

## CHAPTER 941

### Storm Water Utility and Storm Water Management

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#### **CROSS REFERENCES**

*Erosion and sediment control - see P. & Z. Ch. 1143*

*Storm water discharges - see S.U. & P.S.937.30 et seq.*

#### **941.01 PURPOSE AND SCOPE.**

- (a) The purpose of this regulation is to establish technically feasible and economically reasonable storm water

management standards to achieve a level of storm water quality and quantity control that will minimize damage to property and degradation of water resources and will promote and maintain the health, safety, and welfare of the citizens of the City.

(b) This regulation requires owners who develop or re-develop their property within the City to:

(1) Control storm water runoff from their property and ensure that all storm water control measures (SCMs) are properly designed, constructed, and maintained.

(2) Reduce water quality impacts to receiving water resources that may be caused by new development or redevelopment activities.

(3) Control the volume, rate, and quality of storm water runoff originating from their property so that surface water and ground water are protected and flooding and erosion potential are not increased.

(4) Minimize the need to construct, repair, and replace subsurface storm drain systems.

(5) Preserve natural infiltration and ground water recharge, and maintain subsurface flow that replenishes water resources, except in slippage prone soils.

(6) Incorporate storm water quality and quantity controls into site planning and design at the earliest possible stage in the development process.

(7) Reduce the expense of remedial projects needed to address problems caused by inadequate storm water management.

(8) Maximize use of SCMs that serve multiple purposes including, but not limited to, flood control, erosion control, fire protection, water quality protection, recreation, and habitat preservation.

(9) Design sites to minimize the number of stream crossings and the width of associated disturbance in order to minimize the City's future expenses related to the maintenance and repair of stream crossings.

(10) Maintain, promote, and re-establish conditions necessary for naturally occurring stream processes that assimilate pollutants, attenuate flood flows, and provide a healthy water resource.

(c) This regulation shall apply to all parcels used or being developed, either wholly or partially, for new or relocated projects involving highways and roads; subdivisions or larger common plans of development; industrial, commercial, institutional, or residential projects; building activities on farms; redevelopment activities; grading; and all other uses that are not specifically exempted in Section 1121.01.

(d) Public entities, including the State of Ohio, Lake County, and the City of Painesville shall comply with this regulation for roadway projects initiated after March 10, 2006 and, to the maximum extent practicable, for projects initiated before that time.

(e) This regulation does not apply to activities regulated by, and in compliance with, the Ohio Agricultural Sediment Pollution Abatement Rules.

(f) This regulation does not require a Comprehensive Storm Water Management Plan for linear construction projects, such as pipeline or utility line installation, that do not result in the installation of impervious surface as determined by the City Engineer. Such projects must be designed to minimize the number of stream crossings and the width of disturbance. Linear construction projects must comply with the requirements of Chapter 1121 Erosion and Sediment Control.

(Ord. 2-18. Passed 1-2-18.)

## **941.02 DEFINITIONS.**

For the purpose of these regulations, the words and phrases shall be defined as follows, unless the content clearly indicates or requires a different meaning.

(a) "Abatement." Any action taken to remedy, correct, or eliminate a condition within, associated with, or impacting a drainage system which condition has been declared a hazard or public nuisance pursuant to Section 941.16.

(b) "Acre." A measurement of area equaling 43,560 square feet.

(c) "As-built survey." A survey shown on a plan or drawing prepared by a registered professional surveyor indicating the actual dimensions, elevations, and locations of any structures, underground utilities, swales, detention facilities, and sewage treatment facilities after construction has been completed.

(d) "Base rate" means the storm water drainage service charges on a base unit. The storm water management fee for a single-family residential property in the City equals the base rate.

(e) "Base unit" means the average impervious surface area associated with a single family residential unit in the City.

(f) "Best management practices (BMPs)." Also "storm water control measures (SCMs)." Schedule of activities, prohibitions of practices, operation and maintenance procedures, treatment requirements, and other management practices (both structural and non-structural) to prevent or reduce the pollution of water resources and to control storm water volume and rate. This includes practices to control runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. For guidance, please see U.S. EPA's National Menu of BMPs at <http://water.epa.gov/polwaste/npdes/swbmp/inde>

x.cfm.

- (g) "Clean Water Act." Pub. L. 92-500, as amended Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483, Pub. L. 97-117, and Pub. L. 100-4, 33 U.S.C. 1251 et seq. Referred to as the Federal Water Pollution Control Act or the Federal Water Pollution Control Act Amendments of 1972.
- (h) "Community." The City of Painesville, its designated representatives, boards, or commissions.
- (i) "Comprehensive Storm Water Management Plan." The written document and plans meeting the requirements of this regulation that sets forth the plans and practices to minimize storm water runoff from a development area, to safely convey or temporarily store and release post-development runoff at an allowable rate to minimize flooding and stream bank erosion, and to protect or improve storm water quality and stream channels.
- (j) "Critical storm." A storm that is determined by calculating the percentage increase in volume of runoff by a proposed development area for the one-year 24-hour event. The critical storm is used to calculate the maximum allowable storm water discharge rate from a developed site.
- (k) "Developed property." Real property which has been altered from its natural state by the addition of any improvements such as buildings, structures, pavements, or other impervious area.
- (l) "Developer." A person, firm, or corporation that presumes to excavate or fill, build structures, install infrastructure, or otherwise improve a specific parcel or tract of land.
- (m) "Development area." A parcel or contiguous parcels owned by one person or persons, or operated as one development unit, and used or being developed for commercial, industrial, residential, institutional, or other construction or alteration that changes runoff characteristics.
- (n) "Development drainage area." A combination of each hydraulically unique watershed with individual outlet points on the development area.
- (o) "Disturbed area." An area of land subject to erosion due to the removal of vegetative cover and/or soil-disturbing activities.
- (p) "Drainage." The removal of excess surface water or ground water from land by surface or subsurface drains.
- (q) "Drainage facilities." Various drainage works that may include conduits, catch basins, manholes, energy dissipation structures, channels, outlets, retention/detention basins, and other structure components.
- (r) "Drainage service area." For the purpose of calculating storm water drainage service charges for lots or parcels of real property described in Section 941.14 as other developed property, the total square footage of impervious area shall be used. Scaled measurements taken from orthographic images shall be used to determine the area of imperviousness. Site plans or actual, on-site measurements will be obtained and used for the purpose of calculating the storm water drainage service area in cases where the orthographic image for a particular lot or parcel of real property obviously differs from the actual condition of the lot or parcel.
- (s) "Erosion." The process by which the land surface is worn away by the action of wind, water, ice, gravity, or any combination of those forces.
- (t) "Extended detention facility." A storm water control measure that replaces and/or enhances traditional detention facilities by releasing the runoff collected during the storm water quality event over at least 24 to 48 hours, retarding flow and allowing pollutants to settle within the facility.
- (u) "Final stabilization." All soil-disturbing activities at the site have been completed and a uniform perennial vegetative cover with a density of at least 80% coverage for the area has been established, or equivalent stabilization practices, such as the use of mulches or geotextiles, have been employed.
- (v) "Grading." The process in which the topography of the land is altered to a new slope.
- (w) "Green infrastructure." Wet weather management approaches and technologies that utilize, enhance, or mimic the natural hydrologic cycle processes of infiltration, evapotranspiration, and reuse.
- (x) "Hydrologic Unit Code." A cataloging system developed by the U.S. Geological Survey and the Natural Resource Conservation Service to identify watersheds in the United States.
- (y) "Impervious cover." Any surface that cannot effectively absorb or infiltrate water. This may include roads, streets, parking lots, rooftops, sidewalks, and other areas not covered by vegetation.
- (z) "Impervious surface." A surface area which is compacted or covered with material that is resistant to infiltration by water, including, but not limited to, most conventionally surfaced streets, roofs, sidewalks, patios, driveways, parking lots, and any other oiled, graveled, graded, compacted, paved, or other surface which impedes the natural infiltration of surface water.
- (aa) "Impervious surface area." The number of square feet of horizontal surface covered by buildings, roofs, parking lots, and other impervious surfaces. All building measurements shall be made between exterior faces of walls, foundations, columns, or other means of support or enclosure.

(bb) "Infiltration control measure." A storm water control measure that does not discharge to a water resource during the storm water quality event, requiring collected runoff to either infiltrate into the ground water and/or be consumed by evapotranspiration, thereby retaining storm water pollutants in the facility.

(cc) "Larger common plan of development." A contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under one plan.

(dd) "Low impact development." Low-impact development (LID) is a site design approach, which seeks to integrate hydrologically functional design with pollution prevention measures to compensate for land development impacts on hydrology and water quality. LID's goal is to mimic natural hydrology and processes by using small-scale, decentralized practices that infiltrate, evaporate, detain, and transpire storm water. LID storm water control measures (SCMs) are uniformly and strategically located throughout the site.

(ee) "Maximum extent practicable." The level of pollutant reduction that operators of small municipal separate storm sewer systems regulated under 40 C.F.R. Parts 9, 122, 123, and 124, referred to as NPDES Storm Water Phase II, must meet.

(ff) "Municipal separate storm sewer system (MS4)." A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that are:

(1) Owned or operated by the Federal government, State, municipality, township, County, district, or other public body (created by or pursuant to State or Federal law) including a special district under State law such as a district, flood control district or drainage districts, or similar entity, or a designated and approved management agency under section 208 of the Clean Water Act that discharges into water resources; and

(2) Designed or used for collecting or conveying solely storm water;

(3) Which is not a combined sewer; and

(4) Which is not part of a publicly owned treatment works.

(gg) "Multi-family dwelling." A building with four or more dwelling units.

(hh) "National Pollutant Discharge Elimination System (NPDES)." A regulatory program in the Federal Clean Water Act that prohibits the discharge of pollutants into surface waters of the United States without a permit.

(ii) "Nonstructural storm water control measure (SCM)." Any technique that uses natural processes and features to prevent or reduce the discharge of pollutants to water resources and control storm water volume and rate.

(jj) "O and M." Operation and maintenance.

(kk) "Orthographic image." Photographic image obtained through aerial photography.

(ll) "Other developed property." Developed property other than single-, two- or three-family residential property. Such property shall include, but not be limited to, multi-family dwellings, commercial properties, industrial properties, parking lots, hospitals, schools, recreational and cultural facilities, hotels, offices, and churches.

(mm) "Post-development." The conditions that exist following the completion of soil-disturbing activity in terms of topography, vegetation, land use, and the rate, volume, quality, or direction of storm water runoff.

(nn) "Pre-construction meeting." Meeting prior to construction between all parties associated with the construction of the project, including government agencies, contractors, and owners to review agency requirements and plans as submitted and approved.

(oo) "Pre-development." The conditions that exist prior to the initiation of soil-disturbing activity in terms of topography, vegetation, land use, and the rate, volume, quality, or direction of storm water runoff.

(pp) "Professional engineer." A professional engineer registered in the State of Ohio with specific education and experience in water resources engineering, acting in conformance with the Code of Ethics of the Ohio State Board of Registration for Engineers and Surveyors.

(qq) "Property owner." The property owner of record as listed in the Lake County Auditor's records. A "property owner" includes any individual, corporation, firm, partnership, or group of individuals acting as a unit, and any trustee, receiver, or personal representative.

(rr) "Redevelopment." A construction project on land that has been previously developed and where the new land use will not increase the runoff coefficient used to calculate the water quality volume. If the new land use will increase the runoff coefficient, then the project is considered to be a new development project rather than a redevelopment project.

(ss) "Riparian area." Land adjacent to any brook, creek, river, or stream having a defined bed and bank that, if appropriately sized, helps to stabilize streambanks, limit erosion, reduce flood size flows, and/or filter and settle out runoff pollutants, or performs other functions consistent with the purposes of this regulation.

(tt) "Riparian and wetland setback." The real property adjacent to a water resource on which soil- disturbing activities are limited by a city's riparian and wetland setback regulation.

(uu) "Runoff." The portion of rainfall, melted snow, or irrigation water that flows across the ground surface and is

eventually returned to water resources.

(vv) "Sediment." The soils or other surface materials that can be transported or deposited by the action of wind, water, ice, or gravity as a product of erosion.

(ww) "Sedimentation." The deposition of sediment in water resources.

(xx) "Single-family residential property." A developed property which serves as the primary purpose of providing a permanent dwelling unit and which is classified as residential in the Lake County Auditor's records. A single-family detached dwelling, a townhouse containing an accessory apartment or second dwelling unit, duplexes, and three-unit buildings are included in this definition.

(yy) "Site owner/operator." Any individual, corporation, firm, trust, commission, board, public or private partnership, joint venture, agency, unincorporated association, municipal corporation, County or State agency, the Federal government, other legal entity, or an agent thereof that is responsible for the overall construction site.

(zz) "Soil-disturbing activity." Clearing, grading, excavating, filling, or other alteration of the earth's surface where natural or human-made ground cover is destroyed and that may result in, or contribute to, increased storm water quantity and/or decreased storm water quality.

(aaa) "Stabilization." The use of best management practices or storm water control measures that reduce or prevent soil erosion by storm water runoff, trench dewatering, wind, ice, gravity, or a combination thereof.

(bbb) "Stormwater" or "storm water." Defined at 40 C.F.R. 122.26(b)(13) and means storm water runoff, snow melt runoff and surface runoff and drainage.

(ccc) "Storm water control measure (SCM)." Also "best management practice (BMP)." Schedule of activities, prohibitions of practices, operation and maintenance procedures, treatment requirements, and other management practices (both structural and non-structural) to prevent or reduce the pollution of water resources and to control storm water volume and rate. This includes practices to control runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. For guidance, please see U.S. EPA's National Menu of BMPs at <http://water.epa.gov/polwaste/npdes/swbmp/index.cfm>.

(ddd) "Storm Water Advisory Group (SAG)." A group of citizens consisting of approximately 20 representatives from various segments of the local community, including residents, businesses, elected officials, and community organizations. The purpose of the SAG is to provide relative local input concerning storm water issues.

(eee) "Storm water drainage system." All man-made facilities, structures, and natural watercourses used for collecting and conducting storm water, surface runoff, street wash water, and drainage, but which excludes sanitary sewage and industrial waste, other than unpolluted cooling water, to, through, and from drainage areas to the points of final outlet including, but not limited to, any and all of the following: conduits and appurtenance features: canals, creeks, channels, catch basins, ditches, streams, gulches, gullies, flumes, culverts, siphons, retention or detention basins, dams, floodwalls, levees, and pumping stations.

(fff) "Storm water management." The planning, design, construction, regulation, improvement, repair, maintenance, and operation of facilities and programs relating to storm water, flood plains, flood control, grading erosion, tree conservation, and sediment control.

(ggg) "Storm water management fee" means the fee established under this chapter and charged on owners or tenants of parcels or pieces of real property to fund the costs of storm water management and of operating, maintaining, and improving the storm water system in the City.

(hhh) "Storm Water Management Utility" or "Utility." The utility created by this chapter to operate, maintain, and improve the City's storm water system.

(iii) "Structural storm water management practice" or "storm water control measure (SCM)." Any constructed facility, structure, or device that prevents or reduces the discharge of pollutants to water resources and controls storm water volume and rate.

(jjj) "Surface water of the State." Also "water resource." Any stream, lake, reservoir, pond, marsh, wetland, or other waterway situated wholly or partly within the boundaries of the State, except those private waters which do not combine or affect a junction with surface water. Waters defined as sewerage systems, treatment works, or disposal systems in Ohio R.C. 6111.01 are not included.

(kkk) "Tenant." A person or group of people that rents and occupies the property of another.

(III) "Total maximum daily load (TMDL)." The sum of the existing and/or projected point source, non-point source, and background loads for a pollutant to a specified watershed, water body, or water body segment. A TMDL sets and allocates the maximum amount of a pollutant that may be introduced into the water and still ensures attainment and maintenance of water quality standards.

(mmm) "Utility." A public service regulated by government.

(nnn) "Water." Any storm water, surface water, snow melt, or ground water.

(ooo) "Water quality volume (WQv)." The volume of storm water runoff which must be captured and treated prior to

discharge from the developed site after construction is complete. WQv is based on the expected runoff generated by the mean storm precipitation volume from post-construction site conditions at which rapidly diminishing returns in the number of runoff events captured begins to occur.

(ppp) "Water resource." Also "surface water of the State." Any stream, lake, reservoir, pond, marsh, wetland, or waterway situated wholly or partly within the boundaries of the State, except those private waters which do not combine or affect a junction with surface water. Waters defined as sewerage systems, treatment works, or disposal systems in Ohio R.C. 6111.01 are not included.

(qqq) "Water resource crossing." Any bridge, box, arch, culvert, truss, or other type of structure intended to convey people, animals, vehicles, or materials from one side of a watercourse to another. This does not include private, noncommercial footbridges or pole-mounted aerial electric or telecommunication lines, nor does it include below-grade utility lines.

(rrr) "Watershed." The total drainage area contributing storm water runoff to a single point.

(sss) "Wetland." Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, and similar areas (40 C.F.R. 232, as amended).

(Ord. 2-18. Passed 1-2-18.)

### **941.03 LIMITS OF RESPONSIBILITY.**

(a) The utility shall monitor the design, operation, maintenance, inspection, and construction of all storm sewers, storm drains, and storm water facilities in the City. The utility shall be responsible for the design and construction of new public storm water facilities and rehabilitation of existing storm water facilities where required in the City and shall inspect, operate, and maintain them as prescribed in Section 941.04.

(b) The utility shall be responsible for controlling siltation and sedimentation that will adversely affect the performance of storm sewers, drainage ditches, watercourses, and other drainage facilities or that will pollute public waters and watercourses.

(c) This regulation requires owners who develop or redevelop their property within the City to:

(1) Control storm water runoff from their property and ensure that all storm water management practices are properly designed, constructed, and maintained.

(2) Reduce water quality impacts to receiving water resources that may be caused by new development or redevelopment activities.

(3) Control the volume, rate, and quality of storm water runoff originating from their property so that surface water and ground water are protected and flooding and erosion potential are not increased.

(4) Minimize the need to construct, repair, and replace subsurface storm drain systems.

(5) Preserve natural infiltration and ground water recharge, and maintain subsurface flow that replenishes water resources, except in slippage-prone soils.

(6) Incorporate storm water quality and quantity controls into site planning and design at the earliest possible stage in the development process.

(7) Reduce the expense of remedial projects needed to address problems caused by inadequate storm water management.

(8) Maximize use of SCMs that serve multiple purposes, including but not limited to, flood control, erosion control, fire protection, water quality protection, recreation, and habitat preservation.

(9) Design sites to minimize the number of stream crossings and the width of associated disturbance in order to minimize the City future expenses related to the maintenance and repair of stream crossings.

(10) Maintain, promote, and re-establish conditions necessary for naturally occurring stream processes that assimilate pollutants, attenuate flood flows, and provide a healthy water resource.

(d) This regulation shall apply to all parcels used or being developed, either wholly or partially, for new or relocated projects involving highways and roads; subdivisions or larger common plans of development; industrial, commercial, institutional, or residential projects; building activities on farms; redevelopment activities; grading; and all other uses that are not specifically exempted in Section 941.04.

(e) Public entities, including the State of Ohio, Lake County, and the City of Painesville shall comply with this regulation for roadway projects initiated after March 10, 2006 and, to the maximum extent practicable, for projects initiated before that time.

(f) This regulation does not apply to activities regulated by, and in compliance with, the Ohio Agricultural Sediment Pollution Abatement Rules.

(g) This regulation does not require a Comprehensive Storm Water Management Plan for linear construction projects,

such as pipeline or utility line installation, that do not result in the installation of impervious surface as determined by the City Engineer. Such projects must be designed to minimize the number of stream crossings and the width of disturbance. Linear construction projects must comply with the requirements of Chapter 1121 Erosion and Sediment Control.

(Ord. 2-18. Passed 1-2-18.)

#### **941.04 OPERATION AND MAINTENANCE OF FACILITIES.**

The utility shall determine the responsibility of all storm water facilities within the City. In general, the utility shall be responsible for operation and maintenance of public facilities on public land, street rights-of-way, and easements. The developer/owner shall be responsible for all maintenance associated with storm water drainage facilities on private property and to ensure proper operation.

Where public facilities are in easements, the owner of the property is responsible for aesthetic maintenance such as lawn mowing, litter pickup, etc. The owner shall also place no structures or plantings that interfere with the drainage facility or its operation and maintenance.

(a) An Inspection and Maintenance Agreement. The inspection and maintenance agreement required for SCMs under this regulation shall be a stand-alone document between the City and the applicant, and shall contain the following information and provisions:

(1) The location of each SCM, including those measures permitted to be located in, or within 50 feet of, water resources, and identification of the drainage area served by each storm water management practice.

(2) A schedule for regular maintenance for each aspect of the storm water management system and description of routine and non-routine maintenance tasks to ensure continued performance of the system as is detailed in the approved Comprehensive Storm Water Management Plan. This schedule may include additional standards, as required by the City Engineer, to ensure continued performance of SCMs permitted to be located in, or within 50 feet of, water resources.

(3) The location and documentation of all access and maintenance easements on the property.

(4) Identification of the landowner(s), organization, or municipality responsible for long-term maintenance, including repairs, of SCMs.

(5) The landowner(s), organization, or municipality shall maintain storm water management practices in accordance with this regulation.

(6) The City has the authority to enter upon the property to conduct inspections as necessary to verify that the SCMs are being maintained and operated in accordance with this regulation.

(7) The City shall maintain public records of the results of site inspections, shall inform the landowner(s), organization, or municipality responsible for maintenance of the inspection results, and shall specifically indicate any corrective actions required to bring the SCMs into proper working condition.

(8) If the City notifies the landowner(s), organization, or municipality responsible for maintenance of the maintenance problems that require correction, the specific corrective actions shall be taken within a reasonable time frame as determined by the City.

(9) The City is authorized to enter upon the property and to perform the corrective actions identified in the inspection report if the landowner(s), organization, or municipality responsible for maintenance does not make the required corrections in the specified time period. The City shall be reimbursed by the landowner(s), organization, or municipality responsible for maintenance for all expenses incurred within ten days of receipt of invoice from the City.

(10) The method of funding long-term maintenance and inspections of all storm water management practices.

(11) A release of the City from all damages, accidents, casualties, occurrences, or claims that might arise or be asserted against the City from the construction, presence, existence, or maintenance of the storm water management practices.

(b) Alteration or termination of these stipulations is prohibited. The applicant must provide a draft of this inspection and maintenance agreement as part of the Comprehensive Storm Water Management Plan submittal. Once a draft is approved, a recorded copy of the Agreement must be submitted to the City to receive final inspection approval of the site.

(Ord. 2-18. Passed 1-2-18.)

#### **941.05 LAND AND FACILITIES AFFECTED OUTSIDE THE CITY.**

Where storm water drains from lands outside the City, the facilities within the City receiving the storm water shall be designed in accordance with this code as if the entire drainage area was within the City.

(Ord. 2-18. Passed 1-2-18.)

#### **941.06 RULES AND REGULATIONS.**

(a) The purpose of a storm water management utility is to protect the drainage facilities, improvements, and properties owned by the City; to secure the best results from the construction, operation, and maintenance thereof; and to prevent

damage and misuse of any of the drainage facilities, improvements, or properties within the City. To accomplish this purpose, the City Engineer or Service Director may make and enforce rules and regulations that are approved by the City Manager and are necessary and reasonable:

- (1) To prescribe the manner in which storm sewers, ditches, channels, and other storm water facilities are to be designed, installed, adjusted, altered, or otherwise changed.
- (2) To prescribe inspection and other fees permitted by this code.
- (3) To prescribe the manner in which such facilities are operated.
- (4) To facilitate the enforcement of this code.
- (5) To prescribe the collection procedures and timing of service charge bills.
- (6) To protect the drainage facilities, improvements, and properties controlled by the division and to prescribe the manner of their use by any public or private person, firm, or corporation.
- (7) To protect the public health, safety, and welfare.

(b) The purpose of comprehensive storm water management regulations is to establish technically feasible and economically reasonable storm water management standards to achieve a level of storm water quality and quantity control that will minimize damage to property and degradation of water resources and will promote and maintain the health, safety, and welfare of the citizens of the City.

(Ord. 2-18. Passed 1-2-18.)

#### **941.07 SUPPORT SERVICES.**

The utility may avail itself of the services and facilities of other City divisions and departments and the services of consulting engineers and architects, construction contractors, and other private companies, and shall pay for such services or facilities. Services may include the actual planning, design, inspection, construction, operation, maintenance, or repair of existing and new storm water facilities.

(Ord. 2-18. Passed 1-2-18.)

#### **941.08 COOPERATION WITH FEDERAL, STATE, AND OTHER AGENCIES, AND POLITICAL SUBDIVISIONS.**

The City Manager, upon the recommendation of the City Engineer or Service Director and approval by Council, may enter into agreements with other political subdivisions including the County, State of Ohio, Federal government, and other agencies having power to regulate storm water as provided by law where required. The City shall have the right to enter into agreements to make drainage improvements, where required, and as provided by law.

(Ord. 2-18. Passed 1-2-18.)

#### **941.09 NATIONAL FLOOD INSURANCE PROGRAM.**

The utility shall assist in the administration of the National Flood Insurance Program.

(Ord. 2-18. Passed 1-2-18.)

#### **941.10 NPDES STORM WATER PERMIT.**

The City Engineer or Service Director is responsible for complying with the requirements set forth by the United States (U.S.) and the Ohio Environmental Protection Agency's NPDES Storm Water Permit Program. The requirements of this program include, but are not limited to, establishing and implementing best management practices to address storm water pollution and to protect and preserve the quality of waters of the State.

(Ord. 2-18. Passed 1-2-18.)

#### **941.11 PERMITS AND PLAN REVIEW PROCESS.**

(a) Permits. It shall be unlawful for any person or organization to construct, enlarge, alter, repair, relocate, or demolish a storm sewer, natural watercourse, or other drainage facilities without first filing an application and obtaining a proper permit from the City Inspection Services Department and paying the prescribed fee.

Permits are required and may be granted for the following improvement categories:

- (1) Connection into the public storm water system.
  - (2) Improvements that are or will become public facilities.
  - (3) Improvements within dedicated but unimproved street rights-of-way.
  - (4) Improvements that require retention or detention facilities.
- (b) Plan Review. Plans for all improvements made within the City that require storm water facilities and/or changes or

alterations to existing storm water facilities must be submitted to the City Inspection Services Department for review and approval. All improvements must conform to this chapter; the City's Design Standards, Chapter 1113 ; and Improvements, Chapter 1115 ; and the storm water master plan. No permit shall be issued until a plan is approved, or the need for a permit is waived, by the City Engineer, Service Director, or City Manager.

All applications for permits shall be accompanied by plans and specifications as required by the City Inspection Services Department. In addition to the plans and specifications, the applicant shall provide all statements, calculations, drawings, and other supporting data regarding the manner in which storm water runoff from the project site on the proposed development area will be controlled.

Every development shall be provided with a storm water system capable of handling storm water flowing onto the development site from other areas as well as storm water from the site itself. The drainage system shall be designed to discharge into a watercourse, drainage channel, or other existing storm water facility without producing any adverse effect on adjacent or downstream properties.

A storm sewer shall be constructed when the storm water flow from the tributary area, as determined by the City Engineer or Service Director, is a hazard to adjoining property.

The storm water drainage system shall not be combined with any part of the sanitary sewer system, nor shall sanitary water be discharged thereto.

(c) Permit Review. It shall be the duty of the City Engineer or Service Director, or their designee, to examine the application as described in the plan review process. If the examination reveals no objections to the proposed plan and it appears that the proposed work will be in compliance with the master plan, codes, laws, and ordinances applicable thereto and the proposed construction or work will be in conformance with this code, such application shall be approved and a permit issued, as soon as practicable, for the proposed work. If the examination reveals otherwise, such application shall be rejected and the findings shall be communicated in writing to the applicant.

(d) Permit Fees. The owner/developer shall pay a permit fee and an inspection fee as detailed herein for all storm water facilities to be constructed. These fees shall be determined by the City Engineer or Service Director, or their designee, in accordance with Section 1149.01 (a)(3), and the sewer construction permit fee of ten dollars (\$10.00) plus five dollars (\$5.00) per 100 feet of pipe.

(e) Permit Revoked. The City Engineer or Service Director may revoke the permit or stop work for any of the following reasons:

(1) Whenever there is a violation of any provision of this code, any ordinance of the City, or statute of the State of Ohio relating to the project.

(2) Whenever the continuance of any work becomes dangerous to life or property.

(3) Whenever there is a violation of any condition on which the issuance of the permit was based.

(4) Whenever, in the opinion of the City Engineer or Service Director or his or her authorized agent, the person having charge of the work is incompetent.

(5) Whenever any false statement or misrepresentation has been made upon the application, plans, or specifications on which the issuance of the permit or approval was based.

(6) Whenever work is discontinued for a period of one year or when, in the opinion of the City Engineer or Service Director, the completion of the work has been unduly delayed.

No revoked permit may be revived until the plans and uncompleted work are made to comply with all the requirements of all laws, codes, regulations, and ordinances then in effect.

(Ord. 2-18. Passed 1-2-18.)

#### **941.12 INSPECTION AND SURVEILLANCE.**

(a) It shall be the duty of the City Engineer or Service Director to enforce this code. After an application is approved and a permit is issued, construction can begin. It shall be the duty of the City Engineer or Service Director, or his or her duly authorized representative, to inspect or designate others to inspect the premises for which permits have been issued.

(b) When the City Engineer or Service Director or his or her duly authorized representative agent finds the drainage facility, or the construction thereof, is contrary to the approved plans, or presents an unsafe or dangerous condition in connection with the provisions of this code or of any law or ordinance relating to the same subject matter, the City Engineer or Service Director shall give notice to the owner of the premises or the contractor responsible for the work. The notice shall state where and in what respect the work does not conform to the approved plans, or state the defective condition and law violated, and shall specify a reasonable period of time in which to conform to the plans or the code.

(c) In every instance, a revocation notice of the permit shall be in writing and shall be served upon the owner, his or her agent, or the person having charge of the work. After the notice is received it shall be unlawful for any person to proceed with any operation for which such permit was issued. No part of the fees for such permit shall be returned.

(d) Notice, as required by this provision, is to be served on the owner, agent, contractor, or other person responsible for

the work or violation related to this code, by personal delivery or by certified mail addressed to his or her last known place of residence or place of business.

(Ord. 2-18. Passed 1-2-18.)

#### **941.13 RIGHT OF ENTRY FOR SURVEY AND EXAMINATION.**

(a) The employees of the City Inspection Services Department, or its agents including contractors and their employees, consultants and their employees, may enter upon lands within the City to make surveys and examinations to accomplish the necessary preliminary findings to establish a storm water master plan and for detailed analysis to prepare final plans and specifications for any proposed improvements.

(b) Where storm water improvements are made, or exist, upon any private lands that require periodic maintenance or inspection, the City shall obtain from the owner a perpetual easement and right of entry and access to any storm water channel or facility, including storm sewers.

(Ord. 2-18. Passed 1-2-18.)

#### **941.14 ESTABLISHMENT OF STORM WATER DRAINAGE SERVICE CHARGES.**

(a) Application. A storm water drainage service charge is imposed on each and every developed lot and parcel of land within the City corporation limits and on the owner or tenant thereof, excepting only public streets, boulevards, alleys, viaducts, sidewalks, curbing, street crossings, grade separations, and other public ways, highway structures, and appurtenances belonging to the City.

(1) Undeveloped land shall be exempt from storm water drainage service charges until such land is determined by the City Engineer or Service Director as being "developed property." The storm water drainage service charge will then be developed according to the provisions of this chapter.

(2) Road and freeway rights-of-way shall be exempted from the storm water drainage service charge because they function as part of the storm water collection and conveyance system. Railroads and other rights-of-way will be charged as described herein.

(3) Properties that have existing storm water detention or retention facilities, or those planning such facilities, may have their storm water drainage service charges adjusted as determined by the City Engineer or Service Director. The detention or retention facilities must be in accord with the hydrologic, hydraulic, and structural design requirements of the City's Design Standards, Chapter 1113, and Improvements, Chapter 1115. Facilities of a temporary nature will not be allowed an adjustment in the charges.

(4) The storm water drainage charge shall be applied to all newly developed property at the point in time that the temporary electric account is established or the issuance of a certificate of compliance. The charge shall be determined based on the property classification according to the building permit application submittal.

(5) Properties having best management practice (BMPs) techniques to improve the quality of the storm water leaving the property may have their storm water drainage service charge adjusted as determined by the City Engineer or Service Director.

(b) Classification. There shall be two classifications of residential property:

(1) Single-, two-, and three-family residential. It has been determined that the intensity of development of most parcels of real property in the City classified as one-, two-, and three-family residential units are similar. The average impervious area of such parcels has been calculated to equal 0.06 acres (2,500 square feet). Therefore, all one-, two-, and three-family residential units in the City are determined to have a base unit of impervious area of 0.06 acres and shall be charged a flat rate storm water management fee equal to the base rate for each individual residential unit regardless of the size of the parcel or the improvements.

(2) Multi-family residential. It has been determined the intensity of development of most parcels of real property in the City classified as multi-family residential units are similar. The individual average impervious area of each unit has been calculated to equal 0.03 acres (1,270 square feet). Therefore, all multi-family residential units in the City are determined to have a base unit of impervious area of 0.03 acres and shall be charged a flat rate storm water management fee equal to one-half of the base rate for each individual residential unit regardless of the size of the parcel or the improvements.

(3) Other developed property. The storm water management fee for other developed property (i.e., nonresidential property) in the City shall be the base rate multiplied by the numerical factor obtained by dividing the total impervious area (acres) of the property by one base unit (0.06 acres). The impervious surface area for other developed property is the acreage for the buildings and other improvements on the property. Alternatively, the impervious surface area of other developed property may be determined by the City Engineer or Service Director, or their designee, through site examination, mapping information, aerial photographs, and other available information. The minimum storm water management fee for other developed property shall equal the base rate for single-, two-, or three-family residential property.

(c) Base Rate per Base Unit The base rate monthly charge per base unit of impervious area shall be two dollars and seventy-five cents (\$2.75). The base rate monthly charge shall be reviewed annually and adjusted to meet the utility's budget for next year's operations, capital improvements, and other Federal, State, or local regulations.

(Ord. 2-18. Passed 1-2-18.)

#### **941.15 COLLECTION OF STORM WATER DRAINAGE SERVICE CHARGE.**

(a) The City Manager is hereby authorized to collect the storm water drainage service charges.

(b) The storm water drainage service charge shall be paid by the owner or tenant of each lot or parcel that is subject to this charge on a periodic basis in accordance with regulations established herein and as regulated by Chapter 925, Utilities, General Provisions.

(Ord. 2-18. Passed 1-2-18.)

#### **941.16 STORM WATER DRAINAGE SYSTEM CORRECTIONS.**

(a) Notice to Correct Storm Water Drainage System Appurtenances Whenever the City Engineer or Service Director shall find that within a tract or parcel of land there is an obstruction to a culvert, covered drain, or other natural or man-made watercourse that interferes with water naturally flowing therein or that such culvert, drain, or watercourse is of insufficient capacity to reasonably accommodate the flow of water; or that a condition which alters, impairs, reduces, restricts, or otherwise damages any part of the storm water system or which may do so in the event of a severe rainstorm event constitutes a public hazard or nuisance, the City Engineer or Service Director or his or her duly authorized representative shall notify the owner or person having possession, charge, or management of such land to remove the obstruction or provide the necessary drainage. Such notice shall be served on such persons by personal delivery, by mail at the last known place of residence, or by posting on the premises.

The owner must comply with the City Engineer or Service Director's orders within the time specified, not to exceed 30 days. Whoever fails to comply with such order shall be guilty of a minor misdemeanor per Section 941.99. Each and every day thereafter during which the owner fails to carry out the order of the City Engineer or Service Director or his or her duly authorized representative, shall constitute a separate offense.

(b) Emergencies and Abatement. In case of an emergency, the City Manager may direct that action be taken immediately to correct the condition or abate the activity to protect the public health, safety, and welfare. The utility may perform the required work and charge the owner the abatement costs.

In any case, where a condition described in this Section 941.16 exists for more than 30 days after service of notice, Council may, by resolution, direct the owner to fill or drain such land, remove any obstruction, and, if necessary, enlarge the culverts, drains, or watercourse to meet the requirements of this code.

After service of a copy of such resolution or after publication in a paper of general circulation in the City for two consecutive weeks, the owner, or his or her agent, shall comply with the directions of the resolution within the time therein specified. In the event an owner fails or refuses to comply with Council's resolution, the utility shall perform the required work and charge the owner the abatement costs. If the property owner fails to pay the same within 30 days after notice of the amount of the expense, the Director of Finance shall certify the same to the Lake County Auditor to be placed upon the tax duplicate and collected as other taxes are collected according to law.

(c) Abatement Costs. The City Engineer or Service Director shall account for all costs associated with an emergency or abatement including, but not limited to, administration, notification, inspection, serving of papers or documents, legal counsel, force account labor, enforcement, operational services, and outside contracted services.

This section shall not be construed to relieve the owner of any penalties prescribed by Section 941.99.

(Ord. 2-18. Passed 1-2-18.)

#### **941.17 REQUESTS FOR CORRECTION OR ADJUSTMENT OF THE STORM WATER DRAINAGE SERVICE CHARGE.**

(a) A property owner or tenant may request correction or adjustment of the storm water management fee by submitting the request in writing to the City Engineer or Service Director within 30 days after the date the notice or the bill is mailed or issued to the property owner or tenant. Grounds for correction of the fee include:

- (1) Incorrect classification of the property for purposes of determining the fee.
- (2) Errors in the amount of the impervious surface area of the property.
- (3) Mathematical errors in calculating the fee to be applied to the property.
- (4) Errors in the identification of the property owner or tenant of a property subject to the fee.

(5) The storm water management fee for a nonresidential parcel that has been determined in accordance with Section 941.14(b)(3) may be granted an adjustment in an amount not to exceed 25% of such fee, should such parcel benefit from detention or retention facilities provided and properly maintained by the owner or tenant.

(6) The storm water management fee for a nonresidential parcel that has been determined in accordance with Section 941.14(b)(3) may be granted an adjustment in an amount not to exceed 25% of such fee, should such parcel and downstream storm water facilities and waterways benefit from the application of an acceptable best management practice (BMP) technique as defined by the Ohio Environmental Protection Agency (EPA). BMPs include, but are not limited to:

- A. Sedimentation and runoff control, such as sediment traps, sediment basins, and chambers;

- B. Filter berms, sand filters, diversion ditches, or brush barriers;
- C. On-lot water treatment systems, or bio-retention and treatment;
- D. Storm water wetland;
- E. Hydro-dynamic separators and other manufactured products for storm water inlets.

(b) The City Engineer or Service Director, or their designee, shall make a determination within 30 days after receipt of the property owner or tenant's completed written request for correction or adjustment of the fee.

(c) A property owner must comply with all rules and procedures adopted by the City when submitting a request for correction of the fee and must provide all information necessary for the City Engineer or Service Director, or their designee, to make a determination on a request for correction of the fee.

(d) Review Committee. A five-member Review Committee will be assembled and shall hear and decide appeals to decisions made concerning corrections or adjustments to storm water management fees as described in this Section 941.17. The Review Committee shall consist of three members appointed by City Council who possess technical knowledge and expertise relating to storm water management or their association and/or membership to or with the Storm Water Advisory Group, and two members of the City's Administration, as appointed by the City Manager. The terms of the three Council-appointed members shall be for three years and be of such length and so arranged that the term of one member will expire each year. Each member shall serve until a qualified successor is appointed. Members of the committee may be removed for nonperformance of duty, misconduct, or other cause, by Council upon written notification.

The Review Committee shall hear and decide appeals to storm water management fees when it is believed there is an error in any requirement, decision, or determination made by the City Engineer or Service Director, or their designee, in the enforcement or administration of this chapter. It should not be the intention of any appeal to go against the spirit of the storm water utility and the Review Board shall dismiss trivial appeals.

In its deliberations, the Review Committee shall consider technical support data provided by the applicant and relevant engineering standards when making its final decision relevant to the appeal on the correction or adjustment.

(Ord. 2-18. Passed 1-2-18.)

#### **941.18 FLOODING; LIABILITY.**

Floods from storm water runoff may occasionally occur which exceed the capacity of storm water drainage facilities constructed, operated, and/or maintained by funds made available under this chapter. This chapter does not imply that property subject to the fees and charges established herein will always be free from storm water flooding or flood damage, or that storm water systems capable of handling all storm events can cost effectively be constructed, operated, and/or maintained. Nor shall this chapter create a liability on the part of, or cause of action against, the City or any officer or employee thereof for any flood damage that may result from such storms or the runoff thereof. Nor does this chapter purport to reduce the need or the necessity for obtaining flood insurance.

(Ord. 2-18. Passed 1-2-18.)

#### **941.19 DISCLAIMER OF LIABILITY.**

(a) Compliance with the provisions of this code shall not relieve any person from responsibility for damage to any person or property otherwise imposed by law. The provisions of this regulation are promulgated to promote the health, safety, and welfare of the public and are not designed for the benefit of any individual or any particular parcel of property.

(b) By approving a Comprehensive Storm Water Management Plan under this regulation, the City does not accept responsibility for the design, installation, and operation and maintenance of SCMs.

(Ord. 2-18. Passed 1-2-18.)

#### **941.20 CONFLICTS, SEVERABILITY, NUISANCES, AND RESPONSIBILITY.**

(a) Where this regulation is in conflict with other provisions of law or ordinance, the most restrictive provisions, as determined by the City Engineer, shall prevail.

(b) If any clause, section, or provision of this regulation is declared invalid or unconstitutional by a court of competent jurisdiction, the validity of the remainder shall not be affected thereby.

(c) This regulation shall not be construed as authorizing any person to maintain a nuisance on their property, and compliance with the provisions of this regulation shall not be a defense in any action to abate such a nuisance.

(d) Failure of the City to observe or recognize hazardous or unsightly conditions or to recommend corrective measures shall not relieve the site owner from the responsibility for the condition or damage resulting therefrom, and shall not result in the City, its officers, employees, or agents being responsible for any condition or damage resulting therefrom.

(Ord. 2-18. Passed 1-2-18.)

#### **941.21 DEVELOPMENT OF COMPREHENSIVE STORM WATER MANAGEMENT PLANS.**

(a) This regulation requires that a Comprehensive Storm Water Management Plan be developed and implemented for soil-disturbing activities disturbing one or more acres of total land, or less than one acre if part of a larger common plan of development or sale disturbing one or more acres of total land, and on which any regulated activity of Section 941.01(c) is proposed. A Comprehensive Storm Water Management Plan must be developed and implemented for all commercial and industrial site development. The City Engineer may require a Comprehensive Storm Water Management Plan on sites disturbing less than one acre.

(b) The City shall administer this regulation, shall be responsible for determination of compliance with this regulation, and shall issue notices and orders as may be necessary. The City may consult with the Lake County SWCD, State agencies, private engineers, storm water districts, or other technical experts in reviewing the Comprehensive Storm Water Management Plan.

(Ord. 2-18. Passed 1-2-18.)

#### **941.22 APPLICATION PROCEDURES.**

(a) Pre-Application Meeting. The applicant shall attend a pre-application meeting with the City Engineer to discuss the proposed project, review the requirements of this regulation, identify unique aspects of the project that must be addressed during the review process, and establish a preliminary review and approval schedule.

(b) Preliminary Comprehensive Storm Water Management Plan. The applicant shall submit two sets of a Preliminary Comprehensive Storm Water Management Plan (Preliminary Plan) and the applicable fees to the City Engineer and/or the Service Director. The Preliminary Plan shall show the proposed property boundaries, setbacks, dedicated open space, public roads, water resources, storm water control facilities, and easements in sufficient detail and engineering analysis to allow the City Engineer to determine if the site is laid out in a manner that meets the intent of this regulation and if the proposed SCMs are capable of controlling runoff from the site in compliance with this regulation. The applicant shall submit two sets of the Preliminary Plan and applicable fees as follows:

- (1) For subdivisions: In conjunction with the submission of the preliminary subdivision plan.
- (2) For other construction projects: In conjunction with the application for a zoning permit.
- (3) For general clearing projects: In conjunction with the application for a zoning permit.

(c) Final Comprehensive Storm Water Management Plan. The applicant shall submit two sets of a Final Comprehensive Storm Water Management Plan (Final Plan) and the applicable fees to the City Engineer and/or the Service Director in conjunction with the submittal of the final plat, improvement plans, or application for a building or zoning permit for the site. The Final Plan shall meet the requirements of Section 941.24 and shall be approved by the City Engineer prior to approval of the final plat and/or before issuance of a building permit by the Chief Building Official.

(d) Review and Comment. The City Engineer and/or the Service Director shall review the Preliminary and Final Plans submitted, and shall approve or return for revisions with comments and recommendations for revisions. A Preliminary or Final Plan rejected because of deficiencies shall receive a narrative report stating specific problems and the procedures for filing a revised Preliminary or Final Plan.

(e) Approval Necessary. Land-clearing and soil-disturbing activities shall not begin and zoning and/or building permits shall not be issued without an approved Comprehensive Storm Water Management Plan.

(f) Valid for Two Years. Approvals issued in accordance with this regulation shall remain valid for two years from the date of approval.

(Ord. 2-18. Passed 1-2-18.)

#### **941.23 COMPLIANCE WITH STATE AND FEDERAL REGULATIONS.**

Approvals issued in accordance with this regulation do not relieve the applicant of responsibility for obtaining all other necessary permits and/or approvals from other Federal, State, and/or County agencies. If requirements vary, the most restrictive shall prevail. These permits may include, but are not limited to, those listed below. Applicants are required to show proof of compliance with these regulations before the City will issue a building or zoning permit.

(a) Ohio Environmental Protection Agency (Ohio EPA) National Pollutant Discharge Elimination System (NPDES) Permits authorizing storm water discharges associated with construction activity or the most current version thereof. Proof of compliance with these requirements shall be the applicant's Notice of Intent (NOI) number from Ohio EPA, a copy of the Ohio EPA Director's Authorization Letter for the NPDES Permit, or a letter from the site owner certifying and explaining why the NPDES Permit is not applicable.

(b) Section 401 of the Clean Water Act. Proof of compliance shall be a copy of the Ohio EPA Water Quality Certification application tracking number, public notice, project approval, or a letter from the site owner certifying that a qualified professional has surveyed the site and determined that Section 401 of the Clean Water Act is not applicable. Wetlands, and other waters of the United States, shall be delineated by protocols accepted by the U.S. Army Corps of Engineers at the time of application of this regulation.

(c) Ohio EPA Isolated Wetland Permit. Proof of compliance shall be a copy of Ohio EPA's Isolated Wetland Permit application tracking number, public notice, project approval, or a letter from the site owner certifying that a qualified

professional has surveyed the site and determined that Ohio EPA's Isolated Wetlands Permit is not applicable. Isolated wetlands shall be delineated by protocols accepted by the U.S. Army Corps of Engineers at the time of application of this regulation.

(d) Section 404 of the Clean Water Act Proof of compliance shall be a copy of the U.S. Army Corps of Engineers' Individual Permit application, public notice, or project approval, if an Individual Permit is required for the development project. If an Individual Permit is not required, the site owner shall submit proof of compliance with the U.S. Army Corps of Engineers' Nationwide Permit Program. This shall include one of the following:

(1) A letter from the site owner certifying that a qualified professional has surveyed the site and determined that Section 404 of the Clean Water Act is not applicable.

(2) A site plan showing that any proposed fill of waters of the United States conforms to the general and special conditions specified in the applicable Nationwide Permit. Wetlands, and other waters of the United States, shall be delineated by protocols accepted by the U.S. Army Corps of Engineers at the time of application of this regulation.

(e) Ohio Dam Safety Law. Proof of compliance shall be a copy of the ODNR Division of Soil and Water Resources permit application tracking number, a copy of the project approval letter from the ODNR Division of Soil and Water Resources, or a letter from the site owner certifying and explaining why the Ohio Dam Safety Law is not applicable.

(Ord. 2-18. Passed 1-2-18.)

#### **941.24 COMPREHENSIVE STORM WATER MANAGEMENT PLANS.**

(a) Comprehensive Storm Water Management Plan Required. The applicant shall develop a Comprehensive Storm Water Management Plan describing how the quantity and quality of storm water will be managed after construction is completed for every discharge from the site and/or into a water resource or small municipal separate storm sewer system (MS4). The Plan will illustrate the type, location, and dimensions of every structural and non-structural SCM incorporated into the site design, and the rationale for their selection. The rationale must address how these SCMs will address flooding within the site as well as flooding that may be caused by the development upstream and downstream of the site. The rationale will also describe how the SCMs minimize impacts to the physical, chemical, and biological characteristics of on-site and downstream water resources and, if necessary, correct current degradation of water resources that is occurring or take measures to prevent predictable degradation of water resources.

(b) Preparation by Professional Engineer. The Comprehensive Storm Water Management Plan shall be prepared by a registered professional engineer and include supporting calculations, plan sheets, and design details. To the extent necessary, as determined by the City Engineer, a site survey shall be performed by a registered professional surveyor to establish boundary lines, measurements, or land surfaces.

(c) Community Procedures. The City Engineer shall prepare and maintain procedures providing specific criteria and guidance to be followed when designing the storm water management system for the site. These procedures may be updated from time to time, at the discretion of the City Engineer based on improvements in engineering, science, monitoring, and local maintenance experience. The City Engineer shall make the final determination of whether the practices proposed in the Comprehensive Storm Water Management Plan meet the requirements of this regulation. The City Engineer may also maintain a list of acceptable SCMs that meet the criteria of this regulation to be used in the City.

(d) Contents of Comprehensive Storm Water Management Plan. The Comprehensive Storm Water Management Plan shall contain an application, narrative report, construction site plan sheets, a long-term inspection and maintenance plan and inspection and maintenance agreement, and a site description with the following information provided:

(1) Site description:

- A. A description of the nature and type of the construction activity (e.g., residential, shopping mall, highway, etc.).
- B. Total area of the site and the area of the site that is expected to be disturbed (i.e., grubbing, clearing, excavation, filling, or grading, including off-site borrow areas).
- C. A description of prior land uses at the site.
- D. An estimate of the impervious area and percent of imperviousness created by the soil-disturbing activity at the beginning and at the conclusion of the project.
- E. Selection (source and justification) and/or calculations of runoff coefficients for water quality volume determination, peak discharge control (curve number/critical storm method), and rational method.
- F. Existing data describing the soils throughout the site, including soil map units including the series complexes, and association, hydrologic soil group, porosity, infiltration characteristics, depth to ground water, depth to bedrock, and any impermeable layers.
- G. If available, the quality of any known pollutant discharge from the site such as that which may result from previous contamination caused by prior land uses.
- H. The location and name of the immediate water resource(s) and the first subsequent water resource(s).
- I. The aerial (plan view) extent and description of water resources at or near the site that will be disturbed or will

receive discharges from the project.

J. If applicable, identify the point of discharge to a municipal separate storm sewer system and the location where that municipal separate storm sewer system ultimately discharges to a stream, lake, or wetland. The location and name of the immediate receiving stream or surface water(s) and the first subsequent receiving water(s) and the aerial extent and description of wetlands or other special aquatic sites at or near the site which will be disturbed or which will receive discharges.

K. TMDLs applicable for the site [refer to TMDL community identifier table at <http://www.nehiostormwater.com/>]; demonstrate that appropriate SCMs have been selected to address these TMDLs.

L. For each SCM, identify the drainage area, percent impervious cover within the drainage area, runoff coefficient for water quality volume, peak discharge, and the time of concentration for each subwatershed per Appendix 1 of Ohio's storm water manual, *Rainwater and Land Development*. Pervious and impervious areas should be treated as separate subwatersheds unless allowed at the discretion of the community engineer. Identify the SCM surface area, discharge and dewatering time, outlet type and dimensions. Each SCM shall be designated with an individual identification number.

M. Describe the current condition of water resources including the vertical stability of stream channels and indications of channel incision that may be responsible for current or future sources of high sediment loading or loss of channel stability.

(2) Site map showing:

- A. Limits of soil-disturbing activity on the site.
- B. Soils map units for the entire site, including locations of unstable or highly erodible soils.
- C. Existing and proposed one-foot contours. This must include a delineation of drainage watersheds expected before, during, and after major grading activities as well as the size of each drainage watershed in acres.
- D. Water resource locations including springs, wetlands, streams, lakes, water wells, and associated setbacks on or within 200 feet of the site, including the boundaries of wetlands or streams and first subsequent named receiving water(s) the applicant intends to fill or relocate for which the applicant is seeking approval from the U.S. Army Corps of Engineers and/or Ohio EPA.
- E. Existing and planned locations of buildings, roads, parking facilities, and utilities.
- F. The location of any in-stream activities, including stream crossings.

(3) Contact information: Company name and contact information as well as contact name, addresses, and phone numbers for the following:

- A. The professional engineer who prepared the Comprehensive Storm Water Management Plan.
- B. The site owner.

(4) Phase, if applicable, of the overall development plan.

(5) List of subplot numbers if project is a subdivision.

(6) Ohio EPA NPDES Permit number and other applicable State and Federal permit numbers, if available, or status of various permitting requirements if final approvals have not been received.

(7) Location, including complete site address and subplot number if applicable.

(8) Location of any easements or other restrictions placed on the use of the property.

(9) A site plan sheet showing:

- A. The location of each proposed post-construction SCMs.
- B. The geographic coordinates of the site AND each proposed practice in North American Datum Ohio State Plane North.

It is preferred that the entire site be shown on one plan sheet to allow a complete view of the site during plan review. If a smaller scale is used to accomplish this, separate sheets providing an enlarged view of areas on individual sheets should also be provided.

(10) Inspection and maintenance agreement: The inspection and maintenance agreement required for SCMs under this regulation as a stand-alone document between the City and the applicant. A copy of this agreement should be attached to the property deed. The agreement shall contain the following information and provisions:

A. Identification of the landowner(s), organization, or municipality responsible for long-term inspection and maintenance, including repairs, of the SCMs.

B. The landowner(s), organization, or municipality shall maintain SCMs in accordance with this regulation.

C. The City has the authority to enter upon the property to conduct inspections as necessary, with prior notification of the property owner, to verify that the SCMs are being maintained and operated in accordance with this regulation.

D. The City shall maintain public records of the results of site inspections, shall inform the landowner(s), organization, or municipality responsible for maintenance of the inspection results, and shall specifically indicate in writing any corrective actions required to bring the SCMs into proper working condition.

E. If the City notifies the landowner(s), organization, or municipality responsible for maintenance of the maintenance problems that require correction, the specific corrective actions shall be taken within a reasonable time as determined by the City.

F. The City is authorized to enter upon the property and perform the corrective actions identified in the inspection report if the landowner(s), organization, or municipality responsible for maintenance does not make the required corrections in the specified time period. The City shall be reimbursed by the landowner(s), organization, or municipality responsible for maintenance for all expenses incurred within 10 days of receipt of invoice from the City, or more with written approval from the City Engineer.

G. The method of funding long-term maintenance and inspections of all SCMs.

H. A release of the City from all damages, accidents, casualties, occurrences, or claims that might arise or be asserted against the City from the construction, presence, existence, or maintenance of the SCMs.

(11) Inspection and maintenance plan: This plan will be developed by the applicant and reviewed by the City. Once the inspection and maintenance plan is approved, a recorded copy of the plan must be submitted to the City as part of the final inspection approval as described in Section 941.28 . The plan will include at a minimum:

A. The location of each SCM and identification of the drainage area served by each SCM.

B. Photographs of each SCM, including all inlets and outlets upon completion of construction.

C. Schedule of inspection.

D. A schedule for regular maintenance for each aspect of the storm water management system and description of routine and non-routine maintenance tasks to ensure continued performance of the system as is detailed in the approved Comprehensive Storm Water Management Plan. A maintenance inspection checklist written so the average person can understand it shall be incorporated. The maintenance plan will include a detailed drawing of each SCM and outlet structures with the parts of the outlet structure labeled. This schedule may include additional standards, as required by the City Engineer, to ensure continued performance of SCMs permitted to be located in, or within 50 feet of, water resources.

E. The location and documentation of all access and maintenance easements on the property.

*Alteration or termination of these stipulations is prohibited.*

(12) Required calculations: The applicant shall submit calculations for projected storm water runoff flows, volumes, and timing into and through all SCMs for flood control, channel protection, water quality, and the condition of the habitat, stability, and incision of each water resource and its floodplain, as required in Section 941.25 of this regulation. These submittals shall be completed for both pre- and post-development land use conditions and shall include the underlying assumptions and hydrologic and hydraulic methods and parameters used for these calculations. The applicant shall also include critical storm determination and demonstrate that the runoff from offsite areas have been considered in the calculations.

(13) List of all contractors and subcontractors before construction: Prior to construction or before the pre-construction meeting, provide the list of all contractors and subcontractors and their names, addresses, and phones involved with the implementation of the Comprehensive Storm Water Management Plan including a written document containing signatures of all parties as proof of acknowledgment that they have reviewed and understand the requirements and responsibilities of the Comprehensive Storm Water Management Plan.

(14) Existing and proposed drainage patterns: The location and description of existing and proposed drainage patterns and SCMs, including any related SCMs beyond the development area and the larger common development area.

(15) For each SCM to be employed on the development area, include the following:

A. Location and size, including detail drawings, maintenance requirements during and after construction, and design calculations, all where applicable.

B. Final site conditions including storm water inlets and permanent non-structural and structural SCMs. Details of the SCMs shall be drawn to scale and shall show volumes and sizes of contributing drainage areas.

C. Any other structural and/or non-structural SCMs necessary to meet the design criteria in this regulation and any supplemental information requested by the City Engineer.

D. Each SCM shall be designated with an individual identification number.

(Ord. 2-18. Passed 1-2-18.)

#### **941.25 PERFORMANCE STANDARDS.**

(a) General. The storm water system, including SCMs for storage, treatment and control, and conveyance facilities, shall be designed to prevent structure flooding during the 100-year, 24-hour storm event; to maintain pre-development runoff patterns, flows, and volumes; and to meet the following criteria:

(1) Integrated practices that address degradation of water resources The SCMs shall function as an integrated system that controls flooding and minimizes the degradation of the physical, biological, and chemical integrity of the water resources receiving storm water discharges from the site. Acceptable practices shall:

- A. Not disturb riparian areas, unless the disturbance is intended to support a watercourse restoration project and complies with Chapter 1140 Riparian Setbacks.
- B. Maintain pre-development hydrology and ground water recharge on as much of the site as practicable.
- C. Only install new impervious surfaces and compact soils where necessary to support the future land use.
- D. Compensate for increased runoff volumes caused by new impervious surfaces and soil compaction by reducing storm water peak flows to less than predevelopment levels.
- E. Be designed according to the methodology included in the most current edition of *Rainwater and Land Development* or another design manual acceptable for use by the City and Ohio EPA.

SCMs that meet the criteria in this regulation, and additional criteria required by the City Engineer, shall comply with this regulation.

(2) Practices designed for final use. SCMs shall be designed to achieve the storm water management objectives of this regulation, to be compatible with the proposed post-construction use of the site, to protect the public health, safety, and welfare, and to function safely with routine maintenance.

(3) Storm water management for all lots. Areas developed for a subdivision, as defined in Chapter 1113 Design Standards, shall provide storm water management and water quality controls for the development of all subdivided lots. This shall include provisions for lot grading and drainage that prevent structure flooding during the 100-year, 24-hour storm; and maintain, to the extent practicable, the pre-development runoff patterns, volumes, and peaks from each lot.

(4) Storm water facilities in water resources SCMs and related activities shall not be constructed in water resources unless the applicant shows proof of compliance with all appropriate permits from the Ohio EPA, the U.S. Army Corps of Engineers, and other applicable Federal, State, and local agencies as required in Section 941.23 of this regulation, and the activity is in compliance with Chapter 1121 , all as determined by the City Engineer.

(5) Storm water ponds and surface conveyance channels. All storm water pond and surface conveyance designs must provide a minimum of one foot freeboard above the projected peak stage within the facility during the 100-year, 24-hour storm. When designing storm water ponds and conveyance channels, the applicant shall consider public safety as a design factor and alternative designs must be implemented where site limitations would preclude a safe design.

(6) Exemption. The site where soil-disturbing activities are conducted shall be exempt from the requirements of this Section 941.25 if it can be shown to the satisfaction of the City Engineer that the site is part of a larger common plan of development where the storm water management requirements for the site are provided by an existing SCMs, or if the storm water management requirements for the site are provided by practices defined in a regional or local storm water management plan approved by the City Engineer.

(7) Maintenance. All SCMs shall be maintained in accordance with the inspection and maintenance plan and agreements approved by the City Engineer as detailed in Section 941.24 .

(8) Ownership. Unless otherwise required by the City, SCMs serving multiple lots in subdivisions shall be on a separate lot held and maintained by an entity of common ownership or, if compensated by the property owners, by the City. SCMs serving single lots shall be placed on these lots, protected within an easement, and maintained by the property owner.

(9) Preservation of existing natural drainage. Practices that preserve and/or improve the existing natural drainage shall be used to the maximum extent practicable. Such practices may include minimizing site grading and compaction; protecting and/or restoring water resources, riparian areas, and existing vegetation and vegetative buffer strips; phasing of construction operations in order to minimize the amount of disturbed land at any one time, and designation of tree preservation areas or other protective clearing and grubbing practices; and maintaining unconcentrated storm water runoff to and through these areas. Post-construction storm water practices shall provide perpetual management of runoff quality and quantity so that a receiving stream's physical, chemical, and biological characteristics are protected and ecological functions are maintained.

(10) Preservation of wetland hydrology. Concentrated storm water runoff from SCMs to wetlands shall be converted to diffuse flow before the runoff enters the wetlands in order to protect the natural hydrology, hydroperiod, and wetland flora. The flow shall be released such that no erosion occurs down slope. Practices such as level spreaders, vegetative buffers, infiltration basins, conservation of forest covers, and the preservation of intermittent streams, depressions, and drainage corridors may be used to maintain the wetland hydrology.

If the applicant proposes to discharge to natural wetlands, a hydrological analysis shall be performed to demonstrate that the proposed discharge matches the pre-development hydro periods and hydrodynamics.

(11) Soil preservation and post-construction soil restoration. To the maximum extent practicable, leave native soil undisturbed and protect from compaction during construction. Except for areas that will be covered by impervious surface or have been incorporated into an SCM, the soil moisture-holding capacity of areas that have been cleared and graded must be restored to that of the original, undisturbed soil to the maximum extent practicable. Areas that have been compacted or had the topsoil or duff layer removed should be amended using the following steps: 1. till subsoil to a depth of 15-18 inches; 2. incorporate compost through top 12 inches; 3. replace with stockpiled site or imported suitable topsoil to a minimum depth of

four inches.

(b) Storm Water Conveyance Design Criteria. All SCMs shall be designed to convey storm water to allow for the maximum removal of pollutants and reduction in flow velocities. This shall include but not be limited to:

(1) Surface water protection. The City Engineer may allow modification to streams, rivers, lakes, wetlands, or other surface waters only if the applicant shows proof of compliance with all appropriate permits from the Ohio EPA, the U.S. Army Corps of Engineers, and other applicable Federal, State, and local agencies as required in Section 941.23 of this regulation, and the activity is in compliance with Chapter 1121 Erosion and Sediment Control, and Chapter 1140 Riparian Setbacks, all as determined by the City Engineer. At a minimum, stream relocation designs must show how the project will minimize changes to the vertical stability, floodplain form, channel form, and habitat of upstream and downstream channels on and off the property.

(2) Off-site storm water discharges. Off-site storm water runoff that discharges to or across the applicant's development site shall be conveyed through the storm water conveyance system planned for the development site at its existing peak flow rates during each design storm. Off-site flows shall be diverted around storm water quality control facilities or, if this is not possible, the storm water quality control facility shall be sized to treat the off-site flow. Comprehensive Storm Water Management Plans will not be approved until it is demonstrated to the satisfaction of the City Engineer that off-site runoff will be adequately conveyed through the development site in a manner that does not exacerbate upstream or downstream flooding and erosion.

(3) Sheet flow. The site shall be graded in a manner that maintains sheet flow over as large an area as possible. The maximum area of sheet flow shall be determined based on the slope, the uniformity of site grading, and the use of easements or other legally-binding mechanisms that prohibit re-grading and/or the placement of structures within sheet flow areas. In no case shall the sheet flow length be longer than 300 feet, nor shall a sheet flow area exceed 1.5 acres. Flow shall be directed into an open channel, storm sewer, or other SCMs from areas too long and/or too large to maintain sheet flow, all as determined by the City Engineer.

(4) Open channels. Unless otherwise allowed by the City Engineer, drainage tributary to SCMs shall be provided by an open channel with landscaped banks and designed to carry the 10-year, 24-hour storm water runoff from upstream contributory areas.

(5) Open drainage systems. Open drainage systems shall be preferred on all new development sites to convey storm water where feasible. Storm sewer systems shall be allowed only when the site cannot be developed at densities allowed under City zoning or where the use of an open drainage system affects public health or safety, all as determined by the City Engineer. The following criteria shall be used to design storm sewer systems when necessary:

A. Storm sewers shall be designed such that they do not surcharge from runoff caused by the five-year, 24-hour storm, and that the hydraulic grade line of the storm sewer stays below the gutter flow line of the overlying roadway, or below the top of drainage structures outside the roadway during a 10-year, 24-hour storm. The system shall be designed to meet these requirements when conveying the flows from the contributing drainage area within the proposed development and existing flows from off-site areas that are upstream from the development.

B. The minimum inside diameter of pipe to be used in public storm sewer systems is 12 inches. Smaller pipe sizes may be used in private systems, subject to the approval of the City Engineer.

C. All storm sewer systems shall be designed taking into consideration the tailwater of the receiving facility or water resource. The tailwater elevation used shall be based on the design storm frequency. The hydraulic grade line for the storm sewer system shall be computed with consideration for the energy losses associated with entrance into and exit from the system, friction through the system, and turbulence in the individual manholes, catch basins, and junctions within the system.

D. The inverts of all curb inlets, manholes, yard inlets, and other structures shall be formed and channelized to minimize the incidence of quiescent standing water where mosquitoes may breed.

E. Headwalls shall be required at all storm sewer inlets or outlets to and from open channels or lakes.

(6) Water resource crossings. The following criteria shall be used to design structures that cross a water resource in the City:

A. Water resource crossings other than bridges shall be designed to convey the stream's flow for the minimum 25-year, 24-hour storm.

B. Bridges, open bottom arch or spans are the preferred crossing technique and shall be considered in the planning phase of the development. Bridges and open spans should be considered for all State Scenic Rivers, cold water habitat, exceptional warm water habitat, seasonal salmonid habitat streams, and Class III headwater streams. The footers or piers for these bridges and open spans shall not be constructed below the ordinary high water mark.

C. If a culvert or other closed bottom crossing is used, 25% of the cross-sectional area or a minimum of one foot of box culverts and pipe arches must be embedded below the channel bed. The conduit or conveyance must be sized to carry the 25-year storm under these conditions.

D. The minimum inside diameter of pipes to be used for crossings shall be 12 inches.

E. The maximum slope allowable shall be a slope that produces a 10-fps velocity within the culvert barrel under

design flow conditions. Erosion protection and/or energy dissipaters shall be required to properly control entrance and outlet velocities.

F. All culvert installations shall be designed with consideration for the tailwater of the receiving facility or water resource. The tailwater elevation used shall be based on the design storm frequency.

G. Headwalls shall be required at all culvert inlets or outlets to and from open channels or lakes.

H. Streams with a drainage area of five square miles or larger shall incorporate flood plain culverts at the bankfull elevation to restrict head loss differences across the crossing so as to cause no rise in the 100-year storm event.

I. Bridges shall be designed such that the hydraulic profile through a bridge shall be below the bottom chord of the bridge for either the 100-year, 24-hour storm, or the 100-year flood elevation as determined by FEMA, whichever is more restrictive.

(7) Overland flooding. Overland flood routing paths shall be used to convey storm water runoff from the 100-year, 24-hour storm event to an adequate receiving water resource or SCMs such that the runoff is contained within the drainage easement for the flood routing path and does not cause flooding of buildings or related structures. The peak 100-year water surface elevation along flood routing paths shall be at least one foot below the finished grade elevation of all structures. When designing the flood routing paths, the conveyance capacity of the site's storm sewers shall be taken into consideration.

(8) Compensatory flood storage mitigation. In order to preserve floodplain storage volumes and thereby avoid increases in water surface elevations, any filling within floodplains approved by the City must be compensated by providing an equivalent storage volume. First consideration for the location(s) of compensatory floodplain volumes shall be given to areas where the stream channel will have immediate access to the new floodplain within the limits of the development site. Consideration will also be given to enlarging existing or proposed retention basins to compensate for floodplain fill if justified by a hydraulic analysis of the contributing watershed. Unless otherwise permitted by the City, reductions in volume due to floodplain fills must be mitigated within the legal boundaries of the development. Embankment slopes used in compensatory storage areas must reasonably conform to the natural slopes adjacent to the disturbed area. The use of vertical retaining structures is specifically prohibited.

*NOTE: Must also comply with Chapter 1140 Riparian Setbacks.*

(9) Velocity dissipation. Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall to provide non-erosive flow velocity from the structure to a water resource so that the natural physical and biological characteristics and functions of the water resource are maintained and protected.

(c) Storm Water Quality Control.

(1) Direct runoff to a BMP. The site shall be designed to direct runoff to one or more of the following SCMs. These practices are listed in Table 2 of this regulation and shall be designed to meet the following general performance standards:

A. Extended detention facilities that detain storm water; settle or filter particulate pollutants; and release the controlled storm water to a water resource.

B. Infiltration facilities that retain storm water; promote settling, filtering, and biodegradation of pollutants; and infiltrate captured storm water into the ground. The City Engineer may require a soil engineering report to be prepared for the site to demonstrate that any proposed infiltration facilities meet these performance standards.

C. For sites less than five acres, but required to create a comprehensive storm water management plan, the City Engineer may approve other SCMs if the applicant demonstrates to the City Engineer's satisfaction that these SCMs meet the objectives of this regulation as stated in Section 941.25(c)(6).

D. For sites greater than five acres, or less than five acres but part of a larger common plan of development or sale which will disturb five or more acres, the City Engineer may approve other SCMs if the applicant demonstrates to the City Engineer's satisfaction that these SCMs meet the objectives of this regulation as stated in Section 941.25(c)(6), and has prior written approval from the Ohio EPA.

E. For the construction of new roads and roadway improvement projects by public entities (i.e., the State, counties, townships, cities, or villages), the City Engineer may approve SCMs not included in Table 2 of this regulation, but must show compliance with the current version of the Ohio Department of Transportation's *Location and Design Manual, Volume Two Drainage Design*.

*Note: Per Rainwater and Land Development, the water quality volume (WQv) orifice shall be an anti-clogging or non-clogging design such as a reverse slope pipe or a perforated tile pipe with gravel filter. Alternatively, the City may encourage the use of other SCMs for smaller drainage areas.*

(2) Criteria applying to all SCMs. SCMs chosen must be sized to treat the water quality volume (WQV) and to ensure compliance with Ohio Water Quality Standards (O.A.C. Chapter 3745-1).

A. The WQv shall be equal to the volume of runoff from a 0.75-inch rainfall event and shall be determined according to one of the following methods:

1. Through a site hydrologic study approved by the City Engineer that uses continuous hydrologic simulation; site-

specific hydrologic parameters, including impervious area, soil infiltration characteristics, slope, and surface routing characteristics; proposed SCMs controlling the amount and/or timing of runoff from the site; and local long-term hourly records; or

2. Using the following equation:

$$WQv = C \cdot P \cdot A / 12$$

where terms have the following meanings:

WQ v = water quality volume in acre-feet

C = runoff coefficient appropriate for storms less than 1 inch

P = 0.75 inch precipitation depth

A = area draining into the storm water practice, in acres.

Runoff coefficients required by the Ohio Environmental Protection Agency (Ohio EPA) for use in determining the WQv can be determined using the list in Table 1 or using the following equation to calculate the runoff coefficient:

$$C = 0.858i^3 - 0.78i^2 + 0.774i + 0.04, \text{ where:}$$

i = fraction of the drainage area that is impervious

**Table 1: Runoff Coefficients Based on the Type of Land Use**

<u>Land Use</u>	<u>Runoff Coefficient</u>
Industrial and Commercial	0.8
High Density Residential (>8 dwellings/acre)	0.5
Medium Density Residential (4 to 8 dwellings/acre)	0.4
Low Density Residential (<4 dwellings/acre)	0.3
Open Space and Recreational Areas	0.2
Where land use will be mixed, the runoff coefficient should be calculated using a weighted average. For example, if 60% of the contributing drainage area to the storm water treatment structure is Low Density Residential, 30% is High Density Residential, and 10% is Open Space, the runoff coefficient is calculated as follows $(0.6)(0.3)+(0.3)(0.5)+(0.1)(0.2) = (0.35)$	

B. An additional volume equal to 20% of the WQv shall be incorporated into the storm water practice for sediment storage. This volume shall be incorporated into the sections of storm water practices where pollutants will accumulate.

C. Each individual SCM must be sized to treat the WQv associated with its entire contributing drainage area. Exceptions to this may be granted by the City Engineer and/or the OEPA on a case-by-case basis.

D. Storm water quality management practices shall be designed such that the drain time is long enough to provide treatment and protect against downstream bank erosion, but short enough to provide storage available for successive rainfall events as defined in Table 2.

E. Sites within watersheds of coldwater habitat streams shall include SCMs to infiltrate the water quality volume or reduce the temperature of discharged runoff. SCMs that reduce the temperature of discharged runoff include bioretention, permeable pavement, underground detention, and incorporation of shading and infiltration in parking lot design.

F. Each practice shall be designed to facilitate sediment removal, vegetation management, debris control, and other maintenance activities defined in the inspection plan and maintenance agreement for the site.

**Table 2: Draw Down Times for Storm Water Control Measure**

<u>Storm Water Control Measure</u>	<u>Drain Time of WQv</u>
<u>Storm Water Control Measure</u>	<u>Drain Time of WQv</u>
Infiltration Basin or Trench <sup>1</sup>	48 hours
Permeable Pavement – Infiltration <sup>1</sup>	48 hours
Permeable Pavement – Extended Detention	24 hours
Extended Detention Facilities	48 hours
• Dry Extended Detention Basin <sup>2</sup>	
• Wet Extended Detention Basin <sup>3</sup>	24 hours
• Constructed Wetlands (above permanent pool) <sup>4</sup>	24 hours

• Bioretention Area/Cell *5, 6	24 hours
• Sand and other Media Filtrations	24 hours
• Pocket Wetland <sup>7</sup>	24 hours
1 Practices designed to fully infiltrate the WQv shall empty within 48 hours to provide storage for subsequent storm events.	
2 The use of a forebay and micropool is required on all dry extended detention basins. Each is to be sized at a minimum 10% of the WQv.	
3 Provide both a permanent pool and an extended detention volume above the permanent pool, each sized with at least 0.75*WQv.	
4 Extended detention shall be provided for the WQv above the permanent water pool.	
5 The surface ponding area shall completely empty within 24 hours so that there is no standing water. Shorter drawdown times are acceptable as long as design criteria in <i>Rainwater and Land Development</i> have been met.	
6 This includes grassed linear bioretention, which was previously titled enhanced water quality swale.	
7 Pocket wetlands must have a wet pool equal to the WQv, with 25% of the WQv in a pool and 75% in marshes.	
The EDv above the permanent pool must be equal to the WQv.	

(3) Additional criteria applying to infiltration facilities.

- A. Infiltration facilities should be designed to meet all criteria in *Rainwater and Land Development*.
- B. All runoff directed into an infiltration basin must first flow through a pretreatment practice such as a grass channel or filter strip to remove coarser sediments that could cause a loss of infiltration capacity.
- C. During construction, all runoff from disturbed areas of the site shall be diverted away from the proposed infiltration basin site. No construction equipment shall be allowed within the infiltration basin site to avoid soil compaction.

(4) Additional criteria for extended detention facilities.

- A. The outlet shall be designed to not release more than the first half of the water quality volume in less than one-third of the drain time. The outlet shall be designed to minimize clogging, vandalism, maintenance, and promote the capture of floatable pollutants.
- B. The basin design shall incorporate the following features to maximize multiple uses, aesthetics, safety, and maintainability:
  1. Basin side slopes above the permanent pool shall have a run to rise ratio of 4:1 or flatter.
  2. The perimeter of all permanent pool areas deeper than four feet shall be surrounded by an aquatic bench that extends at least eight feet and no more than 15 feet outward from the normal water edge. The eight-foot wide portion of the aquatic bench closest to the shoreline shall have an average depth of six inches below the permanent pool to promote the growth of aquatic vegetation. The remainder of the aquatic bench shall be no more than 15 inches below the permanent pool to minimize drowning risk to individuals who accidentally or intentionally enter the basin, and to limit growth of dense vegetation in a manner that allows waves and mosquito predators to pass through the vegetation. The maximum slope of the aquatic bench shall be 10 (H) to 1 (V). The aquatic bench shall be planted with native plant species comparable to wetland vegetation that are able to withstand prolonged inundation. The use of invasive plant species is prohibited.
  3. A forebay designed to allow larger sediment particles to settle shall be placed at basin inlets. The forebay and micropool volume shall be equal to at least 10% of the water quality volume (WQv).
  4. Detention basins shall be provided with an emergency drain, where practicable, so that the basin may be emptied if the primary outlet becomes clogged and/or to drain the permanent pool to facilitate maintenance. The emergency drain should be designed to drain by gravity where possible.

(5) Criteria for the acceptance of alternative post-construction SCMs. The applicant may request approval from the City Engineer for the use of alternative structural post-construction SCMs if the applicant shows to the satisfaction of the City Engineer that these SCMs are equivalent in pollutant removal and runoff flow/volume reduction effectiveness to those listed in Table 2. If the site is greater than five acres, or less than five acres but part of a larger common plan of development or sale which will disturb five or more acres, prior approval from the Ohio EPA is necessary. To demonstrate the equivalency, the applicant must show:

- A. The alternative SCM has a minimum total suspended solid (TSS) removal efficiency of 80%, using the Level II Technology Acceptance Reciprocity Partnership (TARP) testing protocol.
- B. The water quality volume discharge rate from the selected SCM is reduced to prevent stream bed erosion, unless

there will be negligible hydrologic impact to the receiving surface water of the State. The discharge rate from the SCM will have negligible impacts if the applicant can demonstrate one of the following conditions:

1. The entire water quality volume is recharged to ground water.
2. The development will create less than one acre of impervious surface.
3. The development project is a redevelopment project with an ultra-urban setting, such as a downtown area, or on a site where 100% of the project area is already impervious surface and the storm water discharge is directed into an existing storm sewer system.
4. The storm water drainage system of the development discharges directly into a large river of fourth order or greater or to a lake, and where the development area is less than 5% of the water area upstream of the development site, unless a TMDL has identified water quality problems in the receiving surface water of the State.

(d) Storm Water Quantity Control. The Comprehensive Storm Water Management Plan shall describe how the proposed SCMs are designed to meet the following requirements for storm water quantity control for each watershed in the development:

**Storm Water Flow Limitation.** After development, the rate of storm water flow from any previously undeveloped or partially developed site of two acres or more shall not exceed the pre-development rate of flow from a five-year storm. The reduced rate of flow may be obtained by roof detention, detention by landscape configuration, or other methods found to be acceptable by the City Engineer. This section shall apply regardless of whether the flow is by means of closed conduit, open channel, or natural waterways.

(1) The peak discharge rate of runoff from the critical storm and all more frequent storms occurring under post-development conditions shall not exceed the peak discharge rate of runoff from a one-year, 24-hour storm occurring on the same development drainage area under pre-development conditions.

(2) Storms of less frequent occurrence (longer return periods) than the critical storm, up to the 100-year, 24-hour storm shall have peak runoff discharge rates no greater than the peak runoff rates from equivalent size storms under pre-development conditions. The 1, 2, 5, 10, 25, 50, and 100-year storms shall be considered in designing a facility to meet this requirement.

(3) The critical storm for each specific development drainage area shall be determined as follows:

A. Determine, using a curve number-based hydrologic method or other hydrologic method approved by the City Engineer, the total volume (acre-feet) of runoff from a one-year, 24-hour storm occurring on the development drainage area before and after development. These calculations shall meet the following standards:

1. Calculations shall include the lot coverage assumptions used for full build out as proposed.
2. Calculations shall be based on the entire contributing watershed to the development area.
3. Model pervious, directly connected impervious, and disconnected impervious areas as separate subwatersheds.
4. Drainage area maps shall include area, curve number, time of concentrations. Time of concentration shall also show the flow path and the separation in flow type.

5. Rainfall depth. For the most accurate, up-to-date, location-specific rainfall data for storm water design, use the *Precipitation-Frequency Atlas of the United States*, NOAA Atlas 14, Vol 2(3). [available online: <http://hdsc.nws.noaa.gov/hdsc/pfds/>]

6. Temporal distribution. Use the SCS Type II rainfall distribution for all design events with a recurrence interval greater than one year. Include lot coverage assumptions used for full build out of the proposed condition.

7. Curve numbers for the pre-development condition shall reflect the average type of land use over the past 10 years and not only the current land use.

i. Pre-development curve numbers. For wooded or brushy areas, use listed values from TR-55 NRCS USDA Urban Hydrology for Small Watersheds, 1986 in good hydrologic condition. For meadows, use listed values. For all other areas (including all types of agriculture), use pasture, grassland, or range in good hydrologic condition.

ii. Post-development curve numbers. Open space areas shall use post-construction HSGs from *Rainwater and Land Development* unless the soil is amended after development according to the following protocol: till the subsoil to 15-18 inches, then till using a chisel, spader, or rotary tillage and incorporate compost through top 12 inches, replace topsoil to a minimum depth of four inches. All undisturbed areas or open space with amended soils shall be treated as "open space in good condition."

8. Time of concentration. Use velocity based methods from TR-55 NRCS USDA Urban Hydrology in Small Watersheds, 1986, to estimate travel time (Tt) for overland (sheet) flow, shallow concentrated flow, and channel flow.

i. Maximum sheet flow length is 100 feet.

ii. Use the appropriate "unpaved" velocity equation for shallow concentrated flow from Soil Conservation Service National Engineer Handbook Section 4 - Hydrology (NEH-4).

9. The volume reduction provided by permeable pavement, bioretention, or other LID SCMs may be subtracted from the post development storm water volume. Volume reductions for these practices may be demonstrated using methods outlined in *Rainwater and Land Development* or a hydrologic model acceptable to the City Engineer.

B. To account for future post-construction improvements to the site, calculations shall assume an impervious surface such as asphalt or concrete for all parking areas and driveways, regardless of the surface proposed in the site description except in instances of engineered permeable pavement systems. From the volume determined in Section 941.25(d)(3)A., determine the percent increase in volume of runoff due to development. Using the percentage, select the 24-hour critical storm from Table 3.

**Table 3: 24-Hour Critical Storm**

If the Percentage of Increase in Volume of Runoff is:		The Critical Storm will be:
Equal to or Greater Than:	and Less Than:	
If the Percentage of Increase in Volume of Runoff is:		The Critical Storm will be:
Equal to or Greater Than:	and Less Than:	
–	10	1 year
10	20	2 year
20	50	5 year
50	100	10 year
100	250	25 year
250	500	50 year
500	–	100 year

For example, if the percent increase between the pre- and post-development runoff volume for a one-year storm is 35%, the critical storm is a five-year storm. The peak discharge rate of runoff for all storms up to this frequency shall be controlled so as not to exceed the peak discharge rate from the one-year frequency storm under pre-development conditions in the development drainage area. The post-development runoff from all less frequent storms need only be controlled to meet pre-development.

**(e) Storm Water Management on Redevelopment Projects.**

(1) Comprehensive Storm Water Management Plans for redevelopment projects shall reduce existing site impervious areas by at least 20%. A one-for-one credit towards the 20% net reduction of impervious area can be obtained through the use of green roofs. Where site conditions prevent the reduction of impervious area, SCMs shall be implemented to treat at least 20% of the WQv.

(2) When a combination of impervious area reduction and storm water quality control facilities are used, ensure a 20% net reduction of the site impervious area, provide for treatment of at least 20% of the WQv, or a combination of the two.

(3) Where projects are a combination of new development and redevelopment, the total water quality volume required to be treated shall be calculated by a weighted average based on acreage, with the new development at 100% water quality volume and redevelopment at 20%.

(4) Where conditions prevent impervious area reduction or on-site storm water management for redevelopment projects, practical alternatives as detailed in Section 941.26 may be approved by the City Engineer.

(Ord. 2-18. Passed 1-2-18.)

**941.26 ALTERNATIVE ACTIONS.**

(a) When the City determines that site constraints compromise the intent of this regulation, off-site alternatives may be used that result in an improvement of water quality and a reduction of storm water quantity. Such alternatives shall meet the following standards:

- (1) Shall achieve the same level of storm water quantity and quality control that would be achieved by the on-site controls required under this regulation.
- (2) Implemented in the same Hydrologic Unit Code (HUC) 12 watershed unit as the proposed development project.
- (3) The mitigation ratio of the water quality volume is 1.5 to 1 or the water quality volume at the point of retrofit, whichever is greater.
- (4) An inspection and maintenance agreement as described in Section 941.24(d)(10) is established to ensure operations and treatment in perpetuity.
- (5) Obtain prior written approval from Ohio EPA.

(b) Alternative actions may include, but are not limited to the following. All alternative actions shall be approved by the City Engineer:

- (1) Fees, in an amount specified by the City to be applied to community-wide SCMs.
- (2) Implementation of off-site SCMs and/or the retrofit of an existing practice to increase quality and quantity control.
- (3) Stream, floodplain, or wetland restoration.
- (4) Acquisition or conservation easements on protected open space significantly contributing to storm water control such as wetland complexes.

(Ord. 2-18. Passed 1-2-18.)

#### **941.27 EASEMENTS.**

Access to SCMs as required by the City Engineer for inspections and maintenance shall be secured by easements. The following conditions shall apply to all easements:

(a) Easements shall be included in the inspection and maintenance agreement submitted with the Comprehensive Storm Water Management Plan.

(b) Easements shall be approved by the City prior to approval of a final plat and shall be recorded with the Lake County Auditor and on all property deeds.

(c) Unless otherwise required by the City Engineer, access easements between a public right-of-way and all SCMs shall be no less than 25 feet wide. The easement shall also incorporate the entire practice plus an additional 25-foot-wide band around the perimeter of the SCMs.

(d) The easement shall be graded and/or stabilized as necessary to allow maintenance equipment to access and manipulate around and within each facility, as defined in the inspection and maintenance agreement for the site.

(e) Easements to structural SCMs shall be restricted against the construction therein of buildings, fences, walls, and other structures that may obstruct the free flow of storm water and the passage of inspectors and maintenance equipment; and against the changing of final grade from that described by the final grading plan approved by the City. Any re-grading and/or obstruction placed within a maintenance easement may be removed by the City at the property owners' expense.

(1) In order to protect the health, safety, and general welfare of the people, the Planning Commission shall reject any proposed subdivision located in an area subject to periodic flooding. If the subdivision is located in an area having poor drainage or other adverse physical characteristics, the Commission may approve the subdivision, provided the subdivider agrees to perform such improvements as will render the area safe for the intended use in lieu of performing, or petitioning for, such improvements, the subdivider shall furnish a surety or certified check covering the cost of the required improvements.

(2) Flood control or storm drainage facilities shall be provided as follows:

A. Access to flood control or storm drainage ditches and channels shall be by means of easements. Such easements shall be not less than 30 feet in width, exclusive of the width of the ditch or channel, and an easement of this type shall be provided on one side of a flood control or storm drainage ditch, channel, or similar type facility;

B. Flood control or storm drainage easements containing underground facilities shall have a minimum width of ten feet;

C. Whenever a flood control or storm drainage ditch or channel has a depth of five feet or more, or a bank slope of two feet horizontal to one foot vertical or steeper, a five-foot high masonry wall or a five-foot high chain link fence may be required by the Commission.

(Ord. 2-18. Passed 1-2-18.)

#### **941.28 MAINTENANCE AND FINAL INSPECTION APPROVAL.**

(a) To receive final inspection and acceptance of any project, or portion thereof, the following must be completed by the applicant and provided to the City Engineer:

(1) Final stabilization must be achieved and all permanent SCMs must be installed and made functional, as determined by the City Engineer and per the approved Comprehensive Storm Water Management Plan.

(2) An as-built certification, including as-built survey and inspection, must be sealed, signed, and dated by a professional engineer and a professional surveyor with a statement certifying that the storm water control measures, as designed and installed, meet the requirements of the Comprehensive Storm Water Management Plan approved by the City Engineer. In evaluating this certification, the City Engineer may require the submission of a new set of storm water practice calculations if he or she determines that the design was altered significantly from the approved Comprehensive Storm Water Management Plan. The as-built survey must provide the location, dimensions, and bearing of such practices and include the entity responsible for long-term maintenance as detailed in the inspection and maintenance agreement.

(3) A copy of the complete and recorded inspection and maintenance plan and inspection maintenance agreement as

specified in Section 941.24 must be provided to the City Engineer.

(Ord. 2-18. Passed 1-2-18.)

#### **941.29 ON-GOING INSPECTIONS.**

The owner shall inspect SCMs regularly as described in the inspection and maintenance plan and inspection and maintenance agreement. The City has the authority to enter upon the property to conduct inspections as necessary, with prior notification of the property owner, to verify that the SCMs are being maintained and operated in accordance with this regulation. Upon finding a malfunction or other need for maintenance or repair, the City shall provide written notification to the responsible party, as detailed in the inspection and maintenance agreement, of the need for maintenance. Upon notification, the responsible party shall have five working days, or other mutually agreed upon time, to make repairs or submit a plan with detailed action items and established timelines. Should repairs not be made within this time, or a plan approved by the City Engineer for these repairs not be in place, the City may undertake the necessary repairs and assess the responsible party.

(Ord. 2-18. Passed 1-2-18.)

#### **941.30 FEES FOR STORM WATER MANAGEMENT PLAN.**

The Comprehensive Storm Water Management Plan review, filing, and inspection fee is part of a complete submittal and is required to be submitted to the City before the review process begins. The City Engineer shall establish a fee schedule based upon the actual estimated cost for providing these services.

(Ord. 2-18. Passed 1-2-18.)

#### **941.31 BOND.**

(a) If a Comprehensive Storm Water Management Plan is required by this regulation, soil-disturbing activities shall not be permitted until a cash bond of 5% of the total project cost, has been deposited with the Finance Department. This bond shall be posted for the City to perform the obligations otherwise to be performed by the owner of the development area as stated in this regulation and to allow all work to be performed as needed in the event that the applicant fails to comply with the provisions of this regulation. The storm water bond will be returned, less City administrative fees as detailed in Section 1121.11, when the following three criteria are met:

- (1) After 80% of the lots of the project have been complete or 100% of the total project has been permanently stabilized or three years from the time of permanent stabilization have passed.
- (2) An as-built inspection of all storm water control measures as described in Section 941.28 is approved by the City Engineer.
- (3) An inspection and maintenance plan has been approved by the City and inspection and maintenance agreement has been signed by the developer, the contractor, the City, and the private owner or homeowners association who will take long-term responsibility for these SCMs, is accepted by the City Engineer.

(b) Once these criteria are met, the applicant shall be reimbursed all bond monies that were not used for any part of the project. If all of these criteria are not met after three years of permanent stabilization of the site, the City may use the bond monies to fix any outstanding issues with all storm water management structures on the site and the remainder of the bond shall be given to the private lot owner/homeowners association for the purpose of long-term maintenance of the project.

(Ord. 2-18. Passed 1-2-18.)

#### **941.32 INSTALLATION OF WATER QUALITY STORM WATER CONTROL MEASURES.**

The applicant may not direct runoff through any water quality structures or portions thereof that would be degraded by construction site sediment until the entire area tributary to the structure has reached final stabilization as determined by the City Engineer. This occurs after the completion of the final grade at the site, after all of the utilities are installed, and the site is subsequently stabilized with vegetation or other appropriate methods. The developer must provide documentation acceptable to the City Engineer to demonstrate that the site is completely stabilized. Upon this proof of compliance, the water quality structure(s) may be completed and placed into service. Upon completion of installation of these practices, all disturbed areas and/or exposed soils caused by the installation of these practices must be stabilized within two days.

(Ord. 2-18. Passed 1-2-18.)

#### **941.33 APPEALS.**

Any person aggrieved by any order, requirement, determination, or any other action or inaction by the City in relation to this regulation may appeal to the court of common pleas. Such an appeal shall be made in conformity with Ohio R.C. Chapter 2506. Written notice of appeal shall be served on the City.

(Ord. 2-18. Passed 1-2-18.)

#### **941.99 PENALTY.**

- (a) No person shall violate or cause or knowingly permit to be violated any of the provisions of this regulation, or fail to

comply with any of such provisions or with any lawful requirements of any public authority made pursuant to this regulation, or knowingly use or cause or permit the use of any lands in violation of this regulation or in violation of any permit granted under this regulation.

(b) Whoever violates any provision of this chapter is guilty of a minor misdemeanor. A separate offense shall be deemed committed for each day such violation continues.

(1) Any person, firm, entity, or corporation; including but not limited to, the owner of the property, his or her agents and assigns, occupant, property manager, and any contractor or subcontractor who violates or fails to comply with any provision of this regulation is guilty of a misdemeanor of the third degree and shall be fined no more than five hundred dollars (\$500.00) or imprisoned for no more than 60 days, or both, for each offense. A separate offense shall be deemed committed each day during or on which a violation or noncompliance occurs or continues.

(2) The imposition of any other penalties provided herein shall not preclude the City instituting an appropriate action or proceeding in a court of proper jurisdiction to prevent an unlawful development, or to restrain, correct, or abate a violation, or to require compliance with the provisions of this regulation or other applicable laws, ordinances, rules, or regulations, or the orders of the City.

(Ord. 2-18. Passed 1-2-18.)