

VILLAGE OF BENTLEYVILLE, OHIO

ORDINANCE NO: 2022-54
INTRODUCED BY:

AN ORDINANCE AMENDING CHAPTER 1450, COMPREHENSIVE STORMWATER MANAGEMENT AND DECLARING AN EMERGENCY

WHEREAS, Chapter 1450 of the Codified Ordinances established technically feasible and economically reasonable stormwater management standards to achieve a level of stormwater 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 Village of Bentleyville; and

WHEREAS, the Village Engineer that Chapter 1450 must be amended to meet the current requirements of the Village of Bentleyville's Ohio EPA NPDES Permit; and

WHEREAS, it is the desire of Council to amend Chapter 1450.

NOW, THEREFORE, BE IT ORDAINED by the Council of the Village of Bentleyville, County of Cuyahoga, State of Ohio, that:

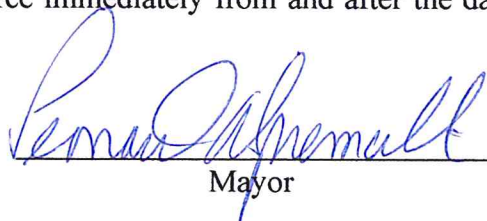
Section 1: Chapter 1450 is hereby amended as set forth on Exhibit A attached hereto and incorporated by reference herein.

Section 2: All other Village Codified Ordinances shall remain in full force and effect, unless inconsistent with this Ordinance.

Section 4: It is found and determined that all formal actions of this Council concerning and relating to the adoption of this Ordinance were adopted in an open meeting of this Council and that all deliberations of this Council and any of its committees that resulted in such formal action were in meetings open to the public, in compliance with all legal requirements, including the applicable sections of the Ohio Revised Code.

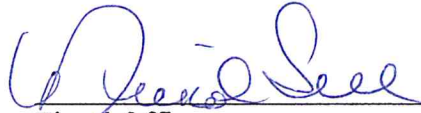
Section 5. This Ordinance is hereby declared to be an emergency measure immediately necessary for the public peace, health, or safety of the inhabitants of the Village and for the further reason that the Village of Bentleyville wants to immediately amend Chapter 1450 of the Codified Ordinances of the Village of Bentleyville. This Ordinance shall, therefore, take effect and be in full force immediately from and after the date of its passage and approval.

Passed: December 21, 2022




Mayor

I, the undersigned, Fiscal Officer of the Village of Bentleyville, hereby certify that there is no newspaper published or having an office of publication in the same Village and that I published the foregoing Ordinance by posting the same in five (5) of the most public places of said Village, as defined by Resolution of Council, for a period of fifteen (15) days, beginning the date following passage and signature by the Mayor.


Fiscal Officer

I, the undersigned, Fiscal Officer of the Village of Bentleyville, hereby certify that the foregoing is a true copy of Ordinance 2022-54 duly enacted by the Council of said Village on December 21, 2022.


Fiscal Officer

CHAPTER 1450

Comprehensive Stormwater Management

- 1450.01 Purpose and scope.
- 1450.02 Definitions.
- 1450.03 Disclaimer of liability.
- 1450.04 Conflicts, severability, nuisances and responsibility.
- 1450.05 Development of comprehensive stormwater management plans.
- 1450.06 Application procedures.
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- 1450.08 Comprehensive stormwater management plans.
- 1450.09 Performance standards.
- 1450.10 Alternative actions.
- 1450.11 Easements.
- 1450.12 Maintenance and final inspection approval.
- 1450.13 On-going inspections.
- 1450.14 Fees.
- 1450.15 Bond.
- 1450.16 Installation of water quality SCMs.
- 1450.17 Violations.
- 1450.18 Appeals.
- 1450.99 Penalty.

1450.01 PURPOSE AND SCOPE.

(a) The purpose of this regulation is to establish technically feasible and economically reasonable stormwater management standards to achieve a level of stormwater 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 Village of Bentleyville.

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

(1) Control stormwater runoff from their property and ensure that all stormwater 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 stormwater 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 stormwater 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 stormwater 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 Village'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 this section.

(d) Public entities, including the State of Ohio, Cuyahoga County, and the Village of Bentleyville 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 stormwater 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 Village 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 1448, Erosion and Sediment Control.

(g) This regulation does not apply to construction or re-construction of stand-alone single-family dwellings when the parcel is not part of an overall subdivision or is part of a subdivision that is in existence as of the adoption of this chapter, unless otherwise required by the Village Engineer.

(Ord. 2011-31. Passed 7-20-11; Ord. 2017-5. Passed 1-18-17.)

1450.02 DEFINITIONS.

The definitions contained in Ohio Environmental Protection Agency ("Ohio EPA")'s Construction General Permit entitled "Authorization for Storm Water Discharges Associated with Construction Activity under the National Pollutant Discharge Elimination System" and Ohio EPA's Municipal Separate Storm Sewer (MS4) Permit entitled "Authorization for Small Municipal Separate Storm Sewer Systems to Discharge Stormwater Under the National Pollutant Discharge Elimination System" in effect at the time a permit is applied for under this chapter shall apply to this chapter and the following definitions shall also apply:

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

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

(c) "Best management practices (BMPs)." Being replaced by stormwater control measures (SCMs).

(d) "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.

(e) "Community." The Village of Bentleyville, its designated representatives, boards, or commissions.

(f) "Comprehensive stormwater management plan." The written document and plans meeting the requirements of this regulation that sets forth the plans and practices to minimize stormwater 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 stormwater quality and stream channels.

(g) "Construction General Permit." The most recent General National Pollutant Discharge Elimination System (NPDES) permit for authorization of stormwater discharges associated with construction activities issued by Ohio EPA (Ohio EPA Permit #OHC000005 and its successors)

(h) "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 twenty-four hour event. The critical storm is used to calculate the maximum allowable stormwater discharge rate from a developed site.

(i) "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.

(j) "Development drainage area." A combination of each hydraulically unique watershed with individual outlet points on the development area.

(k) "Disturbed area." An area of land subject to erosion due to the removal of vegetative cover and/or soil disturbing activities.

- (l) "Drainage." The removal of excess surface water or groundwater from land by surface or subsurface drains.
- (m) "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.
- (n) "Extended detention facility." An SCM that replaces and/or enhances traditional detention facilities by releasing the runoff collected during the storm event to improve stormwater quality over at least twenty-four to forty-eight hours, retarding flow and allowing pollutants to settle within the facility.
- (o) "Final stabilization." All soil disturbing activities at the site have been completed and a uniform perennial vegetative cover with a density of at least eighty percent coverage for the area has been established or equivalent stabilization practices, such as the use of mulches or geotextiles, have been employed.
- (p) "Grading." The process in which the topography of the land is altered to a new slope.
- (q) "Green infrastructure." Wet weather management approaches and technologies that utilize, enhance or mimic the natural hydrologic cycle processes of infiltration, evapotranspiration and reuse.
- (r) "Hydrologic unit COD (HUC)." A cataloging system developed by the United States Geological Survey and the Natural Resource Conservation Service to identify watersheds in the United States.
- (s) "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.
- (t) "Infiltration control measure." A stormwater control measure that does not discharge to a water resource during the stormwater quality event, requiring collected runoff to either infiltrate into the groundwater and/or be consumed by evapotranspiration, thereby retaining stormwater pollutants in the facility.
- (u) "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.
- (v) "Low impact development (LID)." 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 stormwater. LID stormwater control measures (SCMs) are uniformly and strategically located throughout the site.
- (w) "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 Stormwater Phase II, must meet.
- (x) "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 sewer 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;
 - (2) Designed or used for collecting or conveying solely stormwater;
 - (3) Which is not a combined sewer; and
 - (4) Which is not a part of a publicly owned treatment works.
- (y) "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.
- (z) "Nonstructural stormwater control measure (SCM)." Any technique that uses natural processes and features to prevent or reduce the discharge of pollutants to water resources and control stormwater volume and rate.
- (aa) "Ohio Rainwater and Land Development." Ohio's standards for stormwater management, land development, and urban stream protection. The most current edition of these standards shall be used with this regulation.
- (aa) "Ordinary high-water mark." The line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.
- (bb) "Owner or operator." Any party associated with a construction project that meets either of the following two criteria:
 - (1) The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or
 - (2) The party has day-to-day operational control of those activities at a project which are necessary to ensure

compliance with a stormwater pollution prevention plan (SWP3) for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWP3 or comply with other permit conditions.)

(cc) "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 stormwater runoff.

(dd) "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.

(ee) "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 stormwater runoff.

(ff) "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.

(gg) "Redevelopment." Sites that have been previously developed where no post construction SCMs were installed shall either ensure a twenty percent net reduction of site impervious area, provide for treatment of at least twenty percent of the WQv, or a combination of the two. A one-for-one credit towards the twenty percent net reduction of impervious area can be obtained using green roofs and/or pervious pavement. Where projects are a combination of new development and redevelopment, the total WQv that must be treated shall be calculated by a weighted average based on acreage with the new development at 100 percent WQv and redevelopment at twenty percent WQv.

(hh) "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.

(ii) "Riparian and wetland setback." The real property adjacent to a water resource on which soil disturbing activities are limited, all as defined by Chapter 1271, Riparian Setbacks.

(jj) "Runoff." The portion of rainfall, melted snow, or irrigation water that flows across the ground surface and is eventually returned to water resources.

(kk) "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.

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

(mm) 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.

(nn) "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 stormwater quantity and/or decreased stormwater quality.

(oo) "Stabilization." The use of stormwater control measures that reduce or prevent soil erosion by stormwater runoff, trench dewatering, wind, ice, gravity, or a combination thereof.

(pp) "Stormwater." Defined at 40 CFR 122.26(b)(13) and means stormwater runoff, snow melt runoff and surface runoff and drainage.

(qq) "Stormwater Control Measure (SCM)." A structure or area designed to remove pollutants from stormwater and/or reduce stormwater flow rates. SCM's are a subset of Best Management Practices (BMP's) as defined in the Construction General Permit.

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

(ss) "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 R.C. § 6111.01 are not included.

(tt) "Total maximum daily load (TMDL)." The sum of the existing and/or projected point source, nonpoint 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.

(uu) "Village." The Village of Bentleyville, its designated representatives, boards, or commissions.

(vv) "Water quality volume (WQv)." The volume of stormwater 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.

(ww) "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 R.C. § 6111.01 are not included.

(xx) "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, non-commercial footbridges or pole mounted aerial electric or telecommunication lines, nor does it include below grade utility lines.

(yy) "Watershed." The total drainage area contributing stormwater runoff to a single point.

(zz) "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 CFR 232, as amended).

(aaa) "Wetland consultant." Individuals competent in the areas of botany, hydric soils and wetland hydrology that provide professional services or advice, and meet the education and professional experience requirements as required by the Society of Professional Wetland Scientists.

(Ord. 2011-31. Passed 7-20-11; Ord. 2017-5. Passed 1-18-17.)

1450.03 DISCLAIMER OF LIABILITY.

(a) Compliance with the provisions of this regulation shall not relieve any person from responsibility for damage to any person 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 stormwater management plan under this regulation, the Village does not accept responsibility for the design, installation, and operation and maintenance of SCMs.

(Ord. 2011-31. Passed 7-20-11; Ord. 2017-5. Passed 1-18-17.)

1450.04 CONFLICTS, SEVERABILITY, NUISANCES AND RESPONSIBILITY.

(a) Where this regulation conflicts with other provisions of law or ordinance or requirements in the Construction General Permit, the most restrictive provisions, as determined by the Village 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 Village 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 Village, its officers, employees, or agents being responsible for any condition or damage resulting therefrom.

(Ord. 2011-31. Passed 7-20-11; Ord. 2017-5. Passed 1-18-17.)

1450.05 DEVELOPMENT OF COMPREHENSIVE STORMWATER MANAGEMENT PLANS.

(a) This regulation requires that a comprehensive stormwater management plan be developed and implemented for all commercial and industrial site development and all 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 1450.01(c) is proposed. See Section 1450.01(e), (f) and (g) for exempted activities. The Village Engineer reserves the right to require a comprehensive stormwater management plan on sites disturbing less than one acre.

(b) The Village 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 Village may consult with the Chagrin River Watershed Partners, State agencies or other technical experts in reviewing the comprehensive stormwater management plan.

(Ord. 2011-31. Passed 7-20-11; Ord. 2017-5. Passed 1-18-17.)

1450.06 APPLICATION PROCEDURES.

(a) Pre-Application Meeting. The owner is encouraged to schedule a meeting with the Village Engineer or his or her designated representative to:

- (1) Discuss the proposed project;
- (2) Review the requirements of this chapter;
- (3) Identify unique aspects of the project that must be addressed during the review process;
- (4) Establish a preliminary review and approval schedule;

(b) Preliminary Comprehensive Stormwater Management Plan. The owner shall submit two sets of a preliminary comprehensive stormwater management plan (preliminary plan) and the applicable fees to the Village Engineer. The preliminary plan shall show the proposed property boundaries, setbacks, dedicated open space, public roads, water resources, stormwater control facilities, and easements in sufficient detail and engineering analysis to allow the Village 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 owner 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 to the Planning Commission.

(c) Final Comprehensive Stormwater Management Plan. The owner shall submit two sets of a final comprehensive stormwater management plan (final plan) and the applicable fees to the Village Engineer 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 1450.08 and shall be approved by the Village Engineer prior to approval of the final plat and/or before issuance of a building permit.

(d) Review and Comment. The Village Engineer 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 building permits shall not be issued without an approved comprehensive stormwater management plan and conformance with Chapter 1448, Erosion and Sediment Control.

(f) Sub Lots Will Not Proceed. Comprehensive stormwater management plans for individual sub lots in a subdivision will not be approved and building permits will not be issued unless the larger common plan of development or sale containing the sub lot is in compliance with this regulation.

(g) Valid for Two Years: Approvals issued in accordance with this regulation shall remain valid for two (2) years from the date of approval or as stipulated in the Construction General Permit.

(Ord. 2011-31. Passed 7-20-11; Ord. 2017-5. Passed 1-18-17.)

1450.07 COMPLIANCE WITH STATE AND FEDERAL REGULATIONS.

Approvals issued in accordance with this regulation do not relieve the owner 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. Owners are required to show proof of compliance with these regulations before the Village will issue a building permit.

(a) Ohio Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Permits Authorizing Stormwater Discharges Associated with Construction Activity or the Most Current Version Thereof. Proof of compliance with these requirements shall be the owner'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. If an individual permit is required for the development project, 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 not required, the site owner shall submit proof of compliance with the U.S. Army Corps of Engineer's 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. 2011-31. Passed 7-20-11; Ord. 2017-5. Passed 1-18-17.)

1450.08 COMPREHENSIVE STORM WATER MANAGEMENT PLANS.

(a) Comprehensive Stormwater Management Plan Required. The applicant shall develop a Comprehensive Stormwater Management Plan describing how the quantity and quality of stormwater 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).

(b) Preparation by Professional Engineer. The comprehensive stormwater management plan shall be prepared by a registered professional engineer registered in the State of Ohio and include supporting calculations, plan sheets, and design details. To the extent necessary, as determined by the Village Engineer, a site survey shall be performed by a registered professional surveyor registered in the State of Ohio to establish boundary lines, measurements, or land surfaces.

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

(d) Contents of the Comprehensive Stormwater management Plan. The Comprehensive Stormwater Management Plan must contain all elements and meet all requirements specified in the Construction General Permit and the following requirements: (Where there are conflicts, the stricter regulation shall be used.)

(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 imperviousness created by the soil-disturbing activity at the beginning and at the conclusion of the project.

E. Existing data describing the soils throughout the site, including soil map units, series, complexes, association, hydrologic soil group, porosity, infiltration characteristics, depth to groundwater, depth to bedrock, and any impermeable layers.

F. 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.

G. The location and name of the immediate receiving stream or surface water(s) and the first subsequent receiving water(s). 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.

H. The aerial (plan view) extent and description of water resources at or near the site that will be disturbed or which will receive discharges from disturbed areas of the project.

I. 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

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description of wetlands or other special aquatic sites at or near the site which will be disturbed, or which will receive discharges from undisturbed areas of the project.

J. TMDLs applicable for the watershed that the construction site is located in has to demonstrate that the appropriate SCMs have been selected to address the TMDLs for that watershed. The TMDL information for all watersheds in the State of Ohio can be found on the Ohio EPA Nonpoint Source Pollution Control Program Website.

K. 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 sub-watershed per Appendix 1 of Ohio's stormwater manual, *Ohio Rainwater and Land Development*. Identify the SCM surface area, discharge and dewatering time, outlet type and dimensions. Each SCM shall be designated with an individual identification number.

L. 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.

M. An implementation schedule which describes the sequence of major soil-disturbing operations (i.e., grubbing, excavating, grading, utilities and infrastructure installation) and the implementation of erosion and sediment controls to be employed during each operation of the sequence. The SWP3 shall clearly describe for each major construction activity (a) appropriate control measures and the general timing (or sequence) during the construction process that the measures will be implemented; and (b) which contractor is responsible for implementation (e.g., contractor A will clear land and install perimeter controls and contractor B will maintain perimeter controls until final stabilization).

N. For subdivided developments where the SWP3 does not call for a centralized sediment control capable of controlling multiple individual lots, a detail drawing of a typical individual lot showing standard individual lot erosion and sediment control practices.

O. The location of any areas on the site located within a special flood hazard area as defined by current flood insurance rate maps published by the Federal Emergency Management Agency.

P. Location and description of any stormwater discharges associated with dedicated asphalt and dedicated concrete plants associated with the development area and the stormwater control measures to address pollutants in these stormwater discharges.

(2) Site map showing:

A. Limits of soil-disturbing activity on the site.

B. Soil 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 owner intends to fill or relocate for which the owner is seeking approval from the 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.

G. The location of all erosion and sediment control practices, including the location of areas likely to require temporary stabilization during the course of site development.

H. Sediment ponds, including their sediment settling volume and contributing drainage area. When drainage areas are predicted to change throughout active construction (e.g., when temporary diversions are utilized), applicable sediment storage zone and dewatering zone volumes shall be designed for the largest anticipated drainage area, and dewatering orifices shall be designed for the smallest anticipated drainage area.

I. The location of designated stoned construction entrances where the vehicles will ingress and egress the construction site.

(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 stormwater management plan.

B. The site owner.

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

(5) List of sub lot 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 sub-lot 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 SCM.

B. The geographic coordinates of the site AND each proposed SCM in North American Datum Ohio State Plan 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) An inspection and maintenance agreement. The inspection and maintenance agreement required for SCMs under this regulation shall be a stand-alone document between the Village and the owner and shall contain the following information and provisions:

A. The location of each SCM, including those SCMs permitted to be located in, or within fifty feet of, water resources, and identification of the drainage area served by each SCM.

B. A schedule for regular maintenance for each aspect of the stormwater 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 stormwater management plan. This schedule may include additional standards, as required by the Village Engineer, to ensure continued performance of SCMs permitted to be located in, or within fifty feet of, water resources.

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

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

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

F. The Village has the authority to enter upon the property to conduct inspections as necessary to verify with prior notification of the property owner, unless deemed an emergency by the Village Engineer, to verify that the SCMs are being maintained and operated in accordance with this regulation.

G. The Village 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.

H. If the Village 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 Village.

I. The Village 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 Village 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 Village.

J. The method of funding long-term maintenance and inspections of all SCMs. As part of the inspection and maintenance agreement, all private SCM owners shall set up a fund from which regular maintenance will be drawn from as stated in the sub-divider's signed agreement between the developer and the Village.

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

L. Alteration or termination of these stipulations is prohibited. The owner must provide a draft of this inspection and maintenance agreement as part of the comprehensive stormwater management plan submittal. Once a draft is approved, a recorded copy of the agreement must be submitted to the Village to receive final inspection approval of the site.

M. Annual inspection. There will be an annual inspection of all SCMs indicated in the CSWM. A SCM, in this case, shall be considered all stormwater facilities used for the purpose of water quality as decided upon by the Village Engineer. Examples of SCMs requiring annual inspections are wet ponds, dry ponds, sand filters, bio-swales, and constructed wetlands. The Village Engineer may require inspections to be performed more regularly if deemed necessary.

1. The landowner(s) or organization shall use a stormwater certified person (e.g., P.E., CESSWI, CPESC), as approved by the Village Engineer, for annual stormwater inspections.

2. The Stormwater Inspector shall use the SCM inspection checklist that is available from the Village Engineer.

3. It is deemed a violation of this section if the Village does not receive the annual inspection report before August 1 of each year. In such an event, the Village has the authority to enter upon the property to conduct any inspections as necessary to verify that the SCMs are being operated and maintained in accordance with this chapter and charge the responsible party accordingly. Any accounts that are over thirty days delinquent may be certified to the County Auditor, who shall then place the same on the tax duplicate of the county, with interest as allowed by law, to be collected as taxes are collected.

N. Annual report. Following the annual inspection, the landowner(s) or organization shall submit an annual stormwater report to the Village Engineer. This report shall contain the following:

1. The annual inspection form by a stormwater certified person;
2. Listing of all corrective actions coming from the annual inspection listed as either high priority or normal priority;
3. Records of all regular maintenance performed throughout the year;
4. Records of normal priority corrective actions from the previous year;
5. Contact information of party submitting report;
6. The Village shall maintain public records of these annual stormwater reports for a period of five years;
7. The Village Engineer, or his designated appointee, will inspect all SCMs every five years to ensure the integrity of the annual inspections.

O. Corrective actions. Corrective actions created by the annual inspection report shall be listed as either high priority or normal priority.

1. High priority items shall be corrected within three months of the date of the inspection report unless allowed further time by the Village Engineer. The certified stormwater inspector shall submit a letter to the Village Engineer when any high priority item is completed so that the Village Engineer can personally inspect.

2. Normal priority items shall be corrected before the next annual inspection and will be listed in the next annual stormwater report.

3. The Village is authorized to enter upon the property and to perform the corrective actions identified in the inspection report if the landowner(s) or organization responsible for maintenance does not make the required corrections in the specified time period. In addition to any other penalty provided for in this chapter, the Village shall be reimbursed by the landowner(s) or organization responsible for maintenance for all expenses incurred within ten days of receipt of invoice from the Village.

(11) Inspection and Maintenance Plan. This plan will meet the requirements of the Construction General Permit and will be developed by the applicant and reviewed by the Village Engineer. Maintenance requirements of each SCM during and after construction should be included. Once the Inspection and Maintenance Plan is approved, a recorded copy of the plan must be provided to the property owner or association that will be responsible for long-term operation and maintenance of the BMP and submitted to the Village Engineer as part of the final inspections.

(12) Required calculations. The owner shall submit calculations for projected stormwater 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 1450.09. 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 owner 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 stormwater 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 stormwater 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 stormwater inlets and permanent nonstructural and structural SCMs. Details of 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 Village Engineer.

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

(Ord. 2011-31. Passed 7-20-11; Ord. 2017-5. Passed 1-18-17.)

1450.09 PERFORMANCE STANDARDS.

(a) Stormwater Design General Information. No person shall develop any real property or connect or cause to be connected any building or other structure, either directly or indirectly, with a drain for the removal of surface, roof, ground or other water to be discharged into a ditch, swale, waterway, stream or an existing storm drainage system for such real property, without complying with the performance standards and paying the charges set forth in this chapter.

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

(1) Integrated SCMs 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 stormwater discharges from the site. Acceptable SCMs shall:

A. Not disturb riparian areas, unless the disturbance is intended to support a watercourse restoration project and comply with Chapter 1271, Riparian Setbacks.

B. Maintain predevelopment hydrology and groundwater 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 stormwater peak flows to less than predevelopment levels.

E. Be designed according to the methodology included in the most current edition of *Ohio Rainwater and Land Development* or another design manual acceptable for use by the Village and Ohio EPA.

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

(2) SCMs designed for final use. SCMs shall be designed to achieve the stormwater 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) Stormwater management for all lots. Areas developed for a subdivision, as defined in Section 1121.23 of the Zoning Code, shall provide stormwater 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, twenty-four-hour storm; and maintain, to the extent practicable, the pre-development runoff patterns, volumes, and peaks from each lot.

(4) Stormwater facilities in water resources. SCMs and related activities shall not be constructed in water resources unless the owner shows proof of compliance with all appropriate permits from the Ohio EPA, the U.S. Army Corps, and other applicable Federal, State, and local agencies as required in Section 1450.07, and the activity follows Chapter 1448, Erosion and Sediment Control and Chapter 1271, Riparian Setbacks, all as determined by the Village Engineer.

(5) Stormwater facilities in the floodplain. Stormwater facilities constructed, manufactured or otherwise, that provide treatment of the water quality volume (see Table 4 of this section), detention, retention, and/or infiltration, and all related activities, shall not be constructed in any special flood hazard area, as defined in Chapter 1273, Flood Damage Prevention.

(6) Stormwater ponds and surface conveyance channels. All stormwater 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, twenty-four-hour storm. When designing stormwater ponds and conveyance channels, the owner shall consider public safety as a design factor and alternative designs must be implemented where site limitations would preclude a safe design.

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

(8) Maintenance. All SCMs shall be maintained in accordance with the inspection and maintenance agreements approved by the Village Engineer as detailed in Section 1450.08.

(9) Agreements with sub-dividers or developers. A sub-divider or developer shall be required to construct an on-site SCM for the purposes of water quality and water retention approved by the Village Engineer. The combination of stormwater

quality and quantity requirements for two or more developments may be placed into one detention basin to be located at a strategic site given that a separate agreement with all parties is developed. The Village shall enter into an agreement with the sub-divider or developer, to be approved by Council, containing the following conditions:

A. The sub-divider of a major subdivision shall require the formation of a homeowners' association, which shall assume responsibility for all maintenance, upkeep, repair, replacement and management of the SCM. In other developments, the sub-divider or developer shall make provisions acceptable to the Village for maintenance of the SCM area as stated in Section 1450.10. Easements shall be granted to the Village for access to and maintenance of the stormwater management area.

B. If more than one development is to use a single SCM, a separate association of all members using that SCM shall be formed. This association will be held responsible for all future maintenance and repairs of the SCM as stated in this chapter.

C. The sub-divider or developer shall be exempt from the application of this section only if authorized by the Village Engineer.

D. Where a sub-divider or developer is exempt from the provisions of this section, that sub-divider or developer shall comply with and pay fees in accordance with this chapter, governing subdivisions and development prior to the effective date of this section.

E. All SCMs will be placed within blocks and/or easements to allow Village access (see Section 1450.11).

(10) Preservation of existing natural drainage. SCMs that preserve and/or improve the existing natural drainage shall be used to the maximum extent practicable. Such SCMs 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 un-concentrated stormwater runoff to and through these areas. Post-construction stormwater 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.

(11) Preservation of wetland hydrology. Concentrated stormwater runoff from SCMs to wetlands shall be converted to diffuse flow before the runoff enters a wetland(s) in order to protect the natural hydrology, hydro period, and wetland flora. The flow shall be released such that no erosion occurs down slope. SCMs 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 owner 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.

If the owner 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.

(12) 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 fifteen-eighteen inches, 2. incorporate compost through top twelve inches, 3. replace with stockpiled site or imported suitable topsoil to a minimum depth of four inches.

(c) Stormwater Conveyance Design Criteria. All SCMs shall be designed to convey stormwater to allow for the maximum removal of pollutants and reduction in flow velocities. This shall include but not be limited to:

(1) Stream/storm sewer discharge. The stormwater facility (storm sewer main or natural watercourse) that will convey the discharge from the site shall be analyzed to determine if it is capable of conveying the additional storm sewer discharge from the site of a 100-year/24-hour storm. If the designated outlet is not capable of conveying the discharge from the site during the 100-year/24-hour storm, then additional storage must be placed onsite to store the additional volume for a period of forty-eight hours or the outlet modified to convey the discharge.

(2) Surface water protection. The Village Engineer may allow modification to streams, rivers, lakes, wetlands or other surface waters only if the owner shows proof of compliance with all appropriate permits from the Ohio EPA, the U.S. Army Corps, and other applicable Federal, State, and local agencies as required in Section 1450.07, and the activity is in compliance with Chapter 1448, Erosion and Sediment Control and Chapter 1271, Riparian Setbacks all as determined by the Village 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.

(3) Off-site stormwater discharges. Off-site stormwater runoff that discharges to or across the owner's development site shall be conveyed through the stormwater conveyance system planned for the development site at its existing peak flow

rates during each design storm. Off-site flows shall be diverted around stormwater quality control facilities or, if this is not possible, the stormwater quality control facility shall be sized to treat the off-site flow. Comprehensive stormwater management plans will not be approved until it is demonstrated to the satisfaction of the Village 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.

(4) 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. 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 Village Engineer.

(5) Open channels. Unless otherwise allowed by the Village Engineer, drainage tributary to SCMs shall be provided by an open channel with landscaped banks and designed to carry the ten-year, twenty-four-hour stormwater runoff from upstream contributory areas.

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

A. Storm sewer design flow shall be based on the Rational Method. Storm sewers shall be designed per Chapter 1242. The system shall be designed to meet these requirements when conveying the flows from the contributing area within the proposed development and existing flows from offsite areas that are upstream from the development. These calculations will be reviewed and approved by the Village Engineer prior to design acceptance. Rainfall data shall be obtained from the latest volume of the NOAA Rainfall ATLAS 14 or Table 1. Runoff coefficients shall be per Table 2.

<i>Table 1 - Rainfall per Storm Frequency</i>	
<i>24 Hour Storm (year)</i>	<i>Rainfall (inches)</i>
<i>Table 1 - Rainfall per Storm Frequency</i>	
<i>24 Hour Storm (year)</i>	<i>Rainfall (inches)</i>
2 (50% storm)	2.44
5 (20% storm)	3.06
10 (10% storm)	3.55
25 (4% storm)	4.35
50 (2% storm)	5.08
100 (1% storm)	5.92

<i>Table 2</i>				
<i>Rational Method Runoff Coefficients (C)</i>				
	<i>Runoff Coefficients for Hydrologic Soil Groups</i>			
<i>Cover Description</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>

Table 2 Rational Method Runoff Coefficients (C) for Village of Bentleyville				
	Runoff Coefficients for Hydrologic Soil Groups			
Cover Description	A	B	C	D
Cultivated agricultural land	0.17	0.3	0.43	0.50
Pasture or range land continuous grazing	0.08	0.16	0.36	0.47
Meadow protected from grazing	0.06	0.13	0.30	0.43
Woods	0.05	0.10	0.29	0.41
Woods/grass combination (orchard, tree farm, etc.)	0.07	0.14	0.33	0.45
Lawns, parks, golf courses, cemeteries, etc.	0.08	0.16	0.36	0.47
Paved streets, parking lots, roofs, driveways, etc.	0.96	0.96	0.96	0.96
Gravel areas	0.40	0.59	0.69	0.74
Residential Areas				
Average lot size & Average % Impervious Area				
acre or less 65	0.41	0.59	0.72	0.77
¼ acre 38	0.16	0.37	0.54	0.64
acre 30	0.12	0.32	0.50	0.61
½ acre 25	0.09	0.29	0.47	0.59
1 acre 20	0.06	0.26	0.45	0.57
2 acres 12	0.05	0.23	0.41	0.50
Dirt or graded areas	0.41	0.61	0.74	0.83

B. Rainfall intensity will be calculated using the equation $i = a/(t+b)^c$

Where:

i = Rainfall intensity (in./hour)

t = Time of concentration (minutes)

Refer to Ohio Department of Transportation's *Location & Design Manual, Volume 2* (or latest edition) *Drainage Design*, Figure 1101-2 for Rainfall Intensity Constants (a, b & c). The maximum slope allowable shall be a slope that produces no less than 2.5-fps and no more than a 10-fps velocity within the pipe barrel under design flow conditions.

C. The minimum inside diameter of pipe to be used in public storm sewer systems is twelve inches.

D. All stormwater conveyance 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.

1. Previous studies on file with the Village.
2. FEMA Flood Insurance Rate Maps.
3. Calculations prepared by a registered professional engineer.

E. Catch basin design spread calculations shall be submitted to the Village Engineer for review to determine catch basin spacing and sizing. At a minimum, there shall be at least one total clear lane during a twenty-five year, twenty-four-hour storm.

F. 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.

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

H. Outlets discharging into an open-water conveyance structure shall have an invert at a minimum of three inches above the average water depth during the snow-melt season.

I. The flood elevation for a 100-year, twenty-four-hour storm must be a minimum of ten feet away horizontally from the perimeter of any homes within the new subdivision, nor cause any home flooding to adjacent neighboring properties, and shall be at least two feet below the finished grade elevation of any livable structure.

J. All storm sewer outlets from a subdivision must flow either into a public storm sewer, stream of the State, or a major ditch unless authorized by the Village Engineer.

K. The maximum distance for sheet flow shall be 300 feet before entering a storm structure. Except, that the maximum overland drainage area tributary to the storm structure shall be no greater than 1.5 acres.

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

A. Water resource crossings other than bridges shall be designed to convey the stream's flow for the minimum 100-year, twenty-four-hour storm or as indicated by the Village Engineer. The maximum allowed headwater for such a storm shall be twelve inches below pavement crown elevation. Water crossings carrying receiving waters located near upstream Village borders shall convey no more flow than currently designed to carry unless directed by the Village Engineer.

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, coldwater habitat, exceptional warmwater 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, twenty-five percent 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 100-year storm under these conditions.

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

E. The maximum slope allowable shall be a slope that produces a ten-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 floodplain 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 one-foot below the bottom chord of the bridge for either the 100-year, twenty-four-hour storm, or the 100-year flood elevation as determined by FEMA, whichever is more restrictive.

(8) Overland flooding. Overland flood routing paths shall be used to convey stormwater runoff from the 100-year, twenty-four-hour storm event to an adequate receiving water resource or SCM 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 Village of the site's storm sewers shall be taken into consideration.

(9) 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 Village must be compensated by providing an equivalent storage volume. First consideration for the location(s) of compensatory floodplain volumes should 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 Village, 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.

(10) 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.

(d) Stormwater Quality Control. The site shall be designed to direct runoff to one or more SCM's that meet or exceed the criteria in the Construction General Permit.

(e) Stormwater Quantity Control. The comprehensive stormwater management plan shall describe how the proposed SCMs are designed to meet the following requirements for stormwater quantity control for each watershed in the

development:

(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, twenty-four-hour storm occurring on the same development drainage area under pre-development conditions.

(2) Developers or sub-dividers shall include in their preliminary plans a local watershed study to determine the impact from the development or subdivision caused by stormwater onto the lands adjoining or downstream from the area to be developed, to assure that said lands shall not be adversely affected by the proposed development or subdivision.

(3) Storms of less frequent occurrence (longer return periods) than the critical storm, up to the 100-year, twenty-four-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.

(4) 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 Village Engineer, the total volume (acre-feet) of runoff from a one-year, twenty-four-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. 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.

4. Rainfall data shall be obtained from the latest volume of the NOAA Rainfall ATLAS 14 or per Table 1.

5. 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.

6. Curve numbers for the pre-development condition must reflect the average type of land use over the past ten years and not only the current land use. Curve numbers shall conform to the National Engineering Handbook Table 9-1.

a. Post-development curve numbers - All areas that are altered by construction practices shall use post-construction hydraulic soil groups from *Ohio Rainwater and Land Development*.

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

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

9. 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.

B. From the volume determined in division (d)(3)A. of this section, determine the percent increase in volume of runoff due to development. Using the percentage, select the twenty-four-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:	
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:	
—	10	1 year
10	20	2 year
20	50	5 year
50	100	10 years

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 1-year storm is 35%, the critical storm is a 5-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 1-year frequency storm under predevelopment conditions in the development drainage area. The post-development runoff from all less frequent storms need only be controlled to meet pre-development peak discharge rates for each of those same storms.

C. For sites with less than one acre of disturbed land and not part of a common plan of development:

1. If the post-developed flow for the critical storm is less than 110 percent of the pre-developed critical storm flow, no stormwater quantity measures need to be implemented.

2. If the post-developed flow for the critical storm is equal to or greater than 110 percent of the pre-developed critical storm, stormwater quantity measures need to be implemented so that the post-developed critical storm flow is less than the pre-developed critical storm flow.

(f) Stormwater Management for Previously Developed Areas

1. SCM's on previously developed sites must meet the criteria in the Construction General Permit

(Ord. 2011-31. Passed 7-20-11; Ord. 2017-5. Passed 1-18-17.)

1450.10 ALTERNATIVE ACTIONS.

When the Village of Bentleyville 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 stormwater quantity. Such alternatives shall meet the standards in the Construction General Permit and shall achieve the same level of stormwater quantity control that would be achieved by the on-site controls required under this regulation. The Village Engineer may require proof of Ohio EPA review and approval for any alternative action proposed.

Ord. 2011-31. Passed 7-20-11; Ord. 2017-5. Passed 1-18-17.)

1450.11 EASEMENTS.

Access to SCMs as required by the Village Engineer for inspections and maintenance shall be secured by easements in the event that they are not performed by the owner, homeowner's association, or other private party. The following conditions shall apply to all easements:

(a) Easements shall be included in the inspection and maintenance agreement submitted with the comprehensive stormwater management plan.

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

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

(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 stormwater 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 Village. Any re-grading and/or obstruction placed within a maintenance easement may be removed by the Village at the property owners' expense.

(Ord. 2011-31. Passed 7-20-11; Ord. 2017-5. Passed 1-18-17.)

1450.12 MAINTENANCE AND FINAL INSPECTION APPROVAL.

To receive final inspection and acceptance of any project, or portion thereof, the following must be completed by the owner and provided to the Village Engineer:

(a) Final stabilization must be achieved and all permanent SCMs must be installed and made functional, as determined by

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the Village Engineer and per the approved comprehensive stormwater management plan.

(b) An as-built certification, including as-built survey and inspection, must be sealed, signed and dated by a registered professional engineer and a registered professional surveyor with a statement certifying that the SCMs, as designed and installed, meet the requirements of the comprehensive stormwater management plan approved by the Village Engineer. In evaluating this certification, the Village Engineer may require the submission of a new set of SCM calculations if he/she determines that the design was altered significantly from the approved comprehensive stormwater management plan. The as-built survey must provide the location, dimensions, and bearing of such SCMs and include the entity responsible for long-term maintenance as detailed in the inspection and maintenance agreement.

(c) A copy of the complete and recorded inspection and maintenance agreement as specified in Section 1450.08 must be provided to the Village Engineer.

(Ord. 2011-31. Passed 7-20-11; Ord. 2017-5. Passed 1-18-17.)

1450.13 ON-GOING INSPECTIONS.

The owner shall inspect SCMs regularly as described in the inspection and maintenance plan and inspection and maintenance agreement. The Village 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 Village 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 ten 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 Village Engineer for these repairs not be in place, the Village may undertake the necessary repairs and assess all costs to the responsible party.

(Ord. 2011-31. Passed 7-20-11; Ord. 2017-5. Passed 1-18-17.)

1450.14 FEES.

The comprehensive stormwater management plan review, filing, and inspection fee is part of a complete submittal and is required to be submitted to the Village before the review process begins. The Village Engineer shall establish a fee schedule based upon the actual estimated cost for providing these services.

(Ord. 2011-31. Passed 7-20-11; Ord. 2017-5. Passed 1-18-17.)

1450.15 BOND.

(a) If a comprehensive stormwater management plan is required by this regulation, soil-disturbing activities shall not be permitted until a cash bond of five percent of the total project cost of the SCMs, has been deposited with the Village Finance Department. This bond shall be posted for the Village 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 owner fails to comply with the provisions of this regulation. The stormwater bond will be returned, less Village administrative and review fees when the following three criteria are met:

(1) After eighty percent of the lots of the project have been complete or 100 percent 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 SCMs is completed by the owner and approved by the Village Engineer.

(3) An inspection and maintenance agreement signed by the developer, the contractor, the Village, and the private owner or homeowners association who will take long term responsibility for these SCMs, is accepted by the Village Engineer.

(b) Once these criteria are met, the owner 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 Village may use the bond monies to fix any outstanding issues with all stormwater 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. 2011-31. Passed 7-20-11; Ord. 2017-5. Passed 1-18-17.)

1450.16 INSTALLATION OF WATER QUALITY SCMS.

The owner 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 Village 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 Village 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 SCMs, all disturbed areas and/or exposed soils caused by the installation of these SCMs must be stabilized within two days.

(Ord. 2011-31. Passed 7-20-11; Ord. 2017-5. Passed 1-18-17.)

1450.17 VIOLATIONS.

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.

(Ord. 2011-31. Passed 7-20-11; Ord. 2017-5. Passed 1-18-17.)

1450.18 APPEALS.

Appeals from the requirements of this chapter or the enforcement of the requirements of this chapter, shall be prosecuted in accordance with Section 1262.02 of the Codified Ordinances.

(Ord. 2011-31. Passed 7-20-11; Ord. 2017-5. Passed 1-18-17.)

1450.99 PENALTY.

(a) Any person, firm, entity or corporation; including but not limited to, the owner of the property, his 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 sixty 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.

(b) The imposition of any other penalties provided herein shall not preclude the Village 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 Village.

(Ord. 2011-31. Passed 7-20-11; Ord. 2017-5. Passed 1-18-17.)