code, and any subdivision subject to approval under Chapter 38 of the Code, with the exceptions listed in subsection (b) below.

(b) *Exceptions.* A storm water management plan shall not be required for:

- (1) Agricultural activity that is consistent with an approved soil conservation plan.
- (2) Additions or modifications to any single family or duplex structure.
- (3) Landscaping or gardening involving less than 5,000 square feet of land.
- (4) Construction of a dwelling on a legal lot within a development that itself previously received approval under this article, provided that less than 5,000 square feet of land is cleared or graded for such construction.

(c) *Requirements.* A storm water management plan shall be submitted and reviewed in accordance with requirements of division 2, section 78-992.

(Amend. of 1-13-2003(2), § 2-1)

Sec. 78-992. Procedures for review.

(a) *Process.* Twenty copies of the proposed storm water management plan for each development and earth change project as required under division 2, section 78-991 shall be submitted to the development official at the same time a site plan or preliminary subdivision plat is submitted.

For any development other than a platted subdivision, the storm water management plan shall be received at least 30 days prior to a planning commission meeting in order to be reviewed at that meeting. In the case of a platted subdivision, it shall be submitted at least 15 days prior to a planning commission meeting.

(b) *Agency review.*

(1) Upon receipt of a completed application for approval of a storm water management plan, the city clerk shall transmit one copy of the plan to the planning commission and each of the following officials or agencies for their comments:

- a. Fire chief;
- b. Police chief;
- c. Clinton County Drain Commissioner;
- d. Superintendent of DeWitt Public Schools;
- e. City public services department;
- f. City engineer;
- g. Mid-Michigan District Health Department;
- h. Other agencies deemed necessary by the city clerk.

(2) Review agencies listed in this section shall have 15 days from the date of transmittal to respond to the development official in writing. Should a review agency or official fail to respond in the required time or before the scheduled date for planning commission action on the application, it shall be presumed that the review official or agency has no comment regarding the application.

(c) *Planning commission review.*

(1) If the planning commission determines that all required information has not been received, the applicant may request that the matter be tabled, and the planning

commission may, at its discretion, with or without such a request, table the matter to allow for the submittal of the required information.

(2) The planning commission shall review the storm water management plan to determine compliance with the conditions contained in section 78-992(d).

(3) The planning commission may add conditions for approval of the plan.

(4) The planning commission shall consider the comments made by the agencies listed in this article in making its determination.

(5) The authority to grant final approval for a storm water management plan shall be vested with the planning commission for all types of projects except for special land use permits and platted subdivisions. In the case of a special land use permit or a platted subdivision, final authority for approval of the plan shall be vested with the city council. Action of the city council shall occur after the planning commission has provided a recommendation on the plan.

(d) *Conditions of approval.* The city shall grant approval of a storm water management plan, which may impose terms and conditions in accordance with division 2, section 78-995, and which shall be granted only upon compliance with each of the requirements stated below.

(1) The applicant has submitted a storm water management plan complying with this article.

(2) The applicant has paid or deposited the management plan review fee pursuant to division 2, section 78-995.

(3) The applicant has paid or posted the applicable financial guarantee pursuant to division 2, section 78-995.

(4) The applicant provides all easements necessary to implement the approved storm water management plan and to otherwise comply with this article including, but not limited to, division 5, section 78-1029, in form and substance acceptable to the city, and to be recorded with the Clinton County Register of Deeds.

5. The storm water management plan conforms with all applicable design and performance standards for drains and storm water management systems, as set forth in division 3.

6. All storm water facilities are designed in accordance with current BMPs.

7. The applicant provides the required maintenance plan for routine, emergency, and long-term maintenance of all storm water facilities and in compliance with the approved storm water management plan and this article including, but not limited to, division V, sections 78-1027 and 78-1029. The maintenance plan shall be in form and substance acceptable to the city and shall be recorded with the Clinton County Register of Deeds.

(Amend. of 1-13-2003(2), § 2-2)

Sec. 78-993. Plan requirements.

(a) *General plan requirements.* Through maps, illustrations, reports, and calculations, the storm water management plan shall display the required information in a clear and logical sequence.

The storm water management plan shall be sufficiently detailed to specify the type, location, and size of soil erosion control measures and storm water facilities, including calculations.

Scale for mapping. The storm water management plan shall be drawn to a scale of at least one inch equal to 40 feet (1 inch = 40 feet) for property less than three acres and one inch equal to one hundred feet (1 inch = 100 feet) for property three acres or more in size.

(b) *Plan submittal requirements.* The following plan requirements are in addition to other requirements specified in division 3, sections 78-1005 and 78-1006 of this article and other applicable chapters of the Code. The applicant shall provide a storm water management plan to the city for review and approval. Upon request by the applicant, or at its own initiative, the planning commission may determine that one or more requirements may not be applicable and may be waived. Applicant shall submit 20 copies of the storm water management plan, which shall identify and contain all of the following information:

(1) *Contact information.* The name, address, and telephone number of all persons having a legal interest in the property and the tax reference number and parcel number of the property or properties affected. Include information on the zoning classification of the applicant's parcel and all adjacent parcels.

(2) *Location map.* A map depicting the location of the development site and all water bodies that will ultimately receive storm water runoff.

(3) *Topographic base map.* 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 not greater than two feet. The map shall also show existing surface water drainage (permanent and intermittent) and flow direction, including streams, ponds, culverts, ditches, and wetlands; location of 100-year floodplain, if applicable to the site; current land use including all existing structures; locations of utilities, roads, and easements; and significant natural and manmade features not otherwise shown.

(4) *Soils information.* The site soil information from the Clinton County Soil Map Survey.

(5) *Watershed.* A map showing the drainage boundary of the proposed development and/or earth change, each point of discharge from the development and/or earth change, and the drainage relationship with existing council-approved watershed patterns.

(6) *Calculations.* Storm water calculations shall be provided in accordance with the design standards referenced in division 3.

(7) *Site plan drawing.* A drawing showing all proposed storm water facilities with existing and final grades. This map shall also show existing and proposed lot lines, property lines, and structures, parking areas, etc. on the parcel and within 100 feet of the site.

(8) *Outlet and culvert information.* The sizes and locations of upstream and downstream culverts serving the major drainage routes flowing into and out of the development site, with arrows indicating the direction of flow to the ultimate receiving water body. Any significant offsite and onsite drainage outlet restrictions other than culverts should be noted on the drainage map. Storm sewer calculations indicating the number of acres, calculated to the nearest tenth of an acre, contributing to each specific inlet/outlet and maximum flow in cubic feet per second shall be stated on the plan. The applicant shall demonstrate that suitable conveyance exists downstream of the development site to receive the storm water, including easements, if necessary, for such conveyance. If easements do not exist, and cannot be acquired, the applicant shall

demonstrate the means of volume controls. Any areas of offsite sheet flow shall be identified.

(9) *Construction plan.* An implementation and sequencing plan for construction and inspection of all storm water facilities, including a schedule of the estimated dates of completing construction of the storm water facilities shown on the plan and an identification of the proposed inspection procedures to ensure that the storm water facilities are constructed in accordance with the approved storm water management plan.

(10) *Sedimentation and erosion control plan.* A soil erosion and sedimentation plan for all construction activities related to implementing any onsite storm water management practices. This plan shall provide the effective control of construction site storm water runoff and sediment track-out onto roadways.

(11) *Construction specifications.* All construction specifications for the storm water facilities and a single sheet showing all proposed storm water facilities, including vegetative BMP's, with drainage easements overlaid onto the overall road and utility plan and drawn to the same scale.

(12) *Additional drawings.* Drawings, profiles, and specifications for the construction of the storm water facilities, including vegetation, reasonably necessary to ensure that storm water runoff will be drained, stored, or otherwise controlled in accordance with this article. All drawings will include the date (month, day, year), including dates of any revisions, a title block, scale, and north point.

(13) *Maintenance plan.* A document in form and substance acceptable to the city for ensuring maintenance of any privately owned storm water facilities. The maintenance plan shall include a mandatory association or other enforceable 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 storm water management plan, the maintenance plan shall authorize the city to maintain any onsite storm water facility as reasonably necessary, at the owner's expense.

(14) *Firm contact information.* Name and signature of planner, architect, engineer, surveyor, wetland specialist, landscape architect, and/or other technical experts who have assisted in the preparation of the storm water management plan, designed the storm water facilities, and will inspect the final construction of the storm water facilities. The submitted plan shall be stamped and signed by the licensed design engineer or registered landscape architect.

(15) *Vegetation plan.* A drawing, which details the existing vegetation to remain and protective measures to be undertaken during construction.

(16) *Other environmental permits.* All other applicable environmental permits shall be acquired for the site prior to construction.

(17) *Additional information.* Any other information necessary for the city to verify that the storm water management plan complies with the city's design and performance standards for drains and storm water facilities.

(18) *Fees.* Payment of applicable review fees is required before any review will commence.

(19) *Phased development plans.* Should the applicant plan to subdivide or develop a given area but wishes to begin with only a portion of the total area, the original preliminary plan will include the proposed general layout for the entire area. The first phase of the subdivision will be clearly superimposed upon the overall plan in order to

illustrate clearly the method of development and/or earth change that the applicant intends to follow. However, the storm water management plan shall be submitted for the entire development, with calculations and devices designed for buildout sufficient to demonstrate to the planning commission the feasibility of future phases complying with the standards of this article.

(20) *Site features.* The location and description of onsite and adjacent offsite features that may be relevant in determining the overall requirements for storm water management. These features may include, but are not limited to, the following:

- a. Adjoining roads, subdivisions, and other developments and/or earth change activities;
- b. Schools, parks, and cemeteries;
- c. Drains, sewers, water mains, septic fields and wells;
- d. Overhead power lines, underground transmission lines, gas mains, pipelines or other utilities;
- e. Existing and proposed easements;
- f. Natural and artificial watercourses, wetlands and wetland boundaries, floodplains, lakes, bays and lagoons;
- g. Designated natural areas;
- h. Any proposed environmental mitigation features.

(21) *Soil borings.* Soil borings shall be required at various locations including the sites of proposed retention/detention/infiltration facilities.

(22) *Weekly construction reports.* As required by section 78-1009(b), construction reports shall be submitted weekly, unless some other period of time is approved by the planning commission.

(23) *Previously developed sites.* For earth changes, development or redevelopment occurring on a previously developed site, an applicant shall be required to include within the storm water management plan measures for controlling existing storm water runoff discharges from the site in accordance with the standards of the article, or to match existing discharge rates, whichever is less.

(Amend. of 1-13-2003(2), § 2-3)

Sec. 78-994. Approved plans and amendments.

(a) *Approved plans.* Approval of final development plans, site plans, and final preliminary subdivision plats shall not be granted prior to approval of the storm water management plan.

Upon approval of the storm water management plan, the planning commission chair, or the chair's designee, shall sign three copies thereof. One signed copy shall be made a part of the city's files; one copy shall be forwarded to the city engineer; and, one copy shall be returned to the applicant.

Planning commission approval shall expire two years from the date of such approval, unless construction has commenced and proceeds satisfactorily.

(1) An applicant may request from the planning commission unlimited one-year extensions of the plan approval, provided such request is applied for in writing prior to the date of expiration of plan approval.

a. The planning commission shall grant the request if plan requirements and standards, including those of this article that are reasonably related to the earth change, have not changed.

(b) *Amendments.* Amendments to an approved storm water management plan may occur only under the following circumstances:

(1) The holder of an approved plan shall notify the development official of any proposed amendment to such approved plan.

(2) Minor changes may be approved by the development official upon certification in writing to the planning commission that the proposed revision does not alter the basic design nor any specified conditions of the plan as agreed upon by the planning commission. The development official shall consider the following to be a minor change:

a. Any change that does not decrease the effectiveness of approved storm water facilities.

b. Any change that does not cause an increase in runoff rate and/or volume.

c. Any change deemed to be minor as determined by the planning commission from time to time.

(3) Should the development official determine that the requested modification to the approved plan is not minor, then the applicant shall submit a new plan for review as required by this article.

(Amend. of 1-13-2003(2), § 2-4)

Sec. 78-995. Fees and performance guarantees.

(a) *Review fees.* Fees and escrow account payments shall be sufficient to cover administrative and technical review costs anticipated to be incurred by the city.

(1) All expenses and costs incurred by the city directly associated with processing, reviewing and approving or denying storm water management plan application shall be paid to the city from the funds in an escrow account established by the applicant and held by the city.

(2) The city may draw funds from an applicant's escrow account to reimburse the city for out-of-pocket expenses incurred by the city relating to the application. Such reimbursable expenses include, but are not limited to, expenses related to the following:

a. Services of the city attorney directly related to the application.

b. Services of the city engineer directly related to the application.

c. Services of other independent contractors or consultants working for the city, which are directly related to the application.

d. Any additional public hearings, required mailings and legal notice requirements necessitated by the application.

(3) At the time an applicant applies for approval of a storm water management plan, the applicant shall deposit with the city clerk, as an escrow deposit, an initial amount equal to six percent of the estimated cost of constructing the proposed storm water management plan improvements as submitted by the applicant and reviewed and approved by the city engineer unless the city determines that a greater amount is appropriate, in which case the basis for such determination shall be provided to the applicant in writing. Any excess funds remaining in the escrow account after the application has been fully processed, reviewed, and the final city approval and acceptance of the earth change has occurred will be refunded to the applicant with no interest to be

paid on those funds. Additional amounts may be required to be placed in the escrow account by the applicant, at the discretion of the city.

(4) Construction observation fees shall be equal to two percent of the cost estimate, which shall be submitted prior to the start of construction and approved by the city as noted above. Any excess funds remaining in the escrow account after the application has been fully processed, reviewed, and the final city approval and acceptance of the earth change has occurred will be refunded to the applicant with no interest to be paid on those funds. Additional amounts may be required to be placed in the escrow account by the applicant, at the discretion of the city.

(b) *Performance guarantees.* The city shall not approve a storm water management plan until the applicant submits to the city, in a form and amount satisfactory to the city, an irrevocable letter of credit or other similar financial guarantee for the timely and satisfactory construction of all storm water facilities in accordance with the approved storm water management plan. Performance bonds are not acceptable. The amount of the financial guarantee shall be equal to the estimated cost of constructing the improvements, approved by the city as noted above.

Upon designation by the city engineer that the storm water facilities appear to have been completed in general accordance with the approved storm water management plan, the city may release the irrevocable letter of credit, subject to final city acceptance and approval. The city shall retain not less than ten percent of the original face value of the irrevocable letter of credit for a period of one year and one day after the city engineer's designation noted above. The purpose of this retainage is to guarantee that the storm water facilities perform as designed.

This article shall not be construed or interpreted as relieving an applicant of its obligation to pay all costs associated with onsite private storm water facilities as well as those costs arising from the need to make other drainage improvements in order to reduce an earth change's impact to property owners and watercourses.

(Amend. of 1-13-2003(2), § 2-5)

Sec. 78-996. Appeals.

(a) *Appeals.* A person aggrieved by the decision of the planning commission or city council with respect to an action regarding the storm water management plan may appeal the action to the board of zoning appeals pursuant to the process defined in Chapter 78, Article III of the City Code.

(Amend. of 1-13-2003(2), § 2-6)

Secs. 78-997--78-1004. Reserved.

DIVISION 3. DESIGN AND CONSTRUCTION STANDARDS

Sec. 78-1005. Performance/general standards.

(a) *Responsibility.* The city is not responsible for providing drainage facilities on private property for the management of storm water on the private property. It shall be the responsibility of the property owner to maintain private storm water facilities serving the property and to prevent or correct the accumulation of debris, which interferes with the drainage or storm water management function of the system.

All developments and earth changes subject to review under the requirements of this article shall be designed, constructed, and maintained to control runoff, prevent flooding and protect water quality. The particular facilities and measures required onsite shall reflect the natural features, wetland, and watercourses on the site; the potential for onsite and offsite flooding, water pollution, and erosion; and the size of the site.

(b) *General standards for onsite and offsite storm water management.*

(1) Storm water facilities shall be designed to prevent flood hazards and water pollution related to storm water runoff, soil erosion and channel erosion from the proposed earth change.

(2) Existing storm water from upstream and offsite locations shall be conveyed around or through the site, or stored onsite.

(3) Every storm water facility shall control the release of storm water in accordance with the design standards adopted by city council resolution.

(4) Unless otherwise approved, storm water runoff shall be conveyed through swales and vegetated buffer strips so as to decrease runoff velocity, allow for natural infiltration and passive storage, allow suspended sediment particles to settle, and to remove pollutants.

(5) Alterations to natural drainage patterns shall not increase runoff, create flooding or water pollution for adjacent or downstream property owners.

(6) Cutting, filling, and grading shall be minimized and the natural topography of the site shall be preserved to the maximum extent practicable, except where specific findings demonstrate that major alterations will still meet the purposes and requirements of this article.

(7) Grading of lands at locations that are adjacent to or near lands, streets, alleys, sidewalks, or other public or private property shall be done in a manner to protect the property from settling, cracking or sustaining other damage.

(8) All development and other earth changes shall be designed, constructed, and completed so that the exposed area of any disturbed land is limited to the shortest possible period of time.

(9) Damage to public utilities or services and damage to or impairment of any water body on or near the location of any water body shall be prevented.

(10) Natural wetlands shall be maintained to the maximum extent practicable.

(11) Increased offsite release of storm water shall be minimized to the maximum extent practicable. Therefore, the volume of storm water shall be managed and stored to the maximum extent practicable.

(12) The increased volume of water discharged due to earth changes and/or development of the site shall not create adverse impacts to property owners and watercourses. These adverse impacts may include, but are not limited to flooding, excessive soil saturation, crop damage, erosion, and/or degradation in water quality or habitat.

(c) *Storm water facilities.* The types of storm water facilities are listed in order of preference, with the most desirable listed first.

(1) *Infiltration facilities.* This article encourages the use of infiltration systems as a part of storm water management plan design. Storm water storage and/or infiltration facilities, which protect water quality and minimize flooding, shall be designed to meet the standards of this article. Storage facilities may include, but are not limited to, detention

basins, retention basins, infiltration trenches, swales with check dams, bioretention structures and other facilities and/or BMP's proposed by the applicant. It shall be the responsibility of the applicant to demonstrate that all proposed facilities meet the intent, goals, and standards of this article.

As the rate of percolation/infiltration of water into the soil column varies depending on the soil type, the type of infiltration system used may be site specific. Storm water management plan designers shall consider soil permeability when designing storm water infiltration components of a management system. The site developer shall attempt to minimize compaction of soil, which decreases infiltration and groundwater recharge and contributes to increased storm water runoff.

(2) *Storm water storage facilities.* All detention and/or retention basins shall be designed to meet the standards of this article. The types of basins are listed in order of preference, with the most desirable listed first:

a. Wet basins, or detention basins with a fixed minimum water elevation between runoff events. Wet basins, which serve to trap soil particles onsite, are preferable to dry basins.

b. Detention basins, which detain the first flush of an event and attenuate its release over an extended period.

c. Extended detention basins, which hold storm water from a less frequent storm event over an extended period before completely draining to become a dry basin. Dry basins without extended detention shall not be permitted.

Detention and/or retention basins shall be designed to hold runoff from a 100-year frequency storm event. Basins shall be permanently stabilized to minimize erosion.

Detention and/or retention basins shall have an overflow system. If the overflow system cannot discharge to a creek, lake, or wetland without causing flooding on adjacent or downstream properties, then the basin shall be designed to hold storm water runoff from back-to-back 100-year storm events.

Detention and/or retention basins and associated berms and landscaping shall be designed to protect public safety and to be visually attractive.

Detention and/or retention basins shall be provided in platted outlots, common areas or open space areas.

(Amend. of 1-13-2003(2), § 3-1)

Sec. 78-1006. Design standards.

The city council shall adopt by resolution minimum design standards for calculating runoff, storm water discharge release rates, and requirements for dischargers to implement onsite detention, retention, infiltration, or other methods necessary to control the rate and volume of surface water runoff discharged into the storm water drainage system.

(Amend. of 1-13-2003(2), § 3-2)

Sec. 78-1007. Soil erosion and sedimentation control.

(a) *Requirements.* All persons who cause, in whole or in part, any earth change to occur shall provide soil erosion and sedimentation control 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 earth changes shall be in accordance with all applicable federal and state laws, and local ordinances and applicable rules, regulations, and standards. The strictest of such requirements shall apply. The applicant shall obtain and comply with the terms of a soil erosion and sedimentation control permit if required by law.

No grading, site preparation, or removal of vegetative cover shall take place prior to storm water management plan approval and the installation of erosion control facilities.

(Amend. of 1-13-2003(2), § 3-3)

Sec. 78-1008. Landscaping/revegetation.

(a) *Landscaping requirements.* An applicant shall address the following guiding principles and standards:

(1) Native, natural existing vegetation shall be retained to the maximum extent practicable, recognizing earth changes will occur and it is not possible to retain much of what exists and still accomplish the basic project purpose.

(2) Native species shall be used for revegetation and landscaping to the maximum extent practicable.

(3) The flood tolerance of proposed species shall be considered, particularly in storm water management areas and components.

(4) Water requirements of species proposed in areas other than storm water management facilities shall be considered, with the goal of reducing their water demand and nutrient requirements to the maximum extent practicable.

(5) The storm water management components shall be chemical-free zones within the development, with the exception of accepted management techniques for the establishment and maintenance of components requiring the same.

(6) Bio-retention areas shall be vegetated with species, which maximize the infiltration, uptake and evapotranspiration of water.

(Amend. of 1-13-2003(2), § 3-4)

Sec. 78-1009. Maintenance/inspection/reporting.

(a) *Construction maintenance requirements.*

(1) The applicant shall be responsible for maintenance and inspection of storm water BMP's and management components on a regular basis during construction.

(2) Authorized representatives of the city may enter the project site to conduct onsite inspections at any time during construction, and is by reference a condition of any approval, and may review any log the applicant maintains pursuant to Subsection (b).

(b) *Inspection/reporting.* The applicant shall notify the city in advance before the commencement of construction. A licensed professional engineer or his or her designee who has been approved by the city shall conduct regular observations of the storm water facilities construction. All observations shall be documented with brief, written reports prepared, and submitted to the city, the frequency of which shall be determined at the time the plan is approved. The report shall contain the following information:

(1) The date and location of the site visit.

(2) Recent precipitation events.

(3) Copies from the NPDES construction site logbook, if applicable.

(4) Whether construction is in general compliance with the approved storm water management plan.

- (5) Variations from the approved construction specifications.
- (6) Any violations that exist with a timetable for completing corrective actions or a brief description of corrective actions completed.

If any violations are found, the property owner shall be notified by the city in writing of the nature of the violation and the corrective actions necessary. No additional work shall proceed until all violations are corrected by the applicant and approved by the city.

Should a city observation reveal noncompliance with the approved storm water management plan, a violation and stop work order may be issued in accordance with division 4 of this article entitled "Enforcement".

(Amend. of 1-13-2003(2), § 3-5)

Sec. 78-1010. Variances.

The board of zoning appeals shall have the authority to interpret this article and may grant variances to these requirements provided the variances are consistent with the general purpose and intent of the requirements. The procedural requirements for appeals under article III shall be applicable to appeals under this article. In addition to the procedures of article III, when variances are requested from the storm water management system article, the applicant shall show that storm water management systems have been provided to the maximum extent feasible with the requirements of this article.

(Amend. of 1-13-2003(2), § 3-6)

Secs. 78-1011--78-1016. Reserved

DIVISION 4. ENFORCEMENT

Sec. 78-1017. Violations.

A person who violates any provision of this article is responsible for a municipal civil infraction, subject to payment of a civil fine as set forth in section 42-38 of the Code. Repeat offenses under this article shall be subject to increased fines as set forth in section 42-38 of the Code.

(Amend. of 1-13-2003(2), § 4-1)

Sec. 78-1018. Stop work order.

(a) *Stop work order.* Where there is work in progress that causes a violation of any provision of this article, the city is authorized to issue a stop work order to prevent further or continuing violations. 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 with the order. The city may also undertake or cause to be undertaken any necessary measures to prevent violations of this article or to avoid or reduce the effects of noncompliance. 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 until paid.

(b) *Emergency measures.* When emergency measures are necessary to moderate a nuisance, to protect public safety, health and welfare, or to prevent loss of life, injury or damage to property, the city 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 article, and shall promptly reimburse the city for all of such costs. Such costs shall be a lien upon the property until paid.
(Amend. of 1-13-2003(2), § 4-2)

Sec. 78-1019. Restoration.

Any violator of this article may be required to restore land to its undisturbed condition and/or repair and stabilize damaged areas. In the event that restoration or repairs are not undertaken within a reasonable time after notice, the city may take necessary corrective action, the cost of which shall become a lien upon the property until paid.

(Amend. of 1-13-2003(2), § 4-3)

Secs. 78-1020--78-1026. Reserved.

DIVISION 5. MAINTENANCE

Sec. 78-1027. Responsibility.

(a) *Responsibility.* Maintenance of storm water facilities shall be the responsibility of the person or persons holding title to the property. These persons are responsible for the continual operation, maintenance, and repair of storm water facilities and BMPs in accordance with the provisions of this article.

For privately maintained storm water facilities, the maintenance requirements specified in this article shall be enforced by the city against the owner(s) of the property served by the storm water facilities.

(b) *Maintenance plan.* A maintenance plan, as specified in division 2 section 78-993, shall include specific maintenance activities for each storm water facility and any other elements of the approved storm water management plan. The maintenance plan shall be submitted simultaneously for municipal review with all other required elements of the storm water management plan.

(c) *Record keeping.* Parties responsible for the operation and maintenance of storm water facilities shall make records of the installation and of all maintenance and repairs, and shall retain the records for at least five years. These records shall be made available to the city during inspection of the facility and at other reasonable times upon request.

All storm water facilities shall be maintained according to the measures outlined in the approved storm water management plan.

The person(s) or organization(s) responsible for maintenance shall be designated in the plan. Options include:

(1) Property owner's association provided that provisions for financing necessary maintenance are included in deed restrictions or other contractual agreements.

(2) Means of permanent maintenance through agreement with the Office of the Clinton County Drain Commissioner, or other appropriate governmental agency.

(Amend. of 1-13-2003(2), § 5-1)

Sec. 78-1028. Access.

When any new storm water facilities are installed on private property, or when any new connection is made between private property and a public drainage control system, the property owner shall grant to the city through an easement the right to enter the property at reasonable times and in a reasonable manner for the purpose of inspection. This access

includes the right to enter a property when the city has reason to believe that a violation of this article is occurring or has occurred, and to enter when necessary for the abatement of a public nuisance or correction of a violation of this article.

(Amend. of 1-13-2003(2), § 5-2)

Sec. 78-1029. Easements.

(a) *Easements.* The owner shall provide all easements necessary to implement the approved storm water management plan and maintenance plan and to otherwise comply with this article in form and substance required by the city and/or any other governmental agency assuming authority, and shall record such easements as directed by the city. The easements shall assure access for proper inspection and maintenance of storm water facilities in perpetuity and shall provide adequate emergency overland flow-ways. The maintenance plan shall, among other matters, assure access for proper inspection and maintenance of storm water facilities and adequate emergency overland flow-ways.

Easement widths will be determined by the city and be situated in such a way as to allow maximum maintenance access. In general, easement widths shall conform to the following:

(1) Open channels and watercourses: A minimum of 50 feet total width. Additional width may be required in some cases, including but not limited to: watercourses with floodplains delineated by FEMA; sandy soils, steep slopes, at access points from road crossings.

(2) Open swales (cross lot drainage): minimum of 30 feet total width.

(3) Enclosed storm drains: A minimum of 20 feet will be required, situated in such a way as to allow maximum maintenance access. Additional width will be required in some cases. These may include but are not limited to, pipe depths exceeding four feet from the top of pipe, sandy soils, and steep slopes.

(Amend. of 1-13-2003(2), § 5-3)