Clark County Storm Water Management and Sediment Control Regulations

Amended 2012

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Table of Contents

Section 1 General Provisions

SECTION 1.01 TITLE

These regulations shall be cited as the Clark County Storm Water Management and Sediment Control Regulations and are hereinafter referred to as "these regulations."

SECTION 1.02 STATUTORY AUTHORIZATION

These regulations of Clark County are promulgated pursuant to the Ohio Revised Code (O.R.C.) 307.79 and thereafter as amended, whereby a board of county commissioners may adopt rules to abate soil erosion and water pollution by soil sediment by land development.

SECTION 1.03 ADMINISTRATION

The Clark County Engineer's Department (hereinafter referred to as "County Engineer"), acting as the Clark County Board of Commissioner's duly authorized representative, shall administer these regulations. Clark County Engineer's Department authorizes its staff on behalf of the Clark County Board of Commissioners to determine compliance with these regulations and shall issue such notices and orders as may be necessary.

SECTION 1.04 PURPOSE

The Clark County Board of Commissioners, hereinafter referred to as "Commissioners," adopts these Storm Water Management and Sediment Control Regulations to establish technically feasible and economically reasonable standards to achieve a level of management and conservation practices that will abate water erosion of the soil or abate the degradation of the Waters of the State by soil sediment in conjunction with land grading, excavating, filling, or other soil disturbing activities on land used or being developed for nonfarm commercial, industrial, residential or other nonfarm purposes. The Commissioners additionally adopt these regulations to establish criteria for determination of the acceptability of such management and conservation practices, and to implement Phase II of the storm water program of the National Pollutant Discharge Elimination System (NPDES) established in 40 CFR Part 122.

These regulations further intend, but are not limited to:

A) Permit development while keeping downstream flooding, erosion, and sedimentation at existing levels.
B) Reduce damage to receiving watercourses that may be caused by increases in the quantity and/or rate of water discharged, and impairment of their capacity that may be caused by sedimentation.
C) Establish a basis for the design of all storm drainage systems that will preserve the rights and options of both the dominant and servient property owners and help assure the long-term adequacy of storm drainage systems.

SECTION 1.05 SCOPE

These regulations shall require persons to file plans governing erosion control, sediment control, and water management and receive a permit for soil-disturbing activities on land used or being developed for nonfarm commercial, industrial, residential or other nonfarm uses as additionally regulated by the Ohio EPA, including, but not limited to, individual or multiple lots, subdivisions, multi-family developments, commercial and industrial developments, recreational projects, general clearing and grading projects, underground utilities, private highways, other building activities on any lands, redevelopment of urban areas and all other uses unless expressly excluded as follows:

A) Land being used in a strip mining operation as defined in O.R.C. 1513.01;
B) Land being used in a surface mining operation as defined in O.R.C. 1514.01; or
C) Activities related to the production and/or cultivation of agricultural crops or silviculture operations whose activities are regulated under the Agricultural Pollution Abatement Rules & Standards (Ohio Administrative Code 1501:15)
D) Public highways, transportation, and drainage improvements or maintenance thereof undertaken by a government agency or political subdivision provided that its standard sediment control policies have been approved by the Clark County Board of Commissioners, or by the Chief of the ODNR Division of Soil and Water Conservation, and that the applicable sediment control policies are no less restrictive than these regulations.

SECTION 1.06 EXCEPTIONS

A) Any developer seeking approval to construct a single-family residence shall be exempted from having to prepare a control plan; provided, they comply with the subdivision lot grading plan approved by the County Engineer.
B) When the total detention required on a development area is less than 1,000 cubic feet, the County Engineer may, upon the request of the developer, waive the detention requirements of this chapter. The County Engineer will not grant a waiver if it is determined that storm water drainage would be a threat to adjacent properties if no detention were to be provided or if it is determined that the public sewer system downstream of the development area is not adequate to handle the increased storm flow.
C) Exemption under this section from the requirement to prepare and submit a control plan does not exempt such developer from complying with the other provisions of this ordinance. The County Engineer may require the developer to submit information necessary for the County Engineer to evaluate compliance with the requirements of this Chapter.

SECTION 1.07 DISCLAIMER OF LIABILITY

Neither submission of a plan under provisions of these regulations, nor compliance with provisions of these regulations, shall relieve any person or other entity from responsibility for damage to any person or property otherwise imposed by law; nor shall it create a duty by the Commissioners, or by the County Engineer, to those damaged by soil sediment pollution.

SECTION 1.08 SEVERABILITY

If any clause, section, or provision of these regulations is declared invalid or unconstitutional by a court of competent jurisdiction, validity of the remainder shall not be affected thereby.

SECTION 1.09 NUISANCES

These regulations shall not be construed as authorizing any person to maintain a private or public nuisance on his property, and compliance with the provisions of these regulations shall not be a defense in any action to abate such a nuisance.

SECTION 1.10 RESPONSIBILITY

Failure of the County Engineer to observe or recognize hazardous or unsightly conditions or to recommend corrective measures shall not relieve the owner from the responsibility for the condition or damage resulting therefrom, and shall not result in the Commissioners or County Engineer, its officers, employees, or agents being responsible from any conditions or damage resulting therefrom.

SECTION 1.11 EFFECTIVE DATE

These regulations shall replace the existing regulations on the 31st day following the date of their adoption by the Clark County Board of Commissioners.

Section 2 Definitions

SECTION 2.01 INTERPRETATION OF TERMS AND WORDS

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

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

SECTION 2.02 WORDS AND TERMS DEFINED

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

APPROVED: Compliant with these regulations.

BEST MANAGEMENT PRACTICES (BMP's): Structural or nonstructural facilities or activities that control soil erosion and/or storm water runoff at a development site. This includes treatment requirements, operating and maintenance procedures, and other practices to control site runoff, leaks, or waste disposal.

CHANNEL: A manmade bed that conveys water; a ditch excavated for the flow of water a non-stream, a non-watercourse.

WATER QUALITY VOLUME WQv: Volume of storm water runoff that must be captured and treated before discharge from the developed site after construction is complete. WQ_v 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.

CRITICAL STORM: That storm which is calculated by means of the percentage increase in volume of runoff by a proposed development. The critical storm is used to calculate the maximum allowable storm water discharge rate from a developed site.

CUT: An excavation that reduces an existing elevation, as in road or foundation construction.

DETENTION STRUCTURE: A permanent storm water management facility for the temporary storage of runoff, which is designed to delay and attenuate flow.

DEVELOPMENT AREA: A lot or contiguous lots owned by one person or persons, or operated as one development unit, and used or being developed for commercial, industrial, residential, institutional, or other non-farm construction or alternative that changes runoff characteristics, upon which soil-disturbing activities occur.

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

DISTURBED AREA: An area of land subject to erosion due to the removal of vegetative cover and/or soil disturbing activities.

DITCH: A manmade channel for the purpose of drainage or irrigation with intermittent flow.

DRAINAGE: The removal of excess surface water or groundwater from land by surface or subsurface drains.

DRAINAGE IMPROVEMENT: As defined in O.R.C. 6131.01 (C), and/or conservation works of improvement, O.R.C. 1511 and 1515.

ENGINEER: A Professional Engineer registered in the State of Ohio.

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 material, both mineral and organic, to minimize the removal of soil material from the land surface and to prevent its transport out of a disturbed area by means of wind, water, ice, gravity, or any combination of those forces.

FARM: Land, water, or buildings primarily devoted to growing and/or cultivating crops in connection with any of the following:

A) Raising or harvesting of an agricultural, horticultural or viticultural commodity and
B) Raising, shearing, feeding, caring for, training, and management of livestock and poultry.

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% cover for the area has been established or equivalent stabilization measures, such as the use of mulches, geotextiles, have been employed.

FLOOD PLAIN: The designated areas shown on the flood hazard boundary maps of the county, prepared by the United States Department of Housing and Urban Development, Federal Insurance Administration, and the Federal Emergency Management Agency; which are subject to periodic flooding from a 100-year frequency storm.

HYDRIC SOILS: Soils that are saturated, flooded, or ponded for a long enough time period during the growing season that anaerobic conditions develop in the upper part of the soil. Soils that are considered "wetland" soils.

HYDROPHYTIC VEGETATION: Plants that are found in wetland areas. These plants have been classified by their frequency of occurrence in wetlands.

IMPERVIOUS: Not allowing infiltration which means any paved, hardened or structural surface regardless of its composition including (but not limited to) buildings, roads, driveways, parking lots, loading/unloading spaces, decks, patios, and swimming pools.

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

LARGER COMMON PLAN OF DEVELOPMENT: A contiguous area where multiple separate and distinct construction activities may take place at different times on different schedules under one development area.

LOT: 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 lot may contain more than one contiguous lot.

MAJOR SUBDIVISION: As defined in the most current version of the Subdivision Regulations of Clark County.

MAXIMUM EXTENT PRACTICABLE: The level of pollutant reduction that site owners of small municipal separate storm sewer systems regulated under 50 C.F.R. Parts 9, 122, 123, and 124, referred to as NPDES Storm Water Phase II, must meet.

MS4: Municipal Separate Storm Sewer System. A conveyance or system of conveyances (including roadside ditches, catch basins, curbs, gutters, storm sewers) that are:

A) Owned or operated by the federal government, state, municipality, township, county, district(s) or other public body (created by or pursuant to state or federal law) including special districts 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 act that discharges into surface water of the State; and
B) Designed or used for collecting or conveying solely storm water, which is not a combined sewer and is not a part of a publicly owned treatment works.

MULTI-FAMILY DEVELOPMENT: Apartments, condominiums, townhouses, duplexes, or other similar buildings housing more than one family.

NON-FARM: Land, water or buildings that are not primarily devoted to the uses specified in the definition of "farm" herein.

NPDES: National Pollutant Discharge Elimination System. A regulatory program in the Federal Clean Water Act that prohibits the discharge of pollutants into surface water of the Unites Sates without a permit.

NOI: Notice of Intent obtained from the Ohio EPA under the NPDES Phase 2 Program

NOT: Notice of Termination obtained from the Ohio EPA under NPDES Phase 2 Program

OHIO EPA: Ohio Environmental Protection Agency

ODNR-DSWC: Ohio Department of Natural Resources, Division of Soil and Water Conservation.

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 or combination thereof.

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

PUD: Planned Unit Development

RAINWATER AND LAND DEVELOPMENT MANUAL: Ohio's standards developed by ODNR-DSWC for storm water management, land development, and urban watercourse protection. The most current edition of these standards shall be used with this regulation.

RETENTION STRUCTURE: A permanent storm water management facility that provides for the permanent storage of runoff and is only released through percolation, evaporation, transpiration or through an emergency overflow.

RIPARIAN SETBACK: An area of naturally vegetated land adjacent to designated watercourses that, if appropriately sized, helps to stabilize stream banks, limit erosion, reduce flood size flows and/or filter and settle out runoff pollutants. This area shall be a designated distance from a watercourse as set by applicable local or county regulations.

RUNOFF: The portion of rainfall, melted snow, or irrigation water that flows across the ground surface and is eventually returned to groundwater, streams, watercourses, ponds, lakes or wetlands.

SEDIMENT: Soils or other surface materials that are or have been 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 BASIN: A barrier or other suitable retention structure built across an area of water flow to intercept runoff and allow transported sediment to settle and be retained, prior to discharge into waters of the state.

SEDIMENT POLLUTION: Degradation of waters of the state by sediment as a result of failure to apply management or conservation practices to abate wind or water soil erosion, specifically in conjunction with soil-disturbing activities on land used or being developed for commercial, institutional, industrial, residential, or other non-farm purposes.

SOIL AND WATER CONSERVATION DISTRICT: An entity organized under Chapter 1515 of the Ohio Revised Code; referring either to the Soil and Water Conservation District Board, or its designated employee(s), hereinafter referred to as the County Engineer.

SOIL DISTURBING ACTIVITIES: Clearing, grubbing, grading, excavating, filling, or other alteration of the earth's surface where natural or human made ground cover is destroyed and which may result in, or contribute to erosion and sediment pollution. This may also include construction of buildings, structures, utilities, roadways, parking areas, and septic systems that will involve soil disturbance or altering of the existing ground cover.

SOIL LOSS: Soil moved from a given site by the forces of erosion, measured using the Revised Soil Loss Equation "RUSLE".

STABILIZATION: The use of Best Management Practices, such as seeding and mulching, that reduce or prevent soil erosion by water, wind, ice, gravity, or a combination of those forces.

STORM WATER: Storm water runoff, snowmelt, surface runoff, and drainage.

STORM WATER MANAGEMENT: Runoff water safely conveyed or temporarily stored and released at an allowable rate to minimize erosion and flooding.

STREAM: see definition for “watercourse”.

SUBSOIL: That portion of the soil below the topsoil or plow layer, typically beginning 6-12" below the surface, but can also extend to 48” or deeper in the case of prime farmland soils, down to bedrock parent material.

SWP3: Storm Water Pollution Prevention Plan as defined and required by the Ohio EPA.

TEMPORARY SOIL STABILIZATION: 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 soil that is usually darker in color and richer in organic matter and nutrients than the subsoil.

WATERCOURSE: A natural channel with defined bed and banks within which concentrated water flows, either continuously or intermittently, (e.g. brooks, creeks, rivers or streams.

WATER MANAGEMENT AND SEDIMENT CONTROL (SSWMSC) PLAN: A plan prepared, designed, and approved in accordance with the specific requirements as contained in these regulations. This plan will provide for storm water management to address the increase in storm water created by the proposed development as well as illustrating the means and methods to minimize erosion and prevent off-site sedimentation by containing sediment on-site, or by-passing sediment-laden runoff through a sediment control measure. Equivalent to a SWP3.

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 contain a predominance of hydric soils, and that under normal circumstances do support a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, and similar areas (40 CFR 232, as amended).

Section 3 Standards

Section 3.01 Standards Defined

In order to control sediment pollution of water resources the developer for the development area shall use conservation planning and practices to maintain the level of conservation established by the following standards:

A) Timing of sediment-trapping practices. Sediment control practices shall be functional throughout earth-disturbing activity. Settling facilities, perimeter controls, and other practices intended to trap sediment shall be implemented as the first step of grading and within seven days from the start of grubbing. They shall continue to function until the upslope development area is restabilized.

B) Stabilization of denuded areas. Denuded areas shall have soil stabilization applied within seven days if they are to remain dormant for more than forty-five days. Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is reached on any portion of the site, and shall also be applied within seven days to denuded areas which may not be at final grade, but will remain dormant (undisturbed) for longer than forty-five days.

C) Settling facilities. Concentrated storm water runoff from denuded areas shall pass through a sediment-settling facility. The facility's storage capacity shall be sixty-seven cubic yards per acre of drainage area.

D) Sediment barriers. Sheet flow runoff from denuded areas shall be filtered or diverted to a settling facility. Sediment barriers such as sediment fence or diversions to settling facilities shall protect adjacent properties and water resources from sediment transported by sheet flow.

E) Storm sewer inlet protection. All storm sewer inlets which accept water runoff from the development area shall be protected so that sediment-laden water will not enter the storm sewer system without first being filtered or otherwise treated to remove sediment, unless the storm sewer system drains to a settling facility.

F) Working in or crossing streams.

1) Streams including bed and banks shall be restabilized immediately after in-channel work is completed, interrupted, or stopped. To the extent practicable, construction vehicles shall be kept out of streams. Where in-channel work is necessary, precautions shall be taken to stabilize the work area during construction to minimize erosion.

2) If a live (wet) stream must be crossed by construction vehicles regularly during construction, a temporary stream crossing shall be provided.

G) Construction access routes. Measures shall be taken to prevent soil transport onto surfaces where runoff is not checked by sediment controls, or onto public roads.

H) Sloughing and dumping.
   1) No soil, rock, debris, or any other material shall be dumped or placed into a water resource or into such proximity that it may readily slough, slip, or erode into a water resource unless such dumping or placing is authorized by the County Engineer and, when applicable, the U.S. Army Corps of Engineers, for such purposes as, but not limited to, constructing bridges, culverts, and erosion control structures.
   2) Unstable soils prone to slipping or landsliding shall not be graded, excavated, filled nor have loads imposed upon them unless the work is done in accordance with a qualified Professional Engineer's recommendations to correct, eliminate, or adequately address the problems.

I) Cut and fill slopes. Cut and fill slopes shall be designed and constructed in a manner which will minimize erosion. Consideration shall be given to the length and steepness of the slope, soil type, upslope drainage area, groundwater conditions, and slope stabilization.

J) Stabilization of outfalls and channels. Outfalls and constructed or modified channels shall be designed and constructed to withstand the expected velocity of flow from a post- development, ten-year frequency storm without eroding.

K) 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 the County Engineer determines will provide adequate cover and is mature enough to control soil erosion satisfactorily and to survive adverse weather conditions.

L) Disposition of temporary practices. All temporary erosion and sediment control practices shall be disposed of within thirty days after final site stabilization is achieved or after the temporary practices are no longer needed, unless otherwise authorized by the County Engineer. Trapped sediment shall be permanently stabilized to prevent further erosion.

M) Maintenance. All temporary and permanent erosion and sediment control practices shall be designed and constructed to minimize maintenance requirements. They shall be maintained and repaired as needed to assure continued performance of their intended function. The developer for the continued maintenance of permanent erosion controls shall be identified to the satisfaction of the County.

The County Engineer is empowered to adopt excavation and construction specifications and erosion and sediment control practice specifications, consistent with the accomplishing the purposes of this Chapter, which shall be used by Developers in complying with the requirements of this Chapter.

These standards shall not operate to limit the discretion of the County Engineer to waive requirements imposed by this Chapter; provided such waiver is consistent with accomplishing the purposes of this Chapter.

Section 4 Control Plans

Section 4.01 Plan Requirements

In order to control sediment pollution of water resources, the developer for the development area shall develop a control plan for the development area.

A) The control plan shall identify potential erosion and sediment pollution problems and describe measures to be taken to control those problems.

B) The control plan must be submitted to and be approved by the County Engineer prior to any earth-disturbing activity on the development area.

C) The following information shall be included in the control plan:
   1) A general project description including the nature and purpose of the earth-disturbing activity;
   2) A vicinity sketch locating the development area and all pertinent surrounding features, including water resources;
   3) The location of sensitive areas receiving runoff from the development area;
   4) The existing and proposed topography;
   5) The location and description of existing and proposed drainage patterns and facilities, including any allied drainage facilities beyond the development area;
   6) The limits of earth-disturbing activity;
   7) The types of soils within or affected by the development area and the location of all highly erodible or unstable soils;

8) Erosion and sediment control practices to be employed on the development area:
   a) Their location; and
   b) Where applicable, their size, detail drawings, maintenance requirements, and design calculations.
9) Storm water provisions, including:
   a) A general description of the storm water management strategy proposed to meet the requirements of this Chapter;
   b) The location and design calculations for all permanent storm water conveyance, detention, and retention structures;
   c) The person or entity responsible for continued maintenance of the storm water control structure;
   d) Maintenance requirements and schedules; and
   e) Permanent access and access easements required to perform inspection and maintenance of storm water control structures and storm water conveyance systems.
   10) The schedule, phasing, and coordination of construction operations and erosion and sediment control practices.

Section 5 Stream Channel and Flood Plain Erosion

A) In order to control pollution of public waters by soil sediment from accelerated stream channel erosion and flood plain erosion caused by accelerated storm water runoff from development areas, the peak rates of runoff from an area after development may be no greater than the peak rates of runoff from the same area before development for all twenty- four-hour storms from one- to one-hundred-year frequency. Design and development to match the peak rate of runoff for the one-, two-, five-, ten-, twenty-five-, fifty, and one-hundred-year storms will be considered adequate to meet this rule.

B) If the volume of runoff from an area after development will be greater than the volume of runoff from the same area before development, it shall be compensated by reducing the peak rate of runoff from the critical storm and all more-frequent storms occurring on the development area to the peak rate of runoff from a one-year frequency, twenty-four-hour storm occurring on the same area under predevelopment conditions. Storms of less-frequent occurrence (longer return periods) than the critical storm up to the one-hundred-year storm shall have peak runoff rates no greater than the peak runoff rates from equivalent size storms under predevelopment conditions. The critical storm for a specific development area is determined 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 (b)(2)(A) of this section, determine the per cent of increase in volume of runoff due to development and, using this percentage, select the critical storm from the following table:

If the percentage increase in volume of runoff is:		The 24-hour "critical storm" for discharge limitation will be:
≥	<	
0	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

("≥" means greater than or equal to and "<" means less than)

C) Methods for controlling increases in storm water runoff peaks and volumes may include, but are not limited to:
   1) Grading and use of grade control structure to provide a level of control in flow paths and stream gradients.
   2) Provisions for detention and retention (for example, permanent ponds and lakes with storm water basins provided with proper drainage, multiple-use areas for storm water detention and recreation, wildlife, or transportation, or subsurface storage areas).

D) Hydrologic calculation methods shall be as follows:
   1) For developments under 5 acres: use either the rational method or "Urban Hydrology for Small Water Sheds" technical release 55, U.S. Department of Agriculture.
   2) For developments over 5 acres: use "Urban Hydrology for Small Water Sheds" technical release 55, U.S. Department of Agriculture.
   3) For developments over 200 acres: may use, with the concurrence of the County Engineer, "Project Formulation Hydrology" technical release 20, U.S. Department of Agriculture.

Section 6 Sheet and Rill Erosion

To control pollution of surface waters by soil sediment and other pollutants, the developer shall:

A) Construct and maintain basins sized in accordance with the United States Soil Conservation Service handbook, "Water Management and Sediment Control for Urbanizing Areas" (Washington, D.C., U.S. Government Printing Office, June 1978); or

B) Apply and maintain a level of management and conservation or practices such that the predicted average annual soil loss, accumulated monthly in accordance with the procedure in the United States Soil Conservation Service handbook, "Water Management and Sediment Control for Urbanizing Areas," is less than fifteen (15) tons per acre the first year commencing from the time of initial earth disturbance, ten (10) tons per acre the second year, and five (5) tons per acre for any other year of the development process. The management and conservation practices shall be designed, applied, and maintained so that the entire development area and any part thereof is protected from accelerated erosion in accordance with the stated criteria; or,

C) Use other methods to control surface water pollution; this may include but is not limited to a combination of paragraphs (a) and (b) of this standard, provided those methods are acceptable to the County Engineer.

Section 7 Concentrated Water Erosion

To control pollution of surface waters by soil sediment from accelerated erosion in drainageways and grassed waterways and in streams and ditches disturbed or modified in conjunction with the development process on a development area, the developer shall:

Design, construct, and maintain concentrated water flow channels such that the velocity of flow does not exceed the permissible velocities listed below; or

TABLE OF PERMISSIBLE VELOCITIES FOR FLOWING WATER

Maximum Velocities for Grassed Waterways

Cover	Slope** Range** (percent)	Permissible Velocity* Erosion Resistant Soils (feet/second)	Easily Eroded Soils (feet/second)
Kentucky Bluegrass	0 - 5	7.0	5.0
Tall Fescue	5 - 10	6.0	4.0
Smooth brome	over 10	5.0	3.0
Grass mixtures**	0 - 5	5.0	4.0
Reed canary	5 - 10	6.0	3.0
Redtop***	***		
Red fescue	0 - 5	3.5	2.5

* Use velocities exceeding five feet per second only where good cover and proper maintenance can be obtained.

** Do not use on slopes steeper than ten percent except for vegetated side slopes in combination with a stone, concrete, or highly resistant vegetative center section.

*** Do not use on slopes steeper than five percent except for vegetated side slopes in combination with a stone, concrete, or highly resistant vegetative center section.

Drainage Field Ditches. Drainage field ditches are shallow-graded ditches with flat side slopes which do not interfere with tillage operations. Generally, the side slopes range from 8:1 to 15:1. The purpose of drainage field ditches is to collect water from depressional or nearly flat areas within a field and remove it to a stable outlet. Generally, erosive velocities will not be a problem because of the low gradient of fields in which drainage field ditches are used and because of the shallow side slopes. Maximum velocities shall be limited to 2.5 feet/second unless on-side studies show that higher velocities will not result in erosive conditions.

Maximum Velocities for Vegetated Stream Channels.
Drainage Areas Less Than One Square Mile: The maximum permissible design velocity shall be based on site conditions and shall be such as to result in stability of the ditch bottoms and side slopes. Maximum permissible velocities will be computed using bank-full stage or ten-year frequency stage, whichever is lower. The following table will be used as maximum velocity for all drainage main or lateral designs. Vegetation will be established immediately after construction.

Subsoil Texture	Maximum Velocity* (feet/second)
Sand and sandy loam (non-colloidal)	2.5
Silt loam (also high lime clay)	3.0
Sandy clay loam	3.5
Clay loam	4.0
Stiff clay, fine gravel, and graded loam to gravels	5.0
Graded silt to cobbles (colloidal)	5.5
Shale, hardpan, coarse gravel	6.0

* Channels that cannot be designed to meet the maximum velocity limitations must be stabilized with materials other than vegetation. Such materials include crushed rock, concrete, gabions, etc.

A) Drainage Areas Greater Than One Square Mile: Channel velocities for newly constructed channels with drainage areas in excess of one square mile shall meet special stability requirements contained in U.S. Soil Conservation Service Technical Guide (Technical Release 25, Planning and Design of Open Channels).
   1) Design, construct, and maintain sediment basins sized in accordance with the United States Soil Conservation Service handbook, "Water Management and Sediment Control for Urbanizing Areas"; or
   2) Use other methods to control sediment pollution; this may include but is not limited to a combination of paragraphs (a) and (b) of this standard, provided those methods are acceptable to the County Engineer.

Section 8 Sloughing, Landscaping and Dumping

To control sediment pollution of surface waters caused by sloughing, landsliding, or dumping of earth material, or placing of earth material into such proximity that it may readily slough, slide, or erode into public waters by natural forces, no person shall:

A) Dump or place earth material into public waters or into such proximity that it may readily slough, slide, or erode into public waters unless such dumping or placing is authorized by the County Engineer for such purposes as, but not limited to, constructing bridges, culverts, erosion control structures, and other in-stream or channel bank improvement works; or
B) Grade, excavate, fill, or impose a load upon any soil or slope known to be prone to slipping or landsliding, thereby causing it to become unstable, unless qualified engineering assistance has been employed to explore the stability problems and make recommendations to correct, eliminate, or adequately address the problems. Grading, excavating, filling, or construction shall commence only after the County Engineer has reviewed and approved the exploratory work and recommendations and only in accordance with the approved recommendations.

Section 9 Storm Water Discharges Associated with Construction

A) No person or operator shall engage in:
   1) Construction activity that results in land disturbances of greater than or equal to one acre, or
   2) Construction activity disturbing less than one acre when that construction activity is part of a larger common plan of development or sale that would disturb one acre or more, or unless that construction activity is performed in full compliance with Ohio EPA Permit No.: OHC000003 "AUTHORIZATION FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM."

B) No person or operator shall allow post-construction runoff from new development and redevelopment completed after the effective date of this regulation, unless the runoff is in full compliance with Ohio EPA Permit No.: OHC000003 "AUTHORIZATION FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM."

C) The provisions of this section shall not apply to a person or to construction activity or to runoff when the Ohio EPA has granted an exemption from the requirements of Ohio EPA Permit No. OHC000003 for such person or to construction activity or to runoff.

Section 10 Control Plan Content and Filing

A) Every developer required to submit a control plan pursuant to Section 4 of this Chapter shall submit one (1) original and two (2) copies of such plan to the County Engineer and obtain the authorizations required by this Chapter prior to entering into any earth-disturbing activity.

B) Such plan shall be accompanied by a map or maps 24" x 36" of the proposed development area or areas, drawn to a scale of one inch (1") equals fifty feet (50') and shall contain the following information:
   1) Location of the area and its relation to its general surroundings including but not limited to:
      a) Off-site areas susceptible to sediment deposits or to erosion caused by accelerated runoff,
      b) Off-site areas affecting potential accelerated runoff and erosion control;
   2) Existing topography of the development area and adjacent land within one hundred feet (100') of the boundaries or more if determined by the County Engineer. The topographic map shall contain existing contours at an interval of not greater than two feet (2') if the slope of the ground is twelve percent (12%) or less and not greater than five feet (5') where the slope is more than twelve percent (12%) to clearly portray the conformation and drainage pattern of the area;
   3) The location of existing buildings, structures, utilities, water bodies, drainage facilities, vegetative cover, paved areas (roads, streets, driveways, sidewalks, etc.) and other significant natural or man-made features on the development area and adjacent land within one hundred feet (100') of the boundaries;
   4) A general description of the predominant soil types, their location, and their limitations for the proposed use (refer to the Soil Survey of Clark County, Ohio, issued January, 1978);
   5) Proposed use of the development area including present development and ultimate utilization with detail on soil cover, both vegetative and impervious;
   6) All proposed earth disturbance including:
      a) Areas of excavation, grading, and filling; including proposed and existing grades and drainage patterns;
      b) The finished grade, stated in feet horizontal to feet vertical, of cut and fill slopes;
      c) Kinds of utilities and proposed areas of installation;
      d) Proposed paved and covered areas in square feet to scale on a plan map;
      e) Makeup of proposed surface soil (upper six inches) on areas not covered by buildings, structures, or pavement. Description shall be in such terms as: original surface soil, subsoil, sandy, heavy clay, stony, etc.;
      f) Proposed kind of cover on areas not covered by buildings, structures, or pavement. Description shall be in such terms as: lawn, turfgrass, shrubbery, trees, forest cover, rip-rap, mulch, etc.;
   7) Provisions for temporary and permanent erosion control;
   8) Provisions for the management of stormwater, derived both on-site and from upper watershed areas, including the control of accelerated on-site runoff, to a stable receiving outlet;
   9) Provisions for maintenance of temporary and permanent stormwater control improvements during

construction;

10) Provisions for maintenance of control facilities including easements or agreements to insure short as well as long term erosion and sediment pollution control and stormwater management;

11) Proposed construction sequence--a time schedule for all earth disturbing activities and installation of provisions for erosion and stormwater management;
12) Design computations and applicable assumptions for all structural measures for stormwater, erosion and sediment pollution control. Volume and velocity of flow must be given for all surface water conveyance. This information shall also be provided for surface water outlets;
13) Seeding mixtures and rates, lime and fertilizer application rates, and kind and quantity of mulching for both temporary and permanent vegetative control measures;
14) Estimate of cost of erosion and sediment control and water management structures and features;
15) Title, scale, direction, legend, and date of all plan maps (with a revision box, if applicable);
16) Names and address of the person(s) preparing the plan, the owner, and any other developer for the development area;
17) Certifications that all earth disturbance, construction, and development will be done pursuant to the plan; and
18) Certification by the Professional Engineer.

C) The County Engineer may waive specific requirements for plan detail or may require additional information to show that work will conform to the standards established in this Chapter.

PLAN REVIEW.

The County Engineer shall, within thirty (30) calendar days of receipt of a control plan, indicate its status of compliance or non-compliance to the person who filed the plan. Indication of non-compliance shall include the plan deficiencies and the procedures for filing a revised plan. Pending preparation and determination of a status of compliance of a revised control plan, earth-disturbing activities shall proceed only in accordance with conditions imposed by the County Engineer to accomplish the purposes of this Chapter.

INSPECTION TO ENSURE COMPLIANCE

A) The County Engineer shall inspect development areas to determine compliance with this Chapter. If it is determined that a violation of this Chapter exists, the developer or his appointed representative shall be notified of the deficiencies or non-compliance by the County Engineer, in writing, by certified mail. If within fourteen (14) days after receipt of such letter, the deficiency or non-compliance has not been corrected or plans have not been approved by the County Engineer for its correction, the County Prosecutor shall seek an injunction or other appropriate relief to abate excessive stormwater runoff, erosion or sedimentation and secure compliance with this Chapter.
B) The County Engineer shall make a final inspection to determine if the standards established in this Chapter have been complied with.

MAINTENANCE

A) When permanent runoff control installations are necessary, the maintenance responsibility shall be designated by the County Engineer. The maintenance responsibility of said installation(s) will be either designated to the County, or to one or more of the developers of the development area.
B) Developers of a development area may petition the County Engineer for the maintenance of permanent runoff control installations by the County provided such required installations:
    1) Benefit two or more property owners;
    2) Are designed for cost-effective maintenance;
    3) Easements must be granted to the County sufficient to allow adequate access for inspections and corrective actions, if necessary, to be performed by the County;
    4) Are designed and installed to meet excavation and construction specifications and erosion and sediment control practice specifications adopted by the County Engineer; and
    5) Were not installed to serve commercial or industrial development areas exclusively.

C) The County Engineer shall not accept any permanent runoff control installation for maintenance by the County until he has first determined that accepting the maintenance responsibility will not impose an undue burden on the County's utility facilities or on the County's staffing and financial resources. The County Commission shall have the right and power at any time to terminate the County's maintenance responsibility previously accepted under this section and, in the event of such termination, the maintenance responsibility shall devolve upon the owner(s) of the property upon which the installation is located and upon the owner(s) of the development site(s) served by the installation.

D) Permanent runoff control installations, which are to be privately maintained by such developer(s) shall be:
   1) Designed and constructed by the developer of the development area with easements granted to the County sufficient to allow adequate access for inspections and corrective actions, if necessary, by the County;
   2) Regularly inspected by the County Engineer to ensure that privately-maintained installations are properly maintained and, if not, maintained at the expense of the one or more of the developers in compliance with an order issued by the County Engineer; and
   3) Maintained as installed by the developer of the development area according to the design approved by the County Engineer and not altered unless approved by the County Engineer.

E) Should the maintenance of any permanent runoff control installations be within a subdivision plat, the maintenance responsibilities shall be described on the record plat of said subdivision.

APPEALS

Any person aggrieved by an order, requirement, determination, or any other action in relation to this regulation, requirement, determination, or other action, may appeal to the Court of Common Pleas. Such an appeal shall be made within thirty (30) days of the date of the final decision and shall specify the grounds for appeal.

Clark County Engineer

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) CHECKLIST
FOR CONSTRUCTION SITES

Project _____ NPDES Permit No. _____

Location _____ Developer _____

Engineer _____ Contractor _____

Clark County Fee: _____ *Preliminary Plan _____* *SWPPP_____*

General Requirements: An SWPPP must be developed **before** the Notice of Intent (NOI) is submitted to Ohio EPA. The NOI must be submitted at least 21 days prior to the start of any construction activity. Construction activity cannot start prior to receiving and Authorization Letter from Ohio EPA. The developer must notify the local government entity (Clark County Engineer) that an NOI has been filed and must post a copy of either the NOI or the Ohio EPA Director's acceptance letter on site. The SWPPP must be retained on-site at all times during construction activity.

Minimum Standards: This plan must address all minimum components of the NPDES Permit and conform to the specifications of the Ohio Department of Natural Resources Division of Soil and Water and Natural Resources Conservation Service handbook, Rainwater and Land Development (Rev. 1996).

ESSENTIAL COMPONENTS:

- ❑ **Vicinity Map** - Location map showing site in relation to surrounding area. Include location of receiving streams/surface waters.
- ❑ **Limits of Clearing and Grading Plan** - Indicate limits and show acreage of earth disturbing activity. Show borrow, spoil and topsoil stockpile areas. Include before and after contours with appropriate contour intervals. Delineate drainage watersheds before, during, and after major grading activities indicating acreage of each area.
- ❑ **Project Description** - Briefly describe the nature, purpose and scope of the land disturbing activity. This may be self-evident from the plan. Include total area of site and acreages of individual phases if applicable. Include a narrative describing the overall erosion and sediment control scheme for this site.
- ❑ **Soils Information** - Show existing soil types including the location of bedrock, unstable, or highly erodible soils as determined by the Clark County Soil Survey and/or soil tests. Show location of any soil test borings on plan. Other soils information; such as permeability, perched water table, etc. may be mentioned.
- ❑ **Surface Water Locations** - Show locations of all lakes, ponds, surface drainage patterns, wetlands, springs, etc. on or within 200 feet of the site. If storm water will be discharging into a municipal separate storm sewer system or into a storm water management structure such as a retention basin which is off the site, clearly indicate this on the plans.
- ❑ **Site Development** - show locations of all prior land uses, existing and proposed buildings, roads, utilities, parking facilities, etc.
- ❑ **Schedule of Construction Activity** - Included in this should be a schedule for implementing temporary and permanent erosion and sediment control practices and storm water management facilities. The NPDES permit requires that all sediment ponds and perimeter barriers be constructed within 7 days of first grubbing. All sediment control structures must remain functional until upland areas are stabilized.
- ❑ **Location of Practices** - Show locations of all structural erosion and sediment control, stormwater management, and water quality practices, including post-construction best management practices. Water ponding facilities should be drawn to scale, with the area of the contributing watershed given.

- **Detail Drawings** -All structural practices should be explained with detail drawings of specifications. Installation specifications may also be necessary to aid contractor. Included should be outlet structures for retention, detention facilities and any special modifications to these structures to aid in improved sediment trapping capability.
- **Land Stabilization Measures** - Provide specifications for temporary and permanent seeding, mulching, blanketing, etc. and also installation schedule for each practice. The NPDES permit requires that all areas at final grade or where construction activity has temporarily ceased for 21 days or longer be stabilized within 7days of last activity. Erosion control blankets and matting should be used to stabilize channels where the flow velocity is greater than 3.5 ft./sec. steep slopes, on highly erosive soils and on areas slow to establish a vegetative cover.
- **Special Notes for Critical Areas** - Include pertinent information regarding stream bank stabilization, riparian corridors, buffer areas, stream restoration plans, wetland areas and stream crossings.
- **Existing Natural Areas** - Show existing or unusual vegetation, wetlands, springs, rock outcroppings, etc. Include vegetation to remain (trees, buffer areas, etc.).
- **Maintenance and Inspections** - Provide notes and information regarding maintenance of each practice to assure continued performance. Erosion and sediment control must be inspected once every 7 days and with 24 hours of 0.5" or greater rainfall. A written log of these inspections must become part of the SWPPP. This log should indicate the dates of inspection, inspector weather conditions, observations, actions taken to correct problems, and the date action was taken.
- **Storm Water Runoff Considerations and Post - Construction BMPs** - Show the pre- and post-construction runoff coefficients including information such as the method used to calculate runoff. Include a narrative describing post construction storm water management BMPs and the rationale for their selection. All sites larger than five or more acres in the larger plan of development MUST provide structural controls that capture the Water Quality Volume and release it over the prescribed number of hours. Refer to the NPDES General Construction Permit for design methodology. Show the locations of all stormwater management facilities and natural vegetation to remain (trees, buffer areas, etc.). Provide an estimate of percent of site imperviousness once the site is developed.
- **Trap Efficiency, Location and Volume of Sediment Ponds -** Concentrated storm water runoff and runoff from drainage areas which exceed the capacity of silt fence or inlet protection, shall pass through a sediment settling pond. Calculations must be shown for all temporary or permanent sediment traps/ponds and any retention/detention facilities to be used for this purpose. All ponds used for the purpose of trapping sediment must have a volume of 67 cubic yards per acre of total drainage area to the pond (not only disturbed area). Trapping efficiency of these structures must demonstrate at least a 75% trapping efficiency. An Excel program is available from the District to determine trapping efficiency. The basins must be shown to scale with the storage volume and contributing drainage area delineated on the SWPPP.
- **Disposal of Solid, Sanitary and Toxic Waste** - Solid, sanitary and toxic waste must be disposed of in a proper manner in accordance with local, state and federal regulations. It is prohibited to burn, bury or pour out onto the ground or into the storm sewers any solvents, paints, stains, gasoline, diesel fuel, used motor oil, hydraulic fluid, antifreeze, cement curing compounds and other such toxic or hazardous wastes. Wash out of cement trucks should occur in a diked, designated area where the washings can collect and be disposed of properly when they harden – OR– specify that all washout be hauled off site back to the concrete plant for disposal or recycling. Fuel storage tanks should be located in diked areas away from any drainage channels. The diked area should hold a volume 110% of the largest tank – OR – specify that the contractor use self-contained spill proof tanks.
- **Trench and Groundwater Dewatering** - All sediment laden pumped water must pass through a sediment basin, filter bag, or sump pit prior to discharge. A note or detail must be provided on the SWPPP that identifies dewatering procedures. Clean ground water should be pumped to a stable outlet and shall not co-mingle with sediment.
- **Off-Site Sediment Tracking** - Minimize such tracking of sediments by vehicles by making the use of gravel construction entrances and regularly scheduled sweeping/good housekeeping.

Clark County Engineer

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)
STANDARD GENERAL NOTES

General Notes to Contractor: (These are specific for Clark County and must be included on the plan)

- ✧ Sediment Ponds/Traps and Perimeter Controls shall be implemented as a first step of grading and within 7 days from the start of grubbing and shall continue to function until upland areas are stabilized.
- ✧ Disturbed areas which will remain unworked for a period of 21 days or more shall be stabilized with seeding and mulching or other approved means within 7 days.
- ✧ Ditches with grades greater than 1.5% and all other slopes greater than 6% will have erosion control blankets/matting installed as part of stabilization measures.
- ✧ Builder is responsible for erosion control on individual lot and must file an NOI with Ohio EPA
- ✧ No solid or liquid waste shall be discharged into storm water runoff.
- ✧ All erosion and sediment control practices must conform to the specifications of Rainwater and Land Development, Ohio's standards for Storm Water Management, Land Development and Urban Stream Protection.
- ✧ Other erosion and sediment control items may be necessary due to environmental conditions.
- ✧ Regular inspection and maintenance will be provided for all erosion and sediment control practices. Permanent records of maintenance and inspections must be kept throughout the construction period. Inspections must be made a minimum of once every 7 days and immediately after storm events greater than 0.5 inches of rain in a 24 hour period. Provided will be name of inspector, major observations, date of inspection and corrective measures taken.
- ✧ Winterization - Any disturbed area that is not going to be worked for 21 days or more must be seeded and mulched by November 1 or must have a dormant seeding or mulch cover applied between November 1 and March 1.

A NOTE ABOUT SUBLOTS

For developments with sublots, NPDES permit coverage must be maintained on the lot until it reaches final stabilization. Home Builders must submit an Individual Lot NOI seven days prior to the start of construction. Developers must submit an Individual Lot NOT for those lots turned over to a new owner. A detail drawing of a typical sublot indicating typical BMPs with notes specifying measures for critical areas, must be included in the SWPPP

- ✧ *If the developer will also build the structures within the development or opts to maintain permit responsibility on lots where structures are being built, a detail drawing of a typical sublot indicating typical BMPs with notes specifying measures for critical areas, must be included in the SWPPP.*
- ✧ *If a developer sells lots to individual home builders the original permittee must file a Notice of Termination (NOT) for those lots that will be sold. ALL lots to be transferred must be stabilized 7 days prior to transfer. The new owner is than responsible to file a NOI seven days prior to construction.*
- ✧ *If a centralized sediment control facility is used the original permittee will be required to maintain responsibility for the implementation of those controls if the drainage area does not meet final stabilization requirements.*

A NOTE ABOUT FINAL STABILIATION

A site is considered stabilized when all of the following criteria are met:

- ✧ A perennial, vegetative cover (or other permanent stabilization practice) has grown to a 75% density throughout the entire disturbed area.
- ✧ All temporary erosion and sediment controls have been removed and disposed of properly.
- ✧ All trapped sediment has been permanently stabilized to prevent further erosion.
- ✧ All construction activities have ceased.

For more information contact the Clark County Engineer's office at (937) 521-1800 or engineer@clarkcountyohio.gov