

**COMPREHENSIVE STORMWATER  
MANAGEMENT REGULATIONS**

**INCLUDING**

**EROSION AND SEDIMENT CONTROL  
&  
COMPREHENSIVE STORMWATER  
MANAGEMENT  
&  
RIPARIAN and WETLAND  
SETBACKS**

**OLMSTED TOWNSHIP, OHIO**

**January, 2017**

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# **COMPREHENSIVE STORMWATER MANAGEMENT REGULATIONS**

## **TABLE OF CONTENTS**

### **SECTION 1 - GENERAL PROVISIONS**

1.1	COMPONENTS.....	1
1.2	PURPOSE.....	1
1.3	SCOPE.....	2
1.4	DISCLAIMER OF LIABILITY.....	2
1.5	CONFLICTS, SEVERABILITY, NUISANCES & RESPONSIBILITY.....	2
1.6	COMPLIANCE WITH STATE AND FEDERAL REGULATIONS.....	2
1.7	EFFECTIVE DATE.....	3

### **SECTION 2 – ADMINISTRATION AND ENFORCEMENT**

2.1	APPLICATION PROCEDURES.....	4
2.2	FEEs.....	5
2.3	ENFORCEMENT.....	6
2.4	VIOLATIONS.....	7
2.5	APPEALS.....	7
2.6	PENALTY.....	8

### **SECTION 3 - CONSTRUCTION AND MAINTENANCE GUARANTEE**

3.1	FORM OF GUARANTEE.....	9
3.2	PERFORMANCE GUARANTEE.....	9
3.3	MAINTENANCE GUARANTEE.....	10
3.4	TIME EXTENSION.....	10
3.5	COMPLETION.....	10
3.6	INSPECTION.....	10
3.8	RELEASE.....	10

### **SECTION 4 - EROSION AND SEDIMENT CONTROL**

4.1	PURPOSE AND SCOPE.....	11
4.2	DEVELOPMENT OF STORMWATER POLLUTION PREVENTION PLANS.....	11
4.3	STORMWATER POLLUTION PREVENTION PLAN (SWP3).....	12
4.4	PERFORMANCE STANDARDS.....	16
4.5	ABBREVIATED STORMWATER POLLUTION PREVENTION PLAN (SWP3).....	25

### **SECTION 5 - COMPREHENSIVE STORMWATER MANAGEMENT**

5.1	PURPOSE AND SCOPE.....	27
5.2	EXEMPTED PROJECTS.....	28
5.3	DEVELOPMENT OF COMPREHENSIVE STORMWATER MANAGEMENT PLANS.....	28
5.4	COMPREHENSIVE STORMWATER MANAGEMENT PLAN.....	28
5.5	PERFORMANCE STANDARDS.....	33
5.6	ALTERNATIVE ACTIONS.....	43
5.7	EASEMENTS.....	44
5.8	MAINTENANCE AND FINAL INSPECTION APPROVAL.....	44
5.9	ON-GOING INSPECTIONS.....	45
5.10	INSTALLATION OF WATER QUALITY STORMWATER CONTROL MEASURES.....	45

## **SECTION 6 - RIPARIAN AND WETLAND SETBACK**

6.1	PURPOSE.....	46
6.2	SCOPE.....	46
6.3	DESIGNATED WATERCOURSES AND RIPARIAN SETBACKS.....	46
6.4	PROCEDURE FOR WETLAND SETBACKS.....	47
6.5	SETBACK REQUIREMENTS.....	48
6.6	USES PERMITTED IN RIPARIAN AND WETLAND SETBACKS.....	49
6.7	USES PROHIBITED IN RIPARIAN AND WETLAND SETBACKS.....	50
6.8	NON-CONFORMING STRUCTURES OR USES.....	51

<b>SECTION 7 – DEFINITIONS.....</b>	<b>52</b>
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## **SECTION 1 - GENERAL PROVISIONS**

### **1.1 COMPONENTS**

- 1) The Comprehensive Stormwater Management Regulation shall consist of: EROSION AND SEDIMENT CONTROL, COMPREHENSIVE STORMWATER MANAGEMENT, and RIPARIAN AND WETLAND SETBACKS.

### **1.2 PURPOSE**

- 2) The purpose of this regulation is to establish technically feasible and economically reasonable stormwater management standards to achieve a level of stormwater quality and quantity control; and erosion and sediment control that will minimize damage to property and degradation of water resources and will promote and maintain the health, safety, and welfare of the citizens of Olmsted Township.
- 3) This regulation requires owners who develop or re-develop their property within Olmsted Township to:
  - a) Control stormwater runoff from their property and ensure that all Stormwater Control Measures (SCMs) are properly designed, constructed, and maintained.
  - b) Reduce water quality impacts to receiving water resources that may be caused by new development or redevelopment activities.
  - c) Control the volume, rate, and quality of stormwater runoff originating from their property so that surface water and groundwater are protected and flooding and erosion potential are not increased.
  - d) Minimize the need to construct, repair, and replace subsurface storm drain systems.
  - e) Preserve natural infiltration and ground water recharge, and maintain subsurface flow that replenishes water resources, except in slippage prone soils.
  - f) Incorporate stormwater quality and quantity controls into site planning and design at the earliest possible stage in the development process.
  - g) Reduce the expense of remedial projects needed to address problems caused by inadequate stormwater management.
  - h) Maximize use of SCMs that serve multiple purposes including, but not limited to, flood control, erosion control, fire protection, water quality protection, recreation, and habitat preservation.
  - i) Design sites to minimize the number of stream crossings and the width of associated disturbance in order to minimize Olmsted Township's future expenses related to the maintenance and repair of stream crossings.
  - j) Maintain, promote, and re-establish conditions necessary for naturally occurring stream processes that assimilate pollutants, attenuate flood flows, and provide a healthy water resource.
  - k) Minimize increases in erosion and sedimentation.

### **1.3 SCOPE**

- 1) The Scope of these regulations is defined in Sections 4.1, 5.1 and 6.2.

### **1.4 DISCLAIMER OF LIABILITY**

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

### **1.5 CONFLICTS, SEVERABILITY, NUISANCES & RESPONSIBILITY**

- 1) Where this regulation is in conflict with other provisions of law or ordinance, the most restrictive provisions shall prevail.
- 2) If any clause, section, or provision of this regulation is declared invalid or unconstitutional by a court of competent jurisdiction, the validity of the remainder shall not be affected thereby.
- 3) This regulation shall not be construed as authorizing any person to maintain a nuisance on their property, and compliance with the provisions of this regulation shall not be a defense in any action to abate such a nuisance.
- 4) Failure of Olmsted Township to observe or recognize hazardous or unsightly conditions or to recommend corrective measures shall not relieve the site owner from the responsibility for the condition or damage resulting therefrom, and shall not result in the Township, its officers, employees, or agents being responsible for any condition or damage resulting therefrom.

### **1.6 COMPLIANCE WITH STATE AND FEDERAL REGULATIONS**

- 1) Approvals issued in accordance with this regulation 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. If requirements vary, the most restrictive requirement shall prevail. These permits may include, but are not limited to, those listed below. Applicants are required to show proof of compliance with these state and federal regulations before the Township will issue a building or Zoning permit.
  - a) Ohio EPA NPDES Permits authorizing stormwater discharges associated with construction activity or the most current version thereof: Proof of compliance with these requirements shall be the applicant's Notice of Intent (NOI) number from Ohio EPA, a copy of the Ohio EPA Director's Authorization Letter for the NPDES Permit, or a letter from the site owner certifying and explaining why the NPDES Permit is not applicable.
  - b) Section 401 of the Clean Water Act: Proof of compliance shall be a copy of the Ohio EPA Water Quality Certification application tracking number, public notice, project approval, or a letter from the site owner certifying that a qualified professional has surveyed the site and determined that Section 401 of the Clean Water Act is not applicable. Wetlands, and other waters of the United States, shall be delineated by protocols accepted by the U.S. Army Corps of Engineers at the time an application is made under this regulation.

- c) Ohio EPA Isolated Wetland Permit: Proof of compliance shall be a copy of Ohio EPA's Isolated Wetland Permit application tracking number, public notice, project approval, or a letter from the site owner certifying that a qualified professional has surveyed the site and determined that Ohio EPA's Isolated Wetlands Permit is not applicable. Isolated wetlands shall be delineated by protocols accepted by the U.S. Army Corps of Engineers at the time an application is made under this regulation.
- d) Section 404 of the Clean Water Act: Proof of compliance shall be a copy of the U.S. Army Corps of Engineers Individual Permit application, public notice, or project approval, if an Individual Permit is required for the development project. If an Individual Permit is not required, the site owner shall submit proof of compliance with the U.S. Army Corps of Engineer's Nationwide Permit Program. This shall include one of the following:
  - i) A letter from the site owner certifying that a qualified professional has evaluated the site and determined that Section 404 of the Clean Water Act is not applicable, and provide documentation.
  - ii) A site plan showing that any proposed fill of waters of the United States conforms to the general and special conditions specified in the applicable Nationwide Permit. Wetlands, and other waters of the United States, shall be delineated by protocols accepted by the U.S. Army Corps of Engineers at the time an application is made under this regulation.
- e) Ohio Dam Safety Law: Proof of compliance shall be a copy of the ODNR Division of Water permit application tracking number, a copy of the project approval letter from the ODNR Division of Water, or a letter from the site owner certifying and explaining why the Ohio Dam Safety Law is not applicable.

## **1.7 EFFECTIVE DATE**

- 1) These regulations shall become effective upon passage of the resolution adopting the Comprehensive Stormwater Management Regulations.

## SECTION 2 – ADMINISTRATION AND ENFORCEMENT

### 2.1 APPLICATION PROCEDURES

- 1) **Pre-Application Meeting:** The applicant shall attend a Pre-Application Meeting with the Township to discuss the proposed project, review the requirements of this regulation, identify unique aspects of the project that must be addressed during the review process, and establish a preliminary review and approval schedule.
- 2) **Soil disturbing activities submitting a Stormwater Pollution Prevention Plan (SWP3):** The applicant shall submit two (2) sets of the SWP3 and the applicable fees to the Township and two (2) sets of the SWP3 and the applicable fees to Cuyahoga County as follows:
  - a) For subdivisions: After the approval of the preliminary plans and with submittal of the improvement plans.
  - b) For other construction projects: Before issuance of a zoning and/or building permit by the Township.
  - c) For general clearing projects: Prior to issuance of a zoning and/or building permit by the Township.
- 3) **Soil disturbing activities submitting an abbreviated Stormwater Pollution Prevention Plan (SWP3):** The applicant shall submit two (2) sets of the Abbreviated SWP3 and the applicable fees to the Township and two (2) sets of the Abbreviated SWP3 and the applicable fees to Cuyahoga County as follows:
  - a) For single-family home construction: Before issuance of a zoning and/or building permit by the Township.
  - b) For other construction projects: Before issuance of a zoning and/or building permit by the Township.
  - c) For general clearing projects: Prior to issuance of a zoning and/or building permit by the Township.
- 4) **Preliminary Comprehensive Stormwater Management Plan:** The applicant shall submit two (2) sets of a Preliminary Comprehensive Stormwater Management Plan (Preliminary Plan) and the applicable fees to the Township and two (2) sets of a Preliminary Comprehensive Stormwater Management Plan (Preliminary Plan) and the applicable fees to Cuyahoga County. The Preliminary Plan shall show the proposed property boundaries, setbacks, dedicated open space, public roads, water resources, stormwater control facilities, and easements in sufficient detail and engineering analysis to allow the Township to determine if the site is laid out in a manner that meets the intent of this regulation and if the proposed SCMs are capable of controlling runoff from the site in compliance with this regulation. The applicant shall submit two (2) sets of the Preliminary Plan and applicable fees as follows:
  - a) For subdivisions: In conjunction with the submission of the preliminary subdivision plan.
  - b) For other construction projects: In conjunction with the application for a zoning and/or building permit.

- c) For general clearing projects: In conjunction with the application for a zoning and/or building permit.
- 5) Final Comprehensive Stormwater Management Plan: The applicant shall submit two (2) sets of a Final Comprehensive Stormwater Management Plan (Final Plan) and the applicable fees to the Township and two (2) sets of a Final Comprehensive Stormwater Management Plan (Final Plan) and the applicable fees to Cuyahoga County in conjunction with the submittal of the final plat, improvement plans, or application for a building or zoning permit for the site. The Final Plan shall meet the requirements of Section 4.3 or 4.5 as applicable and Section 5.4 and shall be approved by the Township prior to approval of the final plat and/or before issuance of a zoning permit by the Zoning Inspector or building permit by the Building Inspector.
- 6) Review and Comment: The Township and the Cuyahoga County SWCD shall review the Preliminary and Final Plans submitted, and shall approve or return for revisions with comments and recommendations for revisions. A Preliminary or Final Plan rejected because of deficiencies shall receive a narrative report stating specific problems and the procedures for filing a revised Preliminary or Final Plan.
- 7) Approval Necessary: Land clearing and soil-disturbing activities shall not begin and zoning and/or building permits shall not be issued without:
  - a) An approved Comprehensive Stormwater Management Plan and SWP3 or Abbreviated SWP3.
  - b) Installation of erosion and sediment controls
  - c) Physical marking in the field of protected areas or critical areas, including wetland and riparian areas.
- 8) SWP3 for individual sublots in a subdivision will not be approved unless the larger common plan of development or sale containing the subplot is in compliance with this regulation.
- 9) The developer, engineer and contractor, and other principal parties, shall meet with the Township for a Pre-Construction Meeting no less than seven (7) days prior to soil-disturbing activity at the site to ensure that erosion and sediment control devices are properly installed, limits of disturbance and buffer areas are properly delineated and construction personnel are aware of such devices and areas. Pre-Construction Meetings for Abbreviated SWP3s may be waived at the discretion of the Township.
- 10) Valid for Two Years: Approvals issued in accordance with this regulation shall remain valid for two (2) years from the date of approval.

## 2.2 FEES

- 1) The Comprehensive Stormwater Management Plan review, filing, and inspection fee is part of a complete submittal and is required to be submitted to the Township before the review process begins. The fees to be paid are not associated with any other charges established by the Township.
- 2) The fees listed below are intended to cover the cost of administering this Stormwater Management Program.
  - a) Subdivisions, institutional, and Commercially Zoned Parcels
    - Filing Fee. Non-refundable filing fees shall be paid to the Township when the plans are



submitted.

Plan Checking and Field Inspection Fees. The owner/applicant shall pay the total cost of plan checking and field inspection of the installed facilities.

The guarantee shall not be released unless the provisions of these regulations are complied with and all fees are paid.

b) Residential parcels that are part of a larger development

Filing Fee. Non-refundable filing fees shall be paid to the Township when the topographic site plans are submitted.

Plan Checking and Field Inspection Fees. The owner shall pay the total cost of plan checking and field inspection. The lots will be inspected for compliance with the provisions of these regulations. Occupancy permits will be issued upon compliance with the provisions of these regulations and the zoning code and payment of all fees.

c) Residential parcels that are not part of a larger development

Filing Fee. Non-refundable filing fees shall be paid to the Township when the topographic site plans are submitted.

Plan Checking and Field Inspection Fees. The owner shall pay the total cost of plan checking and field inspection. The lots will be inspected for compliance with the provisions of these regulations. Occupancy permits will be issued upon compliance with the provisions of these regulations and the zoning code and payment of all fees.

- 3) The filing, plan checking and field inspection fees are based upon the actual estimated cost for providing these services, and shall be established and periodically updated by the Board of Township Trustees.

## 2.3 ENFORCEMENT

- 1) If the Township or its duly authorized representative determines that a violation of the rules adopted under this code exist, the Township or representative 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.
- 2) All development areas may be subject to external inspections by the Township and/or the Cuyahoga County SWCD to ensure compliance with the approved SWP3 or Abbreviated SWP3.
- 3) After each external inspection, the Township and/or the Cuyahoga County SWCD shall prepare and distribute a status report to the applicant.
- 4) If an external inspection determines that operations are being conducted in violation of the approved SWP3 or Abbreviated SWP3 the Township and/or the Cuyahoga County SWCD may take action as detailed in Section 2.4 of this regulation.
- 5) Failure to maintain and repair erosion and sediment controls per the approved SWP3 plan may result in the following escalation:
  - a) First Violation: The Township will issue a Notice of Deficiency to the owner or operator. All controls are to be repaired or maintained per the SWP3 plan within three (3) days of the notification. If controls have not been corrected after this time, the Township may issue a Stop Work Order for all activities until corrections have been made.

- b) **Second Violation:** The Township may issue a formal Notice of Violation which includes a \$250 administrative fee against the SWP3 Bond or site plan deposit. All controls are to be repaired or maintained per the approved SWP3 plan within three (3) days of the Notice of Violation. If controls have not been corrected after this time, the Township may issue a Stop Work Order for all activities until corrections have been made.
  - c) **Third and subsequent violations:** The Township may issue a Stop Work Order for all construction activities and charge a \$250 administrative fee against the SWP3 bond or site plan deposit. The Stop Work Order will be lifted once all controls are in compliance with the approved SWP3 plan.
- 6) The Township shall have the authority to make immediate on-site adjustments to the SWP3 in order to achieve compliance with this ordinance.
  - 7) A final inspection will be made to determine if the criterion of this code has been satisfied and a report will be presented to the Township on the site's compliance status.
  - 8) The Township will monitor soil-disturbing activities for non-farm residential, commercial, industrial, or other non-farm purposes on land of less than one contiguous acre to ensure compliance required by these Rules.
  - 9) The Township shall notify the U.S. Army Corps of Engineers when a violation on a development project covered by an Individual or Nationwide Permit is identified. The Township shall notify the Ohio Environmental Protection Agency when a violation on a development project covered by a Section 401 Water Quality Certification and/or Isolated Wetland Permit is identified.
  - 10) The Township shall not issue building permits for projects regulated under this code that have not received approval for an SWP3 for said project(s).

## **2.4 VIOLATIONS**

- 1) No person shall violate or cause or knowingly permit to be violated any of the provisions of this regulation, or fail to comply with any of such provisions or with any lawful requirements of any public authority made pursuant to this regulation, or knowingly use or cause or permit the use of any lands in violation of this regulation or in violation of any permit granted under this regulation.
- 2) Upon notice, the Township or its duly authorized representative may suspend any active soil disturbing activity for a period not to exceed ninety (90) days, and may require immediate erosion and sediment control measures whenever he or she determines that such activity is not meeting the intent of this regulation. Such notice shall be in writing, shall be given to the applicant, and shall state the conditions under which work may be resumed. In instances, however, where the Township or designee finds that immediate action is necessary for public safety or the public interest, he or she may require that work be stopped upon verbal order pending issuance of the written notice.

## **2.5 APPEALS**

- 1) Any person aggrieved by any order, requirement, determination, or any other action or inaction by the Township in relation to this regulation may appeal to the court of common pleas. Such an appeal shall be made in conformity with [insert appropriate Ohio Revised Code sections]. Written notice of appeal shall be served on the Township and a copy shall be provided to the Cuyahoga County SWCD.

## **2.6 PENALTY**

- 1) Any person, firm, entity or corporation; including but not limited to, the owner of the property, his agents and assigns, occupant, property manager, and any contractor or subcontractor who violates or fails to comply with any provision of this regulation is guilty of a misdemeanor of the third degree and shall be fined no more than one thousand dollars (\$1,000.00) or imprisoned for no more than one hundred eighty (180) days, or both, for each offense.
- 2) A separate offense shall be deemed committed each day during or on which a violation or noncompliance occurs or continues.
- 3) The imposition of any other penalties provided herein shall not preclude the Township instituting an appropriate action or proceeding in a Court of proper jurisdiction to prevent an unlawful development, or to restrain, correct, or abate a violation, or to require compliance with the provisions of this regulation or other applicable laws, ordinances, rules, or regulations, or the orders of the Township.

## **SECTION 3 - CONSTRUCTION AND MAINTENANCE GUARANTEE**

All permanent stormwater, soil erosion, other wastes control, and water quality practices not specifically waived by the Township shall be constructed prior to the issuance of the building permits. Upon the request of the owner and the County Engineer, the Township may consider deferring the construction or installation of a permanent storm water, soil erosion, sediment, or other wastes control or water quality practice.

The Township shall require a Security Bond, Escrow Account, Certified Check or Cash to guarantee that the planned temporary and permanent soil erosion, sediment, and other wastes controls and water quality practices will be constructed and removed in a timely manner. The guarantee shall be furnished to the Township be at the time of the application.

### **3.1 FORM OF GUARANTEE**

- 1) The guarantee of both performance and maintenance will be in the form of a Security Bond, Escrow Account, Certified Check or Cash. The Security Bond, Escrow Account, Certified Check or Cash will be used by the Township to complete any guaranteed construction or removal of improvements or temporary and permanent soil erosion, sediment, and other wastes control practices that are not adequately completed, maintained or removed by the owner in a timely manner, as determined by the Township. The Security Bond, Escrow Account, Certified Check or Cash will be in the total amount of both the performance guarantee and the maintenance guarantee.
  - a) Security Bond, Escrow Account, Certified Check or Cash shall be deposited with the Township prior at the time of application for the final plat approval.
  - b) No soil disturbing activities shall be permitted until a Security Bond, Escrow Account, Certified Check or Cash has been posted to the satisfaction of the Township sufficient for the Township to perform the obligations otherwise to be performed by the owner or person responsible for the development area as stated in this regulation, and to allow all work to be performed as needed in the event that the owner or person responsible for the development area fails to comply with the provisions of this regulation. The Security Bond, Escrow Account, Certified Check or Cash shall be released only after all work required by this regulation has been completed to the satisfaction of the Township and all permit and inspection fees required by these regulations have been paid in full.
  - c) No project subject to this regulation shall commence without the Construction Site Conservation Plan having been approved by the Township.

### **3.2 PERFORMANCE GUARANTEE**

- 1) If a SWP3 or abbreviated SWP3 is required by this regulation, soil disturbing activities shall not be permitted until a cash bond or deposit has been deposited with the Township. The amount shall be a \$1,500 minimum, and an additional \$1,500 paid for each subsequent acre or fraction thereof. The bond will be used for the Township to perform the obligations otherwise to be performed by the owner of the development area as stated in this regulation and to allow all work to be performed as needed in the event that the applicant fails to comply with the provisions of this regulation. The cash bond shall be returned, less Township administrative fees, after all work required by this regulation has been completed and final stabilization has been reached, all as determined by the Township.

### **3.3 MAINTENANCE GUARANTEE**

- 2) The maintenance guarantee shall be maintained for a period of not less than 2 (two) years after final acceptance of stormwater, soil erosion, sediment and other wastes control practices in an amount equal to 20% of the estimate approved by the Township, of the construction and, where necessary, removal of such practices.

### **3.4 TIME EXTENSION**

- 1) The Township may extend for cause the time allowed for the installation of the improvements for which the performance guarantee has been furnished.

### **3.5 COMPLETION**

- 1) Upon completion of the construction of improvements or temporary and/or permanent, soil erosion, sediment, and other wastes control practices and the removal of the temporary soil erosion, sediment, and other wastes control practices for which the performance guarantee has been provided the owner shall notify the Township of this fact.

### **3.6 INSPECTION**

- 1) The Township will not release the Security Bond, Escrow Account, Verified Check or Cash guarantee until the Township representative has inspected the site to ensure that the guaranteed item(s) have been completed and/or removed.

### **3.7 RELEASE**

- 1) The Security Bond, Escrow Account, Verified Check or Cash guarantee will be returned, less Township administrative fees, when the following three criteria are met:
  - a) After 90% of the lots of the project have been complete or 100% of the total project has been permanently stabilized or three (3) years from the time of permanent stabilization have passed.
  - b) An As-Built Inspection of all stormwater control measures as described in Section 5.8 is approved by the Township.
  - c) An Inspection and Maintenance Plan has been approved by the Township and Inspection and Maintenance Agreement has been signed by the developer, the contractor, the Township, and the private owner or homeowners association who will take long term responsibility for these SCMs, is accepted by the Township.
- 2) Once these criteria are met, the applicant shall be reimbursed all bond monies that were not used for any part of the project. If all of these criteria are not met after three years of permanent stabilization of the site, the Township may use the bond monies to fix any outstanding issues with all stormwater management structures on the site and the remainder of the bond shall be given to the private lot owner/ homeowners association for the purpose of long term maintenance of the project.

## **SECTION 4 - EROSION AND SEDIMENT CONTROL**

### **4.1 PURPOSE AND SCOPE**

- 1) The purpose of this regulation is to establish technically feasible and economically reasonable stormwater management standards to achieve a level of stormwater quality and quantity control that will minimize damage to property and degradation of water resources and will promote and maintain the health, safety, and welfare of the citizens of the Township:
- 2) This regulation will:
  - a) Allow development while minimizing increases in erosion and sedimentation.
  - b) Reduce water quality impacts to receiving water resources that may be caused by new development or redevelopment activities.
- 3) This regulation applies to all parcels used or being developed, either wholly or partially, for new or relocated projects involving highways, underground cables, or pipelines; subdivisions or larger common plans of development; industrial, commercial, institutional, or residential projects; building activities on farms; redevelopment activities; general clearing; and all other uses that are not specifically exempted in Section 4.1(4).
- 4) This regulation does not apply to activities regulated by, and in compliance with, the Ohio Agricultural Sediment Pollution Abatement Rules.

### **4.2 DEVELOPMENT OF STORMWATER POLLUTION PREVENTION PLANS**

- 1) This regulation requires that a Stormwater Pollution Prevention Plan be developed and implemented for all soil disturbing activities disturbing one (1) or more acres of total land, or less than one (1) acre if part of a larger common plan of development or sale disturbing one (1) or more acres of total land. A Stormwater Pollution Prevention Plan must be developed and implemented for all commercial and industrial site development. The Township may require a comprehensive stormwater management plan on sites disturbing less than 1 acre.
- 2) The following activities shall submit an Abbreviated SWP3 :
  - a) New single-family residential construction. If such activities disturb one (1) acre or more, or are part of a larger common plan of development or sale disturbing one (1) acre or more, a full SWP3 and compliance with the Ohio EPA Construction General Permit are required.
  - b) Additions or accessory buildings for single-family residential construction. If such activities disturb one (1) acre or more, or are part of a larger common plan of development or sale disturbing one (1) acre or more, a full SWP3 compliance with the Ohio EPA Construction Site General Permit are required.
  - c) General clearing activities not related to construction. If such activities disturb one (1) acre or more, or are part of a larger common plan of development or sale disturbing one (1) acre or more, compliance with the Ohio EPA Construction Site General Permit and a full SWP3 are required.

- 3) Activities disturbing 1/10 (one tenth) or less of an acre are not required to submit a SWP3 or an Abbreviated SWP3, unless required by the Township. These activities must comply with all other provisions of this regulation.

#### **4.3 STORMWATER POLLUTION PREVENTION PLAN (SWP3)**

- 1) In order to control sediment pollution of water resources, the applicant shall submit a SWP3 in accordance with the requirements of this regulation.
- 2) The SWP3 shall include Best Management Practices (BMPs) and Stormwater Control Measures (SCMs) adequate to prevent pollution of public waters by soil sediment from accelerated stormwater runoff from development areas.
- 3) The SWP3 shall be certified by a professional engineer, a registered surveyor, certified professional erosion and sediment control specialist, or a registered landscape architect.
- 4) The SWP3 shall be amended whenever there is a change in design, construction, operation or maintenance, which has a significant effect on the potential for the discharge of pollutants to surface waters of the state or if the SWP3 proves to be ineffective in achieving the general objectives of controlling pollutants in stormwater discharges associated with construction activity.
- 5) The SWP3 shall incorporate measures as recommended by the most current online edition of *Rainwater and Land Development* as published by the Ohio Environmental Protection Agency and shall include the following information:
  - a) A cover page or title identifying the name and location of the site, the name and contact information of all construction site operators, the name and contact information for the person responsible for authorizing and amending the SWP3, preparation date, and the estimated start and completion dates for construction.
  - b) A copy of the permit requirements (attaching a copy of the current Ohio EPA NPDES Construction General Permit is acceptable).
  - c) Site description: The SWP3 shall provide:
    - i) A description of the nature and type of the construction activity (e.g. residential, shopping mall, highway, etc.).
    - ii) Total area of the site and the area of the site that is expected to be disturbed (i.e., grubbing, clearing, excavation, filling or grading, including off-site borrow areas).
    - iii) An estimate of the impervious area and percent of imperviousness created by the land disturbance.
    - iv) A calculation of the run-off coefficients for both the pre-construction and post-construction site conditions.
    - v) Existing data describing the soil and, if available, the quality of any known pollutant discharge from the site such as that which may result from previous contamination caused by prior land uses.

- vi) A description of prior land uses at the site.
- vii) An implementation schedule which describes the sequence of major soil-disturbing operations (i.e., grubbing, excavating, grading, utilities and infrastructure installation) and the implementation of erosion and sediment controls to be employed during each operation of the sequence.
- viii) The location and name of the immediate receiving stream or surface water(s) and the first subsequent receiving water(s) and the aerial extent and description of wetlands or other special aquatic sites at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project. For discharges to a municipal separate storm sewer system (MS4), the point of discharge to the MS4 and the location where the MS4 ultimately discharges to a water resource shall be indicated.
- ix) List TMDLs applicable for the site and demonstrate that appropriate BMPs or stormwater control measures (SCMs) have been selected to address these TMDLs
- x) For subdivided developments a detail drawing of a typical individual lot showing standard individual lot erosion and sediment control practices. This does not remove the responsibility to designate specific erosion and sediment control practices in the SWP3 for areas such as steep slopes, stream banks, drainage ways, and riparian zones.
- xi) Location and description of any stormwater discharges associated with dedicated asphalt and dedicated concrete plants associated with the development area and the best management practices to address pollutants in these stormwater discharges.
- xii) A log documenting grading and stabilization activities as well as amendments to the SWP3, which occur after construction activities commence.
- xiii) Each temporary and permanent stormwater practice shall be designated with an individual identification number.
- xiv) Site map showing:
  - (1) Limits of soil-disturbing activity of the site, including off site spoil and borrow areas.
  - (2) Soils types should be depicted for all areas of the site, including locations of unstable or highly erodible soils.
  - (3) Existing and proposed one-foot (1') contours. This must include a delineation of drainage watersheds expected during and after major grading activities as well as the size of each drainage watershed in acres.
  - (4) Surface water locations including springs, wetlands, streams, lakes, water wells, etc., on or within 200 feet of the site, including the boundaries of wetlands or stream channels and first subsequent named receiving water(s) the applicant intends to fill or relocate for which the applicant is seeking approval from the Army Corps of Engineers and/or Ohio EPA.
  - (5) Existing and planned locations of buildings, roads, parking facilities, and utilities.



- (6) The location of all erosion and sediment control practices, including the location of areas likely to require temporary stabilization during the course of site development.
- (7) Sediment and stormwater management basins including their sediment settling volume and the maximum expected disturbed area that will be directed to the sediment pond during construction. The plan should include a summary of the following:
  - (a) The required sediment storage and dewatering volumes
  - (b) The provided sediment storage and dewatering volumes
  - (c) The weir length or skimmer size, as applicable
  - (d) The weir length or skimmer size provided
- (8) Data sheets for all sediment traps, sediment basins, and SCMs that identify contributing drainage area, disturbed area, water quality volume, sedimentation volume, dewatering volume, practice surface area, facility discharge and dewatering time, outlet type and dimensions, and any other relevant parameters for each practice.
- (9) A separate plan and profile view of each individual sediment settling pond and its outlet structure. Detail drawings of the outlet structure shall indicate the following elevations:
  - (a) Pond bottom
  - (b) Elevation required to store the required sediment storage volume
  - (c) For sediment basins, the elevation at which the skimmer is attached
  - (d) For sediment traps, the top and bottom of the stone outlet section
  - (e) Elevation required to store the dewatering volume, exclusive of the sediment storage volume
  - (f) Elevation of the top of embankment
  - (g) Crest of the emergency spillway
- (10) Where used as a sediment-settling pond during construction, the plan shall include a detail drawing of the temporary outlet configuration of the permanent stormwater basin with the following information specified:
  - (a) Storage volume provided below the elevation at which the skimmer or other surface dewatering device is attached
  - (b) Elevation at which the skimmer or other surface dewatering device is attached
  - (c) Elevation at which the full dewatering zone is stored above the skimmer invert

- (d) Any temporary modification to permanent outlet orifices or weirs required to ensure no discharge below the skimmer invert and only the skimmer controls the discharge up to the top of the dewatering volume.
    - (e) Calculations of the sediment storage volume, dewatering volume and skimmer drawdown time shall also be provided
  - (11) The location of permanent SCMs to be used to control pollutants in stormwater after construction operations have been completed.
  - (12) Areas designated for the storage or disposal of solid, sanitary and toxic wastes, including dumpster areas, areas designated for cement truck washout, and vehicle fueling.
  - (13) Methods to minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, and sanitary waste to precipitation, stormwater runoff, and snow melt.
  - (14) Measures to prevent and respond to chemical spills and leaks. Applicants may also reference the existence of other plans (i.e., Spill Prevention Control and Countermeasure (SPCC) plans, spill control programs, Safety Response Plans, etc.) provided that such plan addresses this requirement and a copy of such plan is maintained on site.
  - (15) Methods to minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. No detergents may be used to wash vehicles. Wash waters shall be treated in a sediment basin or alternative control that provides equivalent treatment prior to discharge.
  - (16) The location of designated stoned construction entrances where the vehicles will ingress and egress the construction site.
  - (17) The location of any in-stream activities including stream crossings.
- d) A soils engineering report. The Township may require the SWP3 to include a Soils Engineering Report based upon his/her determination that the conditions of the soils are unknown or unclear to the extent that additional information is required to protect against erosion or other hazards. This report shall be based on adequate and necessary test borings, and shall contain all the information listed below. Recommendations included in the report and approved by the Township shall be incorporated in the grading plans and/or other specifications for site development.
- i) Data regarding the nature, distribution, strength, and erodibility of existing soils.
  - ii) If applicable, data regarding the nature, distribution, strength, and erodibility of the soil to be placed on the site.
  - iii) Conclusions and recommendations for grading procedures.
  - iv) Conclusions and recommended designs for interim soil stabilization devices and measures, and for permanent soil stabilization after construction is completed.
  - v) Design criteria for corrective measures when necessary.

- vi) Opinions and recommendations covering the stability of the site.

#### 4.4 PERFORMANCE STANDARDS

- 1) The SWP3 must contain a description of the controls appropriate for each construction operation and the applicant must implement such controls. The SWP3 must clearly describe for each major construction activity the appropriate control measures; the general sequence during the construction process under which the measures will be implemented; and the contractor responsible for implementation (e.g., contractor A will clear land and install perimeter controls and contractor B will maintain perimeter controls until final stabilization).
- 2) The approved SWP3, and the sediment and erosion controls, and non-sediment pollution controls contained therein, shall be implemented upon the commencement of construction. Perimeter controls must be installed two working days prior to commencement of construction. The approved plan must be implemented until the site reaches final stabilization. All properties adjacent to the site of soil-disturbing activity shall be protected from soil erosion and sediment run-off and damage, including, but not limited to, private properties, natural and artificial waterways, wetlands, storm sewers and public lands.
- 3) It is the owner's responsibility to maintain current records of contractor(s) responsible for implementation of the SWP3 and provide that information to the Township. The SWP3 shall identify all subcontractors engaged in activities that could impact stormwater runoff. The SWP3 shall contain signatures from all of the identified subcontractors indicating that they have been informed and understand their roles and responsibilities in complying with the SWP3. The applicant shall review the SWP3 with the primary contractor prior to commencement of construction activities and keep a SWP3 training log to demonstrate that this review had occurred.
- 4) Erosion and sediment controls shall be designed, installed and maintained effectively to minimize the discharge of pollutants during the course of earth disturbing activities. The controls shall include the following minimum components:
  - a) Non-Structural Preservation Measures: The SWP3 must make use of practices that preserve the existing natural condition to the maximum extent practicable. Such practices may include preserving riparian areas, preserving existing vegetation and vegetative buffer strips, phasing of construction operations in order to minimize the amount of disturbed land at any one time, minimizing disturbance of steep slopes, designation of tree preservation areas or other protective clearing or grubbing practices. Soil compaction shall be minimized and, unless infeasible, topsoil shall be preserved. Provide and maintain a 50-foot buffer of undisturbed natural vegetation around surface waters of the state, or riparian or wetland setbacks, if applicable, whichever is greater, unless maintaining this buffer is infeasible (e.g., stream crossings for roads or utilities, or for channel and floodplain rehabilitation and restoration). Direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration.
  - b) Erosion Control Practices: The SWP3 must make use of erosion controls that are capable of providing cover over disturbed soils. The amount of soil exposed during construction activity shall be minimized. A description of control practices designed to restabilize disturbed areas after grading or construction shall be included in the SWP3. The SWP3 must provide specifications for stabilization of all disturbed areas of the site and provide guidance as to which method of stabilization will be employed for any time of the year. Such practices may include: temporary seeding, permanent seeding, mulching, matting, sod stabilization, vegetative buffer

strips, phasing of construction operations, the use of construction entrances, and the use of alternative ground cover.

Erosion control practices must meet the following requirements:

- i) **Stabilization.** Disturbed areas must be stabilized as specified in Tables 1 and 2 below.

**Table 1: Permanent Stabilization**

Area requiring permanent stabilization	Time frame to apply erosion controls
Any area that will lie dormant for one year or more.	Within 7 days of the most recent disturbance.
Any area within 50 feet of a surface water of the state and at final grade.	Within 2 days of reaching final grade.
Any other areas at final grade.	Within 7 days of reaching final grade within that area.

**Table 2: Temporary Stabilization**

Area requiring temporary stabilization	Time frame to apply erosion controls
Any disturbed area within 50 feet of a surface water of the state and not at final grade.	Within 2 days of the most recent disturbance if that area will remain idle for more than 14 days.
For all construction activities, any disturbed area, including soil stockpiles that will be dormant for more than 14 days but less than one year, and not within 50 feet of a surface water of the state.	Within 7 days of the most recent disturbance within the area.  For residential subdivisions, disturbed areas must be stabilized at least 7 days prior to transfer of ownership or operational responsibility.
Disturbed areas that will be idle over winter.	Prior to November 1 or the onset of winter weather, whichever occurs first.
<b>Note:</b> Where vegetative stabilization techniques may cause structural instability or are otherwise unobtainable, alternative stabilization techniques must be employed.	

- ii) **Permanent stabilization of conveyance channels.** Applicants shall undertake special measures to stabilize channels and outfalls and prevent erosive flows. Measures may include seeding, dormant seeding, mulching, erosion control matting, sodding, riprap, natural channel design with bioengineering techniques, or rock check dams, all as defined in the most recent edition of *Rainwater and Land Development* or the *Field Office Technical Guide* available at [www.nrcs.usda.gov/technical/efotg/](http://www.nrcs.usda.gov/technical/efotg/).
- c) **Runoff Control Practices.** The SWP3 shall incorporate measures that control the volume and velocity of stormwater runoff within the site to prevent erosion. Peak flow rates and total stormwater volume shall be controlled to minimize erosion and outlets, downstream channel and streambank erosion. Such practices may include rock check dams, pipe slope drains, diversions to direct flow away from exposed soils and protective grading practices. These practices shall divert runoff away from disturbed areas and steep slopes where practicable. Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel to provide non-erosive flow velocity from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected.
- d) **Sediment Control Practices.** The SWP3 shall include a description of, and detailed drawings for, all structural practices that shall store runoff, allowing sediments to settle and/or divert flows

away from exposed soils or otherwise limit runoff from exposed areas to minimize sediment discharges from the site. Structural practices shall be used to control erosion and trap sediment from a site remaining disturbed for more than 14 days. Such practices may include, among others: sediment settling ponds, silt fences, storm drain inlet protection, and earth diversion dikes or channels which direct runoff to a sediment settling pond. The design, installation and maintenance of erosion and sediment controls shall address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site.

- e) All sediment control practices must be capable of ponding runoff in order to be considered functional. Earth diversion dikes or channels alone are not considered a sediment control practice unless used in conjunction with a sediment settling pond.

Sediment control practices must meet the following requirements:

- i) Timing. Sediment control structures shall be functional throughout the course of earth disturbing activity. Sediment basins and perimeter sediment barriers 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 development area is restabilized. As construction progresses and the topography is altered, appropriate controls must be constructed or existing controls altered to address the changing drainage patterns.
- ii) Sediment settling ponds. A sediment settling pond, or equivalent best management practice upon approval from the Township and/or the Cuyahoga County SWCD, is required for any one of the following conditions:
  - (1) Concentrated stormwater runoff.
  - (2) Runoff from drainage areas which exceeds the design capacity of silt fence (see Table 3) inlet protection, or other sediment barriers.
  - (3) Runoff from common drainage locations with 10 or more acres of disturbed land.

Sediment settling ponds shall be provided in the form of a sediment trap or sediment basin as defined in the latest edition of *Rainwater and Land Development*. The maximum allowable contributing drainage area to a sediment trap shall be limited to less than 5 acres. Contributing-drainage areas of 5 acres or more shall be treated with a sediment basin. An equivalent best-management practice may be utilized upon approval from the Township.

The sediment-settling pond shall provide both a sediment storage zone and a dewatering zone. The volume of the dewatering zone shall be at least 1,800 cubic feet of storage per acre of total contributing drainage area. The dewatering structure of sediment basins shall be designed to have a minimum 48-hour drain time, and, unless infeasible, be designed to always withdraw runoff from the surface of the pond throughout the storm cycle. As such, a skimmer discharge device consistent with *Rainwater and Land Development* shall be provided to dewater sediment basins. Sediment traps shall also provide both a sediment storage zone and dewatering zone, but the outlet structure shall be constructed consistent with the specifications contained in the latest edition of *Rainwater and Land Development*.

When post-construction detention/water quality ponds are to be used as temporary sediment trapping BMPs, a skimmer discharge device consistent with *Rainwater and Land Development* shall be utilized during construction phase and until the site is deemed

permanently stabilized by the Township.

The skimmer shall be designed per the equivalent requirements of sediment basins and the operator must ensure that the outlet structure of the pond provides an equivalent or better sediment storage zone and dewatering zone. As such, temporarily while the site is under construction, there shall be no discharge of runoff below the elevation required for the sediment storage zone and the discharge of stormwater within the dewatering zone shall only occur through the skimmer.

The volume of the sediment storage zone shall be calculated by one of the following methods:

Method 1: The volume of the sediment storage zone shall be 1000ft<sup>3</sup> per disturbed acre within the watershed of the basin.

Method 2: The volume of the sediment storage zone shall be the volume necessary to store the sediment as calculated with RUSLE or other generally accepted erosion prediction model.

When determining the total contributing drainage area, off-site areas and areas which remain undisturbed by construction activity must be included unless runoff from these areas is diverted away from the sediment settling pond and is not co-mingled with sediment-laden runoff. The depth of the dewatering zone must be less than or equal to five (5) feet. The configuration between the inlets and the outlet of the sediment-settling pond must provide at least two units of length for each one unit of width  $\geq 2:1$  length-to-width ratio; however, a length to width ratio of  $\geq 4:1$  is recommended. Sediment must be removed from the sediment-settling pond when the design capacity of the sediment storage zone has been completely filled by sediment accumulations. This limit is typically reached when sediment occupies one-half of the basin depth. When designing sediment settling ponds, the applicant must consider public safety, especially as it relates to children, as a design factor for the sediment basin and alternative sediment controls must be used where site limitations would preclude a safe design. The use of a combination of sediment and erosion control measures in order to achieve maximum pollutant removal is encouraged.

- iii) Silt fence and diversions. Sheet flow runoff from denuded areas shall be intercepted by silt fence or diversions to protect adjacent properties and water resources from sediment transported via sheet flow. Where intended to provide sediment control, silt fence shall be placed on a level contour and shall be capable of temporarily ponding runoff. The relationship between the maximum drainage area to silt fence for a particular slope range is shown in Table 3 below. Placing silt fence in a parallel series does not extend the size of the permissible drainage area.

**Table 3: Maximum Drainage Area to Silt Fence Based on Slope**

Maximum Drainage Area (acres) to 100 linear feet of silt fence	Range of slope for a drainage area (%)
0.5	<2%
0.25	$\geq 2\%$ but < 20%
0.125	$\geq 20\%$ but < 50%

- iv) Alternative perimeter controls for sheet flow discharges may be considered by the Township, but their use shall not exceed the limitations indicated in Table 3 above. Detail drawings and plan notes shall specify the diameter of filter socks, compost berms and other such alternative perimeter controls if used instead of silt fence.
- v) Stormwater diversion practices shall be used to keep runoff away from disturbed areas and steep slopes. Such devices, which include swales, dikes or berms, may receive stormwater runoff from areas up to 10 acres.
- vi) Inlet protection. Erosion and sediment control practices, such as boxed inlet protection, shall be installed to minimize sediment-laden water entering active storm drain systems. All inlets receiving runoff from drainage areas of one or more acres will require a sediment settling pond. Straw or hay bales and filter socks around catch basins are not acceptable forms of inlet protection.
- vii) Off-site tracking of sediment and dust control. Best management practices must be implemented to ensure sediment is not tracked off-site and that dust is controlled. These best management practices must include, but are not limited to, the following:
  - (1) Construction entrances shall be built and shall serve as the only permitted points of ingress and egress to the development area. These entrances shall be built of a stabilized pad of aggregate stone or recycled concrete sized greater than 2" in diameter, placed over a geotextile fabric, and constructed in conformance with specifications in the most recent edition of *Rainwater and Land Development*.
  - (2) Streets and catch basins adjacent to construction entrances shall be kept free of sediment tracked off site. Streets directly adjacent to construction entrances and receiving traffic from the development area, shall be cleaned daily to remove sediment tracked off-site. If applicable, the catch basins on these streets nearest to the construction entrances shall also be cleaned weekly and protected from sediment-laden runoff; if feasible without posing a public safety hazard.

Based on site conditions, the Township and/or the Cuyahoga County SWCD may require additional best management practices to control off site tracking and dust. These additional BMPs may include:
  - (3) Fencing shall be installed around the perimeter of the development area to ensure that all vehicle traffic adheres to designated construction entrances.
  - (4) Designated vehicle and wheel-washing areas. Wash water from these areas must be directed to a designated sediment trap, the sediment-settling pond, or to a sump pump for dewatering in conformance with Section 4.4(4)(g) of this regulation. No surfactants or detergents may be used to wash vehicles.
  - (5) Applicants shall take all necessary measures to comply with applicable regulations regarding fugitive dust emissions, including obtaining necessary permits for such emissions. The Township and/or the Cuyahoga County SWCD may require dust controls including the use of water trucks to wet disturbed areas, tarping stockpiles, temporary stabilization of disturbed areas, and regulation of the speed of vehicles on the site.
- viii) Surface Waters of the State protection. Construction vehicles shall avoid water resources. A 50 foot undisturbed natural buffer shall be provided around surface waters of

the state unless infeasible. If it is infeasible to provide and maintain an undisturbed 50-foot natural buffer, the SWP3 shall comply with the stabilization requirements in 4.4(b)(i) for areas within 50 feet of a surface water or riparian or wetland setbacks if applicable, whichever is greater; and minimize soil compaction and, unless infeasible, preserve topsoil. If a riparian or wetland setback is greater than 50 feet, no disturbance of natural vegetation shall occur within the riparian or wetland setback unless a variance to the riparian or wetland setback regulation has been granted] If the applicant is permitted to disturb areas within 50 feet of a water resource, the following conditions shall be addressed in the SWP3:

- (1) All BMPs and stream crossings shall be designed as specified in the most recent edition of *Rainwater and Land Development*.
  - (2) Structural practices shall be designated and implemented on site to protect water resources from the impacts of sediment runoff.
  - (3) No structural sediment controls (e.g., the installation of silt fence or a sediment settling pond in-stream) shall be used in water resources or wetlands.
  - (4) Where stream crossings for roads or utilities are necessary and permitted, the project shall be designed such that the number of stream crossings and the width of the disturbance are minimized.
  - (5) Temporary stream crossings shall be constructed if water resources or wetlands will be crossed by construction vehicles during construction.
  - (6) Construction of bridges, culverts, or sediment control structures shall not place soil, debris, or other particulate material into or close to the water resources or wetlands in such a manner that it may slough, slip, or erode.
  - (7) Concentrated stormwater runoff from BMPs to natural wetlands shall be converted to diffuse flow through the use of level spreaders or other such appropriate measure before the runoff enters the wetlands. The flow should be released such that no erosion occurs downslope. Level spreaders may need to be placed in series to ensure non-erosive velocities.
  - (8) Protected areas or critical areas, including wetlands and riparian areas shall be physically marked in the field prior to earth disturbing activities.
- ix) **Modifying controls.** If periodic inspections or other information indicates a control has been used inappropriately or incorrectly, the applicant shall replace or modify the control for site conditions.
- f) **Non-Sediment Pollutant Controls:** No solid or liquid waste, including building materials, shall be discharged in stormwater runoff. The applicant must implement site best management practices to prevent toxic materials, hazardous materials, or other debris from entering water resources, wetlands or the MS4. These practices shall include but are not limited to the following:
- i) **Waste Materials:** A covered dumpster shall be made available for the proper disposal of garbage, plaster, drywall, grout, gypsum, and other waste materials.



- ii) Concrete Truck Wash Out: The washing of concrete material into a street, catch basin, other public facility, natural resource or water of the state is prohibited. A designated area for concrete washout shall be made available.
- iii) Disposal of Other Wastewaters: The discharge of washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials to a street, catch basin, other public facility, natural resource or waters of the state is prohibited. The discharge of soaps or solvents used in vehicle and equipment washing is also prohibited. If generated, these wastewaters must be collected and disposed of properly.
- iv) Fuel/Liquid Tank Storage: All fuel/liquid 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 containers in the storage area and/or a spill kit shall be provided to clean up spills. The SWP3 shall contain spill prevention and response procedures and these procedures shall be discussed at the pre-construction meeting.
- v) Toxic or Hazardous Waste Disposal: Any toxic or hazardous waste shall be disposed of properly. The discharge of fuels, oils, and other pollutants used in vehicle and equipment operation and maintenance is prohibited.
- vi) Contaminated Soils Disposal and Runoff: Discovery of previously unknown contaminated soils onsite shall be self-reported to Ohio EPA and local authorities. Contaminated soils from redevelopment sites shall be disposed of properly. Runoff from contaminated soils shall not be discharged from the site. Proper permits shall be obtained for development projects on solid waste landfill sites or redevelopment sites. Where construction activities are to occur on sites with contamination from previous activities, operators shall be aware that concentrations of materials that meet other criteria (i.e. not considered a Hazardous Waste, meeting Voluntary Action Program (VAP standards)) may still result in stormwater discharges in excess of Ohio Water Quality Standards. Such discharges are not authorized by this code. Control measures which may be utilized to meet this requirement include, but are not limited to:
  - (1) Use berms, trenches, pits or tanks to collect contaminated runoff and prevent discharge.
  - (2) Pump runoff from contaminated soils to the sanitary sewer with the prior approval of the sanitary sewer system operator, or pump into a container for transport to an appropriate treatment or disposal facility; and
  - (3) Cover areas of contamination with tarps, daily cover or other such methods to prevent stormwater from coming into contact with contaminated materials.

The SWP3 must include methods to minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, and sanitary waste to precipitation, stormwater runoff, and snow melt. The SWP3 shall include measures to prevent and respond to chemical spills and leaks. Applicants may also reference the existence of other plans (i.e., Spill Prevention Control and Countermeasure (SPCC) plans, spill control programs, Safety Response Plans, etc.) provided that such plan addresses this requirement and a copy of such plan is maintained on site.

- g) Compliance with Other Requirements. The SWP3 shall be consistent with applicable State and/or local waste disposal, sanitary sewer, or septic system regulations, including provisions

prohibiting waste disposal by open burning, and shall provide for the proper disposal of contaminated soils located within the development area.

- h) Trench and Ground Water Control. There shall be no sediment-laden or turbid discharges to water resources or wetlands resulting from dewatering activities. If trench or ground water contains sediment, it must pass through a sediment-settling pond or other equally effective sediment control device, prior to being discharged from the construction site. Alternatively, sediment may be removed by settling in place or by dewatering into a sump pit, filter bag or comparable practice. Ground water dewatering which does not contain sediment or other pollutants is not required to be treated prior to discharge. However, care must be taken when discharging ground water to ensure that it does not become pollutant-laden by traversing over disturbed soils or other pollutant sources.
- i) Internal Inspections
  - i) All controls on the site shall be inspected at least once every seven calendar days and within 24 hours after any storm event greater than one-half inch of rain per 24 hour period. The inspection frequency may be reduced to at least once every month if the entire site is temporarily stabilized or runoff is unlikely due to weather conditions (e.g., site is covered with snow, ice, or the ground is frozen). A waiver of inspection requirements is available until one month before thawing conditions are expected to result in a discharge if prior written approval has been attained from the Township and/or the Cuyahoga County SWCD and all of the following conditions are met:
    - (1) The project is located in an area where frozen conditions are anticipated to continue for extended periods of time (i.e. more than one (1) month).
    - (2) Land disturbance activities have been suspended, and temporary stabilization is achieved.
    - (3) The beginning date and ending dates of the waiver period are documented in the SWP3.
    - (4) For sites that will not be completed by October 1, a Pre-Winter Stabilization Meeting shall be held by the landowner and the developer, engineer and contractor of the project and the Township prior to October 1, in order to plan and approve winter erosion and sediment controls as defined in the most current online edition of *Rainwater and Land Development*.
  - ii) The applicant shall assign qualified inspection personnel to conduct these inspections to ensure that the control practices are functional and to evaluate whether the SWP3 is adequate, or whether additional control measures are required. Qualified inspection personnel are individuals with knowledge and experience in the installation and maintenance of sediment and erosion controls. Certified inspection reports shall be submitted to the Township within seven (7) working days from the inspection and retained at the development site.

These inspections shall meet the following requirements:

- (1) 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.
- (2) Erosion and sediment control measures identified in the SWP3 shall be observed to ensure that they are operating correctly. The applicant shall utilize an inspection form

provided by the Township or an alternate form acceptable to the Township. The inspection form shall include:

- (a) The inspection date.
  - (b) Names, titles and qualifications of personnel making the inspection.
  - (c) Weather information for the period since the last inspection, including a best estimate of the beginning of each storm event, duration of each storm event and approximate amount of rainfall for each storm event in inches, and whether any discharges occurred.
  - (d) Weather information and a description of any discharges occurring at the time of inspection.
  - (e) Locations of:
    - (i) Discharges of sediment or other pollutants from site.
    - (ii) BMPs that need to be maintained.
    - (iii) BMPs that failed to operate as designed or proved inadequate for a particular location.
    - (iv) Where additional BMPs are needed that did not exist at the time of inspection.
  - (f) Corrective action required including any necessary changes to the SWP3 and implementation dates.
- (3) Discharge locations shall be inspected to determine whether erosion and sediment control measures are effective in preventing significant impacts to the receiving water resource or wetlands.
- (4) Locations where vehicles enter or exit the site shall be inspected for evidence of off-site vehicle tracking.
- (5) The applicant shall maintain for three (3) years following final stabilization the results of these inspections, the names and qualifications of personnel making the inspections, the dates of inspections, major observations relating to the implementation of the SWP3, a certification as to whether the facility is in compliance with the SWP3, and information on any incidents of non-compliance determined by these inspections.
- j) **Maintenance.** The SWP3 shall be designed to minimize maintenance requirements. All BMPs shall be maintained and repaired as needed to ensure continued performance of their intended function until final stabilization. All sediment control practices must be maintained in a functional condition until all up slope areas they control reach final stabilization. The applicant shall provide a description of maintenance procedures needed to ensure the continued performance of control practices and shall ensure a responsible party and adequate funding to conduct this maintenance, all as determined by the Township.

When inspections reveal the need for repair, replacement, or installation of erosion and sediment control BMPs, the following procedures shall be followed:

- i) When BMPs require repair or maintenance. If an internal inspection reveals that a BMP is in need of repair or maintenance, with the exception of a sediment-settling pond, it must be repaired or maintained within three (3) days of the inspection. Sediment settling ponds must be repaired or maintained within ten (10) days of the inspection.
- ii) When BMPs fail to provide their intended function. If an internal inspection reveals that a BMP fails to perform its intended function as detailed in the SWP3 and that another, more appropriate control practice is required, the SWP3 must be amended and the new control practice must be installed within three (3) to ten (10) days of the inspection as determined by the Township or Cuyahoga County SWCD.
- iii) When BMPs depicted on the SWP3 are not installed. If an internal inspection reveals that a BMP has not been implemented in accordance with the schedule, the control practice must be implemented within ten (10) days from the date of the inspection. If the internal inspection reveals that the planned control practice is not needed, the record must contain a statement of explanation as to why the control practice is not needed.
- k) Final Stabilization. Final stabilization shall be determined by the Township. Once a definable area has achieved final stabilization, the applicant may note this on the SWP3 and no further inspection requirement applies to that portion of the site. Final stabilization also requires the installation of permanent (post-construction) stormwater control measures (SCMs). Obligations under this regulation shall not be completed until installation of post-construction BMPs is verified.

#### 4.5 ABBREVIATED STORMWATER POLLUTION PREVENTION PLAN (SWP3)

- 1) In order to control sediment pollution of water resources, the applicant shall submit an Abbreviated SWP3 in accordance with the requirements of this regulation.
- 2) The Abbreviated SWP3 shall be certified by a professional engineer, a registered surveyor, certified professional erosion and sediment control specialist, or a registered landscape architect.
- 3) The Abbreviated SWP3 shall include a minimum of the following BMPs. The Township may require other BMPs as site conditions warrant.
  - a) Construction Entrances. Construction entrances shall be built and shall serve as the only permitted points of ingress and egress to the development area. These entrances shall be built of a stabilized pad of aggregate stone or recycled concrete or cement sized greater than 2" in diameter, placed over a geotextile fabric, and constructed in conformance with specifications in the most recent edition of *Rainwater and Land Development*.
  - b) Concrete Truck Wash Out. The washing of concrete material into a street, catch basin, or other public facility or natural resource is prohibited. A designated area for concrete washout shall be indicated on the plan. Use for other waste and wastewater is prohibited.
  - c) Street Sweeping. Streets directly adjacent to construction entrances and receiving traffic from the development area, shall be cleaned daily to remove sediment tracked off-site. If applicable, the catch basins on these streets nearest to the construction entrances shall be cleaned weekly.
  - d) Stabilization. The development area shall be stabilized as detailed in Table 4.

**Table 4: Stabilization**

Area requiring stabilization	Time frame to apply erosion controls
Any disturbed area within 50 feet of a surface water of the state and not at final grade.	Within 2 days of the most recent disturbance if that area will remain idle for more than 14 days
For all construction activities, any disturbed area, including soil stockpiles that will be dormant for more than 14 days but less than one year, and not within 50 feet of a stream.	Within 7 days of the most recent disturbance within the area
Disturbed areas that will be idle over winter	Prior to November 1
<b>Note:</b> Where vegetative stabilization techniques may cause structural instability or are otherwise unobtainable, alternative stabilization techniques must be employed. These techniques may include mulching or erosion matting.	

- e) Inlet Protection. Erosion and sediment control practices, such as boxed inlet protection, shall be installed to minimize sediment-laden water entering active storm drain systems, including rear yard inlets. Straw, hay bales, and filter socks are not acceptable forms of inlet protection.
- f) Silt Fence and Other Perimeter Controls. Silt fence and other perimeter controls approved by the Township shall be used to protect adjacent properties and water resources from sediment discharged via sheet (diffused) flow. Silt fence shall be placed along level contours and the permissible drainage area is limited to those indicated in Table 3 in Section 4.3 of these regulations.
- g) Internal Inspection and Maintenance. All controls on the development area shall be inspected at least once every seven calendar days and within 24 hours after any storm event greater than one-half inch of rain per 24 hour period. Maintenance shall occur as detailed below:
  - i) When BMPs require repair or maintenance. If the internal inspection reveals that a BMP is in need of repair or maintenance, with the exception of a sediment-settling pond, it must be repaired or maintained within three (3) days of the inspection. Sediment settling ponds must be repaired or maintained within ten (10) days of the inspection.
  - ii) When BMPs fail to provide their intended function. If the internal inspection reveals that a BMP fails to perform its intended function and that another, more appropriate control practice is required, the Abbreviated SWP3 must be amended and the new control practice must be installed within ten (10) days of the inspection.
  - iii) When BMPs depicted on the Abbreviated SWP3 are not installed. If the internal inspection reveals that a BMP has not been implemented in accordance with the schedule, the control practice must be implemented within ten (10) days from the date of the inspection. If the inspection reveals that the planned control practice is not needed, the record must contain a statement of explanation as to why the control practice is not needed.
- h) Final Stabilization. Final stabilization shall be determined by the Township.

## **SECTION 5 - COMPREHENSIVE STORMWATER MANAGEMENT**

### **5.1 PURPOSE AND SCOPE**

- 1) The purpose of this regulation is to establish technically feasible and economically reasonable stormwater management standards to achieve a level of stormwater quality and quantity control that will minimize damage to property and degradation of water resources and will promote and maintain the health, safety, and welfare of the citizens of the Township:
- 2) This regulation requires owners who develop or re-develop their property within the Township to:
  - a) Control stormwater runoff from their property and ensure that all Stormwater Control Measures (SCMs) are properly designed, constructed, and maintained.
  - b) Reduce water quality impacts to receiving water resources that may be caused by new development or redevelopment activities.
  - c) Control the volume, rate, and quality of stormwater runoff originating from their property so that surface water and groundwater are protected and flooding and erosion potential are not increased.
  - d) Minimize the need to construct, repair, and replace subsurface storm drain systems.
  - e) Preserve natural infiltration and ground water recharge, and maintain subsurface flow that replenishes water resources, except in slippage prone soils.
  - f) Incorporate stormwater quality and quantity controls into site planning and design at the earliest possible stage in the development process.
  - g) Reduce the expense of remedial projects needed to address problems caused by inadequate stormwater management.
  - h) Maximize use of SCMs that serve multiple purposes including, but not limited to, flood control, erosion control, fire protection, water quality protection, recreation, and habitat preservation.
  - i) Design sites to minimize the number of stream crossings and the width of associated disturbance in order to minimize the Township's future expenses related to the maintenance and repair of stream crossings.
  - j) Maintain, promote, and re-establish conditions necessary for naturally occurring stream processes that assimilate pollutants, attenuate flood flows, and provide a healthy water resource.
- 3) This regulation shall apply to all parcels used or being developed, either wholly or partially, for new or relocated projects involving highways and roads; subdivisions or larger common plans of development; industrial, commercial, institutional, or residential projects; building activities on farms; redevelopment activities; grading; and all other uses that are not specifically exempted in Section 5.2.
- 4) Public entities, including the State of Ohio, Cuyahoga County, and the Township shall comply with this regulation for roadway projects initiated after March 10, 2006 and, to the maximum extent practicable, for projects initiated before that time.

## 5.2 EXEMPTED PROJECTS

- 1) The following activities shall also be exempt from these regulations:
  - a) This regulation does not apply to activities regulated by, and in compliance with, the Ohio Agricultural Sediment Pollution Abatement Rules.
  - b) This regulation does not require a Comprehensive Stormwater Management Plan for linear construction projects, such as pipeline or utility line installation, that do not result in the installation of impervious surface as determined by the Township. Such projects must be designed to minimize the number of stream crossings and the width of disturbance. Linear construction projects must comply with the requirements of Section 4 Erosion and Sediment Control.

## 5.3 DEVELOPMENT OF COMPREHENSIVE STORMWATER MANAGEMENT PLANS

- 1) This regulation requires that a Comprehensive Stormwater Management Plan be developed and implemented for all soil disturbing activities disturbing one (1) or more acres of total land, or less than one (1) acre if part of a larger common plan of development or sale disturbing one (1) or more acres of total land, and on which any regulated activity of Section 5.1(3) is proposed.
- 2) A Comprehensive Stormwater Management Plan must be developed and implemented for all commercial, institutional and industrial site development, regardless of size.
- 3) The Township may require a comprehensive stormwater management plan on sites disturbing less than 1 acre.
- 4) The Township shall administer this regulation, shall be responsible for determination of compliance with this regulation, and shall issue notices and orders as may be necessary. The Township may consult with the Cuyahoga SWCD, state agencies, private engineers, stormwater districts, or other technical experts in reviewing the Comprehensive Stormwater Management Plan.

## 5.4 COMPREHENSIVE STORMWATER MANAGEMENT PLAN

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

performed by a registered Professional Surveyor to establish boundary lines, measurements, or land surfaces.

- 3) Community Procedures: The Township shall prepare and maintain procedures providing specific criteria and guidance to be followed when designing the stormwater management system for the site. These procedures may be updated from time to time, at the discretion of the Township based on improvements in engineering, science, monitoring, and local maintenance experience. The Township shall make the final determination of whether the practices proposed in the Comprehensive Stormwater Management Plan meet the requirements of this regulation.
- 4) Contents of Comprehensive Stormwater Management Plan: The Comprehensive Stormwater Management Plan shall contain an application, narrative report, construction site plan sheets, a long-term Inspection and Maintenance Plan and Inspection and Maintenance Agreement, and a site description with the following information provided:
  - a) Site description:
    - i) A description of the nature and type of the construction activity (e.g. residential, shopping mall, highway, etc.).
    - ii) Total area of the site and the area of the site that is expected to be disturbed (i.e. grubbing, clearing, excavation, filling or grading, including off-site borrow areas).
    - iii) A description of prior land uses at the site.
    - iv) An estimate of the impervious area and percent of imperviousness created by the soil-disturbing activity at the beginning and at the conclusion of the project.
    - v) Selection (source and justification) and/or calculations of runoff coefficients for water quality volume determination, peak discharge control (curve number/critical storm method), and rational method.
    - vi) Existing data describing the soils throughout the site, including soil map units including series, complexes, and association, hydrologic soil group, porosity, infiltration characteristics, depth to groundwater, depth to bedrock, and any impermeable layers.
    - vii) If available, the quality of any known pollutant discharge from the site such as that which may result from previous contamination caused by prior land uses.
    - viii) The location and name of the immediate water resource(s) and the first subsequent water resource(s).
    - ix) The aerial (plan view) extent and description of water resources at or near the site that will be disturbed or will receive discharges from the project.
    - x) If applicable, identify the point of discharge to a municipal separate storm sewer system and the location where that municipal separate storm sewer system ultimately discharges to a stream, lake, or wetland. The location and name of the immediate receiving stream or surface water(s) and the first subsequent receiving water(s) and the aerial extent and description of wetlands or other special aquatic sites at or near the site which will be disturbed or which will receive discharges from undisturbed areas of the project.



- xi) TMDLs applicable for the site [refer to TMDL community identifier table at <http://www.neohiostormwater.com/>]; demonstrate that appropriate (SCMs) have been selected to address these TMDLs.
  - xii) For each SCM, identify the drainage area, percent impervious cover within the drainage area, runoff coefficient for water quality volume, peak discharge, and the time of concentration for each subwatershed per Appendix 1 of Ohio's stormwater manual, *Rainwater and Land Development*. Pervious and impervious areas should be treated as separate subwatersheds unless allowed at the discretion of the community engineer. Identify the SCM surface area, discharge and dewatering time, outlet type and dimensions. Each SCM shall be designated with an individual identification number.
  - xiii) Describe the current condition of water resources including the vertical stability of stream channels and indications of channel incision that may be responsible for current or future sources of high sediment loading or loss of channel stability.
- b) Site map showing:
- i) Limits of soil-disturbing activity on the site.
  - ii) Soils map units for the entire site, including locations of unstable or highly erodible soils.
  - iii) Existing and proposed one-foot (1') contours. This must include a delineation of drainage watersheds expected before, during, and after major grading activities as well as the size of each drainage watershed in acres.
  - iv) Water resource locations including springs, wetlands, streams, lakes, water wells, and associated setbacks on or within 200 feet of the site, including the boundaries of wetlands or streams and first subsequent named receiving water(s) the applicant intends to fill or relocate for which the applicant is seeking approval from the Army Corps of Engineers and/or Ohio EPA.
  - v) Existing and planned locations of buildings, roads, parking facilities, and utilities.
  - vi) The location of any in-stream activities including stream crossings.
- c) Contact information: Company name and contact information as well as contact name, addresses, and phone numbers for the following:
- i) The Professional Engineer who prepared the Comprehensive Stormwater Management Plan.
  - ii) The site owner.
- d) Phase, if applicable, of the overall development plan.
- e) List of subplot numbers if project is a subdivision.
- f) Ohio EPA NPDES Permit Number and other applicable state and federal permit numbers, if available, or status of various permitting requirements if final approvals have not been received.
- g) Location, including complete site address and subplot number if applicable.

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

i) A site plan sheet showing:

i) The location of each proposed post-construction SCMs.

ii) The geographic coordinates of the site AND each proposed practice in North American Datum Ohio State Plane North.

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

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

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

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

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

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

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

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

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

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

k) Inspection and Maintenance Plan. This plan will be developed by the applicant and reviewed by the Township. Once the Inspection and Maintenance Plan is approved, a recorded copy of the

Plan must be submitted to the Township as part of the final inspection approval as described in Section 5.5. The plan will include at a minimum:

- i) The location of each SCM and identification of the drainage area served by each SCM.
- ii) Photographs of each SCM, including all inlets and outlets upon completion of construction.
- iii) Schedule of inspection.
- iv) A schedule for regular maintenance for each aspect of the stormwater management system and description of routine and non-routine maintenance tasks to ensure continued performance of the system as is detailed in the approved Comprehensive Stormwater Management Plan. A maintenance inspection checklist written so the average person can understand it shall be incorporated. The maintenance plan will include a detailed drawing of each SCM and outlet structures with the parts of the outlet structure labeled. This schedule may include additional standards, as required by the Township, to ensure continued performance of SCMs permitted to be located in, or within 50 feet of, water resources.
- v) The location and documentation of all access and maintenance easements on the property.

Alteration or termination of these stipulations is prohibited.

- l) Required calculations: The applicant shall submit calculations for projected stormwater runoff flows, volumes, and timing into and through all SCMs for flood control, channel protection, water quality, and the condition of the habitat, stability, and incision of each water resource and its floodplain, as required in Section 5.5 of this regulation. These submittals shall be completed for both pre- and post-development land use conditions and shall include the underlying assumptions and hydrologic and hydraulic methods and parameters used for these calculations. The applicant shall also include critical storm determination and demonstrate that the runoff from offsite areas have been considered in the calculations.
- m) List of all contractors and subcontractors before construction: Prior to construction or before the pre-construction meeting, provide the list of all contractors and subcontractors names, addresses, and phones involved with the implementation of the Comprehensive Stormwater Management Plan including a written document containing signatures of all parties as proof of acknowledgment that they have reviewed and understand the requirements and responsibilities of the Comprehensive Stormwater Management Plan.
- n) Existing and proposed drainage patterns: The location and description of existing and proposed drainage patterns and SCMs, including any related SCMs beyond the development area and the larger common development area.
- o) For each SCM to be employed on the development area, include the following:
  - i) Location and size, including detail drawings, maintenance requirements during and after construction, and design calculations, all where applicable.
  - ii) Final site conditions including stormwater inlets and permanent nonstructural and structural SCMs. Details of SCMs shall be drawn to scale and shall show volumes and sizes of contributing drainage areas.
  - iii) Any other structural and/or non-structural SCMs necessary to meet the design criteria in this

regulation and any supplemental information requested by the Township.

- iv) Each SCM shall be designated with an individual identification number.

## 5.5 PERFORMANCE STANDARDS

- 1) General: The stormwater system, including SCMs for storage, treatment and control, and conveyance facilities, shall be designed to prevent structure flooding during the 100-year, 24-hour storm event; to maintain predevelopment runoff patterns, flows, and volumes; and to meet the following criteria:
  - a) Integrated practices that address degradation of water resources. The SCMs shall function as an integrated system that controls flooding and minimizes the degradation of the physical, biological, and chemical integrity of the water resources receiving stormwater discharges from the site. Acceptable practices shall:
    - i) Not disturb riparian areas, unless the disturbance is intended to support a watercourse restoration project and complies with the Township Riparian and Wetland Setback Regulations.
    - ii) Maintain predevelopment hydrology and groundwater recharge on as much of the site as practicable.
    - iii) Only install new impervious surfaces and compact soils where necessary to support the future land use.
    - iv) Compensate for increased runoff volumes caused by new impervious surfaces and soil compaction by reducing stormwater peak flows to less than predevelopment levels.
    - v) Be designed according to the methodology included in the most current edition of *Rainwater and Land Development* or another design manual acceptable for use by the Township and Ohio EPA.

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

- b) Practices designed for final use: SCMs shall be designed to achieve the stormwater management objectives of this regulation, to be compatible with the proposed post-construction use of the site, to protect the public health, safety, and welfare, and to function safely with routine maintenance.
- c) Stormwater management for all lots: Areas developed for a subdivision shall provide stormwater management and water quality controls for the development of all subdivided lots. This shall include provisions for lot grading and drainage that prevent structure flooding during the 100-year, 24-hour storm; and maintain, to the extent practicable, the pre-development runoff patterns, volumes, and peaks from each lot.
- d) Stormwater facilities in water resources: SCMs and related activities shall not be constructed in water resources unless the applicant shows proof of compliance with all appropriate permits from the Ohio EPA, the U.S. Army Corps, and other applicable federal, state, and local agencies as required in Section 1.6 of this regulation, and the activity is in compliance with Section 4 - Erosion and Sediment Control and the Section 6 - Riparian and Wetland Setback Regulations, all as determined by the Township.

- e) Stormwater ponds and surface conveyance channels: All stormwater pond and surface conveyance designs must provide a minimum of one (1) foot freeboard above the projected peak stage within the facility during the 100-year, 24-hour storm. When designing stormwater ponds and conveyance channels, the applicant shall consider public safety as a design factor and alternative designs must be implemented where site limitations would preclude a safe design.
- f) Exemption: The site where soil-disturbing activities are conducted shall be exempt from the requirements of Section 5.5 if it can be shown to the satisfaction of the Township that the site is part of a larger common plan of development where the stormwater management requirements for the site are provided by an existing SCMs, or if the stormwater management requirements for the site are provided by practices defined in a regional or local stormwater management plan approved by the Township.
- g) Maintenance: All SCMs shall be maintained in accordance with the Inspection and Maintenance Plan and Agreements approved by the Township as detailed in Section 5.4.
- h) Ownership: Unless otherwise required by the Township, SCMs serving multiple lots in subdivisions shall be on a separate lot held and maintained by an entity of common ownership. SCMs serving single lots shall be placed on these lots, protected within an easement, and maintained by the property owner.
- i) Preservation of Existing Natural Drainage: Practices that preserve and/or improve the existing natural drainage shall be used to the maximum extent practicable. Such practices may include minimizing site grading and compaction; protecting and/or restoring water resources, riparian areas, and existing vegetation and vegetative buffer strips; phasing of construction operations in order to minimize the amount of disturbed land at any one time, and designation of tree preservation areas or other protective clearing and grubbing practices; and maintaining unconcentrated stormwater runoff to and through these areas. Post-construction stormwater practices shall provide perpetual management of runoff quality and quantity so that a receiving stream's physical, chemical and biological characteristics are protected and ecological functions are maintained.
- j) Preservation of Wetland Hydrology: Concentrated stormwater runoff from SCMs to wetlands shall be converted to diffuse flow before the runoff enters the wetlands in order to protect the natural hydrology, hydroperiod, and wetland flora. The flow shall be released such that no erosion occurs down slope. Practices such as level spreaders, vegetative buffers, infiltration basins, conservation of forest covers, and the preservation of intermittent streams, depressions, and drainage corridors may be used to maintain the wetland hydrology.

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

- 2) Stormwater Conveyance Design Criteria: All SCMs shall be designed to convey stormwater to allow for the maximum removal of pollutants and reduction in flow velocities. This shall include but not be limited to:
  - a) Surface water protection: The Township may allow modification to streams, rivers, lakes, wetlands or other surface waters only if the applicant shows proof of compliance with all appropriate permits from the Ohio EPA, the U.S. Army Corps, and other applicable federal, state, and local agencies as required in Section 1.6 of this regulation, and the activity is in compliance

with Section 4 - Erosion and Sediment Control and Section 6 - Riparian and Wetland Setback Regulations, all as determined by the Township. At a minimum, stream relocation designs must show how the project will minimize changes to the vertical stability, floodplain form, channel form, and habitat of upstream and downstream channels on and off the property.

- b) Off-site stormwater discharges: Off-site stormwater runoff that discharges to or across the applicant's development site shall be conveyed through the stormwater conveyance system planned for the development site at its existing peak flow rates during each design storm. Off-site flows shall be diverted around stormwater quality control facilities or, if this is not possible, the stormwater quality control facility shall be sized to treat the off-site flow. Comprehensive Stormwater Management Plans will not be approved until it is demonstrated to the satisfaction of the Township that off-site runoff will be adequately conveyed through the development site in a manner that does not exacerbate upstream or downstream flooding and erosion.
- c) Sheet flow: The site shall be graded in a manner that maintains sheet flow over as large an area as possible. The maximum area of sheet flow shall be determined based on the slope, the uniformity of site grading, and the use of easements or other legally-binding mechanisms that prohibit re-grading and/or the placement of structures within sheet flow areas. In no case shall the sheet flow length be longer than 300 feet, nor shall a sheet flow area exceed 1.5 acres. Flow shall be directed into an open channel, storm sewer, or other SCMs from areas too long and/or too large to maintain sheet flow, all as determined by the Township.
- d) Open channels: Unless otherwise allowed by the Township, drainage tributary to SCMs shall be provided by an open channel with vegetated banks and designed to carry the 10-year, 24-hour stormwater runoff from upstream contributory areas.
- e) Open drainage systems: Open drainage systems shall be preferred on all new development sites to convey stormwater where feasible. Storm sewer systems shall be allowed only when the site cannot be developed at densities allowed under the Township zoning or where the use of an open drainage system affects public health or safety, all as determined by the Township. The following criteria shall be used to design storm sewer systems when necessary:
  - i) Storm sewers shall be designed per the Cuyahoga County Department of Public Works, Cuyahoga County Drainage Manual Supplement to O.D.O.T. Location and Design Manual, Volume 2, Drainage Design Manual, Section 1000 and 1100, current revision. The system shall be designed to meet these requirements when conveying the flows from the contributing drainage area within the proposed development and existing flows from offsite areas that are upstream from the development.
  - ii) The minimum inside diameter of pipe to be used in public storm sewer systems is 12 inches. Smaller pipe sizes may be used in private systems, subject to the approval of the Township.
  - iii) All storm sewer systems shall be designed taking into consideration the tailwater of the receiving facility or water resource. The tailwater elevation used shall be based on the design storm frequency. The hydraulic grade line for the storm sewer system shall be computed with consideration for the energy losses associated with entrance into and exit from the system, friction through the system, and turbulence in the individual manholes, catch basins, and junctions within the system.
  - iv) The inverts of all curb inlets, manholes, yard inlets, and other structures shall be formed and channelized to minimize the incidence of quiescent standing water where mosquitoes may breed.

- v) Headwalls shall be required at all storm sewer inlets or outlets to and from open channels or lakes.
- f) Water Resource Crossings. The following criteria shall be used to design structures that cross a water resource in the Township:
  - i) Water resource crossings other than bridges shall be designed to convey the stream's flow for the minimum 25-year, 24-hour storm.
  - ii) Bridges, open bottom arch or spans are the preferred crossing technique and shall be considered in the planning phase of the development. Bridges and open spans should be considered for all State Scenic Rivers, coldwater habitat, exceptional warmwater habitat, seasonal salmonid habitat streams, and Class III headwater streams. The footers or piers for these bridges and open spans shall not be constructed below the ordinary high water mark.
  - iii) If a culvert or other closed bottom crossing is used, twenty-five (25) percent of the cross-sectional area or a minimum of 1 foot of box culverts and pipe arches must be embedded below the channel bed. The conduit or conveyance must be sized to carry the 25-year storm under these conditions.
  - iv) The minimum inside diameter of pipes to be used for crossings shall be 12 inches.
  - v) The maximum slope allowable shall be a slope that produces a 10-fps velocity within the culvert barrel under design flow conditions. Erosion protection and/or energy dissipaters shall be required to properly control entrance and outlet velocities.
  - vi) All culvert installations shall be designed with consideration for the tailwater of the receiving facility or water resource. The tailwater elevation used shall be based on the design storm frequency.
  - vii) Headwalls shall be required at all culvert inlets or outlets to and from open channels or lakes.
  - viii) Streams with a drainage area of 5 square miles or larger shall incorporate floodplain culverts at the bankfull elevation to restrict head loss differences across the crossing so as to cause no rise in the 100-year storm event.
  - ix) Bridges shall be designed, to the extent practicable, such that the hydraulic profile through a bridge shall be below the bottom chord of the bridge for either the 100-year, 24-hour storm, or the 100-year flood elevation as determined by FEMA, whichever is more restrictive.
- g) Overland flooding: Overland flood routing paths shall be used to convey stormwater runoff from the 100-year, 24-hour storm event to an adequate receiving water resource or SCM such that the runoff is contained within the drainage easement for the flood routing path and does not cause flooding of buildings or related structures. The peak 100-year water surface elevation along flood routing paths shall be at least one foot below the finished grade elevation of all structures. When designing the flood routing paths, the conveyance capacity of the site's storm sewers shall be taken into consideration.
- h) Velocity dissipation: Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall to provide non-erosive flow velocity from the structure to a water resource so that the natural physical and biological characteristics and functions of the water

resource are maintained and protected.

3) Stormwater Quality Control:

- a) Direct runoff to an SCM: The site shall be designed to direct runoff to one or more of the following SCMs. These practices are listed in Table 2 of this regulation and shall be designed to meet the following general performance standards:
- i) Extended detention facilities that detain stormwater; settle or filter particulate pollutants; and release the controlled stormwater to a water resource.
  - ii) Infiltration facilities that retain stormwater; promote settling, filtering, and biodegradation of pollutants; and infiltrate captured stormwater into the ground. The Township may require a soil engineering report to be prepared for the site to demonstrate that any proposed infiltration facilities meet these performance standards.
  - iii) For sites less than five (5) acres, but required to create a comprehensive stormwater management plan, the Township may approve other SCMs if the applicant demonstrates to the Township's satisfaction that these SCMs meet the objectives of this regulation as stated in Section 5.5(3)e).
  - iv) For sites greater than five (5) acres, or less than five (5) acres but part of a larger common plan of development or sale which will disturb five (5) or more acres, the Township may approve other SCMs if the applicant demonstrates to the [community engineer's] satisfaction that these SCMs meet the objectives of this regulation as stated in Section 5.5(3)e), and has prior written approval from the Ohio EPA.
  - v) For the construction of new roads and roadway improvement projects by public entities (i.e. the state, counties, townships, cities, or villages), the Township may approve SCMs not included in Table 2 of this regulation, but must show compliance with the current version of the Ohio Department of Transportation "Location and Design Manual, Volume Two Drainage Design".
- b) Criteria applying to all SCMs. SCMs chosen must be sized to treat the water quality volume (WQv) and to ensure compliance with Ohio Water Quality Standards (OAC Chapter 3745-1).
- i) The WQv shall be equal to the volume of runoff from a 0.75 inch rainfall event and shall be determined according to one of the following methods:
    - (1) Through a site hydrologic study approved by the Township that uses continuous hydrologic simulation; site-specific hydrologic parameters, including impervious area, soil infiltration characteristics, slope, and surface routing characteristics; proposed SCMs controlling the amount and/or timing of runoff from the site; and local long-term hourly records, or
    - (2) Using the following equation:
$$WQv = C * P * A / 12$$
where terms have the following meanings:
      - WQv = water quality volume in acre-feet
      - C = runoff coefficient appropriate for storms less than 1 in.
      - P = 0.75 inch precipitation depth
      - A = area draining into the stormwater practice, in acres.



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

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

i = fraction of the drainage area that is impervious

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

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
Where land use will be mixed, the runoff coefficient should be calculated using a weighted average. For example, if 60% of the contributing drainage area to the stormwater treatment structure is Low Density Residential, 30% is High Density Residential, and 10% is Open Space, the runoff coefficient is calculated as follows $(0.6)(0.3) + (0.3)(0.5) + (0.1)(0.2) = (0.35)$	

- ii) An additional volume equal to 20% of the WQv shall be incorporated into the stormwater practice for sediment storage. This volume shall be incorporated into the sections of stormwater practices where pollutants will accumulate.
- iii) Each individual SCM must be sized to treat the WQv associated with its entire contributing drainage area. Exceptions to this may be granted by the Township and/or the OEPA on a case-by-case basis.
- iv) Stormwater quality management practices shall be designed such that the drain time is long enough to provide treatment and protect against downstream bank erosion, but short enough to provide storage available for successive rainfall events as defined in Table 2.
- v) Each practice shall be designed to facilitate sediment removal, vegetation management, debris control, and other maintenance activities defined in the Inspection Plan and Maintenance Agreement for the site.

**Table 2: Draw Down Times for Stormwater Control Measures**

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

c) Additional criteria applying to infiltration facilities.

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

d) Additional criteria for extended detention facilities:

- i) The outlet shall be designed to not release more than the first half of the water quality volume in less than 1/3rd of the drain time. The outlet shall be designed to minimize clogging, vandalism, maintenance, and promote the capture of floatable pollutants.
- ii) The basin design shall incorporate the following features to maximize multiple uses, aesthetics, safety, and maintainability:
  - (1) Basin side slopes above the permanent pool shall have a run to rise ratio of 4:1 or flatter.
  - (2) The perimeter of all permanent pool areas deeper than 4 feet shall be surrounded by an aquatic bench that extends at least 8 feet and no more than 15 feet outward from the normal water edge. The 8 feet wide portion of the aquatic bench closest to the shoreline

shall have an average depth of 6 inches below the permanent pool to promote the growth of aquatic vegetation. The remainder of the aquatic bench shall be no more than 15 inches below the permanent pool to minimize drowning risk to individuals who accidentally or intentionally enter the basin, and to limit growth of dense vegetation in a manner that allows waves and mosquito predators to pass through the vegetation. The maximum slope of the aquatic bench shall be 10 (H) to 1 (V). The aquatic bench shall be planted with native plant species comparable to wetland vegetation that are able to withstand prolonged inundation. The use of invasive plant species is prohibited.

- (3) A forebay designed to allow larger sediment particles to settle shall be placed at basin inlets. The forebay and micropool volume shall be equal to at least 10% of the water quality volume (WQv).
  - (4) Extended detention basins shall be provided with an emergency drain, where practicable, so that the basin may be emptied if the primary outlet becomes clogged and/or to drain the permanent pool to facilitate maintenance. The emergency drain should be designed to drain by gravity where possible.
- e) Criteria for the Acceptance of Alternative post-construction SCMs: The applicant may request approval from the Township for the use of alternative structural post-construction SCMs if the applicant shows to the satisfaction of the Township that these SCMs are equivalent in pollutant removal and runoff flow/volume reduction effectiveness to those listed in Table 2. If the site is greater than five (5) acres, or less than five (5) acres but part of a larger common plan of development or sale which will disturb five (5) or more acres, prior approval from the Ohio EPA is necessary. To demonstrate the equivalency, the applicant must show:
- i) The alternative SCM has a minimum total suspended solid (TSS) removal efficiency of 80 percent, using the Level II Technology Acceptance Reciprocity Partnership (TARP) testing protocol.
  - ii) The water quality volume discharge rate from the selected SCM is reduced to prevent stream bed erosion, unless there will be negligible hydrologic impact to the receiving surface water of the State. The discharge rate from the SCM will have negligible impacts if the applicant can demonstrate one of the following conditions:
    - (a) The entire water quality volume is recharged to groundwater.
    - (b) The development will create less than one acre of impervious surface.
    - (c) The development project is a redevelopment project with an ultra-urban setting, such as a downtown area, or on a site where 100 percent of the project area is already impervious surface and the stormwater discharge is directed into an existing storm sewer system.
    - (d) The stormwater drainage system of the development discharges directly into a large river of fourth order or greater or to a lake, and where the development area is less than 5 percent of the water area upstream of the development site, unless a (TMDL) has identified water quality problems in the receiving surface water of the State.
- 4) Stormwater Quantity Control: The Comprehensive Stormwater Management Plan shall describe how the proposed SCMs are designed to meet the following requirements for stormwater quantity control for each watershed in the development:

- a) The peak discharge rate of runoff from the Critical Storm and all more frequent storms occurring under post-development conditions shall not exceed the peak discharge rate of runoff from a 1-year, 24-hour storm occurring on the same development drainage area under pre-development conditions.
- b) Storms of less frequent occurrence (longer return periods) than the Critical Storm, up to the 100-year, 24-hour storm shall have peak runoff discharge rates no greater than the peak runoff rates from equivalent size storms under pre-development conditions. The 1, 2, 5, 10, 25, 50, and 100-year storms shall be considered in designing a facility to meet this requirement.
- c) The Critical Storm for each specific development drainage area shall be determined as follows:
  - i) Determine, using a curve number-based hydrologic method or other hydrologic method approved by the Township, the total volume (acre-feet) of runoff from a 1-year, 24-hour storm occurring on the development drainage area before and after development. These calculations shall meet the following standards:
    - (1) Calculations shall include the lot coverage assumptions used for full build out as proposed.
    - (2) Calculations shall be based on the entire contributing watershed to the development area.
    - (3) Model pervious, directly connected impervious and disconnected impervious areas as separate subwatersheds.
    - (4) Drainage area maps shall include area, curve number, time of concentrations. Time of concentration shall also show the flow path and the separation in flow type.
    - (5) Rainfall Depth - For the most accurate, up-to-date, location-specific rainfall data for stormwater design, use the Precipitation-Frequency Atlas of the United States, NOAA Atlas 14, Vol 2(3). [available online: <http://hdsc.nws.noaa.gov/hdsc/pfds/>.]
    - (6) Temporal Distribution – Use the SCS Type II rainfall distribution for all design events with a recurrence interval greater than 1 year. Include lot coverage assumptions used for full build out of the proposed condition.
    - (7) Curve numbers for the pre-development condition shall reflect the average type of land use over the past 10 years and not only the current land use.
      - (a) Pre-development Curve Numbers – For wooded or brushy areas, use listed values from TR-55 NRCS USDA Urban Hydrology for Small Watersheds, 1986 in good hydrologic condition. For meadows, use listed values. For all other areas (including all types of agriculture), use pasture, grassland, or range in good hydrologic condition.
      - (b) Post-development Curve Numbers - Open space areas shall use post-construction HSGs from *Rainwater and Land Development* unless the soil is amended after development according to the following protocol: till the subsoil to 15-18 inches, then till using a chisel, spader, or rotary tillage and incorporate compost through top 12 inches, replace topsoil to a minimum depth of 4 inches. All undisturbed areas or open space with amended soils shall be treated as “open space in good condition.”

- (8) Time of Concentration - Use velocity based methods from (TR-55 NRCS USDA Urban Hydrology in Small Watersheds, 1986) to estimate travel time (T<sub>t</sub>) for overland (sheet) flow, shallow concentrated flow and channel flow.
- (a) Maximum sheet flow length is 100 ft.
- (b) Use the appropriate “unpaved” velocity equation for shallow concentrated flow from Soil Conservation Service National Engineer Handbook Section 4 – Hydrology (NEH-4).
- (9) The volume reduction provided by permeable pavement, bioretention, or other LID SCMs may be subtracted from the post development stormwater volume. Volume reductions for these practices may be demonstrated using methods outlined in *Rainwater and Land Development* or a hydrologic model acceptable to the Township.
- ii) To account for future post-construction improvements to the site, calculations shall assume an impervious surface such as asphalt or concrete for all parking areas and driveways, regardless of the surface proposed in the site description except in instances of engineered permeable pavement systems. From the volume determined in Section 5.5(4)(c)(i), determine the percent increase in volume of runoff due to development. Using the percentage, select the 24-hour Critical Storm from Table 3.

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

If the Percentage of Increase in Volume of Runoff is:		The Critical Storm will be:
Equal to or Greater Than:	and Less Than:	
----	10	1 year
10	20	2 year
20	50	5 year
50	100	10 year
100	250	25 year
250	500	50 year
500	---	100 year
For example, if the percent increase between the pre- and post-development runoff volume for a 1-year storm is 35%, the Critical Storm is a 5-year storm. The peak discharge rate of runoff for all storms up to this frequency shall be controlled so as not to exceed the peak discharge rate from the 1-year frequency storm under pre-development conditions in the development drainage area. The post-development runoff from all less frequent storms need only be controlled to meet pre-development peak discharge rates for each of those same storms.		

## 5) Stormwater Management on Redevelopment Projects

- a) Comprehensive Stormwater Management Plans for redevelopment projects shall reduce existing site impervious areas by at least 20 percent. A one-for-one credit towards the 20 percent net reduction of impervious area can be obtained through the use of green roofs. Where site

conditions prevent the reduction of impervious area, SCMs shall be implemented to treat at least 20 percent of the WQv

- a) When a combination of impervious area reduction and stormwater quality control facilities are used, 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.
- b) Where projects are a combination of new development and redevelopment, the total WQv required to be treated shall be calculated by a weighted average based on acreage, with the new development at 100 percent water quality volume and redevelopment at 20 percent.
- c) Where conditions prevent impervious area reduction or on-site stormwater management for redevelopment projects, practical alternatives as detailed in Section 5.6 may be approved by the Township.

## **5.6 ALTERNATIVE ACTIONS**

- 1) When the Township determines that site constraints compromise the intent of this regulation, off-site alternatives may be used that result in an improvement of water quality and a reduction of stormwater quantity. Such alternatives shall meet the following standards:
  - a) Shall achieve the same level of stormwater quantity and quality control that would be achieved by the on-site controls required under this regulation.
  - b) Implemented in the same Hydrologic Unit Code (HUC) 12 watershed unit as the proposed development project.
  - c) The mitigation ratio of the water quality volume is 1.5 to 1 or the water quality volume at the point of retrofit, whichever is greater.
  - d) An inspection and maintenance agreement as described in Section 5.4(4)(j) is established to ensure operations and treatment in perpetuity.
  - e) Obtain prior written approval from Ohio EPA.
- 2) Alternative actions may include, but are not limited to the following. All alternative actions shall be approved by the Township:
  - a) Fees, in an amount specified by the Township to be applied to community-wide SCMs.
  - b) Implementation of off-site SCMs and/or the retrofit of an existing practice to increase quality and quantity control.
  - c) Stream, floodplain, or wetland restoration.
  - d) Acquisition or conservation easements on protected open space significantly contributing to stormwater control such as wetland complexes.

## **5.7 EASEMENTS**

- 1) Access to SCMs as required by the Township for inspections and maintenance shall be secured by perpetual easements. The following conditions shall apply to all easements:
  - a) Easements shall be included in the Inspection and Maintenance Agreement submitted with the Comprehensive Stormwater Management Plan.
  - b) Easements shall be approved by the Township prior to approval of a final plat and shall be recorded with the Cuyahoga County Auditor and on all property deeds.
  - c) Unless otherwise required by the Township, access easements between a public right-of-way and all SCMs shall be no less than 25-feet wide. The easement shall also incorporate the entire practice plus an additional 25-foot wide band around the perimeter of the SCM. 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.
  - d) Flood control or storm drainage easements containing underground facilities shall have a minimum width of twenty-five (25) feet.
  - e) Easements for the emergency flow ways shall be a minimum of twenty-five (25) feet in width, or larger if required by the Township.
  - f) The easement shall be graded and/or stabilized as necessary to allow maintenance equipment to access and manipulate around and within each facility, as defined in the Inspection and Maintenance Agreement for the site.
  - g) Easements to structural SCMs shall be restricted against the construction therein of buildings, fences, walls, and other structures that may obstruct the free flow of stormwater and the passage of inspectors and maintenance equipment; and against the changing of final grade from that described by the final grading plan approved by the Township. Any re-grading and/or obstruction placed within a maintenance easement may be removed by the Township at the property owners' expense.

## **5.8 MAINTENANCE AND FINAL INSPECTION APPROVAL**

- 1) To receive final inspection and acceptance of any project, or portion thereof, the following must be completed by the applicant and provided to the Township:
  - a) Final stabilization must be achieved and all permanent SCMs must be installed and made functional, as determined by the Township and per the approved Comprehensive Stormwater Management Plan.
  - b) An As-Built Certification, including As-Built Survey and Inspection, must be sealed, signed and dated by a Professional Engineer and a Professional Surveyor with a statement certifying that the stormwater control measures, as designed and installed, meet the requirements of the Comprehensive Stormwater Management Plan approved by the Township. In evaluating this certification, the Township may require the submission of a new set of stormwater practice calculations if he/she determines that the design was altered significantly from the approved Comprehensive Stormwater Management Plan. The As-Built Survey must provide the location, dimensions, and bearing of such practices and include the entity responsible for long-term

maintenance as detailed in the Inspection and Maintenance Agreement.

- c) A copy of the complete and recorded Inspection and Maintenance Plan and Inspection and Maintenance Agreement as specified in Section 5.4 must be provided to the Township.

## **5.9 ON-GOING INSPECTIONS**

- 1) The owner shall inspect SCMs regularly as described in the Inspection and Maintenance Plan and Inspection and Maintenance Agreement. The Township has the authority to enter upon the property to conduct inspections as necessary, with prior notification of the property owner, to verify that the SCMs are being maintained and operated in accordance with this regulation. Upon finding a malfunction or other need for maintenance or repair, the Township shall provide written notification to the responsible party, as detailed in the Inspection and Maintenance Agreement, of the need for maintenance. Upon notification, the responsible party shall have five (5) working days, or other mutually agreed upon time, to make repairs or submit a plan with detailed action items and established timelines. Should repairs not be made within this time, or a plan approved by the Township for these repairs not in place, the Township may undertake the necessary repairs and assess the responsible party.

## **5.10 INSTALLATION OF WATER QUALITY STORMWATER CONTROL MEASURES**

- 1) The applicant may not direct runoff through any water quality structures or portions thereof that would be degraded by construction site sediment until the entire area tributary to the structure has reached final stabilization as determined by the Township. This occurs after the completion of the final grade at the site, after all of the utilities are installed, and the site is subsequently stabilized with vegetation or other appropriate methods. The developer must provide documentation acceptable to the Township to demonstrate that the site is completely stabilized. Upon this proof of compliance, the water quality structure(s) may be completed and placed into service. Upon completion of installation of these practices, all disturbed areas and/or exposed soils caused by the installation of these practices must be stabilized within 2 days.



## **SECTION 6 - RIPARIAN AND WETLAND SETBACKS**

### **6.1 PURPOSE**

- 1) It is hereby determined that the a system of wetlands, riparian areas, rivers, streams, and other natural watercourses within Olmsted Township contributes to the health, safety, and general welfare of the residents. The specific purpose and intent of this Chapter is to establish appropriate riparian and wetland setbacks and regulate uses and developments within these riparian and wetland setbacks that would impair the ability of riparian and wetland areas to:
  - a) Reduce flood impacts by absorbing peak flows, slowing the velocity of floodwaters, and regulating base flow.
  - b) Assist in stabilizing the banks of watercourses to reduce bank erosion and the downstream transport of sediments eroded from the watercourse banks.
  - c) Reduce pollutants in watercourses during periods of high flows by filtering, settling, and transforming pollutants already present in watercourses.
  - d) Reduce pollutants in watercourses by filtering, settling, transforming and absorbing pollutants in runoff before they enter watercourses.
  - e) Provide watercourse habitats with shade and food.
  - f) Provide habitat to a wide array of aquatic organisms, wildlife, many of which are on Ohio's Endangered and/or Threatened Species listings, by maintaining diverse and connected riparian and wetland vegetation.
  - g) Benefit the Township economically by minimizing encroachment on wetlands and watercourse channels and the need for costly engineering solutions such as dams, extended detention facilities, and rip rap to protect structures and reduce property damage and threats to the safety of residents; and by contributing to the scenic beauty and environment of these areas, and thereby preserving their character, the quality of life of the residents, and the corresponding property values.

### **6.2 SCOPE**

- 1) These regulations shall apply to all lands that border designated watercourses and wetlands as defined in these regulations.
  - a) These regulations shall apply to subdivision approvals and to site plan approvals required by the Township.
  - b) These regulations shall apply to all building permits, which involve soil disturbing activities.

### **6.3 DESIGNATED WATERCOURSES AND RIPARIAN SETBACKS**

- 1) Designated watercourses shall include those meeting any one of the following criteria:

- a) All watercourses draining an area greater than ½ square mile, or
  - b) All watercourses draining an area less than ½ square mile and having a defined bed and bank.
  - c) In determining if watercourses have a defined bed and bank, the Township may consult with the Cuyahoga SWCD or other technical experts as necessary.
- 2) Riparian setbacks shall be on designated watercourses and in accordance with federal, state and local guidelines. The riparian setbacks shall be no less than 25 feet on both sides of the defined bank.

#### **6.4 PROCEDURE FOR WETLAND SETBACKS**

- 1) Whenever a land disturbing activity is proposed on a parcel and such activity does not involve a change to parcel boundaries or land use:
  - a) Upon filing a request for a building permit that does not involve changing of any parcel boundaries or changes in land use, the applicant shall check for indicators of wetlands on the National Wetlands Inventory maps, and Ohio Wetland Inventory map, and the Cuyahoga County Wetlands Inventory (if applicable). A photocopy of the applicable section of each map shall be attached to the permit application.
  - b) If a potential wetland is shown on any of the maps or if there is reason to believe that an unmapped wetland exists on or within 120 feet of the project site the applicant shall retain a qualified wetland professional to evaluate the proposed project site for wetlands. If no wetlands are found, the applicant shall submit a letter from the qualified wetland professional with the permit application verifying his or her negative findings.
- 2) New residential or commercial or other type development and land disturbing activities involving a change to parcel boundaries or a land use change:
  - a) Upon filing a request for approval of a preliminary plat, building permit or other land disturbance permit for new residential, commercial or other type of development that involves changes in any parcel boundaries or changes in land use, the applicant shall retain a qualified wetland professional to survey the proposed development site for wetlands. If no wetlands are found, the applicant or his or her designated representative shall submit a letter with the preliminary plat or permit application verifying that a qualified wetland professional has surveyed the site and found no wetlands. If wetlands are found, the following procedures shall be followed:
  - b) A qualified wetland professional, shall determine the presence of Ohio EPA Category 2 or 3 wetlands (or current equivalent Ohio EPA classification) on the proposed development site using the latest version of the Ohio Rapid Assessment Method for wetland evaluation approved at the time of application of this regulation. Acceptance of this determination shall be subject to approval by the Township.
- 3) If Ohio EPA Category 2 or 3 wetlands (or current equivalent Ohio EPA classification) are located on the proposed development site, the applicant or his or her designated representative shall delineate these wetlands and the wetland setback in conformance with these regulations. The applicant or his

or her designated representative shall identify all delineated wetlands and their associated setbacks on all property/parcel split plats, land development plans, and/or permit applications submitted to the Township.

## **6.5 SETBACK REQUIREMENTS**

1) The following requirements shall apply in riparian wetland setbacks:

- a) Except as otherwise provided in these regulations, riparian and wetland setbacks shall be preserved in their natural state and shall be established and marked in the field prior to any soil disturbing or land clearing activities.
- b) Riparian and wetland setbacks shall be measured in a perpendicular and horizontal direction outward from the ordinary high water mark of each designated watercourse and defined wetland boundary.
  - i) Where the 100-year floodplain is wider than a riparian setback on either or both sides of a designated watercourse, the riparian setback shall be extended to the outer edge of the 100-year floodplain. The 100-year floodplain shall be determined by the project engineer conducting a hydrologic analysis of the project area in conformance with standard engineering practices and approved by the Township.
  - ii) Where wetlands are identified within a riparian setback, the minimum riparian setback width shall be extended to the outer boundary of the wetland. In addition, wetlands shall be protected to the extent detailed in these regulations.
- c) The applicant shall be responsible for delineating riparian and wetland setbacks, including any expansions or modifications as required by these regulations, and identifying these setbacks on all plats submitted to the Township and the County, and on all plans for commercial development or other land development or other land disturbing activity submitted to the Township.
  - i) Wetlands shall be delineated by a site survey, approved by the Township, using delineation protocols accepted by the US Army Corps of Engineers and the Ohio EPA at the time of application of this regulation. If conflict exists between the delineation protocols of these two agencies, the delineation protocol that results in the most inclusive area of wetland shall apply.
  - ii) The delineation may be done by a meets and bounds, or higher level survey and shall be subject to review and approval by the Township
- d) Prior to any soil or vegetation disturbing activity the applicant shall clearly delineate riparian and wetland setbacks on the development site in such a way that they can be clearly viewed, and such delineation shall be maintained throughout soil disturbing activities.
- e) No approvals or permits shall be issued by the County Planning Commission, County Engineer or Township prior to on-site delineation of riparian and wetland setbacks in conformance with these regulations.

- f) Upon completion of an approved subdivision, land development, or other improvement, riparian and wetland setbacks shall be permanently recorded on the plat with the County Recorder.
- g) Riparian and wetland setbacks shall be maintained as open space thereafter through a permanent conservation easement. A third party, not the landowner or permittee or the County, that is allowed by state law, shall be given the conservation easement. If no third party shall accept the conservation easement, the County or Township shall accept it and protect it in perpetuity.

## **6.6 USES PERMITTED IN RIPARIAN AND WETLAND SETBACKS**

- 1) In addition to use regulations promulgated by the zoning, the following regulations regarding uses and activities shall apply. Nothing in this Section shall be construed as authorizing a use or activity that is not permitted on the site by the applicable zoning regulations.
  - a) By-Right Uses Without a Permit: Uses and activities set forth below shall be permitted in riparian and wetland setbacks without a permit required by these regulations. No use permitted under these regulations shall be construed as allowing public trespass on privately held lands.
    - i) Recreational Activity. Passive recreational uses, as permitted by federal, state, and local laws, such as hiking, fishing, hunting, picnicking, and similar uses.
    - ii) Removal of Damaged or Diseased Trees: Damaged or diseased trees may be removed.
    - iii) Revegetation and/or Reforestation: Riparian and wetland setbacks may be revegetated with non-invasive plant species.
    - iv) Maintenance of lawns, gardens and landscaping: Lawns, gardens and landscaping that existed at the time these regulations were passed may be maintained as long as they are not increased in size.
  - b) By-Right Uses With a Permit:
    - i) Selective Harvesting of Timber. Selective harvesting of timber may be allowed upon presentation of a Forest Management and Harvest Plan prepared by a Qualified Forester and accepted by the Township.
      - (1) Any landowner harvesting timber for sale shall post a \$1,000 performance guarantee with the Township. This performance guarantee shall be in the form of a Security Bond, Escrow Account, Certified Check or Cash, and it shall be held until completion of the timber-harvesting operation.
      - (2) Due to the potential for felled logs and branches to damage downstream properties and/or to block watercourses or otherwise exacerbate flooding, logs or branches resulting from permitted selective harvesting that are greater than 6 inches in diameter at the cut end shall be cut into sections no longer than 6 feet or removed from the 100-year floodplain. Harvested trees or felled logs and branches that are part of a designed and approved Streambank Stabilization and Erosion Control Measure shall be allowed to remain in a designated watercourse.

(3) The Forest Management and Harvest Plan shall:

- (a) Show that the site shall be adequately stocked after the approved selective harvest. “Adequately stocked” shall be defined as the residual stocking level greater than the B- Level on the Allegheny Hardwood Stocking Guide produced by the United States Forest Service, or other United States Forest Service stocking guides as dictated by the forest community to be harvested.
  - (b) Show that trees located less than 25 feet from the ordinary high water mark shall not be impacted by the proposed harvesting.
  - (c) Include a map of the site. This map shall specify the location of any skid and haul roads required for transporting harvested trees and fire wood from riparian and wetland setbacks.
  - (d) Include the method to be used to transport harvested trees from riparian and wetland setbacks.
  - (e) Specify the erosion control Best Management Practices that shall be employed during and after the proposed harvest. These erosion control practices shall be in conformance with the Ohio Department of Natural Resources, Division of Forestry’s BMPs for Erosion Control on Logging Jobs in Ohio.
  - (f) Provide the US Army Corps of Engineers and Ohio EPA wetland and Stream protection permit numbers and the associated permit requirements.
- ii) Stream bank Stabilization and Erosion Control Measures. Stream bank stabilization and erosion control measures may be allowed provided that such measures are ecologically compatible and substantially utilize natural materials and native plant species where practical. The stream bank stabilization and erosion control measures shall only be undertaken upon approval of a stormwater pollution prevention plan (SWP3) by the Township.
- iii) Crossings. Crossings of designated watercourses and through riparian setbacks by publicly and privately owned sewer and/or water lines and public and private utility transmission lines shall minimize disturbance in riparian setbacks, shall mitigate any necessary disturbances, and shall meet the standards and specifications in the most current online edition of *Rainwater and Land Development*. Erosive materials shall not be used in making stream crossings.

## 6.7 USES PROHIBITED IN RIPARIAN AND WETLAND SETBACKS

- 1) Any use not authorized under these regulations shall be prohibited in riparian and wetland setbacks. By way of example, the following uses are specifically prohibited; however, prohibited uses are not limited to those examples listed here.

- a) Construction: There shall be no structures of any kind.
- b) Dredging or Dumping: There shall be no drilling, filling, dredging, dumping of soil, spoils, liquid, or solid materials, except for non-commercial composting of uncontaminated natural materials, and except as permitted under the Section 6.6.
- c) Roads or Driveways: There shall be no roads or driveways permitted in riparian and/or wetland setback area, except as permitted under Section 6.6 of these regulations. There shall be no roads or driveways or roads permitted in wetlands or watercourses without a permit issued by the US Army Corps of Engineers and/or the Ohio EPA.
- d) Motorized Vehicles: There shall be no use of motorized vehicles except as permitted under Section 6.6 of these regulations.
- e) Parking Lots: There shall be no parking lots except as permitted under Section 6.6 of these regulations.
- f) Sewage disposal or treatment: Riparian and wetland setbacks shall not be used for sewage disposal or treatment except as permitted by the County Board of Health Regulations.

## **6.8 NON-CONFORMING STRUCTURES OR USES**

- 1) Non-conforming structures or uses within a riparian and wetland setback which are in existence at the time of passage of this regulation may be continued. However, the footprint of the structure shall not be enlarged.

## **SECTION 7 - DEFINITIONS**

**ABBREVIATED STORMWATER POLLUTION PREVENTION PLAN (ABBREVIATED SWP3):** The written document that sets forth the plans and practices to be used to meet the requirements of this regulation.

**ACRE:** A measurement of area equaling 43,560 square feet.

**ADMINISTRATOR:** The person or entity having the responsibility and duty of administering and ensuring compliance with this regulation.

**AS-BUILT SURVEY:** A survey shown on a plan or drawing prepared by a registered Professional Surveyor indicating the actual dimensions, elevations, and locations of any structures, underground utilities, swales, detention facilities, and sewage treatment facilities after construction has been completed.

**BEST MANAGEMENT PRACTICES (BMPs):** Also STORMWATER CONTROL MEASURE (SCM). Schedule of activities, prohibitions of practices, maintenance procedures, and other management practices (both structural and non-structural) to prevent or reduce the pollution of water resources. BMPs also include treatment requirements, operating procedures, and practices to control facility and/or construction site runoff, spillage or leaks, sludge or waste disposal; or drainage from raw material storage.

**CLEAN WATER ACT:** Pub. L. 92-500, as amended Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483, Pub. L. 97-117, and Pub. L. 100-4, 33 U.S.C. 1251 et. seq. Referred to as the Federal Water Pollution Control Act or the Federal Water Pollution Control Act Amendments of 1972.

**COMMENCEMENT OF CONSTRUCTION:** The initial disturbance of soils associated with clearing, grubbing, grading, placement of fill, or excavating activities or other construction activities.

**COMMUNITY:** Throughout this regulation, this shall refer to Olmsted Township, its designated representatives, boards, or commissions.

**COMPREHENSIVE STORMWATER MANAGEMENT PLAN:** The written document and plans meeting the requirements of this regulation that sets forth the plans and practices to minimize stormwater runoff from a development area, to safely convey or temporarily store and release post-development runoff at an allowable rate to minimize flooding and stream bank erosion, and to protect or improve stormwater quality and stream channels.

**CONCENTRATED STORMWATER RUNOFF:** Any stormwater runoff that flows through a drainage pipe, ditch, diversion, or other discrete conveyance channel.

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

**CONSTRUCTION ENTRANCE:** The permitted points of ingress and egress to development areas regulated under this regulation.

**CRITICAL STORM:** A storm that is determined by calculating the percentage increase in volume of runoff by a proposed development area for the 1 year 24 hour event. The critical storm is used to calculate the maximum allowable stormwater discharge rate from a developed site.

**DEVELOPMENT AREA:** A parcel or contiguous parcels owned by one person or persons, or operated as one development unit, and used or being developed for commercial, industrial, residential, institutional, or other construction or alteration that changes runoff characteristics.

**DEVELOPMENT DRAINAGE AREA:** A combination of each hydraulically unique Watershed with individual outlet points on the development area.

**DEWATERING VOLUME:** See current *Ohio Rainwater and Land Development Manual*.

**DISCHARGE:** The addition of any pollutant to surface waters of the state from a point source.

**DISTURBANCE:** Any clearing, grading, excavating, filling, or other alteration of land surface where natural or man-made cover is destroyed in a manner that exposes the underlying soils.

**DISTURBED AREA:** An area of land subject to erosion due to the removal of vegetative cover and/or soil disturbing activities such as grading, excavating, or filling.

**DRAINAGE:** (1) The area of land contributing surface water to a specific point. (2) The removal of excess surface water or groundwater from land by surface or subsurface drains.

**DRAINAGE WATERSHED:** For the purpose of this regulation the total contributing drainage area to a BMP, i.e., the “watershed” directed to the practice. This includes offsite contributing drainage.

**DRAINAGE WAY:** A natural or manmade channel, ditch, or waterway that conveys surface water in a concentrated manner by gravity.

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

**EROSION:** The process by which the land surface is worn away by the action of wind, water, ice, gravity, or any combination of those forces.

**EROSION AND SEDIMENT CONTROL:** The control of soil, both mineral and organic, to minimize the removal of soil from the land surface and to prevent its transport from a disturbed area by means of wind, water, ice, gravity, or any combination of those forces.

**EXTENDED DETENTION FACILITY:** A stormwater control measure that replaces and/or enhances traditional detention facilities by releasing the runoff collected during the stormwater quality event over at least 24 to 48 hours, retarding flow and allowing pollutants to settle within the facility.

**FINAL STABILIZATION:** All soil disturbing activities at the site have been completed and a uniform perennial vegetative cover with a density of at least 80% coverage for the area has been established or equivalent stabilization measures, such as the use of mulches or geotextiles, have been employed. In addition, all temporary erosion and sediment control practices are removed and disposed of and all trapped sediment is permanently stabilized to prevent further erosion. Final stabilization also requires the installation of permanent (post-construction) stormwater control measures (SCMs).

**GRADING:** The excavating, filling, or stockpiling of earth material, or any combination thereof, including the land in its excavated or filled condition.

**GREEN INFRASTRUCTURE:** Wet weather management approaches and technologies that utilize, enhance or mimic the natural hydrologic cycle processes of infiltration, evapotranspiration and reuse.



**GRUBBING:** removing or grinding of roots, stumps and other unwanted material below existing grade.

**HYDROLOGIC UNIT CODE:** a cataloging system developed by the United States Geological Survey and the Natural Resource Conservation Service to identify watersheds in the United States.

**IMPERVIOUS:** That which does not allow infiltration.

**IMPERVIOUS COVER:** Any surface that cannot effectively absorb or infiltrate water. This may include roads, streets, parking lots, rooftops, sidewalks, and other areas not covered by vegetation.

**INFILTRATION CONTROL MEASURE:** A stormwater control measure that does not discharge to a water resource during the stormwater quality event, requiring collected runoff to either infiltrate into the groundwater and/or be consumed by evapotranspiration, thereby retaining stormwater pollutants in the facility.

**LANDSCAPE ARCHITECT:** A Professional Landscape Architect registered in the State of Ohio.

**LARGER COMMON PLAN OF DEVELOPMENT OR SALE:** A contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under one plan.

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

**MAXIMUM EXTENT PRACTICABLE (MEP):** The technology-based discharge standard for Municipal Separate Storm Sewer Systems to reduce pollutants in stormwater discharges that was established by the Clean Water Act §402(p). A discussion of MEP as it applies to small MS4s is found in 40 CFR 122.34.

**MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4):** A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that are:

1. Owned or operated by the federal government, state, municipality, township, county, district, or other public body (created by or pursuant to state or federal law) including a special district under state law such as a sewer district, flood control district or drainage districts, or similar entity, or a designated and approved management agency under Section 208 of the Federal Water Pollution Control Act that discharges into surface waters of the state; and
2. Designed or used for collecting or conveying solely stormwater,
3. Which is not a combined sewer, and
4. Which is not a part of a publicly owned treatment works.

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES):** The national program for issuing, modifying, revoking and reissuing, termination, monitoring and enforcing permits and enforcing pretreatment requirements, under sections 307, 402, 318, 405 under the Clean Water Act.

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

**OPERATOR:** Any party associated with a construction project that meets either of the following two criteria:

The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or

The party has day-to-day operational control of those activities at a project which are necessary to ensure compliance with A Stormwater Pollution Prevention Plan (SWP3) for the site or other permit conditions (e.g. they are authorized to direct workers at a site to carry out activities required by the SWP3 or comply with other permit conditions.

**ORDINARY HIGH WATER MARK:** The point of the bank or shore to which the presence and action of surface water is so continuous as to leave a district marked by erosion, destruction or prevention of woody terrestrial vegetation, predominance of aquatic vegetation, or other easily recognized characteristic. The ordinary high water mark defines the bed of a watercourse.

**OWNER OR OPERATOR:** The owner or operator of any “facility or activity” subject to regulation under the NPDES program.

**SUBDIVISIONS, MAJOR AND MINOR:** See Ohio Administrative Code 711.001 for definition.

**PARCEL:** Means a tract of land occupied or intended to be occupied by a use, building or group of buildings and their accessory uses and buildings as a unit, together with such open spaces and driveways as are provided and required. A parcel may contain more than one contiguous lot individually identified by a ‘Permanent Parcel Number’ assigned by the [county] County Auditor’s Office.

**PERCENT IMPERVIOUSNESS:** The impervious area created divided by the total area of the project site.

**PERMANENT STABILIZATION:** Establishment of permanent vegetation, decorative landscape mulching, matting, sod, rip rap, and landscaping techniques to provide permanent erosion control on areas where construction operations are complete or where no further disturbance is expected for at least one year.

**PERSON:** Any individual, corporation, firm, trust, commission, board, public or private partnership, joint venture, agency, unincorporated association, municipal corporation, county or state agency, the federal government, other legal entity, or an agent thereof.

**PHASING:** Clearing a parcel of land in distinct sections, with the stabilization of each section before the clearing of the next.

**POINT SOURCE:** Any discernible, confined and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or the floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

**POST-DEVELOPMENT:** The conditions that exist following the completion of soil disturbing activity in terms of topography, vegetation, land use, and the rate, volume, quality, or direction of stormwater runoff.

**PRE-CONSTRUCTION MEETING:** Meeting prior to construction between all parties associated with the construction of the project including government agencies, contractors and owners to review agency requirements and plans as submitted and approved.

**PRE-DEVELOPMENT:** The conditions that exist prior to the initiation of soil disturbing activity in terms of topography, vegetation, land use, and the rate, volume, quality, or direction of stormwater runoff.

**PRE-WINTER STABILIZATION MEETING:** A meeting between Olmsted Township and all principal parties, prior to October 1, in order to plan winter erosion and sediment controls for a site that requires a Stormwater Pollution Prevention Plan.

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

**QUALIFIED INSPECTION PERSONNEL:** A person knowledgeable in the principles and practice of erosion and sediment controls, who possess the skills to assess all conditions at the construction site that could impact stormwater quality and to assess the effectiveness of any sediment and erosion control measure selected to control the quality of stormwater discharges from the construction activity.

**RAINWATER AND LAND DEVELOPMENT:** Ohio's standards for stormwater management, land development, and stream protection. The most current edition of these standards shall be used with this regulation.

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

**RIPARIAN AREA:** The transition area between flowing water and terrestrial (land) ecosystems composed of trees, shrubs and surrounding vegetation which serve to stabilize erodible soil, improve both surface and ground water quality, increase stream shading and enhance wildlife habitat.

**RIPARIAN AND WETLAND SETBACK:** The real property adjacent to a water resource on which soil disturbing activities are limited, all as defined by the Olmsted Township Riparian and Wetland Setback Regulations.

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

**RUNOFF COEFFICIENT:** The fraction of rainfall that will appear at the conveyance as runoff.

**SEDIMENT:** The soils or other surface materials that are transported or deposited by the action of wind, water, ice, gravity, or any combination of those forces, as a product of erosion.

**SEDIMENTATION:** The deposition or settling of sediment.

**SEDIMENT SETTLING POND:** A sediment trap, sediment basin or permanent basin that has been temporarily modified for sediment control, as described in the latest edition of *Rainwater and Land Development*.

**SEDIMENT STORAGE VOLUME:** See current edition of *Rainwater and Land Development*.

**SETBACK:** A designated transition area around water resources that is left in a natural, usually vegetated, state to protect the water resources from runoff pollution. Soil disturbing activities in this area are restricted by this regulation.

**SITE OWNER/OPERATOR:** Any individual, corporation, firm, trust, commission, board, public or

private partnership, joint venture, agency, unincorporated association, municipal corporation, county or state agency, the federal government, other legal entity, or an agent thereof that is responsible for the overall construction site.

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

**SOIL DISTURBING ACTIVITY:** Clearing, grading, excavating, filling, grubbing or stump removal that occurs during clearing or timber activities, or other alteration of the earth's surface where natural or human made ground cover is destroyed and that may result in, or contribute to, erosion and sediment pollution.

**SOIL & WATER CONSERVATION DISTRICT:** An entity organized under Chapter 1515 of the Ohio Revised Code referring to either the Soil and Water Conservation District Board or its designated employee(s). Hereafter referred to as Cuyahoga SWCD.

**STABILIZATION:** The use of Best Management Practices or Stormwater Control Measures that reduce or prevent soil erosion by stormwater runoff, trench dewatering, wind, ice, gravity, or a combination thereof.

**STEEP SLOPES:** Slopes that are 15 percent or greater in grade. NOTE: If otherwise defined in community zoning, use community definition.

**STORMWATER POLLUTION PREVENTION PLAN (SWP3):** The written document that sets forth the plans and practices to be used to meet the requirements of this regulation.

**STORMWATER OR STORM WATER:** Defined at 40 CFR 122.26(b)(13) and means stormwater runoff, snow melt runoff and surface runoff and drainage.

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

**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.

**STRUCTURAL STORMWATER MANAGEMENT PRACTICE OR STORMWATER CONTROL MEASURE (SCM):** Any constructed facility, structure, or device that prevents or reduces the discharge of pollutants to water resources and controls stormwater volume and rate.

**SURFACE OUTLET:** A dewatering device that only draws water from the surface of the water.

**SURFACE WATER OF THE STATE:** Also Water Resource or Water Body. Any-stream, lake, reservoir, pond, marsh, wetland, or other waterway situated wholly or partly within the boundaries of the state, except those private waters which do not combine or affect a junction with surface water. Waters defined as sewerage systems, treatment works or disposal systems in Section 6111.01 of the Ohio Revised Code are not included.

**TEMPORARY STABILIZATION:** The establishment of temporary vegetation, mulching, geotextiles, sod, preservation of existing vegetation, and other techniques capable of quickly establishing cover over disturbed areas to provide erosion control between construction operations.

**TOPSOIL:** The upper layer of the soil that is usually darker in color and richer in organic matter and nutrients than subsoil.

**TOTAL MAXIMUM DAILY LOAD:** The sum of the existing and/or projected point source, nonpoint source, and background loads for a pollutant to a specified watershed, water resource or wetland, or water resource or wetland segment. A TMDL sets and allocates the maximum amount of a pollutant that may be introduced into the water and still ensure attainment and maintenance of water quality standard.

**UNSTABLE SOILS:** A portion of land that is identified by the Township as prone to slipping, sloughing, or landslides, or is identified by the U.S. Department of Agriculture Natural Resource Conservation Service methodology as having a low soil strength.

**WATERCOURSE:** Any brook, channel, creek, stream, or river having banks, a defined bed and a definite direction of flow, either continuously or intermittently flowing.

**WATER QUALITY VOLUME (WQv):** The volume of stormwater runoff which must be captured and treated prior to discharge from the developed site after construction is complete. WQv is based on the expected runoff generated by the mean storm precipitation volume from post-construction site conditions at which rapidly diminishing returns in the number of runoff events captured begins to occur.

**WATER RESOURCE Also SURFACE WATER OF THE STATE:** Any stream, lake, reservoir, pond, marsh, wetland, or waterway situated wholly or partly within the boundaries of the state, except those private waters which do not combine or affect a junction with surface water. Waters defined as sewerage systems, treatment works or disposal systems in Section 6111.01 of the Ohio Revised Code are not included.

**WATER RESOURCE CROSSING:** Any bridge, box, arch, culvert, truss, or other type of structure intended to convey people, animals, vehicles, or materials from one side of a watercourse to another. This does not include private, non-commercial footbridges or pole mounted aerial electric or telecommunication lines, nor does it include below grade utility lines.

**WATERSHED:** The total drainage area contributing runoff to a single point.

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