

CUYAHOGA COUNTY RECORDER  
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DEED 11/18/2007 11:11:09 AM  
**200711160242**

# CUYAHOGA COUNTY LAND DEVELOPMENT REGULATIONS

## ARTICLE 2.

### **Water Management And Sediment Control Regulations for the Unincorporated Areas of Cuyahoga County**

**Including Regulations for:  
Construction Site Erosion And Water Runoff  
Post-Construction Water Quality Runoff**

**Effective November 18, 2007**

**Prepared by the  
Cuyahoga County  
Subdivision Review Task Force**

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## **CHAPTER 201. GENERAL PROVISIONS**

### **Section 201.1. Title**

These regulations shall be known and may be cited as the “Cuyahoga County Water Management and Sediment Control Regulations” and are hereinafter referred to as “WMSC Regulations” or “these regulations.”

### **Section 201.2. Purpose**

The Cuyahoga County Board of Commissioners adopts these rules to establish technically feasible and economically reasonable standards aimed at achieving a level of management and conservation practices that will abate soil erosion and degradation of the waters of the State from sediment caused by non-farm earth disturbing activities undertaken during the construction of subdivisions and to promote the health, safety and well-being of the residents of the unincorporated areas of Cuyahoga County, and to implement phase II of the storm water program of the national pollutant discharge elimination system established in 40 C.F.R. Part 122.

These regulations intend, but are not limited, to accomplish the following:

- A. Eliminate or minimize downstream flooding, erosion, and sedimentation damages caused by development and other earth disturbing activities.
- B. Eliminate or reduce damage to receiving streams, which may be caused by increases in the volume of the runoff entering the streams or by the sediment and pollutants contained in the storm water runoff.
- C. Establish a basis for the design of storm water management systems in order to protect the current and future rights and options of both the dominant and subservient property owners and help assure the long term adequacy of the storm water management systems that shall be required.
- D. Provide protection for:
  - 1. Adjacent landowners from property loss due to sedimentation, erosion and flooding.
  - 2. County and township ditches, culverts, and storm sewers from loss of capacity due to siltation.
  - 3. Water and habitat quality in streams, lakes, and wetlands.
- E. Ensure that all entities proposing earth disturbing activities undertaken during the construction of a subdivision prepare, submit and adhere to a Comprehensive Storm Water Management Plan (CSWMP) that includes acceptable management and conservation practices that abate soil erosion and degradation of the waters of the State by providing standards and uniform procedures.

### **Section 201.3. Authorization**

These WMSC Regulations of Cuyahoga County are promulgated pursuant to Section 307.79 of the Ohio Revised Code, whereby a Board of County Commissioners may adopt rules to abate soil erosion and

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water pollution from soil sediment, and may impose reasonable fees for plan review, permit processing and field inspections.

**Section 201.4. Scope**

As authorized by ORC §307.79, these rules apply to earth-disturbing activities on land within the unincorporated areas of Cuyahoga County being developed for residential, non-farm commercial, industrial or other nonfarm purposes, including, but not limited to, residential, commercial and industrial developments submitted for county subdivision review. These rules require persons proposing such activities to file plans governing erosion control, sediment control and water management before clearing, grading, excavating, filling, or otherwise wholly or partially disturbing one or more contiguous acres of land owned by one person or operated as one development unit unless expressly excluded as follows:

- A. Earth 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 these regulations.
- B. Strip mining operations regulated by Chapter 1513 of the Ohio Revised Code and existing at the time of passage of these regulations.
- C. Surface mining operations regulated by Chapter 1514 of the Ohio Revised Code and existing at the time of passage of these regulations.
- D. A Comprehensive Storm Water Management Plan (CSWMP) shall not be required before clearing, grading, excavating, filling or otherwise wholly or partially disturbing less than one acre of land owned by one person, according to ORC§ 307.79. However, areas of less than one contiguous acre shall not be exempt from compliance with other provisions of this section or rules adopted under this section.
- E. A Comprehensive Storm Water Management Plan (CSWMP) shall not be required for a public highway, transportation, or drainage improvement or maintenance project undertaken by a government agency or political subdivision in accordance with a statement of its standard sediment control policies that is approved by the board or chief of the division of soil and water conservation in the department of natural resources.

**Section 201.5. Severability, Nuisances & Responsibility**

- A. If a court of competent jurisdiction declares any clause, section, or provision of these WMSC regulations invalid or unconstitutional, the validity of the remainder shall not be affected thereby.
- B. 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 these regulations shall not be a defense in any action to abate such nuisance.
- C. Failure of the County to observe or recognize a property owner's failure to comply with these regulations or to recommend corrective measures shall not relieve the owner from the responsibility for the condition or damage resulting there from, and shall not result in the County, its officers, employees, or agents being responsible for any condition or damage resulting there from.

**Section 201.6. Interpretation and Compliance With Other Rules And Regulations**

- A. In their interpretation and application, these WMSC Regulations shall be held to be the minimum requirements necessary for the promotion of the public health, safety and general welfare, unless otherwise specifically stated. They shall be liberally construed to further the purposes and objectives set forth herein.
- B. Whenever the requirements of these regulations are at variance with the requirements of any other lawfully adopted rules, regulations, ordinances, or resolution, the most restrictive or that imposing the higher standards shall govern, unless otherwise required by law except that these rules shall not be inconsistent with, more stringent than, nor broader in scope than the rules adopted by the USEPA under 40 C.F.R. Part 122. In the case of these WMSC regulations conflicting with state law, the state statutes shall govern.
- C. Township Zoning and other Applicable Regulations: The provisions of the zoning regulations and other regulations that pertain to development that have been adopted by the township in which the development site is located shall be followed, and written proof of compliance with the applicable township regulations shall be provided at the time of plan review. In the event there is a conflict between these regulations and township regulations, Subsections 201.6A. and B. above shall apply.
- D. State And Federal Regulations. Approvals issued in accordance with these regulations do not relieve the applicant of responsibility for obtaining all other necessary permits and/or approvals from the Ohio EPA, the US Army Corps of Engineers, and other federal, state, and/or county agencies not listed herein. If requirements vary, the most restrictive requirement shall prevail. These permits may include but are not limited to those listed below. Proof of compliance with these state and federal regulations is required to be submitted with the Water Management and Sediment Control Plan before the County Engineer will approve or recommend approval.
  - 1. Ohio EPA NPDES Permits authorizing storm water discharges associated with construction activity or the most current version thereof. Proof of compliance with these requirements shall include, but is not limited to, a copy of the Ohio EPA Director's Authorization letter for the NPDES Permit, Ohio EPA NPDES Permit Number for the project or notarized certification from the site owner explaining why the NPDES Permit is not required.
  - 2. Disturbance of Watercourse or Wetland. If there is any indication that disturbance of an existing watercourse, or potential wetland might occur, proof of compliance with one or all of the following may be required depending on the extent and type of disturbance.
    - a. Jurisdictional Determination: Proof of compliance shall consist of a copy of the Jurisdictional Determination from the U.S. Army Corps of Engineers affirming the findings of a qualified professional's survey and report of the site.
    - b. Section 404 of the Clean Water Act:
      - (1) Proof of compliance shall consist of a copy of the U.S. Army Corps of Engineers Individual Permit application, if an Individual Permit is required for the development project, public notice, or project approval.

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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 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. 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.

- (2) If a Section 404 Permit or Jurisdictional Determination is not required because wetlands or watercourses are not present on the property or there is no reasonable evidence that disturbance will occur, a report from a qualified professional shall be provided stating that he/she has surveyed the site and found no waters of the United States, as 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 or found no reasonable evidence that disturbance will occur.
- c. Ohio EPA Isolated Wetland Permits: Written proof of compliance shall consist of a copy of Ohio EPA's Isolated Wetland Permit application, public notice or project approval, or a report from a qualified professional stating he/she has surveyed the site and found no waters of the United States. 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 401 of the Clean Water Act: Proof of compliance shall consist of a copy of the Ohio EPA Water Quality Certification application, public notice, or project approval, or a report from a qualified professional stating he/she has surveyed the site and found no waters of the United States. 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 Laws. 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 application, 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.

### **Section 201.7. Effective Date**

These regulations and amendments thereto, shall take effect and be in full force and effect 31 days after adoption by the Cuyahoga County Board of County Commissioners.

### **Section 201.8. Disclaimer Of Liability**

Neither submission of a plan under the provisions herein, nor compliance with the provisions of these WMSC Regulations, shall relieve any person or entity from responsibility for damage to any person or property that is otherwise imposed by law, nor shall it create a duty by the Board of Cuyahoga County Commissioners to those impacted by soil sediment pollution and storm water runoff. Approval of a plan or issuance of a permit does not warrant the quality or accuracy of the plan, nor guarantee such to be free of errors or omissions.

## **CHAPTER 202. WMSC DEFINITIONS**

### **Section 202.1. Interpretation Of Words And Terms**

For the purpose of these regulations, certain rules or word usage apply to the text as follows:

- A. Words used in the present tense include the future tense, and the singular includes the plural, unless the context clearly indicates the contrary.
- B. The term “shall” is always mandatory and not discretionary; the term “may” is permissive; the term “should” is permissive but indicates strong suggestion.
- C. Any word or term not interpreted or defined by this article shall be construed according to the rules of grammar and common usage so as to give these regulations their most reasonable application.

### **Section 202.2. Definitions Of Word And Terms**

**100-Year Floodplain:** Any land susceptible to being inundated by water from a base flood. The base flood is the flood that has a one percent (1%) or greater chance of being equaled or exceeded in any given year. For the purposes of this regulation, the 100-year floodplain shall be defined by FEMA or a site-specific Floodplain Delineation in conformance with standard engineering practices and approved by the County.

**Applicant:** A property owner or agent of a property owner who executes the necessary forms and submits the required plans to obtain a Water Management Permit for a proposed subdivision..

**Best Management Practice (BMP):** Any practice or combination of practices that is determined to be the most effective, practicable (including technological, economic, and institutional considerations) means of preventing or reducing the amount of pollution generated by nonpoint sources of pollution to a level compatible with water quality goals. BMPs may include structural practices, conservation practices and operation and maintenance procedures.

**Certified Professional In Erosion And Sediment Control (CPESC):** A person that has subscribed to the Code of Ethics and has met the requirements established by the CPESC Council of Certified Professional In Erosion and Sediment Control, Inc. to be a Certified Professional in Erosion and Sediment Control.

**Channel:** A natural stream that conveys water, or a manmade ditch excavated for the natural flow of water.

**Clearing:** Any activity that removes the vegetative surface cover.

**Concentrated Storm Water Runoff:** Surface water runoff which converges and flows primarily through water conveyance features such as swales, gullies, waterways, channels or storm sewers, and which exceeds the maximum specified flow rates of filters or perimeter controls intended to control sheet flow.

**Conservation:** The wise use and management of natural resources.

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**Cut And Fill Slopes:** A portion of land surface or area from which soil material is excavated and/or filled.

**Cuyahoga SWCD:** The Cuyahoga Soil and Water Conservation District.

**Denuded Area:** A portion of land surface on which the vegetation or other soil stabilization features have been removed, destroyed or covered, and which may result in or contribute to erosion and sedimentation.

**Detention Basin:** A storm water management pond that remains dry between storm events. Storm water management ponds include a properly engineered/designed volume that is dedicated to the temporary storage and slow release of runoff waters in order to control peak discharge rates and provide gravity settling of pollutants.

**Ditch:** An excavation, either dug or natural, for the purpose of drainage or irrigation, and having intermittent flow.

**Dumping:** The grading, pushing, piling, throwing, unloading or placing of soil or other material.

**Earth Disturbing Activity:** Any grading, excavating, filling, or other alteration of the earth's surface where natural or man-made ground cover is destroyed, changed or modified.

**Earth Material:** Soil, sediment, rock, sand, gravel, and organic material or residue associated with or attached to the soil.

**Erosion:** The process by which the land surface is worn away by the action of water, wind, ice or gravity.

**Federal Emergency Management Agency (FEMA):** The agency with overall responsibility for administering the National Flood Insurance Program.

**Frequency Storm:** A rainfall event of a magnitude having a specified average recurrence interval and is calculated with Natural Resources Conservation Service, USDA Type II twenty-four hour curves or depth-duration frequency curves.

**Grading:** Earth disturbing activity such as excavation, stripping, cutting, filling, stockpiling, or any combination thereof.

**Grubbing:** Removing, clearing or scalping material such as roots, stumps or sod.

**Impervious Cover:** Any surface that cannot effectively absorb or infiltrate water. This includes roads, streets, parking lots, rooftops, and sidewalks.

**Intermittent Stream:** A natural channel that may have some water in pools but where surface flows are non-existent or interstitial (flowing through sand and gravel in stream beds) for periods of one week or more during typical summer months.

**Landslide:** The rapid mass movement of soil and rock material downhill under the influence of gravity in which the movement of the soil mass occurs along an interior surface of sliding.

**Larger Common Plan Of Subdivision:** A plan for the overall subdivision of a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under one plan.

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**Natural Resources Conservation Service (NRCS):** An agency of the United States Department of Agriculture, formerly known as the Soil Conservation Service (SCS).

**NPDES Permit:** A National Pollutant Discharge Elimination System Permit issued by Ohio EPA under the authority of the USEPA, and derived from the Federal Clean Water Act.

**Ohio EPA:** The Ohio Environmental Protection Agency.

**Outfall:** An area where water flows from a structure such as a conduit, storm sewer, improved channel or drain, and the area immediately beyond the structure which is impacted by the velocity of flow in the structure.

**Perennial Stream:** A natural channel that contains water throughout the year, except possibly during periods of extreme drought.

**Perimeter Control:** A barrier that prevents sediment from leaving a site by filtering sediment-laden runoff or diverting it to a sediment trap or basin.

**Person:** Any individual, corporation, partnership, joint venture, agency, unincorporated association, municipal corporation, township, county, state agency, the federal government, or any combination thereof.

**Professional Engineer:** A person registered in the State of Ohio as a Professional Engineer, with specific education and experience in water resources engineering, acting in strict conformance with the Code of Ethics of the Ohio Board of Registration for Engineers and Surveyors.

**Redevelopment:** The demolition or removal of existing structures or land uses and construction of new ones.

**Retention Basin:** A storm water management basin that maintains a permanent pool of water. These storm water management ponds include a properly engineered/designed volume dedicated to the temporary storage and slow release of runoff waters in order to control peak discharge rates and provide gravity settling of pollutants.

**Riparian Area:** Land adjacent to watercourses that if naturally vegetated and/or appropriately revegetated and appropriately sized, limits erosion, reduces flood flows, and/or filters and settles out runoff pollutants, or which performs other functions consistent with the purposes of these regulations.

**Riparian Setback:** Land within the unincorporated areas of the County that is alongside streams, within the area defined by these regulations or township regulations, if any, the use of which is restricted to protect the riparian area and stream from impacts of development.

**Rules And Regulations Governing the Installation of Water and Sewerage Improvements:** Procedures and policies adopted by the Cuyahoga County Board of County Commissioners.

**Runoff:** The portion of rainfall, melted snow, or irrigation water that flows across the ground surface and is eventually returned to water resources, watercourses, or wetlands.

**Sediment Barrier:** A sediment control device such as a geotextile Silt Fence or a grass Filter Strip, usually capable of controlling only small flow rates. (Straw bale barriers are not acceptable.)

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**Sediment Basin:** A temporary Sediment Pond that releases runoff at a controlled rate. It is designed to slowly release runoff, detaining it long enough to allow most of the sediment to settle out of the water. The outlet structure is usually a designed pipe riser and barrel. The entire structure is removed after construction. Permanent storm water detention structures can be modified to function as temporary Sediment Basins.

**Sediment Control:** The limiting of sediment being transported by controlling erosion or detaining sediment-laden water and, allowing the sediment to settle out.

**Sediment Pollution:** A failure to use management or conservation practices to control wind or water erosion of the soil and to minimize the degradation of water resources by soil sediment in conjunction with land grading, excavating, filling, or other earth disturbing activities on land used or being developed for commercial, industrial, residential, or other purposes.

**Sediment Settling Pond:** A temporary Sediment Pond that releases runoff at a controlled rate. It is designed to slowly release runoff, detaining it long enough to allow most of the sediment to settle out of the water. The outlet structure is usually a designed pipe riser and barrel. The entire structure is removed after construction. Permanent storm water detention structures can be modified to function as temporary Sediment Basins.

**Sediment Trap:** A temporary sediment-settling pond having a simple spillway outlet structure stabilized with geotextile and riprap.

**Sediment:** Solid material, both mineral and organic, that is in suspension, is being transported, or has been moved from its site of origin by wind, water, gravity or ice, and has come to rest on the earth's surface either on dry land or in a body of water.

**Sensitive Area:** An area or water resource that requires special management because of its susceptibility to sediment pollution, or because of its importance to the well-being of the surrounding communities, region, or the state and includes, but is not limited to, the following:

- A. Ponds, wetlands or small lakes with less than five acres of surface area;
- B. Small streams with gradients less than ten feet per mile with average annual flows of less than 3.5 feet per second containing sand or gravel bottoms.
- C. Drainage areas of a locally or Ohio designated Scenic River.
- D. Riparian and wetland areas.

**Settling Pond:** A runoff detention structure, such as a Sediment Basin or Sediment Trap, which detains sediment-laden runoff, allowing sediment to settle out.

**Sheet Flow:** Water runoff in a thin uniform layer or rills and which is of small enough quantity to be treated by sediment barriers.

**Slip:** A landslide as defined under "Landslides."

**Sloughing:** A slip or downward movement of an extended layer of soil resulting from the undermining action of water or the earth disturbing activity of man.

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**Soil Conservation Service, USDA:** The federal agency now titled the “Natural Resources Conservation Service,” which is an agency of the United States Department of Agriculture.

**Soil Erosion And Sediment Control Practices:** Conservation measures used to control sediment pollution and including structural practices, vegetative practices and management techniques.

**Soil Stabilization:** Vegetative or structural soil cover that prevents exposed soil from eroding, and includes permanent and temporary seeding, mulch, sod, and/or pavement.

**Soil Survey:** The official soil survey produced by the Natural Resources Conservation Service, USDA in cooperation with the Division of Soil and Water Conservation, ODNR and the Cuyahoga County Board of Commissioners.

**Soil:** Unconsolidated erodible earth material consisting of minerals and/or organics.

**Start of Construction:** The first earth disturbing activity associated with a development, including but not limited to land preparation such as clearing, grading, and filling; installation of improvements, excavation for basements, footings, piers, or foundations, and erection of temporary forms.

**Storm Water Control Structure:** Practice used to control accelerated storm water runoff from development areas.

**Storm Water Conveyance System:** All storm sewers, channels, streams, ponds, and lakes that are used for conveying concentrated storm water runoff, or for storing storm water runoff.

**Storm Water Pollution Prevention Plan (SWP3):** The plan required by Ohio EPA to meet the requirements of its National Pollutant Discharge Elimination System (NPDES) Permit program for construction activities.

**Storm Water Runoff:** Surface water runoff which converges and flows primarily through water conveyance features such as swales, gullies, waterways, channels or storm sewers, and which exceeds the maximum specified flow rates of filters or perimeter controls intended to control sheet flow.

**Stream:** A body of water running or flowing on the earth's surface, or a channel with a defined bed and banks in which such flow occurs. Flow may be seasonally intermittent.

**Unstable Soil:** A portion of land surface or area which is prone to slipping, sloughing or landslides, or is identified by Natural Resources Conservation Service methodology as having a low soil strength.

**USEPA:** The United States Environmental Protection Agency.

**Wastewater:** Any water that is contaminated with gasoline, fuel oil, hydrocarbon based chemicals, paint, paint washing liquids or other paint wastes, sanitary wastes, or any other Ohio EPA regulated contaminants.

**Water Resources:** All streams, lakes, ponds, wetlands, water courses, waterways, drainage systems, and all other bodies or accumulations of surface water, either natural or artificial, which are situated wholly or partly within, or border upon this state, or are within its jurisdiction, except those private waters which do not combine or affect a junction with natural surface waters.

**Watercourse:** Any natural, perennial, or intermittent channel, stream, river or brook.

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**Water Management Permit:** A permit issued by the County Engineer that indicates a Comprehensive Storm Water Management Plan has been approved for the development site.

**Wetland Setback:** Land within the unincorporated areas of the County that is contiguous to a wetland and within the area defined by these regulations or township regulations, if any, the use of which is restricted to protect the wetland from impacts of development. **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.

**Winter:** October 1<sup>st</sup> to April 1<sup>st</sup> of each year.

## **CHAPTER 203. ADMINISTRATION AND ENFORCEMENT**

### **Section 203.1. Administration**

These WMSC Regulations shall be administered by the Cuyahoga County Engineer and his or her employees as the duly authorized agent of the Cuyahoga County Board of County Commissioners. The County Engineer shall be the administrator and shall interpret and enforce these regulations and issue such notices and orders as may be necessary.

### **Section 203.2. Consultations**

In implementing these regulations the County Engineer or other County officials may consult with the Cuyahoga SWCD, local, state and federal agencies and other technical experts as it deems necessary. Any costs associated with such consultations may be assessed to the applicant or his or her designated representative.

### **Section 203.3. Enforcement and Violation**

A representative of the Cuyahoga County Engineer's Office may, upon identification to the owner or person in charge, enter any land upon obtaining agreement with the owner, tenant, or manager of the land in order to determine whether there is compliance with these WMSC regulations. If the representative is unable to obtain such an agreement, the representative may apply for, and a judge of the Cuyahoga County Court of Common Pleas may issue, an appropriate inspection warrant as necessary to achieve the purposes of ORC 307.79 and these regulations.

- A. If the Cuyahoga County Engineer's Office determines that a violation of these Regulations exists, the County Engineer may issue an immediate stop work order if the violator failed to obtain any federal, state, or local permit necessary for sediment and erosion control, earth movement, clearing, or cut and fill activity.
- B. In addition, if the Cuyahoga County Engineer's Office determines such a rule violation exists, regardless of whether or not the violator has obtained the proper permits, the County Engineer may authorize the issuance of a notice of violation.
  - 1. If, after a period of not less than thirty (30) days has elapsed following the issuance of the notice of violation, the violation continues, the Cuyahoga County Engineer's Office shall issue a second notice of violation.
  - 2. If, after a period of not less than fifteen (15) days has elapsed following the issuance of the second notice of violation, the violation continues, the Cuyahoga County Engineer's Office may issue a stop work order after first obtaining the written approval of the Cuyahoga County Prosecuting Attorney if, in the opinion of the prosecuting attorney, the violation is egregious.
- C. Once a stop work order is issued, the Cuyahoga County Engineer's Office shall request, in writing, the Cuyahoga County Prosecuting Attorney to seek an injunction or other appropriate relief in the court of common pleas to abate excessive erosion or sedimentation and secure compliance with the rules adopted under this section. If the prosecuting attorney seeks an injunction or other appropriate relief, then, in granting relief, the court of common pleas may

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order the construction of sediment control improvements or implementation of other control measures and may assess a civil fine of not less than one hundred or more than five hundred dollars. Each day of violation of a rule or stop work order issued under this section shall be considered a separate violation subject to a civil fine.

- D. The person to whom a stop work order is issued under this section may appeal the order to the Cuyahoga County Court of Common Pleas, seeking any equitable or other appropriate relief from that order.
- E. No person shall violate any rule adopted or order issued under this section. Notwithstanding sections A and B above, if the Cuyahoga County Engineer's Office determines that a violation of any rule adopted or administrative order issued under this section exists, the County Engineer may request, in writing, the Cuyahoga County prosecuting attorney to seek an injunction or other appropriate relief in the County court of common pleas to abate excessive erosion or sedimentation and secure compliance with the rules or order.
  - 1. In granting relief, the court of common pleas may order the construction of sediment control improvements or implementation of other control measures and
  - 2. May assess a civil fine of not less than one hundred or more than five hundred dollars.
  - 3. Each day of violation of a rule adopted or administrative order issued under this section shall be considered a separate violation subject to a civil fine.

### **Section 203.4. Amendments**

Whenever the public necessity, convenience, general welfare, or good water management practice requires, the Cuyahoga County Board of Commissioners may amend, change, or supplement these regulations in the procedure as specified in Section 307.79 of the Ohio Revised Code.

## **CHAPTER 204. PROCEDURES FOR COMPREHENSIVE STORM WATER MANAGEMENT PLAN REVIEW**

### **Section 204.1. Purpose**

The purpose of this Chapter is to establish the procedures that shall be followed for the application, review, and approval of Comprehensive Storm Water Management Plans and the issuance of Water Management Permits.

### **Section 204.2. Comprehensive Storm Water Management Plan Required**

A **Comprehensive Storm Water Management Plan (CSWMP)** for the entire development site shall be submitted in accordance with the regulations set forth in this Chapter. A CSWMP shall include both a Construction Site Conservation Plan prepared in compliance with Chapter 205 and a Post-Construction Water Quality Plan prepared in compliance with Chapter 206, which shall be titled and numbered in one consecutive sequence. It is anticipated that preparation of a Comprehensive Storm Water Management Plan in compliance with these regulations will, at a minimum, also meet the requirements for a Storm Water Pollution Prevention Plan (SWP3) required by Ohio EPA as part of the NPDES Storm Water Permit for General Construction.

### **Section 204.3. Relationship to the County Subdivision Regulations**

- A. Preliminary Layout of Subdivision. At the time of preliminary plan application to the Cuyahoga County Planning Commission for subdivision review, the preliminary plans shall indicate the following existing and planned features: streams, water bodies, wetlands, proposed riparian and wetland setback areas, proposed permanent BMPs and proposed storm water management detention and retention basins.
- B. Each storm water management detention basin and retention basin should be located entirely on one lot.
- C. Once a Preliminary Plan has been approved by the County Planning Commission for the proposed subdivision, the applicant shall prepare and submit a Comprehensive Storm Water Management Plan to the County Engineer.

### **Section 204.4. Prior Review By Cuyahoga Soil and Water Conservation District**

The application shall include a letter or report from the Cuyahoga SWCD that states that the Comprehensive Storm Water Management Plan, which includes a Construction Site Conservation Plan and a Post-Construction Water Quality Plan, has been reviewed for consistency with Ohio EPA and local regulations, including but not limited to these regulations.

### **Section 204.5. Submission Requirements:**

The plans and data required in Chapters 205 and 206 shall be submitted to the County Engineer in the quantity determined by the County Engineer. Text material shall be submitted on 8.5 by 11 inch paper and drawings on no larger than 24 by 34 inch sized paper.

**Section 204.6. Review and Action**

The County Engineer shall review the plans and may distribute the plans to other agencies for their review and comment, including the review report from the Cuyahoga SWCD, and shall approve or return the plans and accompanying data with comments and recommendations for revisions within thirty (30) working days after receipt of the plans as described above. Plans rejected because of deficiencies shall receive a report stating specific problems. At the time of receipt of a revised plan, the County Engineer shall have thirty (30) days to review the revised plan.

At the time a Comprehensive Storm Water Management Plan is approved, the County Engineer shall issue a Water Management Permit to the applicant.

**Section 204.7. Effect of Approval**

- A. No earth disturbing activity shall begin until all necessary local, county, state and federal permits have been granted to the owner or operator, the required documentation is submitted to the County, and a Water Management Permit is issued.
- B. The permit shall expire two (2) years from the date of issuance unless the permit holder requests an extension before the permit expires.

**Section 204.8. Guarantees for Construction and Maintenance**

All planned temporary and permanent soil erosion, sediment, and other wastes controls and water quality practices required by these regulations for subdivisions shall be considered improvements under the Cuyahoga County Subdivision Regulations. As such, they shall be subject to the guarantee requirements set forth in Section 107.1 through 107.3 of the Cuyahoga County Subdivision Regulations. The guarantee(s) shall ensure that the planned temporary and permanent soil erosion, sediment, and other wastes controls and water quality practices shall be constructed, maintained, and removed in a timely manner, as determined by the County Engineer.

**Section 204.9. Inspections**

The County Engineer and/or the Township shall have the authority to conduct inspections on the site to ensure land disturbing activities are being conducted in compliance with these regulations.

**Section 204.10. Alternative Actions**

Where the County Engineer determines that site constraints exist in a manner that compromises the intent of these regulations to improve the management of storm water runoff as established in these regulations, the use of practical alternatives may be authorized provided such alternatives result in an improvement of water quality and/or a reduction of storm water runoff. Such alternatives shall be in keeping with the intent and likely cost of those measures that would otherwise be required to meet the objectives of these regulations. 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. Payment in lieu of on-site construction of storm water management practices in an amount specified by the County Engineer. The funds collected shall be used by the County to implement storm water management practices that reduce existing storm water runoff and/or improve the existing water quality.
- B. Implementation of off-site storm water management practices.

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- C. Watershed or stream restoration.
- D. Retrofitting of an existing storm water management practice.
- E. Other practices approved by the County Engineer in keeping with the intent of these regulations..

**Section 204.11. Waiver and Administrative Appeals**

- A. A request for a waiver from the requirements of these regulations, or an appeal from the denial by the Cuyahoga County Engineer of a permit required under these regulations, may be made by an applicant in writing to the County Planning Commission.
  - 1. An appeal from a denial of a permit shall be made within 10 business days from the date the denial is issued.
  - 2. The County Planning Commission may grant a waiver from these regulations, and it may reverse a denial of a permit by the County Engineer when, in its judgment, special factors warrant such action.
  - 3. The County Planning Commission may consult with and request recommendations from such experts and governmental agencies is deems necessary when considering a request for waiver or an appeal.
- B. Any final order, adjudication, or decision of the Cuyahoga County Planning Commission can be appealed to the Court of Common Pleas pursuant to Chapters 2505 and 2506 of the Ohio Revised Code.

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## **CHAPTER 205. CONSTRUCTION SITE EROSION AND WATER RUNOFF REQUIREMENTS**

### **Section 205.1. Purpose**

This Chapter intends, but is not limited, to:

- A. Allow development while minimizing increases in downstream flooding, erosion, and sedimentation.
- B. Reduce damage to receiving water resources and drainage systems that could be caused by new development or redevelopment activities.
- C. Control storm water runoff resulting from earth disturbing activities.
- D. Assure that development site owners control the volume and rate of storm water runoff originating from their property so that surface water and ground water are protected, soil erosion is controlled, and flooding potential is not increased.
- E. Preserve to the maximum extent practicable the natural drainage characteristics of the building site and minimize the need to construct, repair, and replace enclosed storm drain systems.
- F. Preserve to the maximum extent practicable natural infiltration and groundwater recharge, and maintain subsurface flow that replenishes water resources, wetlands, and wells.
- G. Assure that storm water controls are incorporated into site planning and design at the earliest possible stage.
- H. Prevent unnecessary stripping of vegetation and loss of soil, especially adjacent to water resources and wetlands.
- I. Reduce the need for costly maintenance and repairs to roads, embankments, sewage systems, ditches, water resources, wetlands, and storm water management practices that are the result of inadequate soil erosion, sediment, storm water and surface drainage control.
- J. Reduce the long-term expense of remedial projects needed to address problems caused by inadequate storm water, erosion and sediment control.
- K. Require the construction of storm water management practices that serve multiple purposes including flood control, soil erosion and sediment control, and require water quality protection; and encourage such practices that promote recreation and habitat preservation.
- L. Ensure that all storm water management, soil erosion and sediment control practices are properly designed, constructed, and maintained.

**Section 205.2. Construction Site Conservation Plan**

In order to control storm water damage and sediment pollution of water resources, wetlands, riparian areas, other natural areas, and public and private lands, the owner of each development area shall be responsible for developing a Construction Site Conservation Plan. This plan shall address storm water management (volume and peak rate of runoff), soil erosion, sediment and other wastes control. This plan shall contain a description of controls appropriate for each construction operation covered by these regulations, and the operator shall implement the planned controls in a timely manner. The plans and 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. The plans shall make use of the practices that preserve the natural conditions of the development area existing at the time these regulations were adopted to the maximum extent practicable.

**Section 205.3. Construction Site Conservation Plan Requirements**

All subdivisions are subject to these regulations and shall follow all of the requirements for a construction site conservation plan set forth in these regulations.

- A. Description of the Plan of Construction: The following information shall be included in the Construction Site Conservation Plan:
1. Site Description:
    - a. A description of the prior land uses of the site.
    - b. A description of the nature and type of construction activity (e.g., low density residential, shopping mall, industrial subdivision).
    - c. A description of the 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).
    - d. An estimate of the impervious area and percent imperviousness created by the construction activity.
    - e. The types of soils within, or affected by, the development area, and the location of all highly erodible or unstable soils as determined by the most current edition of the soil survey of the county, by the Natural Resources Conservation Service (NRCS),
    - f. An onsite, detailed Soils Engineering Report if required by the County Engineer.
    - g. The 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.
  2. A vicinity sketch locating:
    - a. The larger common plan of subdivision
    - b. The proposed subdivision area
    - c. All pertinent surrounding natural features within 200 feet of the development site including, but not limited to:
      - (1) Water resources such as wetlands, springs, lakes, ponds, rivers and streams (including intermittent streams with a defined bed and bank)

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- (2) Conservation Easements
      - (3) Other sensitive natural resources
      - (4) The sensitive areas receiving runoff from the development
    - d. All off-site borrow or spoil areas
    - e. All off-site utility installation areas that are related to the planned project
  3. The existing and proposed topography shown in the appropriate contour intervals as approved by the County Engineer.
  4. 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 subdivision.
  5. Existing and proposed watershed boundary lines, direction of flow and watershed acreage.
  6. 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.
  7. Long-term maintenance requirements and schedules of all BMPs for both the construction and post-construction phases of the development.
  8. Long-term maintenance inspection schedules.
  9. The person or entity financially responsible for conducting the inspections of, and the maintenance of, permanent storm water conveyance and storage structures and all other conservation practices.
  10. The method of ensuring that funding shall be available to conduct the long-term maintenance and inspections of all permanent storm water, soil erosion and sediment control and water quality practices.
  11. The location of any existing or planned riparian and/or wetland setback areas on the property.
  12. The plan shall clearly describe, for each major construction activity, the appropriate BMPs and the general timing (or sequence) during the construction process of when the measures shall be implemented; and, who (which contractor) shall be responsible for implementation (e.g., Contractor A shall clear, grub and install perimeter controls and Contractor B shall maintain perimeter controls until final stabilization; Contractor C shall conduct and document the scheduled inspections.)
  13. Location and description of any storm water discharges associated with dedicated asphalt and concrete plants covered by this regulation and the Best Management Practices to address pollutants in these storm water discharges.
- B. Construction Site Conservation Plan Elements: The Construction Site Conservation Plan shall include, at a minimum, the following information:
1. A map showing the location of:
    - a. The limits of earth disturbing activity including excavations, filling, grading or clearing.
    - b. Drainage patterns during major phases of construction.

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- c. The location of each proposed soil erosion and sediment control BMP, including:
    - (1) Permanent soil erosion control practices to be left in place after construction operations have been completed (e.g. level spreaders, permanent erosion control matting, gabions, rock lined channels),
    - (2) Areas likely to require temporary stabilization during the course of site development,
    - (3) Designated construction entrances where vehicles shall access the construction site,
    - (4) In-stream activities including stream crossings,
    - (5) Areas designated for the storage or disposal of solid, sanitary and toxic wastes,
    - (6) Dumpsters,
    - (7) Cement truck washout,
    - (8) Fuel tanks,
    - (9) BMPs that divert runoff away from disturbed areas and steep slopes including rock check dams, pipe slope drains, diversions to direct flow away from exposed soils, and protective grading practices,
    - (10) Sediment settling ponds drawn to scale.
  - d. Existing and proposed locations of buildings, roads, parking facilities and utilities.
  - e. Boundaries of wetlands and stream channels the owner intends to fill or relocate and identifying those wetlands and stream channels that the owner intends to seek approval from the US Army Corps of Engineers and/or Ohio EPA to fill or relocate.
2. A list of soil erosion and sediment control BMPs being used and the standards and specifications, including detailed drawings, for each BMPs. Each BMP used shall meet the standards and specifications in the current edition of the Ohio Rain Water and Land Development manual. This list shall include:
- a. Methods of controlling the flow of runoff from disturbed areas so as to prevent or minimize erosion.
  - b. Identification of the Structural Practices to be used to control erosion and trap sediment from a site remaining disturbed for more than 14 days.
    - (1) A description shall be included of how each selected control shall store runoff so as to let sediments settle out and/or divert flows away from exposed soils or act to limit runoff from exposed areas.
    - (2) A description shall be included of the size, detail drawings, maintenance requirements and design calculations of each selected control.
  - c. The type and amount of plant seed, live plants, fertilizer, agricultural ground limestone and mulch to be used. Specification of soil testing requirements for fertility and lime requirements shall be included. Specification for the use of perennial grass seed shall also be included.

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- d. Settling ponds shall be identified with basic dimensions and the calculations for size and volume.
  - e. Detailed drawings and installation requirements of all other structural control BMPs.
  - f. Any other soil erosion and sediment control related BMPs and items that are required by the County Engineer.
3. For developments where the overall plan does not call for centralized sediment control capable of controlling multiple individual lots, a detail drawing of a project specific typical individual lot showing standard individual lot soil erosion and sediment control practices and the sequence and timing of BMP installation for the individual lots. This does not remove or eliminate the responsibility to designate and install specific soil erosion and sediment control practices for the storm water discharges.
  4. The scheduling, phasing, and coordination of construction operations and erosion and sediment control BMPs, including vegetative plantings and mulch.
- C. **Storm Water Management Practices:** The Construction Site Conservation Plan shall include a description of the Storm Water Management (SWM) practices to be used on the site, and each SWM practice used shall meet the standards and specifications in the current edition of the Ohio *Rain Water and Land Development* manual. The SWM element of the Plan shall include, at a minimum, the following:
1. A map showing the location, drawn to scale, of permanent SWM conveyance, detention and retention structures, other SWM control structures and the SWM easements.
  2. A general description of the SWM strategy proposed to meet these regulations.
  3. Any other SWM related items required by the County Engineer.

### **Section 205.4. Easements**

Future access to floodplains, flood control facilities, runoff drainage ditches and channels, runoff storage facilities, storm sewers and other drainage ways and structures regulated by these Regulations shall be secured by means of easements.

- A. Access easements shall be recorded in the name of the party responsible for maintenance such as the homeowners association, condominium association or other owners association, and the Township and the County.
- B. Such easements shall encompass the control facility it is to serve and shall have a width around the perimeter of the facility of not less than twenty-five (25) feet. Access easements of this type shall be provided on one (1) side of the flood control or storm drainage ditch, channel, or similar type facility, unless specifically stated otherwise below.
- 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.

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- E. Easements for the emergency flow ways shall be a minimum of twenty-five (25) feet in width, or larger if required by the County Engineer.
- 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.
- H. An access easement having a minimum width of twenty (20) feet shall also be provided that extends from the easement around the control facility to the nearest public or private street.
- I. Easements may be located on individually subdivided lots.

### **Section 205.5. Maintenance and Maintenance Responsibility**

Any portion of the permanent drainage and soil erosion systems, including on-site and off-site storage facilities that are constructed by the owner, shall be continuously maintained into perpetuity.

- A. Maintenance plans shall be provided by the permittee to the County Engineer, Township and the post-construction operator of the BMP (including any applicable homeowner association, condominium association or other type of owners association) upon completion of construction activities and prior to the County Engineer giving final approval for the completed construction.
- B. Single Family and Multi-family Residential Developments: A homeowners association condominium association or other type of owners 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 the Township Board of Trustees.
- C. Apartments, Commercial and Industrial Developments: The plans and plat shall clearly state that the owner of the property shall be continuously responsible for post-construction maintenance and inspections into perpetuity unless such maintenance and inspections become officially accepted by the Township Board of Trustees.
- D. Maintenance Design: All temporary and permanent soil erosion and sediment control practices shall be designed and constructed to minimize maintenance requirements. 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, shall be inspected and maintained into perpetuity by the responsible party designated in the plans. Maintenance shall be conducted throughout the year to ensure that the facilities are properly operational.
- E. Perpetual Maintenance Inspections: The responsible party shall conduct one (1) inspection each year of each Best Management Practice (BMP) constructed on the site in compliance with the Township's Construction Site Storm Water Control Regulations & Post Construction Storm Water Management in New Development and Redevelopment Regulations and shall prepare a

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written report detailing the findings of the inspection. The written report shall be submitted to the Township by May 1 of each year after the BMP has been completed. A copy of the annual written report submitted to the Township shall also be submitted to the Cuyahoga County Engineer.

**Section 205.6. Minimum Standards**

In order to control sediment 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. The plan shall include measures that control the flow of runoff from disturbed areas so as to prevent soil erosion from occurring.
- B. Structural Practices: Structural practices shall be used to control erosion and trap sediment from areas remaining disturbed for more than 14 days.
- C. Sediment Barriers: Sheet flow runoff from denuded areas shall be intercepted by Silt Fence or Diversions to protect adjacent properties and water resources from sediment. Where intended to provide sediment control, Silt Fence shall be placed on a level contour. The relationship between the maximum drainage areas to Silt Fence for a particular slope is shown in the table below.

**Table 1: Silt Fence Applicability**

Maximum drainage area (in acres) to 100 linear feet of Silt Fence	Range of slope for a particular drainage area (in percent)
0.5	< 2%
0.25	≥ 2% but < 20%
0.125	≥ 20% but < 50%

This does not preclude the use of other sediment barriers designed to control sheet flow runoff. The total runoff flow treated by a sediment barrier shall not exceed the design capacity for that sediment barrier. Straw Bale Barriers are not acceptable.

- D. Storm Water Diversion Practices: Storm water diversion practices shall be used to keep runoff away from disturbed areas and steep slopes where practicable. Such practices, which include Swales, Dikes or Berms, Pipe Slope Drains and Diversions, may receive storm water runoff from areas up to ten (10) acres. Storm water diversion practices alone are not considered a sediment control practice unless those are used in conjunction with a sediment settling pond.
- E. All sediment control practices shall be capable of ponding runoff in order to be considered functional.
- F. Clearing and Grubbing: Clearing and grubbing shall be done in two (2) or more phases. The first phase shall include only those locations necessary to install the perimeter soil erosion, sediment and storm water control BMPs. After the perimeter controls are in place and functioning, the remaining phase(s) of clearing and grubbing may continue.
- G. Timing of Sediment Trapping Practices: Sediment control practices shall be functional throughout all phases of up slope earth disturbing activity. Settling facilities, perimeter controls and other practices intended to trap sediment shall be implemented prior to grading and within seven (7) days from the start of grubbing. They shall continue to function until the up slope

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development area is permanently restabilized. As construction progresses and the topography is altered, appropriate controls shall be constructed or existing controls altered to address the changing drainage patterns.

H. **Stabilization of Denuded Areas:** Disturbed areas shall be stabilized as specified in the tables below, or according to the Ohio EPA NPDES Storm Water Permit Rules, whichever is most restrictive:

1. Permanent Soil Stabilization – see Table 2

**Table 2: Permanent Stabilization**

<b>Area requiring permanent stabilization</b>	<b>Time frame to apply erosion controls</b>
Any areas that shall lie dormant for one (1) year or more	Within seven (7) days of the most recent disturbance
Any areas within fifty (50) feet of a stream and at final grade	Within two (2) days of reaching final grade
Any other areas at final grade	Within seven (7) days of reaching final grade within that area

2. Temporary Soil Stabilization. Temporary soil stabilization shall be achieved in the time frame noted in Table 3. This shall be accomplished by seeding with fast germinating and fast growing perennial grasses.

**Table 3: Temporary Stabilization**

<b>Area requiring temporary stabilization</b>	<b>Time frame to apply erosion controls</b>
Any disturbed areas within 50 feet of a stream and not at final grade	Within two days of the most recent disturbance if the area shall remain idle for more than 21 days
For all construction activities, any disturbed areas that shall be dormant for more than 21 days but less than one year, and not within 50 feet of a stream	Within seven days of the most recent disturbance within the area For residential subdivisions, disturbed areas shall be stabilized at least seven days prior to transfer of NPDES permit coverage for the individual lot(s). Proof of permit coverage transfer from Ohio EPA shall be submitted to the County Engineer and Township. The County Engineer and/or Township shall then inspect the lot to ensure that the Temporary Seeding has been done.
Disturbed areas that shall be idle over winter	Prior to the onset of winter weather

3. Where vegetative stabilization techniques may cause structural instability or are otherwise unobtainable, alternative stabilization techniques shall be employed.

I. **Sediment Settling Ponds:** Storm water runoff that exceeds the design capacity of sediment barriers and concentrated storm water flows shall pass through a sediment settling facility.

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1. Where storm sewer drainage areas include 10 or more acres disturbed at one time, a temporary (or permanent) sediment settling pond shall be provided until final stabilization of the site. In single-family residential construction, final stabilization is after the houses are built and permanent landscaping is done.
  - a. Alternative equivalent controls may be used if the owner can show, in writing, that the Ohio EPA approved the use of the alternatives in the (Ohio EPA NPDES Permit for Construction Activity) Storm Water Pollution Prevention Plan (SWP3) for the site.
  - b. It is recommended that for drainage locations of less than 10 acres, smaller sediment settling basins and/or Sediment Traps be used.
2. Each facility's storage capacity shall be no less than sixty-seven (67) cubic yards per acre of total contributing drainage area. The storage volume shall be measured from the bottom of the basin to the top of the primary (principal) spillway.
3. Permanent storm water management ponds that are designed to trap sediment during construction shall be designed to provide for a slow release of sediment-laden water. The draw down time shall meet the criteria in the Ohio Rainwater and Land Development Manual, the most recent edition.
4. The design configuration between inlet(s) and the outlet of settling ponds shall provide at least two units of length for each one unit of width (> 2:1 length to width ratio).
5. The depth of the sediment settling pond shall be less than or equal to five (5) feet.
6. Sediment shall be removed from the sediment settling ponds when the design capacity has been reduced by 40% and before the maintenance guarantee is released.
7. Public safety, especially as it relates to children, shall be considered in the design. Alternative sediment controls shall be used where site limitations would preclude a safe design.
8. Temporary sediment settling ponds shall not be constructed in any permanent or intermittent stream channel.

### J. Storm Sewer Inlet Protection:

1. All storm sewer inlets that accept water runoff from the development area shall be protected so that sediment-laden water shall not enter the storm sewer, unless the storm drain system drains to a Sediment Settling Pond and is exempted in writing by the County Engineer. In phased subdivisions, the storm sewer protection shall be maintained until all up slope areas reach final stabilization, as determined by the County and Township.
2. At the end of this period, the site owner shall hydraulically clean the storm sewers to the satisfaction of the County and Township. All sediments shall be removed from the system and shall not be flushed downstream.

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- K. Storm Sewer & Other Drainage Outlets: All storm sewers, footer drains, roof gutter drains and all other drains shall be outletted at the bottom of the slope. The slope below the outlet shall be able to control the water being drained through the storm sewer or other drains without causing erosion of the stream or channel banks or channel bottom or other areas that the water is outletted on.
- L. Working Near, Or Crossing Streams and Wetlands:
1. Land clearing and construction vehicles shall avoid water resources, wetlands, riparian areas, and their setbacks. If construction vehicles shall cross these areas during land clearing, grubbing or construction, an approved temporary crossing that complies with the standards and specifications in the current edition of the Ohio Rain Water and Land Development manual shall be constructed. Streams, including intermittent streams with a defined bed and banks, shall be restabilized immediately after in-channel work is completed, interrupted, or stopped. Erodible materials shall not be used in making stream crossings.
  2. No soil, rock, debris, or any other material shall be dumped or placed into a water resource or into such proximity that it may slough, slip, or erode into a water resource unless such dumping or placing is authorized by the township or by the county and, when applicable, the US Army Corps Of Engineers and Ohio EPA, for such purposes as, but not limited to, constructing bridges, culverts, and erosion or sediment control structures.
  3. If construction activities disturb areas adjacent to streams, structural practices shall be designed and implemented on site to protect the adjacent streams from the impacts of sediment runoff.
  4. No temporary or permanent sediment controls shall be constructed in a stream channel.
- M. Unstable Soils:
1. Unstable soils shall be as determined by the Cuyahoga County Soil Survey or by a detailed soils report.
  2. The County Engineer may require detailed soil reports when deemed necessary.
  3. Unstable soils prone to slipping or land sliding shall not be graded, excavated, filled or have loads imposed upon them unless the work is performed in accordance with a qualified professional engineer's recommendations to correct, eliminate, or adequately address the problems.
- N. Cut And Fill Slopes: Cut and fill slopes shall be designed and constructed in a manner that shall minimize erosion and slippage. Consideration shall be given to the length and steepness of the slope, soil type, up slope drainage area, groundwater conditions and slope stabilization. The final unreinforced soil slopes shall have a minimum horizontal to vertical ratio of 2:1 (the horizontal shall be two (2) times the vertical), and preferably 3:1.
- O. Stabilization of Outfalls and Channels: Outfalls and constructed or modified channels shall be designed and constructed to withstand the expected velocity of flow from the planned post-

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development frequency storm without eroding. The planned post-construction velocity and flow shall include the entire contributing watershed.

- P. Establishment of Permanent Vegetation: A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized. Permanent vegetation shall not be considered established until the ground cover has 80% vegetative density over the entire disturbed area and provides adequate cover, and is mature enough to satisfactorily control soil erosion and survive adverse weather conditions.
- Q. Disposition of Temporary Practices: All temporary soil erosion and sediment control practices shall be disposed of immediately after final site stabilization is achieved or after the temporary practices are no longer needed, unless otherwise required by the County Engineer. Trapped sediment shall be permanently stabilized to prevent further erosion. The Construction Maintenance Guarantee shall not be released 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 removed, unless allowed by the County Engineer to remain in place and has been stabilized.
- R. Underground Utility Construction: The construction of underground utility lines, pipes, etc. shall be subject to the following criteria:
1. Trenches shall remain open for no more than five days.
  2. There shall be no turbid discharges to surface waters resulting from dewatering activities. If trench or ground water contains sediment, it shall pass through a sediment settling pond or other equally effective sediment control device, prior to being discharged from the construction site or to waters of the state.
  3. When discharging clean ground water care shall be taken to ensure that it does not become pollutant laden by crossing over disturbed soils or other pollutant sources.
- S. Storm Water Basins:
1. Pool Geometry: The minimum length-to-width ratio for the pond is 3:1 (the length shall be *at least* 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 shall 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 storm water management and water quality basin drains shall have adjustable gate valves. Valves shall be located inside the riser at a point where they shall 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.

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5. Principal Spillway: Each principal spillway shall be designed in accordance with the NRCS standards and specifications for the office serving Cuyahoga County. Each principal spillway shall have the capacity to pass the 100-year design storm flow. 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 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 Cuyahoga County. Emergency spillways shall have a 100-year design storm capacity unless exempted in writing by the County Engineer.
7. Embankments: Each dam embankment shall be designed in accordance with the NRCS standards and specifications for the office serving Cuyahoga County. 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 shall 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.
    - (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 shall be designed and managed to eliminate drop-offs and other hazards.
    - (6) Side slopes getting to the pond shall not exceed 3:1 and shall terminate on a safety bench.

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- (7) Soil erosion and sediment control practices used to satisfy these standards shall meet the standards and specifications in the current edition of the Ohio *Rainwater and Land Development* manual, NRCS Field Office Technical Guide for Cuyahoga County or the Ohio EPA, which ever is most stringent.
9. A storm water basin should be entirely located on one permanent parcel.

### **Section 205.7. Inspections**

- A. If inspections or other information indicates a control has been used inappropriately or incorrectly or it has failed, it shall be replaced or modified for the site conditions.
- B. The owner of the development area shall have the site inspected for soil erosion, sediment control and other environmental concerns every seven (7) calendar days, and within twenty-four (24) hours of a 0.5-inch or greater rainfall event until the County Engineer certifies the site as being stable. The County Engineer certification does not relieve the permittee from meeting the Ohio EPA NPDES inspection requirements.
- C. The owner, or his designated representative, shall keep a written log of each inspection and any subsequent improvements to the soil erosion, sediment control or other environmental controls. The inspections shall include the date of the inspection, the name of the inspector, weather conditions, and the actions needed to correct the identified problems.
- D. The inspection log shall include the date and actions taken to correct problems noted in past inspection logs.
- E. If the construction site is subject to Ohio EPA's National Pollutant Discharge Elimination System (NPDES) permit for construction activity, a copy of all of the required inspection sheets shall be submitted to the County Engineer within three (3) working days of the date that the inspection was conducted.
- F. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system.
- G. Erosion and sediment controls identified in the Storm Water Pollution Prevention Plan shall be observed to ensure that they are operating correctly.
- H. Discharge locations shall be inspected to ascertain whether erosion and sediment control measures are effective in preventing significant impacts to the receiving waters.
- I. Locations where vehicles enter or exit the site shall be inspected for evidence of off-site vehicle tracking.
- J. If the inspection reveals that a control practice is in need of repair or maintenance, with the exception of sediment settling ponds, it shall be repaired or maintained within three (3) days of the inspection. Sediment settling ponds shall be repaired or maintained within ten (10) days of the inspection.
- K. If any inspection reveals that a control practice fails to perform its intended function and that another, more appropriate control practice is required, the Construction Site Conservation Plan shall be amended and the new control practice shall be installed within 10 days of the inspection.

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- L. If the inspection reveals that a control practice has not been implemented in the time required by these regulations it shall be installed within ten (10) days from the date of inspection.
- M. If the inspection reveals that a planned control practice is not needed, the record shall contain a statement of explanation as to why the control practice is not needed.

**Section 205.8. Site Management**

A. Construction Entrance:

- 1. Measures shall be taken to prevent soil transport onto public roads, or surfaces where runoff is not checked by sediment controls.
- 2. Stone with geotextile construction entrance(s) shall be implemented as required by the County Engineer and the Ohio EPA. These shall be planned and installed according to the requirements in the most recent edition of the Ohio *Rainwater and Land Development* manual.
- 3. Where soil is transported onto a public road surface, the roads shall be cleaned thoroughly at the end of each day, or more frequently, in order to ensure public safety. Soil shall be removed from paved surfaces by shoveling or sweeping. Street washing shall be allowed only after shoveling or sweeping has removed most of the sediment and street sewer inlet protection is properly installed unless end of sewer sediment ponds exist and are properly functioning.
- 4. Erodible material ramps in streets shall not be used to enable equipment to cross curbs. Non-erosive materials (e.g. wood and stone) can be used.

B. Control of Materials and Debris: Site management practices shall be implemented to prevent toxic materials, hazardous materials, or other debris from entering the County's and state's water resources or wetlands. These practices shall include, but are not limited to, the following:

- 1. A covered dumpster shall be made available for the proper disposal of construction site waste materials, garbage, plaster, drywall, grout, gypsum and etc. A second covered dumpster shall be provided for the proper disposal of toxic and hazardous wastes.
- 2. The washing of excess concrete material into a street, catch basin, or other public facility or natural resource shall ***not be permitted***. A designated area for concrete washouts shall be made available and used for all concrete washouts.
- 3. All fuel tanks and drums shall be stored in a marked storage area. A dike shall be constructed around this storage area with a minimum capacity equal to 110% of the volume of the largest container in the storage area. All additional requirements of the local fire authority shall be followed. If the fuel tanks have a self-contained "dike," the plug shall be kept in the "dike" tank at all times.
- 4. Any toxic or hazardous wastes and/or contaminated soils shall be disposed of according to all applicable environmental laws and statutes. Local health districts and Ohio EPA can provide guidance on these issues.

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5. On a site with a prior industrial land use or a site that is contaminated with gasoline, fuel oil, hydrocarbon based chemicals or other Ohio EPA regulated contaminants, the storm water is considered wastewater. A permit from Ohio EPA is required to address these sites.
6. Proper permits shall be obtained for development projects on solid waste landfill sites.
7. Paint, paint washing liquids, excess paints and other paint wastes are considered solid wastes and shall be disposed of in accordance with applicable state regulations. Appropriate handling of these wastes shall occur at the site so as to prevent the discharge of these wastes into surface or ground waters.
  - a. Water based paint washing liquids and small quantities of excess water based paints may be disposed of by flushing down a connected sanitary sewer but shall not be disposed of in an on-lot disposal system.
  - b. All other paints, paint thinners, and paint cleaning materials shall be disposed of in the site's hazardous waste disposal dumpster.
- C. Restroom facilities shall be provided for site workers at all times that workers are present on the site and during all phases of the construction.
- D. All required permits from appropriate federal, state, or local agencies are required to develop land with a previous industrial or commercial use or another use that may have led to soil contamination by a regulated pollutant.
- E. Pre-winter Stabilization: If the development area will be or is planned to remain active through the winter months, the owner of the development area shall hold a Pre-Winter Stabilization Meeting. The meeting shall be held before October 1<sup>st</sup>. The owner shall invite the operator, developer, engineer, contractor, County Engineer, Township and anyone else requested by the County Engineer to the meeting.

### **Section 205.9. General Provisions**

- A. Soil limitations shall be determined by using the current edition of the county soil survey written by the NRCS, USDA.
- B. Methods for controlling increases in storm water runoff peaks and volumes may include, but are not limited to:
  1. Retarding flow velocities by increasing friction; for example, grassed road ditches rather than paved street gutters where practical, discharging roof water to vegetated areas, or grass and rock-lined drainage channels.
  2. Grading and use of grade control structures to provide a level of control in flow paths and stream gradients.
  3. Induced infiltration of increased storm water runoff into soil, where practical; for example, constructing special infiltration areas where soils are suitable, retaining topsoil

for all areas to be vegetated, or providing good infiltration areas with proper emergency overflow facilities.

4. Provisions for detention and retention, for example, permanent retention ponds and lakes, dry detention basins, and subsurface detention tanks.

**Section 205.10. Stream Channel And Floodplain Erosion Design Criteria**

- A. **Runoff Rate:** The peak runoff rate from the development area shall not be greater after development than it was before development. The applicant shall provide calculations proving no increase in the runoff rates from the one (1), two (2), five (5), ten (10), twenty-five (25), fifty (50) and one hundred (100) year storms.
  
- B. **Runoff Volume:** Increases in the runoff volume shall be offset by further restricting runoff rates. Based on the increase in runoff volume, the applicant shall determine the critical storm for the development area. The runoff rate from the critical storm shall be restricted to the one (1) year pre-development storm runoff rate. The critical storm shall be calculated as follows:
  1. Determine the total volume of runoff from a one-year frequency, twenty-four hour storm, occurring on the development area before and after development.
  2. From the volumes in paragraph (1) determine the percent of increase in volume of runoff due to development according to the equation  $(Q \text{ after} / Q \text{ before}) \times 100 - 100$  and, using this percentage, select the critical storm from Table 4:

**Table 4: Critical Storm Selection**

<b>The Percentage Increase In Volume Of Runoff Is:</b>		<b>The 24-Hour “Critical Storm” For Discharge Shall Be</b>
<b>Equal To Or Greater Than</b>	<b>And Less Than</b>	
0	10	1 Year
10	20	2 Years
20	50	5 Years
50	100	10 Years
100	250	25 Years
250	500	50 Years
500	----	100 Years

- C. **Detention Or Retention Basin Exemption For Redevelopment Or For Expansion Of Existing Facilities:**
  1. For any development regulated by these regulations, the construction of a detention or retention basin may not be required for the development if the post-development peak discharge for a 100 year frequency 24 hour storm increases the existing peak discharge by one (1) cubic foot per second or less using the TR-20 method of calculation or other method approved by the County Engineer. The County Engineer can waive this requirement when the County Engineer determines that the existing storm sewers and drainage structures are capable of safely handling the expected increase in flow.
  2. Only one (1) exemption shall be allowed per parcel. Any subsequent expansion shall provide for detention or retention and shall include the previously exempted area.

## **CHAPTER 206. POST-CONSTRUCTION WATER QUALITY RUNOFF REQUIREMENTS**

### **Section 206.1. Purpose**

The intent of the Post Construction Water Quality Runoff regulations 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 shall minimize damage to public and private property and degradation of water resources, and shall promote and maintain the health, safety, and welfare of the residents of the unincorporated areas of the County.
- E. Control storm water runoff resulting from earth 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.

### **Section 206.2. Post-Construction Water Quality 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 Water Quality Plan.

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- A. This plan shall be combined with the Construction Site Conservation Plan that is developed for the site.
- B. This plan shall contain a description of controls appropriate for each construction operation covered by these regulations, and the operator shall 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 County Engineer.
- D. The plan shall make use of the practices that preserve the natural condition of the development area existing at the time these regulations were adopted to the maximum extent practicable (MEP).
- E. To meet the Post-Construction requirements of this regulation, the Post-Construction Water Quality Plan shall contain a description of the Post-Construction Best Management Practices (BMPs) that shall be installed during construction for the site and the rationale for their selection. The rationale shall address the anticipated impacts on the channel and floodplain morphology, hydrology, and water quality.
- F. This plan shall 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. Construction schedule, long-term maintenance requirements and inspection schedules of all BMPs for both the construction and Post-Construction phases of the development, including all permanent vegetative BMPs, shall be identified.
- H. This plan shall 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).
- I. This plan shall 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 shall be available to conduct the long-term maintenance and inspections of all permanent storm water, soil erosion and sediment control and water quality practices shall be identified.
- K. Plans submitted shall be accompanied by a list of all the permits to be obtained from federal, state and local agencies as well as copies of such 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
- L. The Post-Construction Water Quality Plan shall also contain the following information depending on the size of the development sites as well as any additional information required by the County Engineer:

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1. **Development Sites Smaller than Five Acres:** A development site that shall 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 shall disturb five or more acres of land shall identify:
  - a. **Storm Water Issues:** A statement as to how the decreased storm water quality that shall be caused by the planned development project shall be handled.
  - b. **Description of Measures:** A description of the BMPs that shall be installed during the construction process to control pollutants in storm water discharges that shall 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 required by township regulation shall be identified on the plans. They shall 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) Onsite sewage disposal system replacement or conversion to sanitary sewers.
    - (13) Low Impact Development Design.
    - (14) Conservation Development Design.
    - (15) Aquatic benches in Retention Basins and ponds.

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(16) Technical Basis: The plans shall contain a rationale 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 shall disturb less than five (5) acres, but is a part of a larger common plan of development or sale, which shall disturb five (5) or more acres of land shall identify:

- a. Storm Water Detention: The Post-Construction BMP(s) chosen shall 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 shall be sized to treat the water quality volume (WQ<sub>v</sub>) and ensure compliance with Ohio’s Water Quality Standards in OAC Chapter 3745-1. The WQ<sub>v</sub> 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 County Engineer that uses continuous hydrologic simulation and local long-term hourly precipitation records or
- (2) Using the following equation:

$WQ_v = C * P * A / 12$  where: WQ<sub>v</sub> = 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 & 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 shall 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 WQ<sub>v</sub> shall be incorporated into the BMP for sediment storage and/or reduced infiltration capacity. The BMPs shall be designed according to the methodology included in the Ohio Rainwater

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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

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

Best Management Practice	Drain Time of WQv
Infiltration	24 - 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	40 hours
* Provide both a permanent pool and an extended detention volume above the permanent pool, each sized at 0.75 * WQ <sub>v</sub>	

- g. The owner may request approval from the County Engineer 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 vender 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)
  - (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,

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- 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
  - (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.
- 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:
    - (a) Water resources such as wetlands, springs, lakes, ponds, rivers and streams (including intermittent streams with a defined bed and bank)
    - (b) Conservation Easements
    - (c) 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 County 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.

**Section 206.3. Easements**

Future access to all permanent vegetative and/or mechanical post-construction water quality conservation practices (BMPs) and other areas regulated by these Regulations shall be secured by means of easements.

- A. Access easements shall be recorded in the name of the party responsible for maintenance, including when applicable, the homeowners association, condominium association or other owners association.
- B. Such easements shall encompass the control facility it is to serve and shall have a width around the perimeter of the facility of not less than twenty-five (25) feet. 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, unless specifically stated otherwise below.

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- 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 by the County Engineer.
- 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.
- H. An access easement having a minimum width of twenty (20) feet shall also be provided that extends from the easement around the control facility to the nearest public or private street.
- I. Easements may be located on individually subdivided lots.

### **Section 206.4. Maintenance and Maintenance Responsibility**

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, shall be continuously maintained into perpetuity.

- A. Detail drawings and maintenance plans shall be provided for all Post-Construction Best Management Practices (BMPs).
- B. Maintenance plans shall 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 the County Engineer, Township and the post-construction operator of the BMP (including any applicable homeowner association, condominium association or other type of owners association) upon completion of construction activities and prior to the County Engineer giving final approval for the completed construction.
- D. Single-Family and Multi-family Residential Developments: A homeowners association, condominium association or other type of owners 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 responsibility for such maintenance and inspections become officially accepted by the Township Board of Trustees.
- E. Apartments, Commercial and Industrial Developments: The plans and plat shall clearly state that the owner of the property shall be continuously responsible for Post-Construction maintenance

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and inspections into perpetuity unless responsibility for such maintenance and inspections become officially accepted by the Township Board of Trustees.

- 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, shall be inspected and maintained into perpetuity by the responsible party designated in the plans and the requirements of these regulations. Maintenance shall be conducted throughout the year to ensure that the facilities are properly operational.
- G. **Perpetual Maintenance Inspections**: The responsible party shall conduct one (1) inspection each year on each Best Management Practice (BMP) constructed on the site in compliance with the Township's Construction Site Storm Water Control Regulations & Post Construction Storm Water Management in New Development and Redevelopment Regulations and shall prepare a written report detailing the findings of the inspection. The written report shall be given to the Township by May 1<sup>st</sup> of each and every year after the BMP has been completed. One copy of the written report shall be submitted to the Cuyahoga County Engineer's Office annually, concurrently when it is submitted to the Township.

### **Section 206.5. 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 shall 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 shall 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 shall 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.

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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 Cuyahoga 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 Cuyahoga County. Emergency spillways shall have a 100-year design storm capacity unless exempted in writing by the County Engineer.
7. Embankments: Each dam embankment shall be designed in accordance with the NRCS standards and specifications for the office serving Cuyahoga County. 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 shall 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).

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- (5) The contours of the pond shall 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 shall need to be planned, designed, constructed and maintained into perpetuity. Water Quality Basins shall not be constructed in any permanent or intermittent stream channel.