

CHAPTER 945
Post-Construction Water Quality Runoff

EDITOR'S NOTE: The Post-Construction Water Quality Plan will be coordinated and combined with the Riparian and Wetland Setback Plan and the Construction Site Conservation Plan that are developed for the same site.

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945.01 INTENT.

The intent of this chapter is to:

- (a) Allow development while reducing damage to receiving water resources and drainage systems that may be caused by new development or redevelopment activities.
- (b) Protect and maintain the receiving stream's physical, chemical, biological characteristics and stream functions.
- (c) Provide perpetual management of storm water runoff quality and quantity.
- (d) Establish consistent technically feasible and operationally practical standards to achieve a level of storm water quantity and quality control that will minimize damage to public and private property and degradation of water resources, and will promote and maintain the health, safety, and welfare of the residents of the Community.
- (e) Control storm water runoff resulting from soil disturbing activities.
- (f) Preserve, to the maximum extent practicable (MEP), the natural drainage characteristics of the building site.

- (g) Preserve, to the maximum extent practicable (MEP), natural infiltration and groundwater recharge, and maintain subsurface flow that replenishes water resources, wetlands, and wells.
- (h) Assure that storm water quality controls are incorporated into site planning and design at the earliest possible stage.
- (i) Reduce the need for costly treatment and mitigation for the damage to and loss of water resources that are the result of inadequate storm water quality control.
- (j) Reduce the long-term expense of remedial projects needed to address problems caused by inadequate storm water quality control.
- (k) Require the incorporation of water quality protection that encourages and promotes habitat preservation into the construction of storm water management practices.
- (l) Ensure that all storm water quality practices are properly designed, constructed, and maintained. (Ord. 2165. Passed 11-24-08.)
- (m) To incorporate enhanced practices to address (reduce) the discharge of TMDL-specified pollutants from the Village of Sheffield. The current TMDL (Total Maximum Daily Load) identifier table for the Village of Sheffield can be found on the OEPA website. (Ord. 2555. Passed 1-9-17.)

945.02 DISCLAIMER OF LIABILITY AND DEFINITIONS.

(a) Neither submission of a plan under the provisions herein, nor compliance with the provisions of these regulations, shall relieve any person or entity from responsibility for damage to any person or property that is otherwise imposed by law.

(b) Definitions. For purpose of this regulation, the following terms shall have the meaning herein indicated:

- (1) **ABBREVIATED STORMWATER POLLUTION PREVENTION PLAN (ABBREVIATED SWP3):** The written document that sets forth the plans and practices to be used to meet the requirements of this regulation.
- (2) **ACRE:** A measurement of area equaling 43,560 square feet.
- (3) **ADMINISTRATOR:** The person or entity having the responsibility and duty of administering and ensuring compliance with this regulation.
- (4) **BEST MANAGEMENT PRACTICES (BMPs): Also STORMWATER CONTROL MEASURE (SCM).** Schedule of activities, prohibitions of practices, maintenance procedures, and other management practices (both structural and non-structural) to prevent or reduce the pollution of water resources and wetlands. BMPs also include treatment requirements, operating procedures, and practices to control facility and/or construction site runoff, spillage or leaks, sludge or waste disposal; or drainage from raw material storage.
- (5) **COMMENCEMENT OF CONSTRUCTION:** The initial disturbance of soils associated with clearing, grubbing, grading, placement of fill, or excavating activities or other construction activities.
- (6) **COMMUNITY:** Throughout this regulation, this shall refer to the Village of Sheffield, its designated representatives, boards or commissions.
- (7) **CONCENTRATED STORMWATER RUNOFF:** Any stormwater runoff that flows through a drainage pipe, ditch, diversion or other discrete conveyance channel.
- (8) **CONSTRUCTION ENTRANCE:** The permitted points of ingress and egress to development areas regulated under this regulation.

- (9) **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.
- (10) **DEWATERING VOLUME:** See current Ohio Rainwater and Land Development Manual.
- (11) **DISCHARGE:** The addition of any pollutant to surface waters of the state from a point source.
- (12) **DISTURBANCE:** Any clearing, grading, excavating, filling, or other alteration of land surface where natural or man-made cover is destroyed in a manner that exposes the underlying soils.
- (13) **DISTURBED AREA:** An area of land subject to erosion due to the removal of vegetative cover and/or soil disturbing activities such as grading, excavating, or filling.
- (14) **DRAINAGE:**
A. The area of land contributing surface water to a specific point.
B. The removal of excess surface water or groundwater from land by surface of subsurface drains.
- (15) **DRAINAGE WATERSHED:**
A. The area of land contributing surface water to a specific point or BMP. This includes any off-site drainage.
B. The removal of excess surface water or groundwater from land by surface or subsurface drains. For the purpose of this regulation the total contributing drainage area to a BMP, i.e., the "watershed" directed to the practice. This includes offsite contributing drainage.
- (16) **DRAINAGE WAY:** A natural or manmade channel, ditch, or waterway that conveys surface water in a concentrated manner by gravity.
- (17) **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.
- (18) **EROSION AND SEDIMENT CONTROL:** The control of soil, both mineral and organic, to minimize the removal of soil from the land surface and to prevent its transport from a disturbed area by means of wind, water, ice, gravity, or any combination of those forces.
- (19) **EROSION AND SEDIMENT CONTROL PLAN:** The written document meeting the requirements of this regulation which sets forth the plans and practices to be used to minimize soil erosion and prevent offsite disposal of soil sediment by containing sediment on-site or bypassing sediment-laden runoff through a sediment control measure during and after land development.
- (20) **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 measures, such as the use of mulches or geotextiles, have been employed. In addition, all temporary erosion and sediment control practices are removed and disposed of and all trapped sediment is permanently stabilized to prevent further erosion. Final stabilization also requires the installation of permanent (post-construction) stormwater control measures (SCMs).
- (21) **GRADING:** The excavating, filling, or stockpiling of earth material, or any combination thereof, including the land in its excavated or filled condition.

- (22) **GRUBBING:** Removing or grinding of roots, stumps and other unwanted material below existing grade.
- (23) **IMPERVIOUS:** That which does not allow infiltration.
- (24) **LANDSCAPE ARCHITECT:** A Professional Landscape Architect registered in the State of Ohio.
- (25) **LARGER COMMON PLAN OF DEVELOPMENT OR SALE:** A contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under one plan.
- (26) **MAXIMUM EXTENT PRACTICABLE (MEP):** The level of pollutant reduction that site owners 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. The technology-based discharge standard for Municipal Separate Storm Sewer Systems to reduce pollutants in storm water discharges that was established by the Clean Water Act §402(p). A discussion of MEP as it applies to small MS4s is found in 40 CFR 122.34.
- (27) **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:
- A. 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 Federal Water Pollution Control Act that discharges into surface waters of the state; and
 - B. Designed or used for collecting or conveying solely storm water; and
 - C. Which is not a combined sewer; and
 - D. Which is not a part of a publicly owned treatment works.
- (28) **NPDES: 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. The national program for issuing, modifying, revoking and reissuing, termination, monitoring and enforcing permits and enforcing pretreatment requirements, under sections 307, 402, 318, 405 under the Clean Water Act.
- (29) **OPERATOR:** Any party associated with a construction project that meets either of the following two criteria:
- A. The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications;
 - B. 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).

- (30) **SITE OWNER OR OPERATOR:** The owner or operator of any "facility or activity" subject to regulation under the NPDES program.
- (31) **SUBDIVISIONS, MAJOR AND MINOR:** See Ohio Administrative Code 711.001 for definition.
- (32) **PARCEL:** Means a tract of land occupied or intended to be occupied by a use, building or group of buildings and their accessory uses and buildings as a unit, together with such open spaces and driveways as are provided and required. A parcel may contain more than one contiguous lot individually identified by a 'Permanent Parcel Number' assigned by the Lorain County Auditor's Office.
- (33) **PERCENT IMPERVIOUSNESS:** The impervious area created divided by the total area of the project site.
- (34) **PERMANENT STABILIZATION:** Establishment of permanent vegetation, decorative landscape mulching, matting, sod, rip rap, and landscaping techniques to provide permanent erosion control May 2016 6 on areas where construction operations are complete or where no further disturbance is expected for at least one year.
- (35) **PERSON:** 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.
- (36) **PHASING:** Clearing a parcel of land in distinct sections, with the stabilization of each section before the clearing of the next.
- (37) **POINT SOURCE:** Any discernible, confined and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or the floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.
- (38) **PRE-CONSTRUCTION MEETING:** A meeting between the Village of Sheffield and all principle parties, prior to the start of any construction, at a site that requires a Stormwater Pollution Prevention Plan.
- (39) **PRE-WINTER STABILIZATION MEETING:** A meeting between the Village representatives and all principal parties, prior to October 1, in order to plan winter erosion and sediment controls for a site that requires a Stormwater Pollution Prevention Plan.
- (40) **PROFESSIONAL ENGINEER:** A Professional Engineer registered in the State of Ohio.
- (41) **QUALIFIED INSPECTION PERSONNEL:** A person knowledgeable in the principles and practice of erosion and sediment controls, who possesses the skills to assess all conditions at the construction site that could impact stormwater quality and to assess the effectiveness of any sediment and erosion control measure selected to control the quality of stormwater discharges from the construction activity.
- (42) **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.

- (43) **RIPARIAN AREA:** The transition area between flowing water and terrestrial (land) ecosystems composed of trees, shrubs and surrounding vegetation which serve to stabilize erodible soil, improve both surface and ground water quality, increase stream shading and enhance wildlife habitat.
- (44) **RUNOFF:** The portion of rainfall, melted snow, or irrigation water that flows across the ground surface and is eventually conveyed to water resources or wetlands.
- (45) **RUNOFF COEFFICIENT:** The fraction of rainfall that will appear at the conveyance as runoff.
- (46) **SEDIMENT:** The soils or other surface materials that are transported or deposited by the action of wind, water, ice, gravity, or any combination of those forces, as a product of erosion.
- (47) **SEDIMENTATION:** The deposition or settling of sediment.
- (48) **SEDIMENT SETTLING POND:** A sediment trap, sediment basin or permanent basin that has been temporarily modified for sediment control, as described in the latest edition of Rainwater and Land Development.
- (49) **SEDIMENT STORAGE VOLUME:** See current edition of Rainwater and Land Development.
- (50) **SETBACK:** A designated transition area around water resources and wetlands that is left in a natural, usually vegetated, state to protect the water resources and wetlands from runoff pollution. Soil disturbing activities in this area are restricted by this regulation.
- (51) **SOIL DISTURBING ACTIVITY:** Clearing, grading, excavating, filling, grubbing or stump removal that occurs during clearing or timber activities, 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, erosion and sediment pollution.
- (52) **STABILIZATION:** The use of BMPs, such as seeding and mulching, that reduce or prevent soil erosion by water, wind, ice, gravity, or a combination of those forces.
- (53) **STEEP SLOPES:** Slopes that are 15 percent or greater in grade.
- (54) **STORMWATER POLLUTION PREVENTION PLAN (SWP3):** The written document that sets forth the plans and practices to be used to meet the requirements of these sections.
- (55) **STORMWATER:** Stormwater runoff, snow melt and surface runoff and drainage.
- (56) **SURFACE OUTLET:** A dewatering device that only draws water from the surface of the water.
- (57) **SURFACE WATERS OF THE STATE:** Also Water Resource or Water Body. Any streams, lakes, reservoirs, pond, marshes, wetlands, or other waterways 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 Section 6111.01 of the Ohio Revised Code are not included.
- (58) **TEMPORARY STABILIZATION:** The establishment of temporary vegetation, mulching, geotextiles, sod, preservation of existing vegetation, and other techniques capable of quickly establishing cover over disturbed areas to provide erosion control between construction operations.

- (59) **TOPSOIL:** The upper layer of the soil that is usually darker in color and richer in organic matter and nutrients than subsoil.
- (60) **TOTAL MAXIMUM DAILY LOAD:** The sum of the existing and/or projected point source, nonpoint source, and background loads for a pollutant to a specified watershed, water resource or wetland, or water resource or wetland segment. A TMDL sets and allocates the maximum amount of a pollutant that may be introduced into the water and still ensure attainment and maintenance of water quality standard.
- (61) **UNSTABLE SOILS:** A portion of land that is identified by the Village of Sheffield Engineer as prone to slipping, sloughing, or landslides, or is identified by the U.S. Department of Agriculture Natural Resource Conservation Service methodology as having a low soil strength.
- (62) **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.
- (63) **WATER RESOURCE Also SURFACE WATER OF THE STATE:** Any public or private body of water; including wetlands; the area within the ordinary high water level of lakes and ponds; as well as the area within the ordinary high water level of any brook, creek, river, or stream having a defined bed and bank (either natural or artificial) which confines and conducts continuous or intermittent flow. 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 Section 6111.01 of the Ohio Revised Code are not included. **WATER RESOURCE:** Any public or private body of water including lakes and ponds, as well as any brook, creek, river, or stream having banks, a defined bed, and a definite direction of flow, either continuously or intermittently flowing.
- (64) **WATERSHED:** The total drainage area contributing runoff to a single point.
- (65) **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).
(Ord. 2555. Passed 1-9-17.)

945.03 CONFLICTS, SEVERABILITY, NUISANCES AND RESPONSIBILITY.

(a) Where this section imposes a greater restriction upon land than is imposed or required by other Community provisions of law, ordinance, contract or deed, the provisions of this chapter shall prevail.

(b) If a court of competent jurisdiction declares any clause, section, or provision of these regulations invalid or unconstitutional, the validity of the remainder shall not be affected thereby.

(c) These regulations shall not be construed as authorizing any person to maintain a private or public nuisance on their property. Compliance with the provisions of this regulation shall not be a defense in any action to abate such nuisance.

(d) Failure of the Community to observe or recognize hazardous or unsightly conditions or to recommend corrective measures shall not relieve the owner from the responsibility for the condition or damage resulting therefrom, and shall not result in the Community, its officers, employees, or agents being responsible for any condition or damage resulting therefrom. (Ord. 2165. Passed 11-24-08.)

945.04 SCOPE.

This chapter applies to development areas having new or relocated projects involving highways, underground cables, pipelines, subdivisions, industrial projects, commercial projects, building activities on farms, redevelopment of urban areas and all other land uses not specifically exempted. This chapter does not apply to:

- (a) Land-disturbing activities related to producing agricultural crops or silviculture operations regulated by the Ohio Agricultural Sediment Pollution Abatement Rules (1501: 15-3-01 to 1501: 15-3-09 of the Ohio Administrative Code) and existing at the time of passage of this regulation.
- (b) Strip mining operations regulated by Chapter 1513 of the Ohio Revised Code and existing at the time of passage of this regulation.
- (c) Surface mining operations regulated by Chapter 1514 of the Ohio Revised Code and existing at the time of passage of this regulation.
- (d) Linear construction projects, (e.g., pipeline or utility line installation), which do not result in the installation of impervious surface and are independent of other construction projects (not part of a larger common plan of development or sale). However, linear construction projects must be designed to minimize the number of stream crossings and the width of disturbance.
- (e) Municipal maintenance projects deemed in the best interest of the Village of Sheffield.
- (f) Transportation projects that are subject to industry specific Ohio EPA Rules are exempt from these rules.
- (g) It is not the role of the community to point out each and every part of the rules and how to implement them on the individual job sites. It is the project owner's responsibility to be proactive in meeting the intent, purpose and requirements of these regulations. (Ord. 2165. Passed 11-24-08.)

945.05 POST-CONSTRUCTION WATER QUALITY CONTROL PLAN.

In order to control Post-Construction water quality damage and damage to public and private lands, the owner of each development area shall be responsible for developing a Post-Construction Storm Water Management Plan.

- (a) This plan will be combined with the Construction Site Conservation Plan and the Riparian Setback and Wetland Setback Plans that are also developed for the site.
- (b) This plan will contain a description of controls appropriate for each construction operation covered by these regulations, and the operator will implement such controls in a timely manner.
- (c) The BMPs used to satisfy the conditions of these regulations shall meet the standards and specifications in the current edition of the Ohio Rain Water and Land Development manual, ODOT Post-Construction storm water standards, or other manual that is acceptable to the Village Administrator or Ohio EPA.
- (d) The plan must make use of the practices that preserve the existing natural condition to the Maximum Extent Practicable (MEP).

- (e) To meet the Post-Construction requirements of this regulation, the Post-Construction Water Quality Plan must contain a description of the Post-Construction Best Management Practices (BMPs) that will be installed during construction for the site and the rationale for their selection. The rationale must address the anticipated impacts on the channel and floodplain morphology, hydrology, and water quality.
- (f) This plan will identify the person or entity responsible for continued maintenance of all vegetative and/or mechanical BMPs for both the construction and Post-Construction phases of the development.
- (g) Long-term maintenance requirements and schedules of all BMPs for both the construction and Post-Construction phases of the development will be identified.
- (h) This plan will contain long-term maintenance inspection schedules, including the printed name and contact point of the Post-Construction landowner (e.g., president of the homeowners association, store manager, apartment complex manager, etc.).
- (i) This plan will identify the person or entity financially responsible for maintaining the permanent inspection and maintenance of permanent storm water conveyance and storage structures and other conservation practices.
- (j) The method of ensuring that funding will be available to conduct the long-term maintenance and inspections of all permanent storm water, soil erosion and sediment control and water quality practices will be identified.
- (k) The Post-Construction Plan will also contain the following information depending on the size of the development sites:
 - (1) Development sites smaller than five acres. A development site that will disturb one (1) or more, but less than five (5) acres of land and is not a part of a larger common plan of development or sale which will disturb five or more acres of land shall identify:
 - A. Storm Water Issues. A statement as to how the decreased storm water quality that will be caused by the planned development project will be handled
 - B. Description of Measures. A description of the BMPs that will be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed.
 - C. Upland Areas. Structural measures placed on upland areas to the degree attainable.
 - D. Map. A map of the entire site showing the overall development.
 - E. Riparian and/or Wetland Setback. All riparian and wetland setback areas will be identified on the plans. They will also be marked in the field prior to the start of construction.
 - F. BMPs. Best Management Practices used in the Post-Construction Water Quality Plan may include but are not limited to:
 - 1. Permanent Storm Water Detention ponds that provide extended detention of the water volume.
 - 2. Flow attenuation by use of open vegetated swales and natural depressions.
 - 3. Onsite infiltration of runoff.
 - 4. Sequential systems that combine several practices.
 - 5. Permanent conservation easements, preferably with the easement being held by a third party with no vested interest in ever seeing the property developed.

6. Natural Channel Design for drainageways.
 7. Bioengineering in drainageways.
 8. Recreating floodplains.
 9. Chemical and biological filters in storm sewer inlets.
 10. Sand Filters.
 11. Allowing roof water from buildings to run across lawn areas to remove pollutants.
 12. On-site sewage disposals system replacement or conversion to sanitary sewers.
 13. Low Impact Development Design.
 14. Countryside Development Design meeting the criteria of the Western Reserve Resource Conservation and Development Area.
 15. Aquatic benches in Retention Basins and ponds.
- G. Technical Basis. The plans will contain a rational statement utilized to select the BMPs used to control pollution and to maintain and protect water quality.
- (2) Development sites 5 acres or larger. A development site that disturbs five (5) or more acres of land or will disturb less than five (5) acres, but is a part of a larger common plan of development or sale, which will disturb five (5) or more acres of land shall identify:
- A. Storm Water Detention. The Post-Construction BMP(s) chosen must be able to detain storm water runoff for protection of the stream channels, stream erosion control, and improved water quality.
 - B. Structural BMPs. Structural (designed) Post-Construction storm water treatment practices shall be incorporated into the permanent drainage system for the site.
 - C. Properly Sized BMPs. The BMP(s) chosen must be sized to treat the water quality volume (WQv) and ensure compliance with Ohio's Water Quality Standards in OAC Chapter 3745-1. The WQv shall be equivalent to the volume of runoff from a 0.75-inch rainfall and shall be determined according to one of the two following methods:
 1. Through a site hydrologic study approved by the local municipal permitting authority that uses continuous hydrologic simulation and local long-term hourly precipitation records or
 2. Using the following equation:

$$WQv = C * P * A / 12$$
 where:
 WQv = water quality volume in acre-feet
 C = runoff coefficient appropriate for storms less than 1 inch (see Table 1)
 P = 0.75 inch precipitation depth
 A = area draining into the BMP in acres

Table 1 Runoff Coefficients Based on the Type of Land Use

Land Use	Runoff Coefficient
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

- D. Where the 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 $(0.6)(0.3) + (0.3)(0.5) + (0.1)(0.2) = 0.35$.
- E. An additional volume equal to 20 percent of the WQv shall be incorporated into the BMP for sediment storage and/or reduced infiltration capacity. The BMPs will be designed according to the methodology included in the Ohio Rainwater and Land Development manual, ODOT Post-Construction storm water standards, or other manual that is acceptable to Ohio EPA.
- F. BMPs shall be designed such that the drain time is long enough to provide treatment, but short enough to provide storage available for successive rainfall events as described in Table 2 below:
(Ord. 2165. Passed 11-24-08.)

Table 2: Target Draw Down (Drain) Times for Structural Post-Construction Treatment Control Practices

Best Management Practice	Drain Time of WQv
Permeable Pavement - Infiltration	48 hours
Permeable Pavement - Extended Detention	48 hours
Infiltration Basin or Trench	48 hours
Vegetated Swale and Filter Strip	24 hours
Extended Detention Basin (Dry Basins)	48 hours
Retention Basins (Wet Basins)*	24 hours
Constructed Wetlands (above permanent pool)	24 hours
Media Filtration, Bioretention	24 hours

* Provide both a permanent pool and an extended detention volume above the permanent pool, each sized at 0.75* WQv.

* Shorter drawdown times may be acceptable as long as design criteria in Rainwater and Land Development guide have been met.
(Ord. 2555. Passed 1-9-17.)

- G. The owner may request approval from the Village to use alternative structural Post-Construction BMPs if the owner can demonstrate, in a way that is acceptable to Ohio EPA rules and regulations that the alternative BMPs are equivalent in effectiveness to those listed in Table 2 above. The use of alternative or vendor supplied Post-Construction BMPs should be limited to redevelopment projects where justification is provided that the traditional BMPs in Table 2 are technically and economically infeasible.
- H. Construction activities shall be exempt from this condition if it can be demonstrated that the WQv is provided within an existing structural Post-Construction BMP that is part of a larger common plan of development or sale or if structural Post-Construction BMPs are addressed in a regional or local storm water management plan.
- I. For redevelopment projects (i.e., developments on previously developed property), Post-Construction practices shall either ensure a 20 percent net reduction of the site impervious area, provide for treatment of at least 20 percent of the WQv, or a combination of the two.
- J. Site Description:
1. The prior land uses of the site.
 2. The nature and type of construction activity (e.g., low density residential, shopping mall, highway, etc.)
 3. Total area of the site and the area of the site that is expected to be disturbed (i.e., grubbing, clearing, excavating, filling or grading, including off-site borrow, fill or spoil areas and off-site utility installation areas)

4. Amount of the impervious area and percent imperviousness created by the construction activity (Ord. 2165. Passed 11-24-08.)
 5. Name and/or location of the immediate receiving stream or surface water(s) and the first subsequent named receiving water and the major river watersheds in which it is located.
 6. For discharges to a municipal separate storm sewer system (MS4), the point of discharge to the MS4 and the location where the MS4 ultimately discharges to a water resource shall be indicated.
 7. List TMDLs applicable for the site and demonstrate that appropriate BMPs or stormwater control measures (SCMs) have been selected to address these TMDLs. A current TMDL listing for the corresponding watershed can be obtained by accessing the Northeast Ohio Stormwater Training Council website. (Ord. 2555. Passed 1-9-17.)
- K. A vicinity sketch locating:
1. The development area.
 2. The larger common plan of development or sale.
 3. All pertinent surrounding natural features within 200 feet of the development site including, but not limited to:
 4. Water resources such as wetlands, springs, lakes, ponds, rivers and streams (including intermittent streams with a defined bed and bank).
 5. Conservation easements.
 6. Other sensitive natural resources and areas receiving runoff from the development.
- L. The existing and proposed topography shown in the appropriate contour intervals as determined by the community engineer (generally one-foot contours are used).
- M. The location and description of existing and proposed drainage patterns and facilities, including any allied drainage facilities beyond the development area and the larger common plan of development or sale.
- N. Existing and proposed watershed boundary lines, direction of flow and watershed acreage.
- O. The person or entity responsible for continued maintenance of all permanent vegetative and/or mechanical Post-Construction water quality conservation practices (BMPs).
- P. The location of any existing or planned riparian and/or wetland setback areas on the property. (Ord. 2165. Passed 11-24-08.)

945.06 EASEMENTS.

Future access to all permanent vegetative and/or mechanical Post-Construction water quality conservation practices (BMPs) and other areas, as required by the Village, shall be secured by means of easements.

- (a) The easements shall be recorded in the name of Sheffield Village and, in single-family residential developments, the homeowners association.

- (b) Such easements shall be not less than twenty-five (25) feet in width, in addition to the width of the ditch, channel, or other facility it is to serve. Further, an easement of this type shall be provided on one (1) side of the flood control or storm drainage ditch, channel, or similar-type facility.
- (c) Access along the initial drainage system shall be by means of easements. Such easements shall be not less than twenty-five (25) feet in width, with a minimum ten (10) foot width on either side of the centerline.
- (d) Access adjacent to storage facilities shall consist of a twenty-five (25) foot easement in the case of detention (dry) basins, and a twenty-five (25) foot easement with a twenty-five (25) foot level bench in the case of retention (wet) basins, measured from the top of the bank, and shall include the storage facility itself.
- (e) Easements for the emergency flow ways shall be a minimum of twenty-five (25) feet in width, or larger if required.
- (f) Flood control or storm drainage easements containing underground facilities shall have a minimum width of twenty-five (25) feet.
- (g) The easements shall be restricted against the planting within said easement of trees, shrubbery or plantings with woody growth characteristics, and against the construction therein of buildings, accessory buildings, fences, walls or any other obstructions to the free flow of storm water and the movement of inspectors and maintenance equipment and also restricted against the changing of final grade from that described by the grading plan. (Ord. 2165. Passed 11-24-08.)

945.07 MAINTENANCE.

Any portion of the permanent Post-Construction water quality management systems, including on-site and off-site treatment/storage facilities that are constructed by the owner, will be continuously maintained into perpetuity.

- (a) Detail drawings and maintenance plans must be provided for all Post-Construction Best Management Practices (BMPs).
- (b) Maintenance plans must ensure that pollutants collected within structural Post-Construction BMP practices are disposed of in accordance with local, state and federal guidelines.
- (c) Maintenance plans shall be provided by the permittee to both the Village Administrator and the Post-Construction operator of the BMP (including homeowner associations) upon completion of construction activities and prior to the final approval for the completed construction.
- (d) Single-Family Residential Developments. A Homeowners' Association shall be created and placed in title of the affected lands and shall be continuously responsible for Post-Construction maintenance and inspections into perpetuity unless such maintenance and inspections become officially accepted by Sheffield Village.
- (e) Multi-Family, Commercial and Industrial Developments. The plans will clearly state that the owner of the property shall be continuously responsible for Post-Construction maintenance and inspections into perpetuity.
- (f) Maintenance Design. Low maintenance requirements are a priority in the design and construction of all facilities. Multi-use facilities incorporating assets such as aesthetics and recreation may be incorporated into the design of the drainage facilities. All permanent drainage, soil erosion, sediment control, water quality management systems and BMPs, including on-site and off-site structures and vegetation that are constructed or planted, must be inspected and maintained into perpetuity by the responsible party designated in the plans and the requirements of this chapter. Inspections and maintenance will be incorporated periodically throughout the year to ensure that the facilities are properly operational.

- (g) **Perpetual Maintenance Inspections.** One (1) inspection with a written report will be performed each year. The written report will be given to the Village Administrator by May 1st of each and every year after the Best Management Practice (BMP) has been completed.
- (1) **Structures that require a permit from the Ohio Division of Water.** A written and stamped report from a professional engineer on the status of all structural BMPs that require a permit from the Ohio Department of Natural Resources (ODNR) Division of Water. This applies to all BMPs that require a permit either at the time of construction or fall under the jurisdiction of ODNR Division of Water at any time after construction is completed.
 - (2) **Easements.** A written report from an inspector on the status of all storm water management easements for each project shall be submitted to the Village Administrator by May 1st of each year into perpetuity. These reports will document if restricted plantings, fences and structures are on the easement and will identify the location of the noted easement restriction violations.
 - (3) **Best Management Practices (BMPs) that do not have a high risk for loss of life, bodily injury, or damage to structures or infrastructure related to imminent failure.** A written and stamped report from a professional engineer, landscape architect or Certified Professional in Erosion and Sediment Control (CPESC) on the status of permanent soil erosion, sediment control, water quality management systems and the status of the related easements shall be submitted to the Village Administrator by May 1st of each year into perpetuity.
 - (4) **BMPs that have a potential loss of Life.** A written and stamped report covering the status of all BMPs that have a potential for loss of life, bodily injury, or damage to structures or infrastructure will be prepared by a professional engineer or other individual possessing a valid state license that authorizes them to design the same type of BMP for construction.
(Ord. 2165. Passed 11-24-08.)

945.08 MINIMUM STANDARDS.

In order to control pollution of water resources, the owner or person responsible for the development area shall use conservation planning and practices to maintain the level of conservation established in the following standards.

- (a) **Standards and Specifications.** Post-Construction runoff practices used to satisfy these standards shall meet the standards and specifications in the current edition of the "Rainwater and Land Development" manual, NRCS Field Office Technical Guide for the local county, or the Ohio EPA, which ever is most stringent.
- (b) **Water Quality Basins.**
 - (1) **Pool geometry.** The minimum length-to-width ratio for the pond is 3:1 (the length will be three (3) times the width).
 - (2) **Riser in embankment.** The riser shall be located within the embankment for purposes of maintenance access. Access to the riser will be by manholes.
 - (3) **Water drains.** Each retention basin shall have a drainpipe that can completely drain the pond. The drain shall have an elbow within the pond to prevent sediment deposition from plugging the drain.

- (4) Adjustable gate valves. Both the Water Quality and the Storm Water Management Basin drains shall have adjustable gate valves. Valves shall be located inside of the riser at a point where they will remain dry and can be operated in a safe and convenient manner. During the annual inspections the valves shall be fully opened and closed at least once, and the certifying official shall attest to this on the inspection form. To prevent vandalism, the handwheel shall be chained to a ringbolt or manhole step.
- (5) Principal spillway. Each principal spillway shall be designed in accordance with the Natural Resources Conservation Service (NRCS) standards and specifications for the office serving the local county. Each principal spillway shall have the capacity to pass the 100 year design storm flows. The inlet or riser size for the pipe drops shall be designed so that the flow through the structure goes from weir flow control to pipe flow control without going into orifice control in the riser. The crest elevation of the primary spillway shall be no less than one foot below the emergency spillway crest. Premium joint pipe is required and a removable trash rack shall be installed at each location. Anti-seep collars shall be provided for all pipe conduits through an embankment.
- (6) Emergency spillway. An emergency spillway shall be provided on each Water Quality and Storm Water Management basin. Emergency spillways shall convey flood flows safely past the embankment, and shall be designed in accordance with NRCS standards and specifications for the office serving the local county. Emergency spillways shall have a 100-year design storm capacity.
- (7) Embankments. Each dam embankment shall be designed in accordance with the NRCS standards and specifications for the office serving the county that the project is located in. Anti-seep collars shall be provided for all pipe conduits through an embankment.
- (8) Safety features.
 - A. The primary spillway opening shall not permit access to the public and other non-maintenance personnel.
 - B. The perimeter of all water pool areas that are deeper than three (3) feet shall be surrounded by benches that meet the following:
 1. A safety bench, with a maximum slope of 3%, which extends outward, on dry land, from the shoreline. This bench will be a minimum of 25 feet wide to provide for the safety of individuals and maintenance vehicles that are adjacent to the water pool. The safety bench may be landscaped, without the use of structures, to prevent access to the water pool.
 2. Side slopes between the safety bench and the aquatic bench shall not be steeper than 3:1 (3 feet horizontal for every 1 foot vertical).
 3. An aquatic bench that extends inward from the shoreline far enough to ensure public safety and has a maximum depth of 15 inches below the normal water surface elevations. The aquatic bench may be landscaped to prevent access to the deeper water pool. The aquatic bench may also be incorporated into the Post-Construction Water Quality Plan.
 4. Side slopes beyond the aquatic bench and below the permanent water level shall not be steeper than 2:1 (2 feet horizontal for every 1 foot vertical).

5. The contours of the pond will be designed and managed to eliminate drop-offs and other hazards. Side slopes getting to the pond shall not exceed 3:1 and shall terminate on a safety bench.
- (9) Water quality basin. If a Water Quality Basin is needed and can not be incorporated into an existing or planned Detention or Retention Basin then a separate Water Quality Basin will need to be planned, designed, constructed and maintained into perpetuity.
- (10) Water Quality Basins will not be constructed in any permanent or intermittent stream channel.
- (11) Flexibility. These standards are general guidelines and shall not limit the right of the Sheffield Village to impose at any time additional and/or more stringent requirements nor shall the standards limit the right of Sheffield Village to waive, in writing, individual requirements.
(Ord. 2165. Passed 11-24-08.)

945.09 ALTERNATIVE ACTIONS.

Where Sheffield Village determines that site constraints exist in a manner that compromises the intent of this chapter to improve the management of storm water runoff as established in this chapter, practical alternatives may be used to result in an improvement of water quality and/or a reduction of storm water runoff. Such alternatives must be in keeping with the intent and likely cost of those measures that would otherwise be required to meet the objectives of this section. When possible, all practical alternatives shall be implemented within the drainage area of the proposed development project. Practical alternatives can include, but are not limited to:

- (a) Implementation of off-site storm water management practices.
- (b) Watershed or stream restoration.
- (c) Retrofitting of an existing storm water management practice.
- (d) Other practices approved by Sheffield Village in keeping with the intent of this chapter. (Ord. 2165. Passed 11-24-08.)

945.10 COMPLIANCE WITH OTHER RULES AND REGULATIONS.

(a) Ohio Dam Safety Laws. The provisions of the Ohio Dam Safety Laws shall be followed. Proof of compliance with the Ohio Dam Safety Law administered by the ODNR Division of Water shall be, but is not limited to, a copy of the ODNR Division of Water permit number or a copy of the project approval letter from the ODNR Division of Water or a letter from the site owner explaining why the Ohio Dam Safety Law is not applicable. The written proof will be provided to the Village Engineer before a construction permit will be issued.

(b) NPDES Permits. The provisions of the National Pollutant Discharge Elimination System (NPDES) Permits for construction activity, by the Ohio EPA, shall be followed. Proof of compliance shall be, but is not limited to, a copy of the Ohio EPA NPDES Permit number or a letter from the site owner explaining why the NPDES Permit is not applicable. The written proof will be provided to the Village Administrator before a construction permit will be issued.

(c) Federal and State Wetland Permits. The provisions of the U.S. Army Corps of Engineers dredge and fill permits for federally-protected wetlands shall be followed. The provisions of Ohio EPA's Isolated Wetlands Permits shall also be followed. Wetlands and other waters of the United States shall be delineated by protocols accepted by the U.S. Army Corps of Engineers and the Ohio EPA at the time of the application of these regulations. Written proof of compliance with both permit programs will be provided to the Village Engineer before a construction permit will be issued. Proof of compliance shall be, but is not limited to, the following:

- (1) A copy of the U.S. Army Corps of Engineers Individual Permit, if required for the project, showing project approval and any restrictions that apply to site activities; or
- (2) A site plan showing that any proposed fill of waters of the United States conforms to the general and specific conditions specified in the applicable Nationwide Permit; or
- (3) A letter from a qualified professional employed by the landowner who has surveyed the site and found no wetlands or other waters of the United States. Such a letter shall be noted on site plans submitted to the Sheffield Village Building Department. (Ord. 2165. Passed 11-24-08.)

945.11 VIOLATIONS.

No person shall violate, or cause, or knowingly permit to be violated, any of the provisions of these regulations, or fail to comply with any such provisions or with any lawful requirements of any public authority made pursuant to these regulations, or knowingly use or cause or permit the use of any lands in violation of these regulations or in violation of any permit granted under these regulations. (Ord. 2165. Passed 11-24-08.)

945.12 PENALTIES.

(a) Whoever violates or fails to comply with any provision of this regulation is guilty of a misdemeanor of the first degree and shall be fined no more than one thousand dollars (\$1,000) or imprisoned for no more than one hundred eighty (180) days, or both, for each offense.

(b) A separate offense shall be deemed committed each day during or on which a violation or noncompliance occurs or continues.

(c) Upon notice from the Village Administrator, or designated representative, that work is being performed contrary to this regulation, such work shall immediately stop. Such notice shall be in writing and shall be given to the owner or person responsible for the development area, or person performing the work, and shall state the conditions under which such work may be resumed; provided, however, in instances where immediate action is deemed necessary for public safety or the public interest, the Village Administrator may require that work be stopped upon verbal order pending issuance of the written order.

(d) The imposition of any other penalties provided herein shall not preclude Sheffield Village, by or through its Law Director and/or any of his or her assistants, from 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, or ordinances, rules or regulations or the orders of the Sheffield Village. (Ord. 2165. Passed 11-24-08.)

945.13 DEVELOPER'S AGREEMENT.

(a) All permanent storm water, soil erosion, sediment control and water quality practices not specifically waived by the Sheffield Village shall be constructed prior to the granting of the Final Plat Approval. Upon the request of the owner, the Sheffield Village may defer the construction or installation of a permanent storm water, soil erosion, sediment control or water quality practice prior to the approval of the final plat where, in the Village Engineer's judgment, such proper construction or installation is not immediately necessary for the protection of the public health and safety; and where the prior installation or construction of such improvement would constitute an undue hardship on the owner because in the case of new vegetation or weather

conditions, or because in the case of concrete, building construction could cause cracking and excessive wear and tear on new structures. In such event, a developer's agreement executed between the owner and Sheffield Village shall be required. Improvements shall be properly constructed or installed within an agreed specified time, but not to exceed six (6) months after the filing of such final plat.

(b) The owner will provide a maintenance guarantee for all permanent improvements, soil erosion, and sediment control and water quality practices.

- (1) The guarantee. The guarantee of both performance and maintenance will be in the form of a Developer's agreement with an Escrow Account. The Escrow Account will be used by Sheffield Village to complete any guaranteed construction or removal of improvements or temporary and permanent soil erosion, sediment control and water quality practices that are not adequately completed, maintained or removed by the owner in a timely manner, as determined. The Escrow Account will be in the total amount of both the performance guarantee and the maintenance guarantee.
 - A. An amount determined by the Village Engineer shall be deposited with the Sheffield Village Building Department prior to review by the Village Engineer to cover professional services.
 - B. An amount determined by the Village Law Director shall be deposited with the Sheffield Village Building Department to cover professional services.
 - C. No soil disturbing activities shall be permitted until a Developer's agreement is in force.
 - D. No project subject to this regulation shall commence without the Soil Erosion and Sediment Control, and Storm Water Management, and Water Quality Plans having been approved by the Village Administrator.
- (2) Performance guarantee. The furnishing of a performance guarantee will be maintained in an amount of not less than 120% of the estimate approved by the Village Engineer, of installation of the deferred improvements.
- (3) Maintenance guarantee. The maintenance guarantee shall be maintained for a period of not less than (two) 2 years after final acceptance of the storm water, soil erosion, sediment control, and water quality practices in an amount equal to 20% of the estimate approved by the Village Engineer, of the construction and, where necessary, removal of such practices.
- (4) Time extension. The Village Administrator may extend the time allowed for the installation of the improvements for which the performance guarantee has been provided with the receipt of a written request from the owner.
- (5) Completion. Upon completion of the construction of improvements or temporary and/or permanent, soil erosion, sediment control, and water quality practices and the removal of the temporary soil erosion, sediment control, and water quality practices for which the performance guarantee has been provided the owner shall notify the Village Administrator of this fact.
- (6) Inspection. Sheffield Village will not release the Escrow Account until the Village Engineer has inspected the site to ensure that the guaranteed item(s) have been completed and/or removed.

- (7) Release. The Construction Maintenance Guarantee shall not be released by Sheffield Village until all temporary soil erosion and sediment control practices that are no longer needed have been removed, properly disposed of and any trapped sediment has been stabilized.
(Ord. 2165. Passed 11-24-08.)

945.14 APPLICATION PROCEDURES FOR POST-CONSTRUCTION WATER QUALITY PLANS.

(a) This plan will be combined with the Soil Erosion and Sediment Control, Storm Water Management, Riparian Setback and Wetland Setback Plans that have also been developed for the site.

(b) Plans developed by the site owners and approved by Sheffield Village in accordance with this regulation do not relieve the site owner of responsibility for obtaining all other necessary permits and/or approvals from federal, state, and county departments. If requirements vary, the most stringent requirement shall be followed.

(c) Plans submitted to the Village Engineer for review and approval, shall be accompanied by other required permits and documentation relevant to the project, including but not limited to the US Army Corps Of Engineers, Ohio EPA, ODNR Division of Water and Ohio EPA NPDES Permit for Construction Activities

(d) Five (5) sets of the plans and necessary data required by this regulation shall be submitted to the Village Engineer as follows:

- (1) Format.
 - A. Text material will be on 8.5 by 11 inch paper.
 - B. Drawings will be on paper sized no larger than 24 inch by 36 inches.
 - C. One (1) complete set of Electronic drawings in PDF format.
- (2) Construction projects.
 - A. At the preliminary plan approval request the preliminary plans shall show all of the following existing and planned features: streams, water bodies, wetlands, riparian and wetland setback areas permanent BMPs, storm water management detention and retention basins.
 - B. At the Improvement plan approval request.
- (3) For general clearing projects. Thirty (30) working days prior to any soil-disturbing activities.
- (4) Permits list. A list of all the permits that will be needed from federal, state and local agencies.
- (5) Long-term maintenance.
 - A. The requirements and schedules of all permanent vegetative and/or mechanical Post-Construction water quality conservation BMPs.
 - B. Long-term maintenance inspection schedules for all permanent vegetative and/or mechanical Post-Construction water quality conservation BMPs.
 - C. The person or entity financially responsible for inspecting and maintaining all permanent vegetative and/or mechanical Post-Construction water quality conservation BMPs.

- D. The method of ensuring that funding will be available to conduct the long-term maintenance and inspections of all permanent vegetative and/or mechanical Post-Construction water quality conservation BMPs.
- E. The Village Engineer shall review the plans, and shall approve or return these with comments and recommendations for revisions, within thirty (30) working days after receipt of the plan as described above. A plan rejected because of deficiencies shall receive a report stating specific problems and the procedures for filing a revised plan. At the time of receipt of a revised plan another thirty (30) day review period shall begin.
- F. Approved plans shall remain valid for one (1) year from the date of approval. After one (1) year the plan(s) approval automatically expires.
- G. No soil-disturbing activity shall begin before all necessary local, state and federal permits have been granted to the owner or operator.
- H. The Village Administrator or designated assignee, will do construction inspections until the site is stabilized. The construction will not be considered completed until the Village Administrator has conducted the Post-Construction inspections.
(Ord. 2165. Passed 11-24-08.)

