

**CHAPTER 320A
CONSTRUCTION SITE SOIL EROSION, SEDIMENT, AND OTHER WASTES
AND STORM WATER RUNOFF**

320A.01 DEFINITIONS. As used in this chapter, the following words and terms shall mean the following:

APPROVING AUTHORITY: The official responsible for administering the applicable program(s).

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

CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC): A person that has subscribed to the Code of Ethics and have met the requirements established by the CPESC Council of Certified Professional In Erosion and Sediment Control, Inc. to be a Certified Professional in Erosion and Sediment Control.

CHANNEL: A natural stream that conveys water, or a ditch or channel excavated for the natural flow of water.

COMMUNITY: Community shall mean the City of Berea, State of Ohio, and its designated agents and representatives.

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

CONSERVATION: The wise use and management of natural resources.

CUT AND FILL SLOPES: A portion of land surface or area from which soil material is excavated and/or filled.

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

DETENTION BASIN: A storm water management pond that remains dry between storm events. Storm water management ponds include a properly engineered/designed volume which is dedicated to the temporary storage and slow release of runoff waters.

DEVELOPMENT AREA: Any tract, lot, or parcel of land, or combination of tracts, lots or parcels of land, which are in one ownership, or are contiguous and in diverse ownership, where earth-disturbing activity is to be performed.

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

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

EARTH DISTURBING ACTIVITY: Any grading, excavating, filling, or other alteration of the earth's surface where natural or man-made ground cover is destroyed.

EARTH MATERIAL: Soil, sediment, rock, sand, gravel, and organic material or residue associated with or attached to the soil.

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

EXISTING: In existence at the time of the passage of these regulations.

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

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

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

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.

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

LOCAL COUNTY SWCD: The local county Soil and Water Conservation District.

NATURAL RESOURCES CONSERVATION SERVICE (NRCS): An agency of the United States Department of Agriculture, formerly known as the Soil Conservation Service (SCS).

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

OHIO EPA: The Ohio Environmental Protection Agency.

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.

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

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

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

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

RETENTION BASIN: A storm water management pond that maintains a permanent pool of water. These storm water management ponds include a properly engineered/designed volume dedicated to the temporary storage and slow release of runoff waters.

RIPARIAN AREA: Naturally vegetated land adjacent to watercourses which, if appropriately sized, helps to stabilize streambanks, limit erosion, reduce flood flows, and/or filter and settle out runoff pollutants, or which performs other functions consistent with the purposes of these regulations.

RIPARIAN SETBACK: Those lands within the Community which are alongside streams where earth disturbing activities will not take place and natural vegetation will not be removed.

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

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

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

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

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

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

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

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

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

SLIP: A landslide as defined under "Landslides."

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

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

SOIL CONSERVATION SERVICE, USDA: The federal agency now titled the "Natural Resources Conservation Service," which is an agency of the United States Department of Agriculture.

SOIL EROSION AND SEDIMENT CONTROL PLAN: A written and/or drawn soil erosion and sediment pollution control plan to minimize erosion and prevent off-site sedimentation throughout all earth disturbing activities on a development area.

SOIL EROSION AND SEDIMENT CONTROL PRACTICES: Conservation measures used to control sediment pollution and including structural practices, vegetative practices and management techniques.

SOIL STABILIZATION: Vegetative or structural soil cover that controls erosion, and includes permanent and temporary seeding, mulch, sod, pavement, etc.

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

STORM WATER CONTROL STRUCTURE: Practice used to control accelerated storm water runoff from development areas.

STORM WATER CONVEYANCE: All storm sewers, channels, streams, ponds, lakes, etc., used for conveying concentrated storm water runoff, or for storing storm water runoff.

STORM WATER POLLUTION PREVENTION PLAN (SWP3): The plan required by Ohio EPA to meet the requirements of its National Pollutant Discharge Elimination System (NPDES) Permit program for construction activities.

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

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

USEPA: The United States Environmental Protection Agency.

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

WATERCOURSE: Any natural, perennial, or intermittent channel with a defined bed and banks, stream, river or brook.

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

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 Codified Federal Register (CFR) 232, as amended). Wetlands shall be delineated by a site survey approved by the Community using delineation protocols accepted by the U.S. Army Corps of Engineers and the Ohio EPA at the time of application of this regulation. If a conflict exists between the delineation protocols of these two agencies, the delineation protocol that results in the most inclusive area of wetlands shall apply.

WETLAND SETBACK: Those lands adjacent to wetlands where earth disturbing activities will not take place and natural vegetation will not be removed.

WINTER: October 1st to April 1st of each year.

320A.02 PLAN, PURPOSE AND SCOPE.

(A) COMPREHENSIVE STORM WATER MANAGEMENT PLAN. The Construction Site Conservation Plan developed to meet this regulation will be coordinated and combined with the Riparian and Wetland Setback Plan and the Post-Construction Water Quality Plan that are developed for the same site. These plans will be titled and numbered in one consecutive sequence to make a Comprehensive Storm Water Management Plan for the site. The Comprehensive Storm Water Management Plan so developed will serve as the Storm Water Pollution Prevention Plan (SWP3) required by Ohio EPA as part of the NPDES Storm Water Permit for General Construction.

(B) PURPOSE: The purpose and intent of this regulation is to establish consistent technically feasible and operationally practical standards to achieve a level of storm water management, and erosion and sediment control that will minimize damage to public and private property and the degradation of water resources, and will promote and maintain the health, safety, and welfare of the residents of the Community.

This regulation further intends, but is not limited, to:

1. Allow development while minimizing increases in downstream flooding, erosion, and sedimentation.
2. Reduce damage to receiving water resources and drainage systems that are caused by new development or redevelopment activities.
3. Control storm water runoff resulting from soil disturbing activities.
4. Assure that development site owners control the volume and rate of storm water runoff originating from their property so that surface water and ground water are protected, soil erosion is controlled, and flooding potential is not increased.
5. Preserve to the maximum extent practicable the natural drainage characteristics of the building site and minimize the need to construct, repair, and replace enclosed storm drain systems.
6. Preserve to the maximum extent practicable natural infiltration and groundwater recharge, and maintain subsurface flow that replenishes water resources, wetlands, and wells.
7. Assure that storm water controls are incorporated into site planning and design at the earliest possible stage.
8. Prevent unnecessary stripping of vegetation and loss of soil, especially adjacent to water resources and wetlands.

9. Reduce the need for costly maintenance and repairs to roads, embankments, sewage systems, ditches, water resources, wetlands, and storm water management practices that are the result of inadequate soil erosion, sediment and storm water control.
10. Reduce the long-term expense of remedial projects needed to address problems caused by inadequate storm water, erosion and sediment control.
11. Require the construction of storm water management practices that serve multiple purposes including flood control, soil erosion and sediment control, and require water quality protection; and encourage such practices that promote recreation and habitat preservation.
12. Ensure that all storm water management, soil erosion and sediment control practices are properly designed, constructed, and maintained.

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

1. Land disturbing activities related to producing agricultural crops or Silviculture operations regulated by the Ohio Agricultural Sediment Pollution Abatement Rules (1501: 15-3-01 to 1501: 15-3-09 of the Ohio Administrative Code) and existing at the time of passage of this regulation.
2. Coal surface mining operations regulated by Chapter 1513 of the Ohio Revised Code and existing at the time of passage of this regulation.
3. Other surface mining operations regulated by Chapter 1514 of the Ohio Revised Code and existing at the time of passage of this regulation.

320A.03 DISCLAIMER OF LIABILITY: Neither submission of a plan under the provisions herein, nor compliance with the provisions of these regulations, shall relieve any person or entity from responsibility for damage to any person or property that is otherwise imposed by law.

320A.04 CONFLICTS, SERVABILITY, NUISANCES & RESPONSIBILITY:

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

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

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

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

(E) Consultations: In implementing these regulations the City Engineer or other City officials may consult with the local county SWCD, state and federal agencies and other technical experts as necessary. Any costs associated with such consultations may be assessed to the applicant or his or her designated representative.

320A.05 ISSUANCE OF BUILDING PERMITS FOR RESIDENTIAL PROJECTS:

Two building permits will be issued for all single-family residential construction and similar types of construction as determined by the City Engineer. The first building permit shall allow the construction of the footers and basement walls or slab. No additional construction shall be performed and no additional building materials shall be allowed on the site until the Community has issued the second building permit. The City Engineer may approve the stockpiling of additional construction materials on the site prior to the issuance of the second permit if a suitable location can be identified. Proper Soil Erosion and Sediment Control must be maintained on the stockpile area prior to, during, and after the area is used for stockpiling.

The second building permit, allowing delivery of the remaining building materials and the remaining construction activities, shall not be issued until the City Engineer certifies that the required BMPs and any other BMPs identified in the Soil Erosion and Sediment Control Plan submitted with the Application for the first building permit have been properly installed, pursuant to the most recent edition of the Ohio *Rainwater and Land Development* manual.

320A.06 CONSTRUCTION SITE CONSERVATION PLAN:

(A) In order to control storm water damage and sediment pollution of water resources, wetlands, riparian areas, other natural areas, and public and private lands, the owner of each development area shall be responsible for developing a comprehensive Construction Site Conservation Plan. This plan will address storm water management (volume and peak rate of runoff), soil erosion, sediment and other wastes control. This plan must contain a description of controls appropriate for each construction operation covered by these regulations, and the operator must implement the planned controls in a timely manner. The plans and BMPs used to satisfy the conditions of these regulations shall meet the standards and specifications in the current edition of the Ohio *Rain Water and Land Development* manual. The plans must make use of the practices that preserve the existing natural condition to the Maximum Extent Practicable. The plan shall identify the subcontractors engaged in activities that could impact storm water runoff. The Construction Site Conservation Plan 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 Construction Site Conservation Plan.

1. **Development Sites Under 1 (One) Acre In Size:** Individual development sites that are larger than 8,000 square feet and smaller than one (1) acre (43,560 square feet) in total size of disturbed area, can submit abbreviated soil erosion and sediment control plans with the topography plan for the requested permit(s). The abbreviated plan must cover the following items, in addition to any other items from this ordinance that are required by the City Engineer.
 - A. Storm Water Issues: A statement as to how the increased storm water runoff that will be caused by the planned development project will be handled. This statement must identify the Best Management Practices (BMPs) the new construction project will include in order to address storm water runoff.
 - B. Redevelopment Exemption: Owners of development sites that were created by demolishing an older existing structure can request, in writing, that the City Engineer exempt them from the storm water issues if the total soil surface area being made impermeable is the same or less than the total soil surface area that was impermeable due to the structure(s) being torn down and removed.
 - C. Riparian and Wetland Setbacks: All riparian and wetland setback areas will be identified in the plan and in the field before construction starts.
 - D. Soil Erosion and Sediment Issues: A sketch of the entire development site must be submitted that identifies the location of:
 - 1) All existing and planned impervious areas, storm water inlets, drainage swales, wetlands, streams, conservation easements and other natural features to be saved and protected on the property.
 - 2) All existing and planned temporary and permanent conservation practices for the site. Residential lots shall include at a minimum the following:
 - a) Soil erosion and sediment control BMPs, and;
 - b) Construction Entrance, and;
 - c) Temporary Grass Seeding with 2 tons per acre of straw mulch, and;
 - d) Storm Drain Inlet Protection around every storm yard inlet on the site or accepting drainage from the site, and;
 - e) Silt Fence protection for any stream located on or close to the site and lacking an adequate vegetative buffer, and;
 - f) Silt Fence to prevent sediment discharge into street storm sewer inlets where no centralized sediment control exists for the drainage area that includes the lot, and;
 - g) Construction fence to protect any conservation easements, riparian setbacks and wetland setbacks from encroachment by construction activities.
 - E. The schedule for the use of Temporary Seeding developed according to the Temporary Seeding Table contained in the Minimum Standards Section of this ordinance must be included.

The location of construction material stockpile areas, if such have been approved by the City Engineer, with a description of the Soil Erosion and Sediment Controls to be maintained on the stockpile area prior to, during, and after the area is used for stockpiling.

2. **Development Sites 1 (One) Acre In Size or Larger:** All developments that have a larger common plan of development or sale equal to or larger than one (1) acre in size of disturbed area are subject to this ordinance and shall follow all of the requirements set forth in this ordinance.

A. Description of the Plan of Construction: The following information shall be included in the Construction Site Conservation Plan:

1) Site Description:

- a) A description of the prior land uses of the site.
- b) A description of the nature and type of construction activity (e.g., low density residential, shopping mall, highway, etc.).
- c) A description of the total area of the site and the area of the site that is expected to be disturbed (i.e., grubbing, clearing, excavating, filling or grading, including off-site borrow, fill or spoil areas and off-site utility installation areas).
- d) An estimate of the impervious area and percent imperviousness created by the construction activity.
- e) The types of soils within, or affected by, the development area, and the location of all highly erodible or unstable soils as determined by the most current edition of the soil survey of the county, by the Natural Resources Conservation Service (NRCS),
- f) An onsite, detailed Soils Engineering Report if required by the City Engineer.
- g) The name and/or location of the immediate receiving stream or surface water(s) and the first subsequent named receiving water and the major river watersheds in which it is located.

2) A vicinity sketch locating:

- a) The larger common plan of development or sale
- b) The development area
- c) All pertinent surrounding natural features within 200 feet of the development site including, but not limited to:
 - 01 Water resources such as wetlands, springs, lakes, ponds, rivers and streams (including intermittent streams with a defined bed and bank)
 - 02 Conservation Easements
 - 03 Other sensitive natural resources
 - 04 The sensitive areas receiving runoff from the development
- d) All off-site borrow or spoil areas
- e) All off-site utility installation areas that are related to the planned project

3) The existing and proposed topography shown in the appropriate contour intervals as approved by the City Engineer (generally one-foot contours are used).

- 4) The location and description of existing and proposed drainage patterns and facilities, including any allied drainage facilities beyond the development area and the larger common plan of development or sale.
 - 5) Existing and proposed watershed boundary lines, direction of flow and watershed acreage.
 - 6) The person or entity responsible for continued maintenance of all vegetative and/or mechanical BMPs for both the construction and post-construction phases of the development.
 - 7) Long-term maintenance requirements and schedules of all BMPs for both the construction and post-construction phases of the development.
 - 8) Long-term maintenance inspection schedules.
 - 9) The person or entity financially responsible for conducting the inspections of, and the maintenance of, permanent storm water conveyance and storage structures and all other conservation practices.
 - 10) The method of ensuring that funding will be available to conduct the long-term maintenance and inspections of all permanent storm water, soil erosion and sediment control and water quality practices.
 - 11) The location of any existing or planned riparian and/or wetland setback areas on the property.
 - 12) The plan must clearly describe, for each major construction activity, the appropriate BMPs and the general timing (or sequence) during the construction process of when the measures will be implemented; and, who (which contractor) will be responsible for implementation (e.g., Contractor A will clear, grub and install perimeter controls and Contractor B will maintain perimeter controls until final stabilization; Contractor C will conduct and document the scheduled inspections.)
 - 13) Location and description of any storm water discharges associated with dedicated asphalt and concrete plants covered by this regulation and the Best Management Practices to address pollutants in these storm water discharges.
- (B) Construction Site Conservation Plan Elements: the Construction Site Conservation Plan shall include, at a minimum, the following information:
- 1) The Construction Site Conservation Plan shall include a map showing the location of:
 - a) The limits of earth disturbing activity including excavations, filling, grading or clearing.
 - b) Drainage patterns during major phases of construction.
 - c) The location of each proposed soil erosion and sediment control BMP, including:

- 01 Permanent soil erosion control practices to be left in place after construction operations have been completed (e.g. level spreaders, permanent erosion control matting, gabions, rock lined channels, etc.),
 - 02 Areas likely to require temporary stabilization during the course of site development,
 - 03 Designated construction entrances where vehicles will access the construction site,
 - 04 In-stream activities including stream crossings,
 - 05 Areas designated for the storage or disposal of solid, sanitary and toxic wastes,
 - 06 Dumpsters,
 - 07 Cement truck washout,
 - 08 Fuel tanks
 - 09 BMPs that divert runoff away from disturbed areas and steep slopes where practicable including rock check dams, pipe slope drains, diversions to direct flow away from exposed soils, and protective grading practices,
 - 10 Sediment settling ponds drawn to scale.
- d) Existing and proposed locations of buildings, roads, parking facilities and utilities.
 - e) Boundaries of wetlands and stream channels the owner intends to fill or relocate for which the owner is seeking approval from the US Army Corps of Engineers and/or Ohio EPA.
- 2) The Construction Site Conservation Plan shall include a list of soil erosion and sediment control BMPs being used and the standards and specifications, including detailed drawings, for each BMPs. This list shall include:
- a) Methods of controlling the flow of runoff from disturbed areas so as to prevent or minimize erosion.
 - b) Identification of the Structural Practices to be used to control erosion and trap sediment from a site remaining disturbed for more than 14 days. A description shall be included of how each selected control will store runoff so as to let sediments settle out and/or divert flows away from exposed soils or act to limit runoff from exposed areas.
 - c) Identification for each Structural Practice of its size, detail drawings, maintenance requirements and design calculations.
 - d) The type and amount of plant seed, live plants, fertilizer, agricultural ground limestone and mulch to be used. Specification of soil testing requirements for fertility and lime requirements will be included. Specification for the use of perennial grass seed will also be included.
 - e) Settling ponds will be identified with basic dimensions and the calculations for size and volume.
 - f) Detailed drawings and installation requirements of all other structural control BMPs.
 - g) Any other soil erosion and sediment control related BMPs and items that are required by the City Engineer.
 - h) For developments where the overall plan does not call for centralized sediment control capable of controlling multiple individual lots, a detail drawing of a project specific typical individual lot showing standard individual lot soil erosion and sediment control practices and the sequence and timing of BMP installation for the individual lots. This

does not remove or eliminate the responsibility to designate and install specific soil erosion and sediment control practices for the storm water discharges.

- 3) The Construction Site Conservation Plan shall include the scheduling, phasing, and coordination of construction operations and erosion and sediment control BMPs, including vegetative plantings and mulch.

(C) The Construction Site Conservation Plan shall include a description of the Storm Water Management (SWM) practices to be used on the site. The SWM element of the Plan shall include, at a minimum, the following:

- 1) A map showing the location, drawn to scale, of permanent SWM conveyance, detention and retention structures, other SWM control structures and the SWM easements.
- 2) A general description of the SWM strategy proposed to meet this ordinance.
- 3) Design calculations for all permanent SWM conveyance, detention and retention structures, and other SWM control structures.
- 4) Any other SWM related items required by the City Engineer.

320A.07 EASEMENTS: Future access to floodplains, flood control facilities, runoff drainage ditches and channels, runoff storage facilities, storm sewers and other drainage ways and structures, as required by the City Engineer, shall be secured by means of easements.

- A. The easements shall be recorded in the name of the Community and, in single-family residential developments, the homeowners association.
- B. Such easements shall be not less than twenty-five (25) feet in width, in addition to the width of the ditch, channel, or other facility it is to serve. Access easements of this type shall be provided on one (1) side of the flood control or storm drainage ditch, channel, or similar type facility.
- C. Access along the initial drainage system shall be by means of easements. Such easements shall be not less than twenty-five (25) feet in width, with a minimum ten (10) foot width on either side of the centerline.
- D. Access adjacent to storage facilities shall consist of a twenty-five (25) foot easement in the case of detention (dry) basins, and a twenty-five (25) foot easement with a twenty-five 25 foot level bench in the case of retention (wet) basins, measured from the top of the bank, and shall include the storage facility itself.

- E. Easements for the emergency flow ways shall be a minimum of twenty-five (25) feet in width, or larger if required by the City Engineer.
- F. Flood control or storm drainage easements containing underground facilities shall have a minimum width of twenty-five (25) feet.
- G. The easements shall be restricted against the planting within said easement of trees, shrubbery or plantings with woody growth characteristics, and against the construction therein of buildings, accessory buildings, fences, walls or any other obstructions to the free flow of storm water and the movement of inspectors and maintenance equipment and also restricted against the changing of final grade from that described by the grading plan.

320A.08 MAINTENANCE: Any portion of the permanent drainage and soil erosion systems, including on-site and off-site storage facilities that are constructed by the owner, will be continuously maintained into perpetuity.

- A. Maintenance plans shall be provided by the permittee to both the City Engineer and the post-construction operator of the BMP (including homeowner associations) upon completion of construction activities and prior to the City Engineer giving final approval for the completed construction.
- B. Single Family and Multi-family Residential Developments: A Homeowners' Association shall be created and placed in title of the affected lands and shall be continuously responsible for post-construction maintenance and inspections into perpetuity unless such maintenance and inspections become officially accepted by the Community.
- C. Apartments, Commercial and Industrial Developments: The plans will clearly state that the owner of the property shall be continuously responsible for post-construction maintenance and inspections into perpetuity unless the Community officially accepts such maintenance and inspections.
- D. Maintenance Design: All temporary and permanent soil erosion and sediment control practices shall be designed and constructed to minimize maintenance requirements. Multi-use facilities incorporating assets such as aesthetics and recreation may be incorporated into the design of the drainage facilities. All permanent drainage, soil erosion, sediment control, water quality management systems and BMPs, including on-site and off-site structures and vegetation that are constructed or planted, must be inspected and maintained into perpetuity by the responsible party designated in the plans. Inspections and maintenance will be incorporated periodically throughout the year to ensure that the facilities are properly operational.
- E. Perpetual Maintenance Inspections: One (1) inspection with a written report will be performed each year. The written report will be given to the City Engineer by May 1st of each and every year after the Best Management Practice (BMP) has been completed.

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

320A.09 MINIMUM STANDARDS: In order to control sediment pollution of water resources, the owner or person responsible for the development area shall use conservation planning and practices to maintain the level of conservation established in the following standards.

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

for a particular slope is shown in the table below. (Placing silt fence in a parallel series does not extend the size of the drainage area).

Table 1: Silt Fence Applicability

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

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

D. Storm Water Diversion Practices: Storm water diversion practices shall be used to keep runoff away from disturbed areas and steep slopes where practicable. Such practices, which include Swales, Dikes or Berms, Pipe Slope Drains and Diversions, may receive storm water runoff from areas up to ten (10) acres. Storm water diversion practices alone are not considered a sediment control practice unless those are used in conjunction with a sediment settling pond.

E. All sediment control practices must be capable of ponding runoff in order to be considered functional.

F. Clearing and Grubbing will be done in two (2) or more phases. The first phase will include only those locations necessary to install the perimeter soil erosion, sediment and storm water control BMPs. After the perimeter controls are in place and functioning, the remaining phase(s) of clearing and grubbing may continue.

G. Timing of Sediment Trapping Practices: Sediment control practices shall be functional throughout all phases of up slope earth disturbing activity. Settling facilities, perimeter controls and other practices intended to trap sediment shall be implemented **prior** to grading and within seven (7) days from the start of grubbing. They shall continue to function until the up slope development area is permanently restabilized. As construction progresses and the topography is altered, appropriate controls must be constructed or existing controls altered to address the changing drainage patterns.

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

Table 2: Permanent Stabilization

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

Table 3: Temporary Stabilization

Area requiring temporary stabilization	Time frame to apply erosion controls
Any disturbed areas within fifty (50) feet of a stream and not at final grade	Within two (2) days of the most recent disturbance if the area will remain idle for twenty-one (21) days or more
Disturbed areas that will be dormant for more than 21 days but less than one (1) year and not within fifty (50) feet of a stream	Within seven (7) days of the most recent disturbance within the area.
Residential subdivisions for disturbance which has occurred on building lots	<p>Within 7 days of the most recent disturbance if housing unit construction on the lot is not scheduled to begin within 21 days of the disturbance.</p> <p>In any case, Temporary or Permanent Stabilization will be properly installed, pursuant to the most recent edition of the <i>Ohio Rainwater and Land Development</i> manual, before the second building permit is issued.</p>
Non-residential subdivisions and commercial developments	<p>Within 7 days of the most recent disturbance if further construction activity will not occur within 21 days of the disturbance.</p> <p>Where vegetative stabilization techniques may cause structural instability or are otherwise prohibited, alternative stabilization techniques must be employed.</p>
Disturbed areas that will be idle over winter	Prior to the onset of winter weather

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

I. Sediment Settling Ponds: A sediment settling pond is required for any one of the following conditions:

Concentrated storm water runoff (e.g., storm sewer or ditch);

Runoff from drainage areas, which exceed the design capacity of silt fence or other sediment barriers;

Runoff from drainage areas that exceed the design capacity of inlet protection; or

Runoff from common drainage locations with 10 or more acres of disturbed land.

Alternative controls can be used if the owner can show, in writing, that the Ohio EPA approved the use of alternatives that the owner demonstrated to be equivalent in effectiveness to a sediment settling pond.

1. Where storm sewer drainage areas include 10 or more acres disturbed at one time, a temporary (or permanent) sediment settling pond must be provided until final stabilization of the site. In single-family residential construction, final stabilization is after the houses are built and permanent landscaping is done.

It is recommended that for drainage locations of less than 10 acres, smaller sediment settling basins and/or Sediment Traps be used.

2. Each facility's storage capacity shall be no less than 1800 cubic feet of dewatering zone area per acre of total contributing drainage area and 1,000 cubic feet per disturbed acre of sediment storage zone area. The storage volume will be measured from the bottom of the basin to the top of the primary (principle) spillway.

3. Permanent storm water management ponds that are designed to trap sediment during construction shall be designed to provide for a slow release of sediment-laden water. The draw down time must be at least 48 hours, or meet the criteria in the Ohio Rainwater and Land Development manual whichever is most stringent.

4. The design configuration between inlet(s) and the outlet of settling ponds must provide at least two units of length for each one unit of width (> 2:1 length to width ratio); a length to width ratio of 4:1 is recommended.

5. The depth of the sediment settling pond must be less than or equal to five (5) feet.

6. Sediment must be removed from the sediment settling ponds when the design capacity has been reduced by 40%.

7. Public safety, especially as it relates to children, must be considered in the design. Alternative sediment controls must be used where site limitations would preclude a safe design.

8. Temporary sediment settling ponds will not be constructed in any stream channel.

J. Storm Sewer Inlet Protection:

1. All storm sewer inlets that accept water runoff from the development area shall be protected so that sediment-laden water will not enter the storm sewer, unless the storm drain system drains to a Sediment Settling Pond and is exempted in writing by the City Engineer. In areas where construction will be ongoing, such as subdivisions, the storm sewer protection shall be maintained until all up slope areas reach final stabilization, as determined by the City Engineer.
2. All inlets receiving runoff from drainage areas of one or more acres will require a sediment settling pond.
3. At the end of this period the site owner shall hydraulically clean the storm sewers to the satisfaction of the City Engineer. All sediments shall be removed from the system and shall not be flushed downstream.

K. Storm Sewer & Other Drainage Outlets: All storm sewers, footer drains, roof gutter drains and all other drains will be outletted at the bottom of the slope. The slope below the outlet will be able to control the water being drained through the storm sewer or other drains without causing erosion of the stream or channel banks or channel bottom or other areas that the water is outletted on.

L. Working Near, Or Crossing Streams and Wetlands:

1. Construction vehicles shall avoid water resources, wetlands, riparian areas, and their setbacks. If construction vehicles must cross these areas during construction, an approved temporary crossing shall be constructed. Streams, including intermittent streams with a defined bed and banks, shall be restabilized immediately after in-channel work is completed, interrupted, or stopped. Erodible materials will not be used in making stream crossings.
2. No soil, rock, debris, or any other material shall be dumped or placed into a water resource or into such proximity that it may slough, slip, or erode into a water resource unless such dumping or placing is authorized by the approving authority and, when applicable, the US Army Corps Of Engineers and Ohio EPA, for such purposes as, but not limited to, constructing bridges, culverts, and erosion or sediment control structures.

3. If construction activities disturb areas adjacent to streams, structural practices shall be designed and implemented on site to protect the adjacent streams from the impacts of sediment runoff.
4. No temporary or permanent sediment controls will be constructed in a stream channel.
5. Streams and wetland setbacks required by the community will be implemented. As a minimum a setback of 25 feet, as measured from the ordinary high water mark of the surface water, will be maintained in its natural state as a permanent buffer.

M. Construction Entrance:

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

N. Unstable Soils:

1. Unstable soils will be as determined by the local county Soil Survey or by a detailed soils report.
2. The City Engineer may require detailed soil reports when deemed necessary.
3. Unstable soils prone to slipping or land sliding shall not be graded, excavated, filled or have loads imposed upon them unless the work is performed in accordance with a qualified professional engineer's recommendations to correct, eliminate, or adequately address the problems.

O. Cut And Fill Slopes: Cut and fill slopes shall be designed and constructed in a manner that will minimize erosion and slippage. Consideration shall be given to the length and steepness of the slope, soil type, up slope drainage area, groundwater conditions and slope stabilization. The minimum final unreinforced soil slopes will have a horizontal to vertical ratio of 2:1 (the horizontal will be two (2) times the vertical).

P. Stabilization of Outfalls and Channels: Outfalls and constructed or modified channels shall be designed and constructed to withstand the expected velocity of flow from the planned post-development frequency storm without eroding. The planned post-construction velocity and flow shall include the entire contributing watershed. Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel to provide non-erosive velocity from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected.

Q. Establishment of Permanent Vegetation: A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized. Permanent vegetation shall not be considered established until ground cover is achieved which, in the opinion of the City Engineer, has 80% vegetative density over the entire disturbed area and provides adequate cover, and is mature enough to satisfactorily control soil erosion and survive adverse weather conditions.

R. Disposition of Temporary Practices: All temporary soil erosion and sediment control practices shall be disposed of immediately after final site stabilization is achieved or after the temporary practices are no longer needed, unless otherwise required by the City Engineer. Trapped sediment shall be permanently stabilized to prevent further erosion. The Construction Maintenance Guarantee shall not be released by the Community until all temporary soil erosion and sediment control practices that are no longer needed have been removed, properly disposed of and any trapped sediment has been stabilized.

S. Underground Utility Construction: The construction of underground utility lines, pipes, etc. shall be subject to the following criteria:

- 1 Trenches shall remain open for no more than five days.
2. There shall be no turbid discharges to surface waters resulting from dewatering activities. If trench or ground water contains sediment, it must pass through a sediment settling pond or other equally effective sediment control device, prior to being discharged from the construction site or to waters of the state.
3. When discharging clean ground water care must be taken to ensure that it does not become pollutant laden by crossing over disturbed soils or other pollutant sources.

T. Inspections:

1. If inspections or other information indicates a control has been used inappropriately or incorrectly or it has failed, it must be replaced or modified for the site conditions.
2. The owner of the development area shall have the site inspected for soil erosion, sediment control and other environmental concerns every seven (7) calendar days, and within twenty-four (24) hours of a 0.5 inch or greater rainfall event until the City Engineer certifies the site as being stable. The City Engineer certification does not relieve the permittee from meeting the Ohio EPA NPDES inspection requirements.
3. 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., the 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 all of the following conditions are met: the project is located in an area where frozen conditions are anticipated to continue for extended periods of time (i.e., more than one month); land disturbance activities have been suspended; and the beginning and ending dates of the waiver period are documented. Once a definable area has been fully stabilized, you may mark this on your plans and no further inspection requirements apply to that portion of the site.
4. Following each inspection, a checklist must be completed and signed by the qualified inspection personnel representative. At a minimum, the inspection report must include: 1) the inspection date; ii) names, titles, and qualifications of personnel making the inspection; iii) weather information for the period since the last inspection including the timing, duration, and depth of any storms; iv) weather information and a description of any discharges occurring at the time of the inspection; v) location(s) of discharges of sediment or other pollutants from the site; vi) locations(s) of BMPs that need to be maintained; vii) locations(s) of BMPs that failed to operate as designed or proved inadequate for a particular location; viii) location(s) where additional BMPs are needed that did not exist at the time at the inspection; and, ix) corrective action required including any necessary changes to the Comprehensive Storm Water Management Plan and implementation dates.
5. The inspection log will include the date and actions taken to correct problems noted in past inspection logs.

6. If the construction site is subject to Ohio EPA's National Pollutant Discharge Elimination System (NPDES) permit for construction activity, a copy of all of the required inspection sheets will be submitted to the City Engineer within three (3) working days of the date that the inspection was conducted.
7. 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.
8. Erosion and sediment controls identified in the Storm Water Pollution Prevention Plan shall be observed to ensure that they are operating correctly.
9. Discharge locations shall be inspected to ascertain whether erosion and sediment control measures are effective in preventing significant impacts to the receiving waters.
10. Locations where vehicles enter or exit the site shall be inspected for evidence of off-site vehicle tracking.
11. Sensitive areas including riparian and wetland setbacks shall be observed to ensure that they remain well marked and undisturbed.
12. If the inspection reveals that a control practice is in need of repair or maintenance, with the exception of sediment settling ponds, 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.
13. If any inspection reveals that a control practice fails to perform its intended function and that another, more appropriate control practice is required, the Construction Site Conservation Plan must be amended and the new control practice must be installed within 10 days of the inspection.
14. If the inspection reveals that a control practice has not been implemented in the time required by this ordinance it must be installed within ten (10) days from the date of inspection.
15. If the inspection reveals that a planned control practice is not needed, the record must contain a statement of explanation as to why the control practice is not needed.

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

1. A covered dumpster shall be made available for the proper disposal of construction site waste materials, garbage, plaster, drywall, grout, gypsum and etc. A second covered dumpster will be provided for the proper disposal of toxic and hazardous wastes.
2. The washing of excess concrete material into a street, catch basin, or other public facility or natural resource shall not occur. A designated area for concrete washouts shall be made available and used for all concrete washouts.
3. All fuel tanks and drums shall be stored in a marked storage area. A dike shall be constructed around this storage area with a minimum capacity equal to 110% of the volume of the largest container in the storage area. All additional requirements of the local fire authority must be followed. If the fuel tanks have a self-contained "dike," the plug will be kept in the "dike" tank at all times.
4. Any toxic or hazardous wastes and/or contaminated soils must be disposed of according to all applicable environmental laws and statutes. Local health districts and Ohio EPA can provide guidance on these issues.
5. On a site with a prior industrial landuse or a site that is contaminated with gasoline, fuel oil, hydrocarbon based chemicals or other Ohio EPA regulated contaminates, the storm water is considered wastewater. A permit from Ohio EPA is required to address these sites.
6. Proper permits shall be obtained for development projects on solid waste landfill sites.
7. Paint, paint washing liquids, excess paints and other paint wastes are considered solid wastes and shall be disposed of in accordance with applicable state regulations. Appropriate handling of these wastes shall occur at the site so as to prevent the discharge of these wastes into surface or ground waters.
 - a) Water based paint washing liquids and small quantities of excess water based paints may be disposed of by flushing down a connected sanitary sewer but may not be disposed of in an on-lot disposal system.
 - b) All other paints, paint thinners, and paint cleaning materials will be disposed of in the site's hazardous waste disposal dumpster.

8. Restroom facilities will be provided for site workers at all times that workers are present on the site and during all phases of the construction.
9. All required permits from appropriate federal, state, or local agencies are required to develop land with a previous industrial or commercial use or another use that may have led to soil contamination by a regulated pollutant.

V. Pre-winter Stabilization: If the development area will, or is planned to remain, active through the winter months, the owner of the development area shall hold a Pre-Winter Stabilization Meeting. The meeting will be held before October 1st. The owner shall invite the operator, developer, engineer, contractor, City Engineer and anyone else requested by the City Engineer to the meeting.

W. Storm Water Basins:

- 1) Pool Geometry: The minimum length-to-width ratio for the pond is 3:1 (the length will be three (3) times the width).
- 2) Riser in Embankment: The riser shall be located within the embankment for purposes of maintenance access. Access to the riser will be by manholes.
- 3) Water Drains: Each retention basin shall have a drainpipe that can completely drain the pond. The drain shall have an elbow within the pond to prevent sediment deposition from plugging the drain.
- 4) Adjustable Gate Valves: Both the storm water management and water quality basin drains shall have adjustable gate valves. Valves shall be located inside the riser at a point where they will remain dry and can be operated in a safe and convenient manner. During the annual inspections the valves shall be fully opened and closed at least once, and the certifying official shall attest to this on the inspection form. To prevent vandalism, the handwheel shall be chained to a ringbolt or manhole step.
- 5) Principal Spillway: Each principal spillway shall be designed in accordance with the NRCS standards and specifications for the office serving the county. Each principal spillway shall have the capacity to pass the 100-year design storm flow. The inlet or riser size for the pipe drops shall be designed so that the flow through the structure goes from weir flow control to pipe flow control without going into orifice control in the riser. The crest elevation of the primary spillway shall be no less than one foot below the emergency spillway crest. Premium joint pipe is required and a removable trash rack shall be installed at each location. Anti-seep collars shall be provided for all pipe conduits through an embankment.

6) Emergency Spillway: An emergency spillway shall be provided on each storm water management basin. Emergency spillways shall convey flood flows safely past the embankment, and shall be designed in accordance with NRCS standards and specifications for the office serving the local county. Emergency spillways shall have a 100-year design storm capacity unless exempted in writing by the City Engineer.

7) Embankments: Each dam embankment shall be designed in accordance with the NRCS standards and specifications for the office serving the county that the project is located in. Anti-seep collars shall be provided for all pipe conduits through an embankment.

8) Safety Features:

a) The primary spillway opening shall not permit access to the public and other non-maintenance personnel.

b) The perimeter of all water pool areas that are deeper than three (3) feet shall be surrounded by benches that meet the following:

i) A safety bench, with a maximum slope of 3%, which extends outward, on dry land, from the shoreline. This bench will be a minimum of 25 feet wide to provide for the safety of individuals and maintenance vehicles that are adjacent to the water pool. The safety bench may be landscaped, without the use of structures, to prevent access to the water pool.

ii) Side slopes between the safety bench and the aquatic bench shall not be steeper than 3:1 (3 feet horizontal for every 1 foot vertical).

iii) An aquatic bench that extends inward from the shoreline far enough to ensure public safety and has a maximum depth of 15 inches below the normal water surface elevations. The aquatic bench may be landscaped to prevent access to the deeper water pool.

iv) Side slopes beyond the aquatic bench and below the permanent water level shall not be steeper than 2:1 (2 feet horizontal for every 1 foot vertical).

v) The contours of the pond will be designed and managed to eliminate drop-offs and other hazards.

vi) Side slopes getting to the pond shall not exceed 3:1 and shall terminate on a safety bench.

vii) Soil erosion and sediment control practices used to satisfy these standards shall meet the standards and specifications in the current edition of the Ohio *Rainwater and Land Development* manual, NRCS Field Office Technical Guide for the local county or the Ohio EPA, which ever is most stringent.

X These standards are general guidelines and shall not limit the right of the City Engineer to impose at any time additional, more stringent requirements, nor shall the standards limit the right of the City Engineer to waive, in writing, individual requirements.

Y. Soil limitations shall be determined by using the current edition of the county soil survey written by the NRCS, USDA.

Z. Methods for controlling increases in storm water runoff peaks and volumes may include, but are not limited to:

- 1) Retarding flow velocities by increasing friction; for example, grassed road ditches rather than paved street gutters where practical, discharging roof water to vegetated areas, or grass and rock-lined drainage channels.
- 2) Grading and use of grade control structures to provide a level of control in flow paths and stream gradients.
- 3) Induced infiltration of increased storm water runoff into soil, where practical; for example, constructing special infiltration areas where soils are suitable, retaining topsoil for all areas to be vegetated, or providing good infiltration areas with proper emergency overflow facilities.
- 4) Provisions for detention and retention, for example, permanent retention ponds and lakes, dry detention basins, and subsurface detention tanks.

320A.10 STREAM CHANNEL AND FLOODPLAIN EROSION DESIGN CRITERIA:

- A. Runoff Rate: The peak runoff rate from the development area shall not be greater after development than it was before development. The applicant shall provide calculations proving no increase in the runoff rates from the one (1), two (2), five (5), ten (10), twenty-five (25), fifty (50) and one hundred (100) year storms.

B. Runoff Volume: Increases in the runoff volume shall be offset by further restricting runoff rates. Based on the increase in runoff volume, the applicant shall determine the critical storm for the development area. The runoff rate from the critical storm shall be restricted to the one (1) year pre-development storm runoff rate. The critical storm shall be calculated as follows:

- 1) Determine the total volume of runoff from a one-year frequency, twenty-four hour storm, occurring on the development area before and after development.
- 2) From the volumes in paragraph (1) determine the percent of increase in volume of runoff due to development according to the equation $(Q \text{ after} \div \text{the } Q \text{ before}-1) \times 100$ and, using this percentage, select the critical storm from this table:

Table 4: Critical Storm Selection

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

C. Detention Or Retention Basin Exemption For Redevelopment Or For Expansion Of Existing Facilities:

- 1) For any development regulated by this ordinance, the construction of a detention or retention basin may not be required for the development if the post-development peak discharge for a 100 year frequency 24 hour storm increases the existing peak discharge by one (1) cubic foot per second or less using the TR-55 method of calculation or other method approved by the City Engineer. The City Engineer can waive this requirement if existing storm sewers and drainage structures can safely handle the expected increase in flow.
- 2) Only one (1) exemption will be allowed per parcel. Any subsequent expansion must provide for detention or retention and must include the previously exempted area.

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

1. Fees shall be paid in an amount specified by the City Engineer. These fees shall be applied by the Community to storm water management practices that reduce existing storm water runoff.
2. Implementation of off-site storm water management practices.
3. Watershed or stream restoration.
4. Retrofitting of an existing storm water management practice.
5. Other practices approved by the City Engineer in keeping with the intent of this section.

320A.11 COMPLIANCE WITH OTHER RULES AND REGULATIONS:

- A. Ohio Dam Safety Laws: The provisions of the Ohio Dam Safety Laws shall be followed. Proof of compliance with the Ohio Dam Safety Law administered by the ODNR Division of Water shall be, but is not limited to, a copy of the ODNR Division of Water permit number or a copy of the project approval letter from the ODNR Division of Water or a letter from the site owner explaining why the Ohio Dam Safety Law is not applicable. The written proof will be provided to the City Engineer before a construction permit will be issued.
- B. NPDES Permits: The provisions of the National Pollutant Discharge Elimination System (NPDES) Permits, issued by the Ohio EPA, shall be followed. Proof of compliance shall be, but is not limited to, a copy of the Ohio EPA NPDES Permit number or a letter from the site owner explaining why the NPDES Permit is not applicable. The written proof will be provided to the City Engineer before a construction permit will be issued.
- C. Federal And State Wetland Permits: The provisions of the U.S. Army Corps of Engineers dredge and fill permits for federally-protected wetlands shall be followed. The provisions of Ohio EPA's Isolated Wetlands Permits shall also be followed. Wetlands and other waters of the United States shall be delineated by protocols accepted by the U.S. Army Corps of Engineers and the Ohio EPA at the time of the application of these regulations. Written proof of compliance with both permit programs will be provided to the City Engineer before a construction permit will be issued. Proof of compliance shall be, but is not limited to, the following:

A copy of the U.S. Army Corps of Engineers Individual Permit, if required for the project, showing project approval and any restrictions that apply to site activities; or

A site plan showing that any proposed fill of waters of the United States conforms to the general and specific conditions specified in the applicable Nationwide Permit; or

A letter from the site owner verifying that a qualified professional has surveyed the site and found no wetlands or other waters of the United States. Such a letter shall be noted on site plans submitted to the Community.

320A.12 CONSTRUCTION AND MAINTENANCE GUARANTEE:

(A) All permanent storm water, soil erosion, other wastes control, and water quality practices not specifically waived by the Community shall be constructed prior to the granting of the Final Plat Approval. Upon the request of the owner, the Community may defer the construction or installation of a permanent storm water, soil erosion, sediment, or other wastes control or water quality practice prior to the approval of the final plat where, in the City Engineer's judgment, such proper construction or installation is not immediately necessary for the protection of the public health and safety; and where the prior installation or construction of such improvement would constitute an undue hardship on the owner because in the case of new vegetation or weather conditions, or because in the case of concrete, building construction could cause cracking and excessive wear and tear on new structures. In such event, the Community shall require a Security Bond, Escrow Account, Certified Check or Cash to guarantee that such deferred improvements will be properly constructed or installed within an agreed specified time, but not to exceed six (6) months after the filing of such final plat.

(B) The owner will provide a maintenance guarantee for all permanent improvements, and soil erosion, wastes controls, and water quality practices in accordance with the provisions herein.

The Community 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, as determined by the City Engineer.

1. The Guarantee: The guarantee of both performance and maintenance will be in the form of a Security Bond, Escrow Account, Verified Check or Cash. The Security Bond, Escrow Account, Verified Check or Cash will be used by the Community 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 City Engineer. The Security Bond, Escrow Account, Verified Check or Cash will be in the total amount of both the performance guarantee and the maintenance guarantee. Ohio municipalities and counties may require performance bonds or other guarantees for water management improvement as stated in the ORC Chapter 711.101.

- a. Security Bond, Escrow Account, Verified Check or Cash shall be deposited with the Community prior to review by the City Engineer and/or its consultants to cover professional services of the City Engineer, Building Commissioner, Zoning Inspector and/or other experts required by the City Engineer, City Council, Mayor or Review Boards.
 - b. No soil disturbing activities shall be permitted until a Security Bond, Escrow Account, Verified Check or Cash has been posted to the satisfaction of the City Engineer sufficient for the Community 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, Verified Check or Cash shall be released only after all work required by this regulation has been completed to the satisfaction of the City Engineer 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 City Engineer.
2. Performance Guarantee: The furnishing of a performance guarantee will be maintained in an amount of not less than 120% of the estimate approved by the City Engineer, of installation of the deferred improvements.
 3. Maintenance Guarantee: The maintenance guarantee shall be maintained for a period of not less than 2 (two) years after final acceptance of the storm water, soil erosion, sediment, and other wastes control practices in an amount equal to 20% of the estimate approved by the City Engineer, of the construction and, where necessary, removal of such practices.
 4. Time Extension: The City Engineer may extend for cause the time allowed for the installation of the improvements for which the performance guarantee has been provided with the receipt of a written request from the owner.
 5. Completion: Upon completion of the construction of improvements or temporary and/or permanent, soil erosion, sediment, 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 City Engineer of this fact.
 6. Inspection: The Community will not release the Security Bond, Escrow Account, Verified Check or Cash guarantee until the City Engineer has inspected the site to ensure that the guaranteed item(s) have been completed and/or removed.

7. Slow Release Devices: Performance and maintenance guarantees will be maintained on the temporary sediment removal slow release devices installed in detention and retention basins until the entire site has reached final soil stabilization. Final stabilization in single-family residential developments is when 90% of the homes are constructed with their lawns completely installed and any remaining unbuilt lots having been permanently stabilized with a uniform ground cover at a growth density of 80% or better.
8. Release: The Construction Maintenance Guarantee shall not be released by the Community until all temporary soil erosion and sediment control practices that are no longer needed have been removed, properly disposed of and any trapped sediment has been stabilized.

320A.13 APPLICATION PROCEDURES FOR CONSTRUCTION CONSERVATION PLANS (CCP):

- A. This plan will be combined with the Post-Construction Water Quality, Riparian Setback and Wetland Setback Plans that have also been developed for the site.
- B. Plans developed by the site owners and approved by the Community in accordance with this regulation do not relieve the site owner of responsibility for obtaining and complying with all other necessary permits and/or approvals from federal, state, county, and local agencies and departments. If requirements vary, the most stringent requirement shall be followed. Plans submitted to the City Engineer for review and approval, shall be accompanied by all other required permits and documentation relevant to the project, including but not limited to the permits required and issued by the US Army Corps Of Engineers, Ohio EPA and ODNR Division of Water.
- C. If the City Engineer determines necessary, the application must include a letter or report from the local county SWCD that states that the Construction Site Conservation Plan, the Riparian and Wetland Setback Plan and the Post-construction Water Quality Plan have been reviewed for consistency with Ohio EPA and local regulations.
- D. Five (5) sets of the plans and necessary data required by this regulation shall be submitted to the City Engineer with text material being submitted on 8.5 by 11 inch paper and drawings on no larger than 24 by 36 inch sized paper. Submittals shall include:
 - 1) At the preliminary plan approval request, the preliminary plans only need to show all of the following existing and planned features: streams, water bodies, wetlands, riparian and wetland setback areas, permanent BMPs and storm water management detention and retention basins.
 - 2) At the improvement plan approval request, the entire Comprehensive Storm Water Management Plan must be submitted.

- E. The City Engineer shall review the plans, including the review report from the local county SWCD, and shall approve or return these with comments and recommendations for revisions within thirty (30) working days after receipt of the plan as described above. A plan rejected because of deficiencies shall receive a report stating specific problems. At the time of receipt of a revised plan, another thirty (30) day review period shall begin.
- F. Approved plans shall remain valid for two (2) years from the date of approval. After two (2) years the plan(s) approval automatically expires.
- G. No soil disturbing activity shall begin before all necessary local, county, state and federal permits have been granted to the owner or operator.
- H. The Community will do construction inspections until the site reaches final stabilization as determined by the City Engineer.

320A.14 MISCELLANEOUS

(A) EFFECTIVE DATE: This ordinance and its regulations shall become effective upon their passage.

(B) CONSULTATIONS: In implementing these regulations the City Engineer or other City officials may consult with the local county SWCD, state and federal agencies and other technical experts as necessary. Any costs associated with such consultations may be assessed to the applicant or his or her designated representative.

320A.99 VIOLATIONS AND PENALTIES:

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

(B) Whoever violates or fails to comply with any provision of this regulation is guilty of a misdemeanor of the first degree and shall be fined no more than one thousand dollars (\$1,000.00) or imprisoned for no more than one hundred eighty (180) days, or both, for each offense. A separate offense shall be deemed committed each day during or on which a violation or noncompliance occurs or continues.

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

(D) The imposition of any other penalties provided herein shall not preclude the Community, by or through its Law Director and/or any of their assistants, from instituting an appropriate action or proceeding in a Court of Proper Jurisdiction to prevent an unlawful development or to restrain, correct or abate a violation, or to require compliance with the provisions of this regulation or other applicable laws, or ordinances, rules or regulations or the orders of the City Engineer.